



# Sensor Actuator Interface

Catalogue

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**Fieldbus, data cables and accessories**

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**Plug in connector and protective caps**

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## Housings for signal transmission



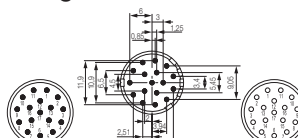
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## Built-in connectors for signal transmission



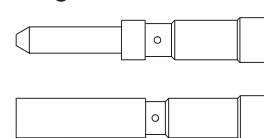
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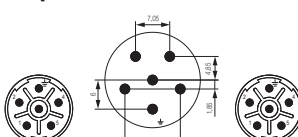
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## Built-in connectors for power transmission



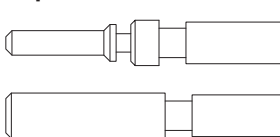
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# Sensor Actuator Interface

|                                  |              |     |
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# Technology is Priority One

## A

We would like to give some details about the many interesting innovations that have appeared since the release of the last SAI Catalogue. These pages describe solutions that are designed to make your work easier.

## M23 connectors

In addition to the SAI distributors and the moulded cables, Weidmüller now offers a wide line of M23 connectors. A distinction is made between connectors for power and connectors for signals. There are also a variety of housing types such as the plug housing, coupling housing and add-on flange. Crimp versions are typical whereby the individual components can be ordered separately. Sets or inserts with contacts are also available on request.



## M12 with plastic nuts

Plastic nuts are not used as a cost savings measure. The cost that nuts contribute to the entire expense is simply too small to be a factor. Instead, plastic is used because it has better resistance when compared to nickel-plated metals. In certain applications, the standard metal nuts can oxidise and degrade. For such uses, nuts made from plastic can help to increase the lifespan. M8 cables fitted with plastic nuts are also available on request.



### M12 with stainless-steel nut

The stainless steel nuts can be used in cases when the plastic nuts do not meet your mechanical requirements. Weidmüller also offers moulded versions in addition to the customisable M12 connectors. Our stainless steel nuts are made from a special high quality stainless steel. A small selection of these types are shown in our catalogue. Other variations can also be produced on request.



### M8 and M12 lines with yellow cable

In a trend towards machine standardisation, sensor cables with yellow cladding are often routed in machines. Weidmüller also offers these sensor cables in our standard line. Since such cables are typically used in tooling machines, they are designed only as halogen free PUR cables in this colour.



### Profibus Sub-D connector with M12 outlet

Market research indicates that the connection to the Sub-D connector is a common source of error during machine malfunctions. It is also a fairly complex task to install a Sub-D connector on a Profibus cable. We sought to find a solution that would solve both of these problems. So we introduced a Sub-D connector with an M12 outlet. This ensures "Plug & Play" functionality for this connection. The M12 cable only needs to be screwed on. All components are completely tested so that they will deliver a safe, reliable connection.



# Are you already a Weidmüller customer?

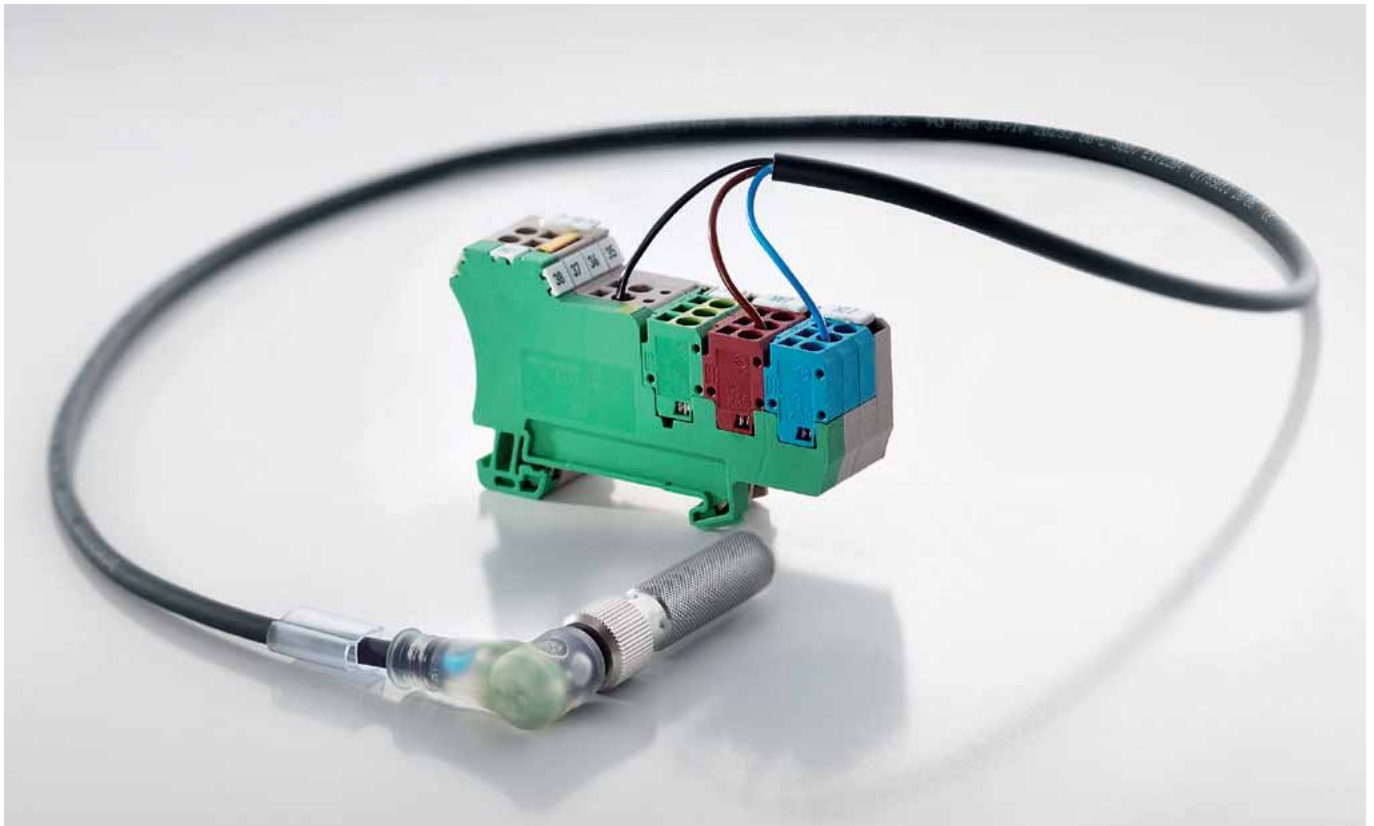
**A****Then why not order your M12 or M8 cables from us!**

Weidmüller supplies an extremely wide range of M12 and M8 cables, naturally with proven Weidmüller quality.

To answer as many demands as possible, we offer:

- PVC cables
- PUR/PVC cables
- PUR/halogen-free cables

Of course, with very short delivery times and favourable conditions. Please do not hesitate to contact us and ask for an offer or any additional information.



# Sensor and actuator cables

|                                   |                                               |      |
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## SAI cable

**B** Weidmüller manufactures its own SAI cable. This ensures optimal versatility. We do not use fully automatic machines which are difficult to adapt. That is why Weidmüller is well known for delivering promptly with quick turnaround times despite our wide variety of available options. We can also develop and produce solutions for specific customer requirements. We regularly produce cables, for example, with customer specific labels and logos.

But naturally it is the cost of this increased flexibility that is the decisive factor. In order to meet your cost requirements, an additional production line has been specially designed for keeping costs down. The line produces top selling products that are marketed for their economical cost factors.



Sensor cables from Weidmüller: shown here with yellow and black cables, together with bus cables



### Easy to identify

The EAN number on each label can be scanned in.



### Resistant to vibration

M8 with vibration resistance



### High quality

Compatible for use with robots;  
recyclable, halogen-free cables



### Versatile

Customised cables



One end without connector



Connecting cables



Valve cables



Connection cables / bus cables

Overview of sensor cables

B

|                   | No. of poles                 | Cable material                                | One end free                                                       |                                                                    |                                                                    | M8 socket straight                                                 |                                                                    |                                                                    |
|-------------------|------------------------------|-----------------------------------------------|--------------------------------------------------------------------|--------------------------------------------------------------------|--------------------------------------------------------------------|--------------------------------------------------------------------|--------------------------------------------------------------------|--------------------------------------------------------------------|
|                   |                              |                                               | PUR                                                                | PUR halogen-free                                                   | PVC                                                                | PUR                                                                | PUR halogen-free                                                   | PVC                                                                |
| One end free      |                              | 1.5 m<br>3.0 m<br>5.0 m<br>10.0 m<br>variable |                                                                    |                                                                    |                                                                    |                                                                    |                                                                    |                                                                    |
| M8 plug straight  | 4(S)<br>1(+)<br>3(-)         | 1.5 m<br>3.0 m<br>5.0 m<br>10.0 m<br>variable | 1824590150<br>1824590300<br>1824590500<br>1824591000<br>1824590000 | 1926970150<br>1926970300<br>1926970500<br>1926971000<br>1926970000 | 1927230150<br>1927230300<br>1927230500<br>1927231000<br>1927230000 | 1824570150<br>1824570300<br>1824570500<br>1824571000<br>1824570000 | 1926890150<br>1926890300<br>1926890500<br>1926891000<br>1926890000 | 1927150150<br>1927150300<br>1927150500<br>1927151000<br>1927150000 |
|                   | 2(0)<br>1(+)<br>4(S)<br>3(-) | 1.5 m<br>3.0 m<br>5.0 m<br>10.0 m<br>variable | 1906270150<br>1906270300<br>1906270500<br>1906271000<br>1906270000 | 1926990150<br>1926990300<br>1926990500<br>1926991000<br>1926990000 | 1927250150<br>1927250300<br>1927250500<br>1927251000<br>1927250000 | ***                                                                | ***                                                                | ***                                                                |
| M8 plug 90°       | 4(S)<br>1(+)<br>3(-)         | 1.5 m<br>3.0 m<br>5.0 m<br>10.0 m<br>variable | 1857550150<br>1857550300<br>1857550500<br>1857551000<br>1857550000 | 1927050150<br>1927050300<br>1927050500<br>1927051000<br>1927050000 | 1927310150<br>1927310300<br>1927310500<br>1927311000<br>1927310000 | On request                                                         | On request                                                         | On request                                                         |
|                   | 2(0)<br>1(+)<br>4(S)<br>3(-) | 1.5 m<br>3.0 m<br>5.0 m<br>10.0 m<br>variable | 1857560150<br>1857560300<br>1857560500<br>1857561000<br>1857560000 | 1927070150<br>1927070300<br>1927070500<br>1927071000<br>1927070000 | 1927330150<br>1927330300<br>1927330500<br>1927331000<br>1927330000 | ***                                                                | ***                                                                | ***                                                                |
| M12 plug straight | 1(+)<br>3(-)<br>4(S)         | 1.5 m<br>3.0 m<br>5.0 m<br>10.0 m<br>variable | 9457810150<br>9457810300<br>9457810500<br>9457811000<br>9457810000 | 1926620150<br>1926620300<br>1926620500<br>1926621000<br>1926620000 | 1925430150<br>1925430300<br>1925430500<br>1925431000<br>1925430000 | 1824570150<br>1824570300<br>1824570500<br>1824571000<br>1824570000 | 1926890150<br>1926890300<br>1926890500<br>1926891000<br>1926890000 | 1927150150<br>1927150300<br>1927150500<br>1927151000<br>1927150000 |
|                   | 2(0)<br>3(-)<br>1(+)<br>4(S) | 1.5 m<br>3.0 m<br>5.0 m<br>10.0 m<br>variable | 9456100150<br>9456100300<br>9456100500<br>9456101000<br>9456100000 | 1926630150<br>1926630300<br>1926630500<br>1926631000<br>1926630000 | 1925440150<br>1925440300<br>1925440500<br>1925441000<br>1925440000 | ***                                                                | ***                                                                | ***                                                                |
| M12 plug 90°      | 2(0)<br>3(-)<br>1(+)<br>4(S) | 1.5 m<br>3.0 m<br>5.0 m<br>10.0 m<br>variable | 9457610150<br>9457610300<br>9457610500<br>9457611000<br>9457610000 | 1926640150<br>1926640300<br>1926640500<br>1926641000<br>1926640000 | 1925450150<br>1925450300<br>1925450500<br>1925451000<br>1925450000 | ***                                                                | ***                                                                | ***                                                                |
|                   | 1(+)<br>3(-)<br>4(S)         | 1.5 m<br>3.0 m<br>5.0 m<br>10.0 m<br>variable | 9456690150<br>9456690300<br>9456690500<br>9456691000<br>9456690000 | 1926700150<br>1926700300<br>1926700500<br>1926701000<br>1926700000 | 1925510150<br>1925510300<br>1925510500<br>1925511000<br>1925510000 | On request                                                         | On request                                                         | On request                                                         |
|                   | 2(0)<br>3(-)<br>1(+)<br>4(S) | 1.5 m<br>3.0 m<br>5.0 m<br>10.0 m<br>variable | 1906260150<br>1906260300<br>1906260500<br>1906261000<br>1906260000 | 1926710150<br>1926710300<br>1926710500<br>1926711000<br>1926710000 | 1925520150<br>1925520300<br>1925520500<br>1925521000<br>1925520000 | ***                                                                | ***                                                                | ***                                                                |
|                   | 1(+)<br>3(-)<br>4(S)         | 1.5 m<br>3.0 m<br>5.0 m<br>10.0 m<br>variable | 9457670150<br>9457670300<br>9457670500<br>9457671000<br>9457670000 | 1926720150<br>1926720300<br>1926720500<br>1926721000<br>1926720000 | 1925530150<br>1925530300<br>1925530500<br>1925531000<br>1925530000 | ***                                                                | ***                                                                | ***                                                                |

Preferred types / extracted from the complete line. Please make a separate inquiry for information about the M8 snap-on version, twin cabling and others.

M8 socket

straight



| PUR | PUR halogen-free | PVC |
|-----|------------------|-----|
|-----|------------------|-----|

|            |            |            |
|------------|------------|------------|
| 9457850150 | 1927000150 | 1927260150 |
| 9457850300 | 1927000300 | 1927260300 |
| 9457850500 | 1927000500 | 1927260500 |
| 9457851000 | 1927001000 | 1927261000 |
| 9457850000 | 1927000000 | 1927260000 |

90°



| PUR | PUR halogen-free | PVC |
|-----|------------------|-----|
|-----|------------------|-----|

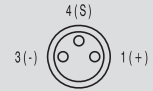
|            |            |            |
|------------|------------|------------|
| 9457380150 | 1927060150 | 1927320150 |
| 9457380300 | 1927060300 | 1927320300 |
| 9457380500 | 1927060500 | 1927320500 |
| 9457381000 | 1927061000 | 1927321000 |
| 9457380000 | 1927060000 | 1927320000 |



| PUR | PUR halogen-free | PVC |
|-----|------------------|-----|
|-----|------------------|-----|

|            |            |            |
|------------|------------|------------|
| 9456150150 | 1927080150 | 1927340150 |
| 9456150300 | 1927080300 | 1927340300 |
| 9456150500 | 1927080500 | 1927340500 |
| 9456151000 | 1927081000 | 1927341000 |
| 9456150000 | 1927080000 | 1927340000 |

90° angle with 2 LEDs



| PUR | PUR halogen-free | PVC |
|-----|------------------|-----|
|-----|------------------|-----|

|            |            |            |
|------------|------------|------------|
| 9457460150 | 1927090150 | 1927350150 |
| 9457460300 | 1927090300 | 1927350300 |
| 9457460500 | 1927090500 | 1927350500 |
| 9457461000 | 1927091000 | 1927351000 |
| 9457460000 | 1927090000 | 1927350000 |

|            |            |            |
|------------|------------|------------|
| ***        | ***        | ***        |
| 1880470150 | 1926900150 | 1927160150 |
| 1880470300 | 1926900300 | 1927160300 |
| 1880470500 | 1926900500 | 1927160500 |
| 1880471000 | 1926901000 | 1927161000 |
| 1880470000 | 1926900000 | 1927160000 |

|            |            |            |
|------------|------------|------------|
| 1824580150 | 1926910150 | 1927170150 |
| 1824580300 | 1926910300 | 1927170300 |
| 1824580500 | 1926910500 | 1927170500 |
| 1824581000 | 1926911000 | 1927171000 |
| 1824580000 | 1926910000 | 1927170000 |

|            |            |            |
|------------|------------|------------|
| ***        | ***        | ***        |
| 1857660150 | 1926920150 | 1927180150 |
| 1857660300 | 1926920300 | 1927180300 |
| 1857660500 | 1926920500 | 1927180500 |
| 1857661000 | 1926921000 | 1927181000 |
| 1857660000 | 1926920000 | 1927180000 |

|            |            |            |
|------------|------------|------------|
| 1877250150 | 1926930150 | 1927190150 |
| 1877250300 | 1926930300 | 1927190300 |
| 1877250500 | 1926930500 | 1927190500 |
| 1877251000 | 1926931000 | 1927191000 |
| 1877250000 | 1926930000 | 1927190000 |

|            |            |            |
|------------|------------|------------|
| ***        | ***        | ***        |
| On request | On request | On request |

|            |            |            |
|------------|------------|------------|
| 1857670150 | 1926950150 | 1927210150 |
| 1857670300 | 1926950300 | 1927210300 |
| 1857670500 | 1926950500 | 1927210500 |
| 1857671000 | 1926951000 | 1927211000 |
| 1857670000 | 1926950000 | 1927210000 |

|            |            |            |
|------------|------------|------------|
| ***        | ***        | ***        |
| 1857680150 | 1926960150 | 1927220150 |
| 1857680300 | 1926960300 | 1927220300 |
| 1857680500 | 1926960500 | 1927220500 |
| 1857681000 | 1926961000 | 1927221000 |
| 1857680000 | 1926960000 | 1927220000 |

|            |            |            |
|------------|------------|------------|
| ***        | ***        | ***        |
| On request | On request | On request |
| ***        | ***        | ***        |

|            |            |            |
|------------|------------|------------|
| ***        | ***        | ***        |
| 9456660150 | 1938070150 | 1938200150 |
| 9456660300 | 1938070300 | 1938200300 |
| 9456660500 | 1938070500 | 1938200500 |
| 9456661000 | 1938071000 | 1938201000 |
| 9456660000 | 1938070000 | 1938200000 |

|            |            |            |
|------------|------------|------------|
| 9457980150 | 1938050150 | 1938180150 |
| 9457980300 | 1938050300 | 1938180300 |
| 9457980500 | 1938050500 | 1938180500 |
| 9457981000 | 1938051000 | 1938181000 |
| 9457980000 | 1938050000 | 1938180000 |

|            |            |            |
|------------|------------|------------|
| ***        | ***        | ***        |
| 9456670150 | 1938080150 | 1938210150 |
| 9456670300 | 1938080300 | 1938210300 |
| 9456670500 | 1938080500 | 1938210500 |
| 9456671000 | 1938081000 | 1938211000 |
| 9456670000 | 1938080000 | 1938210000 |

|            |     |     |
|------------|-----|-----|
| 9457760150 |     |     |
| 9457760300 |     |     |
| 9457760500 | *** | *** |
| 9457761000 |     |     |
| 9457760000 |     |     |

|            |            |            |
|------------|------------|------------|
| ***        | ***        | ***        |
| On request | On request | On request |

|            |            |            |
|------------|------------|------------|
| 1906330150 | 1938060150 | 1938190150 |
| 1906330300 | 1938060300 | 1938190300 |
| 1906330500 | 1938060500 | 1938190500 |
| 1906331000 | 1938061000 | 1938191000 |
| 1906330000 | 1938060000 | 1938190000 |

|            |            |            |
|------------|------------|------------|
| ***        | ***        | ***        |
| 1906340150 | 1938090150 | 1938220150 |
| 1906340300 | 1938090300 | 1938220300 |
| 1906340500 | 1938090500 | 1938220500 |
| 1906341000 | 1938091000 | 1938221000 |
| 1906340000 | 1938090000 | 1938220000 |

|     |     |     |
|-----|-----|-----|
| *** | *** | *** |
| *** | *** | *** |

|     |     |     |
|-----|-----|-----|
| *** | *** | *** |
|-----|-----|-----|








|     |     |     |
|-----|-----|-----|
| *** | *** | *** |
|-----|-----|-----|

|     |     |     |
|-----|-----|-----|
| *** | *** | *** |
|-----|-----|-----|

|     |     |     |
|-----|-----|-----|
| *** | *** | *** |
|-----|-----|-----|

Overview of sensor cables

B

|              |                                                                                     | M12 socket                                                                                                                                                             |                  |            |            |
|--------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|------------|------------|
|              |                                                                                     | straight                                                                                                                                                               |                  |            |            |
|              |                                                                                     |   |                  |            |            |
|              |                                                                                     |   |                  |            |            |
|              |                                                                                     | PUR                                                                                                                                                                    | PUR halogen-free | PVC        |            |
|              |                                                                                     | PUR                                                                                                                                                                    | PUR halogen-free | PVC        |            |
| One end free |    | No. of poles                                                                                                                                                           |                  |            |            |
|              |                                                                                     | Cable material                                                                                                                                                         |                  |            |            |
|              |                                                                                     | 1.5 m                                                                                                                                                                  | 9457820150       | 1926760150 | 1925570150 |
|              |                                                                                     | 3.0 m                                                                                                                                                                  | 9457820300       | 1926760300 | 1925570300 |
|              |                                                                                     | 5.0 m                                                                                                                                                                  | 9457820500       | 1926760500 | 1925570500 |
| 10.0 m       | 9457821000                                                                          | 1926761000                                                                                                                                                             | 1925571000       |            |            |
| variable     | 9457820000                                                                          | 1926760000                                                                                                                                                             | 1925570000       |            |            |
| M8 plug      | straight                                                                            | No. of poles                                                                                                                                                           |                  |            |            |
|              |                                                                                     | Cable material                                                                                                                                                         |                  |            |            |
|              |                                                                                     | 1.5 m                                                                                                                                                                  | 1937950150       | 1938100150 | 1938230150 |
|              |                                                                                     | 3.0 m                                                                                                                                                                  | 1937950300       | 1938100300 | 1938230300 |
|              |                                                                                     | 5.0 m                                                                                                                                                                  | 1937950500       | 1938100500 | 1938230500 |
|              | 10.0 m                                                                              | 1937951000                                                                                                                                                             | 1938101000       | 1938231000 |            |
|              | variable                                                                            | 1937950000                                                                                                                                                             | 1938100000       | 1938230000 |            |
|              | ***                                                                                 | ***                                                                                                                                                                    | ***              |            |            |
|              | 1.5 m                                                                               | 1937980150                                                                                                                                                             | 1938130150       | 1938260150 |            |
|              | 3.0 m                                                                               | 1937980300                                                                                                                                                             | 1938130300       | 1938260300 |            |
| 5.0 m        | 1937980500                                                                          | 1938130500                                                                                                                                                             | 1938260500       |            |            |
| 10.0 m       | 1937981000                                                                          | 1938131000                                                                                                                                                             | 1938261000       |            |            |
| variable     | 1937980000                                                                          | 1938130000                                                                                                                                                             | 1938260000       |            |            |
| 90°          |  | No. of poles                                                                                                                                                           |                  |            |            |
|              |                                                                                     | Cable material                                                                                                                                                         |                  |            |            |
|              |                                                                                     | 1.5 m                                                                                                                                                                  | On request       | On request | On request |
|              |                                                                                     | 3.0 m                                                                                                                                                                  | On request       | On request | On request |
|              |                                                                                     | 5.0 m                                                                                                                                                                  | On request       | On request | On request |
|              | 10.0 m                                                                              | On request                                                                                                                                                             | On request       | On request |            |
|              | variable                                                                            | On request                                                                                                                                                             | On request       | On request |            |
|              | ***                                                                                 | ***                                                                                                                                                                    | ***              |            |            |
|              | 1.5 m                                                                               | On request                                                                                                                                                             | On request       | On request |            |
|              | 3.0 m                                                                               | On request                                                                                                                                                             | On request       | On request |            |
| 5.0 m        | On request                                                                          | On request                                                                                                                                                             | On request       |            |            |
| 10.0 m       | On request                                                                          | On request                                                                                                                                                             | On request       |            |            |
| variable     | On request                                                                          | On request                                                                                                                                                             | On request       |            |            |
| M12 plug     | straight                                                                            | No. of poles                                                                                                                                                           |                  |            |            |
|              |                                                                                     | Cable material                                                                                                                                                         |                  |            |            |
|              |                                                                                     | 1.5 m                                                                                                                                                                  | 9457230150       | 1926490150 | 1925300150 |
|              |                                                                                     | 3.0 m                                                                                                                                                                  | 9457230300       | 1926490300 | 1925300300 |
|              |                                                                                     | 5.0 m                                                                                                                                                                  | 9457230500       | 1926490500 | 1925300500 |
|              | 10.0 m                                                                              | 9457231000                                                                                                                                                             | 1926491000       | 1925301000 |            |
|              | variable                                                                            | 9457230000                                                                                                                                                             | 1926490000       | 1925300000 |            |
|              | ***                                                                                 | ***                                                                                                                                                                    | ***              |            |            |
|              | 1.5 m                                                                               | 1906300150                                                                                                                                                             | 1926500150       | 1925310150 |            |
|              | 3.0 m                                                                               | 1906300300                                                                                                                                                             | 1926500300       | 1925310300 |            |
| 5.0 m        | 1906300500                                                                          | 1926500500                                                                                                                                                             | 1925310500       |            |            |
| 10.0 m       | 1906301000                                                                          | 1926501000                                                                                                                                                             | 1925311000       |            |            |
| variable     | 1906300000                                                                          | 1926500000                                                                                                                                                             | 1925310000       |            |            |
| 90°          |  | No. of poles                                                                                                                                                           |                  |            |            |
|              |                                                                                     | Cable material                                                                                                                                                         |                  |            |            |
|              |                                                                                     | 1.5 m                                                                                                                                                                  | 1821050150       | On request | On request |
|              |                                                                                     | 3.0 m                                                                                                                                                                  | 1821050300       | On request | On request |
|              |                                                                                     | 5.0 m                                                                                                                                                                  | 1821050500       | On request | On request |
|              | 10.0 m                                                                              | 1821051000                                                                                                                                                             | On request       | On request |            |
|              | variable                                                                            | 1821050000                                                                                                                                                             | On request       | On request |            |
|              | ***                                                                                 | ***                                                                                                                                                                    | ***              |            |            |
|              | 1.5 m                                                                               | On request                                                                                                                                                             | On request       | On request |            |
|              | 3.0 m                                                                               | On request                                                                                                                                                             | On request       | On request |            |
| 5.0 m        | On request                                                                          | On request                                                                                                                                                             | On request       |            |            |
| 10.0 m       | On request                                                                          | On request                                                                                                                                                             | On request       |            |            |
| variable     | On request                                                                          | On request                                                                                                                                                             | On request       |            |            |

M12 socket

straight



| PUR | PUR halogen-free | PVC |
|-----|------------------|-----|
|-----|------------------|-----|

|            |            |            |
|------------|------------|------------|
| 9457910150 | 1926780150 | 1925590150 |
| 9457910300 | 1926780300 | 1925590300 |
| 9457910500 | 1926780500 | 1925590500 |
| 9457911000 | 1926781000 | 1925591000 |
| 9457910000 | 1926780000 | 1925590000 |

90°



| PUR | PUR halogen-free | PVC |
|-----|------------------|-----|
|-----|------------------|-----|

|            |            |            |
|------------|------------|------------|
| 9457320150 | 1926820150 | 1925630150 |
| 9457320300 | 1926820300 | 1925630300 |
| 9457320500 | 1926820500 | 1925630500 |
| 9457321000 | 1926821000 | 1925631000 |
| 9457320000 | 1926820000 | 1925630000 |



| PUR | PUR halogen-free | PVC |
|-----|------------------|-----|
|-----|------------------|-----|

|            |            |            |
|------------|------------|------------|
| 9457740150 | 1926830150 | 1925640150 |
| 9457740300 | 1926830300 | 1925640300 |
| 9457740500 | 1926830500 | 1925640500 |
| 9457741000 | 1926831000 | 1925641000 |
| 9457740000 | 1926830000 | 1925640000 |



| PUR | PUR halogen-free | PVC |
|-----|------------------|-----|
|-----|------------------|-----|

|            |            |            |
|------------|------------|------------|
| 9457690150 | 1926840150 | 1925650150 |
| 9457690300 | 1926840300 | 1925650300 |
| 9457690500 | 1926840500 | 1925650500 |
| 9457691000 | 1926841000 | 1925651000 |
| 9457690000 | 1926840000 | 1925650000 |

B

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| *** | *** | *** |
| *** | *** | *** |

|            |            |            |
|------------|------------|------------|
| 1937960150 | 1938110150 | 1938240150 |
| 1937960300 | 1938110300 | 1938240300 |
| 1937960500 | 1938110500 | 1938240500 |
| 1937961000 | 1938111000 | 1938241000 |
| 1937960000 | 1938110000 | 1938240000 |

|            |            |            |
|------------|------------|------------|
| ***        | ***        | ***        |
| 1937990150 | 1938140150 | 1938270150 |
| 1937990300 | 1938140300 | 1938270300 |
| 1937990500 | 1938140500 | 1938270500 |
| 1937991000 | 1938141000 | 1938271000 |
| 1937990000 | 1938140000 | 1938270000 |

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| *** | *** | *** |
| *** | *** | *** |

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| *** | *** | *** |
| *** | *** | *** |

|            |            |            |
|------------|------------|------------|
| 1937970150 | 1938120150 | 1938250150 |
| 1937970300 | 1938120300 | 1938250300 |
| 1937970500 | 1938120500 | 1938250500 |
| 1937971000 | 1938121000 | 1938251000 |
| 1937970000 | 1938120000 | 1938250000 |

|            |            |            |
|------------|------------|------------|
| ***        | ***        | ***        |
| 1938000150 | 1938150150 | 1938280150 |
| 1938000300 | 1938150300 | 1938280300 |
| 1938000500 | 1938150500 | 1938280500 |
| 1938001000 | 1938151000 | 1938281000 |
| 1938000000 | 1938150000 | 1938280000 |

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|-----|-----|-----|
| *** | *** | *** |
| *** | *** | *** |

|     |     |     |
|-----|-----|-----|
| *** | *** | *** |
| *** | *** | *** |

|            |            |            |
|------------|------------|------------|
| 9457390150 | 1926530150 | 1925340150 |
| 9457390300 | 1926530300 | 1925340300 |
| 9457390500 | 1926530500 | 1925340500 |
| 9457391000 | 1926531000 | 1925341000 |
| 9457390000 | 1926530000 | 1925340000 |

|            |            |            |
|------------|------------|------------|
| ***        | ***        | ***        |
| 9457310150 | 1926540150 | 1925350150 |
| 9457310300 | 1926540300 | 1925350300 |
| 9457310500 | 1926540500 | 1925350500 |
| 9457311000 | 1926541000 | 1925351000 |
| 9457310000 | 1926540000 | 1925350000 |

|     |     |     |
|-----|-----|-----|
| *** | *** | *** |
| *** | *** | *** |

|            |            |            |
|------------|------------|------------|
| 9457340150 | 1926510150 | 1925320150 |
| 9457340300 | 1926510300 | 1925320300 |
| 9457340500 | 1926510500 | 1925320500 |
| 9457341000 | 1926511000 | 1925321000 |
| 9457340000 | 1926510000 | 1925320000 |

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| *** | *** | *** |
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|            |            |            |
|------------|------------|------------|
| 9457270150 | 1926550150 | 1925360150 |
| 9457270300 | 1926550300 | 1925360300 |
| 9457270500 | 1926550500 | 1925360500 |
| 9457271000 | 1926551000 | 1925361000 |
| 9457270000 | 1926550000 | 1925360000 |

|     |     |     |
|-----|-----|-----|
| *** | *** | *** |
| *** | *** | *** |

|            |            |            |
|------------|------------|------------|
| 1815670150 | 1926570150 | 1925380150 |
| 1815670300 | 1926570300 | 1925380300 |
| 1815670500 | 1926570500 | 1925380500 |
| 1815671000 | 1926571000 | 1925381000 |
| 1815670000 | 1926570000 | 1925380000 |

|            |            |            |
|------------|------------|------------|
| ***        | ***        | ***        |
| 1906310150 | 1926580150 | 1925390150 |
| 1906310300 | 1926580300 | 1925390300 |
| 1906310500 | 1926580500 | 1925390500 |
| 1906311000 | 1926581000 | 1925391000 |
| 1906310000 | 1926580000 | 1925390000 |

|     |     |     |
|-----|-----|-----|
| *** | *** | *** |
| *** | *** | *** |

|            |            |            |
|------------|------------|------------|
| 9456500150 |            |            |
| 9456500300 |            |            |
| 9456500500 | On request | On request |
| 9456501000 |            |            |
| 9456500000 |            |            |

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| *** | *** | *** |
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| *** | *** | *** |
|-----|-----|-----|

|            |            |            |
|------------|------------|------------|
| 9457900150 | 1926590150 | 1925400150 |
| 9457900300 | 1926590300 | 1925400300 |
| 9457900500 | 1926590500 | 1925400500 |
| 9457901000 | 1926591000 | 1925401000 |
| 9457900000 | 1926590000 | 1925400000 |

Overview of sensor cables

B

|              |          | No. of poles | Cable material                                | M12 socket                                                         |                                                                    |                                                                    |                                                                    |                                                                    |                                                                    |
|--------------|----------|--------------|-----------------------------------------------|--------------------------------------------------------------------|--------------------------------------------------------------------|--------------------------------------------------------------------|--------------------------------------------------------------------|--------------------------------------------------------------------|--------------------------------------------------------------------|
|              |          |              |                                               | 90° angle with 2 LEDs                                              |                                                                    |                                                                    |                                                                    |                                                                    |                                                                    |
|              |          |              |                                               | PUR                                                                | PUR halogen-free                                                   | PVC                                                                | PUR                                                                | PUR halogen-free                                                   | PVC                                                                |
| One end free |          |              | 1.5 m<br>3.0 m<br>5.0 m<br>10.0 m<br>variable | 9457800150<br>9457800300<br>9457800500<br>9457801000<br>9457800000 | 1926650150<br>1926650300<br>1926650500<br>1926651000<br>1926650000 | 1925460150<br>1925460300<br>1925460500<br>1925461000<br>1925460000 | 9456380150<br>9456380300<br>9456380500<br>9456381000<br>9456380000 | 1926660150<br>1926660300<br>1926660500<br>1926661000<br>1926660000 | 1925470150<br>1925470300<br>1925470500<br>1925471000<br>1925470000 |
|              |          |              |                                               |                                                                    |                                                                    |                                                                    |                                                                    |                                                                    |                                                                    |
| M8 plug      | straight |              | 1.5 m<br>3.0 m<br>5.0 m<br>10.0 m<br>variable | ***                                                                | ***                                                                | ***                                                                | ***                                                                | ***                                                                | ***                                                                |
|              |          |              | 1.5 m<br>3.0 m<br>5.0 m<br>10.0 m<br>variable | ***                                                                | ***                                                                | ***                                                                | ***                                                                | ***                                                                | ***                                                                |
|              | 90°      |              | 1.5 m<br>3.0 m<br>5.0 m<br>10.0 m<br>variable | ***                                                                | ***                                                                | ***                                                                | ***                                                                | ***                                                                | ***                                                                |
|              |          |              | 1.5 m<br>3.0 m<br>5.0 m<br>10.0 m<br>variable | ***                                                                | ***                                                                | ***                                                                | ***                                                                | ***                                                                | ***                                                                |
| M12 plug     | straight |              | 1.5 m<br>3.0 m<br>5.0 m<br>10.0 m<br>variable | 9457790150<br>9457790300<br>9457790500<br>9457791000<br>9457790000 | 1926600150<br>1926600300<br>1926600500<br>1926601000<br>1926600000 | 1925410150<br>1925410300<br>1925410500<br>1925411000<br>1925410000 | ***                                                                | ***                                                                | ***                                                                |
|              |          |              | 1.5 m<br>3.0 m<br>5.0 m<br>10.0 m<br>variable | ***                                                                | ***                                                                | ***                                                                | ***                                                                | ***                                                                | ***                                                                |
|              |          |              | 1.5 m<br>3.0 m<br>5.0 m<br>10.0 m<br>variable | ***                                                                | ***                                                                | ***                                                                | ***                                                                | ***                                                                | ***                                                                |
|              | 90°      |              | 1.5 m<br>3.0 m<br>5.0 m<br>10.0 m<br>variable | On request                                                         | On request                                                         | On request                                                         | ***                                                                | ***                                                                | ***                                                                |
|              |          |              | 1.5 m<br>3.0 m<br>5.0 m<br>10.0 m<br>variable | ***                                                                | ***                                                                | ***                                                                | On request                                                         | On request                                                         | On request                                                         |
|              |          |              | 1.5 m<br>3.0 m<br>5.0 m<br>10.0 m<br>variable | ***                                                                | ***                                                                | ***                                                                | ***                                                                | ***                                                                | ***                                                                |



# Sensor cables with plug at one end only

## M12



## M8



## M8 Snap connection



## Twin cabling



## M5



### Sensor/actuator cable pre-assembled with M8/M12 plug-in connector at one end

Machine designers frequently require individual cable lengths. Sensor cables with a connector fitted at one end only can be easily adapted to the corresponding situation. The cables are available in many different versions: straight, 90° and with all common pole numbers (3,4 and 5). Male plugs and Female sockets can be assembled to suit individual customer requirements for connecting cables. The cable sheathing is of PUR (polyurethane) and is suitable for use with cable carrier systems. Plugs and cables are in neutral black.

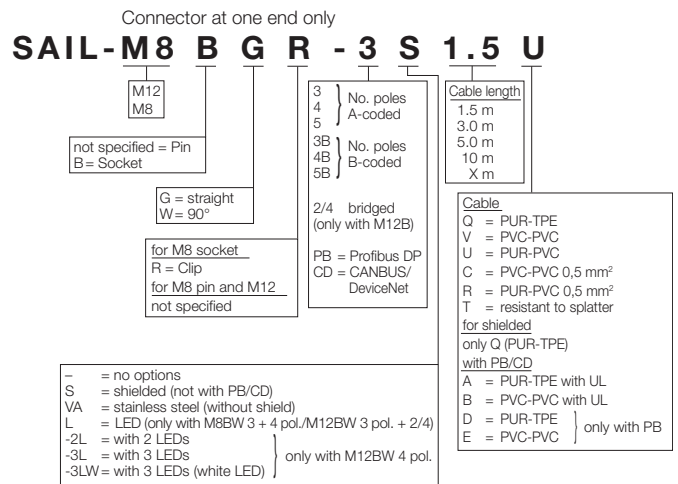
### Sensor cables

Weidmüller can supply various cable lengths as indicated in the following table:

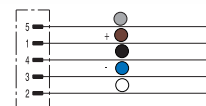
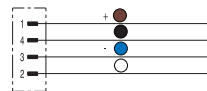
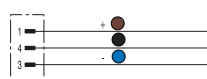
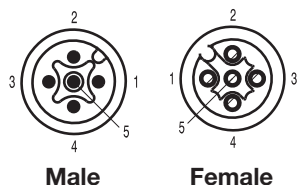
### Typical cable lengths are:

- 1.5 m
- 3.0 m
- 5.0 m
- 10.0 m

### Example of designation



**M12 one end without connector**  
**A-coded**



**Ordering data**

| Male, straight             |       |
|----------------------------|-------|
| PVC                        | 1.5 m |
| PUR                        | 1.5 m |
| PUR halogen-free           | 1.5 m |
| PUR halogen-free yellow    | 1.5 m |
| Resistant to welding beads | 1.5 m |
| Male, angled               |       |
| PVC                        | 1.5 m |
| PUR                        | 1.5 m |
| PUR halogen-free           | 1.5 m |
| PUR halogen-free yellow    | 1.5 m |
| Resistant to welding beads | 1.5 m |
| Female, straight           |       |
| PVC                        | 1.5 m |
| PUR                        | 1.5 m |
| PUR halogen-free           | 1.5 m |
| PUR halogen-free yellow    | 1.5 m |
| Resistant to welding beads | 1.5 m |
| Female, angled             |       |
| PVC                        | 1.5 m |
| PUR                        | 1.5 m |
| PUR halogen-free           | 1.5 m |
| PUR halogen-free yellow    | 1.5 m |
| Resistant to welding beads | 1.5 m |
| Note                       |       |
| Other versions on request  |       |

| 3-pole                    |            |
|---------------------------|------------|
| Type                      | Order No.  |
| SAIL-M12G-3-1.5V          | 1925430150 |
| SAIL-M12G-3-1.5U          | 9457810150 |
| SAIL-M12G-3-1.5Q          | 1926620150 |
| SAIL-M12G-3-1.5QGE        | 1092980150 |
| SAIL-M12G-3-1.5T          | 1021750150 |
|                           |            |
| SAIL-M12W-3-1.5V          | 1925510150 |
| SAIL-M12W-3-1.5U          | 9456690150 |
| SAIL-M12W-3-1.5Q          | 1926700150 |
| SAIL-M12W-3-1.5QGE        | 1093160150 |
| SAIL-M12W-3-1.5T          | 1021760150 |
|                           |            |
| SAIL-M12BG-3-1.5V         | 1925570150 |
| SAIL-M12BG-3-1.5U         | 9457820150 |
| SAIL-M12BG-3-1.5Q         | 1926760150 |
| SAIL-M12BG-3-1.5QGE       | 1092910150 |
| SAIL-M12BG-3-1.5T         | 1968590150 |
|                           |            |
| SAIL-M12BW-3-1.5V         | 1925630150 |
| SAIL-M12BW-3-1.5U         | 9457320150 |
| SAIL-M12BW-3-1.5Q         | 1926820150 |
| SAIL-M12BW-3-1.5QGE       | 1092940150 |
| SAIL-M12BW-3-1.5T         | 1968560150 |
| Note                      |            |
| Other versions on request |            |

| 4-pole                    |            |
|---------------------------|------------|
| Type                      | Order No.  |
| SAIL-M12G-4-1.5V          | 1925440150 |
| SAIL-M12G-4-1.5U          | 9456100150 |
| SAIL-M12G-4-1.5Q          | 1926630150 |
| SAIL-M12G-4-1.5QGE        | 1077750150 |
| SAIL-M12G-4-1.5T          | 1021770150 |
|                           |            |
| SAIL-M12W-4-1.5V          | 1925520150 |
| SAIL-M12W-4-1.5U          | 1906260150 |
| SAIL-M12W-4-1.5Q          | 1926710150 |
| SAIL-M12W-4-1.5QGE        | 1093170150 |
| SAIL-M12W-4-1.5T          | 1021790150 |
|                           |            |
| SAIL-M12BG-4-1.5V         | 1925580150 |
| SAIL-M12BG-4-1.5U         | 9457730150 |
| SAIL-M12BG-4-1.5Q         | 1926770150 |
| SAIL-M12BG-4-1.5QGE       | 1092920150 |
| SAIL-M12BG-4-1.5T         | 1968580150 |
|                           |            |
| SAIL-M12BW-4-1.5V         | 1925640150 |
| SAIL-M12BW-4-1.5U         | 9457740150 |
| SAIL-M12BW-4-1.5Q         | 1926830150 |
| SAIL-M12BW-4-1.5QGE       | 1092960150 |
| SAIL-M12BW-4-1.5T         | 1968570150 |
| Note                      |            |
| Other versions on request |            |

| 5-pole                    |            |
|---------------------------|------------|
| Type                      | Order No.  |
| SAIL-M12G-5-1.5V          | 1925450150 |
| SAIL-M12G-5-1.5U          | 9457610150 |
| SAIL-M12G-5-1.5Q          | 1926640150 |
| SAIL-M12G-5-1.5QGE        | 1092990150 |
| SAIL-M12G-5-1.5T          | 1021650150 |
|                           |            |
| SAIL-M12W-5-1.5V          | 1925530150 |
| SAIL-M12W-5-1.5U          | 9457670150 |
| SAIL-M12W-5-1.5Q          | 1926720150 |
| SAIL-M12W-5-1.5QGE        | 1093180150 |
| SAIL-M12W-5-1.5T          | 1021660150 |
|                           |            |
| SAIL-M12BG-5-1.5V         | 1925590150 |
| SAIL-M12BG-5-1.5U         | 9457910150 |
| SAIL-M12BG-5-1.5Q         | 1926780150 |
| SAIL-M12BG-5-1.5QGE       | 1092930150 |
| SAIL-M12BG-5-1.5T         | 1021670150 |
|                           |            |
| SAIL-M12BW-5-1.5V         | 1925650150 |
| SAIL-M12BW-5-1.5U         | 9457690150 |
| SAIL-M12BW-5-1.5Q         | 1926840150 |
| SAIL-M12BW-5-1.5QGE       | 1092970150 |
| SAIL-M12BW-5-1.5T         | 1021690150 |
| Note                      |            |
| Other versions on request |            |

**Standard cable lengths**

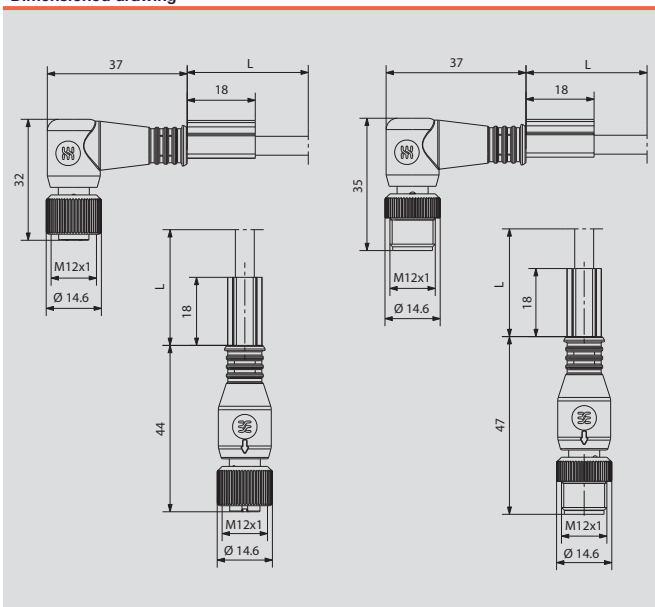
|                                                                                                                                                                  |        |           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-----------|
| All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths. | 1.5 m  | xxxxx0150 |
|                                                                                                                                                                  | 3.0 m  | xxxxx0300 |
|                                                                                                                                                                  | 5.0 m  | xxxxx0500 |
|                                                                                                                                                                  | 10.0 m | xxxxx1000 |

**Technical data**

|                                         |                                        |
|-----------------------------------------|----------------------------------------|
| Rated current                           | 4 A                                    |
| Protection class                        | IP 67                                  |
| Core cross-section                      | 0.34 mm <sup>2</sup>                   |
| Contact surface                         | gold-plated                            |
| Temperature range of housing            | -25...+85 °C                           |
| Rated voltage                           | 250 V (3- and 4-pole) / 125 V (5-pole) |
| (acc. to VDE standard 0110 ISO group C) |                                        |

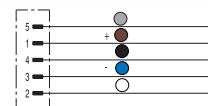
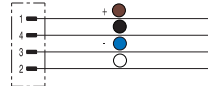
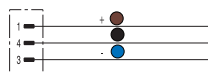
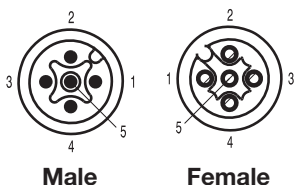
Chapter W includes additional technical specifications for the cable

**Dimensioned drawing**



## Sensor cables

**M12 one end without connector  
A-coded  
with plastic threaded ring**



### Ordering data

|                         |       |
|-------------------------|-------|
| <b>Male, straight</b>   |       |
| PUR                     | 1.5 m |
| <b>Male, angled</b>     |       |
| PUR                     | 1.5 m |
| <b>Female, straight</b> |       |
| PUR                     | 1.5 m |
| <b>Female, angled</b>   |       |
| PUR                     | 1.5 m |
| <b>Note</b>             |       |

### 3-pole

| Type              | Order No.  |
|-------------------|------------|
| SAIP-M12G-3-1.5U  | 1108800150 |
| SAIP-M12W-3-1.5U  | 1108670150 |
| SAIP-M12BG-3-1.5U | 1108730150 |
| SAIP-M12BW-3-1.5U | 1108770150 |

### 4-pole

| Type              | Order No.  |
|-------------------|------------|
| SAIP-M12G-4-1.5U  | 1108810150 |
| SAIP-M12W-4-1.5U  | 1108680150 |
| SAIP-M12BG-4-1.5U | 1108740150 |
| SAIP-M12BW-4-1.5U | 1108780150 |

### 5-pole

| Type              | Order No.  |
|-------------------|------------|
| SAIP-M12G-5-1.5U  | 1108820150 |
| SAIP-M12W-5-1.5U  | 1108690150 |
| SAIP-M12BG-5-1.5U | 1108750150 |
| SAIP-M12BW-5-1.5U | 1108790150 |

### Standard cable lengths

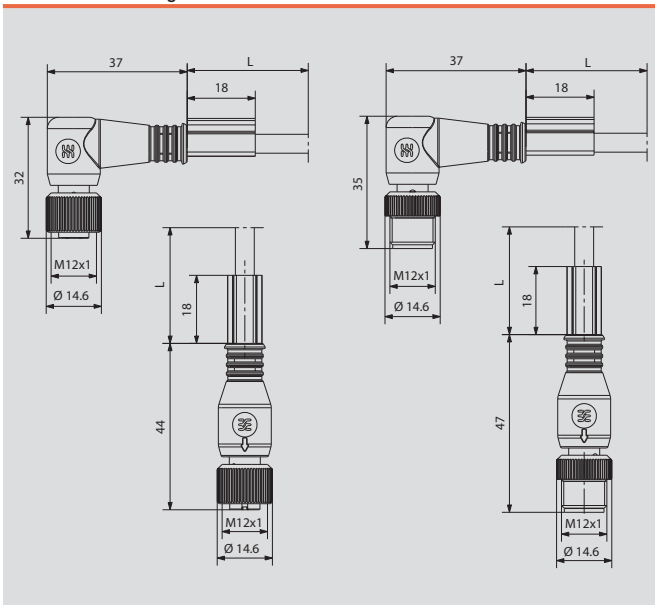
|                                                                                                                                                                  |        |            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------|
| All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths. | 1.5 m  | xxxxxx0150 |
|                                                                                                                                                                  | 3.0 m  | xxxxxx0300 |
|                                                                                                                                                                  | 5.0 m  | xxxxxx0500 |
|                                                                                                                                                                  | 10.0 m | xxxxxx1000 |

### Technical data

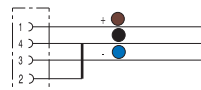
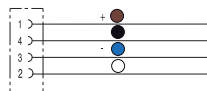
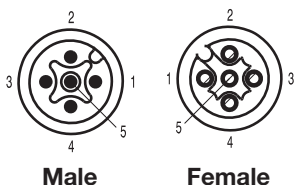
|                                         |                                        |
|-----------------------------------------|----------------------------------------|
| Rated current                           | 4 A                                    |
| Protection class                        | IP 67                                  |
| Core cross-section                      | 0.34 mm <sup>2</sup>                   |
| Contact surface                         | gold-plated                            |
| Temperature range of housing            | -25...+85 °C                           |
| Rated voltage                           | 250 V (3- and 4-pole) / 125 V (5-pole) |
| (acc. to VDE standard 0110 ISO group C) |                                        |

Chapter W includes additional technical specifications for the cable

### Dimensioned drawing



**M12 one end without connector  
A-coded  
with stainless-steel threaded ring  
1.4404/316L**



**Ordering data**

|                         |       |
|-------------------------|-------|
| <b>Female, straight</b> |       |
| PUR                     | 1.5 m |
| <b>Female, angled</b>   |       |
| PUR                     | 1.5 m |
| <b>Note</b>             |       |

|                      |                  |
|----------------------|------------------|
|                      | <b>4-pole</b>    |
| <b>Type</b>          | <b>Order No.</b> |
| SAIL-M12BG-VA-4-1,5U | 9457950150       |
| SAIL-M12BW-VA-4-1,5U | 9457960150       |

|                        |                  |
|------------------------|------------------|
|                        | <b>4-pole</b>    |
| <b>Type</b>            | <b>Order No.</b> |
| SAIL-M12BG-VA-2/4-1,5U | 1939410150       |
| SAIL-M12BW-VA-2/4-1,5U | 1939370150       |

**Standard cable lengths**

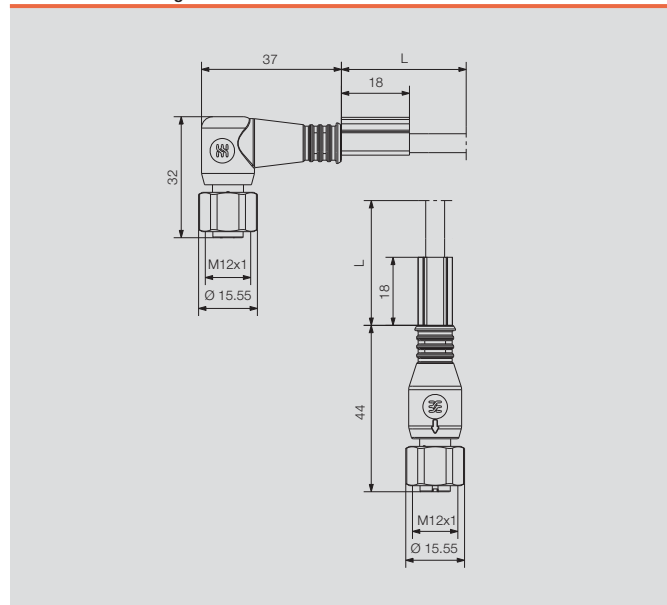
|                                                                                                                                                                  |        |            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------|
| All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths. | 1.5 m  | xxxxxx0150 |
|                                                                                                                                                                  | 3.0 m  | xxxxxx0300 |
|                                                                                                                                                                  | 5.0 m  | xxxxxx0500 |
|                                                                                                                                                                  | 10.0 m | xxxxxx1000 |

**Technical data**

|                                         |                                        |
|-----------------------------------------|----------------------------------------|
| Rated current                           | 4 A                                    |
| Protection class                        | IP 67                                  |
| Core cross-section                      | 0.34 mm <sup>2</sup>                   |
| Contact surface                         | gold-plated                            |
| Temperature range of housing            | -25...+85 °C                           |
| Rated voltage                           | 250 V (3- and 4-pole) / 125 V (5-pole) |
| (acc. to VDE standard 0110 ISO group C) |                                        |

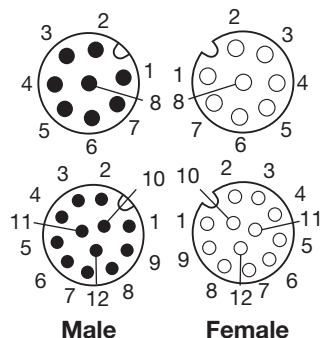
Chapter W includes additional technical specifications for the cable

**Dimensioned drawing**



### Sensor cables

#### M12 one end without connector high-pole 8 / 12-pole A-coded



#### Ordering data

| Female, straight, shielded |  |
|----------------------------|--|
| 1.5 m                      |  |
| 3.0 m                      |  |
| 5.0 m                      |  |
| 10.0 m                     |  |
| Female, straight           |  |
| 1.5 m                      |  |
| 3.0 m                      |  |
| 5.0 m                      |  |
| 10.0 m                     |  |
| Female, angled             |  |
| 5.0 m                      |  |
| 10.0 m                     |  |
| Note                       |  |

| 8-pole                    |            |
|---------------------------|------------|
| Type                      | Order No.  |
| SAIL-M12BG-8-(S)-1.5U     | 1890520150 |
| SAIL-M12BG-8-(S)-3.0U     | 1890520300 |
| SAIL-M12BG-8-(S)-5.0U     | 1890520500 |
| SAIL-M12BG-8-(S)-10U      | 1890521000 |
|                           |            |
| SAIL-M12BG-8-1.5U         | 1865870150 |
| SAIL-M12BG-8-3.0U         | 1865870300 |
| SAIL-M12BG-8-5.0U         | 1865870500 |
| SAIL-M12BG-8-10U          | 1865871000 |
|                           |            |
| SAIL-M12BW-8-5.0U         | 1883460500 |
| SAIL-M12BW-8-10U          | 1883461000 |
| Other versions on request |            |

| 12-pole                   |            |
|---------------------------|------------|
| Type                      | Order No.  |
|                           |            |
|                           |            |
|                           |            |
|                           |            |
|                           |            |
|                           |            |
|                           |            |
|                           |            |
|                           |            |
| SAIL-M12BG-12-5.0U        | 1879710500 |
| SAIL-M12BG-12-10U         | 1879711000 |
|                           |            |
| SAIL-M12BW-12-5.0U        | 1898240500 |
| SAIL-M12BW-12-10U         | 1898241000 |
| Other versions on request |            |

#### Standard cable lengths

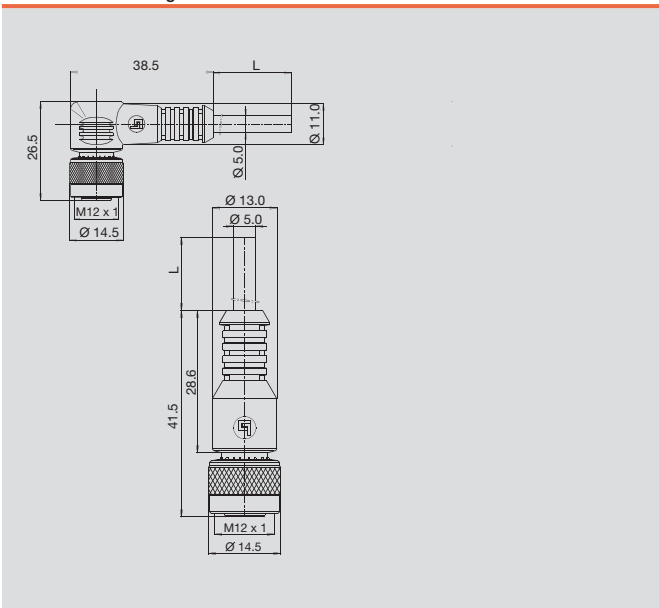
|                                                                                                                                                                  |        |            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------|
| All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths. | 1.5 m  | xxxxxx0150 |
|                                                                                                                                                                  | 3.0 m  | xxxxxx0300 |
|                                                                                                                                                                  | 5.0 m  | xxxxxx0500 |
|                                                                                                                                                                  | 10.0 m | xxxxxx1000 |

#### Technical data

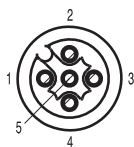
|                                         |                      |
|-----------------------------------------|----------------------|
| Rated current                           | 1 A                  |
| Protection class                        | IP 67                |
| Core cross-section                      | 0.25 mm <sup>2</sup> |
| Contact surface                         | gold-plated          |
| Temperature range of housing            | -25...+85 °C         |
| Rated voltage                           |                      |
| (acc. to VDE standard 0110 ISO group C) |                      |

Chapter W includes additional technical specifications for the cable

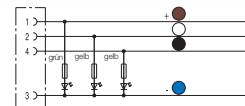
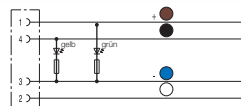
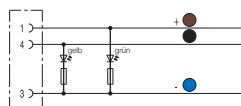
#### Dimensioned drawing



**M12 one end without connector with LED A-coded female, angled**



Female



**Ordering data**

| Female, angled             |       |
|----------------------------|-------|
| PVC                        | 1.5 m |
| PUR                        | 1.5 m |
| PUR halogen-free           | 1.5 m |
| PUR halogen-free yellow    | 1.5 m |
| Resistant to welding beads | 1.5 m |
| <b>Note</b>                |       |

**2 LEDs**

**3-pole**

| Type                      | Order No.  |
|---------------------------|------------|
| SAIL-M12BW-3L1.5V         | 1925460150 |
| SAIL-M12BW-3L1.5U         | 9457800150 |
| SAIL-M12BW-3L1.5Q         | 1926650150 |
| SAIL-M12BW-3L1.5QGE       | 1114880150 |
| SAIL-M12BW-3L1.5T         | 1004330150 |
| Other versions on request |            |

**2 LEDs**

**4-pole**

| Type                      | Order No.  |
|---------------------------|------------|
| SAIL-M12BW-4-2L1.5V       | 1925470150 |
| SAIL-M12BW-4-2L1.5U       | 9456380150 |
| SAIL-M12BW-4-2L1.5Q       | 1926660150 |
| SAIL-M12BW-4-2L1.5QGE     | 1092950150 |
| SAIL-M12BW-4-2L1.5T       | 1007000150 |
| Other versions on request |            |

**3 LEDs**

**4-pole**

| Type                      | Order No.  |
|---------------------------|------------|
| SAIL-M12BW-4-3L1.5V       | 1963960150 |
| SAIL-M12BW-4-3L1.5U       | 1963940150 |
| SAIL-M12BW-4-3L1.5Q       | 1963950150 |
| Other versions on request |            |

**Standard cable lengths**

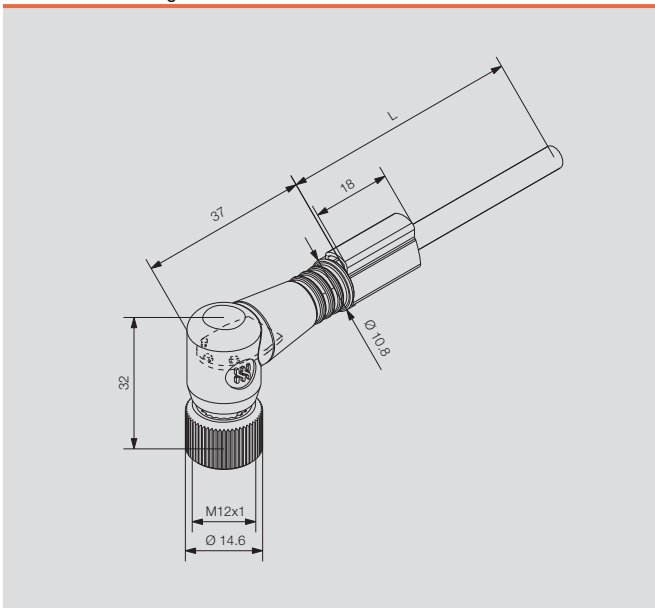
|                                                                                                                                                                  |        |            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------|
| All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths. | 1.5 m  | xxxxxx0150 |
|                                                                                                                                                                  | 3.0 m  | xxxxxx0300 |
|                                                                                                                                                                  | 5.0 m  | xxxxxx0500 |
|                                                                                                                                                                  | 10.0 m | xxxxxx1000 |

**Technical data**

|                                         |                                        |
|-----------------------------------------|----------------------------------------|
| Rated current                           | 4 A                                    |
| Protection class                        | IP 67                                  |
| Core cross-section                      | 0.34 mm <sup>2</sup>                   |
| Contact surface                         | gold-plated                            |
| Temperature range of housing            | -25...+85 °C                           |
| Rated voltage                           | 250 V (3- and 4-pole) / 125 V (5-pole) |
| (acc. to VDE standard 0110 ISO group C) |                                        |

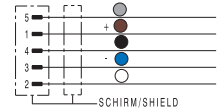
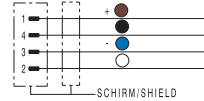
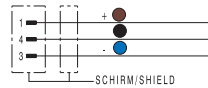
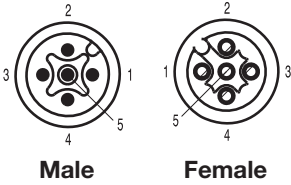
Chapter W includes additional technical specifications for the cable

**Dimensioned drawing**



Sensor cables

M12 one end without connector shielded A-coded



Ordering data

|                         |       |
|-------------------------|-------|
| <b>Male, straight</b>   |       |
| PUR halogen-free        | 1.5 m |
| <b>Male, angled</b>     |       |
| PUR halogen-free        | 1.5 m |
| <b>Female, straight</b> |       |
| PUR halogen-free        | 1.5 m |
| <b>Female, angled</b>   |       |
| PUR halogen-free        | 1.5 m |
| <b>Note</b>             |       |

3-pole

| Type                      | Order No.  |
|---------------------------|------------|
| SAIL-M12G-3S1.5Q          | 1906470150 |
| SAIL-M12W-3S1.5Q          | 1906500150 |
| SAIL-M12BG-3S1.5Q         | 1867410150 |
| SAIL-M12BW-3S1.5Q         | 1906950150 |
| Other versions on request |            |

4-pole

| Type                      | Order No.  |
|---------------------------|------------|
| SAIL-M12G-4S1.5Q          | 1906480150 |
| SAIL-M12W-4S1.5Q          | 1059650150 |
| SAIL-M12BG-4S1.5Q         | 1812540150 |
| SAIL-M12BW-4S1.5Q         | 1808970150 |
| Other versions on request |            |

5-pole

| Type                      | Order No.  |
|---------------------------|------------|
| SAIL-M12G-5S1.5Q          | 1926690150 |
| SAIL-M12W-5S1.5Q          | 1906520150 |
| SAIL-M12BG-5S1.5Q         | 9456140150 |
| SAIL-M12BW-5S1.5Q         | 1906540150 |
| Other versions on request |            |

Standard cable lengths

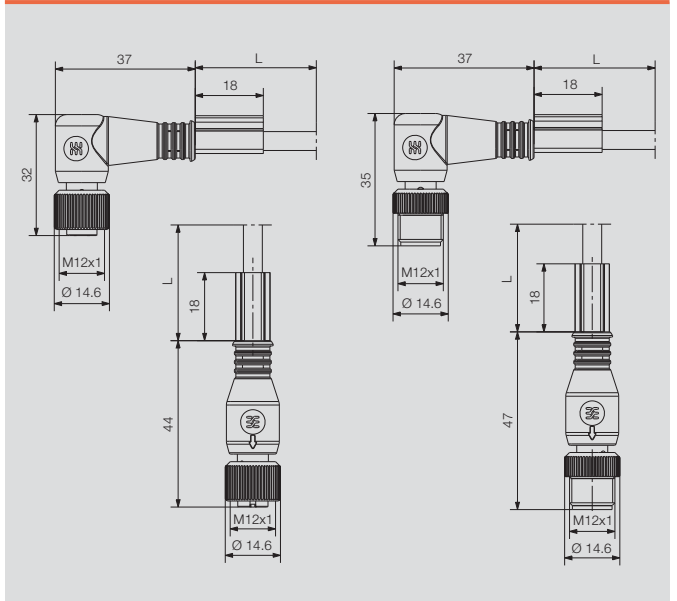
|                                                                                                                                                                  |        |            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------|
| All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths. | 1.5 m  | xxxxxx0150 |
|                                                                                                                                                                  | 3.0 m  | xxxxxx0300 |
|                                                                                                                                                                  | 5.0 m  | xxxxxx0500 |
|                                                                                                                                                                  | 10.0 m | xxxxxx1000 |

Technical data

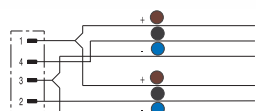
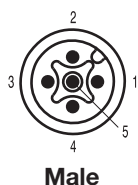
|                                         |                                        |
|-----------------------------------------|----------------------------------------|
| Rated current                           | 4 A                                    |
| Protection class                        | IP 67                                  |
| Core cross-section                      | 0.34 mm <sup>2</sup>                   |
| Contact surface                         | gold-plated                            |
| Temperature range of housing            | -25...+85 °C                           |
| Rated voltage                           | 250 V (3- and 4-pole) / 125 V (5-pole) |
| (acc. to VDE standard 0110 ISO group C) |                                        |

Chapter W includes additional technical specifications for the cable

Dimensioned drawing



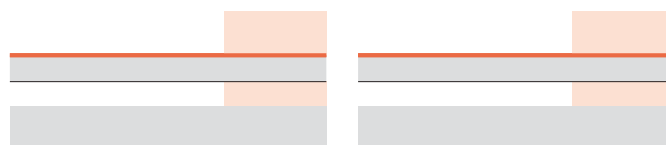
**Twin cabling**  
**M12 one end without connector**



**Ordering data**

|                                   |       |
|-----------------------------------|-------|
| <b>Male straight - open ended</b> |       |
| PUR                               | 1.5 m |
| <b>Note</b>                       |       |

|             |                |                   |
|-------------|----------------|-------------------|
|             | <b>3-pole</b>  |                   |
| <b>Type</b> | SAIL-ZW-3-1.5U | <b>Order No.</b>  |
|             |                | <b>1964310150</b> |



**Standard cable lengths**

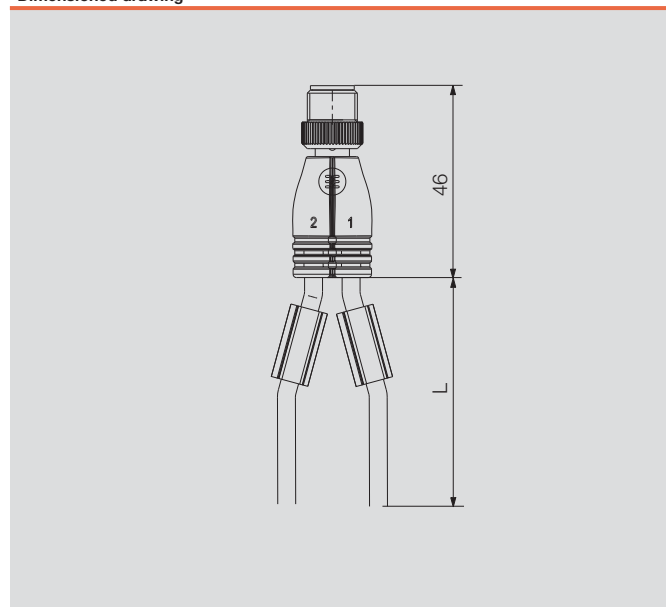
|                                                                                                                                                                  |        |            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------|
| All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths. | 1.5 m  | xxxxxx0150 |
|                                                                                                                                                                  | 3.0 m  | xxxxxx0300 |
|                                                                                                                                                                  | 5.0 m  | xxxxxx0500 |
|                                                                                                                                                                  | 10.0 m | xxxxxx1000 |

**Technical data**

|                                         |                                        |
|-----------------------------------------|----------------------------------------|
| Rated current                           | 4 A                                    |
| Protection class                        | IP 67                                  |
| Core cross-section                      | 0.34 mm <sup>2</sup>                   |
| Contact surface                         | gold-plated                            |
| Temperature range of housing            | -25...+85 °C                           |
| Rated voltage                           | 250 V (3- and 4-pole) / 125 V (5-pole) |
| (acc. to VDE standard 0110 ISO group C) |                                        |

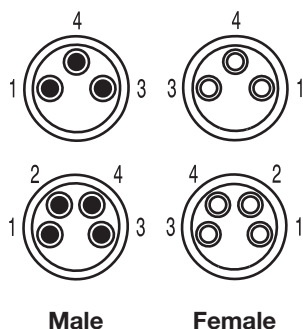
Chapter W includes additional technical specifications for the cable

**Dimensioned drawing**



Sensor cables

M8 one end without connector



Ordering data

| Male, straight          |       |
|-------------------------|-------|
| PVC                     | 1.5 m |
| PUR                     | 1.5 m |
| PUR halogen-free        | 1.5 m |
| Male, angled            |       |
| PVC                     | 1.5 m |
| PUR                     | 1.5 m |
| PUR halogen-free        | 1.5 m |
| Female, straight        |       |
| PVC                     | 1.5 m |
| PUR                     | 1.5 m |
| PUR halogen-free        | 1.5 m |
| PUR halogen-free yellow | 1.5 m |
| Female, angled          |       |
| PVC                     | 1.5 m |
| PUR                     | 1.5 m |
| PUR halogen-free        | 1.5 m |
| PUR halogen-free yellow | 1.5 m |
| <b>Note</b>             |       |

3-pole

| Type                      | Order No.  |
|---------------------------|------------|
| SAIL-M8G-3-1.5V           | 1927230150 |
| SAIL-M8G-3-1.5U           | 1824590150 |
| SAIL-M8G-3-1.5Q           | 1926970150 |
|                           |            |
| SAIL-M8W-3-1.5V           | 1927310150 |
| SAIL-M8W-3-1.5U           | 1857550150 |
| SAIL-M8W-3-1.5Q           | 1927050150 |
|                           |            |
| SAIL-M8BG-3-1.5V          | 1927240150 |
| SAIL-M8BG-3-1.5U          | 9457450150 |
| SAIL-M8BG-3-1.5Q          | 1926980150 |
| SAIL-M8BG-3-1.5QGE        | 1093190150 |
|                           |            |
| SAIL-M8BW-3-1.5V          | 1927320150 |
| SAIL-M8BW-3-1.5U          | 9457380150 |
| SAIL-M8BW-3-1.5Q          | 1927060150 |
| SAIL-M8BW-3-1.5QGE        | 1093220150 |
| Other versions on request |            |

4-pole

| Type                      | Order No.  |
|---------------------------|------------|
| SAIL-M8G-4-1.5V           | 1927250150 |
| SAIL-M8G-4-1.5U           | 1906270150 |
| SAIL-M8G-4-1.5Q           | 1926990150 |
|                           |            |
| SAIL-M8W-4-1.5V           | 1927330150 |
| SAIL-M8W-4-1.5U           | 1857560150 |
| SAIL-M8W-4-1.5Q           | 1927070150 |
|                           |            |
| SAIL-M8BG-4-1.5V          | 1927260150 |
| SAIL-M8BG-4-1.5U          | 9457850150 |
| SAIL-M8BG-4-1.5Q          | 1927000150 |
| SAIL-M8BG-4-1.5QGE        | 1093200150 |
|                           |            |
| SAIL-M8BW-4-1.5V          | 1927340150 |
| SAIL-M8BW-4-1.5U          | 9456150150 |
| SAIL-M8BW-4-1.5Q          | 1927080150 |
| SAIL-M8BW-4-1.5QGE        | 1093240150 |
| Other versions on request |            |

Standard cable lengths

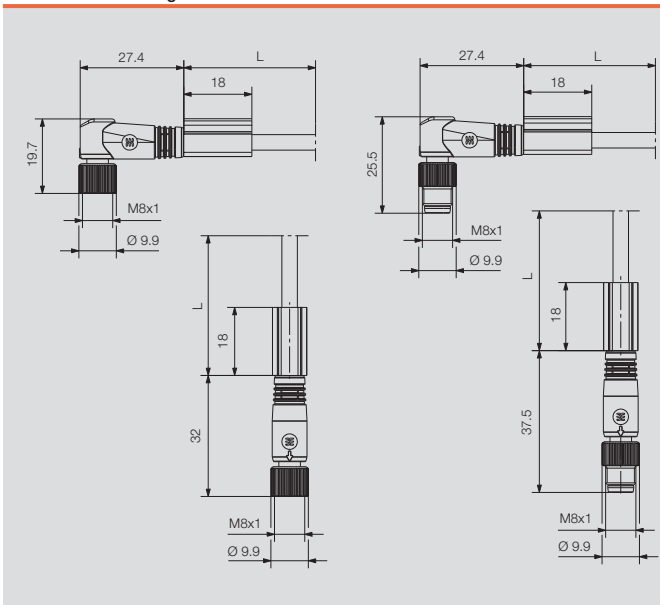
|                                                                                                                                                                  |        |           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-----------|
| All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths. | 1.5 m  | xxxxx0150 |
|                                                                                                                                                                  | 3.0 m  | xxxxx0300 |
|                                                                                                                                                                  | 5.0 m  | xxxxx0500 |
|                                                                                                                                                                  | 10.0 m | xxxxx1000 |

Technical data

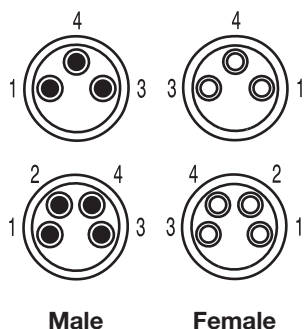
|                                         |                               |
|-----------------------------------------|-------------------------------|
| Rated current                           | 4 A                           |
| Protection class                        | IP 67                         |
| Core cross-section                      | 0.25 mm <sup>2</sup>          |
| Contact surface                         | gold-plated                   |
| Temperature range of housing            | -25...+85 °C                  |
| Rated voltage                           | 60 V (3-pole) / 30 V (4-pole) |
| (acc. to VDE standard 0110 ISO group C) |                               |

Chapter W includes additional technical specifications for the cable

Dimensioned drawing



**M8 one end without connector snap-on connection**



**Ordering data**

| Female, straight |       |
|------------------|-------|
| PVC              | 1.5 m |
| PUR              | 1.5 m |
| PUR halogen-free | 1.5 m |
| Female, angled   |       |
| PVC              | 1.5 m |
| PUR              | 1.5 m |
| PUR halogen-free | 1.5 m |
| Note             |       |

| 3-pole                    |            |
|---------------------------|------------|
| Type                      | Order No.  |
| SAIL-M8BGR-3-1.5V         | 1948710150 |
| SAIL-M8BGR-3-1.5U         | 1827020150 |
| SAIL-M8BGR-3-1.5Q         | 1948610150 |
| Other versions on request |            |

| 4-pole                    |            |
|---------------------------|------------|
| Type                      | Order No.  |
| SAIL-M8BGR-4-1.5V         | 1948730150 |
| SAIL-M8BGR-4-1.5U         | 1948530150 |
| SAIL-M8BGR-4-1.5Q         | 1948630150 |
| Other versions on request |            |

**Standard cable lengths**

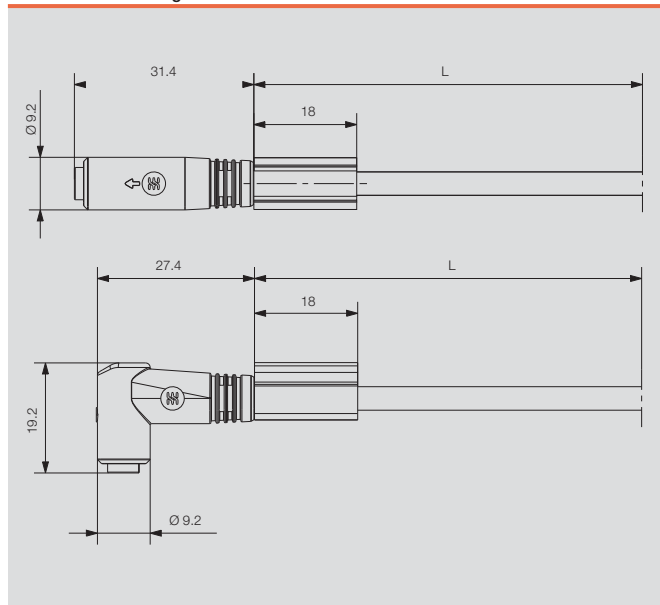
|                                                                                                                                                                  |        |            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------|
| All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths. | 1.5 m  | xxxxxx0150 |
|                                                                                                                                                                  | 3.0 m  | xxxxxx0300 |
|                                                                                                                                                                  | 5.0 m  | xxxxxx0500 |
|                                                                                                                                                                  | 10.0 m | xxxxxx1000 |

**Technical data**

|                                         |                               |
|-----------------------------------------|-------------------------------|
| Rated current                           | 4 A                           |
| Protection class                        | IP 65                         |
| Core cross-section                      | 0.25 mm <sup>2</sup>          |
| Contact surface                         | gold-plated                   |
| Temperature range of housing            | -25...+85 °C                  |
| Rated voltage                           | 60 V (3-pole) / 30 V (4-pole) |
| (acc. to VDE standard 0110 ISO group C) |                               |

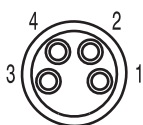
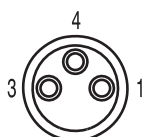
Chapter W includes additional technical specifications for the cable

**Dimensioned drawing**

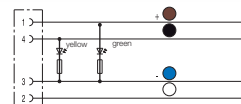
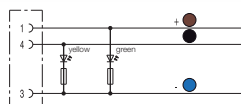


Sensor cables

M8 one end without connector with LED



Female



Ordering data

| Female, angled          |       |
|-------------------------|-------|
| PVC                     | 1.5 m |
| PUR                     | 1.5 m |
| PUR halogen-free        | 1.5 m |
| PUR halogen-free yellow | 1.5 m |
| <b>Note</b>             |       |

2 LEDs

3-pole

| Type                      | Order No.  |
|---------------------------|------------|
| SAIL-M8BW-3L1.5V          | 1927350150 |
| SAIL-M8BW-3L1.5U          | 9457460150 |
| SAIL-M8BW-3L1.5Q          | 1927090150 |
| SAIL-M8BW-3L1.5QGE        | 1093210150 |
| Other versions on request |            |

2 LEDs

4-pole

| Type                      | Order No.  |
|---------------------------|------------|
| SAIL-M8BW-4L1.5V          | 1927360150 |
| SAIL-M8BW-4L1.5U          | 1906400150 |
| SAIL-M8BW-4L1.5Q          | 1927100150 |
| SAIL-M8BW-4L1.5QGE        | 1093230150 |
| Other versions on request |            |

Standard cable lengths

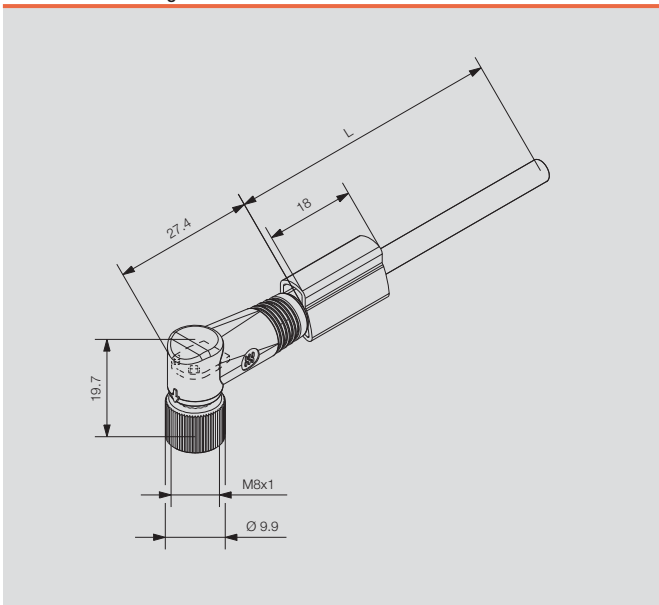
|                                                                                                                                                                  |        |            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------|
| All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths. | 1.5 m  | xxxxxx0150 |
|                                                                                                                                                                  | 3.0 m  | xxxxxx0300 |
|                                                                                                                                                                  | 5.0 m  | xxxxxx0500 |
|                                                                                                                                                                  | 10.0 m | xxxxxx1000 |

Technical data

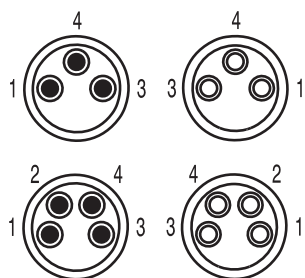
|                                         |                               |
|-----------------------------------------|-------------------------------|
| Rated current                           | 4 A                           |
| Protection class                        | IP 67                         |
| Core cross-section                      | 0.25 mm <sup>2</sup>          |
| Contact surface                         | gold-plated                   |
| Temperature range of housing            | -25...+85 °C                  |
| Rated voltage                           | 60 V (3-pole) / 30 V (4-pole) |
| (acc. to VDE standard 0110 ISO group C) |                               |

Chapter W includes additional technical specifications for the cable

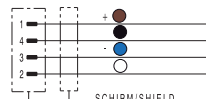
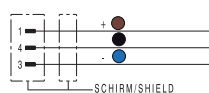
Dimensioned drawing



**M8 one end without connector shielded**



**Male Female**



**Ordering data**

| Male, straight   |       |
|------------------|-------|
| PUR              | 1.5 m |
| Male, angled     |       |
| PUR              | 1.5 m |
| Female, straight |       |
| PUR              | 1.5 m |
| Female, angled   |       |
| PUR              | 1.5 m |
| <b>Note</b>      |       |

**3-pole**

| Type                      | Order No.  |
|---------------------------|------------|
| SAIL-M8G-3S1.5U           | 1906560150 |
| SAIL-M8W-3S1.5U           | 1906580150 |
| SAIL-M8BG-3S1.5U          | 1906600150 |
| SAIL-M8BW-3S1.5U          | 1906620150 |
| Other versions on request |            |

**4-pole**

| Type                      | Order No.  |
|---------------------------|------------|
| SAIL-M8G-4S1.5U           | 1906570150 |
| SAIL-M8W-4S1.5U           | 1906590150 |
| SAIL-M8BG-4S1.5U          | 1906610150 |
| SAIL-M8BW-4S1.5U          | 1906630150 |
| Other versions on request |            |

**Standard cable lengths**

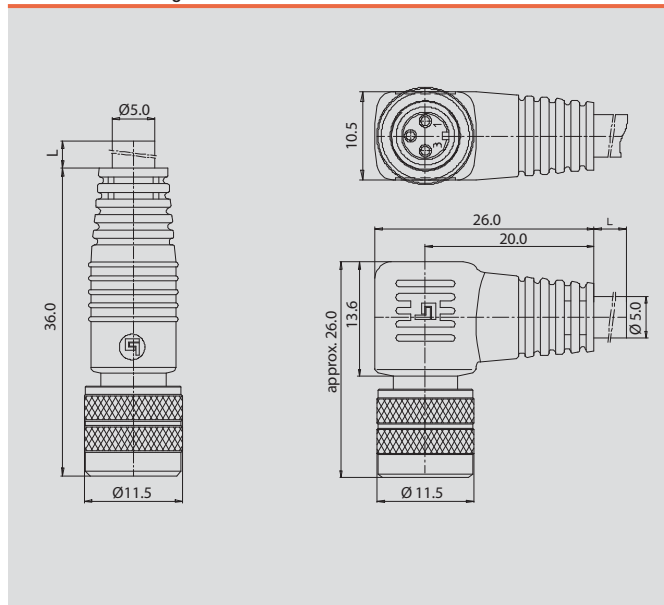
|                                                                                                                                                                  |        |            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------|
| All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths. | 1.5 m  | xxxxxx0150 |
|                                                                                                                                                                  | 3.0 m  | xxxxxx0300 |
|                                                                                                                                                                  | 5.0 m  | xxxxxx0500 |
|                                                                                                                                                                  | 10.0 m | xxxxxx1000 |

**Technical data**

|                                         |                               |
|-----------------------------------------|-------------------------------|
| Rated current                           | 4 A                           |
| Protection class                        | IP 67                         |
| Core cross-section                      | 0.25 mm <sup>2</sup>          |
| Contact surface                         | gold-plated                   |
| Temperature range of housing            | -25...+85 °C                  |
| Rated voltage                           | 60 V (3-pole) / 30 V (4-pole) |
| (acc. to VDE standard 0110 ISO group C) |                               |

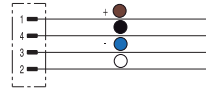
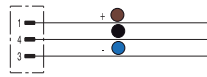
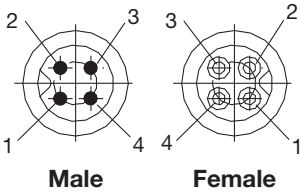
Chapter W includes additional technical specifications for the cable

**Dimensioned drawing**



**Sensor cables**

**M5 one end without connector**



**Ordering data**

| Male, straight   |       |
|------------------|-------|
| PUR              | 1.5 m |
| Male, angled     |       |
| PUR              | 1.5 m |
| Female, straight |       |
| PUR              | 1.5 m |
| Female, angled   |       |
| PUR              | 1.5 m |
| <b>Note</b>      |       |

**3-pole**

| Type                      | Order No.  |
|---------------------------|------------|
| SAIL-M5G-3P-1.5U          | 1854060150 |
| SAIL-M5W-3P-1.5U          | 1873280150 |
| SAIL-M5BG-3P-1.5U         | 1873290150 |
| SAIL-M5BW-3P-1.5U         | 1873260150 |
| Other versions on request |            |

**4-pole**

| Type                      | Order No.  |
|---------------------------|------------|
| SAIL-M5G-4P-1.5U          | 1871700150 |
| SAIL-M5W-4P-1.5U          | 1873240150 |
| SAIL-M5BG-4P-1.5U         | 1873250150 |
| SAIL-M5BW-4P-1.5U         | 1873270150 |
| Other versions on request |            |

**Standard cable lengths**

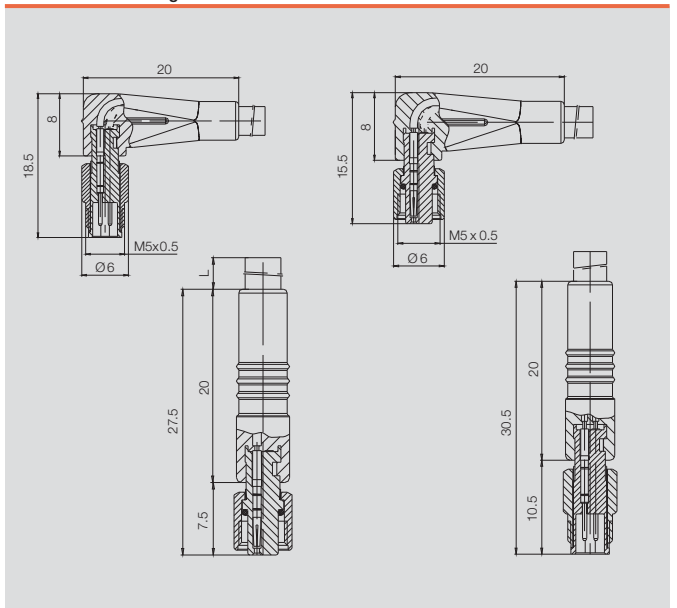
|                                                                                                                                                                  |        |            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------|
| All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths. | 1.5 m  | xxxxxx0150 |
|                                                                                                                                                                  | 3.0 m  | xxxxxx0300 |
|                                                                                                                                                                  | 5.0 m  | xxxxxx0500 |
|                                                                                                                                                                  | 10.0 m | xxxxxx1000 |

**Technical data**

|                                         |                      |
|-----------------------------------------|----------------------|
| Rated current                           | 1 A                  |
| Protection class                        | IP 67                |
| Core cross-section                      | 0.25 mm <sup>2</sup> |
| Contact surface                         | gold-plated          |
| Temperature range of housing            | -25...+85 °C         |
| Rated voltage                           | 60 V                 |
| (acc. to VDE standard 0110 ISO group C) |                      |

Chapter W includes additional technical specifications for the cable

**Dimensioned drawing**





# Connecting cables

## M12



## M8



## M8 Snap connection



## Twin cabling



Many applications with sensors require suitable connecting cables. The connecting cables are available in different designs. The M12/M8 plug-in connectors are available in straight and 90° versions and also with LEDs.

- When plugged in, the M12 connecting cables comply with IP68 ingress protection class.
- The cable sheathing is black and made of polyurethane (PUR or PVC).
- The connecting cables are supplied with two marking sleeves. Corresponding tags TM-I 18 for the marking sleeves can be found in chapter I.

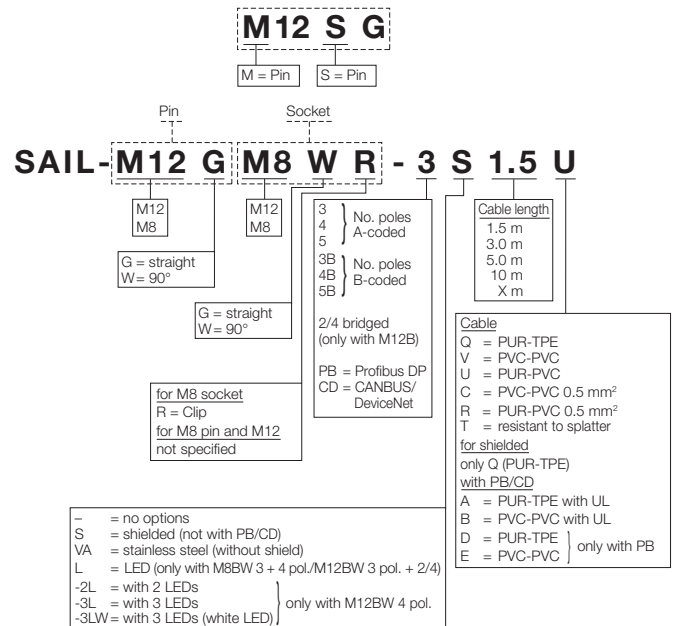
### Sensor cables

Weidmüller can supply various cable lengths as indicated in the following table:

#### Typical cable lengths are:

- 1.5 m
- 3.0 m
- 5.0 m
- 10.0 m

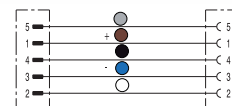
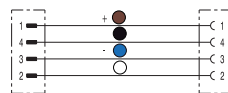
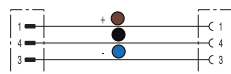
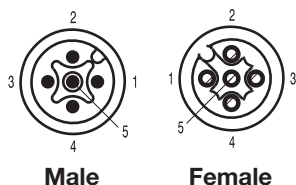
### Example of designation



Connecting cables

M12 to M12

A-coded



Ordering data

| Male, straight - Female, straight |       |
|-----------------------------------|-------|
| PVC                               | 1.5 m |
| PUR                               | 1.5 m |
| PUR halogen-free                  | 1.5 m |
| PUR halogen-free yellow           | 1.5 m |
| Resistant to welding beads        | 1.5 m |
| Male, straight - Female, angled   |       |
| PVC                               | 1.5 m |
| PUR                               | 1.5 m |
| PUR halogen-free                  | 1.5 m |
| PUR halogen-free yellow           | 1.5 m |
| Resistant to welding beads        | 1.5 m |
| Male, angled - Female, angled     |       |
| PVC                               | 1.5 m |
| PUR                               | 1.5 m |
| PUR halogen-free                  | 1.5 m |
| Note                              |       |

| 3-pole                    |            |  |
|---------------------------|------------|--|
| Type                      | Order No.  |  |
| SAIL-M12GM12G-3-1.5V      | 1925300150 |  |
| SAIL-M12GM12G-3-1.5U      | 9457230150 |  |
| SAIL-M12GM12G-3-1.5Q      | 1926490150 |  |
| SAIL-M12GM12G-3-1.5QGE    | 1093010150 |  |
| SAIL-M12GM12G-3-1.5T      | 1021710150 |  |
| Other versions on request |            |  |

| 4-pole                    |            |  |
|---------------------------|------------|--|
| Type                      | Order No.  |  |
| SAIL-M12GM12G-4-1.5V      | 1925310150 |  |
| SAIL-M12GM12G-4-1.5U      | 1906300150 |  |
| SAIL-M12GM12G-4-1.5Q      | 1926500150 |  |
| SAIL-M12GM12G-4-1.5QGE    | 1093020150 |  |
| SAIL-M12GM12G-4-1.5T      | 1021730150 |  |
| Other versions on request |            |  |

| 5-pole                    |            |  |
|---------------------------|------------|--|
| Type                      | Order No.  |  |
| SAIL-M12GM12G-5-1.5V      | 1925320150 |  |
| SAIL-M12GM12G-5-1.5U      | 9457340150 |  |
| SAIL-M12GM12G-5-1.5Q      | 1926510150 |  |
| SAIL-M12GM12G-5-1.5QGE    | 1093030150 |  |
| SAIL-M12GM12G-5-1.5T      | 1011970150 |  |
| Other versions on request |            |  |

Standard cable lengths

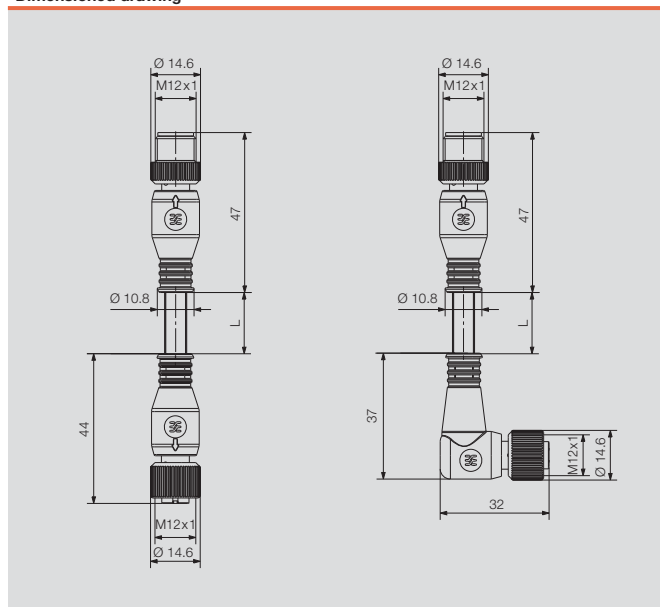
|                                                                                                                                                                  |        |           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-----------|
| All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths. | 1.5 m  | xxxxx0150 |
|                                                                                                                                                                  | 3.0 m  | xxxxx0300 |
|                                                                                                                                                                  | 5.0 m  | xxxxx0500 |
|                                                                                                                                                                  | 10.0 m | xxxxx1000 |

Technical data

|                                         |                                        |
|-----------------------------------------|----------------------------------------|
| Rated current                           | 4 A                                    |
| Protection class                        | IP 67                                  |
| Core cross-section                      | 0.34 mm <sup>2</sup>                   |
| Contact surface                         | gold-plated                            |
| Temperature range of housing            | -25...+85 °C                           |
| Rated voltage                           | 250 V (3- and 4-pole) / 125 V (5-pole) |
| (acc. to VDE standard 0110 ISO group C) |                                        |

Chapter W includes additional technical specifications for the cable

Dimensioned drawing



## Sensor cables

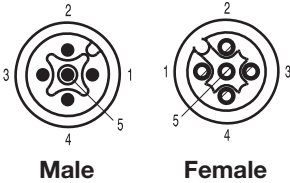
## Connecting cables

M12 to M12

A-coded

Bridged between

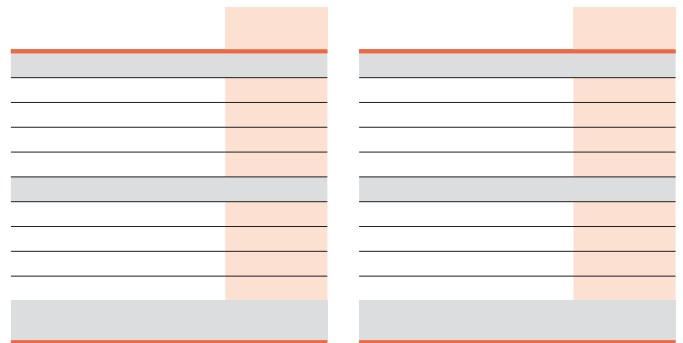
pins 2 and 4



## Ordering data

| Male, straight - Female, straight |       |
|-----------------------------------|-------|
| PVC                               | 1.5 m |
| PUR                               | 1.5 m |
| PUR halogen-free                  | 1.5 m |
| PUR halogen-free yellow           | 1.5 m |
| Male, straight - Female, angled   |       |
| PVC                               | 1.5 m |
| PUR                               | 1.5 m |
| PUR halogen-free                  | 1.5 m |
| PUR halogen-free yellow           | 1.5 m |
| Note                              |       |

| 3-pole                    |            |
|---------------------------|------------|
| Type                      | Order No.  |
| SAIL-M12GM12G-2/4-1.5V    | 1925330150 |
| SAIL-M12GM12G-2/4-1.5U    | 9456990150 |
| SAIL-M12GM12G-2/4-1.5Q    | 1926520150 |
| SAIL-M12GM12G-2/4-1.5QGE  | 1093000150 |
| <hr/>                     |            |
| SAIL-M12GM12W-2/4-1.5V    | 1925370150 |
| SAIL-M12GM12W-2/4-1.5U    | 9457890150 |
| SAIL-M12GM12W-2/4-1.5Q    | 1926560150 |
| SAIL-M12GM12W-2/4-1.5QGE  | 1093040150 |
| Other versions on request |            |



## Standard cable lengths

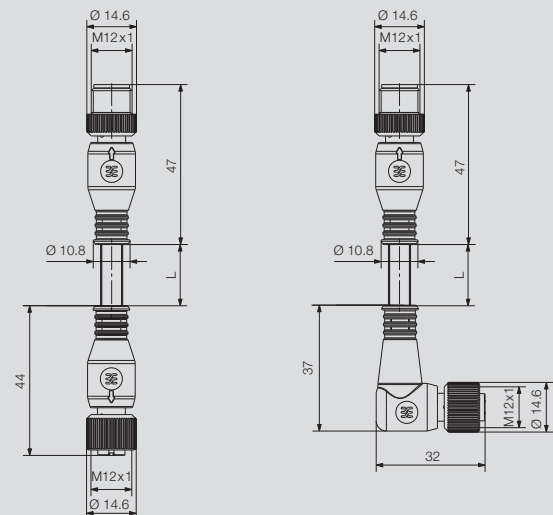
|                                                                                                                                                                  |        |           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-----------|
| All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths. | 1.5 m  | xxxxx0150 |
|                                                                                                                                                                  | 3.0 m  | xxxxx0300 |
|                                                                                                                                                                  | 5.0 m  | xxxxx0500 |
|                                                                                                                                                                  | 10.0 m | xxxxx1000 |

## Technical data

|                                         |                                        |
|-----------------------------------------|----------------------------------------|
| Rated current                           | 4 A                                    |
| Protection class                        | IP 67                                  |
| Core cross-section                      | 0.34 mm <sup>2</sup>                   |
| Contact surface                         | gold-plated                            |
| Temperature range of housing            | -25...+85 °C                           |
| Rated voltage                           | 250 V (3- and 4-pole) / 125 V (5-pole) |
| (acc. to VDE standard 0110 ISO group C) |                                        |

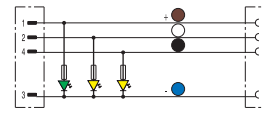
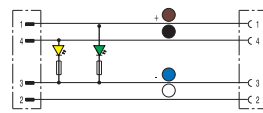
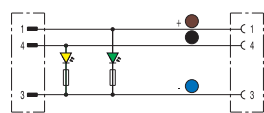
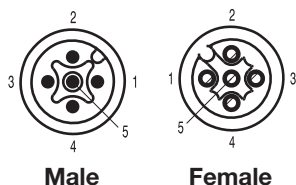
Chapter W includes additional technical specifications for the cable

## Dimensioned drawing



Connecting cables

M12 to M12, LED  
A-coded  
male, straight -  
female, angled



Ordering data

| Male, straight - Female, angled |       |
|---------------------------------|-------|
| PVC                             | 1.5 m |
| PUR                             | 1.5 m |
| PUR halogen-free                | 1.5 m |
| PUR halogen-free yellow         | 1.5 m |
| Resistant to welding beads      | 1.5 m |
| <b>Note</b>                     |       |

| 2 LEDs                    | 3-pole           |
|---------------------------|------------------|
| <b>Type</b>               | <b>Order No.</b> |
| SAIL-M12GM12W-3L1.5V      | 1925410150       |
| SAIL-M12GM12W-3L1.5U      | 9457790150       |
| SAIL-M12GM12W-3L1.5Q      | 1926600150       |
| SAIL-M12GM12W-3L1.5T      | 1004320150       |
| Other versions on request |                  |

| 2 LEDs                    | 4-pole           |
|---------------------------|------------------|
| <b>Type</b>               | <b>Order No.</b> |
| SAIL-M12GM12W-4-2L1.5V    | 1925420150       |
| SAIL-M12GM12W-4-2L1.5U    | 1906410150       |
| SAIL-M12GM12W-4-2L1.5Q    | 1926610150       |
| SAIL-M12GM12W-4-2L1.5T    | 1004310150       |
| Other versions on request |                  |

| 3 LEDs                    | 4-pole           |
|---------------------------|------------------|
| <b>Type</b>               | <b>Order No.</b> |
| SAIL-M12GM12W-4-3L1.5V    | 1963930150       |
| SAIL-M12GM12W-4-3L1.5U    | 1963910150       |
| SAIL-M12GM12W-4-3L1.5Q    | 1232810150       |
| SAIL-M12GM12W-4-3LW1.5QGE | 1093060150       |
| SAIL-M12GM12W-4-3LW1.5T   | 1020930150       |
| Other versions on request |                  |

Standard cable lengths

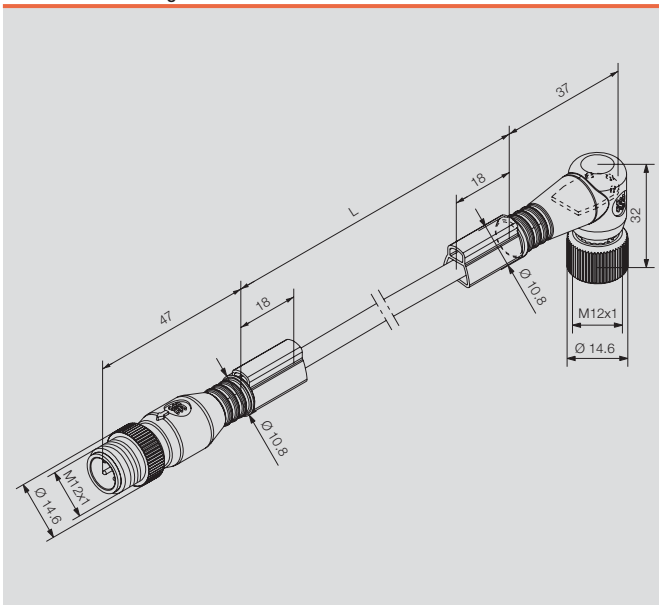
|                                                                                                                                                                  |        |           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-----------|
| All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths. | 1.5 m  | xxxxx0150 |
|                                                                                                                                                                  | 3.0 m  | xxxxx0300 |
|                                                                                                                                                                  | 5.0 m  | xxxxx0500 |
|                                                                                                                                                                  | 10.0 m | xxxxx1000 |

Technical data

|                                         |                                        |
|-----------------------------------------|----------------------------------------|
| Rated current                           | 4 A                                    |
| Protection class                        | IP 67                                  |
| Core cross-section                      | 0.34 mm <sup>2</sup>                   |
| Contact surface                         | gold-plated                            |
| Temperature range of housing            | -25...+85 °C                           |
| Rated voltage                           | 250 V (3- and 4-pole) / 125 V (5-pole) |
| (acc. to VDE standard 0110 ISO group C) |                                        |

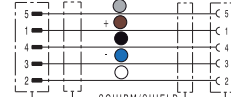
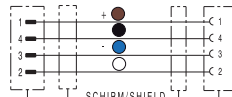
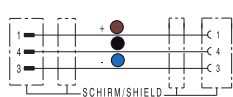
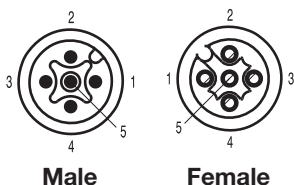
Chapter W includes additional technical specifications for the cable

Dimensioned drawing



Sensor cables

Connecting cables  
M12 to M12  
A-coded  
shielded



Ordering data

|                                          |       |
|------------------------------------------|-------|
| <b>Male, straight - Female, straight</b> |       |
| PUR halogen-free                         | 1.5 m |
| <b>Male, straight - Female, angled</b>   |       |
| PUR halogen-free                         | 1.5 m |
| <b>Male, angled - Female, angled</b>     |       |
| PUR halogen-free                         | 1.5 m |
| <b>Note</b>                              |       |

3-pole

| Type                      | Order No.  |
|---------------------------|------------|
| SAIL-M12GM12G-3S1.5Q      | 1058490150 |
| SAIL-M12GM12W-3S1.5Q      | 1059470150 |
| SAIL-M12WM12W-3S1.5Q      | 1059720150 |
| Other versions on request |            |

4-pole

| Type                      | Order No.  |
|---------------------------|------------|
| SAIL-M12GM12G-4S1.5Q      | 1058500150 |
| SAIL-M12GM12W-4S1.5Q      | 1059480150 |
| SAIL-M12WM12W-4S1.5Q      | 1059730150 |
| Other versions on request |            |

5-pole

| Type                      | Order No.  |
|---------------------------|------------|
| SAIL-M12GM12G-5S1.5Q      | 1058510150 |
| SAIL-M12GM12W-5S1.5Q      | 1059540150 |
| SAIL-M12WM12W-5S1.5Q      | 1059740150 |
| Other versions on request |            |

Standard cable lengths

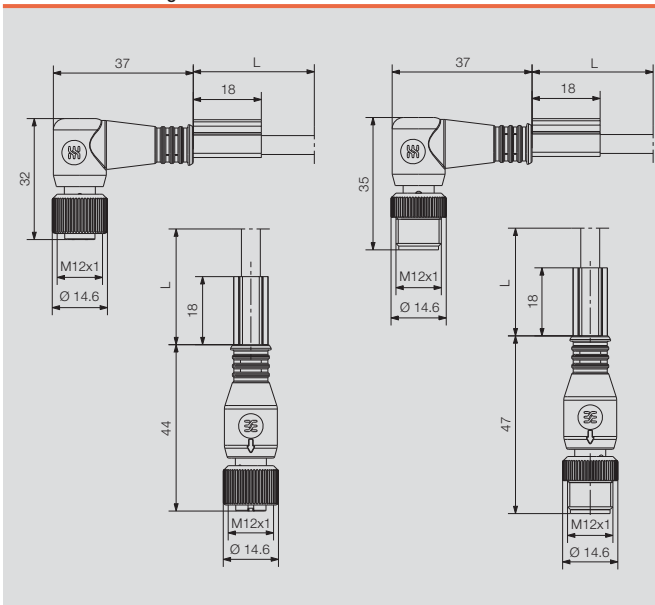
|                                                                                                                                                                  |        |            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------|
| All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths. | 1.5 m  | xxxxxx0150 |
|                                                                                                                                                                  | 3.0 m  | xxxxxx0300 |
|                                                                                                                                                                  | 5.0 m  | xxxxxx0500 |
|                                                                                                                                                                  | 10.0 m | xxxxxx1000 |

Technical data

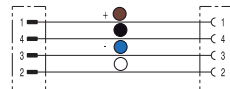
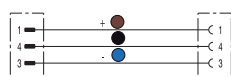
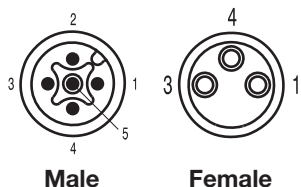
|                                         |                                        |
|-----------------------------------------|----------------------------------------|
| Rated current                           | 4 A                                    |
| Protection class                        | IP 67                                  |
| Core cross-section                      | 0.34 mm <sup>2</sup>                   |
| Contact surface                         | gold-plated                            |
| Temperature range of housing            | -25...+85 °C                           |
| Rated voltage                           | 250 V (3- and 4-pole) / 125 V (5-pole) |
| (acc. to VDE standard 0110 ISO group C) |                                        |

Chapter W includes additional technical specifications for the cable

Dimensioned drawing



**Connecting cables**  
**M12 to M8**



**Ordering data**

| Male, straight - Female, straight |       |
|-----------------------------------|-------|
| PVC                               | 1.5 m |
| PUR                               | 1.5 m |
| PUR halogen-free                  | 1.5 m |
| Male, straight - Female, angled   |       |
| PVC                               | 1.5 m |
| PUR                               | 1.5 m |
| PUR halogen-free                  | 1.5 m |
| Male, angled - Female, angled     |       |
| PVC                               | 1.5 m |
| PUR                               | 1.5 m |
| PUR halogen-free                  | 1.5 m |
| <b>Note</b>                       |       |

| 3-pole                    |            |
|---------------------------|------------|
| Type                      | Order No.  |
| SAIL-M12GM8G-3-1.5V       | 1938170150 |
| SAIL-M12GM8G-3-1.5U       | 9457770150 |
| SAIL-M12GM8G-3-1.5Q       | 1938040150 |
| SAIL-M12GM8W-3-1.5V       | 1938180150 |
| SAIL-M12GM8W-3-1.5U       | 9457980150 |
| SAIL-M12GM8W-3-1.5Q       | 1938050150 |
| SAIL-M12WM8W-3-1.5V       | 1938190150 |
| SAIL-M12WM8W-3-1.5U       | 1906330150 |
| SAIL-M12WM8W-3-1.5Q       | 1938060150 |
| Other versions on request |            |

| 4-pole                    |            |
|---------------------------|------------|
| Type                      | Order No.  |
| SAIL-M12GM8G-4-1.5V       | 1938200150 |
| SAIL-M12GM8G-4-1.5U       | 9456660150 |
| SAIL-M12GM8G-4-1.5Q       | 1938070150 |
| SAIL-M12GM8W-4-1.5V       | 1938210150 |
| SAIL-M12GM8W-4-1.5U       | 9456670150 |
| SAIL-M12GM8W-4-1.5Q       | 1938080150 |
| SAIL-M12WM8W-4-1.5V       | 1938220150 |
| SAIL-M12WM8W-4-1.5U       | 1906340150 |
| SAIL-M12WM8W-4-1.5Q       | 1938090150 |
| Other versions on request |            |

**Standard cable lengths**

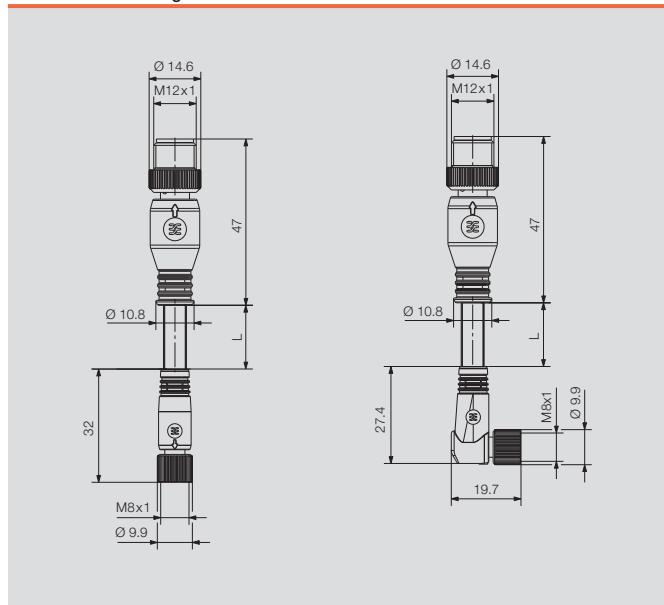
|                                                                                                                                                                  |        |           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-----------|
| All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths. | 1.5 m  | xxxxx0150 |
|                                                                                                                                                                  | 3.0 m  | xxxxx0300 |
|                                                                                                                                                                  | 5.0 m  | xxxxx0500 |
|                                                                                                                                                                  | 10.0 m | xxxxx1000 |

**Technical data**

|                                         |                               |
|-----------------------------------------|-------------------------------|
| Rated current                           | 4 A                           |
| Protection class                        | IP 67                         |
| Core cross-section                      | 0.25 mm <sup>2</sup>          |
| Contact surface                         | gold-plated                   |
| Temperature range of housing            | -25...+85 °C                  |
| Rated voltage                           | 60 V (3-pole) / 30 V (4-pole) |
| (acc. to VDE standard 0110 ISO group C) |                               |

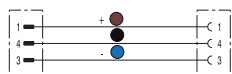
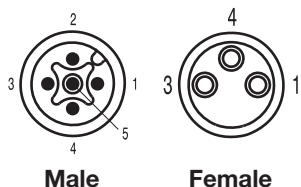
Chapter W includes additional technical specifications for the cable

**Dimensioned drawing**



Sensor cables

Connecting cables  
M12 to M8  
snap-on connection



Ordering data

| Male, straight - Female, straight |       |
|-----------------------------------|-------|
| PUR                               | 1.5 m |
| Male, straight - Female, angled   |       |
| PUR                               | 1.5 m |
| PUR halogen-free yellow           | 1.5 m |
| <b>Note</b>                       |       |

3-pole

| Type                      | Order No.  |
|---------------------------|------------|
| SAIL-M12GM8GR-3-1.5U      | 1984530150 |
| SAIL-M12GM8WR-3-1.5U      | 9457570150 |
| SAIL-M12GM8WR-3-1.5QGE    | 1093150150 |
| Other versions on request |            |

Standard cable lengths

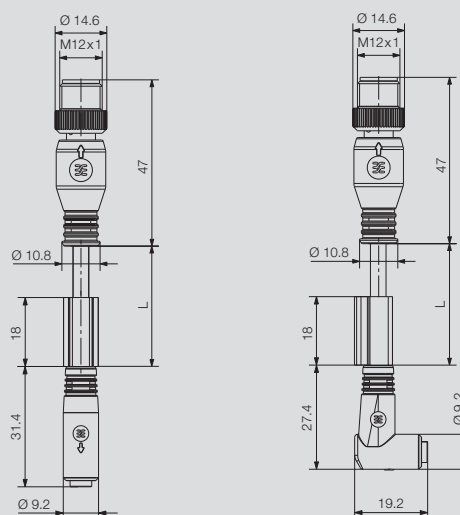
|                                                                                                                                                                  |        |            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------|
| All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths. | 1.5 m  | xxxxxx0150 |
|                                                                                                                                                                  | 3.0 m  | xxxxxx0300 |
|                                                                                                                                                                  | 5.0 m  | xxxxxx0500 |
|                                                                                                                                                                  | 10.0 m | xxxxxx1000 |

Technical data

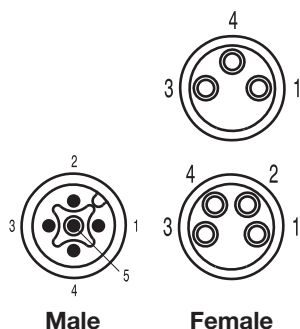
|                                         |                               |
|-----------------------------------------|-------------------------------|
| Rated current                           | 4 A                           |
| Protection class                        | IP 65                         |
| Core cross-section                      | 0.25 mm <sup>2</sup>          |
| Contact surface                         | gold-plated                   |
| Temperature range of housing            | -25...+85 °C                  |
| Rated voltage                           | 60 V (3-pole) / 30 V (4-pole) |
| (acc. to VDE standard 0110 ISO group C) |                               |

Chapter W includes additional technical specifications for the cable

Dimensioned drawing



**Connecting cables**  
**M12 to M8 LED**



**Ordering data**

| Male, straight - Female, angled |       |
|---------------------------------|-------|
| PVC                             | 1.5 m |
| PUR                             | 1.5 m |
| PUR halogen-free                | 1.5 m |
| PUR halogen-free yellow         | 1.5 m |
| <b>Note</b>                     |       |

**2 LEDs**

**3-pole**

| Type                      | Order No.         |
|---------------------------|-------------------|
| SAIL-M12GM8W-3L1.5V       | <b>1962290150</b> |
| SAIL-M12GM8W-3L1.5U       | <b>9457760150</b> |
| SAIL-M12GM8W-3L1.5Q       | <b>1962270150</b> |
| SAIL-M12GM8W-3L1.5QGE     | <b>1093110150</b> |
| Other versions on request |                   |

**2 LEDs**

**4-pole**

| Type                      | Order No.         |
|---------------------------|-------------------|
| SAIL-M12GM8W-4L1.5V       | <b>1962300150</b> |
| SAIL-M12GM8W-4L1.5U       | <b>1906430150</b> |
| SAIL-M12GM8W-4L1.5Q       | <b>1962280150</b> |
| SAIL-M12GM8W-4L1.5QGE     | <b>1093130150</b> |
| Other versions on request |                   |

**Standard cable lengths**

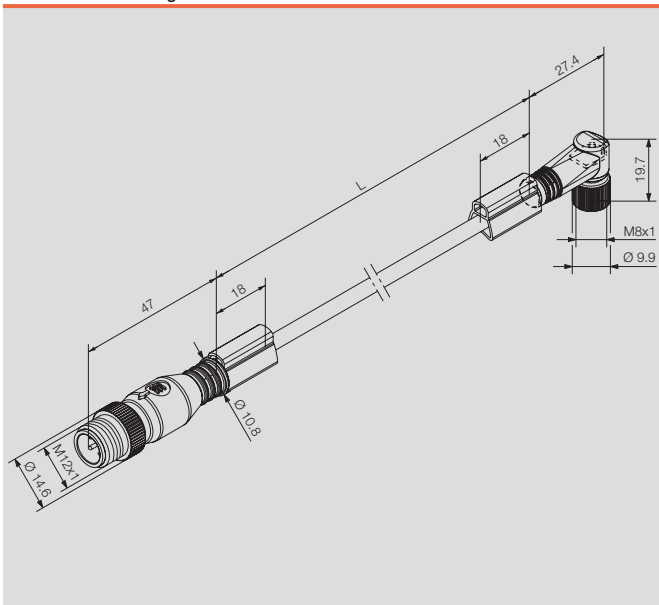
|                                                                                                                                                                  |        |            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------|
| All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths. | 1.5 m  | xxxxxx0150 |
|                                                                                                                                                                  | 3.0 m  | xxxxxx0300 |
|                                                                                                                                                                  | 5.0 m  | xxxxxx0500 |
|                                                                                                                                                                  | 10.0 m | xxxxxx1000 |

**Technical data**

|                                         |                               |
|-----------------------------------------|-------------------------------|
| Rated current                           | 4 A                           |
| Protection class                        | IP 67                         |
| Core cross-section                      | 0.25 mm <sup>2</sup>          |
| Contact surface                         | gold-plated                   |
| Temperature range of housing            | -25...+85 °C                  |
| Rated voltage                           | 60 V (3-pole) / 30 V (4-pole) |
| (acc. to VDE standard 0110 ISO group C) |                               |

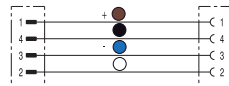
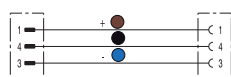
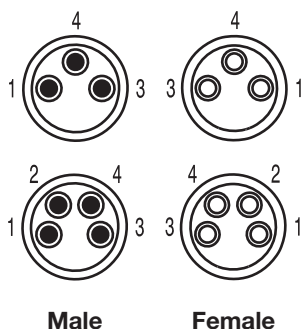
Chapter W includes additional technical specifications for the cable

**Dimensioned drawing**



Sensor cables

Connecting cables  
M8 to M8



Ordering data

| Male, straight - Female, straight |       |
|-----------------------------------|-------|
| PVC                               | 1.5 m |
| PUR                               | 1.5 m |
| PUR halogen-free                  | 1.5 m |
| PUR halogen-free yellow           | 1.5 m |
| Male, straight - Female, angled   |       |
| PVC                               | 1.5 m |
| PUR                               | 1.5 m |
| PUR halogen-free                  | 1.5 m |
| Male, angled - Female, angled     |       |
| PVC                               | 1.5 m |
| PUR                               | 1.5 m |
| PUR halogen-free                  | 1.5 m |
| <b>Note</b>                       |       |

3-pole

| Type                      | Order No.  |
|---------------------------|------------|
| SAIL-M8GM8G-3-1.5V        | 1927150150 |
| SAIL-M8GM8G-3-1.5U        | 1824570150 |
| SAIL-M8GM8G-3-1.5Q        | 1926890150 |
| SAIL-M8GM8G-3-1.5QGE      | 1104470150 |
| SAIL-M8GM8W-3-1.5V        | 1927170150 |
| SAIL-M8GM8W-3-1.5U        | 1824580150 |
| SAIL-M8GM8W-3-1.5Q        | 1926910150 |
| SAIL-M8WM8W-3-1.5V        | 1927210150 |
| SAIL-M8WM8W-3-1.5U        | 1857670150 |
| SAIL-M8WM8W-3-1.5Q        | 1078750150 |
| Other versions on request |            |

4-pole

| Type                      | Order No.  |
|---------------------------|------------|
| SAIL-M8GM8G-4-1.5V        | 1927160150 |
| SAIL-M8GM8G-4-1.5U        | 1880470150 |
| SAIL-M8GM8G-4-1.5Q        | 1926900150 |
| SAIL-M8GM8W-4-1.5V        | 1927180150 |
| SAIL-M8GM8W-4-1.5U        | 1857660150 |
| SAIL-M8GM8W-4-1.5Q        | 1926920150 |
| SAIL-M8WM8W-4-1.5V        | 1927220150 |
| SAIL-M8WM8W-4-1.5U        | 1857680150 |
| SAIL-M8WM8W-4-1.5Q        | 1926960150 |
| Other versions on request |            |

Standard cable lengths

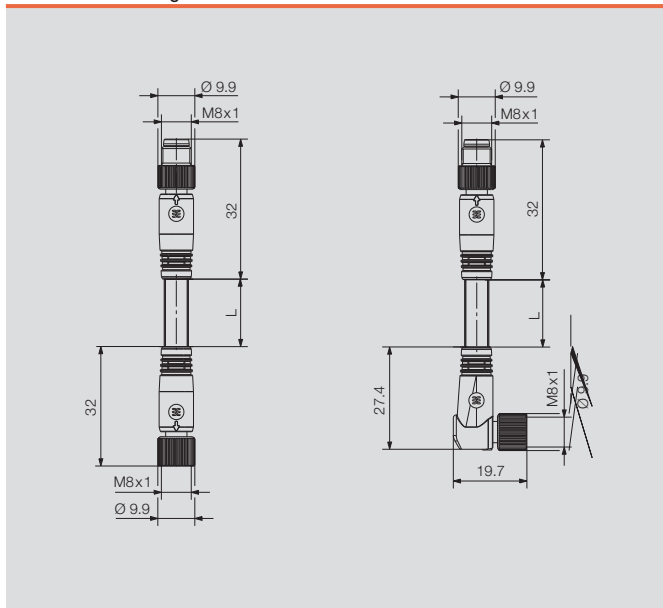
|                                                                                                                                                                  |        |           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-----------|
| All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths. | 1.5 m  | xxxxx0150 |
|                                                                                                                                                                  | 3.0 m  | xxxxx0300 |
|                                                                                                                                                                  | 5.0 m  | xxxxx0500 |
|                                                                                                                                                                  | 10.0 m | xxxxx1000 |

Technical data

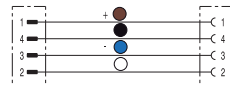
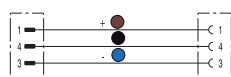
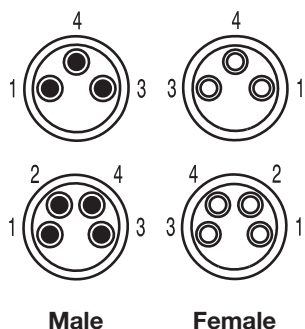
|                                         |                               |
|-----------------------------------------|-------------------------------|
| Rated current                           | 4 A                           |
| Protection class                        | IP 67                         |
| Core cross-section                      | 0.25 mm <sup>2</sup>          |
| Contact surface                         | gold-plated                   |
| Temperature range of housing            | -25...+85 °C                  |
| Rated voltage                           | 60 V (3-pole) / 30 V (4-pole) |
| (acc. to VDE standard 0110 ISO group C) |                               |

Chapter W includes additional technical specifications for the cable

Dimensioned drawing



**Connecting cables**  
**M8 to M8**  
**snap-on connection**



**Ordering data**

| Male, straight - Female, straight |       |
|-----------------------------------|-------|
| PVC                               | 1.5 m |
| PUR                               | 1.5 m |
| PUR halogen-free                  | 1.5 m |
| Male, straight - Female, angled   |       |
| PVC                               | 1.5 m |
| PUR                               | 1.5 m |
| PUR halogen-free                  | 1.5 m |
| Male, angled - Female, angled     |       |
| PVC                               | 1.5 m |
| PUR                               | 1.5 m |
| PUR halogen-free                  | 1.5 m |
| <b>Note</b>                       |       |

**3-pole**

| Type                      | Order No.  |
|---------------------------|------------|
| SAIL-M8GM8GR-3-1.5V       | 1948650150 |
| SAIL-M8GM8GR-3-1.5U       | 1948470150 |
| SAIL-M8GM8GR-3-1.5Q       | 1948550150 |
| SAIL-M8GM8WR-3-1.5V       | 1948660150 |
| SAIL-M8GM8WR-3-1.5U       | 1948480150 |
| SAIL-M8GM8WR-3-1.5Q       | 1948560150 |
| SAIL-M8WM8WR-3-1.5V       | 1948670150 |
| SAIL-M8WM8WR-3-1.5U       | 1948490150 |
| SAIL-M8WM8WR-3-1.5Q       | 1948570150 |
| Other versions on request |            |

**4-pole**

| Type                      | Order No.  |
|---------------------------|------------|
| SAIL-M8GM8GR-4-1.5V       | 1948680150 |
| SAIL-M8GM8GR-4-1.5U       | 1948500150 |
| SAIL-M8GM8GR-4-1.5Q       | 1948580150 |
| SAIL-M8GM8WR-4-1.5V       | 1948690150 |
| SAIL-M8GM8WR-4-1.5U       | 1948510150 |
| SAIL-M8GM8WR-4-1.5Q       | 1948590150 |
| SAIL-M8WM8WR-4-1.5V       | 1948700150 |
| SAIL-M8WM8WR-4-1.5U       | 1948520150 |
| SAIL-M8WM8WR-4-1.5Q       | 1948600150 |
| Other versions on request |            |

**Standard cable lengths**

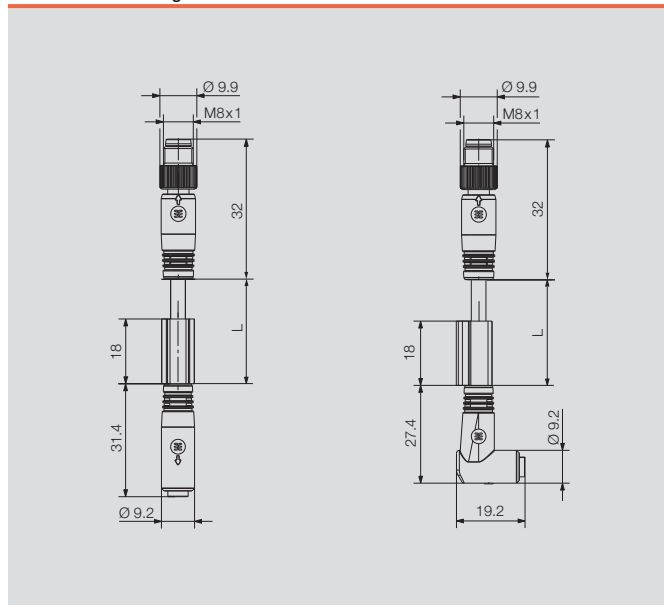
|                                                                                                                                                                  |        |           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-----------|
| All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths. | 1.5 m  | xxxxx0150 |
|                                                                                                                                                                  | 3.0 m  | xxxxx0300 |
|                                                                                                                                                                  | 5.0 m  | xxxxx0500 |
|                                                                                                                                                                  | 10.0 m | xxxxx1000 |

**Technical data**

|                                         |                               |
|-----------------------------------------|-------------------------------|
| Rated current                           | 4 A                           |
| Protection class                        | IP 65                         |
| Core cross-section                      | 0.25 mm <sup>2</sup>          |
| Contact surface                         | gold-plated                   |
| Temperature range of housing            | -25...+85 °C                  |
| Rated voltage                           | 60 V (3-pole) / 30 V (4-pole) |
| (acc. to VDE standard 0110 ISO group C) |                               |

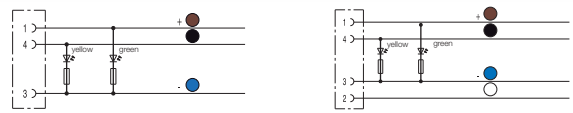
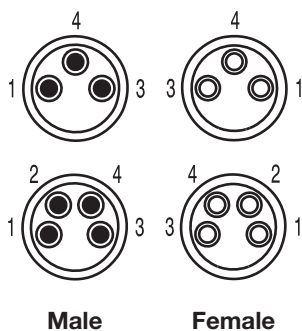
Chapter W includes additional technical specifications for the cable

**Dimensioned drawing**



Sensor cables

Connecting cables  
M8 to M8 LED



Ordering data

| Male, straight - Female, angled |       |
|---------------------------------|-------|
| PVC                             | 1.5 m |
| PUR                             | 1.5 m |
| PUR halogen-free                | 1.5 m |
| <b>Note</b>                     |       |

2 LEDs

3-pole

| Type                      | Order No.  |
|---------------------------|------------|
| SAIL-M8GM8W-3L1.5V        | 1927190150 |
| SAIL-M8GM8W-3L1.5U        | 1877250150 |
| SAIL-M8GM8W-3L1.5Q        | 1926930150 |
| Other versions on request |            |

2 LEDs

4-pole

| Type                      | Order No.  |
|---------------------------|------------|
| SAIL-M8GM8W-4L1.5V        | 1927200150 |
| SAIL-M8GM8W-4L1.5U        | 1906450150 |
| SAIL-M8GM8W-4L1.5Q        | 1926940150 |
| Other versions on request |            |

Standard cable lengths

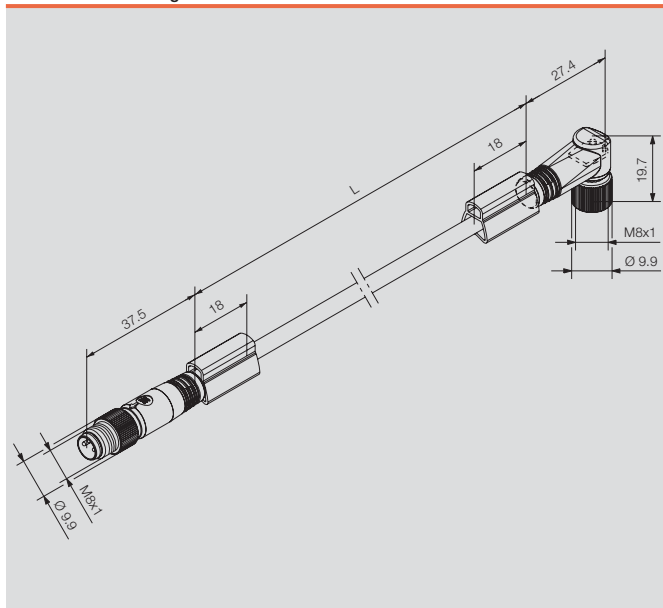
|                                                                                                                                                                  |        |            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------|
| All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths. | 1.5 m  | xxxxxx0150 |
|                                                                                                                                                                  | 3.0 m  | xxxxxx0300 |
|                                                                                                                                                                  | 5.0 m  | xxxxxx0500 |
|                                                                                                                                                                  | 10.0 m | xxxxxx1000 |

Technical data

|                                         |                               |
|-----------------------------------------|-------------------------------|
| Rated current                           | 4 A                           |
| Protection class                        | IP 67                         |
| Core cross-section                      | 0.25 mm <sup>2</sup>          |
| Contact surface                         | gold-plated                   |
| Temperature range of housing            | -25...+85 °C                  |
| Rated voltage                           | 60 V (3-pole) / 30 V (4-pole) |
| (acc. to VDE standard 0110 ISO group C) |                               |

Chapter W includes additional technical specifications for the cable

Dimensioned drawing





# Twin sensor cables with three plug-in connectors: M12/M8

## Twin sensor cables



In general, two sensor cables can be fed with a M12 connector to the distributor. A wide variety of wiring arrangements are possible with these cables. All M12 and M8 connections can be implemented.

Weidmüller has all the necessary components ready. With mechanical engineering, this type of application is an exception.

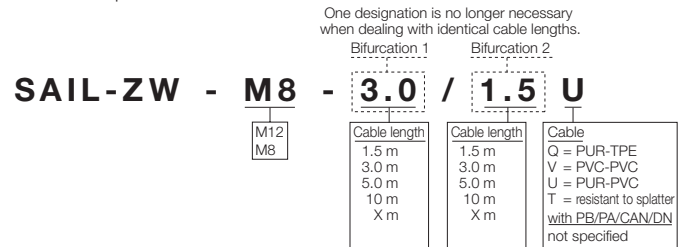
### 4-pole connection

In the SAI distributor, the 4 pole socket is fitted with pins 1, 3, 4 and 5. The 4 pole SAI plug is fitted with pins 1, 2, 3 and 4. This corresponds to market standards.

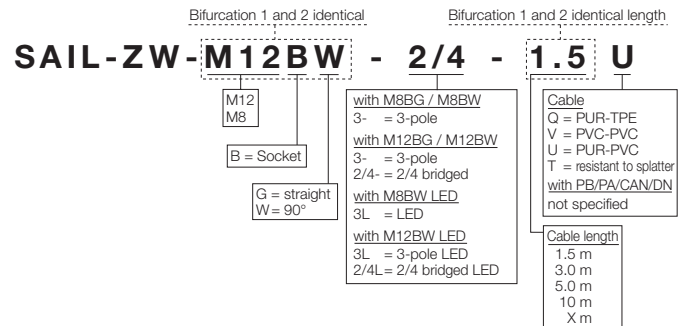
Special care must be taken when wiring combinations of 4-pole plugs and distributors.

### Designation

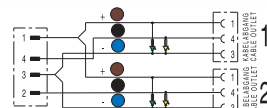
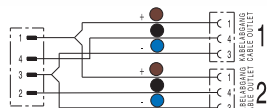
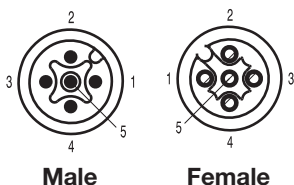
Twin plug  
Bifurcation open for "1" and "2" ends



Twin plug  
Connecting cable



**Twin cabling**  
**M12 to M12**



**Ordering data**

| Male straight - 2 females straight |       |
|------------------------------------|-------|
| PUR                                | 1.5 m |
| Male straight - 2 females angled   |       |
| PUR                                | 1.5 m |
| <b>Note</b>                        |       |

| Type                 | Order No.  |
|----------------------|------------|
| SAIL-ZW-M12BG-3-1.5U | 1005460150 |
| SAIL-ZW-M12BW-3-1.5U | 1005270150 |

| Type                 | Order No.  |
|----------------------|------------|
| SAIL-ZW-M12BW-3L1.5U | 1912110150 |

**Standard cable lengths**

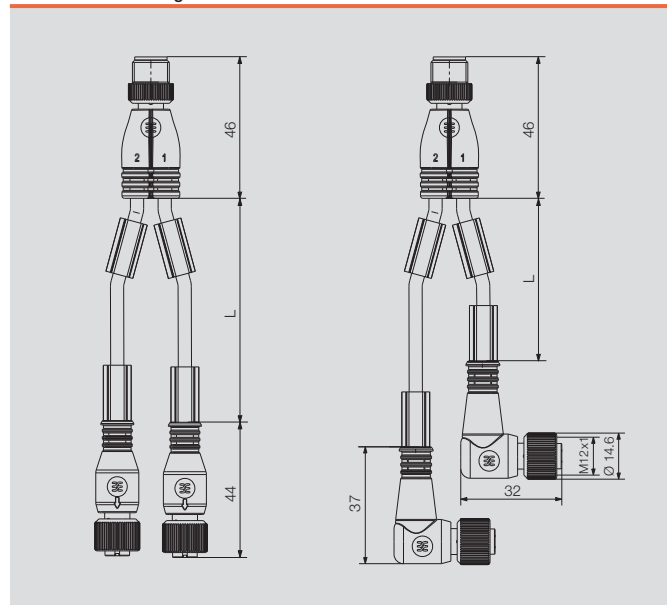
|                                                                                                                                                                  |        |            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------|
| All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths. | 1.5 m  | xxxxxx0150 |
|                                                                                                                                                                  | 3.0 m  | xxxxxx0300 |
|                                                                                                                                                                  | 5.0 m  | xxxxxx0500 |
|                                                                                                                                                                  | 10.0 m | xxxxxx1000 |

**Technical data**

|                                         |                                        |
|-----------------------------------------|----------------------------------------|
| Rated current                           | 4 A                                    |
| Protection class                        | IP 67                                  |
| Core cross-section                      | 0.34 mm <sup>2</sup>                   |
| Contact surface                         | gold-plated                            |
| Temperature range of housing            | -25...+85 °C                           |
| Rated voltage                           | 250 V (3- and 4-pole) / 125 V (5-pole) |
| (acc. to VDE standard 0110 ISO group C) |                                        |

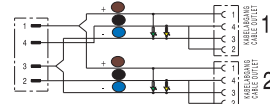
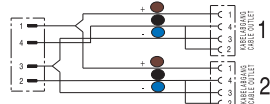
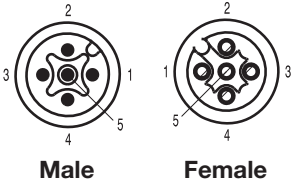
Chapter W includes additional technical specifications for the cable

**Dimensioned drawing**



Sensor cables

Twin cabling  
M12 to M12  
bridge between  
pins 2 and 4



Ordering data

| Male straight - 2 females straight |       |
|------------------------------------|-------|
| PUR                                | 1.5 m |
| Male straight - 2 females angled   |       |
| PUR                                | 1.5 m |
| <b>Note</b>                        |       |

| Type                   | Order No.  |
|------------------------|------------|
| SAIL-ZW-M12BG-2/4-1.5U | 1812550150 |
| SAIL-ZW-M12BW-2/4-1.5U | 1964280150 |

| Type                   | Order No.  |
|------------------------|------------|
| SAIL-ZW-M12BW-2/4L1.5U | 1964290150 |

Standard cable lengths

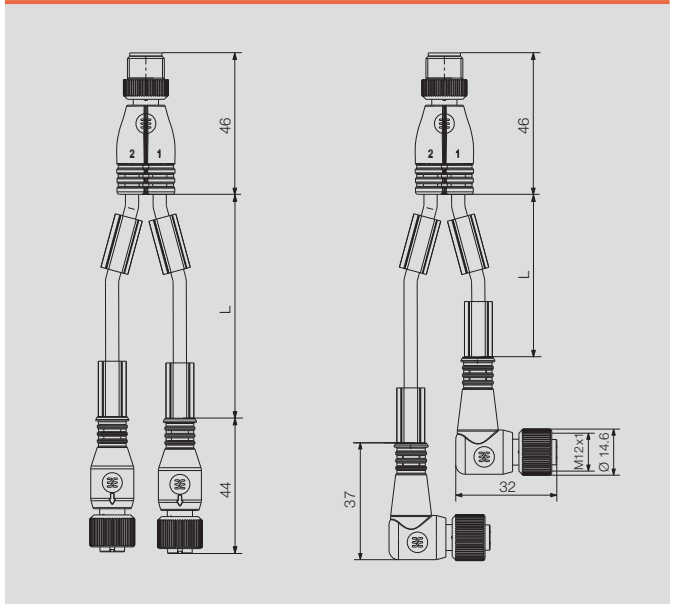
|                                                                                                                                                                  |        |            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------|
| All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths. | 1.5 m  | xxxxxx0150 |
|                                                                                                                                                                  | 3.0 m  | xxxxxx0300 |
|                                                                                                                                                                  | 5.0 m  | xxxxxx0500 |
|                                                                                                                                                                  | 10.0 m | xxxxxx1000 |

Technical data

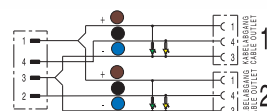
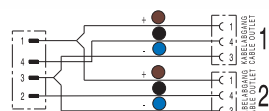
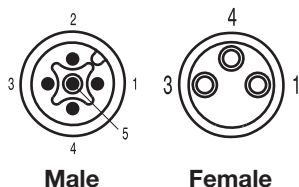
|                                         |                                        |
|-----------------------------------------|----------------------------------------|
| Rated current                           | 4 A                                    |
| Protection class                        | IP 67                                  |
| Core cross-section                      | 0.34 mm <sup>2</sup>                   |
| Contact surface                         | gold-plated                            |
| Temperature range of housing            | -25...+85 °C                           |
| Rated voltage                           | 250 V (3- and 4-pole) / 125 V (5-pole) |
| (acc. to VDE standard 0110 ISO group C) |                                        |

Chapter W includes additional technical specifications for the cable

Dimensioned drawing



**Twin cabling**  
**M12 to M8**



**Ordering data**

| Male straight - 2 females straight |       |
|------------------------------------|-------|
| PUR                                | 1.5 m |
| PUR halogen-free yellow            | 1.5 m |
| Male straight - 2 females angled   |       |
| PUR                                | 1.5 m |
| PUR halogen-free yellow            | 1.5 m |
| <b>Note</b>                        |       |

| Type                      | Order No.         |
|---------------------------|-------------------|
| SAIL-ZW-M8BG-3-1.5U       | <b>9457490150</b> |
| SAIL-ZW-M8BG-3-1.5QGE     | <b>1093250150</b> |
| Other versions on request |                   |

| Type                      | Order No.         |
|---------------------------|-------------------|
| SAIL-ZW-M8BW-3-1.5U       | <b>1964300150</b> |
| SAIL-ZW-M8BW-3-1.5QGE     | <b>1093260150</b> |
| Other versions on request |                   |

| Type                      | Order No.         |
|---------------------------|-------------------|
| SAIL-ZW-M8BW-3L1.5U       | <b>9457410150</b> |
| Other versions on request |                   |

**Standard cable lengths**

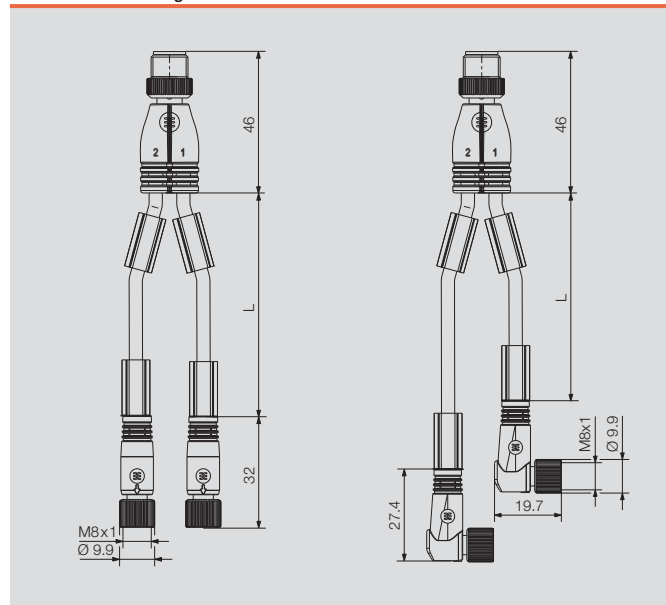
|                                                                                                                                                                  |        |            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------|
| All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths. | 1.5 m  | xxxxxx0150 |
|                                                                                                                                                                  | 3.0 m  | xxxxxx0300 |
|                                                                                                                                                                  | 5.0 m  | xxxxxx0500 |
|                                                                                                                                                                  | 10.0 m | xxxxxx1000 |

**Technical data**

|                                         |                               |
|-----------------------------------------|-------------------------------|
| Rated current                           | 4 A                           |
| Protection class                        | IP 67                         |
| Core cross-section                      | 0.25 mm <sup>2</sup>          |
| Contact surface                         | gold-plated                   |
| Temperature range of housing            | -25...+85 °C                  |
| Rated voltage                           | 60 V (3-pole) / 30 V (4-pole) |
| (acc. to VDE standard 0110 ISO group C) |                               |

Chapter W includes additional technical specifications for the cable

**Dimensioned drawing**

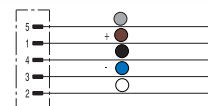
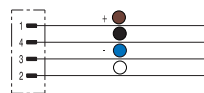
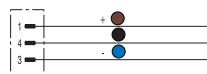
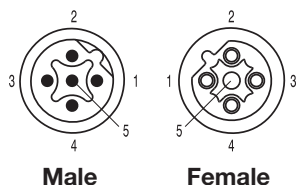


## B-coded M12 cables



Connector coding is very important whenever the potential for damage exists when connectors are incorrectly plugged together. This risk is particularly high when you are working with different voltages in your facility and these voltages must be plugged in. For example, it is not unusual to connect 110 or 230 V with a M12 plug-in connector. However if a 24 V electric potential is connected with a 110 or 230 V line, it will inevitably lead to destructive results. B-coding has been introduced for such cases. B-coded connectors are shaped so that they can not be fitted together unless extreme force is used. This coding makes it safe to use the standard M12 connector system in a single machine for different voltages which may exceed 24 V. For the SAI Active Universal System, the power plug is A-coded since it only provides 24 V. The Profibus DP also takes advantage of this coding scheme. It is currently the only bus system using B-coded M12 plugs for IP67-protected connections. In this case, special approved bulk stock cable is used instead of the power cables.

**M12 one end without connector unshielded B-coded**



**Ordering data**

|                         |       |
|-------------------------|-------|
| <b>Male, straight</b>   |       |
| PUR halogen-free        | 1.5 m |
| <b>Male, angled</b>     |       |
| PUR halogen-free        | 1.5 m |
| <b>Female, straight</b> |       |
| PUR halogen-free        | 1.5 m |
| <b>Female, angled</b>   |       |
| PUR halogen-free        | 1.5 m |
| <b>Note</b>             |       |

**3-pole**

| Type               | Order No.  |
|--------------------|------------|
| SAIL-M12G-3B-1.5Q  | 1057770150 |
| SAIL-M12W-3B-1.5Q  | 1057800150 |
| SAIL-M12BG-3B-1.5Q | 1057740150 |
| SAIL-M12BW-3B-1.5Q | 1061890150 |

**4-pole**

| Type               | Order No.  |
|--------------------|------------|
| SAIL-M12G-4B-1.5Q  | 1057780150 |
| SAIL-M12W-4B-1.5Q  | 1057810150 |
| SAIL-M12BG-4B-1.5Q | 1057750150 |
| SAIL-M12BW-4B-1.5Q | 1061900150 |

**5-pole**

| Type               | Order No.  |
|--------------------|------------|
| SAIL-M12G-5B-1.5Q  | 1057790150 |
| SAIL-M12W-5B-1.5Q  | 1057820150 |
| SAIL-M12BG-5B-1.5Q | 1061880150 |
| SAIL-M12BW-5B-1.5Q | 1057760150 |

**Standard cable lengths**

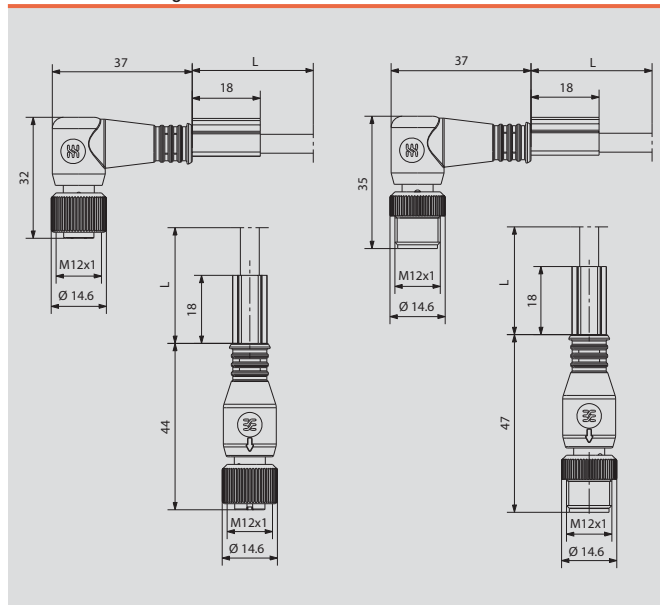
|                                                                                                                                                                  |        |            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------|
| All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths. | 1.5 m  | xxxxxx0150 |
|                                                                                                                                                                  | 3.0 m  | xxxxxx0300 |
|                                                                                                                                                                  | 5.0 m  | xxxxxx0500 |
|                                                                                                                                                                  | 10.0 m | xxxxxx1000 |

**Technical data**

|                                         |                                        |
|-----------------------------------------|----------------------------------------|
| Rated current                           | 4 A                                    |
| Protection class                        | IP 67                                  |
| Core cross-section                      | 0.34 mm <sup>2</sup>                   |
| Contact surface                         | gold-plated                            |
| Temperature range of housing            | -25...+85 °C                           |
| Rated voltage                           | 250 V (3- and 4-pole) / 125 V (5-pole) |
| (acc. to VDE standard 0110 ISO group C) |                                        |

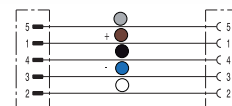
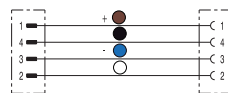
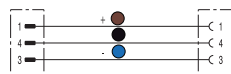
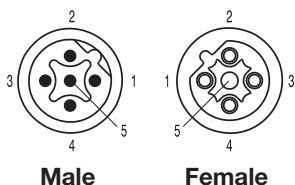
Chapter W includes additional technical specifications for the cable

**Dimensioned drawing**



Power cables

M12 connecting cable  
unshielded  
B-coded



Ordering data

|                                          |       |
|------------------------------------------|-------|
| <b>Male, straight - Female, straight</b> |       |
| PUR halogen-free                         | 1.5 m |
| <b>Male, straight - Female, angled</b>   |       |
| PUR halogen-free                         | 1.5 m |
| <b>Male, angled - Female, angled</b>     |       |
| PUR halogen-free                         | 1.5 m |
| <b>Male, angled - Female, straight</b>   |       |
| PUR halogen-free                         | 1.5 m |
| <b>Note</b>                              |       |

3-pole

| Type                      | Order No.  |
|---------------------------|------------|
| SAIL-M12GM12G-3B-1.5Q     | 1057830150 |
| SAIL-M12GM12W-3B-1.5Q     | 1057900150 |
| SAIL-M12WM12W-3B-1.5Q     | 1061910150 |
| SAIL-M12WM12G-3B-1.5Q     | 1057870150 |
| Other versions on request |            |

4-pole

| Type                      | Order No.  |
|---------------------------|------------|
| SAIL-M12GM12G-4B-1.5Q     | 1057840150 |
| SAIL-M12GM12W-4B-1.5Q     | 1057910150 |
| SAIL-M12WM12W-4B-1.5Q     | 1061920150 |
| SAIL-M12WM12G-4B-1.5Q     | 1057880150 |
| Other versions on request |            |

5-pole

| Type                      | Order No.  |
|---------------------------|------------|
| SAIL-M12GM12G-5B-1.5Q     | 1057850150 |
| SAIL-M12GM12W-5B-1.5Q     | 1057920150 |
| SAIL-M12WM12W-5B-1.5Q     | 1061930150 |
| SAIL-M12WM12G-5B-1.5Q     | 1057890150 |
| Other versions on request |            |

Standard cable lengths

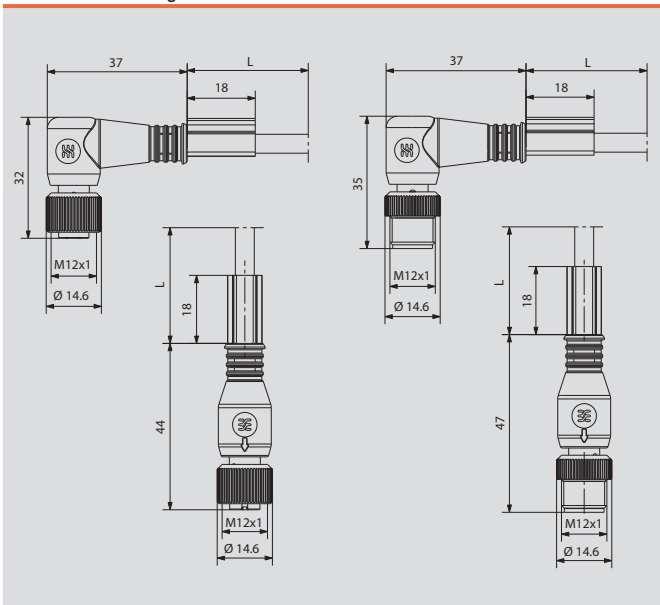
|                                                                                                                                                                  |        |            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------|
| All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths. | 1.5 m  | xxxxxx0150 |
|                                                                                                                                                                  | 3.0 m  | xxxxxx0300 |
|                                                                                                                                                                  | 5.0 m  | xxxxxx0500 |
|                                                                                                                                                                  | 10.0 m | xxxxxx1000 |

Technical data

|                                         |                                        |
|-----------------------------------------|----------------------------------------|
| Rated current                           | 4 A                                    |
| Protection class                        | IP 67                                  |
| Core cross-section                      | 0.34 mm <sup>2</sup>                   |
| Contact surface                         | gold-plated                            |
| Temperature range of housing            | -25...+85 °C                           |
| Rated voltage                           | 250 V (3- and 4-pole) / 125 V (5-pole) |
| (acc. to VDE standard 0110 ISO group C) |                                        |

Chapter W includes additional technical specifications for the cable

Dimensioned drawing



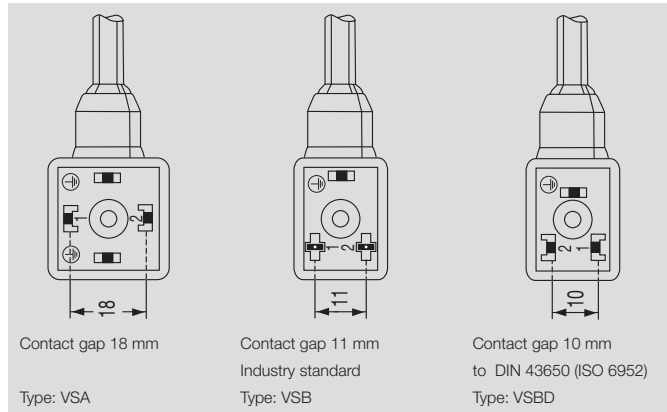


# Valve plug, ISO 4400

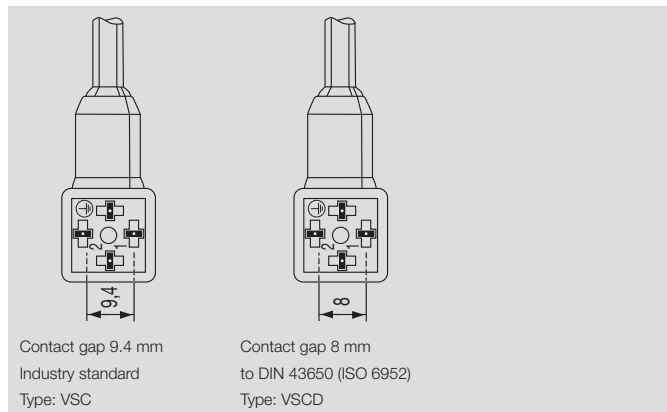


**Valve plug Type A**

**Valve plug Type B**



**Valve plug Type C**



Machine builders frequently need different cable lengths for valve plugs. Valve plugs with free cable ends can be used to adjust the cable exactly to the lengths required.

Weidmüller can of course also supply valve plugs as connecting cables with M12 plugs.

The status of the valve plug is shown by an LED. Every valve plug is fitted with a protective circuit.

The Weidmüller range includes valve plugs of type A, B and C to DIN and industry standards.

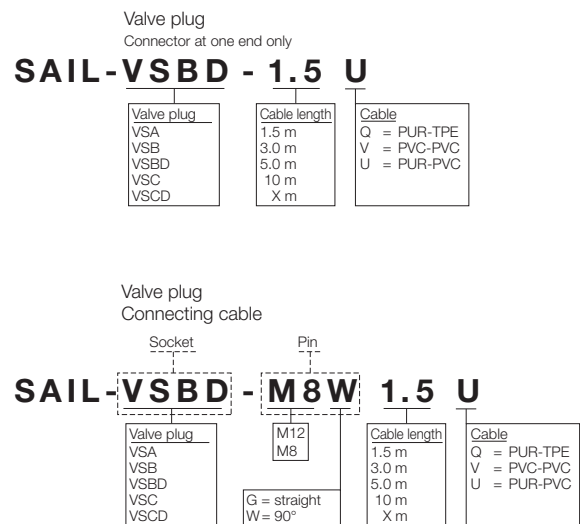
Weidmüller plugs comply with IP67 ingress protection class when plugged in.

The outgoing direction is also crucial. Weidmüller can supply 0° versions, i.e. the outgoing direction of the cable is at the PE contact.

## Types

| Type                     | Contact gap |
|--------------------------|-------------|
| Type A                   | 18 mm       |
| Type B industry standard | 11 mm       |
| Type B DIN               | 10 mm       |
| Type C industry standard | 9.4 mm      |
| Type C DIN               | 8.0 mm      |

## Example of designation



Design A



B

Ordering data

|                             |       |
|-----------------------------|-------|
| Open cable end - valve plug | 1.5 m |
| Male straight - valve plug  | 1.5 m |
| Male angled - valve plug    | 1.5 m |
| Note                        |       |

| A                         |            |
|---------------------------|------------|
| Type                      | Order No.  |
| SAIL-VSA-1.5U             | 9457710150 |
| SAIL-VSA-M12G-1.5U        | 9457040000 |
| SAIL-VSA-M12W-1.5U        | 1857690150 |
| Other versions on request |            |

|  |  |  |
|--|--|--|
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|  |  |  |
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|  |  |  |
|  |  |  |
|  |  |  |

Standard cable lengths

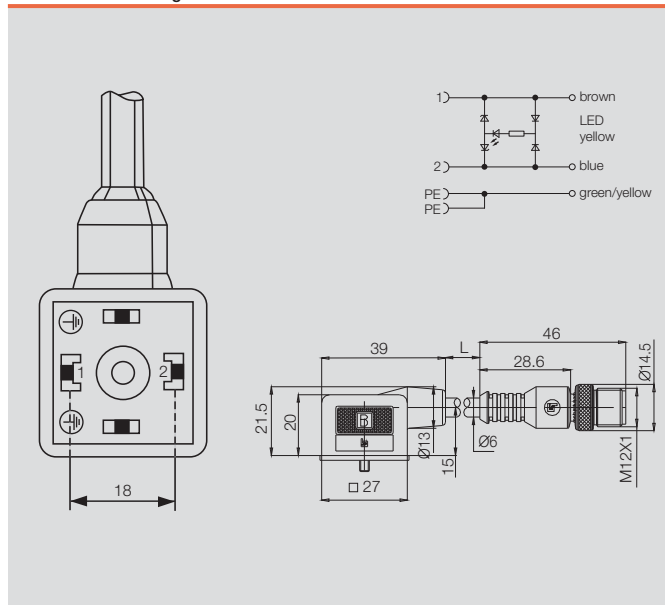
|                                                                                                                                                             |        |            |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------|
| All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed to order other standard cable lengths. | 1.5 m  | xxxxxx0150 |
|                                                                                                                                                             | 3.0 m  | xxxxxx0300 |
|                                                                                                                                                             | 5.0 m  | xxxxxx0500 |
|                                                                                                                                                             | 10.0 m | xxxxxx1000 |

Technical data

|                                         |                      |
|-----------------------------------------|----------------------|
| Sheathing colour                        | grey                 |
| Sheath material                         | PUR                  |
| Rated current                           | 4 A                  |
| Protection class                        | IP 67                |
| Core cross-section                      | 0.75 mm <sup>2</sup> |
| Contact surface                         | tinned               |
| Temperature range of housing            | -25...+85 °C         |
| Rated voltage                           | 24 V                 |
| (acc. to VDE standard 0110 ISO group C) |                      |

L in the drawing is the cable length

Dimensioned drawing



Valve cables

Design B/BD

B = Industrial standard  
 BD = DIN Standard



B

Ordering data

|                                    |       |
|------------------------------------|-------|
| <b>Open cable end - valve plug</b> | 1.5 m |
| <b>Male straight - valve plug</b>  | 1.5 m |
| <b>Male angled - valve plug</b>    | 1.5 m |
| <b>Note</b>                        |       |

B

| Type                      | Order No.  |
|---------------------------|------------|
| SAIL-VSB-1.5U             | 9457930150 |
| SAIL-VSB-M12G-1.5U        | 9457680150 |
| SAIL-VSB-M12W-1.5U        | 1857700150 |
| Other versions on request |            |

BD

| Type                      | Order No.  |
|---------------------------|------------|
| SAIL-VSBD-1,5U            | 9456070150 |
| SAIL-VSBD-M12G-1.5U       | 9457780150 |
| SAIL-VSBD-M12W-1.5U       | 1857710150 |
| Other versions on request |            |

Standard cable lengths

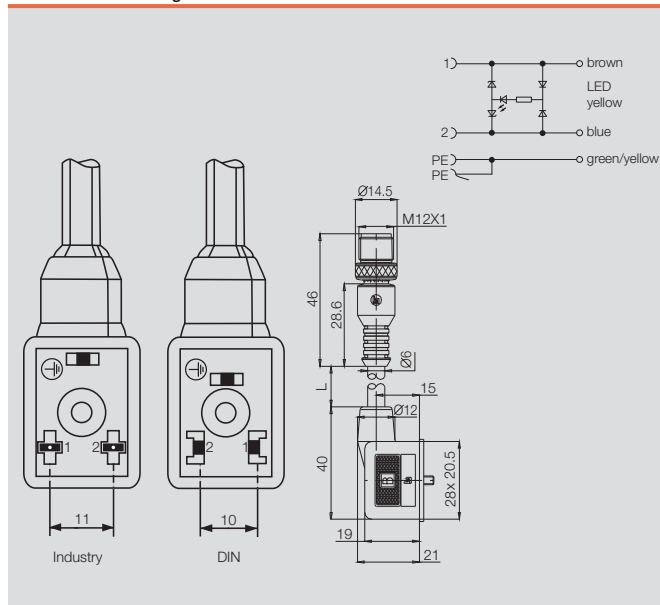
|                                                                                                                                                             |        |            |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------|
| All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed to order other standard cable lengths. | 1.5 m  | xxxxxx0150 |
|                                                                                                                                                             | 3.0 m  | xxxxxx0300 |
|                                                                                                                                                             | 5.0 m  | xxxxxx0500 |
|                                                                                                                                                             | 10.0 m | xxxxxx1000 |

Technical data

|                                         |                      |
|-----------------------------------------|----------------------|
| Sheathing colour                        | grey                 |
| Sheath material                         | PUR                  |
| Rated current                           | 4 A                  |
| Protection class                        | IP 67                |
| Core cross-section                      | 0.75 mm <sup>2</sup> |
| Contact surface                         | tinned               |
| Temperature range of housing            | -25...+85 °C         |
| Rated voltage                           | 24 V                 |
| (acc. to VDE standard 0110 ISO group C) |                      |

L in the drawing is the cable length

Dimensioned drawing



**Design C/CD**

C = Industrial standard  
 CD = DIN Standard



**Ordering data**

|                                    |       |
|------------------------------------|-------|
| <b>Open cable end - valve plug</b> | 1.5 m |
| <b>Male straight - valve plug</b>  | 1.5 m |
| <b>Male angled - valve plug</b>    | 1.5 m |
| <b>Note</b>                        |       |

| C                         |            |
|---------------------------|------------|
| Type                      | Order No.  |
| SAIL-VSC-1.5U             | 9457920150 |
| SAIL-VSC-M12G-1.5U        | 9457400150 |
| SAIL-VSC-M12W-1.5U        | 1857720150 |
| Other versions on request |            |

| CD                        |            |
|---------------------------|------------|
| Type                      | Order No.  |
| SAIL-VSCD-1.5U            | 9456240150 |
| SAIL-VSCD-M12G-1.5U       | 9456170150 |
| SAIL-VSCD-M12W-1.5U       | 1857730150 |
| Other versions on request |            |

**Standard cable lengths**

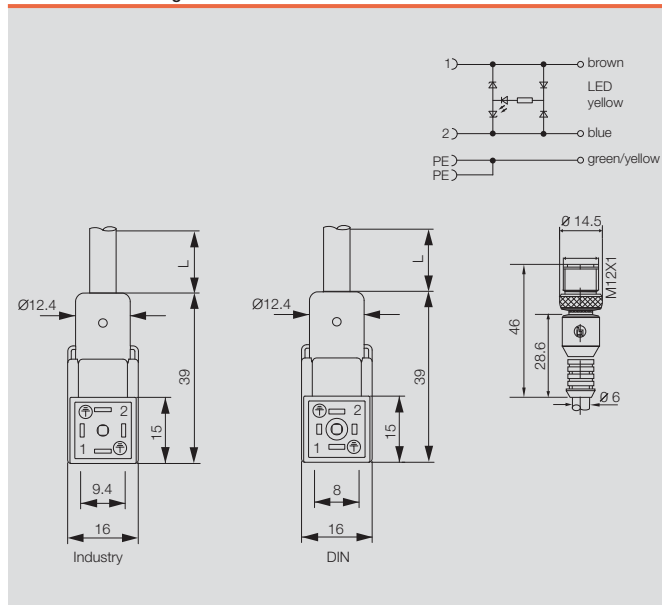
|                                                                                                                                                             |        |            |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------|
| All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed to order other standard cable lengths. | 1.5 m  | xxxxxx0150 |
|                                                                                                                                                             | 3.0 m  | xxxxxx0300 |
|                                                                                                                                                             | 5.0 m  | xxxxxx0500 |
|                                                                                                                                                             | 10.0 m | xxxxxx1000 |

**Technical data**

|                                         |                     |
|-----------------------------------------|---------------------|
| Sheathing colour                        | grey                |
| Sheath material                         | PUR                 |
| Rated current                           | 4 A                 |
| Protection class                        | IP 67               |
| Core cross-section                      | 0.5 mm <sup>2</sup> |
| Contact surface                         | tinned              |
| Temperature range of housing            | -25...+85 °C        |
| Rated voltage                           | 24 V                |
| (acc. to VDE standard 0110 ISO group C) |                     |

L in the drawing is the cable length

**Dimensioned drawing**



# Introduction

## Type A



When building special machines, individual cable lengths are frequently required which are then joined directly to Weidmüller's IDC distributors. Our product portfolio of course contains a corresponding valve plug for such applications.

## Type B



This valve plug has a transparent enclosure with integral seal. In addition, a protective sleeve can be slipped over the cable to protect the connected line. The connection cross-section is 0.5 mm<sup>2</sup> for direct connection to our SAI IDC distributor. The status of the valve plug is indicated by an LED. All valve plugs are fitted with protective circuits.

## Type C

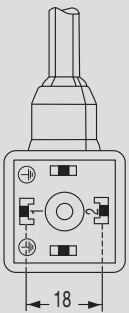


The Weidmüller range includes valve plug forms A, B and C to DIN and industry standards. The plug conforms to ingress protection class IP 67 when plugged in.

### Type

| Type                     | Contact gap |
|--------------------------|-------------|
| Type A                   | 18 mm       |
| Type B industry standard | 11 mm       |
| Type B DIN               | 10 mm       |
| Type C industry standard | 9.4 mm      |
| Type C DIN               | 8.0 mm      |

### Valve plug Type A



Contact gap 18 mm

Type VSA

### Valve plug Type B



Contact gap 11 mm industry standard

Type VSB



Contact gap 10 mm to DIN 43650 (ISO 6952)

Type VSBD

### Valve plug Type C



Contact gap 9.4 mm industry standard

Type VSC



Contact gap 8 mm to DIN 43650 (ISO 6952)

Type VSCD

**Design A**

Suitable for IDC plug-in connectors and protective hose connection



**B**

**Ordering data**

|                                    |       |
|------------------------------------|-------|
| <b>Open cable end - valve plug</b> | 1.5 m |
| <b>Note</b>                        |       |

**A**

|                                  |                  |
|----------------------------------|------------------|
| <b>Type</b>                      | <b>Order No.</b> |
| SAIL-VSA-1.5U(0.5)               | 1845120150       |
| Supplied without protective hose |                  |

**Standard cable lengths**

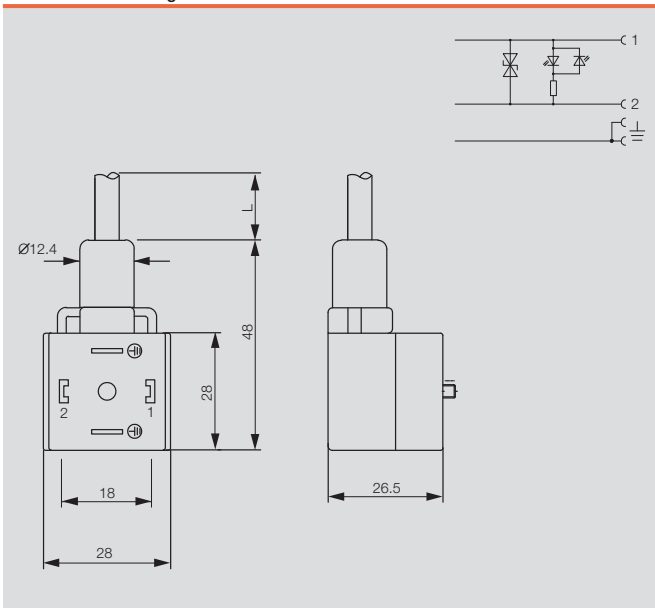
|                                                                                                                                                             |        |            |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------|
| All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed to order other standard cable lengths. | 1.5 m  | xxxxxx0150 |
|                                                                                                                                                             | 3.0 m  | xxxxxx0300 |
|                                                                                                                                                             | 5.0 m  | xxxxxx0500 |
|                                                                                                                                                             | 10.0 m | xxxxxx1000 |

**Technical data**

|                                         |                     |
|-----------------------------------------|---------------------|
| Sheathing colour                        | black               |
| Sheath material                         | PUR                 |
| Rated current                           | 4 A                 |
| Protection class                        | IP 67               |
| Core cross-section                      | 0.5 mm <sup>2</sup> |
| Contact surface                         | tinned              |
| Temperature range of housing            | -25...+85 °C        |
| Rated voltage                           | 24 V                |
| (acc. to VDE standard 0110 ISO group C) |                     |

L in the drawing is the cable length

**Dimensioned drawing**



Valve cables

Design B/BD

B = industry standard  
 BD = DIN standard

Suitable for IDC  
 plug-in connectors and protective  
 hose connection



B

Ordering data

|                             |       |
|-----------------------------|-------|
| Open cable end - valve plug | 1.5 m |
| Note                        |       |

B

| Type                             | Order No.  |
|----------------------------------|------------|
| SAIL-VSB-1.5U(0.5)               | 1845140150 |
| Supplied without protective hose |            |

BD

| Type                             | Order No.  |
|----------------------------------|------------|
| SAIL-VSBD-1.5U(0.5)              | 1845160150 |
| Supplied without protective hose |            |

Standard cable lengths

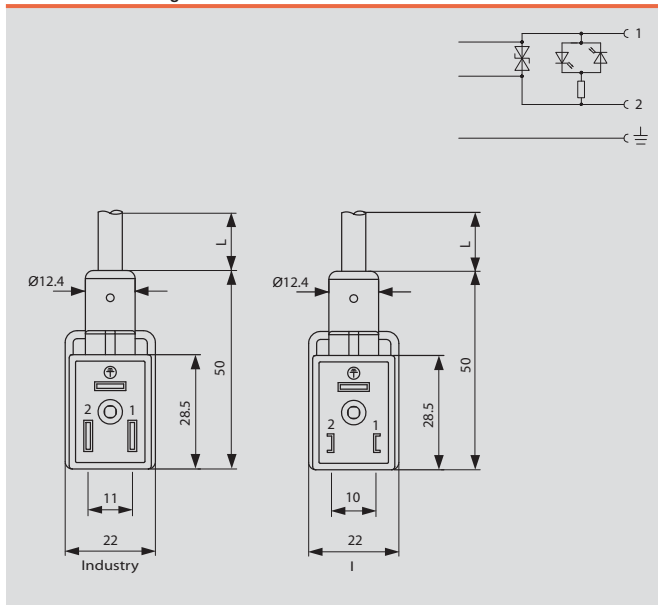
|                                                                                                                                                             |        |            |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------|
| All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed to order other standard cable lengths. | 1.5 m  | xxxxxx0150 |
|                                                                                                                                                             | 3.0 m  | xxxxxx0300 |
|                                                                                                                                                             | 5.0 m  | xxxxxx0500 |
|                                                                                                                                                             | 10.0 m | xxxxxx1000 |

Technical data

|                                         |                     |
|-----------------------------------------|---------------------|
| Sheathing colour                        | black               |
| Sheath material                         | PUR                 |
| Rated current                           | 4 A                 |
| Protection class                        | IP 67               |
| Core cross-section                      | 0.5 mm <sup>2</sup> |
| Contact surface                         | tinned              |
| Temperature range of housing            | -25...+85 °C        |
| Rated voltage                           | 24 V                |
| (acc. to VDE standard 0110 ISO group C) |                     |

L in the drawing is the cable length

Dimensioned drawing



## Cables 3, 4, 5 poles



Weidmüller can provide the following types of cables for connecting sensors and actuators:

- The outer sheathing of the cables is made from polyurethane and the inner stranded wires have PVC insulation.
- They are available with 3, 4 and 5 poles.
- In addition, the cables are also available with PVC outer sheathing and PVC insulation internally.

B

### Ordering data

| PUR                                  | Qty.  | Order No.  |
|--------------------------------------|-------|------------|
| SAIH-SLL-3x0.34mm <sup>2</sup> (PUR) | 100 m | 1902110000 |
| SAIH-SLL-4x0.25mm <sup>2</sup> (PUR) | 100 m | 1902120000 |
| SAIH-SLL-4x0.34mm <sup>2</sup> (PUR) | 100 m | 1902130000 |
| SAIH-SLL-3x0.25mm <sup>2</sup> (PUR) | 100 m | 1902140000 |
| SAIH-SLL-5x0.25mm <sup>2</sup> (PUR) | 100 m | 1902100000 |
| <b>PUR halogen-free</b>              |       |            |
| SAIH-SLL-3x0.34mm <sup>2</sup> (TPE) | 100 m | 1022940000 |
| SAIH-SLL-4x0.34mm <sup>2</sup> (TPE) | 100 m | 1022950000 |
| SAIH-SLL-5x0.34mm <sup>2</sup> (TPE) | 100 m | 1022960000 |
| SAIH-SLL-3x0.25mm <sup>2</sup> (TPE) | 100 m | 1022970000 |
| SAIH-SLL-4x0.25mm <sup>2</sup> (TPE) | 100 m | 1022980000 |
| <b>PVC</b>                           |       |            |
| SAIH-SLL-3x0.34mm <sup>2</sup> (PVC) | 100 m | 1902160000 |
| SAIH-SLL-4x0.25mm <sup>2</sup> (PVC) | 100 m | 1902170000 |
| SAIH-SLL-4x0.34mm <sup>2</sup> (PVC) | 100 m | 1902180000 |
| SAIH-SLL-3x0.25mm <sup>2</sup> (PVC) | 100 m | 1902190000 |
| SAIH-SLL-5x0.25mm <sup>2</sup> (PVC) | 100 m | 1902150000 |
| <b>Information</b>                   |       |            |

### Technical data

|               |                 |               |
|---------------|-----------------|---------------|
| Colour        |                 | black         |
| Cross-section | mm <sup>2</sup> | 0.25 ... 0.34 |
| Qty.          |                 | 100 Meter     |

### Information

## Bus cables



Owing to their easy assembly and adaptability, Weidmüller distributors have become very popular among machine manufacturers. For such applications, Weidmüller can also supply corresponding bus cables for custom assembly.

The bus cables are available in three different versions. All bus cables are suitable for moving cable carriers and are available by the metre. All three trunk cables can be ordered in individual lengths. A typical order quantity is a 500 metre drum. The colour coding of wires conforms to the standard in mechanical engineering.

The connection hoods of the M12 SAI distributors are always fitted with the same terminals so that only one type of cable is required.

### Advantages of bus cables supplied by the metre:

- Special lengths for bus cables
- No cable waste
- No storage space required for different cable lengths
- Bulk stock will be cut to desired length.

### Ordering data

| Type                          | Qty. | Order No.  |
|-------------------------------|------|------------|
| SAIH-SLL 3 x 0.75 – 16 x 0.34 | 1 m  | 9457560000 |
| SAIH-SLL 5 x 0.75 – 16 x 0.34 | 1 m  | 9457970000 |
| SAIH-SLL 3 x 0.75 – 8 x 0.34  | 1 m  | 9457420000 |

# Fieldbus, data cables and accessories

|                                              |                                                         |       |
|----------------------------------------------|---------------------------------------------------------|-------|
| <b>Fieldbus, data cables and accessories</b> | Introduction                                            | C.2   |
|                                              | Fieldbus distributor - Overview                         | C.4   |
|                                              | PROFIBUS-DP - cables                                    | C.6   |
|                                              | PROFIBUS-DP - connectors (M12, Sub-D)                   | C. 10 |
|                                              | PROFIBUS-DP - FBCon T-distributor                       | C. 22 |
|                                              | PROFIBUS-PA - cables                                    | C. 26 |
|                                              | PROFIBUS PA - connectors                                | C. 31 |
|                                              | PROFIBUS-PA - FBCon T-distributor                       | C. 34 |
|                                              | PROFIBUS-PA - FBCon T-distributor with surge protection | C. 40 |
|                                              | PROFIBUS-PA - FBCon T-distributor ATEX Ex(ia)           | C. 50 |
|                                              | CANopen & DeviceNet™ - cables (M12, M8)                 | C. 58 |
|                                              | CANopen & DeviceNet™ - connectors                       | C. 63 |
|                                              | ASI - Cables                                            | C. 64 |
|                                              | ASI - T-piece                                           | C. 65 |
|                                              | Ethernet cables                                         | C. 66 |
|                                              | Ethernet plug-in connector                              | C. 70 |
|                                              | FOUNDATION Fieldbus - connector (7/8")                  | C. 72 |
|                                              | Accessories cable glands                                | C. 73 |

# Bus cables

The bus system lies at the heart of automation engineering. High quality products are essential here if you hope to achieve long term, smooth functionality.

It's not only the slaves and controllers that play a significant role; the type of cables and connection mechanisms in use are also very important. The Weidmüller bus cables are the perfect solution here. The products which we manufacture ourselves (used, for example, in the Profibus, industrial Ethernet and CANopen/DeviceNet sectors) have a 360 degree shielding

within the moulding. This provides effective protection for signal and data transmission.

Delivery times are another decisive factor. Our special production strategy allows us to quickly manufacture parts that are customised to a specific order. We have a dedicated department that is focussed on this strategy and located near the Detmold central warehouse in order to keep delivery times to a minimum.



Bus cables: shown here in the standard colours:

blue (Profibus-PA Ex i), black (CANopen/DeviceNet or Profibus-PA), magenta (Profibus-DP) and green (industrial Ethernet) together with the sensor cables



Cables



M12 plug-in connector



Sub-D connector



FBCon T-distributor

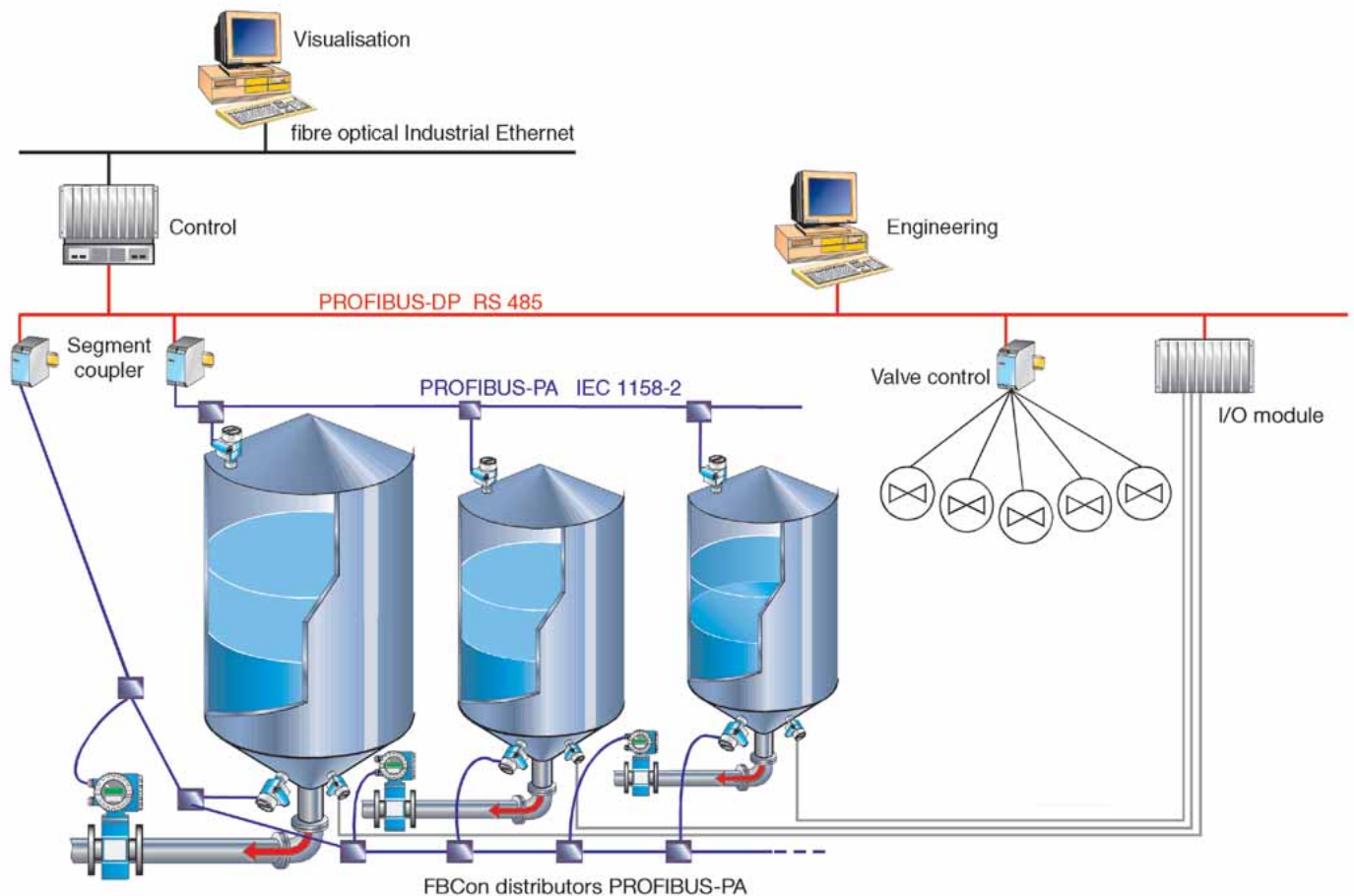
# System description, fieldbus components

FBCon fieldbus distributors are available in industrial and Ex(ia) versions. They are used for coupling 1- 8field devices or sensors. The connection is made via spur. The spur is connected by an M12 plug in connector or directly via an EMC cable gland. The communication and device powering is handled by a common 2-core wire.

The distributors offer the following features irrespective of the version:

- Tension clamp connection technology
- Surge protection for the main line
- Current limiter for each stub line
- EMC cable gland
- M12 plug in connectors
- External earth stud
- Interruption-free bus operation
- Industrial specification
- Bus termination integrated (non EX)
- ⚠ ATEX version
- Pressure equalising element
- IP65, IP66, IP67 Ingress protection class
- Stainless steel versions
- PROFIBUS-PA compatible

## Typical PROFIBUS system layout



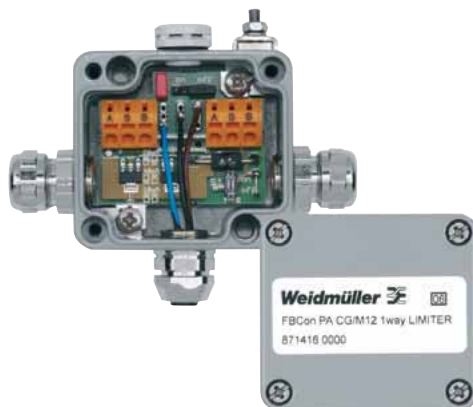
# Product coding

The FBCon family of distributors includes various forms. The product name indicates the respective features as follows:

|         |                                                                                                                                 |
|---------|---------------------------------------------------------------------------------------------------------------------------------|
| FBCon   | Field Bus Connection                                                                                                            |
| PA      | PROFIBUS-PA Process Automation                                                                                                  |
| DP      | PROFIBUS-DP Decentralised Periphery                                                                                             |
| SS      | Stainless Steel                                                                                                                 |
| CG      | Stainless steel cable gland on stainless steel housing. On standard aluminium housings, the cable gland is nickel-plated brass. |
| PCG     | Plastic Cable Gland                                                                                                             |
| CG/M12  | M12 plug-in connector for the stub cables and cable gland for the trunk cable                                                   |
| 1way    | Number of outgoing stub lines                                                                                                   |
| Limiter | Current limiter: protects the PROFIBUS-PA network in the event of an overload in the stub line                                  |
| OVP     | Surge protection: protects the system in the event of a voltage surge                                                           |
| EX      | Approved for potentially explosive areas                                                                                        |
| ATEX    | For explosive atmospheres                                                                                                       |

The standard distributors are grey. The Ex approved distributors are painted blue.

PROFIBUS-PA distributors are generally equipped with a switch in terminating resistor. In potentially explosive areas, the terminating resistor is manufactured with a separate box. This must be used instead of the right-hand cable gland. In the case of PROFIBUS-DP, an additional external 24 V DC power supply is required. This makes the terminator independent of the last station in the network.



**FBCon PA CG/M12 1way Limiter**



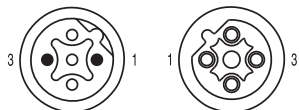
**FBCon SS PCG 1way**



**FBCon PA CG 1way Ex**

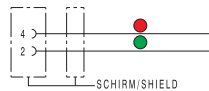
PROFIBUS-DP cables  
one end without connector

Fieldbus, data cables  
and accessories



Male

Female



C

Ordering data

| Male, straight            |       |
|---------------------------|-------|
| PUR/TPE                   | 1.5 m |
| PVC/PVC                   | 1.5 m |
| Male, angled              |       |
| PUR/TPE                   | 1.5 m |
| PVC/PVC                   | 1.5 m |
| Female, straight          |       |
| PUR/TPE                   | 1.5 m |
| PVC/PVC                   | 1.5 m |
| Female, angled            |       |
| PUR/TPE                   | 1.5 m |
| PVC/PVC                   | 1.5 m |
| Note                      |       |
| Other versions on request |       |

2-pole

| Type                      | Order No.  |
|---------------------------|------------|
| SAIL-M12G-PB-1.5D         | 1873300150 |
| SAIL-M12G-PB-1.5E         | 1058530150 |
| SAIL-M12W-PB-1.5D         | 1061970150 |
| SAIL-M12W-PB-1.5E         | 1062340150 |
| SAIL-M12BG-PB-1.5D        | 1873320150 |
| SAIL-M12BG-PB-1.5E        | 1058540150 |
| SAIL-M12BW-PB-1.5D        | 1062300150 |
| SAIL-M12BW-PB-1.5E        | 1062370150 |
| Other versions on request |            |

Standard cable lengths

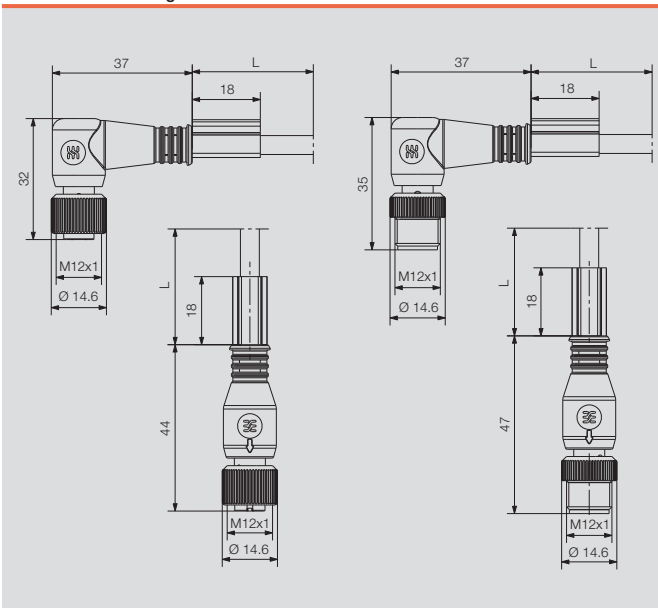
|                                                                                                                                                                  |        |            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------|
| All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths. | 1.5 m  | xxxxxx0150 |
|                                                                                                                                                                  | 3.0 m  | xxxxxx0300 |
|                                                                                                                                                                  | 5.0 m  | xxxxxx0500 |
|                                                                                                                                                                  | 10.0 m | xxxxxx1000 |

Technical data

|                              |                      |
|------------------------------|----------------------|
| Sheathing colour             | magenta (RAL 4008)   |
| Protection class             | IP 67                |
| Core cross-section           | 0.34 mm <sup>2</sup> |
| Contact surface              | gold-plated          |
| Temperature range of housing | -25...+85 °C         |

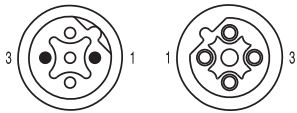
Chapter W includes additional technical specifications for the cable

Dimensioned drawing



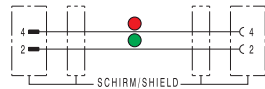
**PROFIBUS-DP cables**

**Connecting cables**



Male

Female



**Ordering data**

| Male, straight - Female, straight |       |
|-----------------------------------|-------|
| PUR/TPE                           | 1.5 m |
| PVC/PVC                           | 1.5 m |
| Male, straight - Female, angled   |       |
| PUR/TPE                           | 1.5 m |
| PVC/PVC                           | 1.5 m |
| Male, angled - Female, angled     |       |
| PUR/TPE                           | 1.5 m |
| PVC/PVC                           | 1.5 m |
| <b>Note</b>                       |       |

**2-pole**

| Type                      | Order No.  |
|---------------------------|------------|
| SAIL-M12GM12G-PB-1.5D     | 1873310150 |
| SAIL-M12GM12G-PB-1.5E     | 1058570150 |
| SAIL-M12GM12W-PB-1.5D     | 1062310150 |
| SAIL-M12GM12W-PB-1.5E     | 1062380150 |
| SAIL-M12WM12W-PB-1.5D     | 1062330150 |
| SAIL-M12WM12W-PB-1.5E     | 1062400150 |
| Other versions on request |            |

**Standard cable lengths**

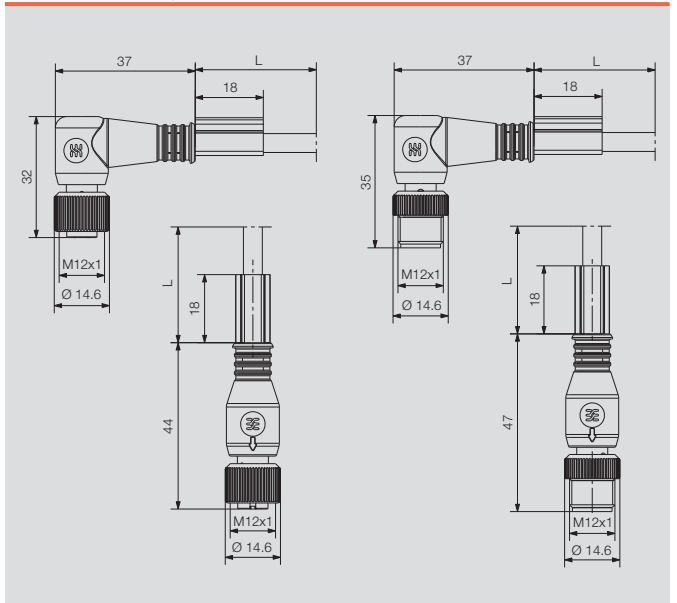
|                                                                                                                                                                  |        |            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------|
| All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths. | 1.5 m  | xxxxxx0150 |
|                                                                                                                                                                  | 3.0 m  | xxxxxx0300 |
|                                                                                                                                                                  | 5.0 m  | xxxxxx0500 |
|                                                                                                                                                                  | 10.0 m | xxxxxx1000 |

**Technical data**

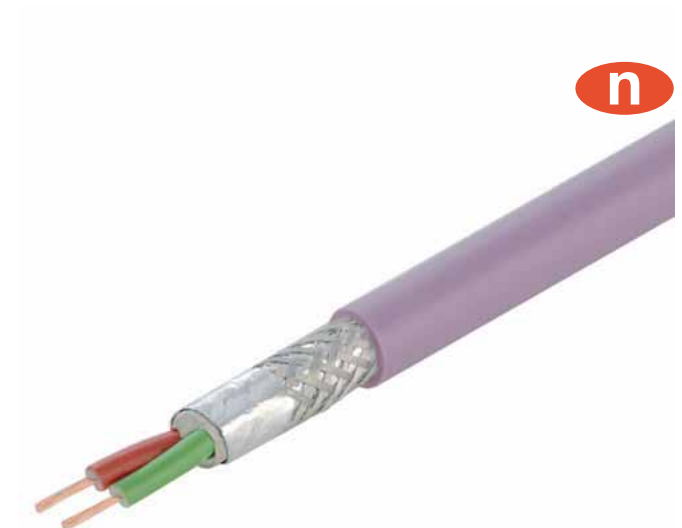
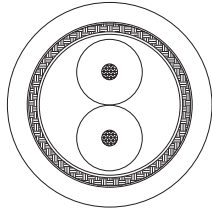
|                              |                      |
|------------------------------|----------------------|
| Sheathing colour             | magenta (RAL 4008)   |
| Protection class             | IP 67                |
| Core cross-section           | 0.34 mm <sup>2</sup> |
| Contact surface              | gold-plated          |
| Temperature range of housing | -25...+85 °C         |

Chapter W includes additional technical specifications for the cable

**Dimensioned drawing**



PROFIBUS-DP bulk lengths



n

PROFIBUS-DP bulk lengths

Ordering data

|             | Type               | Order No.  |
|-------------|--------------------|------------|
| Metre goods | SAIH-PB-2X0.24-PUR | 1232620000 |

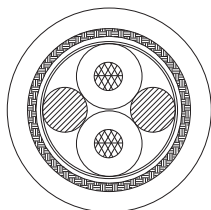
Technical data

| Electrical characteristics at 20 °C             | Requirement  | Test specifications  |
|-------------------------------------------------|--------------|----------------------|
| Conductor resistance                            |              | EN 50 289 Parts 1-2  |
| AWG 24                                          | ≤ 84.0 Ω/km  |                      |
| Insulation resistance                           | ≥ 1 GΩ • km  | EN 50 289 Parts 1-4  |
| Operational capacity                            | A/A          | EN 50 289 Parts 1-5  |
| at 800 Hz                                       | ≤ 35 nF/km   |                      |
| Capacitive earth coupling                       |              | EN 50 289 Parts 1-5  |
| at 800 Hz                                       | < 1500 pF/km |                      |
| Characteristic impedance                        |              | EN 50 289 Parts 1-11 |
| at 9.6 kHz                                      | 300 Ω (RW)   |                      |
| at 38.4 kHz                                     | (185 ± 20) Ω |                      |
| at 3-20 MHz                                     | (150 ± 15) Ω |                      |
| Conductor attenuation (nominal values)          |              | EN 50 289 Parts 1-8  |
| AWG 24                                          |              |                      |
| at 9.6 kHz                                      | 3 dB/km      |                      |
| at 38.4 kHz                                     | 5 dB/km      |                      |
| at 4 MHz                                        | 26 dB/km     |                      |
| at 16 MHz                                       | 55 dB/km     |                      |
| Test voltage (U <sub>50</sub> ) (50 Hz, 1 min.) |              | EN 50 289 Parts 1-3  |
| Wire/wire                                       | 500 V        |                      |
| Wire/shield                                     | 500 V        |                      |

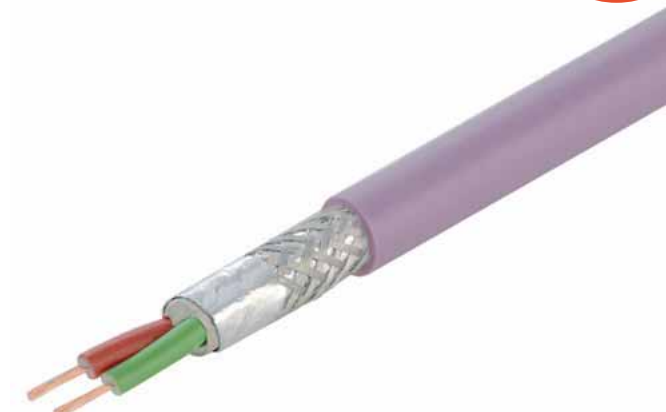
| Thermal characteristics               | Requirement      |
|---------------------------------------|------------------|
| Permitted operating temperature range |                  |
| Static usage:                         |                  |
| TPE-U sheathing                       | -40°C to +70°C   |
| Dynamic usage (routing/installation): |                  |
| TPE-U sheathing                       | -20 °C to +60 °C |

| Mechanical characteristics  | Requirement                         |
|-----------------------------|-------------------------------------|
| Max. permitted strain load: |                                     |
| Static                      | 50 N/mm <sup>2</sup>                |
| Dynamic                     | 20 N/mm <sup>2</sup>                |
| Bending radius *)           | Stranded Litz conductor<br>(AWG 24) |
| simple                      | 7.5 x d                             |
| multiple                    | 15 x d                              |

PROFIBUS-DP bulk lengths



PROFIBUS-DP bulk lengths



Fieldbus, data cables and accessories

C

Ordering data

|             |                       |                  |
|-------------|-----------------------|------------------|
|             | <b>Type</b>           | <b>Order No.</b> |
| Metre goods | SAIH-PB-2X0.34-PVC DE | 1933640000       |

Technical data

|                                               |                                                                                                              |                  |
|-----------------------------------------------|--------------------------------------------------------------------------------------------------------------|------------------|
| <b>Assembly</b>                               |                                                                                                              |                  |
| Wire                                          | Conductor: copper wire, without insulation, AWG 22, 0.64 mm Ø nominal Insulation: PE foam, 2.55 mm Ø nominal |                  |
| Pair                                          | 2 wires according to 4.1 (red, green) to pair stranded, 5.1 mm Ø nominal                                     |                  |
| Wrapping                                      | Plastic foil, 5.2 mm Ø nominal                                                                               |                  |
| Shield                                        | a) AL foil, 5.4 mm Ø nominal<br>b) Braiding tin-plated copper, coverage approx. 60 %, 6.0 mm Ø nominal       |                  |
| Outer cladding                                | PVC YM, 7.8 ±0.2 mm Ø nominal                                                                                |                  |
| <b>Electrical characteristics at 20 °C</b>    |                                                                                                              |                  |
| Conductor resistance                          | ≤ 55 Ω/km                                                                                                    |                  |
| Insulation resistance                         | ≥ 1 GΩ • km                                                                                                  |                  |
| Operational capacity                          | 30 pF/m nominal                                                                                              |                  |
| Characteristic impedance                      | 9.6 KHz (RW)                                                                                                 | 270 Ω            |
|                                               | 38.4 KHz (RW)                                                                                                | 185 Ω            |
|                                               | 3 – 20 MHz                                                                                                   | 150 ± 15 Ω       |
| Attenuation                                   | 9.6 KHz                                                                                                      | 2.2 dB/Km        |
|                                               | 38.4 KHz                                                                                                     | 3.4 dB/Km        |
|                                               | 100 KHz                                                                                                      | 4.5 dB/Km        |
|                                               | 1 MHz                                                                                                        | 11.5 dB/Km       |
|                                               | 3 MHz                                                                                                        | 18.2 dB/Km       |
|                                               | 10 MHz                                                                                                       | 33.2 dB/Km       |
| Test voltage (50 Hz, 1 min.)                  | Wire/wire                                                                                                    | 1.5 kVeff        |
|                                               | Wire/shield                                                                                                  | 1.5 kVeff        |
| <b>Mechanical and thermal characteristics</b> |                                                                                                              |                  |
| Temperature range                             | Stationary                                                                                                   | -40 °C to +70 °C |
|                                               | moving                                                                                                       |                  |
| Min. permitted bending radius                 | Once                                                                                                         | 1.5 kVeff        |
|                                               | Multiple                                                                                                     | 1.5 kVeff        |
| Max. tensile load resistance                  | Static                                                                                                       | 1.5 kVeff        |
|                                               | Dynamic                                                                                                      | 1.5 kVeff        |
| Thermal fire load (guideline value)           | good                                                                                                         |                  |

Tension clamp connection M12,  
stainless steel  
B-coded

SAIS / SAIB VA

straight



Ordering data

|        |              |
|--------|--------------|
| Male   | 5-pole, PG 9 |
| Socket | 5-pole, PG 9 |
| Note   |              |

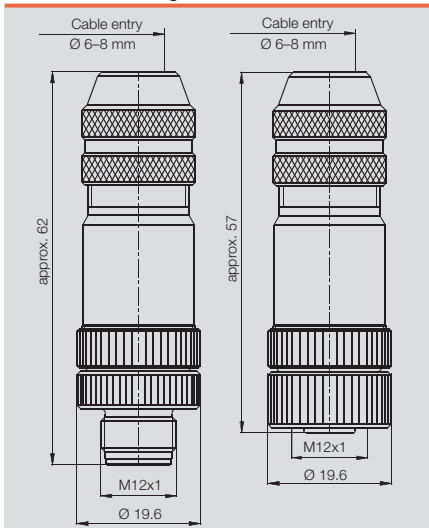
| Type              | Qty. | Order No.  |
|-------------------|------|------------|
| SAIS 5/9-VA-B-COD | 1    | 1920720000 |
| SAIB 5/9-VA-B-COD | 1    | 1920730000 |

Technical data

|                                  |                            |
|----------------------------------|----------------------------|
| Type of connection               | Tension clamp connection   |
| Housing main material            | 1.4404/316L                |
| Contact tube diameter            | M12                        |
| Cable diameter                   | 6...8 mm                   |
| Cross-section for connected wire | 0.25 - 0.5 mm <sup>2</sup> |
| Rated current                    | 4 A                        |
| Rated voltage                    | 125 V                      |
| Temperature range of housing     | -25...+85 °C               |
| Protection class                 | IP 69 k                    |
| Contact surface                  | gold-plated                |
| Note                             | PB = PROFIBUS (B-COD)      |

|                                  |                            |
|----------------------------------|----------------------------|
| Type of connection               | Tension clamp connection   |
| Housing main material            | 1.4404/316L                |
| Contact tube diameter            | M12                        |
| Cable diameter                   | 6...8 mm                   |
| Cross-section for connected wire | 0.25 - 0.5 mm <sup>2</sup> |
| Rated current                    | 4 A                        |
| Rated voltage                    | 125 V                      |
| Temperature range of housing     | -25...+85 °C               |
| Protection class                 | IP 69 k                    |
| Contact surface                  | gold-plated                |
| Note                             | PB = PROFIBUS (B-COD)      |

Dimensioned drawing



PB = PROFIBUS (B-COD)

Screw connection M12, metal (EMC)  
B-coded



SAISM / SAIBM

straight



SAISW / SAIBW

Angled



Ordering data

|        |              |
|--------|--------------|
| Male   | 5-pole, PG 9 |
| Socket | 5-pole, PG 9 |
| Note   |              |

| Type                    | Qty. | Order No.  |
|-------------------------|------|------------|
| SAISM 5/8S M12 5P B-COD | 1    | 1784790000 |
| SAIBM 5/8S M12 5P B-COD | 1    | 1784780000 |

| Type                  | Qty. | Order No.  |
|-----------------------|------|------------|
| SAISW-M-5/8 M12 B-COD | 1    | 1944570000 |
| SAIBW-M-5/8 M12 B-COD | 1    | 1944580000 |

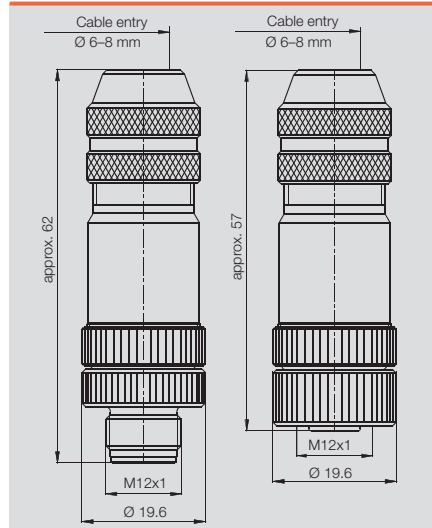
Technical data

|                                  |                             |
|----------------------------------|-----------------------------|
| Type of connection               | Screw connection            |
| Housing main material            | CuZn                        |
| Contact tube diameter            | M12                         |
| Cable diameter                   | 6...8 mm (PG9)              |
| Cross-section for connected wire | 0.14 - 0.75 mm <sup>2</sup> |
| Rated current                    | 4 A                         |
| Rated voltage                    | 125 V                       |
| Temperature range of housing     | -25...+85 °C                |
| Protection class                 | IP 67                       |
| Contact surface                  | gold-plated                 |
| Note                             |                             |

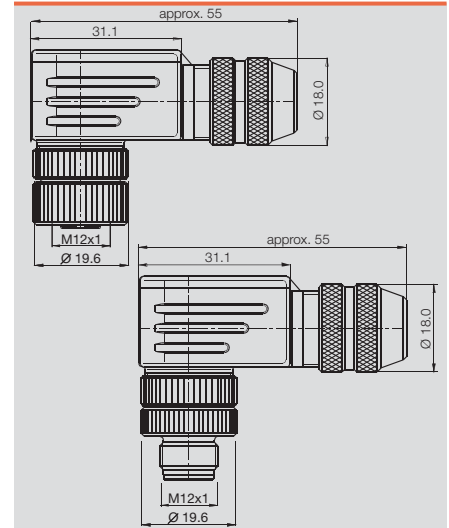
|                                  |                             |
|----------------------------------|-----------------------------|
| Type of connection               | Screw connection            |
| Housing main material            | CuZn                        |
| Contact tube diameter            | M12                         |
| Cable diameter                   | 6...8 mm (PG9)              |
| Cross-section for connected wire | 0.14 - 0.75 mm <sup>2</sup> |
| Rated current                    | 4 A                         |
| Rated voltage                    | 125 V                       |
| Temperature range of housing     | -25...+85 °C                |
| Protection class                 | IP 67                       |
| Contact surface                  | gold-plated                 |
| Note                             |                             |

|                                  |                             |
|----------------------------------|-----------------------------|
| Type of connection               | Screw connection            |
| Housing main material            | CuZn                        |
| Contact tube diameter            | M12                         |
| Cable diameter                   | 6...8 mm (PG9)              |
| Cross-section for connected wire | 0.14 - 0.75 mm <sup>2</sup> |
| Rated current                    | 4 A                         |
| Rated voltage                    | 125 V                       |
| Temperature range of housing     | -25...+85 °C                |
| Protection class                 | IP 67                       |
| Contact surface                  | gold-plated                 |
| Note                             |                             |

Dimensioned drawing



Dimensioned drawing



IDC connection  
B-coded

SAIS / SAIB

straight



Ordering data

|        |              |
|--------|--------------|
| Male   | 3-pole, PG 9 |
| Socket | 3-pole, PG 9 |
| Note   |              |

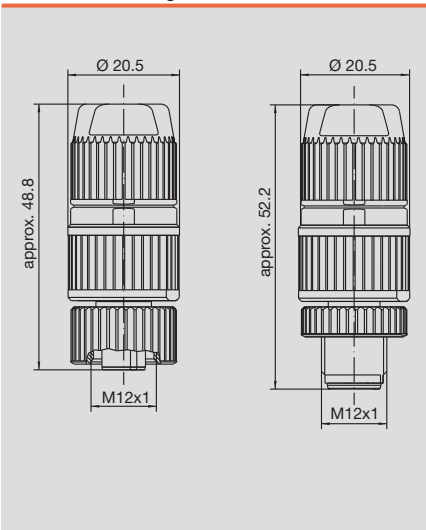
| Type                | Qty. | Order No.  |
|---------------------|------|------------|
| SAIS-3-IDC-M12B-COD | 1    | 1864730000 |
| SAIB-3-IDC-M12B-COD | 1    | 1864740000 |

Technical data

|                                  |                                                           |
|----------------------------------|-----------------------------------------------------------|
| Type of connection               | Insulation displacement connection                        |
| Housing main material            | CuZn                                                      |
| Contact tube diameter            | M12                                                       |
| Cable diameter                   | 7...8.8 mm                                                |
| Cross-section for connected wire | 0.34 - 0.75 mm <sup>2</sup>                               |
| Rated current                    | 4 A                                                       |
| Rated voltage                    | 32 V                                                      |
| Temperature range of housing     | -25...+85 °C                                              |
| Protection class                 | IP 67                                                     |
| Contact surface                  | tinned                                                    |
| Note                             | PB = PROFIBUS (B-COD)<br>IE = Industrial Ethernet (D-COD) |

|                                  |                                                           |
|----------------------------------|-----------------------------------------------------------|
| Type of connection               | Insulation displacement connection                        |
| Housing main material            | CuZn                                                      |
| Contact tube diameter            | M12                                                       |
| Cable diameter                   | 7...8.8 mm                                                |
| Cross-section for connected wire | 0.34 - 0.75 mm <sup>2</sup>                               |
| Rated current                    | 4 A                                                       |
| Rated voltage                    | 32 V                                                      |
| Temperature range of housing     | -25...+85 °C                                              |
| Protection class                 | IP 67                                                     |
| Contact surface                  | tinned                                                    |
| Note                             | PB = PROFIBUS (B-COD)<br>IE = Industrial Ethernet (D-COD) |

Dimensioned drawing



PB = PROFIBUS (B-COD)  
IE = Industrial Ethernet (D-COD)



# Sub-D



This compact connector provides a convenient bus connection for all standardised PROFIBUS-DP devices. A data transmission rate of max. 12 Mbps is possible. An additional Sub-D connector on top of the plug enables analysis/programming devices to be connected without modifying the wiring.

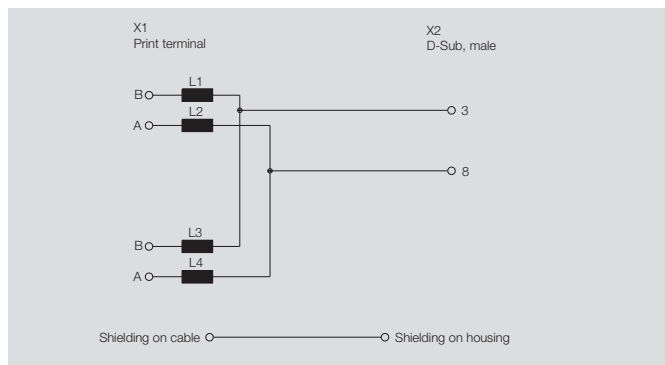
C

The 9-pin sub-D connector is available in four versions:

1. without terminating resistor
2. with built in terminating resistor
3. with switch in terminating resistor and connection for programming unit via IDC connection
4. with switch in terminating resistor and connection for programming unit via tension clamp connection.

- T-piece functions
- Good shield contact
- Ample space for connecting the bus cable
- Cable entry can be closed off with blanking panel
- Fully insulated housing
- Reliable strain relief

## PB-DP SUB-D



### Technical data

|                                |                 |                           |          |
|--------------------------------|-----------------|---------------------------|----------|
| Data transmission rate         |                 | max. 12 Mbps              |          |
| ESD                            |                 | protection to IEC 801-2   |          |
| Operating temperature          | °C              | 0 ... 60                  |          |
| Storage temperature            | °C              | -25 ... +80               |          |
| Ingress protection class       |                 | IP 40                     |          |
| Dimensions (LxWxH)             | mm              | 64.6 x 47.5 x 16          |          |
| Housing material               |                 | PC UL 94 V-1              |          |
| Plug-in connector              |                 | sub-D 9-pin               |          |
| Cable connection               |                 | 2 No. horizontal          |          |
| Cable diameter                 | mm              | 4.5 ... 8                 |          |
| Single conductor cross-section | mm <sup>2</sup> | rigid                     | max. 1.5 |
|                                |                 | flexible                  | max. 1.0 |
| Type of connection             | Screw           | 8395500000 and 8460860000 |          |
|                                | IDC             | 1916980000                |          |
|                                | Tension clamp   | 1934200000                |          |
| <b>Note</b>                    |                 |                           |          |

### Ordering data

| Type        | Qty. | Order No.  |
|-------------|------|------------|
| PB-DP SUB-D | 1    | 8395500000 |

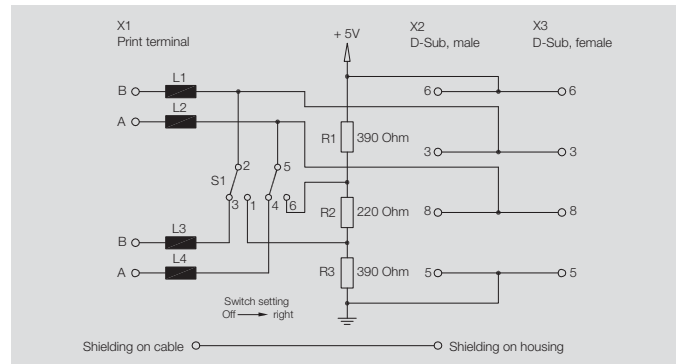
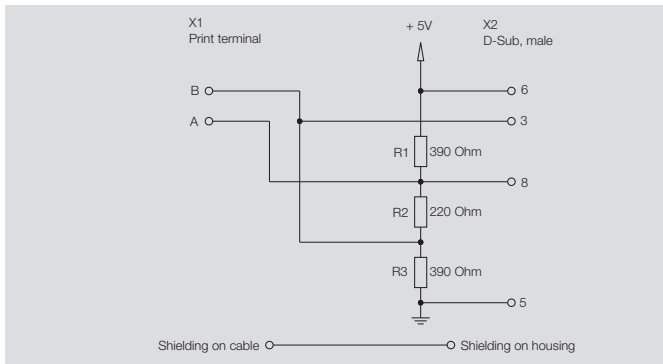
# Sub-D



## PB-DP SUB-D TERM



## PB-DP SUB-D IDC/ZF TERM PS



### Ordering data

| Type             | Qty. | Order No.  |
|------------------|------|------------|
| PB-DP SUB-D TERM | 1    | 8460860000 |

### Ordering data

| Type                    | Qty. | Order No.  |
|-------------------------|------|------------|
| PB-DP SUB-D IDC TERM PS | 1    | 1919680000 |
| PB-DP SUB-D ZF TERM PS  | 1    | 1934200000 |

## PROFIBUS-DP - connectors (M12, Sub-D)

### PROFIBUS Sub-D connector with M12 (90°)

Weidmüller's new Sub-D product line features fully shielded connector variants that enable direct tapping with M12 cables. This allows you to avoid the types or errors that often occur when installing similar connectors with screw connections. The increased contact reliability of the Sub-D connectors more than compensates for the cost of the extra M12 connectors.

#### Special features:

- Complete shielded housing
- Compact housing for small places
- Connection without any mistake because of the M12 connector
- 100% certified components

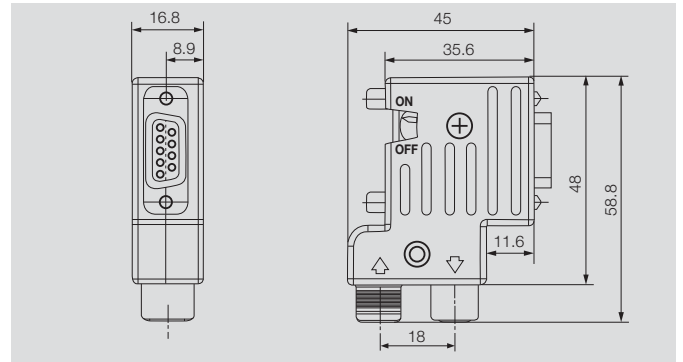
#### Technical data

|                               |                                                                                                     |
|-------------------------------|-----------------------------------------------------------------------------------------------------|
| Data rate                     | acc. to PROFIBUS Specification, 12Mbit/s                                                            |
| Connector pinning             | acc. to PROFIBUS Specification                                                                      |
| PROFIBUS DP connector         | D-Sub 9-polig, male                                                                                 |
| PROFIBUS DP program connector | D-Sub 9-polig, female                                                                               |
| PROFIBUS cable connector      | M12 B coded, male + female, Pin 2 and 4, connected, Cable output: M12 female, Cable entry: M12 male |
| Mechanical lifetime           | 200 connections                                                                                     |
| Temperature range             | -20 °C to +70 °C                                                                                    |
| Humidity                      | Max. 75 % at +25 °C, non condensing                                                                 |
| Ingress protection class      | IP30                                                                                                |
| Housing material              | ZnAl                                                                                                |
| D-Sub screw connection        | UNC 4-40                                                                                            |

#### Note

### PB-DP SUB-D M12 TERM

PROFIBUS-Connector 90° M12 with switch, without programming connector



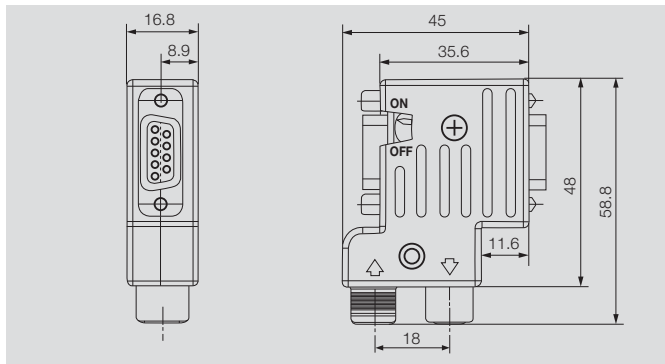
#### Ordering data

| Type                 | Qty. | Order No.  |
|----------------------|------|------------|
| PB-DP SUB-D M12 TERM | 1    | 1140650000 |

PROFIBUS Sub-D connector with M12 (90°)

**PB-DP SUB-D M12 TERM PS**

PROFIBUS-Connector 90° M12 with switch, with programming connector



**Ordering data**

| Type                    | Qty. | Order No.  |
|-------------------------|------|------------|
| PB-DP SUB-D M12 TERM PS | 1    | 1140640000 |

**PROFIBUS-DP - connectors (M12, Sub-D)**

**PROFIBUS Sub-D Connector with tension clamp connection (35°)**

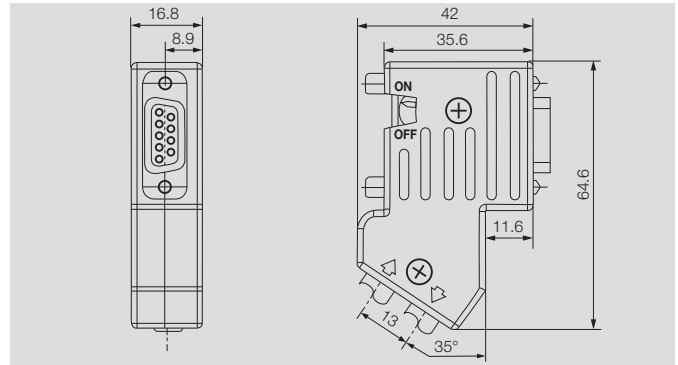
The new Sub-D Family from Weidmüller offers a fully shielded version.

**Special features:**

- Completely shielded housing
- Compact design for use in small spaces

**PB-DP SUB-D ZF35TERM**

PROFIBUS-Connector 35° with switch, without programming connector



**Technical data**

|                               |                                          |
|-------------------------------|------------------------------------------|
| Data rate                     | acc. to PROFIBUS Specification, 12Mbit/s |
| Connector pinning             | acc. to PROFIBUS Specification           |
| PROFIBUS DP connector         | D-Sub 9-polig, male                      |
| PROFIBUS DP program connector | D-Sub 9-polig, female                    |
| PROFIBUS cable connector      | Tension clamp                            |
| Mechanical lifetime           | 200 mating cycles                        |
| Temperature range             | -20 °C to +70 °C                         |
| Humidity                      | Max. 75 % at +25 °C, non condensing      |
| Ingress protection class      | IP30                                     |
| Housing material              | ZnAl                                     |
| D-Sub screw connection        | UNC 4-40                                 |

**Note**

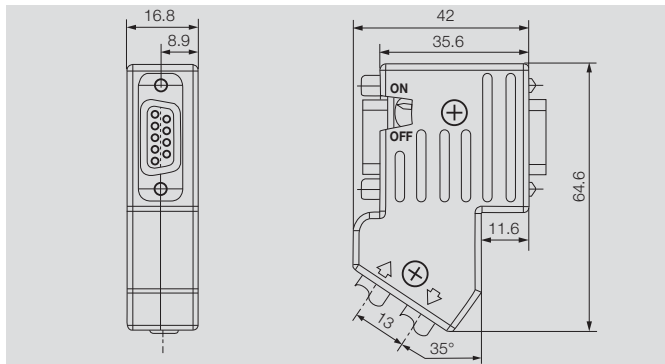
**Ordering data**

| Type                 | Qty. | Order No.  |
|----------------------|------|------------|
| PB-DP SUB-D ZF35TERM | 1    | 1173220000 |

PROFIBUS Sub-D Connector with tension clamp connection (35°)

**PB-DP SUB-D ZF35TERM PS**

PROFIBUS-Connector 35° with switch, with programming connector



**Ordering data**

| Type                    | Qty. | Order No.  |
|-------------------------|------|------------|
| PB-DP SUB-D ZF35TERM PS | 1    | 1173240000 |

## PROFIBUS-DP - connectors (M12, Sub-D)

### PROFIBUS Sub-D Connector with tension clamp connection (90°)

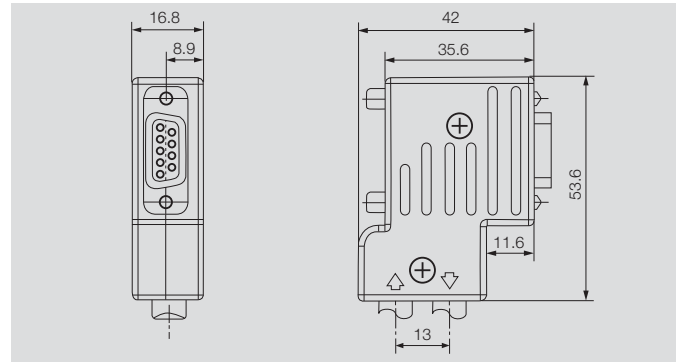
The new Sub-D Family from Weidmüller offers a fully shielded Version.

#### Special features:

- Completely shielded housing
- Compact design for use in small spaces

#### PB-DP SUB-D ZF

PROFIBUS-Connector 90° without switch, without programming connector



#### Technical data

|                               |                                          |
|-------------------------------|------------------------------------------|
| Data rate                     | acc. to PROFIBUS Specification, 12Mbit/s |
| Connector pinning             | acc. to PROFIBUS Specification           |
| PROFIBUS DP connector         | D-Sub 9-polig, male                      |
| PROFIBUS DP program connector | D-Sub 9-polig, female                    |
| PROFIBUS cable connector      | Tension clamp                            |
| Mechanical lifetime           | 200 mating cycles                        |
| Temperature range             | -20 °C to +70 °C                         |
| Humidity                      | Max. 75 % at +25 °C, non condensing      |
| Ingress protection class      | IP30                                     |
| Housing material              | ZnAl                                     |
| D Sub screw connection        | UNC 4-40                                 |

#### Note

#### Ordering data

| Type           | Qty. | Order No.  |
|----------------|------|------------|
| PB-DP SUB-D ZF | 1    | 1161890000 |

PROFIBUS Sub-D Connector with tension clamp connection (90°)

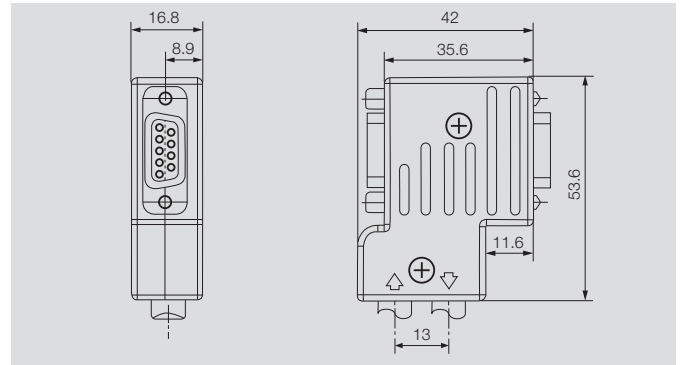
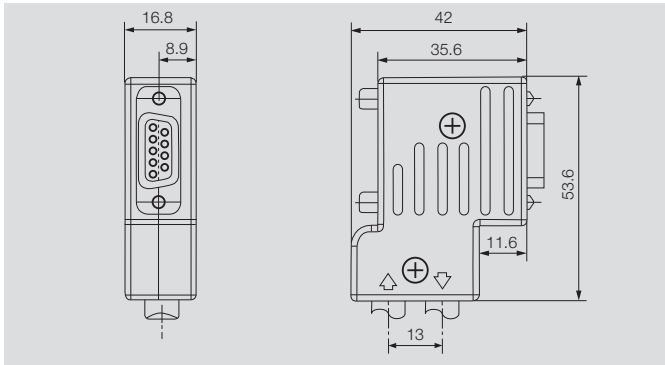
**PB-DP SUB-D ZF TERM**

PROFIBUS-Connector 90° with switch, without programming connector



**PB-DP SUB-D ZF TERM PS**

PROFIBUS-Connector 90° with switch, with programming connector



**Ordering data**

| Type                | Qty. | Order No.  |
|---------------------|------|------------|
| PB-DP SUB-D ZF TERM | 1    | 1161870000 |

**Ordering data**

| Type                   | Qty. | Order No.  |
|------------------------|------|------------|
| PB-DP SUB-D ZF TERM PS | 1    | 1161880000 |

# PROFIBUS-DP distributors



## PROFIBUS-DP distributor

The PROFIBUS-DP topology is a line structure. The spur (T-distributor) connects the individual field devices or remote I/Os to the bus cable. The length of the spur cable depends on the transmission rate and should be as short as possible. The total of all spur lengths for transmission rates up to 1.5 MBaud may not exceed max. 6.6 m. The trunk cable passes through an EMC cable gland into an aluminium or stainless steel enclosure where it is connected to a tension clamp terminal. The spur line to the device is connected using a B-coded M12 socket or an EMC cable gland. Terminating resistors must be wired onto the start and end of the PROFIBUS-DP network. The Terminator modules can take care of this task. The electrically isolated 24-VDC power supply for the bus terminator is routed into the cable gland on the right side. The housing features a pressure-compensation mechanism that counters the effects of climatic fluctuations. The guidelines issued by the PROFIBUS user organisation must be observed.

## PROFIBUS-DP

### Technical data

|                             |                                                   |
|-----------------------------|---------------------------------------------------|
| Operating temperature       | -25 °C to 55 °C                                   |
| Ingress protection class    | IP 66                                             |
| Enclosure material          | High grade aluminium alloy (AL - SI 12)           |
| Finish                      | Painted RAL 7001                                  |
| PROFIBUS-DP connection      | Tension clamp terminals 0.5 – 1.5 mm <sup>2</sup> |
| Cable entry                 | Cable gland M16                                   |
| Cable gland clamping range  | 5.5 – 9.5 mm                                      |
| Contact surface             | M12 plug/socket CuZnAu                            |
| Transmission rate           | Max. 1.5 MBaud                                    |
| Power supply bus connection | Bus terminator 24 VDC +/-10 %                     |
| Trunk cable via cable gland |                                                   |

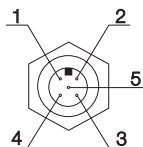
### Installation advice

|                              |              |
|------------------------------|--------------|
| Torques                      |              |
| M16 cable gland at enclosure | 6.0 Nm       |
| Union nut, M16 cable gland   | 4.0 Nm       |
| Enclosure cover              | 1.8 – 2.0 N  |
| External earthing cable      | 1.8 – 2.0 Nm |
| Adaptor/stud cable           | 0.5 Nm       |

### Pin assignment

| Pin no.     | Connection          | Wire colour |
|-------------|---------------------|-------------|
| Pin 1       | unassigned          |             |
| Pin 2       | RxDx/TxD-N / A-wire | green       |
| Pin 3       | unassigned          |             |
| Pin 4       | RxDx/TxD-N / B-wire | red         |
| Pin 5       | shield              |             |
| Cable gland | shield              |             |

### Socket B-coded



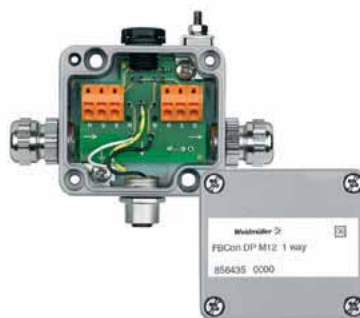
1-channel distributor

Cable gland



1-channel distributor

M12 connection



Ordering data

| Type                             | Type of connection  | Qty. | Order No.  |
|----------------------------------|---------------------|------|------------|
| <b>Aluminium housing</b>         |                     |      |            |
| FBCon DP CG 1way                 | branch line CG      | 1    | 8564340000 |
| <b>Stainless steel enclosure</b> |                     |      |            |
| FBCon SS DP PCG 1way             | all connections PCG | 1    | 8714260000 |

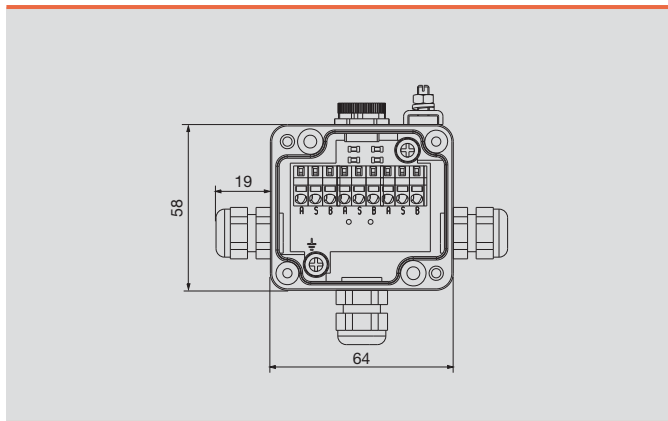
Ordering data

| Type                             | Type of connection | Qty. | Order No.  |
|----------------------------------|--------------------|------|------------|
| <b>Aluminium housing</b>         |                    |      |            |
| FBCon DP M12 1way                | branch line M12    | 1    | 8564350000 |
| <b>Stainless steel enclosure</b> |                    |      |            |
| FBCon SS DP M12 1way             | branch line M12    | 1    | 8714270000 |

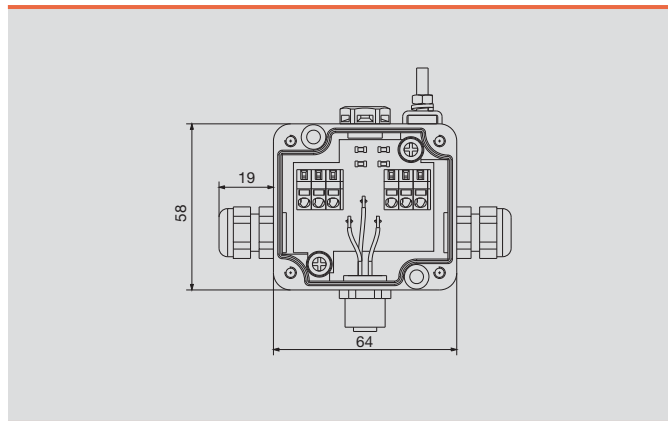
CG = brass cable gland  
PCG = plastic cable gland

CG = brass cable gland  
PCG = plastic cable gland

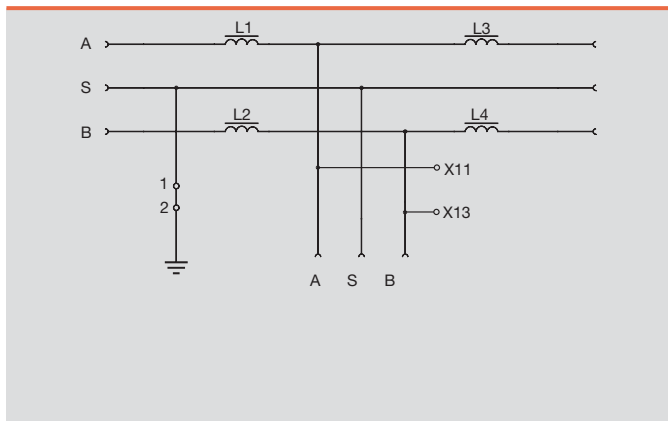
Dimensioned drawing



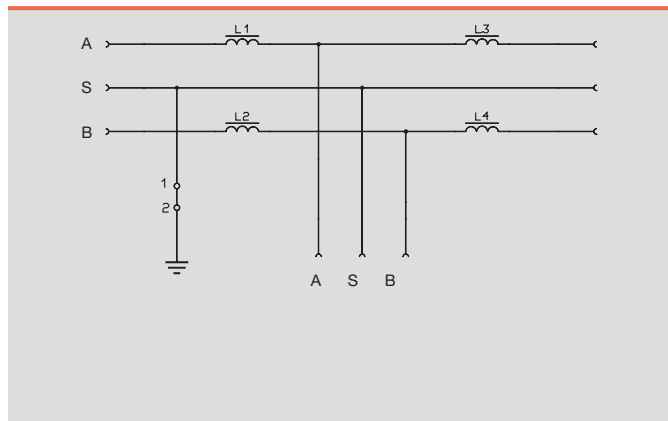
Dimensioned drawing



Wiring diagram



Wiring diagram



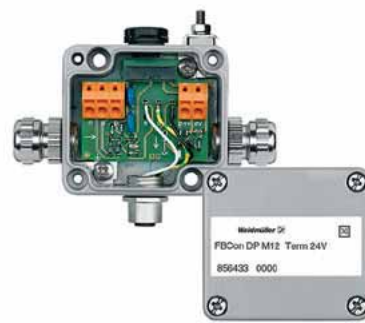
Terminator

Cable gland



Terminator

M12 connection



Ordering data

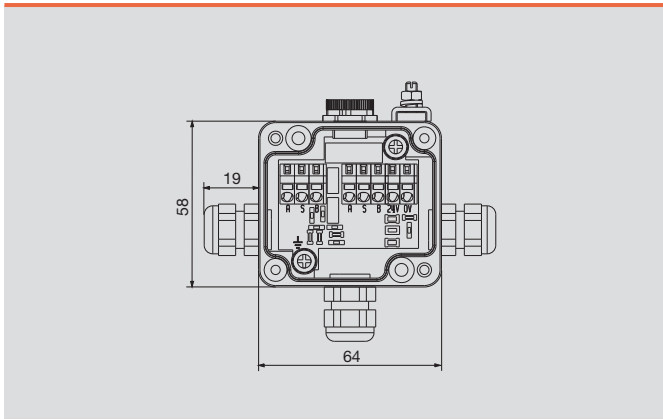
| Type                             | Type of connection  | Qty. | Order No.  |
|----------------------------------|---------------------|------|------------|
| <b>Aluminium housing</b>         |                     |      |            |
| FBCon DP CG Term 24V             | branch line CG      | 1    | 8564290000 |
| <b>Stainless steel enclosure</b> |                     |      |            |
| FBCon SS DP PCG Term 24V         | all connections PCG | 1    | 8714240000 |

Ordering data

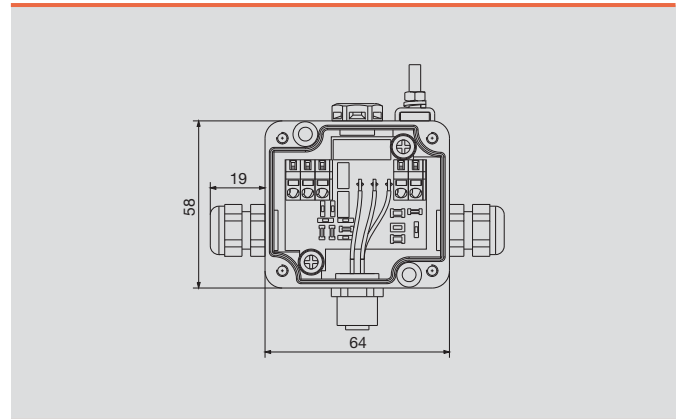
| Type                             | Type of connection | Qty. | Order No.  |
|----------------------------------|--------------------|------|------------|
| <b>Aluminium housing</b>         |                    |      |            |
| FBCon DP M12 Term 24V            | branch line M12    | 1    | 8564330000 |
| FBCon DP M12 Term 5V             | branch line M12    | 1    | 8564320000 |
| <b>Stainless steel enclosure</b> |                    |      |            |
| FBCon SS DP M12 Term 24V         | branch line M12    | 1    | 8714250000 |

CG = brass cable gland  
PCG = plastic cable gland

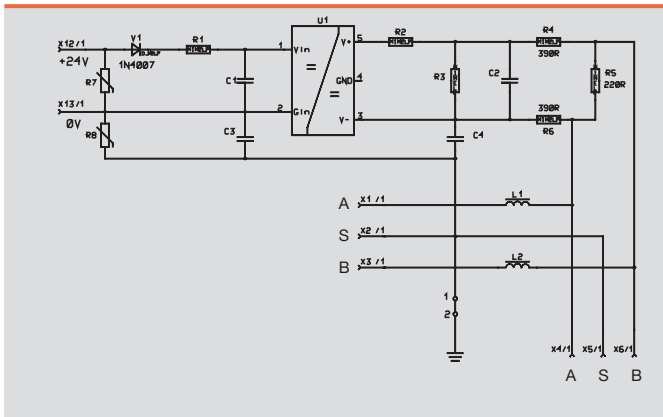
Dimensioned drawing



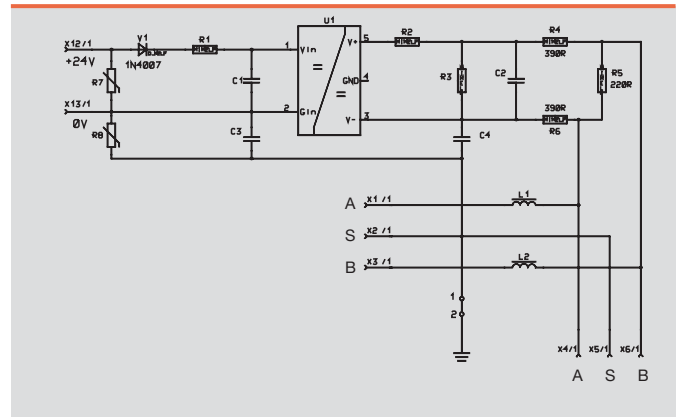
Dimensioned drawing



Wiring diagram



Wiring diagram



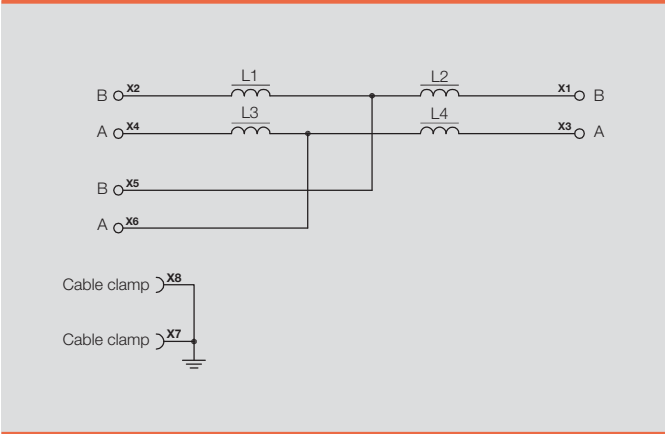
# PROFIBUS-DP IP 20 T-distributor



The distributor for PROFIBUS-DP enables the user to connect it conveniently in the electrical cabinet. They can be mounted on TS32/35 rails and used to connect standardised PROFIBUS-DP lines. Spur cables can also be connected. Please note that spur cables should be kept as short as possible. Part No. 8788580000 has a 9-pin sub-D socket for connecting analysis/programming devices.

- T-piece functions
- Good shield contact
- Ample space for connecting the bus cable
- TS 32/35 terminal rail mounting
- Standardised Sub-D connection for PROFIBUS-DP

## RS PB-DP T



## Technical data

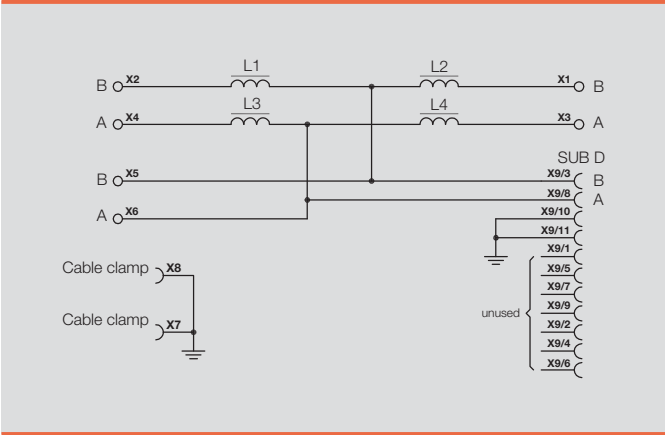
|                                |                 |                                                                           |
|--------------------------------|-----------------|---------------------------------------------------------------------------|
| Data transmission rate         |                 | max. 1.5 Mbps (with max. 6.6 m spur line)<br>max. 12 Mbps (no spur lines) |
| Operating temperature          | °C              | 0 ... 55                                                                  |
| Storage temperature            | °C              | -25 ... +70                                                               |
| Ingress protection class       |                 | IP 20                                                                     |
| Dimensions (LxWxH)             | mm              | 70 x 45 x 42                                                              |
| Plug-in connector              |                 | sub-D 9-pin                                                               |
| Cable diameter                 | mm              | 4.5 ... 8                                                                 |
| Single conductor cross-section | mm <sup>2</sup> | 0.5 ... 2.5                                                               |
| Type of connection             |                 | screw                                                                     |

## Information

## Ordering data

| Type             | Qty. | Order No.  |
|------------------|------|------------|
| RS PB-DP T       | 1    | 8800040000 |
| RS PB-DP T SUB-D | 1    | 8788580000 |

## RS PB-DP T SUB-D





**The PROFIBUS-PA**

is an open fieldbus standard (EN 50170, IEC 1158-2, DIN 19245). It was specifically designed for the requirements of process engineering, such as remote powering and intrinsic safety. The PROFIBUS-PA enables operation of several PA sensors and actuators on one bus line.

The devices are powered using twin cable technology, and the transmission of process data is digital.

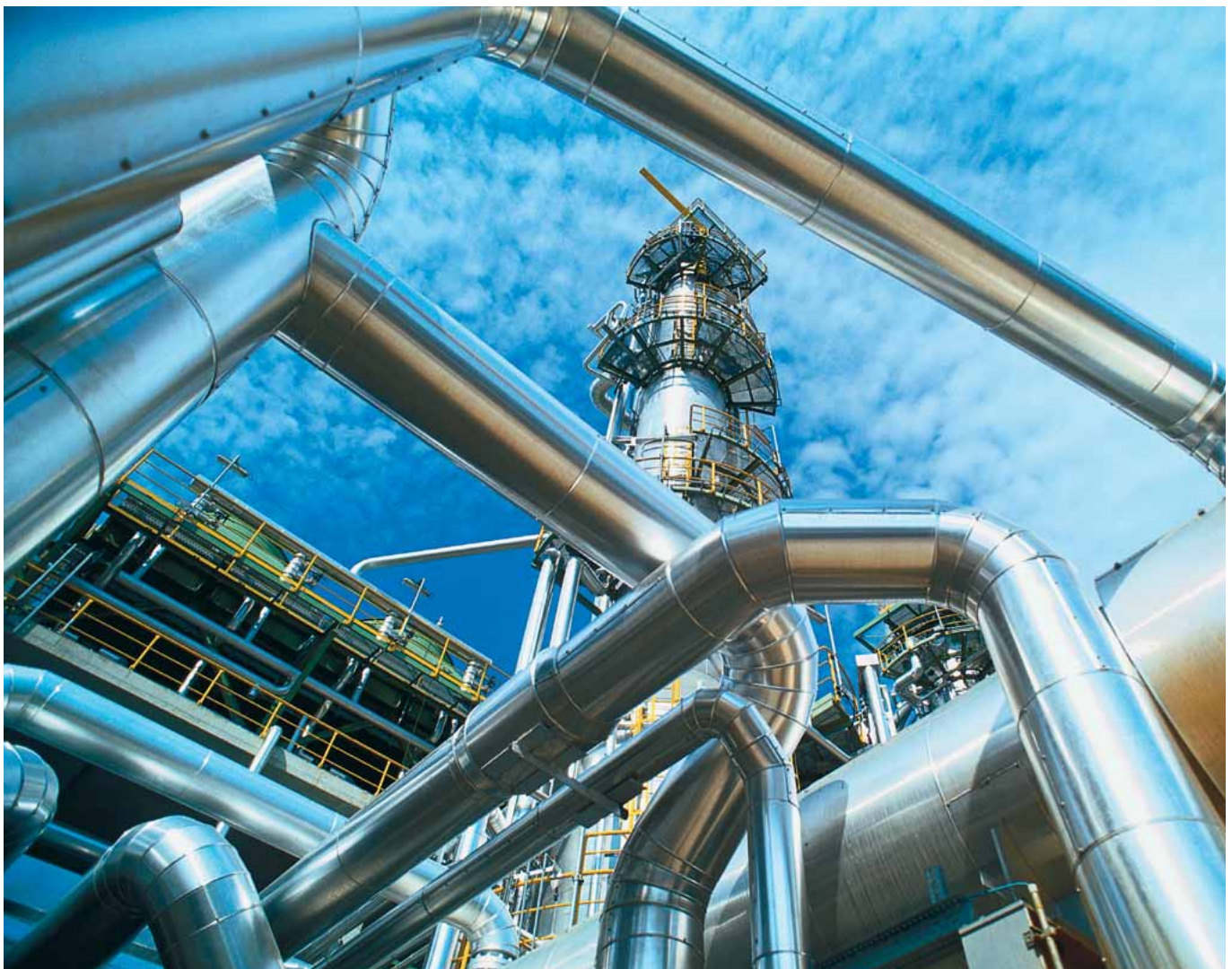
Integration in the PROFIBUS-DP network is done by means of a segment coupler.

Specific advantages of PROFIBUS-PA:

- Low wiring costs
- Minimal planning costs for the process control system
- Remote interrogation or programming of the field device
- Further development and support by the PROFIBUS User Organisation

Whether for servicing or system modification, the PROFIBUS-PA FB connectors from Weidmüller enable connection or replacement of field devices without interrupting the bus system.

An extensive range of accessories such as pre-assembled cables and plug connectors rounds off the programme.





**PROFIBUS-PA cables**

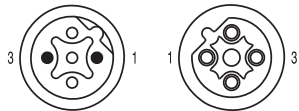


**PROFIBUS-PA connectors**

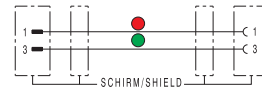
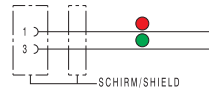


**Profibus PA distributors**

Cables



Male Female



Ordering data

| Designation                               |      |
|-------------------------------------------|------|
| <b>Industrial zone</b>                    |      |
| <b>One side without connector, male</b>   |      |
| M12 EMV/black/1M                          | 1 m  |
| M12 EMV/black/2M                          | 2 m  |
| M12 EMV/black/5M                          | 5 m  |
| M12 EMV/black/10M                         | 10 m |
| <b>One side without connector, female</b> |      |
| M12 EMV/black/1M                          | 1 m  |
| M12 EMV/black/2M                          | 2 m  |
| M12 EMV/black/5M                          | 5 m  |
| M12 EMV/black/10M                         | 10 m |
| <b>Connecting cables, male - female</b>   |      |
| M12 EMV/black/1M                          | 1 m  |
| M12 EMV/black/2M                          | 2 m  |
| M12 EMV/black/5M                          | 5 m  |
| M12 EMV/black/10M                         | 10 m |
| <b>Note</b>                               |      |

| Type                                      | Order No.  |
|-------------------------------------------|------------|
| <b>PROFIBUS-PA cable</b>                  |            |
| FBC PA M12 M 1M                           | 1785120100 |
| FBC PA M12 M 2M                           | 1785120200 |
| FBC PA M12 M 5M                           | 1785120500 |
| FBC PA M12 M 10M                          | 1785121000 |
| <b>One side without connector, female</b> |            |
| FBC PA M12 FM 1M                          | 1785110100 |
| FBC PA M12 FM 2M                          | 1785110200 |
| FBC PA M12 FM 5M                          | 1785110500 |
| FBC PA M12 FM 10M                         | 1785111000 |
| <b>Connecting cables, male - female</b>   |            |
| FBC PA M12 M-FM 1M                        | 1785100100 |
| FBC PA M12 M-FM 2M                        | 1785100200 |
| FBC PA M12 M-FM 5M                        | 1785100500 |
| FBC PA M12 M-FM 10M                       | 1785101000 |
| Other lengths available on request        |            |

Wall bushing



Ordering data

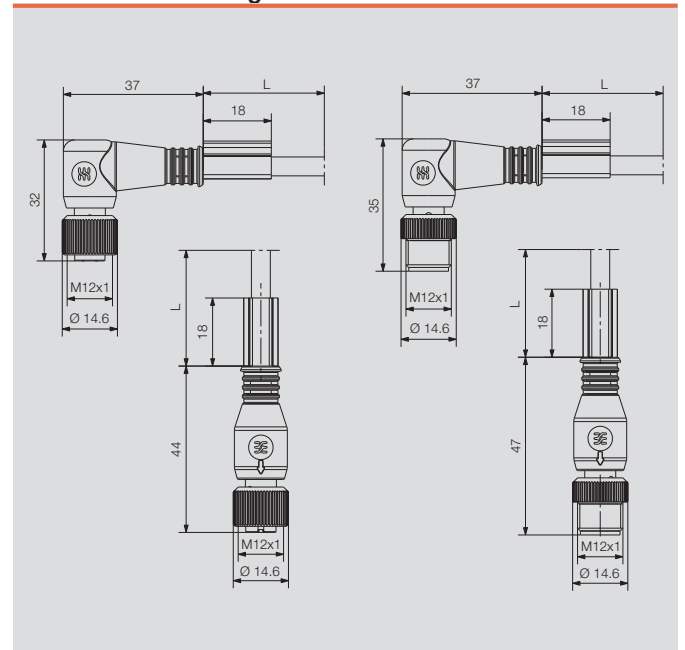
| Type                 | Length | Qty. | Order No.  |
|----------------------|--------|------|------------|
| SAI-WDF-5P M12 60 mm | 60 mm  | 1    | 1819450000 |

Customisable male and female connectors are still required for use with cables that have a connector on only one end.

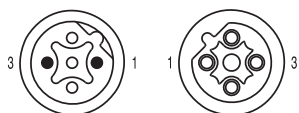
Technical data

|                                             |                               |                |      |
|---------------------------------------------|-------------------------------|----------------|------|
| Wire resistance (loop)                      | max. $\Omega$ /km             | 44             |      |
| Insulation resistance                       | min. $G\Omega$ x km           | 5              |      |
| Working capacity at 800 Hz                  | nom. nF/km                    | 52             |      |
| Inductance 800 Hz                           | mH/km                         | ca. 0.4        |      |
| Characteristic impedance at 31.25 kHz       | $\Omega$                      | 100 $\pm$ 20 % |      |
|                                             | at $\geq$ 1 MHz nom. $\Omega$ | 80             |      |
| Wave attenuation                            |                               |                |      |
| - at 39 kHz                                 | max. d/B 100 m                | 0.3            |      |
| - at 100 kHz                                | nom. d/B 100 m                | 0.35           |      |
| - at 1 MHz                                  | nom. d/B 100 m                | 1.2            |      |
| Signal dispersion speed                     |                               |                |      |
|                                             | nom. [%]                      | 79             |      |
| Coupling resistance up to 30 MHz            |                               |                |      |
|                                             | max. mOhm/m                   | 250            |      |
| Operating voltage (not for three-phase use) |                               |                |      |
|                                             | Peak value V                  | 100            |      |
| Test voltage                                | Wire/wire                     | $U_{eff}$ V    | 1500 |
|                                             | Wire/shield                   | $U_{eff}$ V    | 1500 |
| <b>Mechanical specifications</b>            |                               |                |      |
| Stationary bending radius                   | mm                            | 65             |      |
| Temperature range                           |                               |                |      |
| Stationary                                  | $^{\circ}C$                   | -5 ... 60      |      |
| moving                                      | $^{\circ}C$                   | -30 ... 80     |      |
| <b>Note</b>                                 |                               |                |      |

Dimensioned drawing

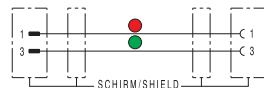
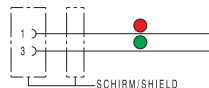


Ex i-cables



Male

Female



Ordering data

| Designation                               |      |
|-------------------------------------------|------|
| <b>Intrinsically safe zone Exi</b>        |      |
| <b>One side without connector, male</b>   |      |
| M12 EMV/blue/1M                           | 1 m  |
| M12 EMV/blue/2M                           | 2 m  |
| M12 EMV/blue/5M                           | 5 m  |
| M12 EMV/blue/10M                          | 10 m |
| <b>One side without connector, female</b> |      |
| M12 EMV/blue/1M                           | 1 m  |
| M12 EMV/blue/2M                           | 2 m  |
| M12 EMV/blue/5M                           | 5 m  |
| M12 EMV/blue/10M                          | 10 m |
| <b>Connecting cables, male - female</b>   |      |
| M12 EMV/blue/1M                           | 1 m  |
| M12 EMV/blue/2M                           | 2 m  |
| M12 EMV/blue/5M                           | 5 m  |
| M12 EMV/blue/10M                          | 10 m |
| <b>Note</b>                               |      |

| Type                                      | Order No.  |
|-------------------------------------------|------------|
| <b>PROFIBUS-PA cable</b>                  |            |
| FBCEX PA M12 M 1M                         | 1785150100 |
| FBCEX PA M12 M 2M                         | 1785150200 |
| FBCEX PA M12 M 5M                         | 1785150500 |
| FBCEX PA M12 M 10M                        | 1785151000 |
| <b>One side without connector, female</b> |            |
| FBCEX PA M12 FM 1M                        | 1785140100 |
| FBCEX PA M12 FM 2M                        | 1785140200 |
| FBCEX PA M12 FM 5M                        | 1785140500 |
| FBCEX PA M12 FM 10M                       | 1785141000 |
| <b>Connecting cables, male - female</b>   |            |
| FBCEX PA M12 M-FM 1M                      | 1785130100 |
| FBCEX PA M12 M-FM 2M                      | 1785130200 |
| FBCEX PA M12 M-FM 5M                      | 1785130500 |
| FBCEX PA M12 M-FM 10M                     | 1785131000 |
| Other lengths available on request        |            |

Wall bushing



Ordering data

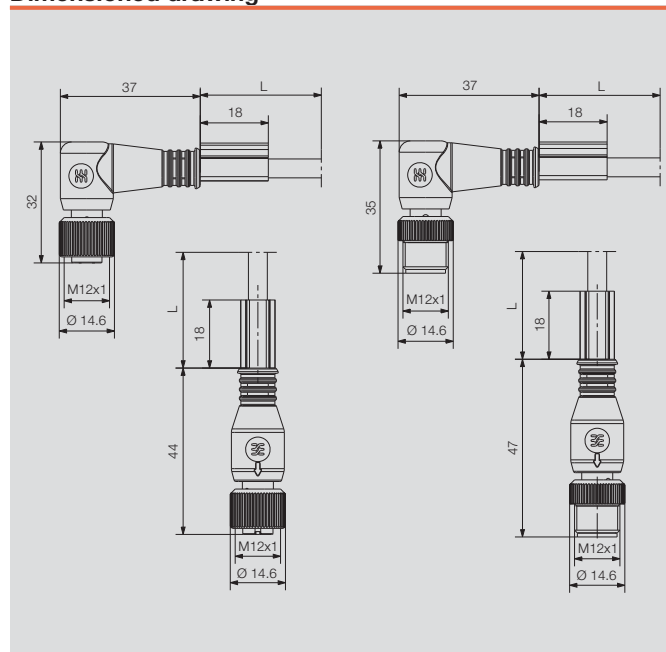
| Type                 | Length | Qty. | Order No.  |
|----------------------|--------|------|------------|
| SAI-WDF-5P M12 60 mm | 60 mm  | 1    | 1819450000 |

Customisable male and female connectors are still required for use with cables that have a connector on only one end.

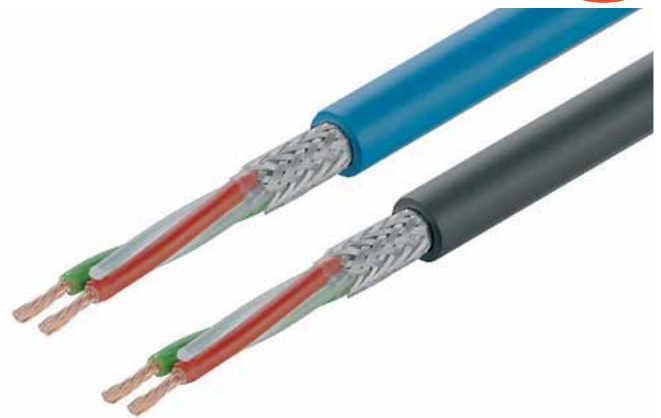
Technical data

|                                             |                     |                |      |
|---------------------------------------------|---------------------|----------------|------|
| Wire resistance (loop)                      | max. $\Omega$ /km   | 44             |      |
| Insulation resistance                       | min. $G\Omega$ x km | 5              |      |
| Working capacity at 800 Hz                  | nom. nF/km          | 52             |      |
| Inductance 800 Hz                           | mH/km               | ca. 0.4        |      |
| Characteristic impedance at 31.25 kHz       | $\Omega$            | 100 $\pm$ 20 % |      |
|                                             | at $\geq$ 1 MHz     | nom. $\Omega$  | 80   |
| Wave attenuation                            |                     |                |      |
| - at 39 kHz                                 | max. d/B 100 m      | 0.3            |      |
| - at 100 kHz                                | nom. d/B 100 m      | 0.35           |      |
| - at 1 MHz                                  | nom. d/B 100 m      | 1.2            |      |
| Signal dispersion speed                     |                     |                |      |
|                                             | nom. [%]            | 79             |      |
| Coupling resistance up to 30 MHz            |                     |                |      |
|                                             | max. mOhm/m         | 250            |      |
| Operating voltage (not for three-phase use) |                     |                |      |
|                                             | Peak value V        | 100            |      |
| Test voltage                                | Wire/wire           | $U_{eff}$ V    | 1500 |
|                                             | Wire/shield         | $U_{eff}$ V    | 1500 |
| <b>Mechanical specifications</b>            |                     |                |      |
| Stationary bending radius                   | mm                  | 65             |      |
| Temperature range                           |                     |                |      |
| Stationary                                  | $^{\circ}C$         | -5 ... 60      |      |
| Moving                                      | $^{\circ}C$         | -30 ... 80     |      |
| <b>Note</b>                                 |                     |                |      |

Dimensioned drawing



PROFIBUS-PA bulk lengths



**PROFIBUS-PA bulk lengths**

**Application:**

Fieldbus cable for PROFIBUS-PA field networks in accordance with IEC 1158-2

The cable is suitable for installation in both dry and humid spaces. When used with the black, UV-resistant cladding, it can also be installed outdoors.

**General characteristics:**

None of the materials used for the cables and during their production contain materials which are detrimental to paint adhesion (**they are LBS-free**).

**LBS** = Materials detrimental to paint adhesion

**Ordering data**

| Type                    | Order No.         |
|-------------------------|-------------------|
| SAIH-PB-PA-2X1.0-PVC-BL | <b>1232630000</b> |
| SAIH-PB-PA-2X1.0-PVC-SW | <b>1232640000</b> |

**Technical data**

| Assembly                                                       |                                                                          |            |
|----------------------------------------------------------------|--------------------------------------------------------------------------|------------|
| Conductor                                                      | Copper wire, without insulation, 1.0 mm <sup>2</sup> , finely stranded   |            |
| Insulating sleeve                                              | Foam skin (O2YS), wire Ø approx. 2.55 mm<br>Wire colours: red and green  |            |
| Stranding                                                      | 2 wires with 2 drain wires approx. 1.0 mm Ø stranded                     |            |
| Wrapping                                                       | 1 layer insulation foil                                                  |            |
| Shield                                                         | Braiding made from tin-plated copper wire,<br>Coverage 85 % ± 5          |            |
| Outer cladding                                                 | PVC, blue RAL 5015 or black<br>Outer diameter: 8.0 mm ± 0.4              |            |
| Electrical characteristics at 20 °C                            |                                                                          |            |
| Wire resistance (loop)                                         | max. Ω/km                                                                | 44         |
| Insulation resistance                                          | min. GΩ x km                                                             | 5          |
| Working capacity                                               |                                                                          |            |
| at 800 Hz                                                      | nom. nF/km                                                               | 52         |
| Inductance                                                     |                                                                          |            |
| at 800                                                         | Hz mH/km                                                                 | ca. 0.4    |
| Characteristic impedance                                       |                                                                          |            |
| at 31.25 kHz                                                   | Ω                                                                        | 100 ± 20 % |
| at ≥ 1 MHz                                                     | nom. Ω                                                                   | 80         |
| Wave attenuation                                               |                                                                          |            |
| at 39 kHz                                                      | max. dB/100 m                                                            | 0.3        |
| at 100 kHz                                                     | nom. dB/100 m                                                            | 0.35       |
| at 1 MHz                                                       | nom. dB/100 m                                                            | 1.2        |
| Signal dispersion speed                                        | nom. [%]                                                                 | 79         |
| Coupling resistance                                            |                                                                          |            |
| at 30 MHz                                                      | max. mOhm/m                                                              | 250        |
| Operating voltage                                              |                                                                          |            |
| (not for three-phase use)                                      | Peak value V                                                             | 100        |
| Test voltage                                                   |                                                                          |            |
| Wire/wire                                                      | U <sub>est.</sub> V                                                      | 1500       |
| Wire/shield                                                    | U <sub>est.</sub> V                                                      | 1500       |
| Mechanical and thermal characteristics                         |                                                                          |            |
| Min. bending radius stationary installed / during installation | mm                                                                       | 65         |
| Temperature range during installation                          | °C                                                                       | -5 to +60  |
| Temperature range stationary installed                         | °C                                                                       | -30 to +80 |
| Flammability                                                   | Flame retardant in accordance with VDE 0482, part 265-2-1 / IEC 60 332-1 |            |

Screw connection M12, metal (EMC)  
A-coded



FBCon / SAIS

straight



SAISW / SAIBW

Angled



Ordering data

| Male   |              |
|--------|--------------|
|        | 4-pole, PG 9 |
|        | 5-pole, PG 9 |
| Socket |              |
|        | 4-pole, PG 9 |
|        | 5-pole, PG 9 |
| Note   |              |

| Type                      | Qty. | Order No.  |
|---------------------------|------|------------|
| FBCon M12 4P M EMC        | 1    | 9455640000 |
| SAIS-M-5/8S M12 5P A-COD  | 1    | 1784740000 |
| Other versions on request |      |            |

| Type                      | Qty. | Order No.  |
|---------------------------|------|------------|
| SAISW-M-4/8 M12           | 1    | 1803930000 |
| SAISW-M-5/8 M12           | 1    | 1803940000 |
| Other versions on request |      |            |

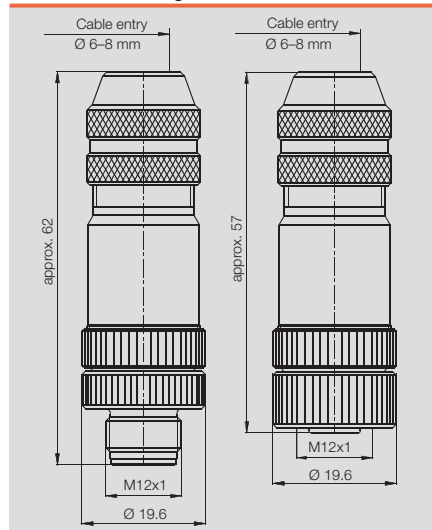
Technical data

| Type of connection               |
|----------------------------------|
| Housing main material            |
| Contact tube diameter            |
| Cable diameter                   |
| Cross-section for connected wire |
| Rated current                    |
| Rated voltage                    |
| Temperature range of housing     |
| Protection class                 |
| Contact surface                  |
| Note                             |

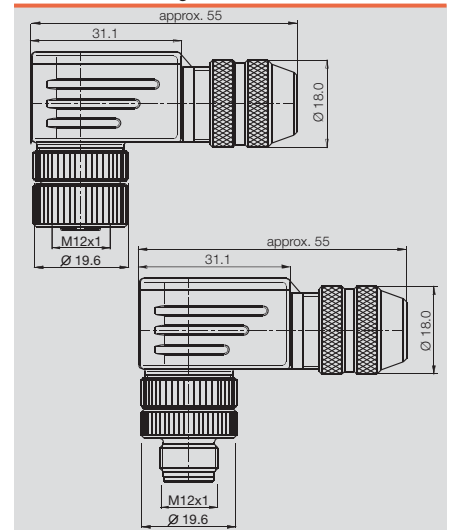
|                             |
|-----------------------------|
| Screw connection            |
| CuZn                        |
| M12                         |
| 6...8 mm (PG9)              |
| 0.14 - 0.75 mm <sup>2</sup> |
| 4 A                         |
| 125 V                       |
| -25...+85 °C                |
| IP 67                       |
| gold-plated                 |

|                             |
|-----------------------------|
| Screw connection            |
| CuZn                        |
| M12                         |
| 6...8 mm (PG9)              |
| 0.14 - 0.75 mm <sup>2</sup> |
| 4 A                         |
| 125 V                       |
| -25...+85 °C                |
| IP 67                       |
| gold-plated                 |

Dimensioned drawing



Dimensioned drawing



Tension clamp connection M12, stainless steel  
A-coded



SAIS / SAIB VA

straight



Ordering data

|        |              |
|--------|--------------|
| Male   | 5-pole, PG 9 |
| Socket | 5-pole, PG 9 |
| Note   |              |

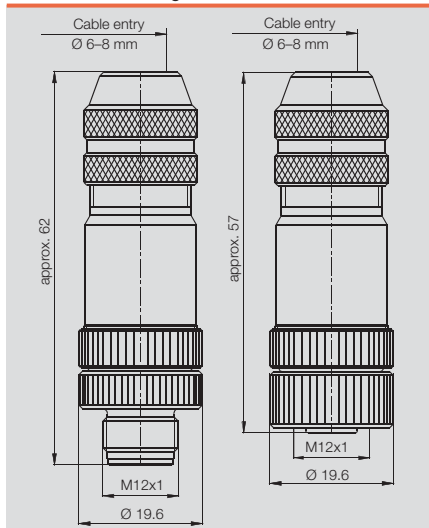
| Type        | Qty. | Order No.  |
|-------------|------|------------|
| SAIS 5/9-VA | 1    | 1920700000 |
| SAIB 5/9-VA | 1    | 1920710000 |

Technical data

|                                  |                            |
|----------------------------------|----------------------------|
| Type of connection               | Tension clamp connection   |
| Housing main material            | 1.4404/316L                |
| Contact tube diameter            | M12                        |
| Cable diameter                   | 6...8 mm                   |
| Cross-section for connected wire | 0.25 - 0.5 mm <sup>2</sup> |
| Rated current                    | 4 A                        |
| Rated voltage                    | 125 V                      |
| Temperature range of housing     | -25...+85 °C               |
| Protection class                 | IP 69 k                    |
| Contact surface                  | gold-plated                |
| Note                             | PB = PROFIBUS (B-COD)      |

|                                  |                            |
|----------------------------------|----------------------------|
| Type of connection               | Tension clamp connection   |
| Housing main material            | 1.4404/316L                |
| Contact tube diameter            | M12                        |
| Cable diameter                   | 6...8 mm                   |
| Cross-section for connected wire | 0.25 - 0.5 mm <sup>2</sup> |
| Rated current                    | 4 A                        |
| Rated voltage                    | 125 V                      |
| Temperature range of housing     | -25...+85 °C               |
| Protection class                 | IP 69 k                    |
| Contact surface                  | gold-plated                |
| Note                             | PB = PROFIBUS (B-COD)      |

Dimensioned drawing



PB = PROFIBUS (B-COD)

Positioning plug connector



Positioning plug connector



Ordering data

|                                           |
|-------------------------------------------|
| Positioning plug connector PG9 500 mm     |
| Adapter PG9 / M20                         |
| Positioning plug connector PG 13.5 150 mm |
| Positioning plug connector PG 13.5 300 mm |
| Positioning plug connector M 20 150 mm    |
| Positioning plug connector M 20 300 mm    |
| Positioning plug connector M 20 300 mm    |
| <b>Note</b>                               |

| Type                    | Qty. | Order No.  |
|-------------------------|------|------------|
| SAIE-M12S-4-0.5U-AEH-VA | 1    | 1861220001 |
| SAIE-EW-M20/PG9-SW24-VA | 1    | 1950270000 |
|                         |      |            |
|                         |      |            |
|                         |      |            |
|                         |      |            |
|                         |      |            |

Technical data

|                                                  |                      |
|--------------------------------------------------|----------------------|
| No. of poles                                     | 4                    |
| Version                                          | pin                  |
| Temperature range                                | -40 ... 85 °C        |
| Housing material                                 | stainless steel (VA) |
| Connection thread                                | PG 9                 |
| Plug thread                                      | M12                  |
| Strand cross-section                             | 0.34 mm <sup>2</sup> |
| Housing class of protection to DIN 40050 IEC 529 | IP 67                |
| Strand length (fitted with wire-end ferrules)    | 500 mm               |
| Nominal current per contact                      | 4 A                  |
| Rated voltage                                    | 250 V                |
| Contact surface                                  | gold-plated          |
| Type of connection                               | screw                |
| Flammability class to UL-94                      |                      |
| Nominal voltage to VDE standard 0110/ISO Group C | V                    |
| Resistance to creepage                           |                      |
| Contact resistance to IEC 512 Part 2             | m Ω                  |
| Insulation resistance to IEC 512 Part 2          | Ω                    |

Note

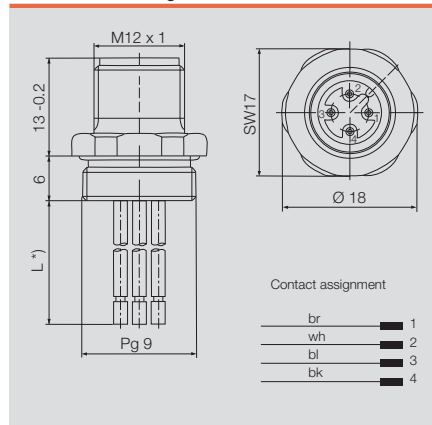
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|--|

Fitting information

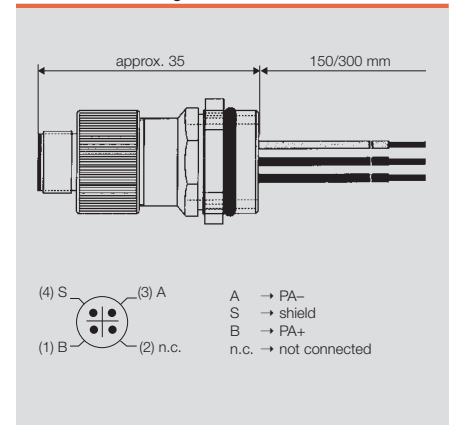
|              | Torque settings |
|--------------|-----------------|
| Set screw    | 1.8 - 2.0 Nm    |
| Knurled ring | hand-tight      |
| Lock-nut     | 6.25 Nm         |

If the device is exposed to vibration, we recommend using a stub cable to isolate the device from the vibration.

Dimensioned drawing



Dimensioned drawing



# FBCon distributors for the industrial segment



## PROFIBUS-PA T-connector

- for industrial applications
- standard

The **PROFIBUS-PA** installation products are increasingly used in the:

- food and beverage industry
- Process industries and
- chemical industry.

The product range offers a wide choice of customer solutions also for use in harsh conditions. This includes standard and EX versions of single and multi-way design with M12 plug-in connection or cable gland. Weidmüller offers a solution for almost every application. If you cannot find your solution here, please contact the branch / sales office responsible for you.

## PROFIBUS-PA T-connector standard

- 1, 2, 4, 8-way with EMC cable gland Industrial + EX / ATEX
- Surge protection optional

The **PROFIBUS-PA T-connector** is intended for direct coupling of measuring devices, sensors, actuators, etc.

- IP 66 Ingress protection class
- Modular design
- Uninterruptible bus operation for service situations
- Simple handling
- Low installation costs
- External earth stud
- Pressure equalising element
- EMC cable gland



# FBCon Fieldbus distributor

## PROFIBUS-PA Fieldbus distributor: sturdy and well-tested

FBCon fieldbus distributors are available in industrial and Ex(ia) versions. They are used for coupling 1- 8field devices or sensors. The connection is made via spur. The spur is connected by an M12 plug-in connector or directly via an EMC cable gland. The communication and device powering is handled by a common 2-core wire.

The PROFIBUS-PA distributors normally feature a switchable terminating resistor. For the Ex zone, the terminating resistor is made with a separate box. Current limiting variants help to ensure that the facility can operate smoothly.

Weidmüller offers a comprehensive line of accessories including pre-assembled PROFIBUS-PA cables in the standard lengths, and plug in connectors for a wide variety of applications.

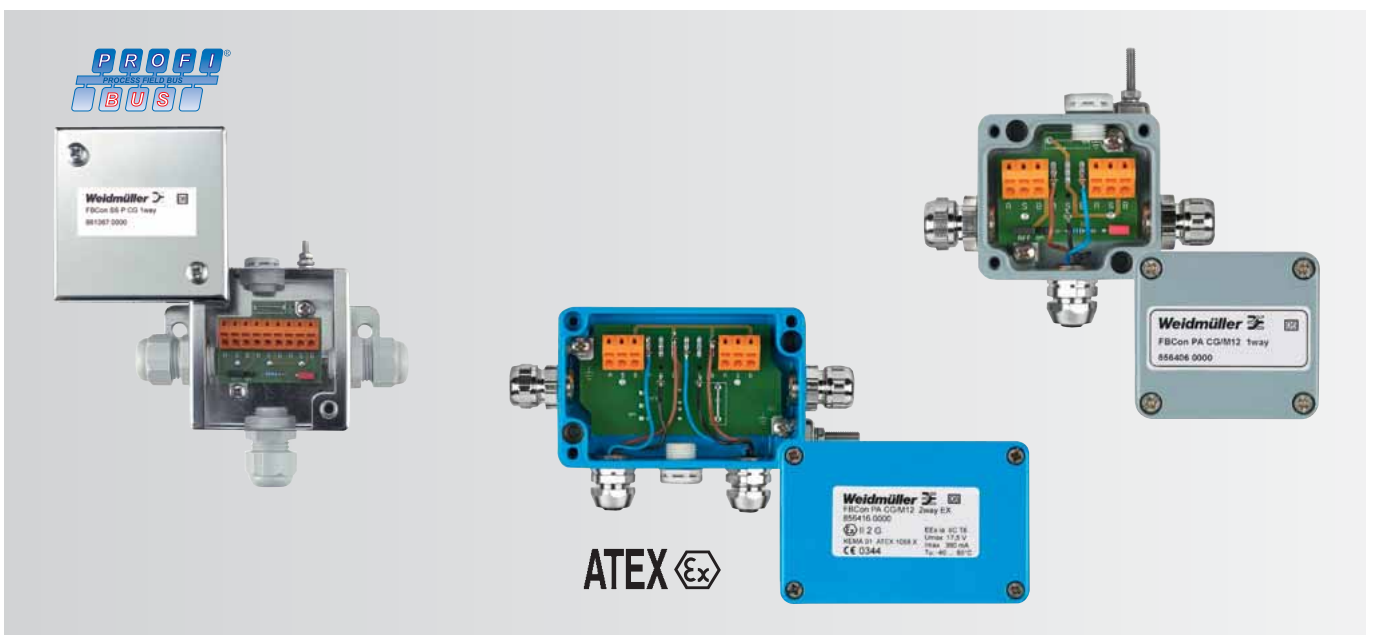
- Fieldbus distributor for PROFIBUS-PA and PROFIBUS-DP
- Standard distributor for use in the safe zone Aluminium housing for connecting from 1 to 8 field devices
- Stainless steel distributor for applications in the food processing industry, for connecting from 1 to 8 field devices
- Intrinsically safe (ia) Ex version in aluminium housing for connecting from 1 to 8 field devices
- EMC cable gland for a secure contact with the shielding

## Technical data for PROFIBUS-PA standard distributors

| Temperature range                       |                                                    |
|-----------------------------------------|----------------------------------------------------|
| Operating temperature                   | from -40 °C to 85 °C                               |
| Ingress protection class                | IP 66                                              |
| Housing material                        | High-quality aluminium alloy (AL-Si 12)            |
| Surface                                 | Stove-enamelled RAL 7001                           |
| PROFIBUS-PA connection                  | Tension clamp connection 0.5 - 1.5 mm <sup>2</sup> |
| Cable entry                             | Cable gland M16                                    |
| Clamping range                          | 5.5 - 9.5 mm                                       |
| Measuring device connector M12 x 14-pin | Contacts MS, surface CUZnAu                        |
| Information                             |                                                    |

## Handling information

| Torques                      |              |
|------------------------------|--------------|
| M16 gland to housing         | 6.25 Nm      |
| M16 union nut on cable gland | 4.5 Nm       |
| Housing cover                | 1.8 - 2.0 Nm |
| External earth stud          | 1.8 - 2.0 Nm |



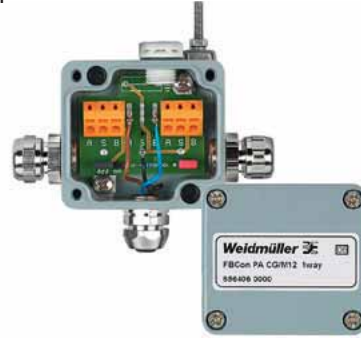
1-channel distributor

Cable gland



1-channel distributor

M12 connection



Ordering data

| Type                             | Type of connection  | Qty. | Order No.  |
|----------------------------------|---------------------|------|------------|
| <b>Aluminium housing</b>         |                     |      |            |
| FBCon PA CG 1way                 | branch line CG      | 1    | 8564090000 |
| <b>Stainless steel enclosure</b> |                     |      |            |
| FBCon SS CG 1way                 | branch line CG      | 1    | 8703430000 |
| FBCon SS PCG 1way                | all connections PCG | 1    | 8613670000 |

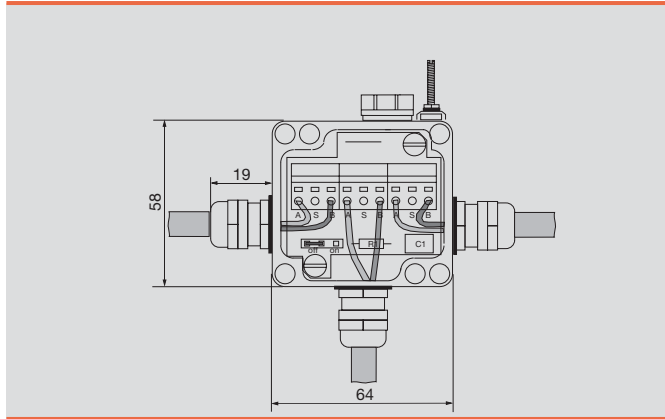
Ordering data

| Type                             | Type of connection | Qty. | Order No.  |
|----------------------------------|--------------------|------|------------|
| <b>Aluminium housing</b>         |                    |      |            |
| FBCon PA CG/M12 1way             | branch line M12    | 1    | 8564060000 |
| <b>Stainless steel enclosure</b> |                    |      |            |
| FBCon SS CG/M12 1way             | branch line M12    | 1    | 8726020000 |

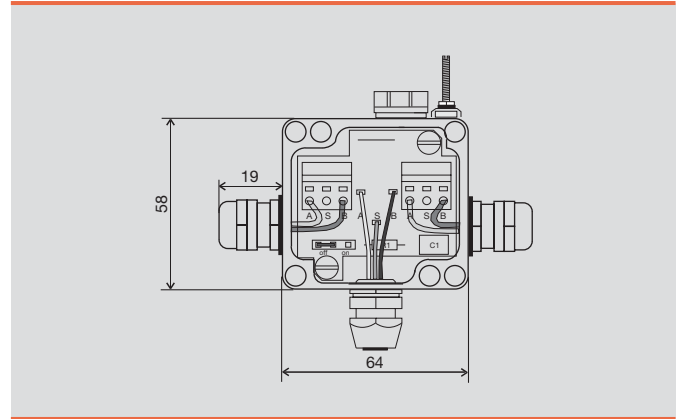
CG = brass cable gland  
PCG = plastic cable gland

CG = brass cable gland  
PCG = plastic cable gland

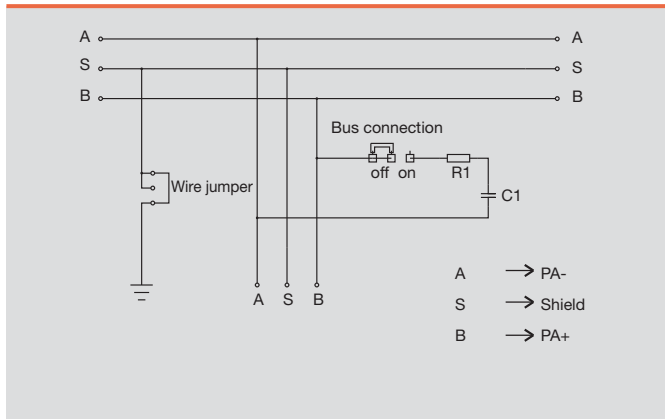
Dimensioned drawing



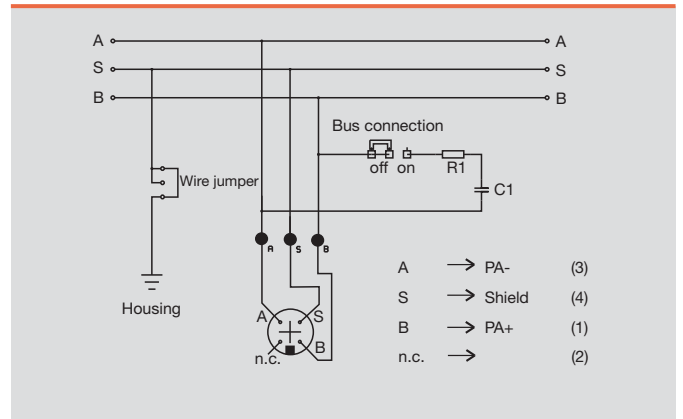
Dimensioned drawing



Wiring diagram



Wiring diagram



2-channel distributor

Cable gland



2-channel distributor

M12 connection



Ordering data

| Type                             | Type of connection | Qty. | Order No.  |
|----------------------------------|--------------------|------|------------|
| <b>Aluminium housing</b>         |                    |      |            |
| FBCon PA CG 2way                 | branch line CG     | 1    | 8564100000 |
| <b>Stainless steel enclosure</b> |                    |      |            |

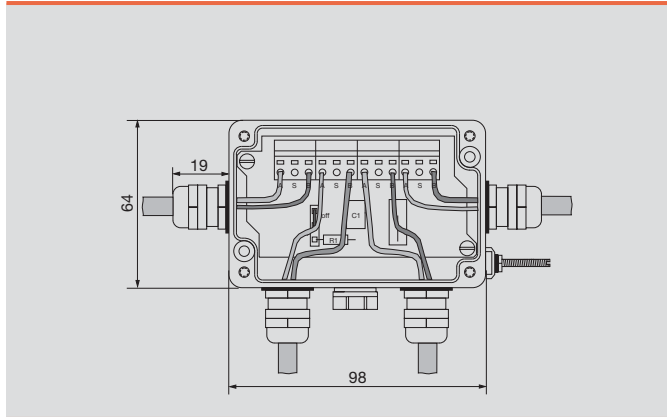
Ordering data

| Type                             | Type of connection | Qty. | Order No.  |
|----------------------------------|--------------------|------|------------|
| <b>Aluminium housing</b>         |                    |      |            |
| FBCon PA CG/M12 2way             | branch line M12    | 1    | 8564070000 |
| <b>Stainless steel enclosure</b> |                    |      |            |

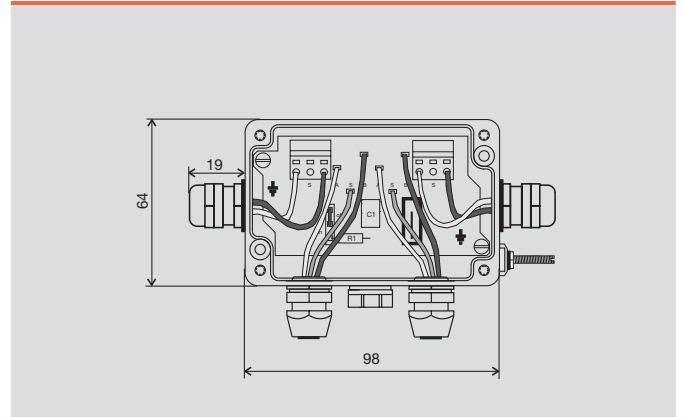
CG = brass cable gland  
PCG = plastic cable gland

CG = brass cable gland  
PCG = plastic cable gland

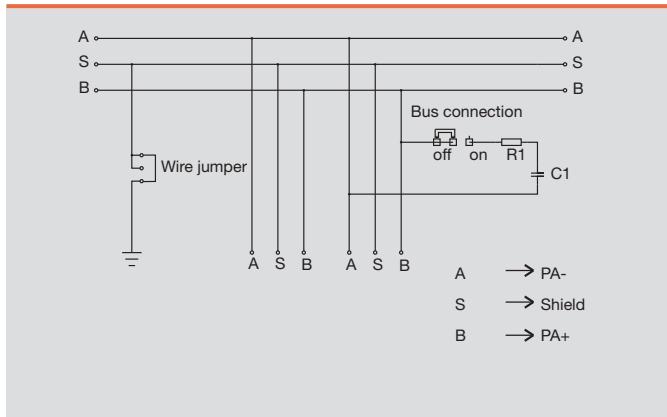
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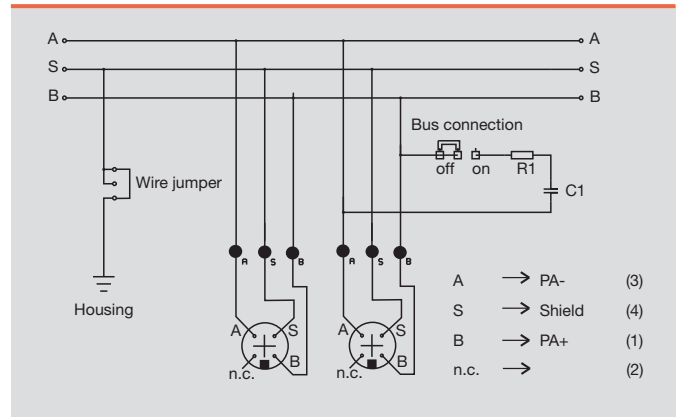
Dimensioned drawing



Wiring diagram



Wiring diagram



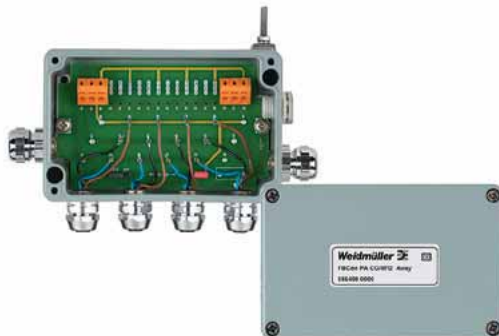
4-channel distributor

Cable gland



4-channel distributor

M12 connection



Ordering data

| Type                             | Type of connection  | Qty. | Order No.  |
|----------------------------------|---------------------|------|------------|
| <b>Aluminium housing</b>         |                     |      |            |
| FBCon PA CG 4way                 | branch line CG      | 1    | 8564110000 |
| <b>Stainless steel enclosure</b> |                     |      |            |
| FBCon SS CG 4way                 | branch line CG      | 1    | 8703450000 |
| FBCon SS PCG 4way                | all connections PCG | 1    | 8613680000 |

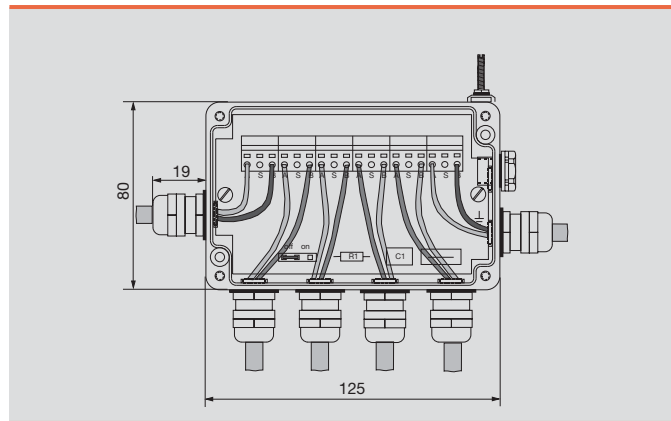
Ordering data

| Type                             | Type of connection | Qty. | Order No.  |
|----------------------------------|--------------------|------|------------|
| <b>Aluminium housing</b>         |                    |      |            |
| FBCon PA CG/M12 4way             | branch line M12    | 1    | 8564080000 |
| <b>Stainless steel enclosure</b> |                    |      |            |
| FBCon SS CG/M12 4way             | branch line M12    | 1    | 8726040000 |

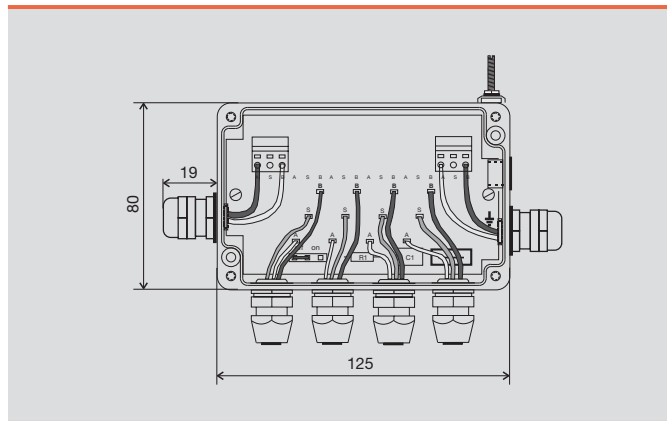
CG = brass cable gland  
PCG = plastic cable gland

CG = brass cable gland  
PCG = plastic cable gland

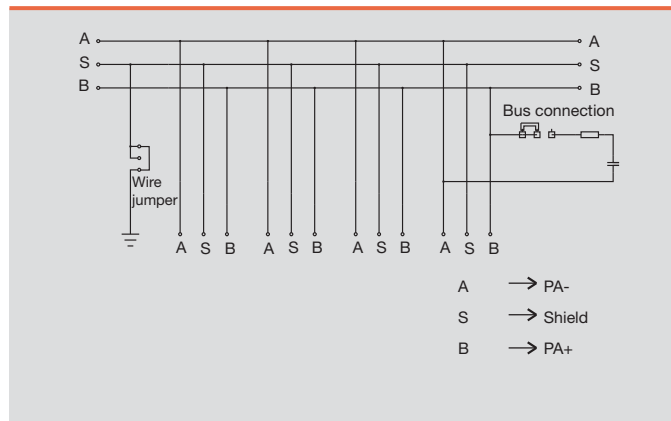
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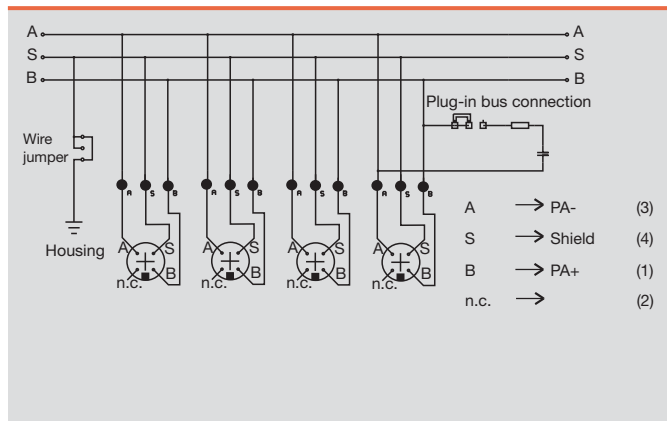
Dimensioned drawing



Wiring diagram



Wiring diagram



8-channel distributor

Cable gland



8-channel distributor

M12 connection



Ordering data

| Type                             | Type of connection  | Qty. | Order No.  |
|----------------------------------|---------------------|------|------------|
| <b>Aluminium housing</b>         |                     |      |            |
| FBCon PA CG 8way                 | branch line CG      | 1    | 8564300000 |
| <b>Stainless steel enclosure</b> |                     |      |            |
| FBCon SS CG 8way                 | branch line CG      | 1    | 8703470000 |
| FBCon SS PCG 8way                | all connections PCG | 1    | 8640720000 |

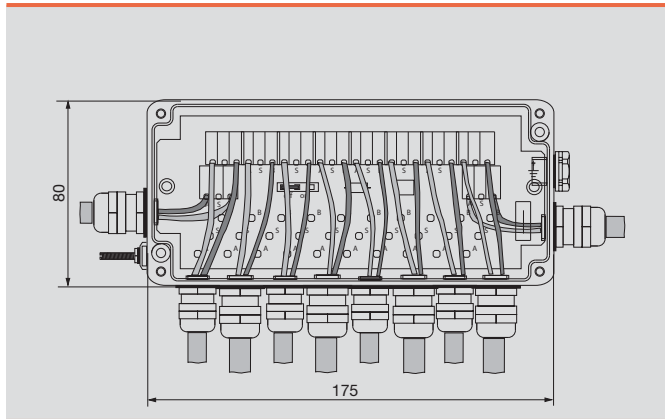
Ordering data

| Type                             | Type of connection | Qty. | Order No.  |
|----------------------------------|--------------------|------|------------|
| <b>Aluminium housing</b>         |                    |      |            |
| FBCon PA CG/M12 8way             | branch line M12    | 1    | 8564310000 |
| <b>Stainless steel enclosure</b> |                    |      |            |
| FBCon SS CG/M12 8way             | branch line M12    | 1    | 8726050000 |

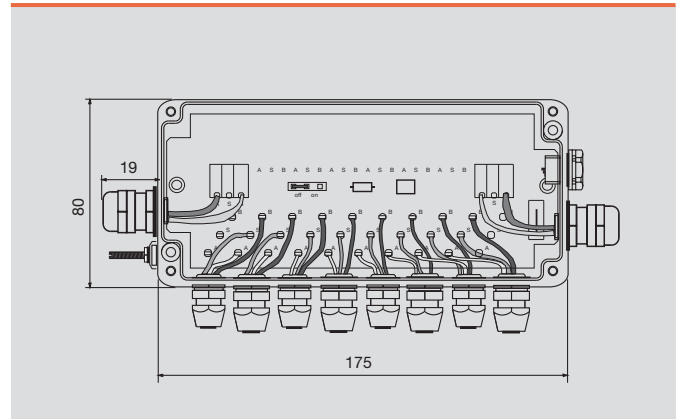
CG = brass cable gland  
PCG = plastic cable gland

CG = brass cable gland  
PCG = plastic cable gland

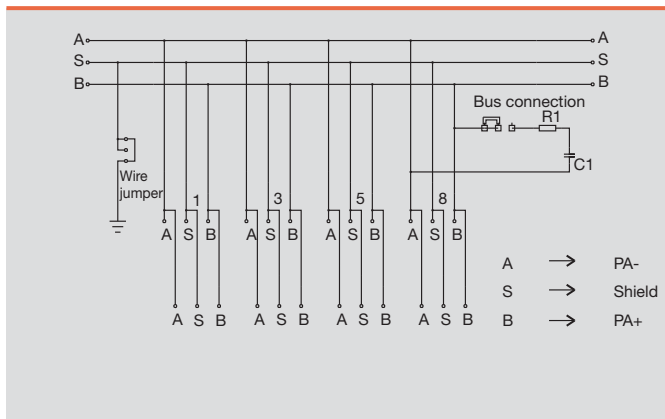
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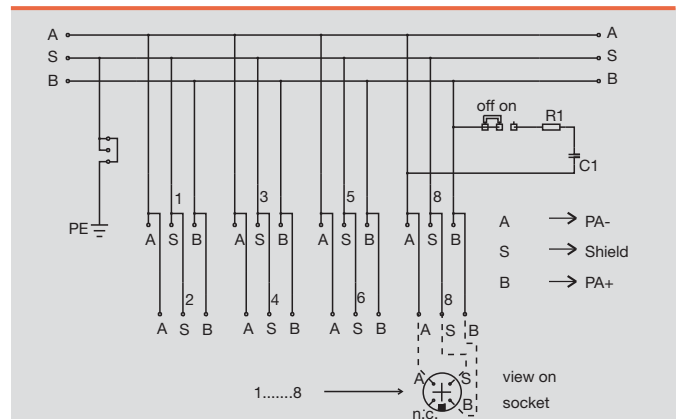
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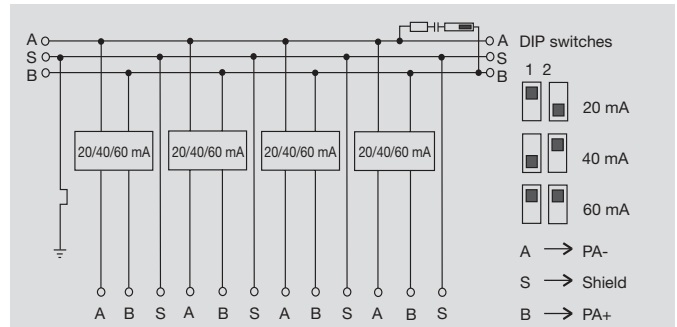
Wiring diagram



Wiring diagram



Fieldbus components for industrial applications with surge protection or current limiter



Example: 4-way module with current limiter

PROFIBUS-PA T-connectors

Fine surge protection or integrated current limiting mechanisms are designed for protecting connected measuring devices, sensors or actuators from surge voltages. Gas-discharge tubes and suppressor diodes are voltage-limiting protection mechanisms. If a rapidly rising voltage pulse reaches the input of a T-connector with surge protection, the gas discharge tube ignites and discharges a high current.

The residual pulse is limited by a suppressor diode. In the case of a slow rise in voltage, the pulse is processed by

the diode alone. The housing is connected to the protective earth via an external earth stud.

When using the connectors for current limiting, the PROFIBUS-PA network is protected against short circuits with protective circuitry.

The current can be set to either 20 mA, 40 mA or 60 mA by means of two DIP switches.

Surge protection  
Technical data

|                                         |                                                   |
|-----------------------------------------|---------------------------------------------------|
| Operating temperature                   | -40 °C to 85 °C                                   |
| Ingress protection class                | IP 67                                             |
| Enclosure material                      | High grade aluminium alloy (AL - SI 12)           |
| Finish                                  | Painted RAL 7001                                  |
| PROFIBUS-PA connection                  | Tension clamp terminals 0.5 - 1.5 mm <sup>2</sup> |
| Cable entry                             | Cable gland M16                                   |
| Branch                                  | M12 socket (4-pin)                                |
| Cable gland clamping range              | 5.5 - 9.5 mm                                      |
| Nominal voltage DC/AC                   | U <sub>N</sub> = 24 V DC/18 V AC                  |
| Max. permissible operating voltage      | U <sub>c</sub> = 30 V DC/21 V AC                  |
| Rated current at 30 °C                  | I <sub>N</sub> = 500 mA                           |
| Trip surge voltage (1 kV/μs)            | < 600 V                                           |
| Rated discharge surge current (8/20 μs) | I <sub>SN</sub> = 10 KA (wire-wire, wire-PE)      |
| Output voltage limit (8/20 μs)          | U <sub>p</sub> = 65 V                             |
| PROFIBUS-PA bus terminator              | Via jumper                                        |

Installation advice

|                              |              |
|------------------------------|--------------|
| <b>Torques</b>               |              |
| Screw terminals              | 0.4 Nm       |
| M16 cable gland at enclosure | 6.0 Nm       |
| Union nut M16 cable gland    | 4.0 Nm       |
| Enclosure cover              | 1.8 - 2.0 Nm |
| External earthing cable      | 1.8 - 2.0 Nm |

Limiter  
Technical data

|                                      |                                                   |
|--------------------------------------|---------------------------------------------------|
| Operating temperature                | -40 °C to 85 °C                                   |
| Ingress protection class             | IP 67                                             |
| Enclosure material                   | High grade aluminium alloy (AL - SI 12)           |
| Finish                               | Painted RAL 7001                                  |
| PROFIBUS-PA connection               | Tension clamp terminals 0.5 - 1.5 mm <sup>2</sup> |
| Cable entry                          | Cable gland M16                                   |
| Branch                               | M12 socket (4-pin)                                |
| Cable gland clamping range           | 5.5 - 9.5 mm                                      |
| Short-circuit protection per station | 20, 40, 60 mA settings                            |
| PROFIBUS-PA bus terminator           | Via jumper                                        |

Installation advice

|                              |              |
|------------------------------|--------------|
| <b>Torques</b>               |              |
| Screw terminals              | 0.4 Nm       |
| M16 cable gland at enclosure | 6.0 Nm       |
| Union nut M16 cable gland    | 4.0 Nm       |
| Enclosure cover              | 1.8 - 2.0 Nm |
| External earthing cable      | 1.8 - 2.0 Nm |

1-channel distributor (OVP)

Cable gland



1-channel distributor (OVP)

M12 connection



Ordering data

| Type                             | Type of connection  | Qty. | Order No.  |
|----------------------------------|---------------------|------|------------|
| <b>Aluminium housing</b>         |                     |      |            |
| FBCon PA CG 1way OVP             | branch line CG      | 1    | 8714120000 |
| <b>Stainless steel enclosure</b> |                     |      |            |
| FBCon SS PCG 1way OVP            | all connections PCG | 1    | 8715270000 |

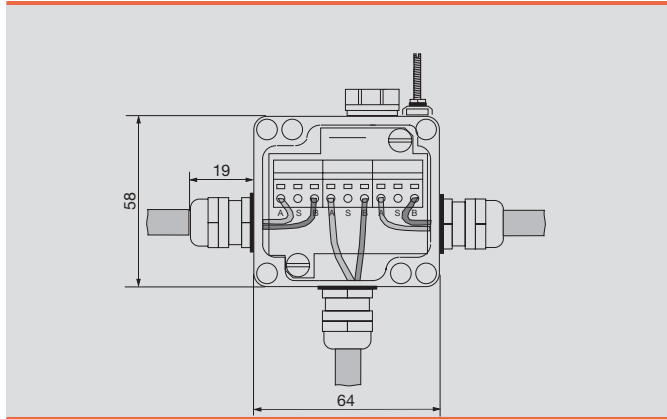
Ordering data

| Type                             | Type of connection | Qty. | Order No.  |
|----------------------------------|--------------------|------|------------|
| <b>Aluminium housing</b>         |                    |      |            |
| FBCon PA CG/M12 1way OVP         | branch line M12    | 1    | 8714080000 |
| <b>Stainless steel enclosure</b> |                    |      |            |

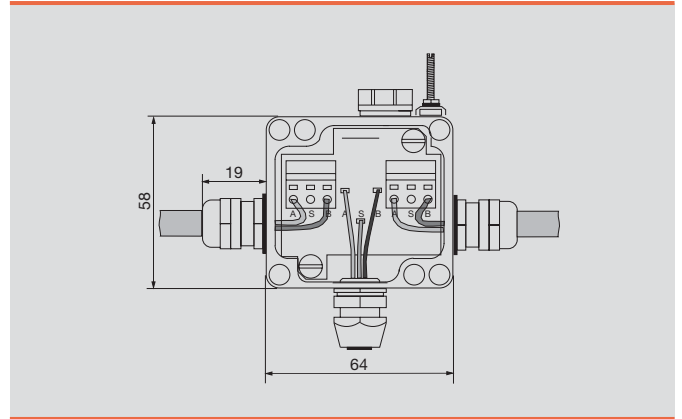
CG = brass cable gland  
PCG = plastic cable gland

CG = brass cable gland  
PCG = plastic cable gland

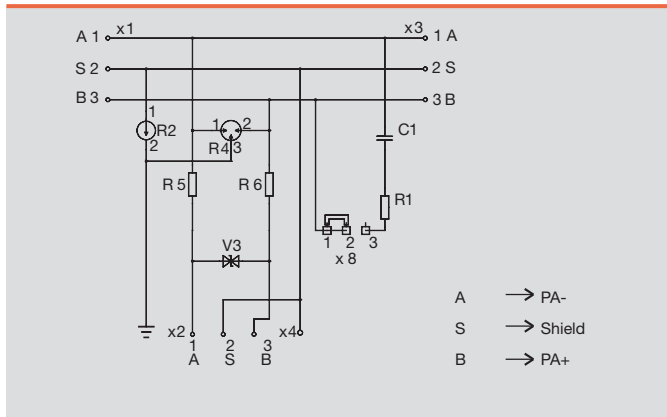
Dimensioned drawing



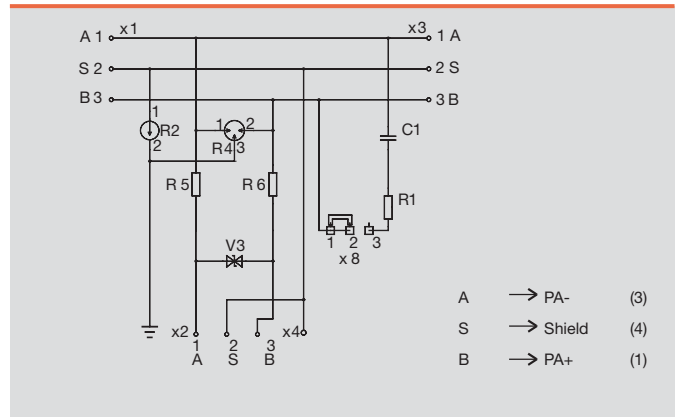
Dimensioned drawing



Wiring diagram



Wiring diagram



# PROFIBUS-PA - FBCon T-distributor with surge protection

## 2-channel distributor (OVP)

Cable gland



## 2-channel distributor (OVP)

M12 connection



### Ordering data

| Type                             | Type of connection | Qty. | Order No.  |
|----------------------------------|--------------------|------|------------|
| <b>Aluminium housing</b>         |                    |      |            |
| FBCon PA CG 2way OVP             | branch line CG     | 1    | 8714130000 |
| <b>Stainless steel enclosure</b> |                    |      |            |

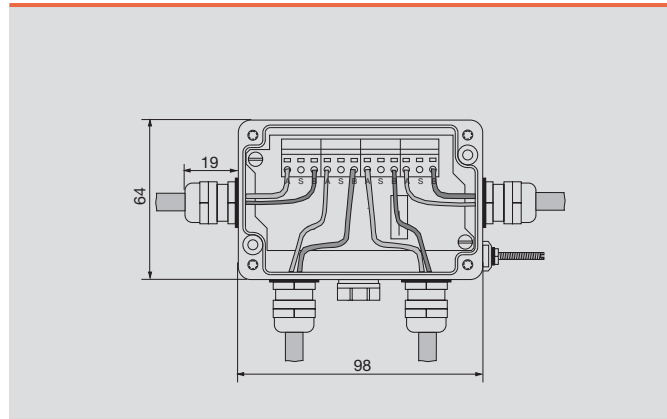
### Ordering data

| Type                             | Type of connection | Qty. | Order No.  |
|----------------------------------|--------------------|------|------------|
| <b>Aluminium housing</b>         |                    |      |            |
| FBCon PA CG/M12 2way OVP         | branch line M12    | 1    | 8714090000 |
| <b>Stainless steel enclosure</b> |                    |      |            |

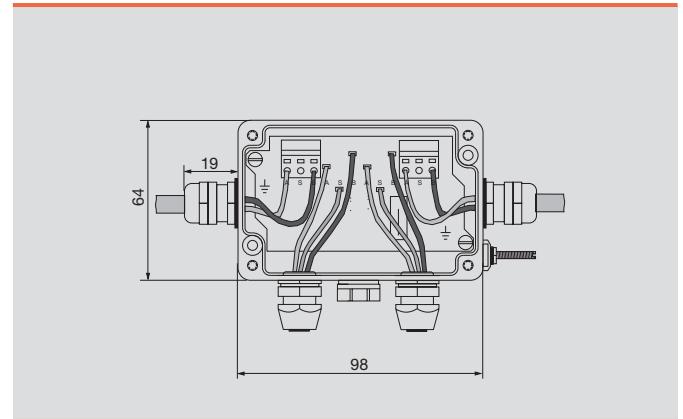
CG = brass cable gland  
PCG = plastic cable gland

CG = brass cable gland  
PCG = plastic cable gland

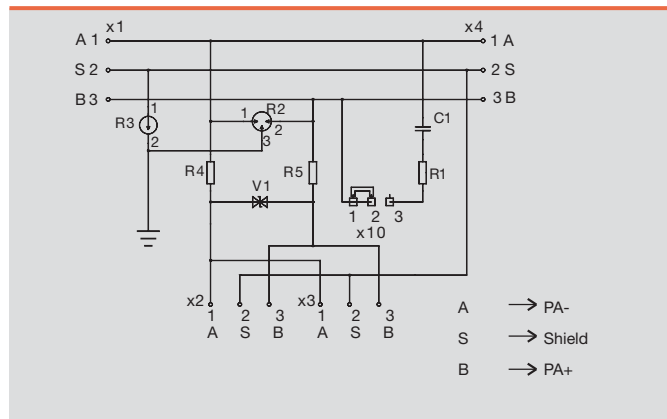
### Dimensioned drawing



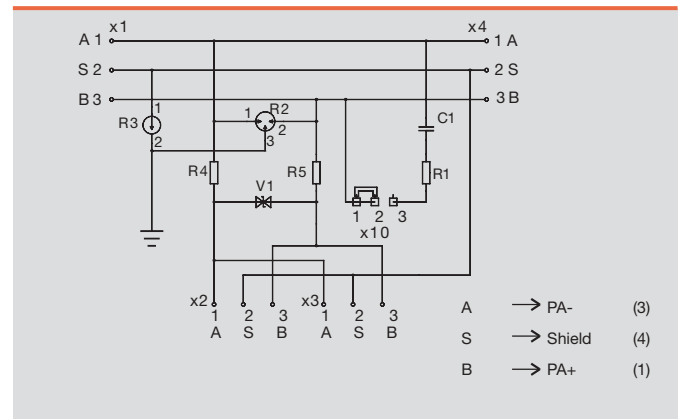
### Dimensioned drawing



### Wiring diagram



### Wiring diagram



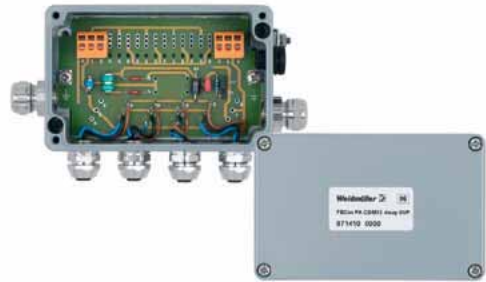
4-channel distributor (OVP)

Cable gland



4-channel distributor (OVP)

M12 connection



Ordering data

| Type                             | Type of connection  | Qty. | Order No.  |
|----------------------------------|---------------------|------|------------|
| <b>Aluminium housing</b>         |                     |      |            |
| FBCon PA CG 4way OVP             | branch line CG      | 1    | 8714140000 |
| <b>Stainless steel enclosure</b> |                     |      |            |
| FBCon SS PCG 4way OVP            | all connections PCG | 1    | 8726080000 |

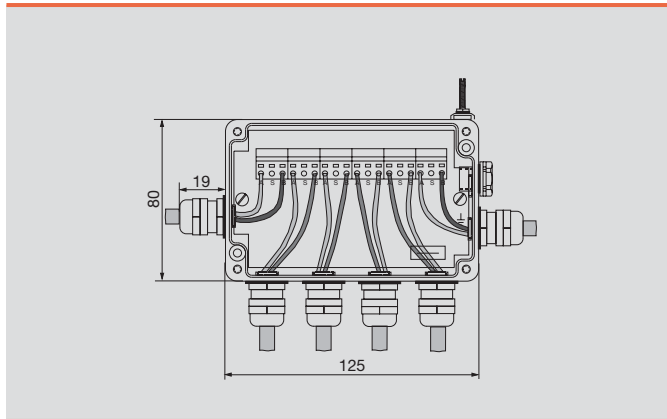
Ordering data

| Type                             | Type of connection | Qty. | Order No.  |
|----------------------------------|--------------------|------|------------|
| <b>Aluminium housing</b>         |                    |      |            |
| FBCon PA CG/M12 4way OVP         | branch line M12    | 1    | 8714100000 |
| <b>Stainless steel enclosure</b> |                    |      |            |

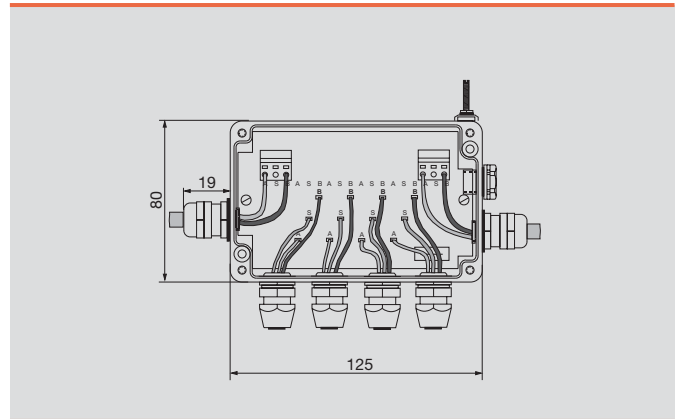
CG = brass cable gland  
PCG = plastic cable gland

CG = brass cable gland  
PCG = plastic cable gland

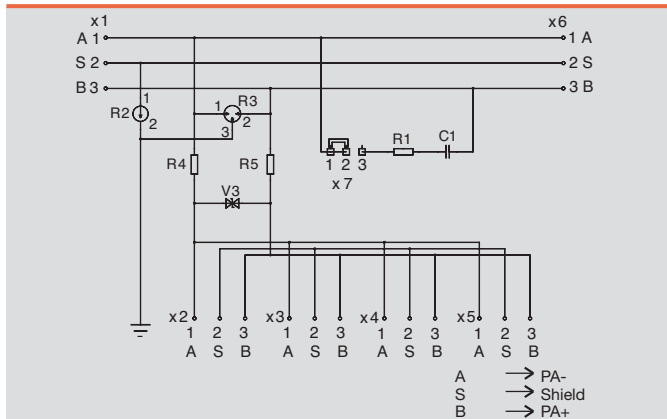
Dimensioned drawing



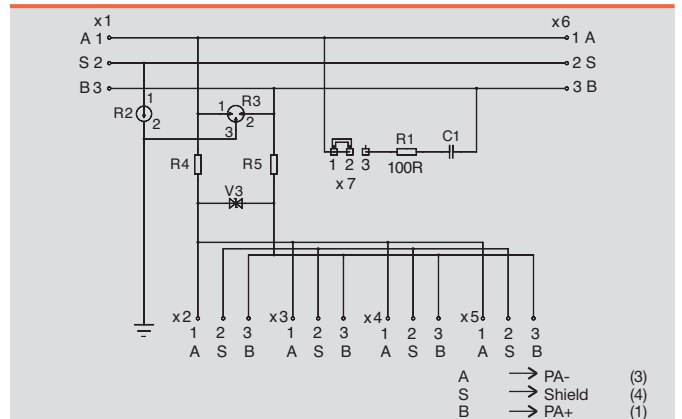
Dimensioned drawing



Wiring diagram



Wiring diagram



# PROFIBUS-PA - FBCon T-distributor with surge protection

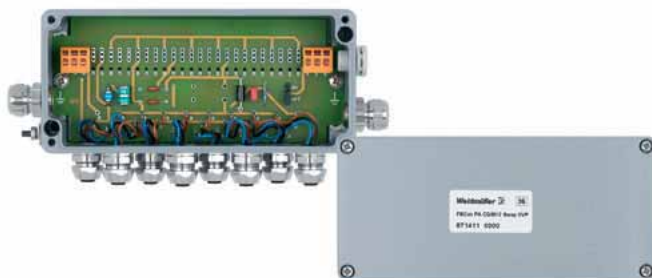
## 8-channel distributor (OVP)

Cable gland



## 8-channel distributor (OVP)

M12 connection



### Ordering data

| Type                             | Type of connection  | Qty. | Order No.  |
|----------------------------------|---------------------|------|------------|
| <b>Aluminium housing</b>         |                     |      |            |
| FBCon PA CG 8way OVP             | branch line CG      | 1    | 8714150000 |
| <b>Stainless steel enclosure</b> |                     |      |            |
| FBCon SS PCG 8way OVP            | all connections PCG | 1    | 8726090000 |

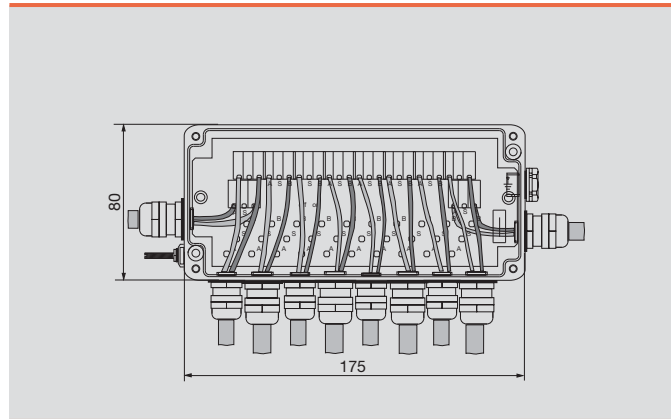
### Ordering data

| Type                             | Type of connection | Qty. | Order No.  |
|----------------------------------|--------------------|------|------------|
| <b>Aluminium housing</b>         |                    |      |            |
| FBCon PA CG/M12 8way OVP         | branch line M12    | 1    | 8714110000 |
| <b>Stainless steel enclosure</b> |                    |      |            |

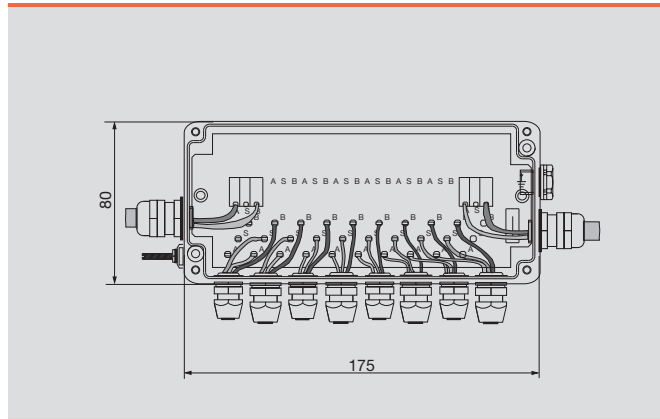
CG = brass cable gland  
PCG = plastic cable gland

CG = brass cable gland  
PCG = plastic cable gland

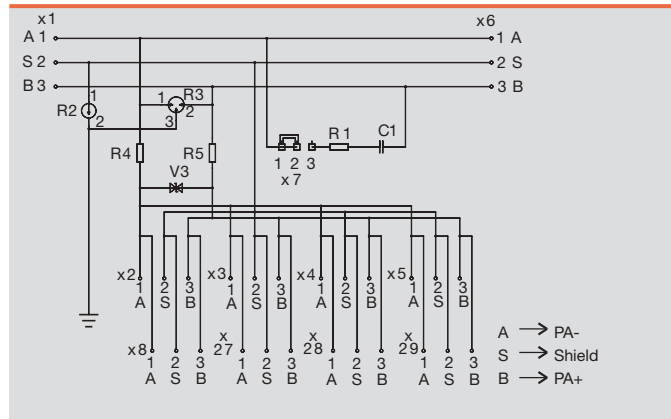
### Dimensioned drawing



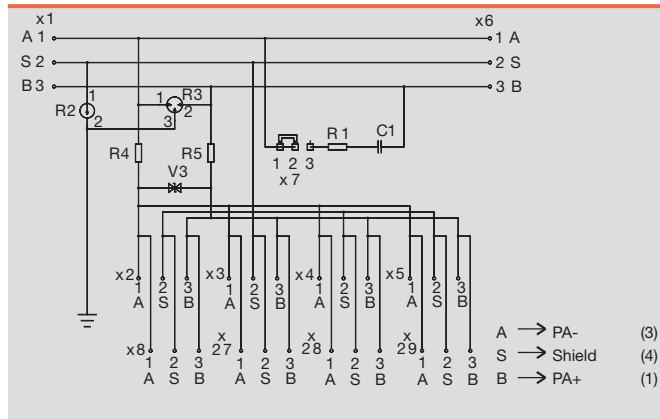
### Dimensioned drawing



### Wiring diagram



### Wiring diagram



1-channel distributor (limiter)

Cable gland



1-channel distributor (limiter)

M12 connection



Ordering data

| Type                             | Type of connection  | Qty. | Order No.  |
|----------------------------------|---------------------|------|------------|
| <b>Aluminium housing</b>         |                     |      |            |
| FBCon PA CG 1way Limiter         | branch line CG      | 1    | 8714200000 |
| <b>Stainless steel enclosure</b> |                     |      |            |
| FBCon SS PCG 1way Limiter        | all connections PCG | 1    | 8726110000 |

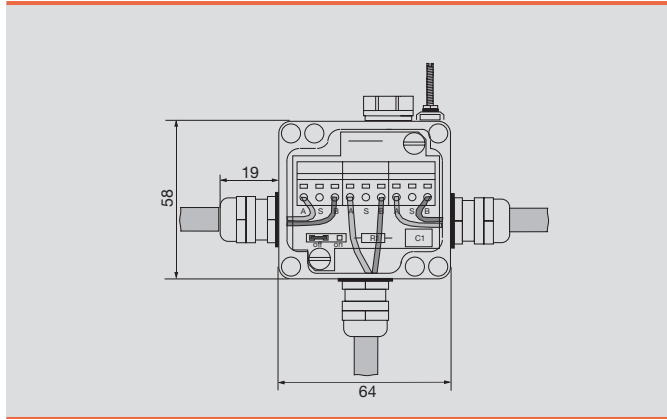
Ordering data

| Type                             | Type of connection | Qty. | Order No.  |
|----------------------------------|--------------------|------|------------|
| <b>Aluminium housing</b>         |                    |      |            |
| FBCon PA CG/M12 1way Limiter     | branch line M12    | 1    | 8714160000 |
| <b>Stainless steel enclosure</b> |                    |      |            |

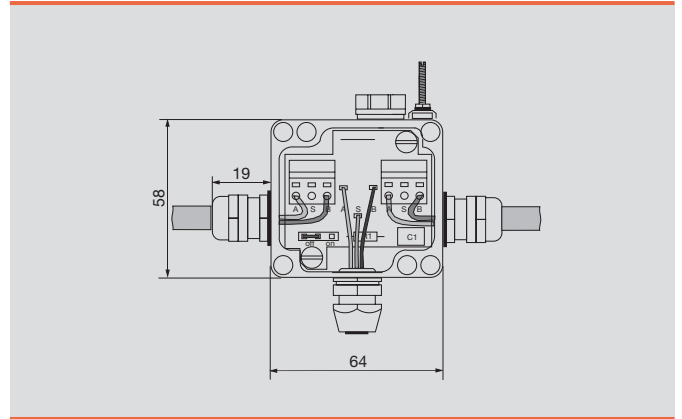
CG = brass cable gland  
PCG = plastic cable gland

CG = brass cable gland  
PCG = plastic cable gland

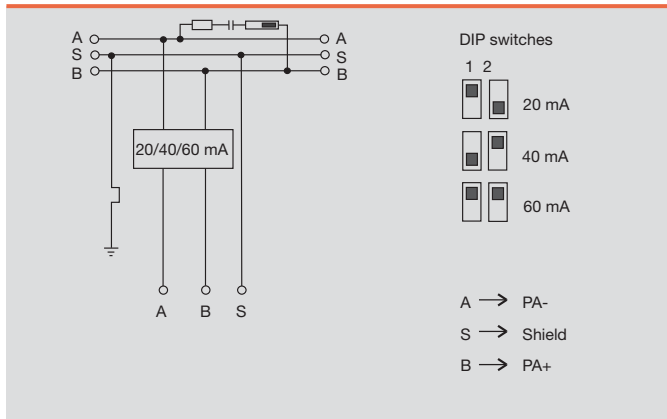
Dimensioned drawing



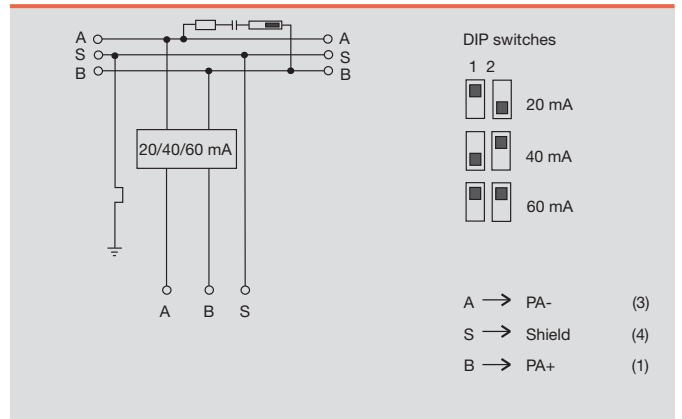
Dimensioned drawing



Wiring diagram



Wiring diagram



PROFIBUS-PA - FBCon T-distributor with surge protection

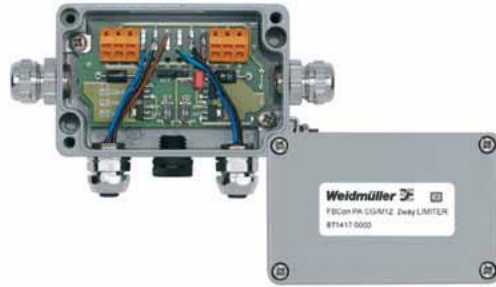
2-channel distributor (limiter)

Cable gland



2-channel distributor (limiter)

M12 connection



Ordering data

| Type                             | Type of connection | Qty. | Order No.  |
|----------------------------------|--------------------|------|------------|
| <b>Aluminium housing</b>         |                    |      |            |
| FBCon PA CG 2way Limiter         | branch line CG     | 1    | 8714210000 |
| <b>Stainless steel enclosure</b> |                    |      |            |

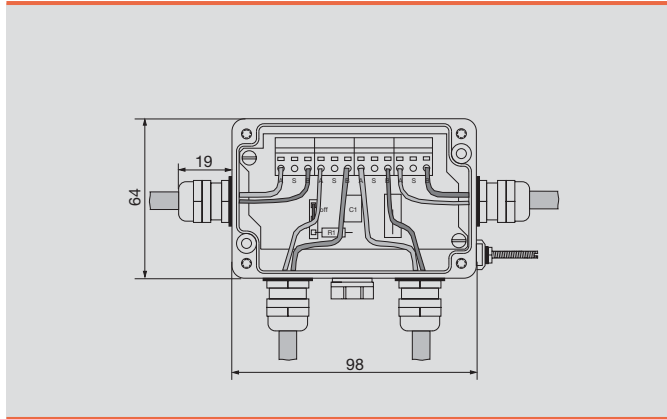
Ordering data

| Type                             | Type of connection | Qty. | Order No.  |
|----------------------------------|--------------------|------|------------|
| <b>Aluminium housing</b>         |                    |      |            |
| FBCon PA CG/M12 2way Limiter     | branch line M12    | 1    | 8714170000 |
| <b>Stainless steel enclosure</b> |                    |      |            |

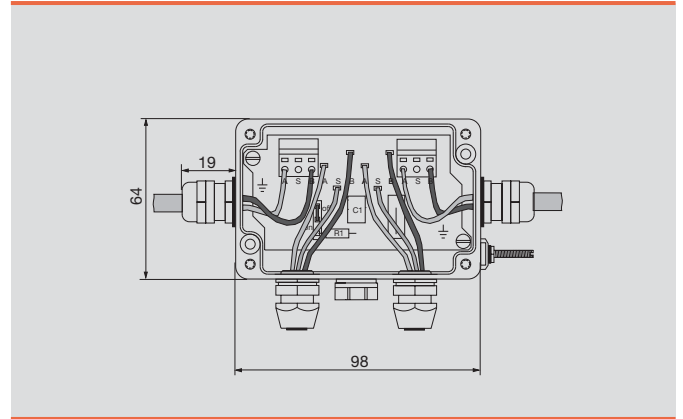
CG = brass cable gland  
PCG = plastic cable gland

CG = brass cable gland  
PCG = plastic cable gland

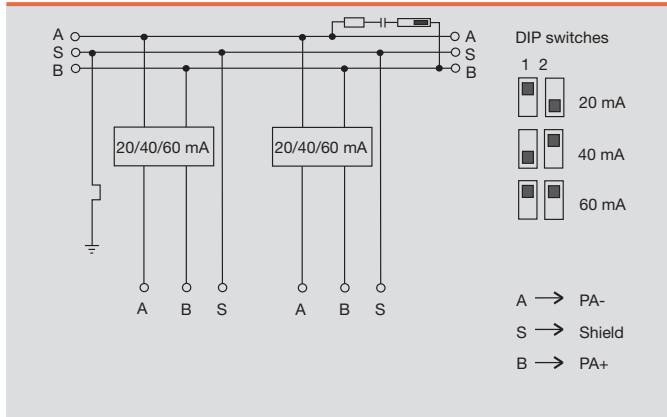
Dimensioned drawing



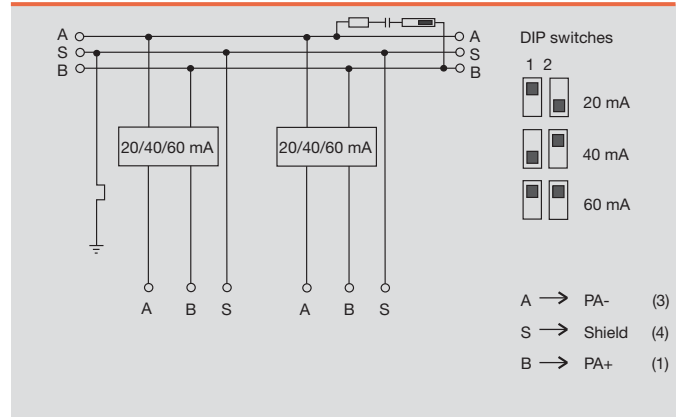
Dimensioned drawing



Wiring diagram



Wiring diagram



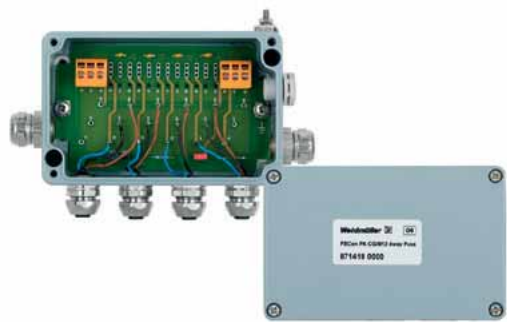
4-channel distributor (limiter)

Cable gland



4-channel distributor (limiter)

M12 connection



Ordering data

| Type                             | Type of connection  | Qty. | Order No.  |
|----------------------------------|---------------------|------|------------|
| <b>Aluminium housing</b>         |                     |      |            |
| FBCon PA CG 4way Limiter         | branch line CG      | 1    | 8714220000 |
| <b>Stainless steel enclosure</b> |                     |      |            |
| FBCon SS PCG 4way Limiter        | all connections PCG | 1    | 8715260000 |

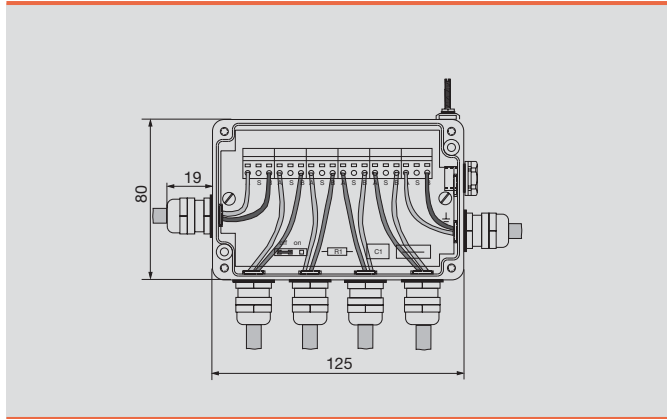
Ordering data

| Type                             | Type of connection | Qty. | Order No.  |
|----------------------------------|--------------------|------|------------|
| <b>Aluminium housing</b>         |                    |      |            |
| FBCon PA CG/M12 4way Limiter     | branch line M12    | 1    | 8714180000 |
| <b>Stainless steel enclosure</b> |                    |      |            |

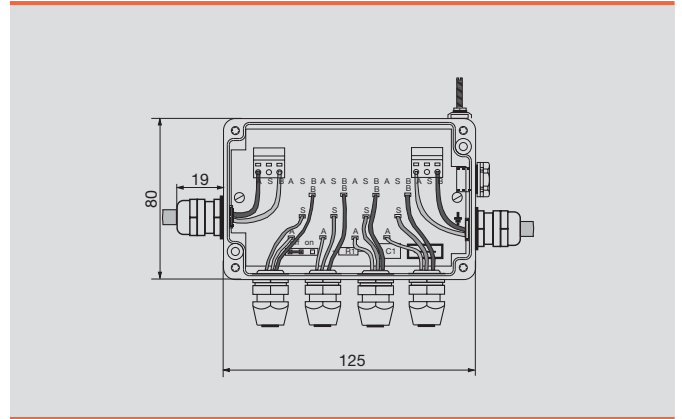
CG = brass cable gland  
PCG = plastic cable gland

CG = brass cable gland  
PCG = plastic cable gland

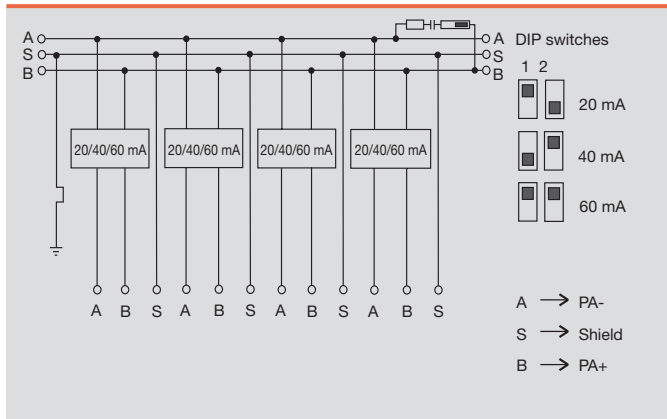
Dimensioned drawing



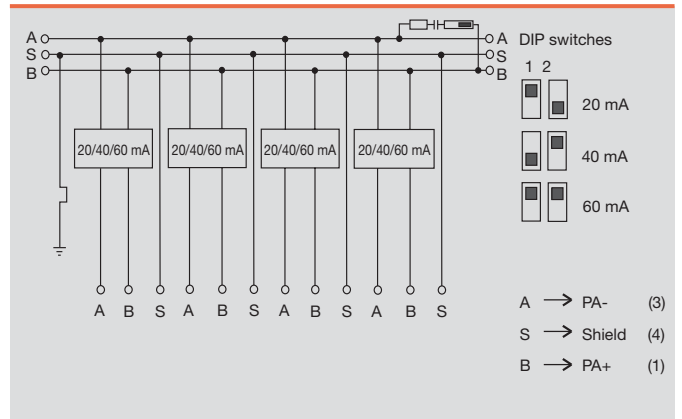
Dimensioned drawing



Wiring diagram



Wiring diagram



## PROFIBUS-PA - FBCon T-distributor with surge protection

### 8-channel distributor (limiter)

Cable gland



### 8-channel distributor (limiter)

M12 connection



C

#### Ordering data

| Type                             | Type of connection  | Qty. | Order No.  |
|----------------------------------|---------------------|------|------------|
| <b>Aluminium housing</b>         |                     |      |            |
| FBCon PA CG 8way Limiter         | branch line CG      | 1    | 8714230000 |
| <b>Stainless steel enclosure</b> |                     |      |            |
| FBCon SS PCG 8way Limiter        | all connections PCG | 1    | 8726160000 |

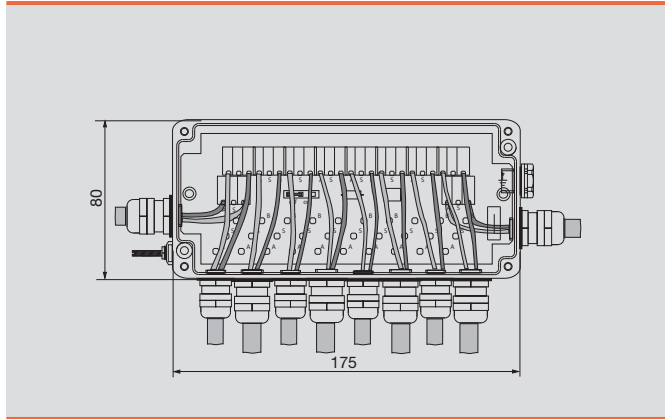
#### Ordering data

| Type                             | Type of connection | Qty. | Order No.  |
|----------------------------------|--------------------|------|------------|
| <b>Aluminium housing</b>         |                    |      |            |
| FBCon PA CG/M12 8way Limiter     | branch line M12    | 1    | 8714190000 |
| <b>Stainless steel enclosure</b> |                    |      |            |

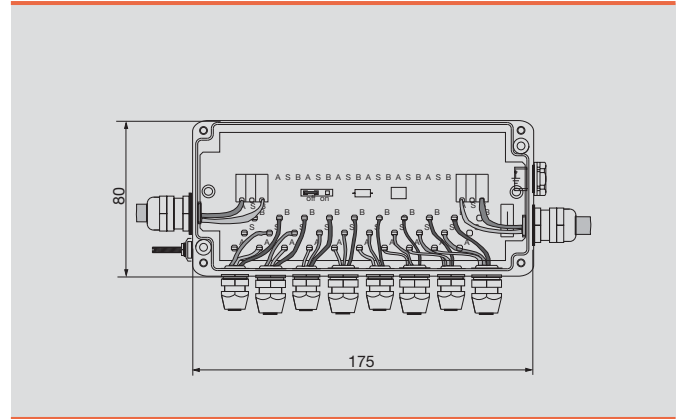
CG = brass cable gland  
PCG = plastic cable gland

CG = brass cable gland  
PCG = plastic cable gland

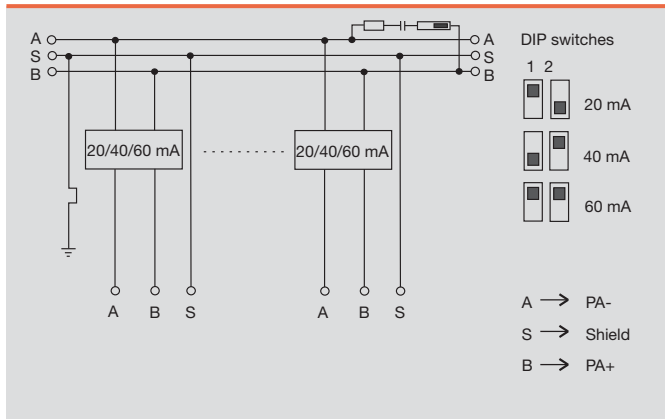
#### Dimensioned drawing



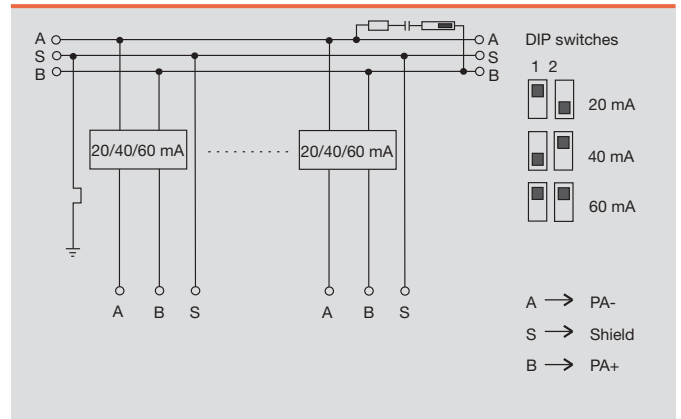
#### Dimensioned drawing



#### Wiring diagram



#### Wiring diagram





## FBCon distributors for Ex areas



### PROFIBUS-PA T-connector

- Ex(ia)

The PROFIBUS-PA installation products are increasingly used in

- food industry
- basic industries and
- chemical industry.

The product range offers a wide choice of customer solutions also for use in harsh conditions. This includes standard and EX versions of single and multi-way design with M12 plug in connection or cable gland. Weidmüller offers a solution for almost every application. If you cannot find your solution here, please contact the branch / sales office responsible for you.

### PROFIBUS-PA T-connector

- Ex(ia)
- 1-way
- 2-way
- 4-way
- 8-way

The PROFIBUS-PA T connector in Ex(ia) specification is intended for direct coupling of measuring devices, sensors, actuators, etc. in potentially explosive areas.

- Approval for intrinsically safe use ATEX approval
- IP 66 Ingress Protection Class
- Modular design
- Uninterruptible bus operation
- Simple handling
- External earth terminal
- External bus terminator



# Approvals

C

**Weidmüller** Bus Terminator 8556460000  
Datum: 27.11.00, Seite 1/2

**Technische Beschreibung / Einsatzgebiete:**

Busabschlusskomponenten wie zum Beispiel der Bus Terminator 8556460000 werden in Feldbusssystemen eingesetzt. Bei Feldbusssystemen spricht man von Leitenebene, Automatisierungsebene und Feldebene, wobei der Bus Terminator der Automatisierungsebene zuzurechnen ist. Allgemein gesagt, kann der Bus Terminator in Feldbusssystemen, die mit einer Frequenz von 31,25 kHz arbeiten, eingesetzt werden. Hierbei ist jedoch zu beachten, dass der Abschlussleistungsstand entsprechend des verwendeten Kommunikationssystems angepasst wird. Der Bus Terminator kann in allen derzeit bekannten Busssystemen eingesetzt werden, die auf der gleichen physikalischen Grundlage basieren. Er dient zur Angleichung des Schwächenstandes der Busleitung an den Schwächenstand der Buslehre (EN 50 170).

Mögliche Einsatzgebiete können FOUNDATION Fieldbus (FF) oder PROFIBUS sein.

**FOUNDATION Fieldbus**  
Der Foundation Fieldbus ist ein 2-Leiter Bus, bei dem die Buslehre über die Busleitung mit Hilfeenergie versorgt werden. Der Bus sowie die Buslehre können in der Zündschutzart Eigensicherheit ausgeführt werden. Damit stellt sich dieses System ein direktes Pendant zur bestehenden 4-20 mA Stromschleife dar.

**PROFIBUS-PA** ist das Kommunikationssystem, um den Anforderungen in der Prozessindustrie (Chemie, Petrochemie) zu begegnen. Die Kommunikation im Feldebereich wird durch die Verfügbarkeit von PROFIBUS-PA kompensiert. PA nutzt eine Zweidrahtleitung, um sowohl einfache Geräte wie Druckaufnehmer, Temperatursensoren etc. als auch komplexe Geräte wie Steuerklappen bedienen zu können. Die Durchdringungsfähigkeit von PROFIBUS-PA ist folgendes gewählt: Detaillierte Angaben zu FMS, DP und PA lassen sich aus der **DIN 19245** entnehmen.

In nicht explosionsgeschützten Bereichen nutzt PA die durch DP und FMS bekannte RS-485-Schnittstelle als Übertragungsmedium. Explosionsgeschützte Bereiche in der Zündschutzart Eigensicherheit können über Segmentkoppler erreicht werden, die die NRZ-kodierten Datensignale in die Manchesterkodierten Signale nach IEC 1158-2 umwandeln.

Die Datenübertragung und die Energieversorgung der Feldebene erfolgt über das gleiche Kabel. Jedes Feldgerät nimmt bei Busspannung der Feldebene einen Konstantstrom von 10 mA auf. Die Signale werden durch Aufmodulieren eines Stroms von ~ 5mA erzeugt.

Die wesentlichen Aufgaben eines Busystems in explosionsgefährdeten Bereichen sind:

- die ergonomische Datenübertragung sicherzustellen,
- eine schnelle und sichere Auskunft über ein Fehlerverhalten zu geben und
- die Anpassung der Prozesssignale während des Prozesses zu garantieren.

Techn. Beschreib. doc

**Weidmüller** Bus Terminator 8556460000  
Datum: 27.11.00, Seite 2/2

Speziell soll der FBCon Bus Terminator 8556460000 für den eigensicheren Bereich EEx ia und den Bereich EEx m eingesetzt werden. Der Bus Terminator darf in Verbindung mit einem für die Zündschutzarten EEx e und EEx d zugelassenen Gehäuse innerhalb einer EEx e / EEx d Applikation verwendet werden (EEx d nur in entsprechendem Gehäuse). Bei Anwendung mit / in einem Korntafelgehäuse wird der Bus Terminator mit einem zusätzlichen Erdschleuß versehen. (Zeichnung 855646 Blatt 7).

**Anwendungsbeispiel für ein Kommunikationssystem mit Bus Terminator**

Techn. Beschreib. doc

**KEMA** REGISTERED QUALITY **Ex**

**(1) EC-TYPE EXAMINATION CERTIFICATE**

(2) Equipment or protective system intended for use in potentially explosive atmosphere – Division II/MS/EC

(3) EC-Type Examination Certificate Number: KEMA 01ATEX1056 X

(4) Equipment or protective system: Bus Termination Module Type Terminator Ex

(5) Manufacturer: Weidmüller Interface GmbH & Co.

(6) Address: Klingenbergstraße 16, 32758 Detmold, Germany

(7) This equipment or protective system and any associated calibration theory is specified in the schedule to this certificate and the documents herein referred to.

(8) KEMA, notified body number 0344 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex I to the Directive.

The performance and test results are recorded in confidential report no. 2007712.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 50014 : 1997 EN 50020 : 1999 EN 50028 : 1997

(10) If the sign "C" is placed after the certificate number, it signifies that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This "EC-Type Examination" Certificate relates only to the design, examination and tests of the specified equipment or protective systems in accordance with the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

(12) The marking of the equipment or protective system shall include the following:

**Ex** II 2 G EEx ia IIC T8 and EEx m II T8

Amstern, 30 April 2001  
By order of the Board of Directors of K.V. KEMA

*C.M. Beekman*  
C.M. Beekman  
Certification Manager

\* This Certificate may only be reproduced in its original and without any change.

KEMA Registered Quality B.V.  
Oude Herengracht 133, 6525 AA Amsterdam, The Netherlands  
T: +31 (0)20 651 4000 F: +31 (0)20 651 4001  
E: info@kema.nl Website: www.kema.nl

ACCREDITED BY THE  
DUTCH COUNCIL FOR  
ACCREDITATION

Page 1/2

**KEMA**

**AMENDMENT 1**  
to EC-Type Examination Certificate KEMA 01ATEX1056 X

Manufacturer: Weidmüller Interface GmbH & Co.  
Address: Klingenbergstraße 16, 32758 Detmold, Germany

**Description**

In future, the range of Fieldbus Components is extended with a Bus Termination Modul with an alternative mechanical construction and with the intrinsically safe Fieldbus Distribution Modules Type FBCon PA OD 1 way Ex, 2 way Ex, 4 way Ex, and Type FBCon PA COM12 1 way Ex, 2 way Ex and 4 way Ex.

The following non-certified connectors and couplers may be used for the connection of intrinsically safe fieldbus systems:  
Connectors, male Type 845064 and female Type 842322 and locking plug-in-connectors Type 845565, 842591, 842593 and 842594.

The distribution modules, connectors and couplers are passive components, which do not influence the properties of the intrinsically safe fieldbus system.

All other data remain unchanged.

**Test documentation**

|                                                        | dated      |
|--------------------------------------------------------|------------|
| 1. Drawing No. 855646, rev 2 (sheets 2, 3, 4, 5 and 6) | 17.09.2001 |
| 860018, rev 0 (sheets 2, 3, 4, 5 and 6)                |            |
| 860019, rev 0 (sheets 2, 3, 4, 5 and 6)                |            |
| 860620, rev 0 (sheets 2, 3, 4, 5 and 6)                |            |
| 856415, rev 0 (sheets 2, 3, 4 and 5)                   |            |
| 856416, rev 0 (sheets 2, 3, 4 and 5)                   |            |
| 856417, rev 0 (sheets 2, 3, 4 and 5)                   |            |
| 856418, rev 0 (sheets 2, 3, 4 and 5)                   |            |
| 856419, rev 0 (sheets 2, 3, 4 and 5)                   |            |
| 856420, rev 0 (sheets 2, 3, 4 and 5)                   |            |
| 4-22884, rev. 1 (sheet 2)                              | 07.06.2001 |
| 845564, rev. 1 (sheets 2 and 3)                        |            |
| 842322, rev. 1 (sheets 2 and 3)                        |            |
| 845565, rev. 3 (sheet 2)                               |            |
| 842591, rev. 2 (sheet 3)                               | 23.12.1997 |
| 842591, rev. 1 (sheet 3)                               |            |
| 945568, rev. 1 (sheet 2)                               | 23.02.2001 |
| 2. Technical delivery condition No. 5203               | 23.02.2001 |

Amstern, 9 October 2001  
KEMA Quality B.V.

*T. Pipker*  
T. Pipker  
Certification Manager

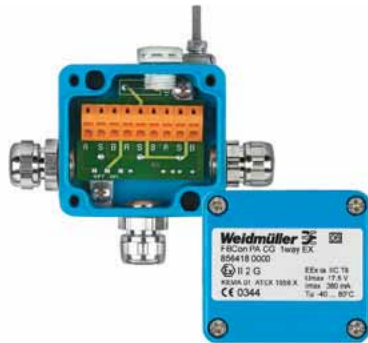
Code: **Ex** II 2 G EEx ia IIC T8 and EEx m II T8 [0012174]  
Page 1/1

\* This Amendment may only be reproduced in its entirety and without any change.



### 1-channel distributor Ex

Cable gland



### 1-channel distributor Ex

M12 connection



#### Ordering data

| Type                             | Type of connection | Qty. | Order No.  |
|----------------------------------|--------------------|------|------------|
| <b>Aluminium housing</b>         |                    |      |            |
| FBCon PA CG 1way Ex              | branch line CG     | 1    | 8564180000 |
| <b>Stainless steel enclosure</b> |                    |      |            |

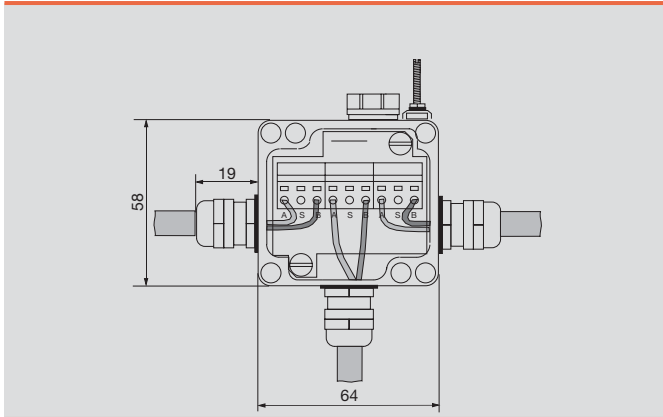
#### Ordering data

| Type                             | Type of connection | Qty. | Order No.  |
|----------------------------------|--------------------|------|------------|
| <b>Aluminium housing</b>         |                    |      |            |
| FBCon PA CG/M12 1way Ex          | branch line M12    | 1    | 8564150000 |
| <b>Stainless steel enclosure</b> |                    |      |            |

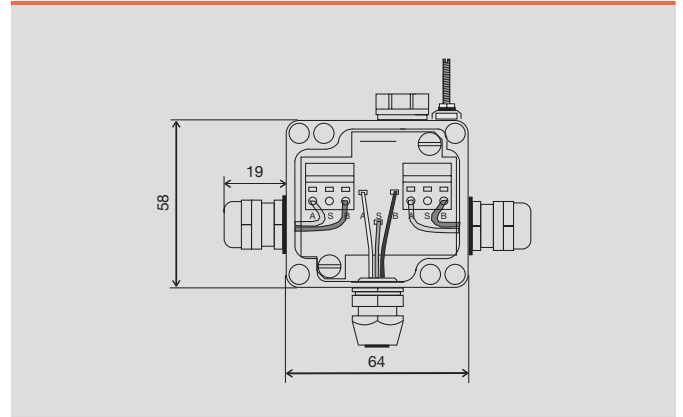
CG = brass cable gland  
PCG = plastic cable gland

CG = brass cable gland  
PCG = plastic cable gland

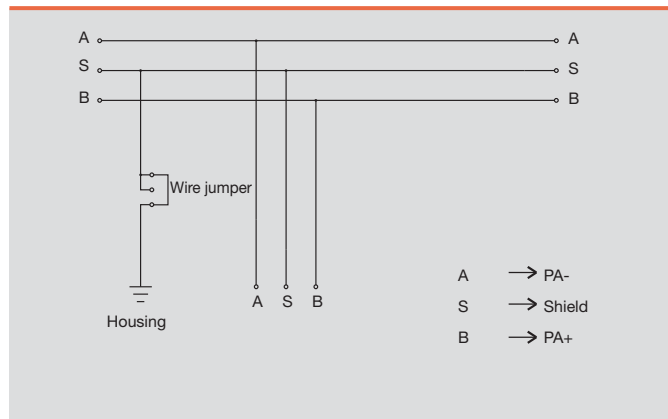
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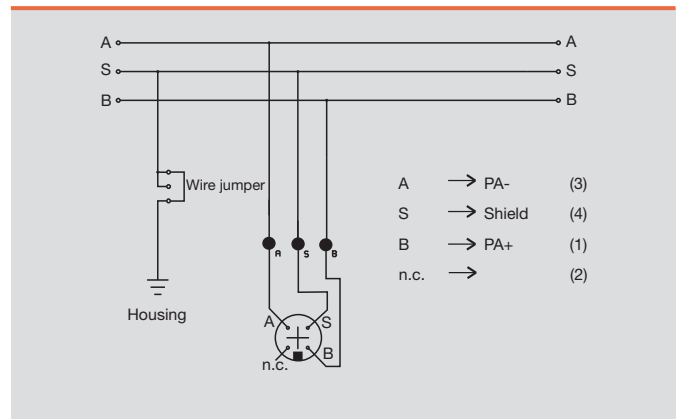
#### Dimensioned drawing



#### Wiring diagram



#### Wiring diagram



2-channel distributor Ex

Cable gland



2-channel distributor Ex

M12 connection



Ordering data

| Type                             | Type of connection | Qty. | Order No.  |
|----------------------------------|--------------------|------|------------|
| <b>Aluminium housing</b>         |                    |      |            |
| FBCon PA CG 2way Ex              | branch line CG     | 1    | 8564190000 |
| <b>Stainless steel enclosure</b> |                    |      |            |

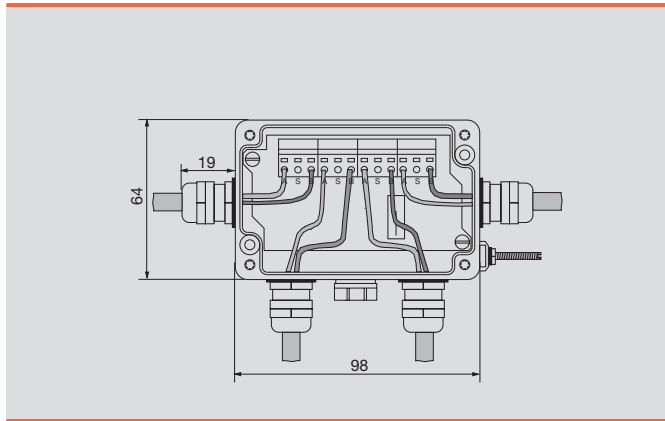
Ordering data

| Type                             | Type of connection | Qty. | Order No.  |
|----------------------------------|--------------------|------|------------|
| <b>Aluminium housing</b>         |                    |      |            |
| FBCon PA CG/M12 2way Ex          | branch line M12    | 1    | 8564160000 |
| <b>Stainless steel enclosure</b> |                    |      |            |

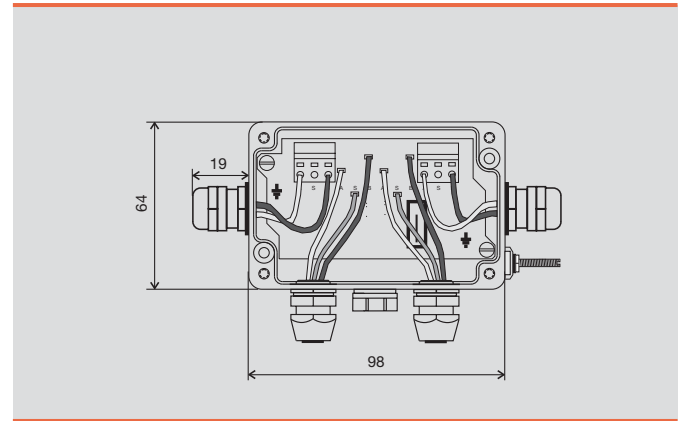
CG = brass cable gland  
PCG = plastic cable gland

CG = brass cable gland  
PCG = plastic cable gland

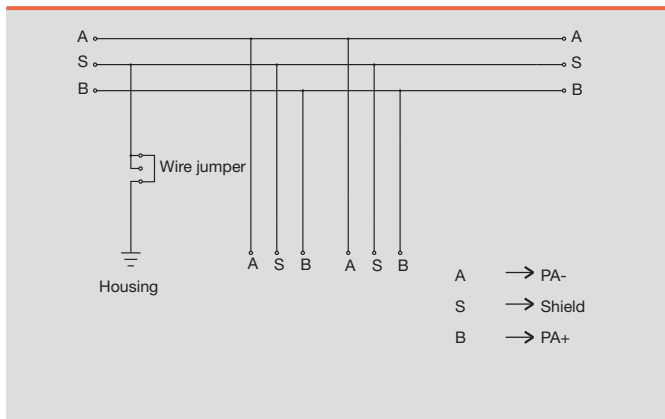
Dimensioned drawing



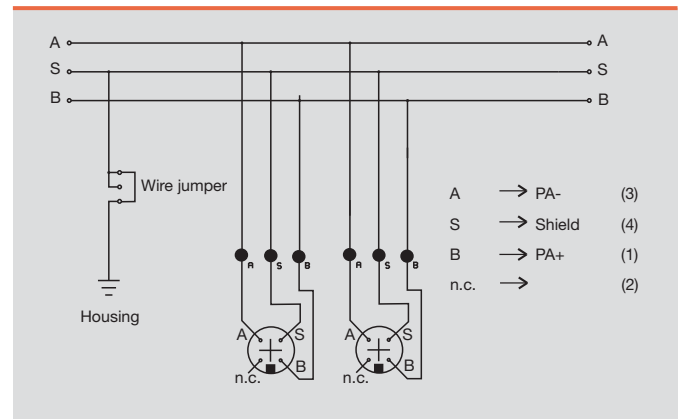
Dimensioned drawing



Wiring diagram

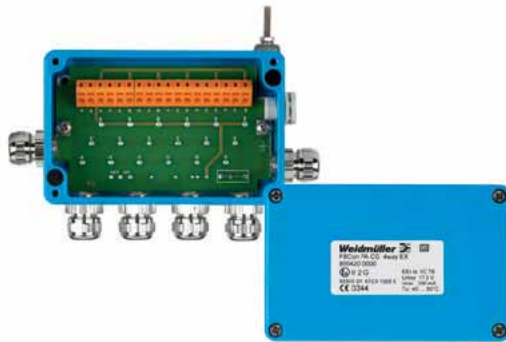


Wiring diagram



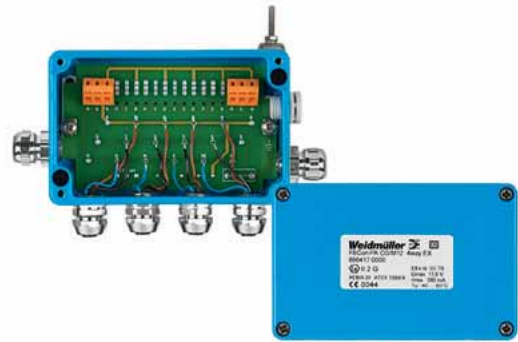
### 4-channel distributor Ex

Cable gland



### 4-channel distributor Ex

M12 connection



#### Ordering data

| Type                             | Type of connection | Qty. | Order No.  |
|----------------------------------|--------------------|------|------------|
| <b>Aluminium housing</b>         |                    |      |            |
| FBCon PA CG 4way Ex              | branch line CG     | 1    | 8564200000 |
| <b>Stainless steel enclosure</b> |                    |      |            |

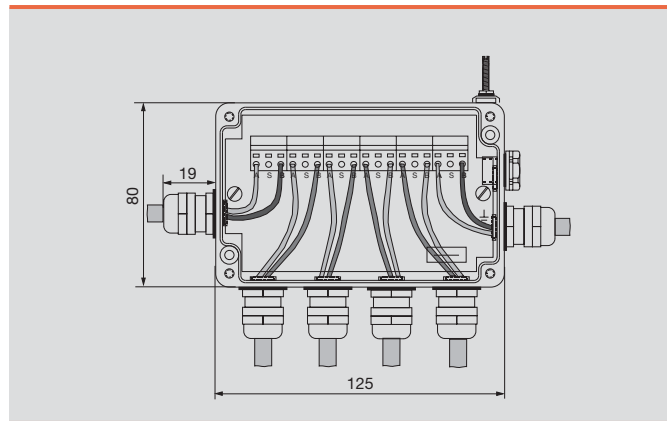
#### Ordering data

| Type                             | Type of connection | Qty. | Order No.  |
|----------------------------------|--------------------|------|------------|
| <b>Aluminium housing</b>         |                    |      |            |
| FBCon PA CG/M12 4way Ex          | branch line M12    | 1    | 8564170000 |
| <b>Stainless steel enclosure</b> |                    |      |            |

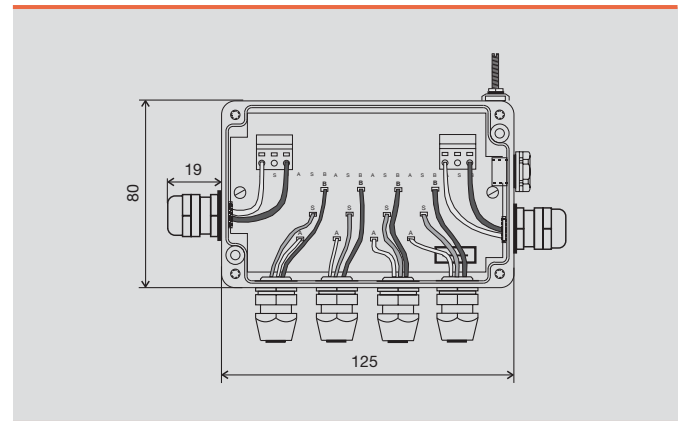
CG = brass cable gland  
PCG = plastic cable gland

CG = brass cable gland  
PCG = plastic cable gland

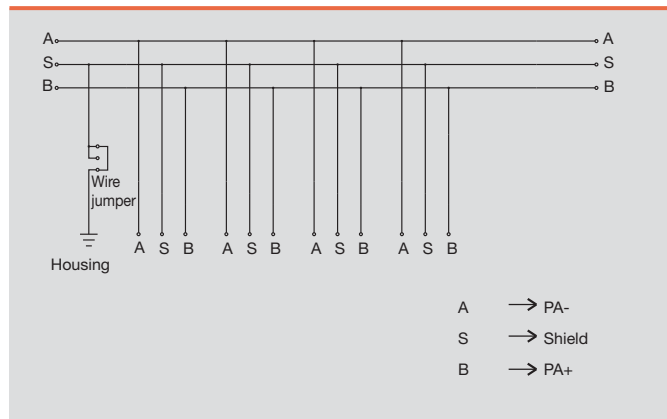
#### Dimensioned drawing



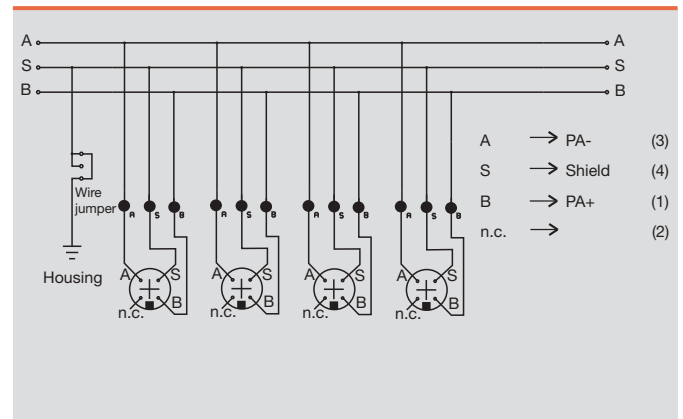
#### Dimensioned drawing



#### Wiring diagram

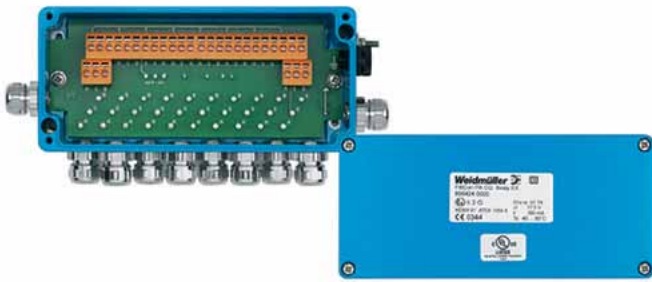


#### Wiring diagram



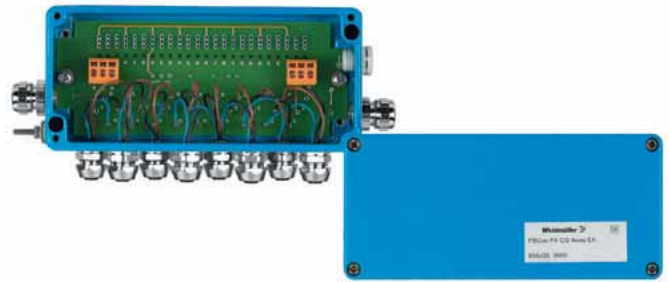
### 8-channel distributor Ex

Cable gland



### 8-channel distributor Ex

M12 connection



### Ordering data

| Type                             | Type of connection | Qty. | Order No.  |
|----------------------------------|--------------------|------|------------|
| <b>Aluminium housing</b>         |                    |      |            |
| FBCon PA CG 8way Ex              | branch line CG     | 1    | 8564240000 |
| <b>Stainless steel enclosure</b> |                    |      |            |

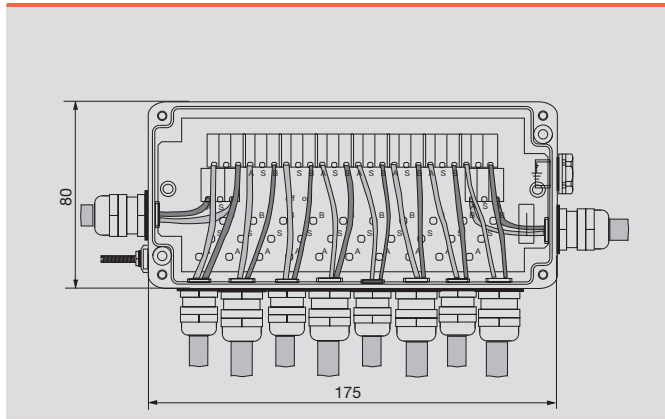
### Ordering data

| Type                             | Type of connection | Qty. | Order No.  |
|----------------------------------|--------------------|------|------------|
| <b>Aluminium housing</b>         |                    |      |            |
| FBCon PA CG/M12 8way Ex          | branch line M12    | 1    | 8564250000 |
| <b>Stainless steel enclosure</b> |                    |      |            |

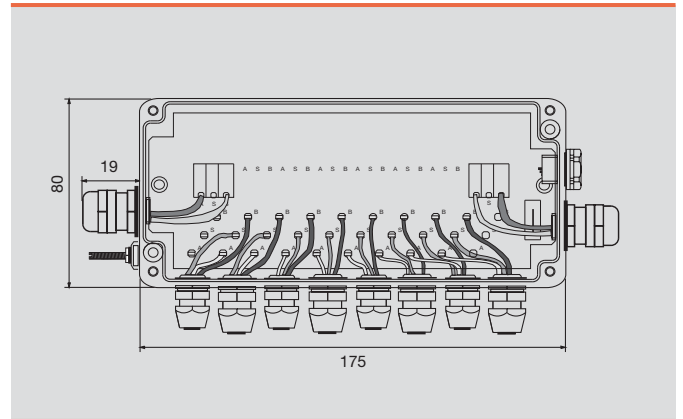
CG = brass cable gland  
PCG = plastic cable gland

CG = brass cable gland  
PCG = plastic cable gland

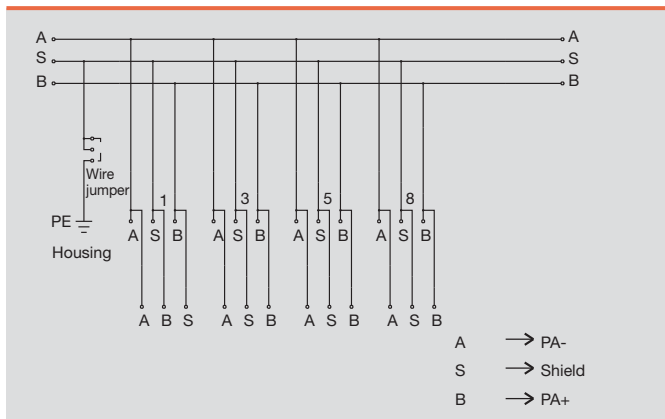
### Dimensioned drawing



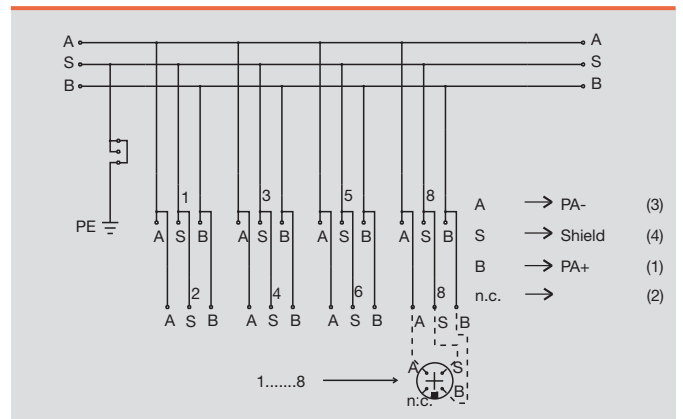
### Dimensioned drawing



### Wiring diagram



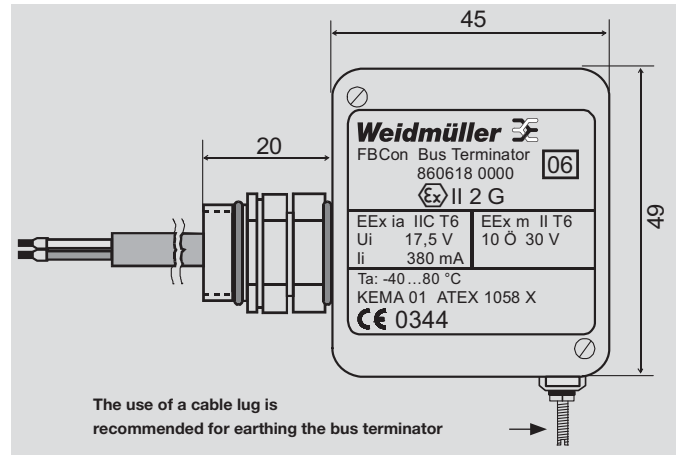
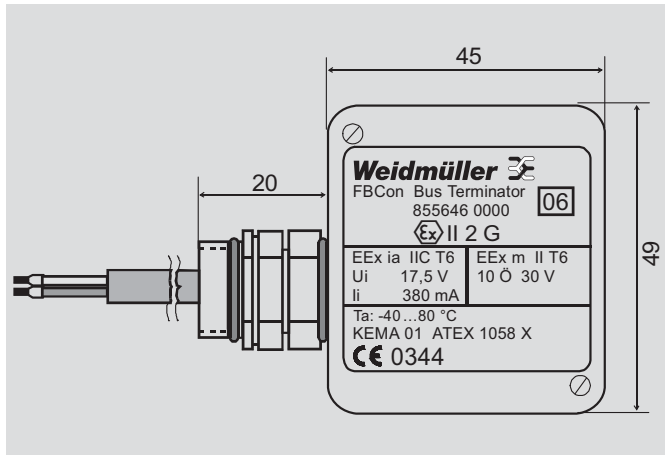
### Wiring diagram



**FBCon bus terminator**  
FBCon bus terminator without earth connection



**FBCon Bus Terminator with earth connection**



**Ordering data**

| Type                                                                    | Qty. | Order No.  |
|-------------------------------------------------------------------------|------|------------|
| FBCon bus terminator EEx with locking clip, without earth connection    | 1    | 8556460000 |
| FBCon bus terminator EEx without locking clip, without earth connection | 1    | 8606190000 |

**Technical data**

|                          |                                         |
|--------------------------|-----------------------------------------|
| Operating temperature    | -40 °C to 80 °C                         |
| Ingress protection class | IP 66                                   |
| Enclosure material       | High grade aluminium alloy (Al - Si 12) |
| Finish                   | Black powder-coated                     |
| Connection lead          | 2 x 0.14 mm <sup>2</sup>                |
| Cable entry              | Bus adapter M16                         |

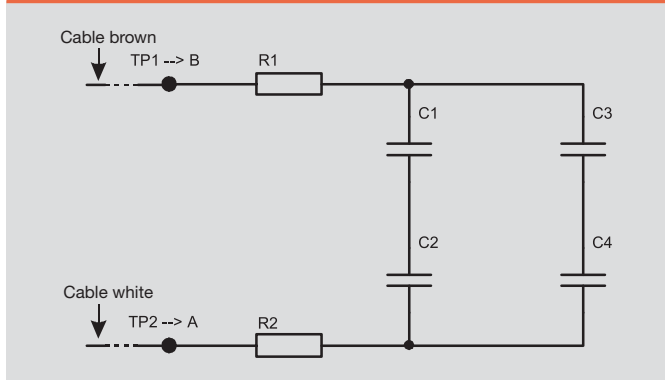
**Ordering data**

| Type                                                   | Qty. | Order No.  |
|--------------------------------------------------------|------|------------|
| FBCon Bus Terminator EEx mit Rastfuß + mit Erdschluss  | 1    | 8606180000 |
| FBCon Bus Terminator EEx ohne Rastfuß + mit Erdschluss | 1    | 8606200000 |

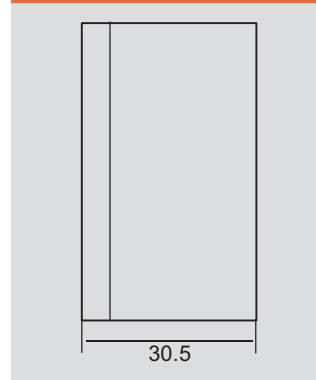
**Technical data**

|                          |                                         |
|--------------------------|-----------------------------------------|
| Operating temperature    | -40 °C to 80 °C                         |
| Ingress protection class | IP 66                                   |
| Enclosure material       | High grade aluminium alloy (Al - Si 12) |
| Finish                   | Black powder-coated                     |
| Connection lead          | 2 x 0.14 mm <sup>2</sup>                |
| Cable entry              | Bus adapter M16                         |

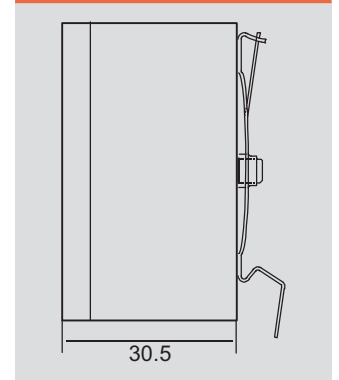
**Wiring diagram**



**Housing cover without clip-on foot**



**Housing cover with clip-on foot**





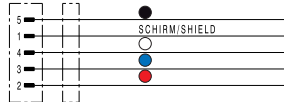
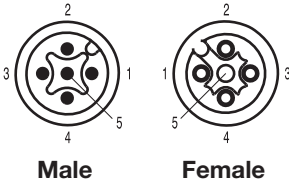
## CANopen & DeviceNet™ - cables (M12, M8)

### CAN/DeviceNet™ cables one end without connector



CANopen

DeviceNet



#### Ordering data

| Male, straight   |       |
|------------------|-------|
| PUR/TPE          | 1.5 m |
| PVC/PVC          | 1.5 m |
| Male, angled     |       |
| PUR/TPE          | 1.5 m |
| PVC/PVC          | 1.5 m |
| Female, straight |       |
| PUR/TPE          | 1.5 m |
| PVC/PVC          | 1.5 m |
| Female, angled   |       |
| PUR/TPE          | 1.5 m |
| PVC/PVC          | 1.5 m |
| Note             |       |

#### 5-pole

| Type                      | Order No.  |
|---------------------------|------------|
| SAIL-M12G-CD-1.5A         | 1964700150 |
| SAIL-M12G-CD-1.5B         | 1060110150 |
| SAIL-M12W-CD-1.5A         | 1062220150 |
| SAIL-M12W-CD-1.5B         | 1062170150 |
| SAIL-M12BG-CD-1.5A        | 1964690150 |
| SAIL-M12BG-CD-1.5B        | 1060120150 |
| SAIL-M12BW-CD-1.5A        | 1061980150 |
| SAIL-M12BW-CD-1.5B        | 1062180150 |
| Other versions on request |            |

#### Standard cable lengths

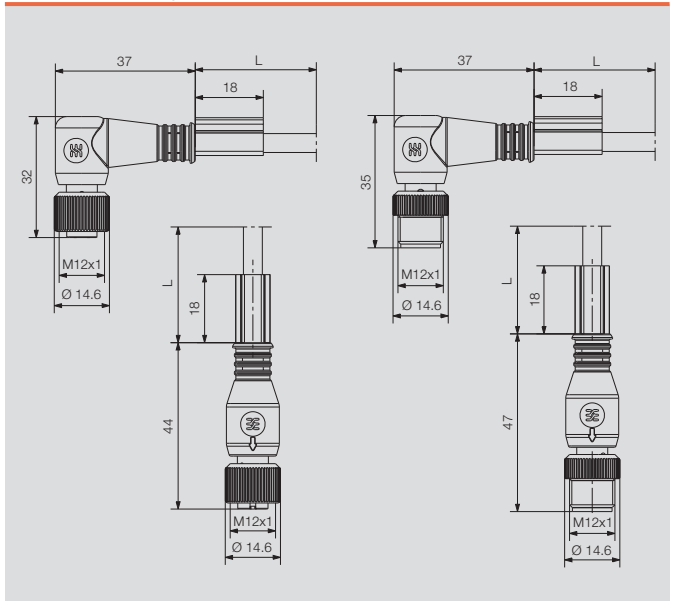
| Standard cable lengths                                                                                                                                           | Ordering data | Ordering data |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------|
| All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths. | 1.5 m         | xxxxx0150     |
|                                                                                                                                                                  | 3.0 m         | xxxxx0300     |
|                                                                                                                                                                  | 5.0 m         | xxxxx0500     |
|                                                                                                                                                                  | 10.0 m        | xxxxx1000     |

#### Technical data

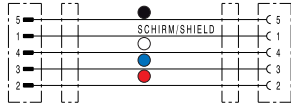
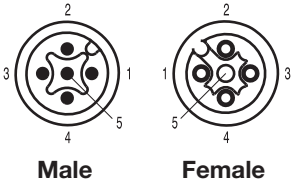
|                              |                                   |
|------------------------------|-----------------------------------|
| Sheathing colour             | black                             |
| Protection class             | IP 67                             |
| Core cross-section           | 2x 0.34 + 2x 0.22 mm <sup>2</sup> |
| Contact surface              | gold-plated                       |
| Temperature range of housing | -25...+85 °C                      |

Chapter W includes additional technical specifications for the cable

#### Dimensioned drawing



CAN/DeviceNet cables™ connecting cables

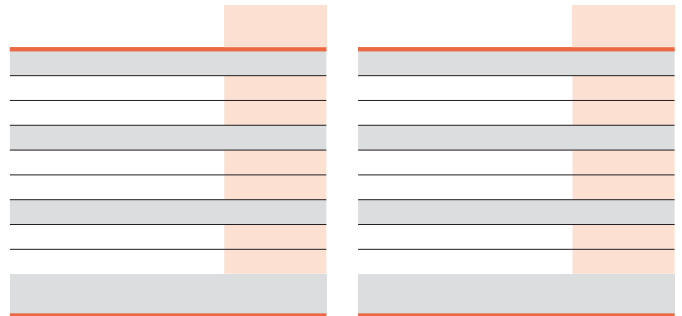


Ordering data

| Male, straight - Female, straight |       |
|-----------------------------------|-------|
| PUR/TPE                           | 1.5 m |
| PVC/PVC                           | 1.5 m |
| Male, straight - Female, angled   |       |
| PUR/TPE                           | 1.5 m |
| PVC/PVC                           | 1.5 m |
| Male, angled - Female, angled     |       |
| PUR/TPE                           | 1.5 m |
| PVC/PVC                           | 1.5 m |
| <b>Note</b>                       |       |

5-pole

| Type                      | Order No.  |
|---------------------------|------------|
| SAIL-M12GM12G-CD-1.5A     | 1964710150 |
| SAIL-M12GM12G-CD-1.5B     | 1060130150 |
|                           |            |
| SAIL-M12GM12W-CD-1.5A     | 1061990150 |
| SAIL-M12GM12W-CD-1.5B     | 1062190150 |
|                           |            |
| SAIL-M12WM12W-CD-1.5A     | 1062150150 |
| SAIL-M12WM12W-CD-1.5B     | 1062210150 |
| Other versions on request |            |



Standard cable lengths

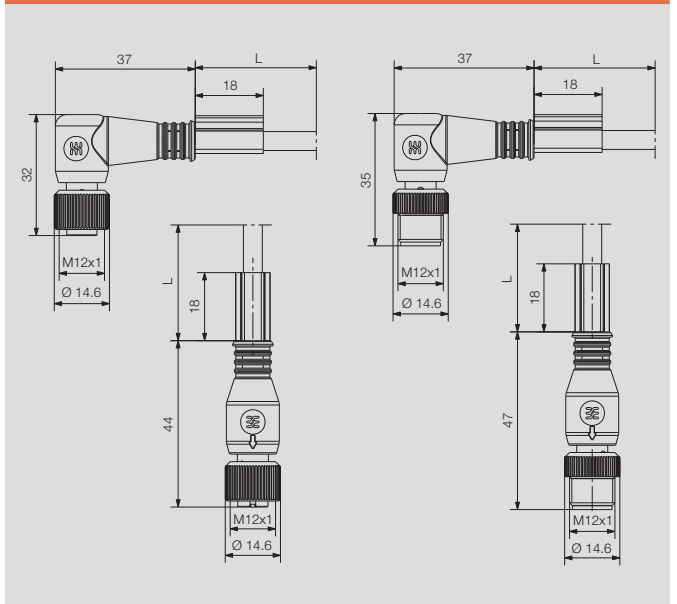
|                                                                                                                                                                  |        |           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-----------|
| All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths. | 1.5 m  | xxxxx0150 |
|                                                                                                                                                                  | 3.0 m  | xxxxx0300 |
|                                                                                                                                                                  | 5.0 m  | xxxxx0500 |
|                                                                                                                                                                  | 10.0 m | xxxxx1000 |

Technical data

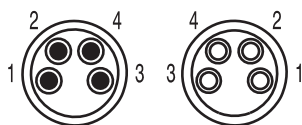
|                              |                                   |
|------------------------------|-----------------------------------|
| Sheathing colour             | black                             |
| Protection class             | IP 67                             |
| Core cross-section           | 2x 0.34 + 2x 0.22 mm <sup>2</sup> |
| Contact surface              | gold-plated                       |
| Temperature range of housing | -25...+85 °C                      |

Chapter W includes additional technical specifications for the cable

Dimensioned drawing



CAN/DeviceNet cables™  
Connecting cables



Male Female

Ordering data

| Length | Type                    | Order No.  |
|--------|-------------------------|------------|
| 0.2 m  | SAIL-M8GM8G-4S-0.2-CAN  | 1216820020 |
| 0.25 m | SAIL-M8GM8G-4S-0.25-CAN | 1216820025 |
| 0.3 m  | SAIL-M8GM8G-4S-0.3-CAN  | 1216820030 |
| 0.5 m  | SAIL-M8GM8G-4S-0.5-CAN  | 1216820050 |
| 0.8 m  | SAIL-M8GM8G-4S-0.8-CAN  | 1216820080 |
| 1.0 m  | SAIL-M8GM8G-4S-1.0-CAN  | 1216820100 |
| 1.5 m  | SAIL-M8GM8G-4S-1.5-CAN  | 1216820150 |
| 3.0 m  | SAIL-M8GM8G-4S-3.0-CAN  | 1216820300 |
| 3.5 m  | SAIL-M8GM8G-4S-3.5-CAN  | 1216820350 |
| 5.0 m  | SAIL-M8GM8G-4S-5.0-CAN  | 1216820500 |
| 7.0 m  | SAIL-M8GM8G-4S-7.0-CAN  | 1216820700 |
| 10.0 m | SAIL-M8GM8G-4S-10-CAN   | 1216821000 |

2-pole

| Type | Order No. |
|------|-----------|
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| Type | Order No. |
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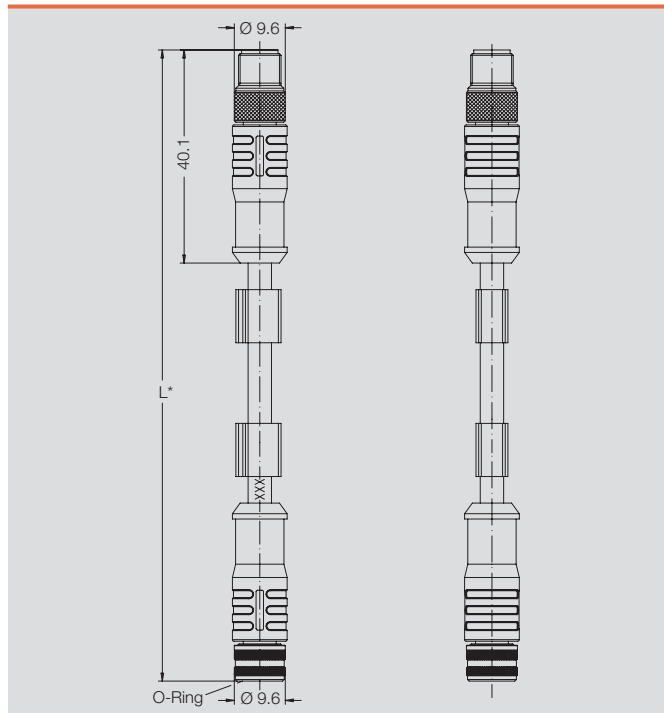
| Type | Order No. |
|------|-----------|
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Technical data

|                                        |                                                                              |
|----------------------------------------|------------------------------------------------------------------------------|
| Operating voltage                      | Max. 300 V peak                                                              |
| Wire                                   | Conductor: copper wire, without insulation, AWG 24, 7-wire Insulation: PE 2Y |
| Quad                                   | 4 wires according to 3.1 are stranded in group of four                       |
| Stranding sequence                     | Brown, green, white, yellow                                                  |
| Wrapping                               | Plastic foil                                                                 |
| Shield                                 | Braiding tin-plated copper, opt. Coverage ≥ 85 %                             |
| Outer cladding                         | PVC, YM                                                                      |
| <b>Electrical properties</b>           |                                                                              |
| Conductor resistance (at 20 °C)        | ≤ 87 Ω/km                                                                    |
| Insulation resistance                  | ≤ 1 GΩ x km                                                                  |
| Dielectric strength (50 Hz 1 min.)     | Wire/wire 1000 V                                                             |
| Characteristic impedance 1-1000 KHz    | nom. 100-120 Ω                                                               |
| Operational capacity                   | nom. 56 pF/m                                                                 |
| <b>Mechanical characteristics</b>      |                                                                              |
| Min. permitted bending radius          | One time: 7.5 x cable diameter<br>Multiple times: 15 x cable diameter        |
| Max. permitted tensile load resistance | Static: 50 N/mm <sup>2</sup><br>Dynamic: 20 N/mm <sup>2</sup>                |
| Weight                                 | Approx. 78 kg/km                                                             |
| <b>Thermal characteristics</b>         |                                                                              |
| moving                                 | -20 °C to 70 °C                                                              |
| Stationary                             | -40 °C to 70 °C                                                              |

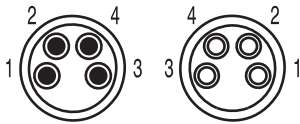
L in the drawing is the cable length

Dimensions



## Universal Pro cables

The four-pole Standard M8 sensor cables are especially well suited for the Universal Pro system. With their diameter of 0.34 mm<sup>2</sup>, these cables allow a system to be expanded up to 50 meters. The 360° shielding guarantees that signal transmission is error-free.



Male

Female

### Technical data

| Cable construction        |                      |
|---------------------------|----------------------|
| No. of poles              | 4                    |
| Sheathing colour          | grey                 |
| Material                  | PUR/PUR              |
| Core cross-section        | 0.34 mm <sup>2</sup> |
| Contact surface           | Gold-plated          |
| Nominal voltage           | 30 V                 |
| Rated current             | 4 A                  |
| Protection class          | IP 67                |
| Ambient temperature, min. | -30 °C               |
| Ambient temperature, max. | 90 °C                |

| Note |                                      |
|------|--------------------------------------|
|      | L in the drawing is the cable length |

### Ordering data

| Male, straight - female, straight | Type                   | (Qty. = 1) | Order No.  |
|-----------------------------------|------------------------|------------|------------|
| 0.3 m                             | SAIL-M8GM8G-4S-0.3Q-SB |            | 1981900030 |
| 1.0 m                             | SAIL-M8GM8G-4S-1.0Q-SB |            | 1981900100 |
| 1.5 m                             | SAIL-M8GM8G-4S-1.5Q-SB |            | 1981900150 |
| 3.0 m                             | SAIL-M8GM8G-4S-3.0Q-SB |            | 1981900300 |
| 5.0 m                             | SAIL-M8GM8G-4S-5.0Q-SB |            | 1981900500 |
| 10.0 m                            | SAIL-M8GM8G-4S-10Q-SB  |            | 1981901000 |
| 15.0 m                            | SAIL-M8GM8G-4S-15Q-SB  |            | 1981901500 |
| 20.0 m                            | SAIL-M8GM8G-4S-20Q-SB  |            | 1981902000 |
| Female, straight - open end       | Type                   | (Qty. = 1) | Order No.  |
| 1.5 m                             | SAIL-M8BG-4S-1.5Q-SB   |            | 1981910150 |
| 3.0 m                             | SAIL-M8BG-4S-3.0Q-SB   |            | 1981910300 |
| 5.0 m                             | SAIL-M8BG-4S-5.0Q-SB   |            | 1981910500 |
| 10.0 m                            | SAIL-M8BG-4S-10Q-SB    |            | 1981911000 |

| Note |                           |
|------|---------------------------|
|      | Other versions on request |

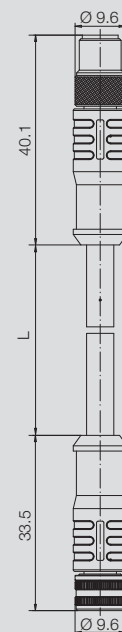
## Terminating resistor



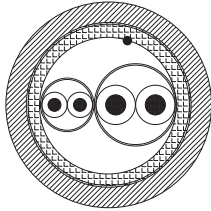
### Ordering data

| Type              | Qty. | Order No.  |
|-------------------|------|------------|
| SAI END CAN M8 4P | 1    | 1955340000 |

## Dimensions



CAN/DeviceNet™ bulk lengths



CAN/DeviceNet bulk lengths

Ordering data

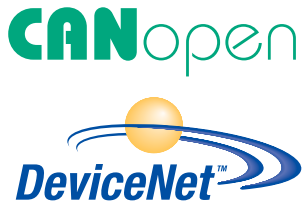
| Male   | Type                       | Order No.  |
|--------|----------------------------|------------|
| 4-pole | SAIH-CD-2x0.34/2x0.22-PURs | 1058630000 |

Technical data

| Component A (1x2x0.34) ST                       |                                                                                                                  |
|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Conductor                                       | Tin-plated copper 0.34 mm <sup>2</sup> (19 wires) according to UL 1581 Tab 20.1                                  |
| Insulation                                      | Polyolefine mixture according to UL Style 80 °C 30 V colour code: 2 conductor red/black<br>Diameter: 1.6 ±0.1 mm |
| Assembly                                        | Two twisted conductors + aluminium-polyester band (Ai exterior)                                                  |
| Element B (1x2x0.22) ST                         |                                                                                                                  |
| Conductor                                       | Tin-plated copper 0.22 mm <sup>2</sup> (19 wires) according to UL 1581 Tab 20.1                                  |
| Insulation                                      | Polyethylene foam skin<br>Colour code: 2 conductors white/blue<br>Diameter: approx. 2.0 mm                       |
| Assembly                                        | Two twisted conductors + aluminium-polyester band (Ai exterior)                                                  |
| Complete assembly                               | Element A + Element B drilled                                                                                    |
| Drain wire                                      | Tin-plated copper 0.34 mm <sup>2</sup> (19 wires) according to UL 1581 Tab 20.1                                  |
| Shield                                          | Tin-plated copper braiding, coverage 85 ± 5 %                                                                    |
| Band                                            | Fibre band                                                                                                       |
| Outer cladding                                  | Polyurethane mixture according to UL Style 80 °C 30 V<br>Colour code: black RAL 9005                             |
| Marking                                         | Not required                                                                                                     |
| General characteristics:                        |                                                                                                                  |
| Nom. impedance 0.3-20 MHz                       | (pair 2 x 0.22 mm <sup>2</sup> ) - 120 ±10 % Ω                                                                   |
| Nominal power rating 800 Hz                     | (pair 2 x 0.22 mm <sup>2</sup> ) - 39 pF/mt                                                                      |
| Operating voltage                               | Low-voltage computer cable                                                                                       |
| Test voltage                                    | 1000 V                                                                                                           |
| Conductor resistance                            | Conductor A: max. 55 Ω/km at 20 °C<br>Conductor B: max. 90 Ω/km at 20 °C                                         |
| Min. bending radius                             | 5 x D (during installation)<br>10 x D (during operations)                                                        |
| Temperature range                               | -40 °C...+80 °C (during installation)<br>-10 °C ... +80 °C (during operations)                                   |
| Reference                                       | UL 1581                                                                                                          |
| Attenuation (max.) (pair 0.22 mm <sup>2</sup> ) | 0,5 MHz ... 1,64 db/100mt<br>1,0 MHz ... 2,30 db/100mt                                                           |
| Max. speed                                      | 180 mt/min                                                                                                       |
| Max. acceleration                               | 5 mt/s <sup>2</sup>                                                                                              |
| Copper weight                                   | 33,6 kg/km (ca.)                                                                                                 |
| Total weight                                    | 79 kg/km (ca.)                                                                                                   |

Note

Screw connection M12, metal (EMC)



SAISM / SAIBM

straight



SAISW / SAIBW

Angled



Ordering data

|               |              |
|---------------|--------------|
| <b>Male</b>   | 5-pole, PG 9 |
| <b>Socket</b> | 5-pole, PG 9 |
| <b>Note</b>   |              |

| Type                      | Qty. | Order No.  |
|---------------------------|------|------------|
| SAIS-M-5/8S M12 5P A-COD  | 1    | 1784740000 |
| SAIB-M-5/8S M12 5P A-COD  | 1    | 1784750000 |
| Other versions on request |      |            |

| Type                      | Qty. | Order No.  |
|---------------------------|------|------------|
| SAISW-M-5/8 M12           | 1    | 1803940000 |
| SAIBW-M-5/8 M12           | 1    | 1803920000 |
| Other versions on request |      |            |

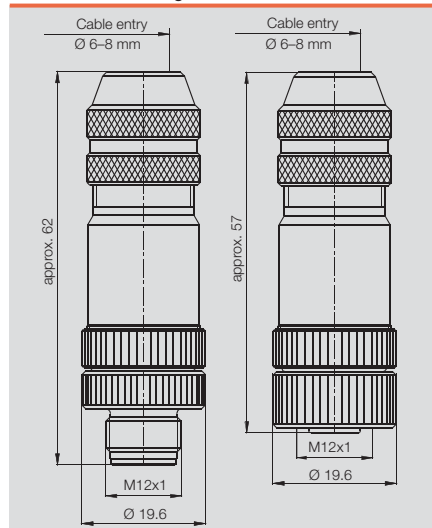
Technical data

|                                  |                             |
|----------------------------------|-----------------------------|
| Type of connection               | Screw connection            |
| Housing main material            | CuZn                        |
| Contact tube diameter            | M12                         |
| Cable diameter                   | 6...8 mm (PG9)              |
| Cross-section for connected wire | 0.14 - 0.75 mm <sup>2</sup> |
| Rated current                    | 4 A                         |
| Rated voltage                    | 125 V                       |
| Temperature range of housing     | -25...+85 °C                |
| Protection class                 | IP 67                       |
| Contact surface                  | gold-plated                 |
| <b>Note</b>                      |                             |

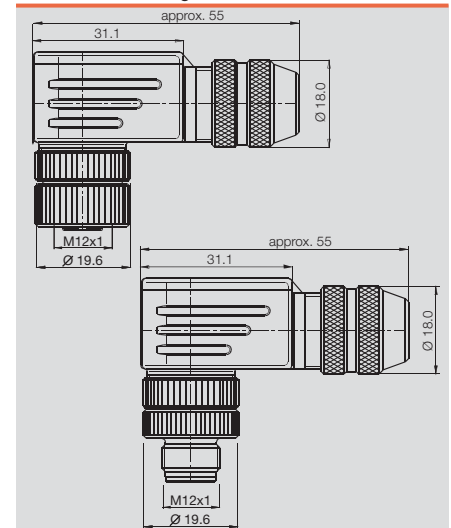
|                                  |                             |
|----------------------------------|-----------------------------|
| Type of connection               | Screw connection            |
| Housing main material            | CuZn                        |
| Contact tube diameter            | M12                         |
| Cable diameter                   | 6...8 mm (PG9)              |
| Cross-section for connected wire | 0.14 - 0.75 mm <sup>2</sup> |
| Rated current                    | 4 A                         |
| Rated voltage                    | 125 V                       |
| Temperature range of housing     | -25...+85 °C                |
| Protection class                 | IP 67                       |
| Contact surface                  | gold-plated                 |
| <b>Note</b>                      |                             |

|                                  |                             |
|----------------------------------|-----------------------------|
| Type of connection               | Screw connection            |
| Housing main material            | CuZn                        |
| Contact tube diameter            | M12                         |
| Cable diameter                   | 6...8 mm (PG9)              |
| Cross-section for connected wire | 0.14 - 0.75 mm <sup>2</sup> |
| Rated current                    | 4 A                         |
| Rated voltage                    | 125 V                       |
| Temperature range of housing     | -25...+85 °C                |
| Protection class                 | IP 67                       |
| Contact surface                  | gold-plated                 |
| <b>Note</b>                      |                             |

Dimensioned drawing

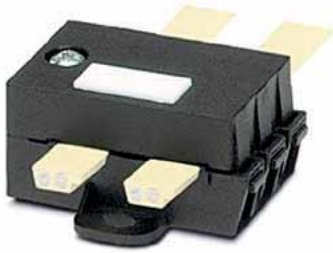


Dimensioned drawing

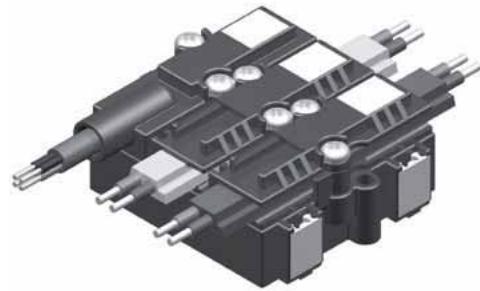




**Bridge module ribbon cable**



**Coupling module ribbon cable to round cable / yellow + black (2 m)**



**Technical data**

|                                    |                                |
|------------------------------------|--------------------------------|
| Connection AS-Interface            | ribbon cable                   |
| No. connectable cables             | 2                              |
| Type of cable                      | ribbon cable, yellow + black   |
| Flexible lead cross-section        | 1.5 mm <sup>2</sup>            |
| Connection type                    | piercing technology            |
| Type of cable                      | PUR solid                      |
| Conductor cross-section            | 0.34 mm <sup>2</sup>           |
| Cable length                       | 2 m                            |
| Operating voltage                  | ≤ 40 V                         |
| Operating current                  | ≤ 4 A                          |
| <b>General data</b>                |                                |
| Pollution severity DIN EN 0110     | 3                              |
| Ambient temperature                | -25 °C ... +75 °C              |
| Storage temperature                | -40 °C ... +85 °C              |
| Housing material                   | PA 6-GF-FR                     |
| Shock resistance                   | 30 g/11 ms                     |
| Vibration resistance               | 10 ... 55 Hz; 1.0 mm amplitude |
| <b>Specific data</b>               |                                |
| Ingress protection class DIN 40050 | IP 65                          |
| Weight                             | 20 g without cable             |
| Pin assignment                     |                                |
| Pin 1:                             | AS-Interface "+"               |
| Pin 2:                             | ext. power supply "-"          |
| Pin 3:                             | AS-Interface "-"               |
| Pin 4:                             | ext. power supply "+"          |
|                                    |                                |
|                                    |                                |
|                                    |                                |
|                                    |                                |
|                                    |                                |
|                                    |                                |
|                                    |                                |
|                                    |                                |
|                                    |                                |
|                                    |                                |
|                                    |                                |

**Technical data**

|                                    |                                |
|------------------------------------|--------------------------------|
| Connection AS-Interface            | ribbon cable                   |
| No. connectable cables             | 2                              |
| Type of cable                      | ribbon cable, yellow + black   |
| Flexible lead cross-section        | 1.5 mm <sup>2</sup>            |
| Connection type                    | piercing technology            |
| Type of cable                      | PUR solid                      |
| Conductor cross-section            | 0.34 mm <sup>2</sup>           |
| Cable length                       | 2 m                            |
| Operating voltage                  | ≤ 40 V                         |
| Operating current                  | ≤ 4 A                          |
| <b>General data</b>                |                                |
| Pollution severity DIN EN 0110     | 3                              |
| Ambient temperature                | -25 °C ... +75 °C              |
| Storage temperature                | -40 °C ... +85 °C              |
| Housing material                   | PA 6-GF-FR                     |
| Shock resistance                   | 30 g/11 ms                     |
| Vibration resistance               | 10 ... 55 Hz; 1.0 mm amplitude |
| <b>Specific data</b>               |                                |
| Ingress protection class DIN 40050 | IP 65 / IP 67                  |
| Weight                             | 50 g without cable             |
| Pin assignment                     |                                |
| Pin 1:                             | AS-Interface "+"               |
| Pin 2:                             | ext. power supply "-"          |
| Pin 3:                             | AS-Interface "-"               |
| Pin 4:                             | ext. power supply "+"          |
|                                    |                                |
|                                    |                                |
|                                    |                                |
|                                    |                                |
|                                    |                                |
|                                    |                                |
|                                    |                                |
|                                    |                                |
|                                    |                                |
|                                    |                                |
|                                    |                                |

**Ordering data**

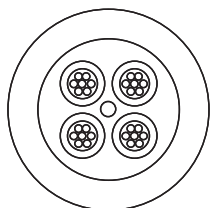
| Type               | Qty. | Order No.  |
|--------------------|------|------------|
| SAI-ASI T FF small | 1    | 1026090000 |

**Ordering data**

| Type          | Qty. | Order No.  |
|---------------|------|------------|
| SAI-ASI T FFR | 1    | 1924980000 |

## Ethernet cables

### Assembled cable - dragline cable M12 straight



### Assembled cable - dragline cable M12 straight

#### Note

#### Application:

Weidmüller's dragline cable can be used wherever lines are subjected to frequent or constant movement in industrial environments - and not only in dragline applications. They are:

- Sturdy
- Flexible
- Pre-assembled with D-coded M12 connectors

### Ordering data

| Cat.5 PROFINET, PUR, M12-M12        | Type                   | Order No.  |
|-------------------------------------|------------------------|------------|
| 1.5 m                               | IE-C5DD4UG0015MCSMCS-E | 1025950015 |
| 3.0 m                               | IE-C5DD4UG0030MCSMCS-E | 1025950030 |
| 5.0 m                               | IE-C5DD4UG0050MCSMCS-E | 1025950050 |
| 10.0 m                              | IE-C5DD4UG0100MCSMCS-E | 1025950100 |
| Cat.5 PROFINET, PUR, M12-open       |                        |            |
| 1.5 m                               | IE-C5DD4UG0015MCSXXX-X | 1025940015 |
| 3.0 m                               | IE-C5DD4UG0030MCSXXX-X | 1025940030 |
| 5.0 m                               | IE-C5DD4UG0050MCSXXX-X | 1025940050 |
| 10.0 m                              | IE-C5DD4UG0100MCSXXX-X | 1025940100 |
| Cat.5 PROFINET, PUR, M12-RJ45       |                        |            |
| 1.5 m                               | IE-C5DD4UG0015MCSA20-E | 1044470015 |
| 3.0 m                               | IE-C5DD4UG0030MCSA20-E | 1044470030 |
| 5.0 m                               | IE-C5DD4UG0050MCSA20-E | 1044470050 |
| 10.0 m                              | IE-C5DD4UG0100MCSA20-E | 1044470100 |
| Cat.5 PROFINET, PUR, M12-M12 female |                        |            |
| 1.5 m                               | IE-C5DD4UG0015MSSMCS-E | 1059330015 |
| 3.0 m                               | IE-C5DD4UG0030MSSMCS-E | 1059330030 |
| 5.0 m                               | IE-C5DD4UG0050MSSMCS-E | 1059330050 |
| 10.0 m                              | IE-C5DD4UG0100MSSMCS-E | 1059330100 |
| Note                                |                        |            |

### Accessories

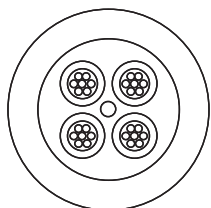
| Type                              | Order No.                     |
|-----------------------------------|-------------------------------|
| Transparent sleeves, 12-mm length | TM 4/12 HF/HB 1719840000      |
| Transparent sleeves, 18-mm length | TM 4/18 HF/HB 1719850000      |
| Insertion label, yellow, 12 mm    | TM-I 12 NEUTRAL GE 1718411687 |
| Insertion label, yellow, 18 mm    | TM-I 18 NEUTRAL GE 1718431687 |
| Note                              |                               |

### Technical data

|                                   |                                        |
|-----------------------------------|----------------------------------------|
| Category                          | Cat.5 (IEC 11801) / Cat.5e (TIA 568-B) |
| Cross-section                     | 4*AWG 22/7 - 0.36 mm <sup>2</sup>      |
| Sheath diameter                   | 6.3-6.7 mm                             |
| Material sheath                   | PUR                                    |
| Sheathing colour                  | green (RAL 6018)                       |
| Insulation cross-section          | 1.5 mm                                 |
| Min. bending radius, repetitive   | 8 x conductor cross-section            |
| Ambient temperature (operational) | -40 °C...+70 °C                        |
| Abrasion resistance               | very good                              |
| Halogen                           | to IEC 60754-2                         |
| Resistance to spread of flame     | acc. to IEC 60332-1                    |
| Resistance to oils                | acc. to IEC 60811-2-1                  |

**Note:**

Assembled cable - dragline cable  
M12 angled



Assembled cable - dragline cable M12 angled

Note

Application:

Weidmüller's dragline cable can be used wherever lines are subjected to frequent or constant movement in industrial environments - and not only in dragline applications. They are:

- Sturdy
- Flexible
- Pre-assembled with D-coded M12 connectors

Ordering data

| Cat.5 PROFINET, PUR, M12 straight-M12 angled | Type                   | Order No.  |
|----------------------------------------------|------------------------|------------|
| 1.5 m                                        | IE-C5DD4UG0015MCSMCA-E | 1059770015 |
| 3.0 m                                        | IE-C5DD4UG0030MCSMCA-E | 1059770030 |
| 5.0 m                                        | IE-C5DD4UG0050MCSMCA-E | 1059770050 |
| 10.0 m                                       | IE-C5DD4UG0100MCSMCA-E | 1059770100 |
| Cat.5 PROFINET, PUR, M12 angled-M12 angled   |                        |            |
| 1.5 m                                        | IE-C5DD4UG0015MCAMCA-E | 1059890015 |
| 3.0 m                                        | IE-C5DD4UG0030MCAMCA-E | 1059890030 |
| 5.0 m                                        | IE-C5DD4UG0050MCAMCA-E | 1059890050 |
| 10.0 m                                       | IE-C5DD4UG0100MCAMCA-E | 1059890100 |
| Cat.5, PUR, M12 angled-open                  |                        |            |
| 1.5 m                                        | IE-C5DD4UG0015MCAXXX-X | 1059750015 |
| 3.0 m                                        | IE-C5DD4UG0030MCAXXX-X | 1059750030 |
| 5.0 m                                        | IE-C5DD4UG0050MCAXXX-X | 1059750050 |
| 10.0 m                                       | IE-C5DD4UG0100MCAXXX-X | 1059750100 |
| Note                                         |                        |            |

Accessories

| Type                              | Order No.                     |
|-----------------------------------|-------------------------------|
| Transparent sleeves, 12-mm length | TM 4/12 HF/HB 1719840000      |
| Transparent sleeves, 18-mm length | TM 4/18 HF/HB 1719850000      |
| Insertion label, yellow, 12 mm    | TM-I 12 NEUTRAL GE 1718411687 |
| Insertion label, yellow, 18 mm    | TM-I 18 NEUTRAL GE 1718431687 |
| Note                              |                               |

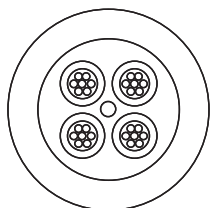
Technical data

|                                   |                                        |
|-----------------------------------|----------------------------------------|
| Category                          | Cat.5 (IEC 11801) / Cat.5e (TIA 568-B) |
| Cross-section                     | 4*AWG 22/7 - 0.36 mm <sup>2</sup>      |
| Sheath diameter                   | 6.3-6.7 mm                             |
| Material sheath                   | PUR                                    |
| Sheathing colour                  | green (RAL 6018)                       |
| Insulation cross-section          | 1.5 mm                                 |
| Min. bending radius, repetitive   | 8 x conductor cross-section            |
| Ambient temperature (operational) | -40 °C...+70 °C                        |
| Abrasion resistance               | very good                              |
| Halogen                           | to IEC 60754-2                         |
| Resistance to spread of flame     | acc. to IEC 60332-1                    |
| Resistance to oils                | acc. to IEC 60811-2-1                  |

Note:

## Ethernet cables

## Assembled cable - railway cable M12 straight



## Assembled cable - railway cable M12 straight

| Note                                                                                                                                                                                                                                                                             |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Description</b></p> <p>Weidmüller's industrial Ethernet rail cables are used on railway vehicles for both interior and exterior installations. They can connect parts which are fixed or which are occasionally in motion. In compliance with EN 50155 specifications.</p> |

## Ordering data

| Cat.5 PUR, M12-M12        | Type                   | Order No.  |
|---------------------------|------------------------|------------|
| 1.5 m                     | IE-C5DB4RE0015MCSMCS-E | 1010850015 |
| 3.0 m                     | IE-C5DB4RE0030MCSMCS-E | 1010850030 |
| 5.0 m                     | IE-C5DB4RE0050MCSMCS-E | 1010850050 |
| 10.0 m                    | IE-C5DB4RE0100MCSMCS-E | 1010850100 |
| Cat.5, PUR, M12-open      |                        |            |
| 1.5 m                     | IE-C5DB4RE0015MCSXXX-X | 1010840015 |
| 3.0 m                     | IE-C5DB4RE0030MCSXXX-X | 1010840030 |
| 5.0 m                     | IE-C5DB4RE0050MCSXXX-X | 1010840050 |
| 10.0 m                    | IE-C5DB4RE0100MCSXXX-X | 1010840100 |
| Cat.5 PUR, M12-M12 female |                        |            |
| 1.5 m                     | IE-C5DB4RE0015MSSMCS-E | 1059340015 |
| 3.0 m                     | IE-C5DB4RE0030MSSMCS-E | 1059340030 |
| 5.0 m                     | IE-C5DB4RE0050MSSMCS-E | 1059340050 |
| 10.0 m                    | IE-C5DB4RE0100MSSMCS-E | 1059340100 |
| Note                      |                        |            |

## Accessories

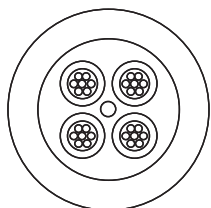
| Type                              | Order No.                     |
|-----------------------------------|-------------------------------|
| Transparent sleeves, 12-mm length | TM 4/12 HF/HB 1719840000      |
| Transparent sleeves, 18-mm length | TM 4/18 HF/HB 1719850000      |
| Insertion label, yellow, 12 mm    | TM-I 12 NEUTRAL GE 1718411687 |
| Insertion label, yellow, 18 mm    | TM-I 18 NEUTRAL GE 1718431687 |
| Note                              |                               |

## Technical data

|                                   |                                         |
|-----------------------------------|-----------------------------------------|
| Category                          | Cat.5 (IEC 11801) / Cat.5e (TIA 568-B)  |
| Cross-section                     | 2*2*AWG 22/7 - 2*2*0.36 mm <sup>2</sup> |
| Sheath diameter                   | 6.95-7.55 mm                            |
| Material sheath                   | Radox GKW S                             |
| Sheathing colour                  | black                                   |
| Insulation cross-section          | 1.95 mm                                 |
| Min. bending radius, repetitive   | 6.0 x conductor cross-section           |
| Ambient temperature (operational) | -40 °C...+90 °C                         |
| Abrasion resistance               | very good                               |
| Halogen                           | to IEC 60754-2                          |
| Resistance to spread of flame     | to IEC 60332-1                          |
| Resistance to oils                | acc. EN 50306-3                         |

**Note:**

## Assembled cable - rail cable M12, angled



## Assembled cable - railway cable M12 angled

## Note

## Description

Weidmüller's industrial Ethernet rail cables are used on railway vehicles for both interior and exterior installations. They can connect parts which are fixed or which are occasionally in motion. In compliance with EN 50155 specifications.

## Ordering data

| Cat.5 PUR, M12 straight-M12 angled |  | Type                   | Order No.  |
|------------------------------------|--|------------------------|------------|
| 1.5 m                              |  | IE-C5DB4RE0015MCSMCA-E | 1059940015 |
| 3.0 m                              |  | IE-C5DB4RE0030MCSMCA-E | 1059940030 |
| 5.0 m                              |  | IE-C5DB4RE0050MCSMCA-E | 1059940050 |
| 10.0 m                             |  | IE-C5DB4RE0100MCSMCA-E | 1059940100 |
| Cat.5, PUR, M12 angled-open        |  |                        |            |
| 1.5 m                              |  | IE-C5DB4RE0015MCAXXX-X | 1059900015 |
| 3.0 m                              |  | IE-C5DB4RE0030MCAXXX-X | 1059900030 |
| 5.0 m                              |  | IE-C5DB4RE0050MCAXXX-X | 1059900050 |
| 10.0 m                             |  | IE-C5DB4RE0100MCAXXX-X | 1059900100 |
| Cat.5 PUR, M12 angled-M12 angled   |  |                        |            |
| 1.5 m                              |  | IE-C5DB4RE0015MCAMCA-E | 1059970015 |
| 3.0 m                              |  | IE-C5DB4RE0030MCAMCA-E | 1059970030 |
| 5.0 m                              |  | IE-C5DB4RE0050MCAMCA-E | 1059970050 |
| 10.0 m                             |  | IE-C5DB4RE0100MCAMCA-E | 1059970100 |
| Note                               |  |                        |            |

## Accessories

| Type                              | Order No.                     |
|-----------------------------------|-------------------------------|
| Transparent sleeves, 12-mm length | TM 4/12 HF/HB 1719840000      |
| Transparent sleeves, 18-mm length | TM 4/18 HF/HB 1719850000      |
| Insertion label, yellow, 12 mm    | TM-I 12 NEUTRAL GE 1718411687 |
| Insertion label, yellow, 18 mm    | TM-I 18 NEUTRAL GE 1718431687 |
| Note                              |                               |

## Technical data

|                                   |                                         |
|-----------------------------------|-----------------------------------------|
| Category                          | Cat.5 (IEC 11801) / Cat.5e (TIA 568-B)  |
| Cross-section                     | 2*2*AWG 22/7 - 2'2*0.36 mm <sup>2</sup> |
| Sheath diameter                   | 6.95-7.55 mm                            |
| Material sheath                   | Radox GKW S                             |
| Sheathing colour                  | black                                   |
| Insulation cross-section          | 1.95 mm                                 |
| Min. bending radius, repetitive   | 6.0 x conductor cross-section           |
| Ambient temperature (operational) | -40 °C...+90 °C                         |
| Abrasion resistance               | very good                               |
| Halogen                           | to IEC 60754-2                          |
| Resistance to spread of flame     | to IEC 60332-1                          |
| Resistance to oils                | acc. EN 50306-3                         |

## Note:

## Ethernet plug-in connector

Tension clamp connection M12, metal (EMC)  
D-coded

# Industrial Ethernet

C

### SAISM / SAIBM

straight



### SAISW / SAIBW

angled



### Ordering data

|               |              |
|---------------|--------------|
| <b>Male</b>   | 4-pole, PG 9 |
| <b>Socket</b> | 4-pole, PG 9 |
| <b>Note</b>   |              |

| Type                    | Qty. | Order No.  |
|-------------------------|------|------------|
| SAISM-4/8S-M12-4P D-COD | 1    | 1892120000 |
| SAIBM-4/8S-M12-4P D-COD | 1    | 1892130000 |

| Type                   | Qty. | Order No.  |
|------------------------|------|------------|
| SAISW-4/8S-M12 4P D-ZF | 1    | 1803930001 |
| SAIBW-4/8S-M12 4P D-ZF | 1    | 1139330000 |

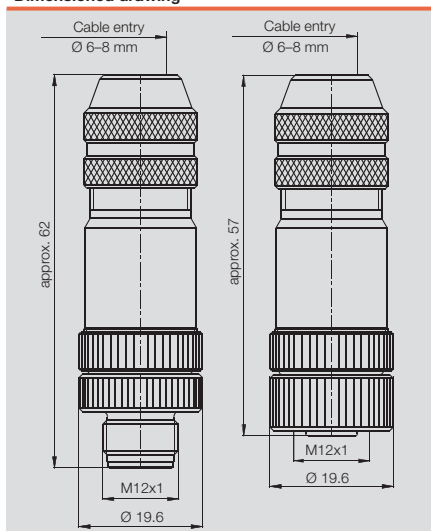
### Technical data

|                                  |                             |
|----------------------------------|-----------------------------|
| Type of connection               | Screw connection            |
| Housing main material            | CuZn                        |
| Contact tube diameter            | M12                         |
| Cable diameter                   | 6...8 mm (PG9)              |
| Cross-section for connected wire | 0.14 - 0.75 mm <sup>2</sup> |
| Rated current                    | 4 A                         |
| Rated voltage                    | 250 V                       |
| Temperature range of housing     | -25...+85 °C                |
| Protection class                 | IP 67                       |
| Contact surface                  | gold-plated                 |
| <b>Note</b>                      |                             |

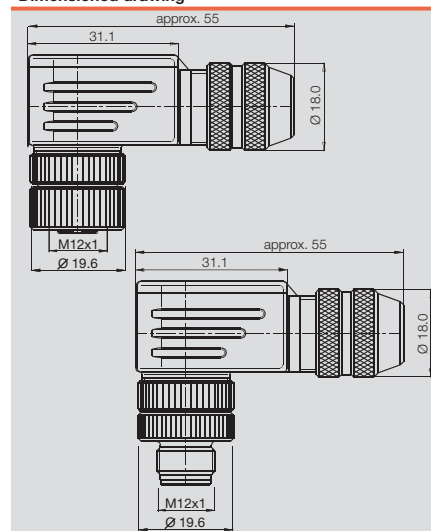
|                                  |                            |
|----------------------------------|----------------------------|
| Type of connection               | Tension clamp connection   |
| Housing main material            | PA                         |
| Contact tube diameter            | M12                        |
| Cable diameter                   | 4...6 mm                   |
| Cross-section for connected wire | 0.25 - 0.5 mm <sup>2</sup> |
| Rated current                    | 4 A                        |
| Rated voltage                    | 250 V                      |
| Temperature range of housing     | -25...+85 °C               |
| Protection class                 | IP 67                      |
| Contact surface                  | gold-plated                |
| <b>Note</b>                      |                            |

|                                  |                            |
|----------------------------------|----------------------------|
| Type of connection               | Tension clamp connection   |
| Housing main material            | PA                         |
| Contact tube diameter            | M12                        |
| Cable diameter                   | 4...6 mm                   |
| Cross-section for connected wire | 0.25 - 0.5 mm <sup>2</sup> |
| Rated current                    | 4 A                        |
| Rated voltage                    | 250 V                      |
| Temperature range of housing     | -25...+85 °C               |
| Protection class                 | IP 67                      |
| Contact surface                  | gold-plated                |
| <b>Note</b>                      |                            |

### Dimensioned drawing



### Dimensioned drawing



Screw connection M12, metal (EMC)  
D-coded

## Industrial Ethernet

### SAISM / SAIBM

straight



### SAISW

angled



#### Ordering data

|               |              |
|---------------|--------------|
| <b>Male</b>   | 4-pole, PG 9 |
| <b>Socket</b> | 4-pole, PG 9 |
| <b>Note</b>   |              |

| Type                    | Qty. | Order No.  |
|-------------------------|------|------------|
| SAISM-4/8S-M12-4P D-COD | 1    | 1892120000 |
| SAIBM-4/8S-M12-4P D-COD | 1    | 1892130000 |

| Type                    | Qty. | Order No.  |
|-------------------------|------|------------|
| SAISW-4/8S-M12-4P D-COD | 1    | 1160550000 |

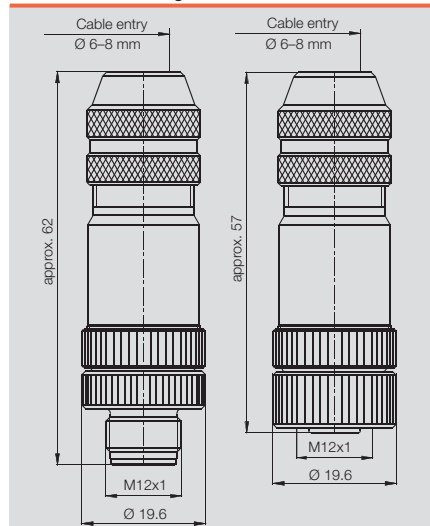
#### Technical data

|                                  |                             |
|----------------------------------|-----------------------------|
| Type of connection               | Screw connection            |
| Housing main material            | CuZn                        |
| Contact tube diameter            | M12                         |
| Cable diameter                   | 6...8 mm (PG9)              |
| Cross-section for connected wire | 0.14 - 0.75 mm <sup>2</sup> |
| Rated current                    | 4 A                         |
| Rated voltage                    | 250 V                       |
| Temperature range of housing     | -25...+85 °C                |
| Protection class                 | IP 67                       |
| Contact surface                  | gold-plated                 |
| <b>Note</b>                      |                             |

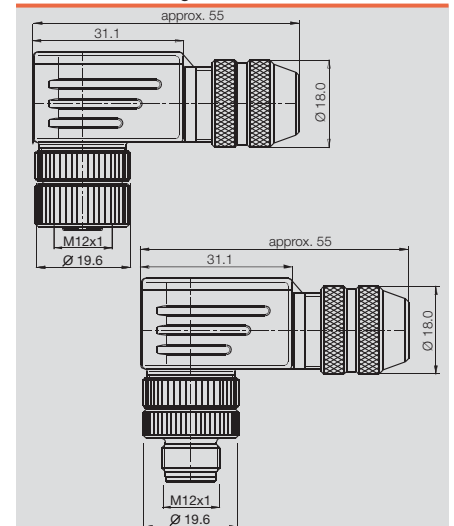
|                                  |                             |
|----------------------------------|-----------------------------|
| Type of connection               | Screw connection            |
| Housing main material            | CuZn                        |
| Contact tube diameter            | M12                         |
| Cable diameter                   | 6...8 mm (PG9)              |
| Cross-section for connected wire | 0.14 - 0.75 mm <sup>2</sup> |
| Rated current                    | 4 A                         |
| Rated voltage                    | 250 V                       |
| Temperature range of housing     | -25...+85 °C                |
| Protection class                 | IP 67                       |
| Contact surface                  | gold-plated                 |
| <b>Note</b>                      |                             |

|                                  |                             |
|----------------------------------|-----------------------------|
| Type of connection               | Screw connection            |
| Housing main material            | CuZn                        |
| Contact tube diameter            | M12                         |
| Cable diameter                   | 6...8 mm (PG9)              |
| Cross-section for connected wire | 0.14 - 0.75 mm <sup>2</sup> |
| Rated current                    | 4 A                         |
| Rated voltage                    | 250 V                       |
| Temperature range of housing     | -25...+85 °C                |
| Protection class                 | IP 67                       |
| Contact surface                  | gold-plated                 |
| <b>Note</b>                      |                             |

#### Dimensioned drawing



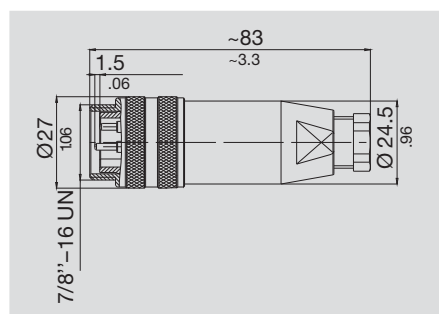
#### Dimensioned drawing



## FOUNDATION Fieldbus - connector (7/8")

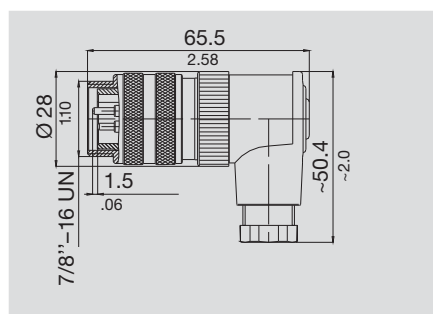
### Plug-in connector FBCon 7/8"

#### Plug-in connector straight (plug)



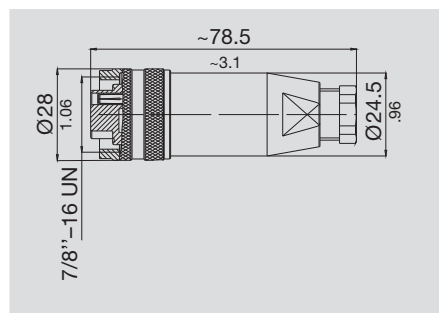
| Ordering data   |      | 4-pole     |
|-----------------|------|------------|
| Type            | Qty. | Order No.  |
| FBCon 7/8" 4P M | 1    | 1808840000 |

#### Plug-in connector 90° (plug)



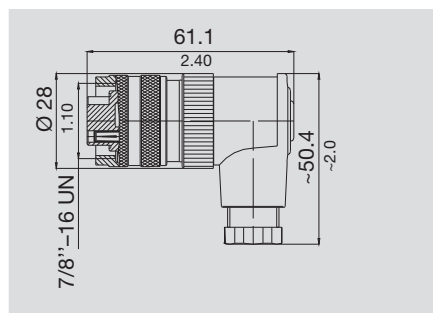
| Ordering data       |      | 4-pole     |
|---------------------|------|------------|
| Type                | Qty. | Order No.  |
| FBCon 7/8" 4P M (A) | 1    | 1808830000 |

#### Plug-in connector straight (socket)



| Ordering data    |      | 4-pole     |
|------------------|------|------------|
| Type             | Qty. | Order No.  |
| FBCon 7/8" 4P FM | 1    | 1812480000 |

#### Plug-in connector 90° (socket)



| Ordering data        |      | 4-pole     |
|----------------------|------|------------|
| Type                 | Qty. | Order No.  |
| FBCon 7/8" 4P FM (A) | 1    | 1812470000 |

### Technical data

|                            |                          |
|----------------------------|--------------------------|
| No. of poles               | 4                        |
| Lock                       | Screw 7/8" UNF           |
| Cable gland                | PG 9                     |
| Connection                 | Screw                    |
| Connection cross-section   | max. 1,5 mm <sup>2</sup> |
| Connection cross-section   | 16 AWG                   |
| Enclosure protection class | IP 67                    |
| Mechanical service life    | >500 plugging cycles     |
| Upper limit temperature    | + 85 °C                  |
| Lower limit temperature    | - 40 °C                  |

### Electrical data

|                           |                      |
|---------------------------|----------------------|
| Rated voltage             | 250 V                |
| Rated surge voltage       | 4000 V               |
| Pollution severity        | 3                    |
| Surge category            | II                   |
| Insulation material group | III                  |
| Test surge voltage        | 4800 V               |
| Rated current             | 9 A (40°)            |
| Volume resistivity        | ≤ 5 mΩ               |
| Insulation resistance     | > 10 <sup>10</sup> Ω |

### Materials

|                      |                    |             |
|----------------------|--------------------|-------------|
| Contact pins         | CuZn               | (brass)     |
| Contact surface      | Au                 | (gold)      |
| Socket body          | PUR/PA             | (UL 94 HB)  |
| Enclosure cable plug | PBT                | (UL 94 V-0) |
| Threaded ring        | Anodised aluminium |             |

Accessories for fieldbus distributors

Cable glands – plastic – IP68



Ordering data

| Type         | Qty. | Order No.  |
|--------------|------|------------|
| VG M16-1/K68 | 50   | 1909860000 |

Cable glands – brass – IP68



Ordering data

| Type          | Qty. | Order No.  |
|---------------|------|------------|
| VG M16-1/MS68 | 50   | 1909910000 |

Cable glands – brass – 1/EMC



Ordering data

| Type            | Qty. | Order No.  |
|-----------------|------|------------|
| VG M16-MS 1/EMV | 50   | 1909500000 |

Cable glands – brass – EEx e, IP68



Ordering data

| Type          | Qty. | Order No.  |
|---------------|------|------------|
| VG M16-EXE MS | 50   | 1737210000 |

Sealing rings – 9005



Ordering data

| Type        | Qty. | Order No.  |
|-------------|------|------------|
| GWDR M16-NP | 50   | 1736230000 |

Blanking plugs – brass



Ordering data

| Type        | Qty. | Order No.  |
|-------------|------|------------|
| VP M16-MS65 | 100  | 1777730000 |

Blanking plugs – plastic - EEx e



Ordering data

| Type          | Qty. | Order No.  |
|---------------|------|------------|
| VG M16-EXE SW | 50   | 1737070000 |

Pressure compensation element – plastic – DAE



Ordering data

| Type             | Qty. | Order No.  |
|------------------|------|------------|
| DAE M12 PA short | 10   | 1868560000 |

For technical data, refer to Catalogue 5 – Enclosures and Cable Glands



# Plug in connector and protective caps

|                                              |                                 |      |
|----------------------------------------------|---------------------------------|------|
| <b>Plug in connector and protective caps</b> | SAI connectors                  | D.2  |
|                                              | Customisable connectors         | D.4  |
|                                              | Connectors – accessories        | D.25 |
|                                              | Built in plugs                  | D.28 |
|                                              | Valve plugs for custom assembly | D.32 |
|                                              | Protective sleeve adapter       | D.34 |

# SAI connectors

Self assembled M8 and M12 connectors are integral and essential connectivity components. They are available with a wide variety of different wire connection methods. Weidmüller offers all of the secure connection methods, which include screw, tension clamp, IDC or solder connection mechanisms. One highlight in this line are the shielded, D-coded M-12 connectors. They are available in male and female versions also with the tension-clamp connection.

## D

The eight pole screw connection connectors are a special favourite. These are available in shielded or unshielded versions.





### Fast

The M12 connectors also come with the tension clamp conductor connection method, in either shielded or unshielded.



### Versatile

Eight pole M12 connectors, shielded, with screw connection and a cable outer insulation diameter of 8 – 10 mm.



### Proven

M8 connectors with screw connections for the conductor are much easier to assemble compared to connectors which require soldering.



### Safe

M8 connectors with shield connections are in increasing demand as the trend towards miniaturization continues.



#### M12 connectors

Screw and tension clamp connection



#### M8 connectors

Screw and solder connection



#### M8 and M12 connectors

Insulation displacement connection (IDC)



#### M8 and M12 connectors

T distributor



#### Protective caps for SAI distributors



#### M12/M8/M5

Built in connectors



#### Customisable valve connectors

# Overview of M8 and M12 screw connections

M8



Plugs and sockets (screw connection) for custom assembly to make up M8 and M12 connections.

Machine builders frequently need individual cable lengths. To meet this demand, Weidmüller can supply M8 and M12 plug in connectors for custom assembly.

D

M12

M12 Metal



The plug in connectors are available with different cable gland diameters. In the 90° versions, the outgoing direction of the cable can be changed in 90° steps. The connected plug in connectors comply with IP 67 ingress protection classification. There are also plug in connectors available for double assignment of distributors.

Screwty



This is the perfect tool for all common cable glands on sensor and actuator cables.

The Screwty fits M12 and M8 round plugs. Both types can be used for the plugs and sockets on custom cables.

The handle of every Screwty has a conventional 1/4 inch fitting and can be used for all sizes. Simply turn the tool to tighten or release a round plug.

Of course, the Screwty is also available with a torque fitting. This adjustable attachment can be used for all sizes. The torque can be infinitely adjusted between 0.5 and 1.7 Nm.

IDC-Tool



Weidmüller offers various products with insulation displacement connection for M12 connectors. These include the IDC connection elements, which can be directly screwed to a distributor, such as part nos. 9457720000 and 1766810000. In addition, there are two M12 IDC adapters with part nos. 1781550001 and 1781540001. All four elements can be fitted by hand with no additional tools. When there are many connections to be made in a day, however, use of the copyright protected IDC tool is recommended. This tool works like a knurled screw on the terminal.

# Overview of SAI connector M12

## Plastic

| Screw connection                | straight                       |                                |            | angled     |            |            |
|---------------------------------|--------------------------------|--------------------------------|------------|------------|------------|------------|
|                                 | 3-pole                         | 4-pole                         | 5-pole     | 3-pole     | 4-pole     | 5-pole     |
| PG7 Male                        | 1871710000                     | 9457550000                     | 9456940000 | 1021280000 | 9457290000 | 9456950000 |
| PG7 Female                      | 1924940000                     | 9457240000                     | 9457250000 | 1021310000 | 9457700000 | 9457260000 |
| <b>Screw connection</b>         |                                |                                |            |            |            |            |
| PG9 Male                        | 1021480000                     | 1807340000                     | 1807350000 |            |            |            |
| PG9 Female                      | 1021510000                     | 1807230000                     | 1807250000 |            |            |            |
| <b>Screw connection</b>         | 8-pole                         | 12-pole<br>(Solder connection) |            |            |            |            |
| PG 9 Male                       | 1836970000                     | 1924950000                     |            |            |            |            |
| PG9 Female                      | 1836960000                     | 1924960000                     |            |            |            |            |
| <b>IDC connection</b>           | (0.14 - 0.34 mm <sup>2</sup> ) | (0.34 - 0.75 mm <sup>2</sup> ) |            |            |            |            |
|                                 | 4-pole                         | 4-pole                         |            |            |            |            |
| Male                            | 1781550001                     | 1852740000                     |            |            |            |            |
| Female                          | 1781540001                     | 1852730000                     |            |            |            |            |
| <b>Tension clamp connection</b> |                                |                                | 5-pole     |            |            |            |
| Male                            |                                |                                | 1906390000 |            |            |            |
| Female                          |                                |                                | 1924970000 |            |            |            |

## Metal

| A-coded<br>Screw connection                 | straight |            |            | angled |            |            |
|---------------------------------------------|----------|------------|------------|--------|------------|------------|
|                                             | 3-pole   | 4-pole     | 5-pole     | 3-pole | 4-pole     | 5-pole     |
| PG7 Male                                    |          |            | 1191030000 |        |            |            |
| PG7 Female                                  |          |            | 1191020000 |        |            |            |
| PG9 Male                                    |          | 9455640000 | 1784740000 |        | 1803930000 | 1803940000 |
| PG9 Female                                  |          | 8426220000 | 1784750000 |        | 1803910000 | 1803920000 |
| <b>Tension clamp connection</b>             |          |            |            |        |            |            |
| PG9 Male                                    |          |            |            |        |            |            |
| PG9 Female                                  |          | 1784740002 |            |        |            |            |
| <b>B-coded<br/>Screw connection</b>         |          |            |            |        |            |            |
| PG9 Male                                    |          |            | 1784790000 |        |            | 1944570000 |
| PG9 Female                                  |          |            | 1784780000 |        |            | 1944580000 |
| <b>D-coded<br/>Screw connection</b>         |          |            |            |        |            |            |
| PG9 Male                                    |          | 1892120000 |            |        |            |            |
| PG9 Female                                  |          | 1892130000 |            |        |            |            |
| <b>D-coded<br/>Tension clamp connection</b> |          |            |            |        |            |            |
| PG9 Male                                    |          | 1892120001 |            |        | 1803930001 |            |
| PG9 Female                                  |          | 1892130001 |            |        | 1139330000 |            |

D

# Overview of M8 connectors

## Plastic

| Screw connection         | straight   |            |        | angled     |            |        |
|--------------------------|------------|------------|--------|------------|------------|--------|
|                          | 3-pole     | 4-pole     | 5-pole | 3-pole     | 4-pole     | 5-pole |
| Male Screw connection    | 1803860000 | 1803850000 |        |            |            |        |
| Female Screw connection  | 1803870000 | 1803880000 |        |            |            |        |
| Male IDC connection      | 1784040001 | 1784060001 |        |            |            |        |
| Female IDC connection    | 1784030001 | 1784050001 |        |            |            |        |
| Male Solder connection   |            |            |        | 1920990000 | 1921000000 |        |
| Female Solder connection |            |            |        | 1920970000 | 1920980000 |        |

## Metal

|                          | straight   |            |        | angled |        |        |
|--------------------------|------------|------------|--------|--------|--------|--------|
|                          | 3-pole     | 4-pole     | 5-pole | 3-pole | 4-pole | 5-pole |
| Male Screw connection    | 1010060000 | 1010070000 |        |        |        |        |
| Female Screw connection  | 1010080000 | 1010090000 |        |        |        |        |
| Male Solder connection   | 1921030000 | 1921040000 |        |        |        |        |
| Female Solder connection | 1921010000 | 1921020000 |        |        |        |        |

Screw connection M12, A-coded

SAIS / SAIB

straight



SAISW / SAIBW

angled



Ordering data

| Male   |              |
|--------|--------------|
|        | 3-pole, PG 7 |
|        | 3-pole, PG 9 |
|        | 4-pole, PG 7 |
|        | 4-pole, PG 9 |
| Socket |              |
|        | 3-pole, PG 7 |
|        | 3-pole, PG 9 |
|        | 4-pole, PG 7 |
|        | 4-pole, PG 9 |
| Note   |              |

| Type                      | Qty. | Order No.  |
|---------------------------|------|------------|
| SAIS-3/7                  | 1    | 1021470000 |
| SAIS-3/9                  | 1    | 1021480000 |
| SAIS-4/7                  | 1    | 9457550000 |
| SAIS-4/9                  | 1    | 1807340000 |
| Other versions on request |      |            |

| Type                      | Qty. | Order No.  |
|---------------------------|------|------------|
| SAISW-3/7                 | 1    | 1021280000 |
| SAISW-3/9                 | 1    | 1021290000 |
| SAISW-4/7                 | 1    | 9457290000 |
| SAISW-4/9                 | 1    | 1807360000 |
| Other versions on request |      |            |

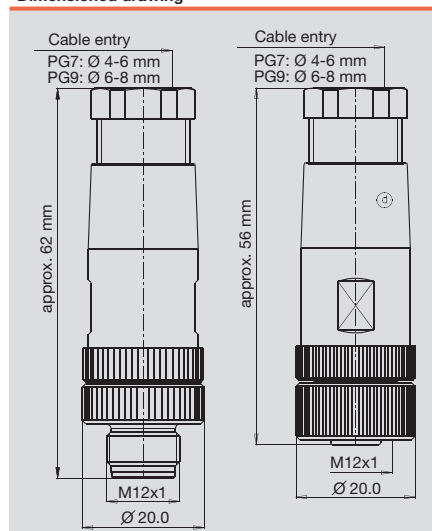
Technical data

| Type of connection               | Screw connection               |
|----------------------------------|--------------------------------|
| Housing main material            | PA                             |
| Contact tube diameter            | M12                            |
| Cable diameter                   | 4...6 mm (PG7)/ 6...8 mm (PG9) |
| Cross-section for connected wire | 0.14 - 0.75 mm <sup>2</sup>    |
| Rated current                    | 4 A                            |
| Rated voltage                    | 250 V                          |
| Temperature range of housing     | -25...+85 °C                   |
| Protection class                 | IP 67                          |
| Contact surface                  | CuSnZn                         |
| Note                             |                                |

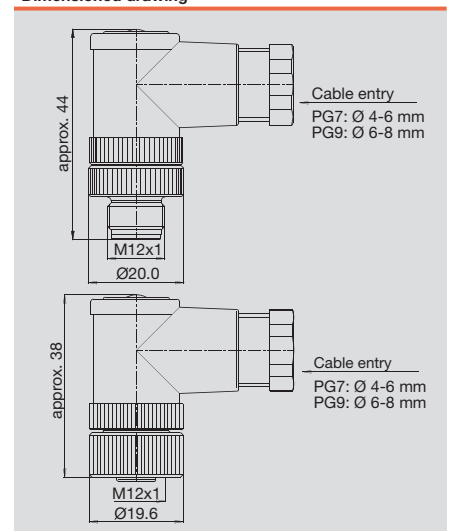
| Type of connection               | Screw connection               |
|----------------------------------|--------------------------------|
| Housing main material            | PA                             |
| Contact tube diameter            | M12                            |
| Cable diameter                   | 4...6 mm (PG7)/ 6...8 mm (PG9) |
| Cross-section for connected wire | 0.14 - 0.75 mm <sup>2</sup>    |
| Rated current                    | 4 A                            |
| Rated voltage                    | 250 V                          |
| Temperature range of housing     | -25...+85 °C                   |
| Protection class                 | IP 67                          |
| Contact surface                  | CuSnZn                         |
| Note                             |                                |

| Type of connection               | Screw connection               |
|----------------------------------|--------------------------------|
| Housing main material            | PA                             |
| Contact tube diameter            | M12                            |
| Cable diameter                   | 4...6 mm (PG7)/ 6...8 mm (PG9) |
| Cross-section for connected wire | 0.14 - 0.75 mm <sup>2</sup>    |
| Rated current                    | 4 A                            |
| Rated voltage                    | 250 V                          |
| Temperature range of housing     | -25...+85 °C                   |
| Protection class                 | IP 67                          |
| Contact surface                  | CuSnZn                         |
| Note                             |                                |

Dimensioned drawing



Dimensioned drawing



## Customisable connectors

### Screw connection M12, A-coded

#### SAIS / SAIB

straight



#### SAISW / SAIBW

angled



Plug in connector and protective caps

D

#### Ordering data

| Male   |              |
|--------|--------------|
|        | 5-pole, PG 7 |
|        | 5-pole, PG 9 |
|        | 8-pole, PG 9 |
| Socket |              |
|        | 5-pole, PG 7 |
|        | 5-pole, PG 9 |
|        | 8-pole, PG 9 |
| Note   |              |

| Type                      | Qty. | Order No.  |
|---------------------------|------|------------|
| SAIS-5/7                  | 1    | 9456940000 |
| SAIS-5/9                  | 1    | 1807350000 |
| SAIS-8/9                  | 1    | 1836970000 |
| Other versions on request |      |            |

| Type                      | Qty. | Order No.  |
|---------------------------|------|------------|
| SAISW-5/7                 | 1    | 9456950000 |
| SAISW-5/9                 | 1    | 1807370000 |
| Other versions on request |      |            |

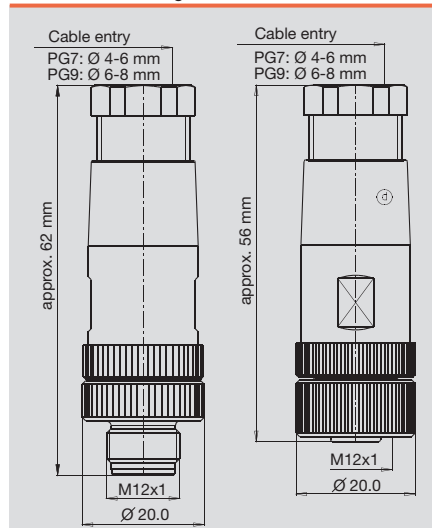
#### Technical data

| Type of connection               | Screw connection               |
|----------------------------------|--------------------------------|
| Housing main material            | PA                             |
| Contact tube diameter            | M12                            |
| Cable diameter                   | 4...6 mm (PG7)/ 6...8 mm (PG9) |
| Cross-section for connected wire | 0.14 - 0.75 mm <sup>2</sup>    |
| Rated current                    | 4 A                            |
| Rated voltage                    | 125 V                          |
| Temperature range of housing     | -25...+85 °C                   |
| Protection class                 | IP 67                          |
| Contact surface                  | CuSnZn                         |
| Note                             |                                |

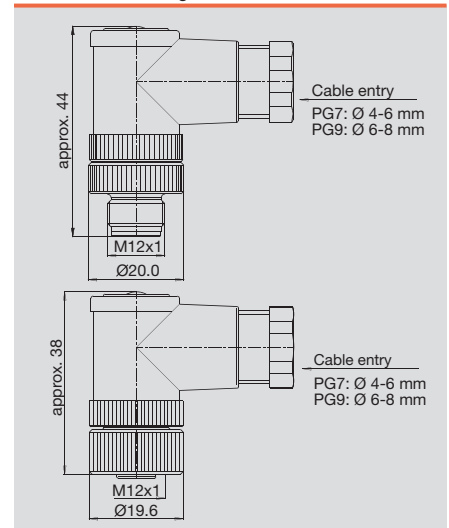
| Type of connection               | Screw connection               |
|----------------------------------|--------------------------------|
| Housing main material            | PA                             |
| Contact tube diameter            | M12                            |
| Cable diameter                   | 4...6 mm (PG7)/ 6...8 mm (PG9) |
| Cross-section for connected wire | 0.14 - 0.75 mm <sup>2</sup>    |
| Rated current                    | 4 A                            |
| Rated voltage                    | 125 V                          |
| Temperature range of housing     | -25...+85 °C                   |
| Protection class                 | IP 67                          |
| Contact surface                  | CuSnZn                         |
| Note                             |                                |

| Type of connection               | Screw connection               |
|----------------------------------|--------------------------------|
| Housing main material            | PA                             |
| Contact tube diameter            | M12                            |
| Cable diameter                   | 4...6 mm (PG7)/ 6...8 mm (PG9) |
| Cross-section for connected wire | 0.14 - 0.75 mm <sup>2</sup>    |
| Rated current                    | 4 A                            |
| Rated voltage                    | 125 V                          |
| Temperature range of housing     | -25...+85 °C                   |
| Protection class                 | IP 67                          |
| Contact surface                  | CuSnZn                         |
| Note                             |                                |

#### Dimensioned drawing



#### Dimensioned drawing



Screw connection M12, A-coded

SAIS / SAIB

straight



SAISW / SAIBW

angled



Ordering data

| Male   |              |
|--------|--------------|
|        | 4-pole, PG 7 |
|        | 5-pole, PG 7 |
| Socket |              |
|        | 4-pole, PG 7 |
|        | 5-pole, PG 7 |
| Note   |              |

| Type                      | Qty. | Order No.  |
|---------------------------|------|------------|
| SAIS-4/7-(KV)             | 1    | 1921060000 |
| SAIS-5/7-(KV)             | 1    | 1921050000 |
| Other versions on request |      |            |

| Type                      | Qty. | Order No.  |
|---------------------------|------|------------|
| SAISW-4/7-(KV)            | 1    | 1962620000 |
| SAISW-5/7-(KV)            | 1    | 1962610000 |
| Other versions on request |      |            |

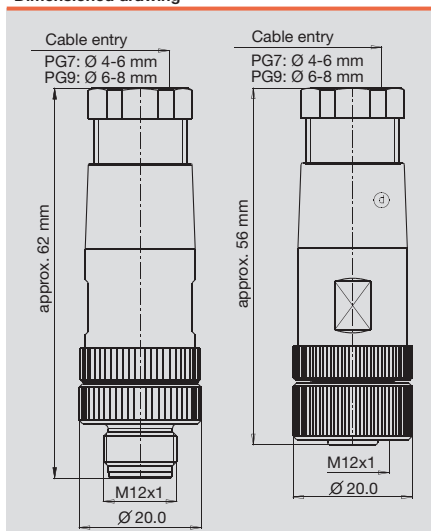
Technical data

| Type of connection               | Screw connection               |
|----------------------------------|--------------------------------|
| Housing main material            | PA                             |
| Contact tube diameter            | M12                            |
| Cable diameter                   | 4...6 mm (PG7)/ 6...8 mm (PG9) |
| Cross-section for connected wire | 0.14 - 0.75 mm <sup>2</sup>    |
| Rated current                    | 4 A                            |
| Rated voltage                    | 250 V                          |
| Temperature range of housing     | -25...+85 °C                   |
| Protection class                 | IP 67                          |
| Contact surface                  | CuSnZn                         |
| Note                             |                                |
| KV = plastic cable gland         |                                |

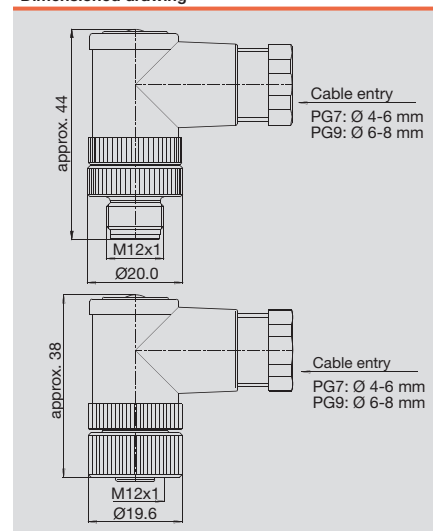
| Type of connection               | Screw connection               |
|----------------------------------|--------------------------------|
| Housing main material            | PA                             |
| Contact tube diameter            | M12                            |
| Cable diameter                   | 4...6 mm (PG7)/ 6...8 mm (PG9) |
| Cross-section for connected wire | 0.14 - 0.75 mm <sup>2</sup>    |
| Rated current                    | 4 A                            |
| Rated voltage                    | 125 V                          |
| Temperature range of housing     | -25...+85 °C                   |
| Protection class                 | IP 67                          |
| Contact surface                  | CuSnZn                         |
| Note                             |                                |
| KV = plastic cable gland         |                                |

| Type of connection               | Screw connection               |
|----------------------------------|--------------------------------|
| Housing main material            | PA                             |
| Contact tube diameter            | M12                            |
| Cable diameter                   | 4...6 mm (PG7)/ 6...8 mm (PG9) |
| Cross-section for connected wire | 0.14 - 0.75 mm <sup>2</sup>    |
| Rated current                    | 4 A                            |
| Rated voltage                    | 125 V                          |
| Temperature range of housing     | -25...+85 °C                   |
| Protection class                 | IP 67                          |
| Contact surface                  | CuSnZn                         |
| Note                             |                                |
| KV = plastic cable gland         |                                |

Dimensioned drawing



Dimensioned drawing



KV = plastic cable gland

## Customisable connectors

### Tension clamp connection M12, stainless steel

A-Codiert

B-Codiert

### SAIS / SAIB VA

straight



## D

### Ordering data

| Male   |              |
|--------|--------------|
|        | 5-pole, PG 9 |
|        | 5-pole, PG 9 |
| Socket |              |
|        | 5-pole, PG 9 |
|        | 5-pole, PG 9 |
| Note   |              |

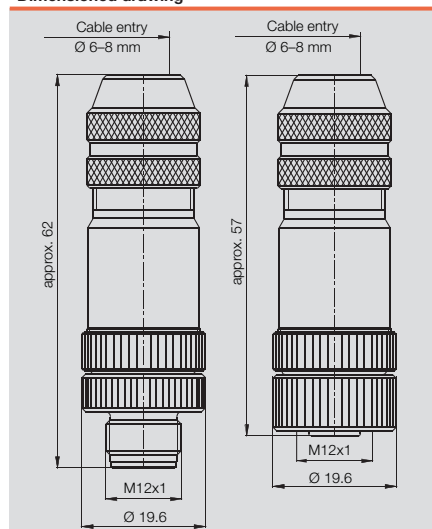
| Type              | Qty. | Order No.  |
|-------------------|------|------------|
| SAIS 5/9-VA       | 1    | 1920700000 |
| SAIS 5/9-VA-B-COD | 1    | 1920720000 |
| SAIB 5/9-VA       | 1    | 1920710000 |
| SAIB 5/9-VA-B-COD | 1    | 1920730000 |

### Technical data

|                                  |                            |
|----------------------------------|----------------------------|
| Type of connection               | Tension clamp connection   |
| Housing main material            | 1.4404/316L                |
| Contact tube diameter            | M12                        |
| Cable diameter                   | 6...8 mm                   |
| Cross-section for connected wire | 0.25 - 0.5 mm <sup>2</sup> |
| Rated current                    | 4 A                        |
| Rated voltage                    | 125 V                      |
| Temperature range of housing     | -25...+85 °C               |
| Protection class                 | IP 69 k                    |
| Contact surface                  | gold-plated                |
| <b>Note</b>                      | PB = PROFIBUS (B-COD)      |

|                                  |                            |
|----------------------------------|----------------------------|
| Type of connection               | Tension clamp connection   |
| Housing main material            | 1.4404/316L                |
| Contact tube diameter            | M12                        |
| Cable diameter                   | 6...8 mm                   |
| Cross-section for connected wire | 0.25 - 0.5 mm <sup>2</sup> |
| Rated current                    | 4 A                        |
| Rated voltage                    | 125 V                      |
| Temperature range of housing     | -25...+85 °C               |
| Protection class                 | IP 69 k                    |
| Contact surface                  | gold-plated                |
| <b>Note</b>                      | PB = PROFIBUS (B-COD)      |

### Dimensioned drawing



PB = PROFIBUS (B-COD)

**SAI M12 plug  
with shield connection**

**SAISM / SAISB 8/11**

straight



**Ordering data**

|               |               |
|---------------|---------------|
| <b>Male</b>   | 8-pole, PG 11 |
| <b>Socket</b> | 8-pole, PG 11 |
| <b>Note</b>   |               |

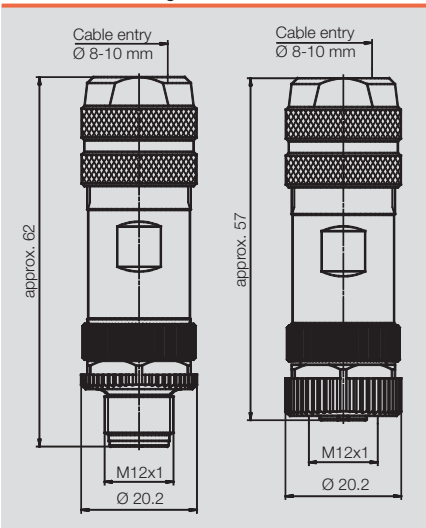
| Type       | Qty. | Order No.  |
|------------|------|------------|
| SAISM-8/11 | 1    | 1118910000 |
| SAIBM-8/11 | 1    | 1118920000 |

**Technical data**

|                                  |                            |
|----------------------------------|----------------------------|
| Type of connection               | Screw connection           |
| Housing main material            | CuZn                       |
| Contact tube diameter            | M12                        |
| Cable diameter                   | 8...10 mm (PG11)           |
| Cross-section for connected wire | 0.14 - 0.5 mm <sup>2</sup> |
| Rated current                    | 2 A                        |
| Rated voltage                    | 60 V                       |
| Temperature range of housing     | -25...+85 °C               |
| Protection class                 | IP 67                      |
| Contact surface                  | gold-plated                |
| <b>Note</b>                      |                            |

|                                  |                            |
|----------------------------------|----------------------------|
| Type of connection               | Screw connection           |
| Housing main material            | CuZn                       |
| Contact tube diameter            | M12                        |
| Cable diameter                   | 8...10 mm (PG11)           |
| Cross-section for connected wire | 0.14 - 0.5 mm <sup>2</sup> |
| Rated current                    | 2 A                        |
| Rated voltage                    | 60 V                       |
| Temperature range of housing     | -25...+85 °C               |
| Protection class                 | IP 67                      |
| Contact surface                  | gold-plated                |
| <b>Note</b>                      |                            |

**Dimensioned drawing**



Screw connection M12, metal (EMC)  
A-coded

FBCon / SAIS

straight



SAISW / SAIBW

angled



Plug in connector and protective caps

D

Ordering data

| Male   |              |
|--------|--------------|
|        | 4-pole, PG 9 |
|        | 5-pole, PG 9 |
| Socket |              |
|        | 4-pole, PG 9 |
|        | 5-pole, PG 9 |
| Note   |              |

| Type                      | Qty. | Order No.  |
|---------------------------|------|------------|
| FBCon M12 4P M EMC        | 1    | 9455640000 |
| SAIS-M-5/8S M12 5P A-COD  | 1    | 1784740000 |
| Other versions on request |      |            |

| Type                      | Qty. | Order No.  |
|---------------------------|------|------------|
| SAISW-M-4/8 M12           | 1    | 1803930000 |
| SAISW-M-5/8 M12           | 1    | 1803940000 |
| Other versions on request |      |            |

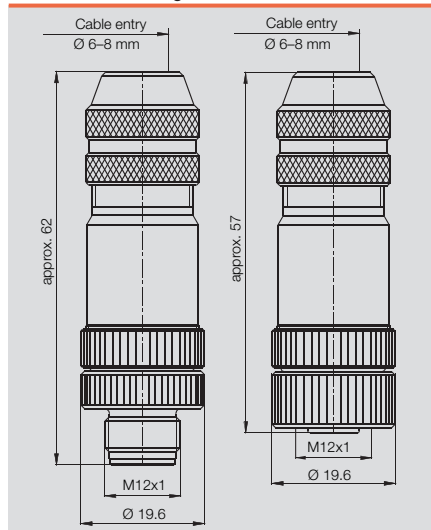
Technical data

| Type of connection               |
|----------------------------------|
| Housing main material            |
| Contact tube diameter            |
| Cable diameter                   |
| Cross-section for connected wire |
| Rated current                    |
| Rated voltage                    |
| Temperature range of housing     |
| Protection class                 |
| Contact surface                  |
| Note                             |

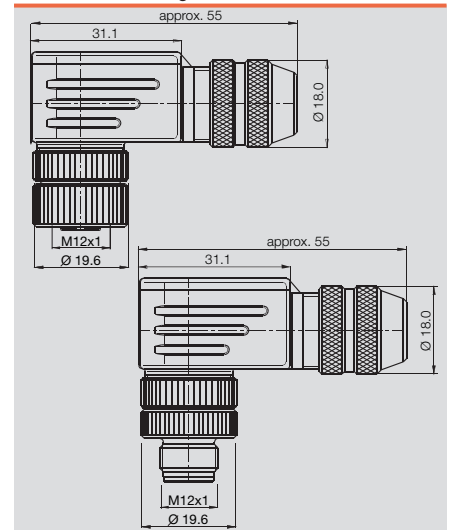
|                             |
|-----------------------------|
| Screw connection            |
| CuZn                        |
| M12                         |
| 6...8 mm (PG9)              |
| 0.14 - 0.75 mm <sup>2</sup> |
| 4 A                         |
| 250 V                       |
| -25...+85 °C                |
| IP 67                       |
| CuSnZn                      |

|                             |
|-----------------------------|
| Screw connection            |
| CuZn                        |
| M12                         |
| 6...8 mm (PG9)              |
| 0.14 - 0.75 mm <sup>2</sup> |
| 4 A                         |
| 125 V                       |
| -25...+85 °C                |
| IP 67                       |
| gold-plated                 |

Dimensioned drawing



Dimensioned drawing



Screw connection M12, metal (EMC)  
B-coded  
D-coded



Industrial Ethernet

SAISM / SAIBM

straight



SAIS / SAIB

straight



Ordering data

| Male   |              |
|--------|--------------|
|        | 3-pole, PG 9 |
|        | 4-pole, PG 9 |
|        | 5-pole, PG 9 |
| Socket |              |
|        | 3-pole, PG 9 |
|        | 4-pole, PG 9 |
|        | 5-pole, PG 9 |
| Note   |              |

| Type                    | Qty. | Order No.  |
|-------------------------|------|------------|
| SAISM-4/8S-M12-4P D-COD | 1    | 1892120000 |
| SAISM 5/8S M12 5P B-COD | 1    | 1784790000 |
| SAIBM-4/8S-M12-4P D-COD | 1    | 1892130000 |
| SAIBM 5/8S M12 5P B-COD | 1    | 1784780000 |

| Type                | Qty. | Order No.  |
|---------------------|------|------------|
| SAIS-3-IDC-M12B-COD | 1    | 1864730000 |
| SAIB-3-IDC-M12B-COD | 1    | 1864740000 |

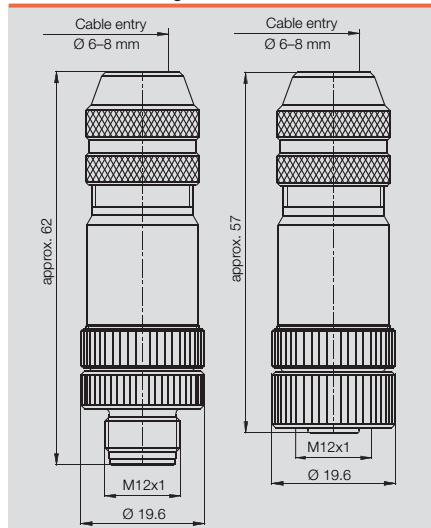
Technical data

| Type of connection               | Screw connection            |
|----------------------------------|-----------------------------|
| Housing main material            | CuZn                        |
| Contact tube diameter            | M12                         |
| Cable diameter                   | 6...8 mm (PG9)              |
| Cross-section for connected wire | 0.14 - 0.75 mm <sup>2</sup> |
| Rated current                    | 4 A                         |
| Rated voltage                    | 250 V                       |
| Temperature range of housing     | -25...+85 °C                |
| Protection class                 | IP 67                       |
| Contact surface                  | gold-plated                 |
| Note                             |                             |

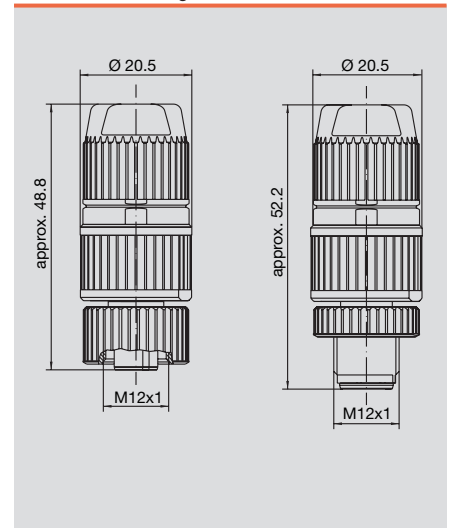
| Type of connection                                        | Insulation displacement connection |
|-----------------------------------------------------------|------------------------------------|
| Housing main material                                     | CuZn                               |
| Contact tube diameter                                     | M12                                |
| Cable diameter                                            | 7...8.8 mm                         |
| Cross-section for connected wire                          | 0.34 - 0.75 mm <sup>2</sup>        |
| Rated current                                             | 4 A                                |
| Rated voltage                                             | 32 V                               |
| Temperature range of housing                              | -25...+85 °C                       |
| Protection class                                          | IP 67                              |
| Contact surface                                           | tinned                             |
| Note                                                      |                                    |
| PB = PROFIBUS (B-COD)<br>IE = Industrial Ethernet (D-COD) |                                    |

| Type of connection                                        | Insulation displacement connection |
|-----------------------------------------------------------|------------------------------------|
| Housing main material                                     | CuZn                               |
| Contact tube diameter                                     | M12                                |
| Cable diameter                                            | 7...8.8 mm                         |
| Cross-section for connected wire                          | 0.34 - 0.75 mm <sup>2</sup>        |
| Rated current                                             | 4 A                                |
| Rated voltage                                             | 32 V                               |
| Temperature range of housing                              | -25...+85 °C                       |
| Protection class                                          | IP 67                              |
| Contact surface                                           | tinned                             |
| Note                                                      |                                    |
| PB = PROFIBUS (B-COD)<br>IE = Industrial Ethernet (D-COD) |                                    |

Dimensioned drawing



Dimensioned drawing



Customisable connectors

Screw connection M12, metal (EMC)  
B-coded



SAISW / SAIBW

angled



D

Ordering data

|        |              |
|--------|--------------|
| Male   | 5-pole, PG 9 |
| Socket | 5-pole, PG 9 |
| Note   |              |

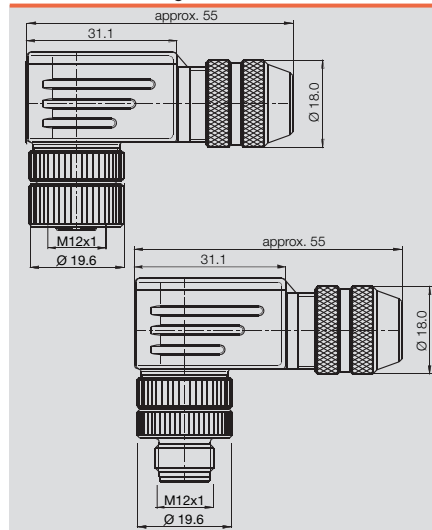
| Type                  | Qty. | Order No.  |
|-----------------------|------|------------|
| SAISW-M-5/8 M12 B-COD | 1    | 1944570000 |
| SAIBW-M-5/8 M12 B-COD | 1    | 1944580000 |

Technical data

|                                  |                             |
|----------------------------------|-----------------------------|
| Type of connection               | Screw connection            |
| Housing main material            | CuZn                        |
| Contact tube diameter            | M12                         |
| Cable diameter                   | 6...8 mm (PG9)              |
| Cross-section for connected wire | 0.14 - 0.75 mm <sup>2</sup> |
| Rated current                    | 4 A                         |
| Rated voltage                    | 125 V                       |
| Temperature range of housing     | -25...+85 °C                |
| Protection class                 | IP 67                       |
| Contact surface                  | gold-plated                 |
| Note                             |                             |

|                                  |                             |
|----------------------------------|-----------------------------|
| Type of connection               | Screw connection            |
| Housing main material            | CuZn                        |
| Contact tube diameter            | M12                         |
| Cable diameter                   | 6...8 mm (PG9)              |
| Cross-section for connected wire | 0.14 - 0.75 mm <sup>2</sup> |
| Rated current                    | 4 A                         |
| Rated voltage                    | 125 V                       |
| Temperature range of housing     | -25...+85 °C                |
| Protection class                 | IP 67                       |
| Contact surface                  | gold-plated                 |
| Note                             |                             |

Dimensioned drawing



Tension clamp connection, metal  
D-coded

# Industrial Ethernet

Plug in connector and protective caps

D

## Ordering data

|               |              |
|---------------|--------------|
| <b>Male</b>   | 4-pole, PG 9 |
| <b>Socket</b> | 4-pole, PG 9 |
| <b>Note</b>   |              |

## Technical data

|                                  |                            |
|----------------------------------|----------------------------|
| Type of connection               | Tension clamp connection   |
| Housing main material            | CuZn                       |
| Contact tube diameter            | M12                        |
| Cable diameter                   | 6...8 mm (PG9)             |
| Cross-section for connected wire | 0.25 - 0.5 mm <sup>2</sup> |
| Rated current                    | 4 A                        |
| Rated voltage                    | 250 V                      |
| Temperature range of housing     | -25...+85 °C               |
| Protection class                 | IP 67                      |
| Contact surface                  | gold-plated                |
| <b>Note</b>                      |                            |

## SAISM / SAIBM

straight



| Type                   | Qty. | Order No.  |
|------------------------|------|------------|
| SAISM-4/8S-M12 4P D-ZF | 1    | 1892120001 |
| SAIBM-4/8S-M12 4P D-ZF | 1    | 1892130001 |

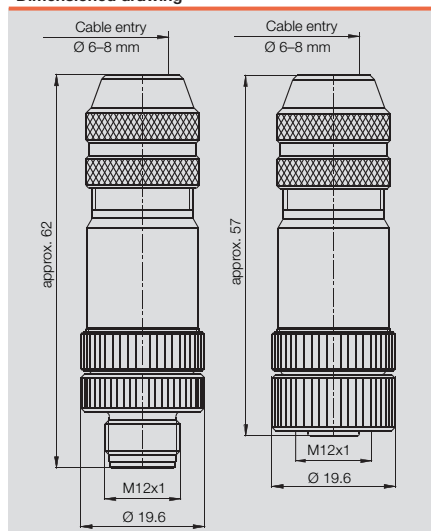
## SAISW / SAIBW

angled

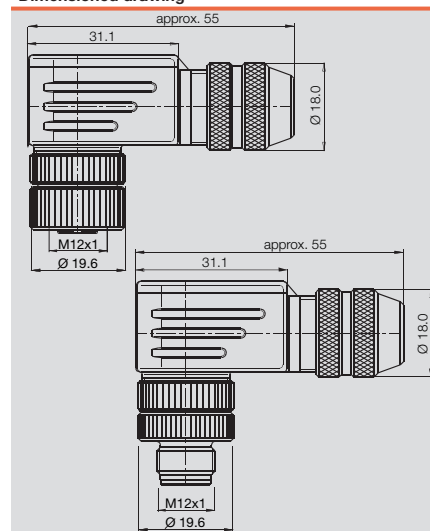


| Type                   | Qty. | Order No.  |
|------------------------|------|------------|
| SAISW-4/8S-M12 4P D-ZF | 1    | 1803930001 |
| SAIBW-4/8S-M12 4P D-ZF | 1    | 1139330000 |

## Dimensioned drawing



## Dimensioned drawing



Customisable connectors

Tension clamp connection M12  
A-coded

SAIS-ZF

straight



D

Ordering data

|        |              |
|--------|--------------|
| Male   | 5-pole, PG 7 |
| Socket | 5-pole, PG 7 |
| Note   |              |

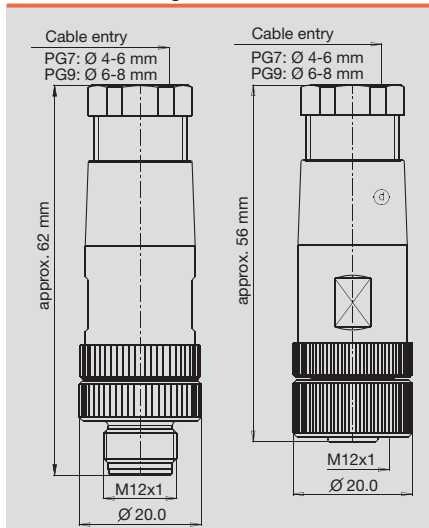
| Type        | Qty. | Order No.  |
|-------------|------|------------|
| SAIS-5/7-ZF | 1    | 1906390000 |
| SAIB-5/7-ZF | 1    | 1924970000 |

Technical data

|                                  |                            |
|----------------------------------|----------------------------|
| Type of connection               | Tension clamp connection   |
| Housing main material            | PA                         |
| Contact tube diameter            | M12                        |
| Cable diameter                   | 4...6 mm                   |
| Cross-section for connected wire | 0.25 - 0.5 mm <sup>2</sup> |
| Rated current                    | 4 A                        |
| Rated voltage                    | 125 V                      |
| Temperature range of housing     | -25...+85 °C               |
| Protection class                 | IP 67                      |
| Contact surface                  | gold-plated                |
| Note                             |                            |

|                                  |                            |
|----------------------------------|----------------------------|
| Type of connection               | Tension clamp connection   |
| Housing main material            | PA                         |
| Contact tube diameter            | M12                        |
| Cable diameter                   | 4...6 mm                   |
| Cross-section for connected wire | 0.25 - 0.5 mm <sup>2</sup> |
| Rated current                    | 4 A                        |
| Rated voltage                    | 125 V                      |
| Temperature range of housing     | -25...+85 °C               |
| Protection class                 | IP 67                      |
| Contact surface                  | gold-plated                |
| Note                             |                            |

Dimensioned drawing



M8 screw connection

SAIS / SAIB

straight



Ordering data

| Male   |        |
|--------|--------|
|        | 3-pole |
|        | 4-pole |
| Socket |        |
|        | 3-pole |
|        | 4-pole |
| Note   |        |

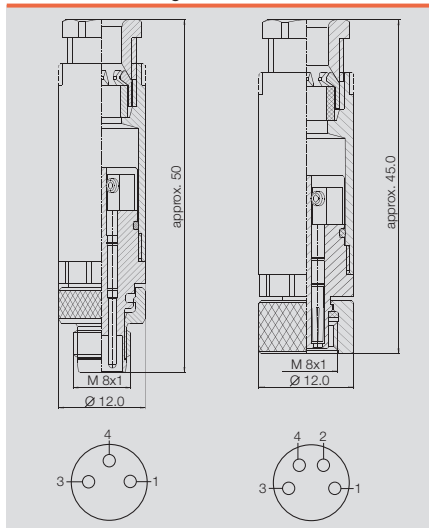
| Type                      | Qty. | Order No.  |
|---------------------------|------|------------|
| SAIS-M8-3P                | 1    | 1803860000 |
| SAIS-M8-4P                | 1    | 1803850000 |
| SAIB-M8-3P                | 1    | 1803870000 |
| SAIB-M8-4P                | 1    | 1803880000 |
| Other versions on request |      |            |

Technical data

| Type of connection               | Screw connection           |
|----------------------------------|----------------------------|
| Housing main material            | PA                         |
| Contact tube diameter            | M8                         |
| Cable diameter                   | 3.5...5 mm                 |
| Cross-section for connected wire | 0.14 - 0.5 mm <sup>2</sup> |
| Rated current                    | 4 A                        |
| Rated voltage                    | 30 V                       |
| Temperature range of housing     | -25...+85 °C               |
| Protection class                 | IP 67                      |
| Contact surface                  | gold-plated                |
| Note                             |                            |

| Type of connection               | Screw connection           |
|----------------------------------|----------------------------|
| Housing main material            | PA                         |
| Contact tube diameter            | M8                         |
| Cable diameter                   | 3.5...5 mm                 |
| Cross-section for connected wire | 0.14 - 0.5 mm <sup>2</sup> |
| Rated current                    | 4 A                        |
| Rated voltage                    | 30 V                       |
| Temperature range of housing     | -25...+85 °C               |
| Protection class                 | IP 67                      |
| Contact surface                  | gold-plated                |
| Note                             |                            |

Dimensioned drawing



## Customisable connectors

Solder connection M8, shielded  
screw connection M8, shielded

### SAISM / SAIBM

straight



### SAISM / SAIBM

straight



Plug in connector and protective caps

D

#### Ordering data

| Male   |        |
|--------|--------|
|        | 3-pole |
|        | 4-pole |
| Socket |        |
|        | 3-pole |
|        | 4-pole |
| Note   |        |

| Type            | Qty. | Order No.  |
|-----------------|------|------------|
| SAISM-M8-3P(TL) | 1    | 1921030000 |
| SAISM-M8-4P(TL) | 1    | 1921040000 |
| SAIBM-M8-3P(TL) | 1    | 1921010000 |
| SAIBM-M8-4P(TL) | 1    | 1921020000 |

| Type             | Qty. | Order No.  |
|------------------|------|------------|
| SAISM-M8-3P-(IF) | 1    | 1010060000 |
| SAISM-M8-4P-(IF) | 1    | 1010070000 |
| SAIBM-M8-3P-(IF) | 1    | 1010080000 |
| SAIBM-M8-4P-(IF) | 1    | 1010090000 |

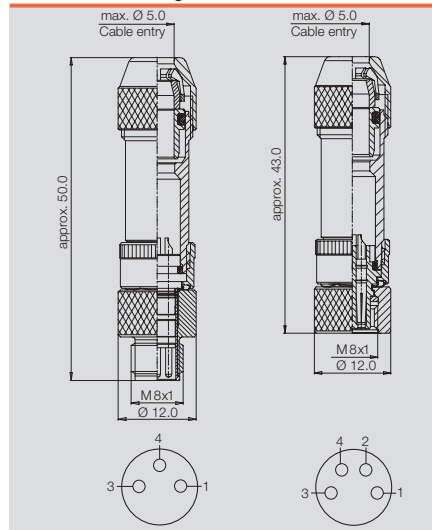
#### Technical data

| Type of connection               | Solder connection           |
|----------------------------------|-----------------------------|
| Housing main material            | CuZn                        |
| Contact tube diameter            | M8                          |
| Cable diameter                   | 3.5...5.5 mm                |
| Cross-section for connected wire | 0.25 - 0.25 mm <sup>2</sup> |
| Rated current                    | 4 A                         |
| Rated voltage                    | 30 V                        |
| Temperature range of housing     | -25...+85 °C                |
| Protection class                 | IP 67                       |
| Contact surface                  | gold-plated                 |
| Note                             |                             |

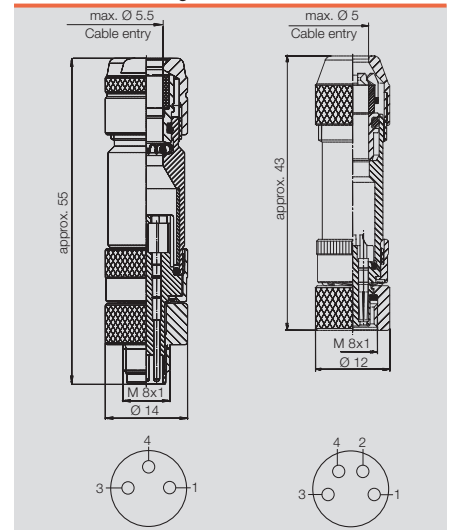
| Type of connection               | Screw connection           |
|----------------------------------|----------------------------|
| Housing main material            | CuZn                       |
| Contact tube diameter            | M8                         |
| Cable diameter                   | 3.5...5 mm                 |
| Cross-section for connected wire | 0.14 - 0.5 mm <sup>2</sup> |
| Rated current                    | 4 A                        |
| Rated voltage                    | 30 V                       |
| Temperature range of housing     | -25...+85 °C               |
| Protection class                 | IP 67                      |
| Contact surface                  | gold-plated                |
| Note                             |                            |
| IF = Iris-type spring            |                            |

| Type of connection               | Screw connection           |
|----------------------------------|----------------------------|
| Housing main material            | CuZn                       |
| Contact tube diameter            | M8                         |
| Cable diameter                   | 3.5...5 mm                 |
| Cross-section for connected wire | 0.14 - 0.5 mm <sup>2</sup> |
| Rated current                    | 4 A                        |
| Rated voltage                    | 30 V                       |
| Temperature range of housing     | -25...+85 °C               |
| Protection class                 | IP 67                      |
| Contact surface                  | gold-plated                |
| Note                             |                            |
| IF = Iris-type spring            |                            |

#### Dimensioned drawing



#### Dimensioned drawing



Solder connection M8

SAISW / SAIBW

angled



Ordering data

|               |        |
|---------------|--------|
| <b>Male</b>   |        |
|               | 3-pole |
|               | 4-pole |
| <b>Socket</b> |        |
|               | 3-pole |
|               | 4-pole |
| <b>Note</b>   |        |

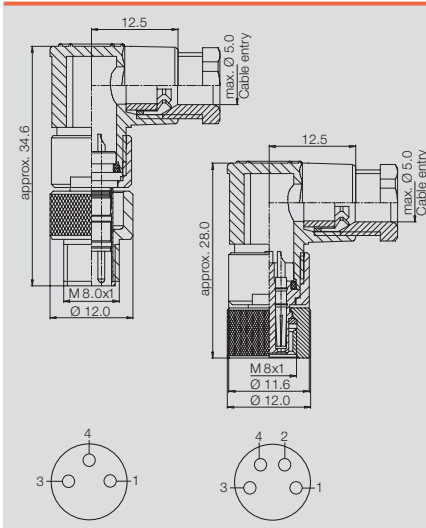
| Type            | Qty. | Order No.  |
|-----------------|------|------------|
| SAISW-M8-3P(TL) | 1    | 1920990000 |
| SAISW-M8-4P(TL) | 1    | 1921000000 |
| SAIBW-M8-3P(TL) | 1    | 1920970000 |
| SAIBW-M8-4P(TL) | 1    | 1920980000 |

Technical data

|                                  |                             |
|----------------------------------|-----------------------------|
| Type of connection               | Solder connection           |
| Housing main material            | CuZn                        |
| Contact tube diameter            | M8                          |
| Cable diameter                   | 3.5...5.5 mm                |
| Cross-section for connected wire | 0.25 - 0.25 mm <sup>2</sup> |
| Rated current                    | 4 A                         |
| Rated voltage                    | 30 V                        |
| Temperature range of housing     | -25...+85 °C                |
| Protection class                 | IP 67                       |
| Contact surface                  | gold-plated                 |
| <b>Note</b>                      |                             |

|                                  |                             |
|----------------------------------|-----------------------------|
| Type of connection               | Solder connection           |
| Housing main material            | CuZn                        |
| Contact tube diameter            | M8                          |
| Cable diameter                   | 3.5...5.5 mm                |
| Cross-section for connected wire | 0.25 - 0.25 mm <sup>2</sup> |
| Rated current                    | 4 A                         |
| Rated voltage                    | 30 V                        |
| Temperature range of housing     | -25...+85 °C                |
| Protection class                 | IP 67                       |
| Contact surface                  | gold-plated                 |
| <b>Note</b>                      |                             |

Dimensioned drawing



# IDC coding systems

## SAI-M/SAI-F

### IDC



#### 3-pole

| Pole | Colour code | Assignment   |
|------|-------------|--------------|
| ●    | brown       | + 24 V DC    |
| ●●   | white       | input/output |
| ●●●  | blue        | 0 V DC       |

D



#### 4-pole

| Pole | Colour code | Assignment     |
|------|-------------|----------------|
| 1    | brown       | + 24 V DC      |
| 2    | uncoloured  | input/output 2 |
| 3    | blue        | 0 V DC         |
| 4    | black       | input/output 1 |

### IDC connection elements

#### Ordering data

| Type                | Qty. | Order No.  |
|---------------------|------|------------|
| SAI-SA-3-IDC        | 1    | 9457720000 |
| SAI-SA-4-IDC        | 1    | 1766810000 |
| SAI-SA-3-IDC (1Set) | 1*   | 1896740000 |

\*) One set contains 100 pieces.

### IDC insulation displacement connections

The insulation displacement connection on Weidmüller SAI distributors is presently the smallest and most robust IDC connection on the market. The connection element is available in 3 and 4 pole versions. The connection system enables you to perform individual fabrication of sensor/actuator cables quickly and reliably on the spot. Conductor cross sections are from 0.25 mm<sup>2</sup> to 0.5 mm<sup>2</sup>.



# M8 and M12 insulation displacement connection (IDC)

M8



The assembly of round plugs is very time consuming.

The cable has to be stripped and possibly also fitted with a wire end ferrule.

But the IDC plug in connector system enable Weidmüller to offer a quick fit connection system that saves users working time and hard cash.

The IDC quick fit quick connection system is available for M12 and M8.

M12



Screwty



This is the perfect tool for all common cable glands on sensor and actuator cables.

The Screwty fits M12 and M8 round plugs. Both types can be used for plugs and sockets on custom cables.

The handle of every Screwty has a conventional 1/4 inch fitting and can be used for all sizes. Simply turn the tool to tighten or release a round plug.

Of course, the Screwty is also available with a torque fitting. This adjustable attachment can be used for all sizes.

The torque can be infinitely adjusted between 0.5 and 1.7 Nm.

D

Customisable connectors

Insulation displacement connection  
M12  
A-coded

SAIS IDC / SAIB IDC

straight



SAISW IDC / SAIBW IDC

angled



D

Ordering data

|        |        |
|--------|--------|
| Male   | 4-pole |
| Socket | 4-pole |
| Note   |        |

| Type                      | Qty. | Order No.  |
|---------------------------|------|------------|
| SAIS-4-IDC M12 small      | 1    | 1781550001 |
| SAIB-4-IDC-M12 small      | 1    | 1781540001 |
| Other versions on request |      |            |

| Type                      | Qty. | Order No.  |
|---------------------------|------|------------|
| SAISW-4-IDC M12           | 1    | 1812870000 |
| SAIBW-4-IDC M12           | 1    | 1812890000 |
| Other versions on request |      |            |

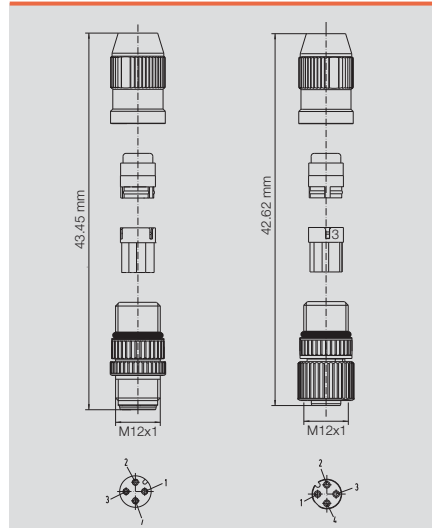
Technical data

|                                  |                                    |
|----------------------------------|------------------------------------|
| Type of connection               | Insulation displacement connection |
| Housing main material            | CuZn                               |
| Contact tube diameter            | M12                                |
| Cable diameter                   | 4...5.1 mm                         |
| Cross-section for connected wire | 0.14 - 0.34 mm <sup>2</sup>        |
| Rated current                    | 4 A                                |
| Rated voltage                    | 32 V                               |
| Temperature range of housing     | -25...+85 °C                       |
| Protection class                 | IP 67                              |
| Contact surface                  | tinned                             |
| Note                             |                                    |

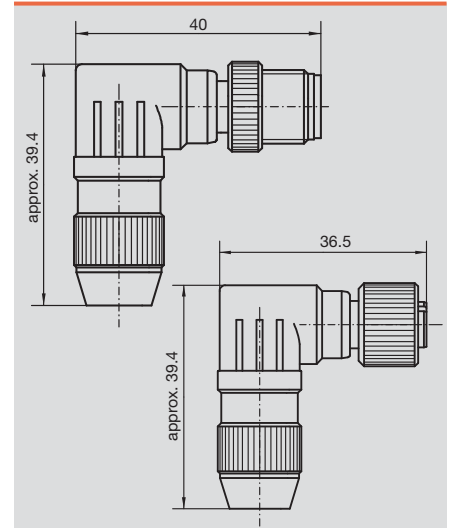
|                                  |                                    |
|----------------------------------|------------------------------------|
| Type of connection               | Insulation displacement connection |
| Housing main material            | CuZn                               |
| Contact tube diameter            | M12                                |
| Cable diameter                   | 4...5.1 mm                         |
| Cross-section for connected wire | 0.25 - 0.5 mm <sup>2</sup>         |
| Rated current                    | 4 A                                |
| Rated voltage                    | 32 V                               |
| Temperature range of housing     | -25...+85 °C                       |
| Protection class                 | IP 67                              |
| Contact surface                  | tinned                             |
| Note                             |                                    |

|                                  |                                    |
|----------------------------------|------------------------------------|
| Type of connection               | Insulation displacement connection |
| Housing main material            | CuZn                               |
| Contact tube diameter            | M12                                |
| Cable diameter                   | 4...5.1 mm                         |
| Cross-section for connected wire | 0.25 - 0.5 mm <sup>2</sup>         |
| Rated current                    | 4 A                                |
| Rated voltage                    | 32 V                               |
| Temperature range of housing     | -25...+85 °C                       |
| Protection class                 | IP 67                              |
| Contact surface                  | tinned                             |
| Note                             |                                    |

Dimensioned drawing



Dimensioned drawing



**Insulation displacement connection  
M12 (0.75)  
A-coded**

**SAIS IDC / SAIB IDC (0.75)**

straight



**Ordering data**

|               |        |
|---------------|--------|
| <b>Male</b>   |        |
|               | 3-pole |
|               | 4-pole |
| <b>Socket</b> |        |
|               | 3-pole |
|               | 4-pole |
| <b>Note</b>   |        |

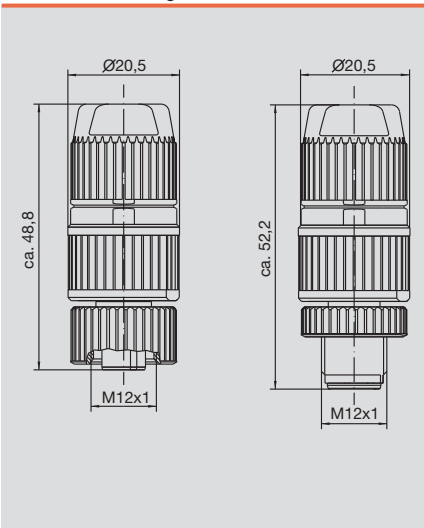
| Type                      | Qty. | Order No.  |
|---------------------------|------|------------|
| SAIS-3-IDC (0,75) M12     | 1    | 1852720000 |
| SAIS-4-IDC (0,75) M12     | 1    | 1852740000 |
| SAIB-3-IDC (0,75) M12     | 1    | 1852730000 |
| SAIB-4-IDC (0,75) M12     | 1    | 1852750000 |
| Other versions on request |      |            |

**Technical data**

|                                  |                                    |
|----------------------------------|------------------------------------|
| Type of connection               | Insulation displacement connection |
| Housing main material            | CuZn                               |
| Contact tube diameter            | M12                                |
| Cable diameter                   | 5.5...8 mm                         |
| Cross-section for connected wire | 0.34 - 0.75 mm <sup>2</sup>        |
| Rated current                    | 6 A                                |
| Rated voltage                    | 50 V                               |
| Temperature range of housing     | -25...+85 °C                       |
| Protection class                 | IP 67                              |
| Contact surface                  | tinned                             |
| <b>Note</b>                      |                                    |

|                                  |                                    |
|----------------------------------|------------------------------------|
| Type of connection               | Insulation displacement connection |
| Housing main material            | CuZn                               |
| Contact tube diameter            | M12                                |
| Cable diameter                   | 5.5...8 mm                         |
| Cross-section for connected wire | 0.34 - 0.75 mm <sup>2</sup>        |
| Rated current                    | 6 A                                |
| Rated voltage                    | 50 V                               |
| Temperature range of housing     | -25...+85 °C                       |
| Protection class                 | IP 67                              |
| Contact surface                  | tinned                             |
| <b>Note</b>                      |                                    |

**Dimensioned drawing**



Customisable connectors

Insulation displacement connection  
M8

SAIS IDC / SAIB IDC

straight



D

Ordering data

|               |        |
|---------------|--------|
| <b>Male</b>   | 3-pole |
|               | 4-pole |
| <b>Socket</b> | 3-pole |
|               | 4-pole |
| <b>Note</b>   |        |

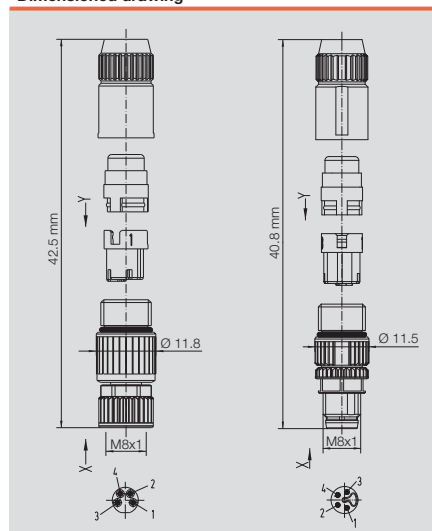
| Type                      | Qty. | Order No.  |
|---------------------------|------|------------|
| SAIS-3-IDC M8 small       | 1    | 1784040001 |
| SAIS-4-IDC M8 small       | 1    | 1784060001 |
| SAIB-3-IDC-M8 small       | 1    | 1784030001 |
| SAIB-4-IDC-M8 small       | 1    | 1784050001 |
| Other versions on request |      |            |

Technical data

|                                  |                                    |
|----------------------------------|------------------------------------|
| Type of connection               | Insulation displacement connection |
| Housing main material            | CuZn                               |
| Contact tube diameter            | M8                                 |
| Cable diameter                   | 3.2...5.4 mm                       |
| Cross-section for connected wire | 0.14 - 0.34 mm <sup>2</sup>        |
| Rated current                    | 4 A                                |
| Rated voltage                    | 32 V                               |
| Temperature range of housing     | -25...+85 °C                       |
| Protection class                 | IP 67                              |
| Contact surface                  | tinned                             |
| <b>Note</b>                      |                                    |

|                                  |                                    |
|----------------------------------|------------------------------------|
| Type of connection               | Insulation displacement connection |
| Housing main material            | CuZn                               |
| Contact tube diameter            | M8                                 |
| Cable diameter                   | 3.2...5.4 mm                       |
| Cross-section for connected wire | 0.14 - 0.34 mm <sup>2</sup>        |
| Rated current                    | 4 A                                |
| Rated voltage                    | 32 V                               |
| Temperature range of housing     | -25...+85 °C                       |
| Protection class                 | IP 67                              |
| Contact surface                  | tinned                             |
| <b>Note</b>                      |                                    |

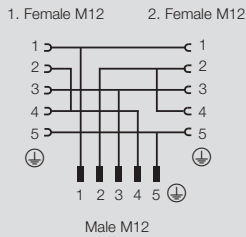
Dimensioned drawing



# T distributor

## M12/M12

Mounting screw M3

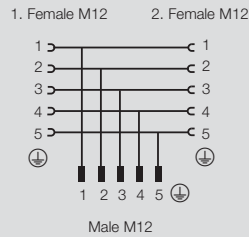


### Ordering data

| Type                            | Qty. | Order No.  |
|---------------------------------|------|------------|
| Distribution, pin 2 + 4 bridged |      |            |
| SAI-Y-5S B2-4 M12/M12           | 1    | 1783410000 |

## M12/M12

Mounting screw M3



### Ordering data

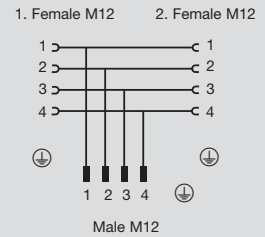
| Type                  | Qty. | Order No.  |
|-----------------------|------|------------|
| Parallel distribution |      |            |
| SAI-Y-5S PARA M12/M12 | 1    | 1783430000 |

## M12/M12

Mounting screw M3



n

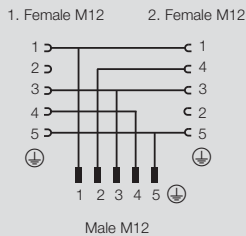


### Ordering data

| Type             | Qty. | Order No.  |
|------------------|------|------------|
| SAI-Y-4S-M12/M12 | 1    | 1060730000 |

## M12/M12

Mounting screw M3

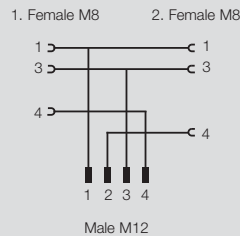


### Ordering data

| Type                    | Qty. | Order No.  |
|-------------------------|------|------------|
| Individual distribution |      |            |
| SAI-Y-5S-M12/M12        | 1    | 1826880000 |

## M12/M8

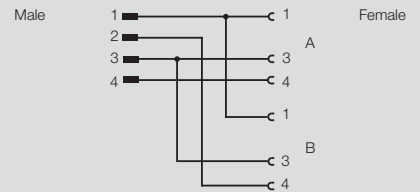
Mounting screw M3



### Ordering data

| Type                    | Qty. | Order No.  |
|-------------------------|------|------------|
| Individual distribution |      |            |
| SAI-Y-4-4/2-4 M12/M8    | 1    | 1783420000 |

## M8/M8



### Ordering data

| Type           | Qty. | Order No.  |
|----------------|------|------------|
| SAI-Y-4S M8/M8 | 1    | 1805660000 |

# Twin plugs and wall bushings



## Miniature twin plugs

Purpose built machines often require individual cable lengths for the initiator cables. In some cases, two cables have to be of different lengths even when going to the same connector position.

To resolve this difficulty, we offer male and female connectors with two cable outlets that you can fabricate as you wish. The miniature twin plug is available with a 90° outlet and a straight outgoing cable direction. The 90° version can be twisted as you wish in steps of 90°.

### Ordering data

| Type                 | Qty. | Order No.  |
|----------------------|------|------------|
| SAIS-ZW-5 (straight) | 1    | 9457540000 |
| SAIS-ZWW (90°)       | 1    | 1837560000 |



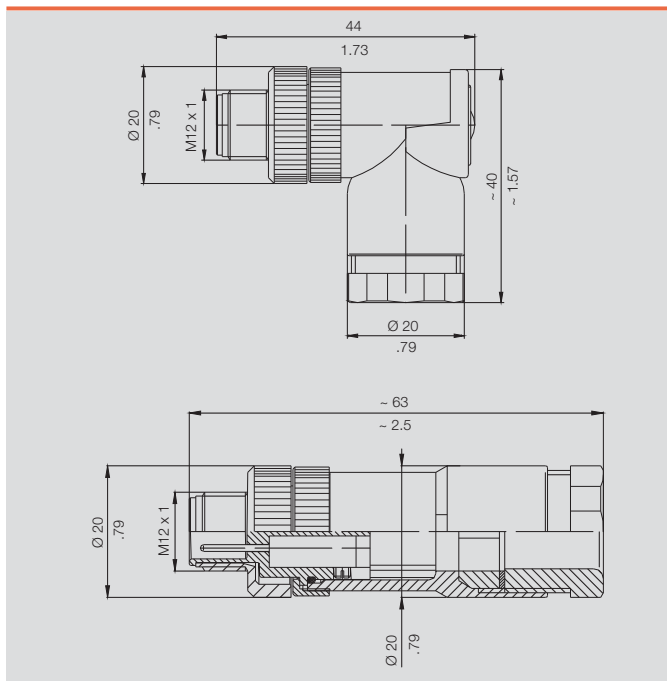
## Wall bushing

In general machine building, it is common to have cables passing through the walls of control cabinets. To meet the need for a wall penetration with M12 plug in connectors, the M12 bushing is included in the range. The wall bushings is available as 5 pole.

In addition, a bushing for PROFIBUS plug in connectors (PB) is available

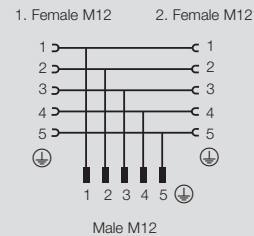
### Ordering data

| Type                  | Länge | Codierung | Qty. | Order No.  |
|-----------------------|-------|-----------|------|------------|
| SAI-WDF-5P M12 60 mm  | 60 mm | A         | 1    | 1819450000 |
| SAI-WDF-5PB M12 60 mm | 60 mm | B         | 1    | 1820690000 |



## M12/M12

### Mounting screw M4



### Ordering data

| Type                  | Qty. | Order No.  |
|-----------------------|------|------------|
| SAI-Y-5S M12/M12 2 BO | 1    | 1881710000 |

# Protective caps for SAI distributors

## Protective cap M5

Protects against external effects when the I/O is not in use. For SAI M5 distributors.



### Ordering data

| Type      | Qty. | Order No.  |
|-----------|------|------------|
| SAI-SK-M5 | 50   | 1855310000 |

## Protective cap M8

Protects against external effects when connector positions are not in use. For SAI M8 distributors.



### Ordering data

| Type      | Qty. | Order No.  |
|-----------|------|------------|
| SAI-SK-M8 | 50   | 1802760000 |

## Protective cap M12

Protects against external effects when connector positions are not in use. For SAI M12 distributors.



### Ordering data

| Type       | Qty. | Order No.  |
|------------|------|------------|
| SAI-SK-M12 | 30   | 9456050000 |

## Protective cap M12

Protects against external effects when connector positions are not in use. For SAI metal distributors.



### Ordering data

| Type         | Qty. | Order No.  |
|--------------|------|------------|
| SAI-SK-M12-M | 30   | 1802750000 |

## Protective cap M12 IDC

Protects against external effects when connector positions are not in use. For SAI distributors with IDC connection.



### Ordering data

| Type       | Qty. | Order No.  |
|------------|------|------------|
| SAI-SK IDC | 10   | 1794850000 |

## Protective cap M12 Universal

Protects against external effects when connector positions are not in use. For SAI M12 Universal distributors.



### Ordering data

| Type           | Qty. | Order No.  |
|----------------|------|------------|
| SAI-SK-M12-UNI | 20   | 2330260000 |

Hand operation possible. Screwty compatible.

## Protective cap M12 connector

Protection from external influences. For open plugs. For attaching to cable.



### Ordering data

| Type          | Qty. | Order No.  |
|---------------|------|------------|
| SAI-SK-M12 BU | 1    | 8425960000 |

## Protective cap M12 connector

Protects against external effects. For open plugs or sockets.



### Ordering data

| Type                              | Qty. | Order No.  |
|-----------------------------------|------|------------|
| Protective cap connector (yellow) | 50   | 1781520000 |



## M12, M8, M5 built in plugs

For connection of cables to sensors and actuators, different built in connectors are needed at the device end.

### M12

---



M12 plug in connectors are available with the following numbers of poles: 4 to 5-pole and 8-pole. Built in connectors for M12 connections are all A-coded and have individual leads of 0.5 m. Fixing of the FP version is achieved with the supplied locknut. Also available are built in connectors that can be screwed in from the front.

### M8

---



M8 connector requirements are covered by the 3 and 4 pole built in male and female connectors. Like the M12 built in connectors, these have a locknut for fastening into a housing wall. These connectors too have 0.5 m long leads attached.

### M5

---



Of course, Weidmüller also offers corresponding built-in connectors for the smallest plug in connectors, M5. The M5 built in connector is available in 3 and 4 pole versions. This plug in connector too has a locknut. The individual lead length with M5 built in connectors is 0.2 m.

The cross sections of the individually attached leads are available from the technical data of the various families of plug in connectors.

M12 (M16)

SAIE-M12 FP



M12 (M16)

SAIE-M12 PG



Ordering data

| Male   |  |
|--------|--|
| 4-pole |  |
| 5-pole |  |
| 8-pole |  |
| Socket |  |
| 4-pole |  |
| 5-pole |  |
| 8-pole |  |
| Note   |  |

| Type                                                          | Qty. | Order No.  |
|---------------------------------------------------------------|------|------------|
| SAIE-M12S-4-0.5U-FP-M16                                       | 1    | 1861160000 |
| SAIE-M12S-5-0.5U-FP-M16                                       | 1    | 1861170000 |
| SAIE-M12S-8-0.5U-FP-M16                                       | 1    | 1861180000 |
| FP with M16 cable gland<br>FP = can be positioned as required |      |            |

| Type                 | Qty. | Order No.  |
|----------------------|------|------------|
| SAIE-M12S-4-0.5U-M16 | 1    | 1861090000 |
| SAIE-M12S-5-0.5U-M16 | 1    | 1861230000 |
| SAIE-M12S-8-0.5U-M16 | 1    | 1861110000 |
| with PG cable gland  |      |            |
| SAIE-M12B-4-0.5U-M16 | 1    | 1861120000 |
| SAIE-M12B-5-0.5U-M16 | 1    | 1836910000 |
| SAIE-M12B-8-0.5U-M16 | 1    | 1861140000 |

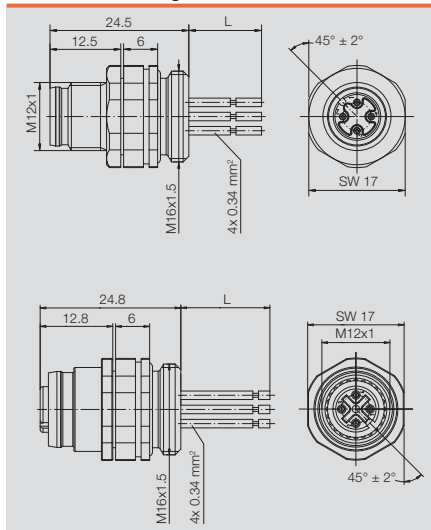
Technical data

| Cable gland                  | M16                  |
|------------------------------|----------------------|
| Housing main material        | CuZn, nickel-plated  |
| Contact tube diameter        | M12                  |
| Core cross-section           | 0.25 mm <sup>2</sup> |
| Rated current                | 4 A                  |
| Rated voltage                | 30 V                 |
| Temperature range of housing | -30...+90 °C         |
| Protection class             | IP 67                |
| Contact surface              | gold-plated          |
| Note                         |                      |

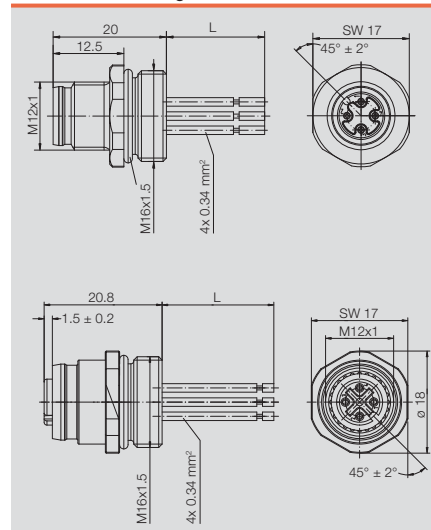
| Cable gland                  | M16                  |
|------------------------------|----------------------|
| Housing main material        | CuZn, nickel-plated  |
| Contact tube diameter        | M12                  |
| Core cross-section           | 0.34 mm <sup>2</sup> |
| Rated current                | 4 A                  |
| Rated voltage                | 60 V                 |
| Temperature range of housing | -30...+90 °C         |
| Protection class             | IP 67                |
| Contact surface              | gold-plated          |
| Note                         |                      |

| Cable gland                  | M16                  |
|------------------------------|----------------------|
| Housing main material        | CuZn, nickel-plated  |
| Contact tube diameter        | M12                  |
| Core cross-section           | 0.34 mm <sup>2</sup> |
| Rated current                | 4 A                  |
| Rated voltage                | 60 V                 |
| Temperature range of housing | -30...+90 °C         |
| Protection class             | IP 67                |
| Contact surface              | gold-plated          |
| Note                         |                      |

Dimensioned drawing



Dimensioned drawing



Built in plugs

M12 (PG 9)

SAIE-M12 PG



D

Ordering data

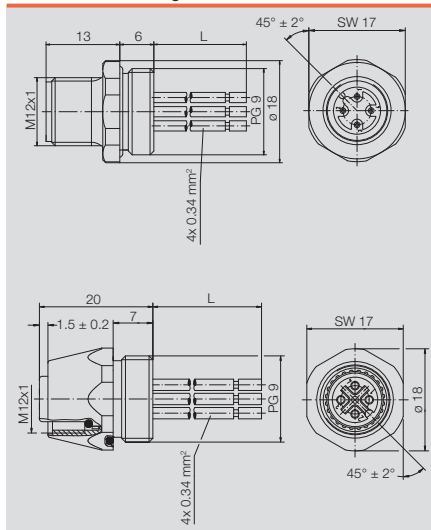
| Male   |        |
|--------|--------|
|        | 4-pole |
|        | 5-pole |
|        | 8-pole |
| Socket |        |
|        | 4-pole |
|        | 5-pole |
|        | 8-pole |
| Note   |        |

| Type                 | Qty. | Order No.  |
|----------------------|------|------------|
| SAIE-M12S-4-0.5U-PG9 | 1    | 1861220000 |
| SAIE-M12S-5-0.5U-PG9 | 1    | 1856120000 |
| SAIE-M12S-8-0.5U-PG9 | 1    | 1861240000 |
|                      |      |            |
| SAIE-M12B-4-0.5U-PG9 | 1    | 1861250000 |
| SAIE-M12B-5-0.5U-PG9 | 1    | 1814890000 |
| SAIE-M12B-8-0.5U-PG9 | 1    | 1861270000 |
| with PG cable gland  |      |            |

Technical data

| Cable gland                  | PG 9                                 |
|------------------------------|--------------------------------------|
| Housing main material        | CuZn, nickel-plated                  |
| Contact tube diameter        | M12                                  |
| Core cross-section           | 0.34 (4- and 5-pole) / 0.25 (8-pole) |
| Rated current                | 4 A                                  |
| Rated voltage                | 30 V                                 |
| Temperature range of housing | -30...+90 °C                         |
| Protection class             | IP 67                                |
| Contact surface              | gold-plated                          |
| Note                         |                                      |

Dimensioned drawing



**M8**

**SAIE-M8 FP**



**M5**

**SAIE-M5**



**Ordering data**

| Male                       |        |
|----------------------------|--------|
|                            | 3-pole |
|                            | 4-pole |
| Socket                     |        |
|                            | 3-pole |
|                            | 4-pole |
| female - snap-on interlock |        |
|                            | 3-pole |
|                            | 4-pole |
| Note                       |        |

| Type                                                      | Qty. | Order No.  |
|-----------------------------------------------------------|------|------------|
| SAIE-M8S-3-0.5U-FP-M8                                     | 1    | 1078730000 |
| SAIE-M8S-4-0.5U-FP-M8                                     | 1    | 1078720000 |
| SAIE-M8B-3-0.5U-FP-M8                                     | 1    | 1856130000 |
| SAIE-M8B-4-0.5U-FP-M8                                     | 1    | 1856140000 |
| SAIE-M8R-3-0.5U-FP-M8                                     | 1    | 1861280000 |
| SAIE-M8R-4-0.5U-FP-M8                                     | 1    | 1861290000 |
| Fixing nut included<br>FP = can be positioned as required |      |            |

| Type                | Qty. | Order No.  |
|---------------------|------|------------|
| SAIE-M5S-3-0.2U     | 1    | 1873050000 |
| SAIE-M5S-4-0.2U     | 1    | 1873030000 |
| SAIE-M5B-3-0.2U     | 1    | 1873060000 |
| SAIE-M5B-4-0.2U     | 1    | 1873040000 |
| Fixing nut included |      |            |

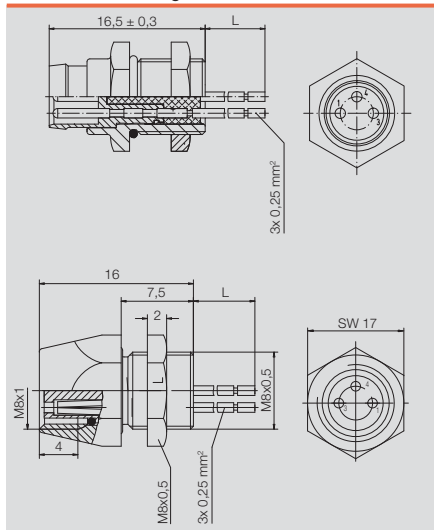
**Technical data**

| Cable gland                  |  |
|------------------------------|--|
| Housing main material        |  |
| Contact tube diameter        |  |
| Core cross-section           |  |
| Rated current                |  |
| Rated voltage                |  |
| Temperature range of housing |  |
| Protection class             |  |
| Contact surface              |  |
| Note                         |  |

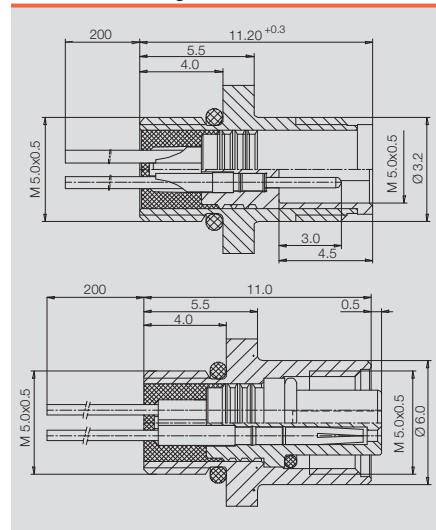
| M 8                  |  |
|----------------------|--|
| CuZn, nickel-plated  |  |
| M8                   |  |
| 0.25 mm <sup>2</sup> |  |
| 4 A                  |  |
| 30 V                 |  |
| -30...+90 °C         |  |
| IP 67                |  |
| gold-plated          |  |
| Note                 |  |

| M 5                  |  |
|----------------------|--|
| CuZn, nickel-plated  |  |
| M5                   |  |
| 0.14 mm <sup>2</sup> |  |
| 1 A                  |  |
| 60 V                 |  |
| -25...+80 °C         |  |
| IP 67                |  |
| gold-plated          |  |
| Note                 |  |

**Dimensioned drawing**



**Dimensioned drawing**



# Introduction



Valve plugs for custom cables are often incorporated when designing special machines. Such plugs are used to connect solenoid valves.

Weidmüller valve plugs are available in all customary forms. The range includes form A, form B to industry standards and to DIN, and form C to industry standards and to DIN.

These valve plugs are available without circuitry in 3 pole and 4 pole versions. A flat gasket seal is included which, when screwed on, guarantees IP65 protection.

## Ordering data

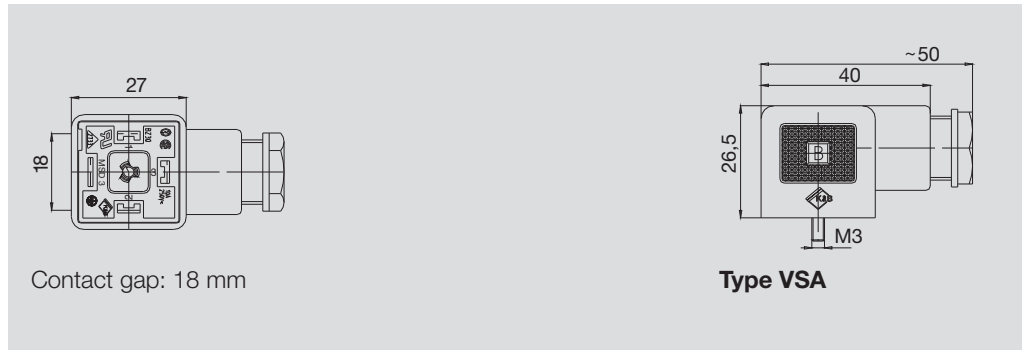
| Type                                   | (Qty.=1) | Order No.  |
|----------------------------------------|----------|------------|
| <b>Type A</b>                          |          |            |
| SAIB-VSA-3P/250/9-OB                   |          | 1873070000 |
| SAIB-VSA-4P/250/9-OB                   |          | 1873080000 |
| SAIB-VSA-3P/250/11-OB                  |          | 1873090000 |
| SAIB-VSA-4P/250/11-OB                  |          | 1873100000 |
| SAIB-VSA-3P/230/9/LD                   |          | 1873110000 |
| SAIB-VSA-3P/24/9/LD                    |          | 1873120000 |
| SAIB-VSA-3P/230/9-H/OB                 |          | 1873130000 |
| SAIB-VSA-4P/230/9-H/OB                 |          | 1873140000 |
| SAIB-VSA-3P/230/11-H/OB                |          | 1873150000 |
| SAIB-VSA-4P/230/11-H/OB                |          | 1873160000 |
| <b>Type B</b>                          |          |            |
| SAIB-VSB-3P/250/9-OB                   |          | 1873170000 |
| SAIB-VSB-3P/24/9/LD                    |          | 1873180000 |
| SAIB-VSBD-3P/250/9-OB                  |          | 1873190000 |
| <b>Type C</b>                          |          |            |
| SAIB-VSC-3P/250/7-OB                   |          | 1873200000 |
| SAIB-VSC-4P/250/7-OB                   |          | 1873210000 |
| SAIB-VSCD-3P/250/7-OB                  |          | 1873220000 |
| SAIB-VSCD-4P/250/7-OB                  |          | 1873230000 |
| All types supplied complete with seal. |          |            |

## Legend

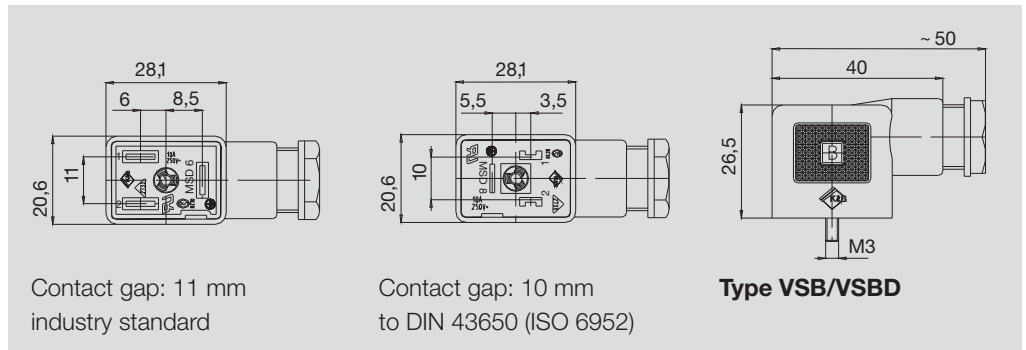
| Designation code |                     |
|------------------|---------------------|
| VS-              | valve plug          |
| OB-              | without cables      |
| 3P, 4P-          | No. of poles        |
| 7, 9, 11-        | cable entry (PG)    |
| H                | high form           |
| T                | Transparent housing |
| 3P               | 2 + PE              |
| 4P               | 3 + PE              |

| Type of valve plug | Contact gap                  |
|--------------------|------------------------------|
| A                  | 18.0 mm                      |
| B                  | 11.0 mm to industry standard |
| BD                 | 10.0 mm to DIN               |
| C                  | 9.4 mm to industry standard  |
| CD                 | 8.0 mm to DIN                |

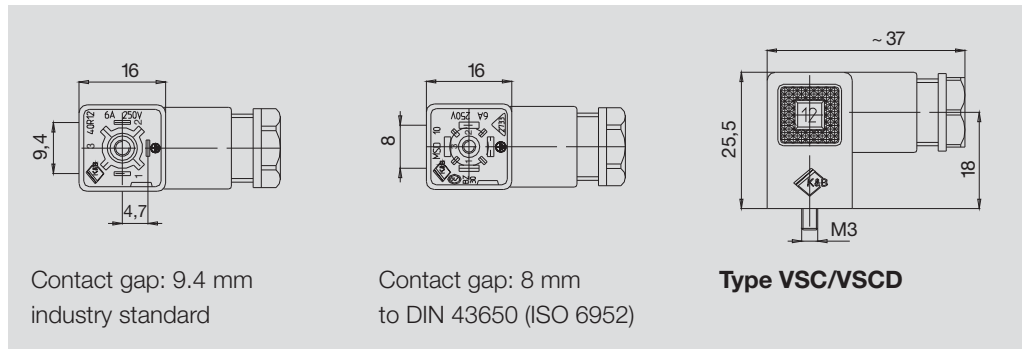
**Plug in connector Type A**  
to DIN EN 175301-803



**Plug in connector Type B**



**Plug in connector Type C**



# Protective sleeve adapter



In machine construction, it is very common for cables to be run in the open air. To be able to protect cables from damage through a wide range of causes such as rodents, it is sometimes necessary to protect the cable with a protective sleeve.

To fasten the protective sleeve to a plug in connector designed for custom assembly, Weidmüller offers a protective sleeve adapter. This adapter is used instead of the PG7 cable gland. The protective sleeve is quick to fit, protecting the cable straight away.

D

## Ordering data

| Type        | Qty. | Order No.  |
|-------------|------|------------|
| SAI-SSA-PG7 | 10   | 1938300000 |

## Fitting a protective sleeve adapter



1. Unscrewing the PG7 cable gland



2. Screwing on the protective sleeve adapter



3. Fitting a PG7 protective sleeve



4. Finished

## Connection of protective sleeve adapter to other plug connectors



1. Connect the protective tubing to the tube union



2. Finished

The protective sleeve is also suitable for protecting cables with valve plugs. A corresponding connecting piece is already present on valve plugs with moulded seal.

# IP67 Remote I/O system SAI Active

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|                                          |                                          |      |
|------------------------------------------|------------------------------------------|------|
| <b>IP67 Remote I/O system SAI Active</b> |                                          |      |
|                                          | Introduction                             | E.2  |
|                                          | Quick select – SAI Active                | E.4  |
|                                          | SAI Active Universal - Overview          | E.6  |
|                                          | SAI Active Universal - PROFIBUS-DP       | E.8  |
|                                          | SAI Active Universal - CANopen           | E.12 |
|                                          | SAI Active Universal - DeviceNet™        | E.16 |
|                                          | SAI Active Universal - EtherNet/IP™      | E.20 |
|                                          | SAI Active Universal - Modbus TCP        | E.24 |
|                                          | SAI Active Universal Pro - Overview      | E.28 |
|                                          | SAI Active Universal Pro                 | E.30 |
|                                          | SAI Active Universal Wireless - Overview | E.42 |
|                                          | SAI Active Universal Wireless            | E.44 |

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# Sensor Actuator Interface (SAI Active)

## Decentralised Remote I/O system with IP67 protection

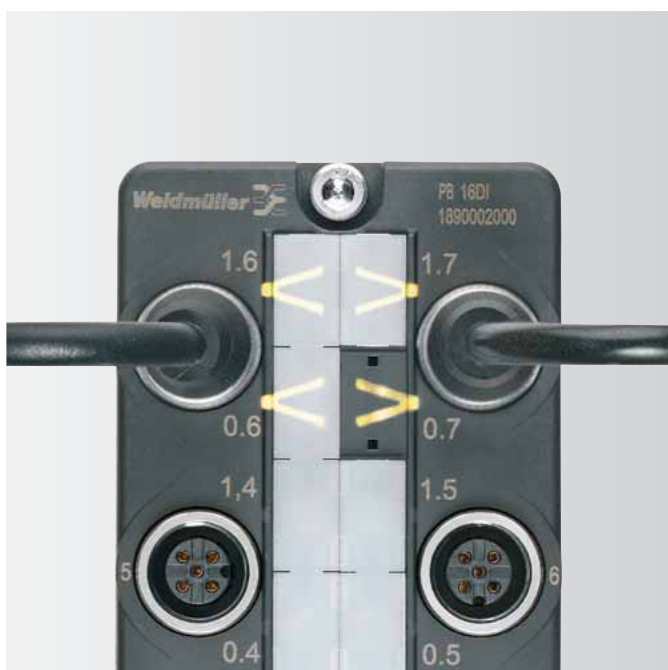
Industrial automation solutions are becoming more and more decentralised. The Weidmüller sensor-actuator distributor SAI Active provides a fieldbus interface for digital communication. It is capable of merging all types of signals from the field and transmitting them without interference to the central controller unit. The SAI Active Remote I/O system is available in several variants to support different applications. A wide range of products for industrial automation are available to the user: the basic “SAI-AU” version provides a quick and simple, entry level solution for decentralisation; the professional “SAI-AU Pro” version has versatile extension options and functional modules; and the “SAI-AU Wireless” system provides a radio based solution.

The SAI Active Remote I/O system features IP67 protection. It provides users with the opportunity to add input and/or output units to the process in a decentralised manner directly on location. The wiring is uncomplicated with pre-assembled cables and standardised M8 and M12 connectors. This simplifies the installation process and reduces the risk of cabling errors. There is no need for complex parallel wiring of the sensors and actuators. Nor do you need to merge the cables together at a central location or electrical cabinet. The IP67 modules have a sturdy construction and provide excellent reliability under adverse conditions involving dust, moisture, acids, high temperatures or vibrations.



In comparison to traditional passive solutions which require a separate line from the point of measurement to the controller for each signal, the active modules stand out because they need only one line to digitally transmit all the signals of a standard fieldbus system. The measurement signal is transmitted to the controller unit precisely (i.e., with no drift). Thus there is no need for manual calibration.

The SAI Active Remote I/O system is available for industrial fieldbus protocols (PROFIBUS-DP, DeviceNet, CANopen, Modbus ASCII) and Ethernet protocols (Modbus TCP and Ethernet/IP). Standardised device drivers are available. They allow you to carry out a vendor-neutral integration into your engineering system without the use of any proprietary software. The drivers can also be used with a wide range of controller units. The diagnostic capabilities of the SAI Active system (available in part using a web browser) make troubleshooting simple. They also significantly reduce the time required for initial commissioning and maintenance. Each module provides a continual specific diagnostic function for each individual channel. When a sensor, actuator or module error is detected, an easily recognised signal is displayed with an arrow icon on the corresponding module. An alert is simultaneously sent on the fieldbus or directly to the controller unit. This allows the application to react quickly so that prompt system analysis can be carried out.



The SAI Active system offers many benefits including less expensive installation and maintenance. It also makes optimal use of space with its compact modules.

This system includes all purpose compact modules and modular subbus components – providing users with decentralised automation that they can profit from as a long term solution.

Weidmüller offers users a wide line of active and passive sensor-actuator distributors for designing a single vendor system. The distributors are versatile enough to be used for practically all industrial automation applications. Our product line is being constantly improved, expanded and adapted to meet future needs.

Use the following table for quickly finding the proper product. Plenty of documentation and software is available to support you during the project planning and initial commissioning phases. All software programs and corresponding product documentation can be downloaded free of charge from the Weidmüller web site.

Selection table

| Order No.                            | Product designation     | Connection system |     | Communication |         |           |                             |            |             |        |          |
|--------------------------------------|-------------------------|-------------------|-----|---------------|---------|-----------|-----------------------------|------------|-------------|--------|----------|
|                                      |                         | M8                | M12 | PROFIBUS DP   | CANopen | DeviceNet | Modbus ASCII (RS 232 / USB) | Modbus TCP | Ethernet/IP | Subbus | Wireless |
| <b>SAI Active Universal</b>          |                         |                   |     |               |         |           |                             |            |             |        |          |
| 1906550000                           | SAI-AU M8 PB 16DI       | X                 |     | X             |         |           |                             |            |             |        |          |
| 1906640000                           | SAI-AU M8 PB 16DI/8DO   | X                 |     | X             |         |           |                             |            |             |        |          |
| 1975450000                           | SAI-AU M8 PB 8DI8DO 2A  | X                 |     | X             |         |           |                             |            |             |        |          |
| 1890020000                           | SAI-AU M12 PB 16DI      |                   | X   | X             |         |           |                             |            |             |        |          |
| 1890010000                           | SAI-AU M12 PB 16DI/8DO  |                   | X   | X             |         |           |                             |            |             |        |          |
| 1968220000                           | SAI-AU M12 PB 8DI8DO 2A |                   | X   | X             |         |           |                             |            |             |        |          |
| 1890000000                           | SAI-AU M12 PB AI/AO/DI  |                   | X   | X             |         |           |                             |            |             |        |          |
| 1906680000                           | SAI-AU M8 CAN 16DI      | X                 |     |               | X       |           |                             |            |             |        |          |
| 1906690000                           | SAI-AU M8 CAN 16DI/8DO  | X                 |     |               | X       |           |                             |            |             |        |          |
| 1906650000                           | SAI-AU M12 CAN 16DI     |                   | X   |               | X       |           |                             |            |             |        |          |
| 1906660000                           | SAI AU M12 CAN 16DI/8DO |                   | X   |               | X       |           |                             |            |             |        |          |
| 1906670000                           | SAI-AU M12 CAN AI/AO/DI |                   | X   |               | X       |           |                             |            |             |        |          |
| 1906730000                           | SAI-AU M8 DN 16DI       | X                 |     |               |         | X         |                             |            |             |        |          |
| 1906740000                           | SAI AU M8 DN 16DI/8DO   | X                 |     |               |         | X         |                             |            |             |        |          |
| 1906700000                           | SAI-AU M12 DN 16DI      |                   | X   |               |         | X         |                             |            |             |        |          |
| 1906710000                           | SAI AU M12 DN 16DI/8DO  |                   | X   |               |         | X         |                             |            |             |        |          |
| 1906720000                           | SAI-AU M12 DN AI/AO/DI  |                   | X   |               |         | X         |                             |            |             |        |          |
| 1906880000                           | SAI-AU M8 IE 16DI       | X                 |     |               |         |           |                             | X          |             |        |          |
| 1906890000                           | SAI-AU M8 IE 16DI/8DO   | X                 |     |               |         |           |                             | X          |             |        |          |
| 1906850000                           | SAI-AU M12 IE 16DI      |                   | X   |               |         |           |                             | X          |             |        |          |
| 1906860000                           | SAI-AU M12 IE 16DI/8DO  |                   | X   |               |         |           |                             | X          |             |        |          |
| 1906870000                           | SAI-AU M12 IE AI/AO/DI  |                   | X   |               |         |           |                             | X          |             |        |          |
| 1906930000                           | SAI-AU M8 EIP 16DI      | X                 |     |               |         |           |                             |            | X           |        |          |
| 1906940000                           | SAI-AU M8 EIP 16DI/8DO  | X                 |     |               |         |           |                             |            | X           |        |          |
| 1906900000                           | SAI-AU M12 EIP 16DI     |                   | X   |               |         |           |                             |            | X           |        |          |
| 1906910000                           | SAI-AU M12 EIP 16DI/8DO |                   | X   |               |         |           |                             |            | X           |        |          |
| 1906920000                           | SAI-AU M12 EIP AI/AO/DI |                   | X   |               |         |           |                             |            | X           |        |          |
| <b>SAI Active Universal Pro</b>      |                         |                   |     |               |         |           |                             |            |             |        |          |
| 1024310000                           | SAI-AU M8 PB GW 16DI    | X                 |     | X             |         |           |                             |            |             | X      |          |
| 1938550000                           | SAI-AU M12 PB GW 16DI   |                   | X   | X             |         |           |                             |            |             | X      |          |
| 1938570000                           | SAI-AU M12 DN GW 16DI   |                   | X   |               |         | X         |                             |            |             | X      |          |
| 1962240000                           | SAI-AU M12 USB GW 8I8O  |                   | X   |               |         |           | X                           |            |             | X      |          |
| 1938580000                           | SAI-AU M12 IE GW 16DI   |                   | X   |               |         |           |                             | X          |             | X      |          |
| 1019490000                           | SAI-AU M12 EIP GW 16DI  |                   | X   |               |         |           |                             |            | X           | X      |          |
| 1938600000                           | SAI-AU M8 SB 8DI        | X                 |     |               |         |           |                             |            |             | X      |          |
| 1938660000                           | SAI-AU M8 SB 8DO 2A     | X                 |     |               |         |           |                             |            |             | X      |          |
| 1938630000                           | SAI-AU M8 SB 8DIO       | X                 |     |               |         |           |                             |            |             | X      |          |
| 1938610000                           | SAI-AU M12 SB 8DI       |                   | X   |               |         |           |                             |            |             | X      |          |
| 1938668000                           | SAI-AU M12 SB 8DO 2A    |                   | X   |               |         |           |                             |            |             | X      |          |
| 1938640000                           | SAI-AU M12 SB 8DIO      |                   | X   |               |         |           |                             |            |             | X      |          |
| 1938690000                           | SAI-AU M12 SB 4AI       |                   | X   |               |         |           |                             |            |             | X      |          |
| 1938700000                           | SAI-AU M12 SB 4AO       |                   | X   |               |         |           |                             |            |             | X      |          |
| 1938730000                           | SAI-AU M12 SB 2Counter  |                   | X   |               |         |           |                             |            |             | X      |          |
| 1938720000                           | SAI-AU M12 SB 4Thermo   |                   | X   |               |         |           |                             |            |             | X      |          |
| 1938710000                           | SAI-AU M12 SB 4PT100    |                   | X   |               |         |           |                             |            |             | X      |          |
| <b>SAI Active Universal Wireless</b> |                         |                   |     |               |         |           |                             |            |             |        |          |
| 1006980000                           | SAI-AU M12 GW PB/BT 12I |                   | X   | X             |         |           |                             |            |             |        | X        |
| 1006940000                           | SAI-AU M12 BT 16DI      |                   | X   |               |         |           |                             |            |             |        | X        |
| 1006930000                           | SAI-AU M12 BT 16DI/8DO  |                   | X   |               |         |           |                             |            |             |        | X        |
| 1006920000                           | SAI-AU M12 BT4AI2AO2DIO |                   | X   |               |         |           |                             |            |             |        | X        |

| Inputs                              |          |         |    |     |         | Outputs                            |          |              |                                              | Supply voltage feed circuits | Special characteristics                                       | Page |
|-------------------------------------|----------|---------|----|-----|---------|------------------------------------|----------|--------------|----------------------------------------------|------------------------------|---------------------------------------------------------------|------|
| Digital                             | Analogue | Counter | TC | RTD | Digital | Output current                     | Analogue | Output range |                                              |                              |                                                               |      |
| 16                                  |          |         |    |     |         |                                    |          |              |                                              | 2                            |                                                               | E.8  |
| Max. 16, min. 8 (can be configured) |          |         |    |     |         | Max. 8, min. 0 (can be configured) | 0.5 A    |              |                                              | 4                            | - Max. I/O channels = 16                                      | E.8  |
| 8                                   |          |         |    |     |         | 8                                  | 2 A      |              |                                              | 4                            | - Max. total current, output = 8 A                            | E.8  |
| 16                                  |          |         |    |     |         |                                    |          |              |                                              | 2                            |                                                               | E.8  |
| Max. 16, min. 8 (can be configured) |          |         |    |     |         | Max. 8, min. 0 (can be configured) | 0.5 A    |              |                                              | 1                            | - Max. I/O channels = 16                                      | E.8  |
| 8                                   |          |         |    |     |         | 8                                  | 2 A      |              |                                              | 2                            | - Max. total current, output = 8 A                            | E.8  |
| 4                                   | 4        |         |    |     |         |                                    |          |              | 2                                            | 2                            | -10...+10 V, 0...+10 V, 0...20 mA, 4...20 mA                  | E.9  |
| 16                                  |          |         |    |     |         |                                    |          |              |                                              | 2                            |                                                               | E.12 |
| Max. 16, min. 8 (can be configured) |          |         |    |     |         | Max. 8, min. 0 (can be configured) | 0.5 A    |              |                                              | 4                            | - Max. I/O channels = 16                                      | E.12 |
| 16                                  |          |         |    |     |         |                                    |          |              |                                              | 2                            |                                                               | E.12 |
| Max. 16, min. 8 (can be configured) |          |         |    |     |         | Max. 8, min. 0 (can be configured) | 0.5 A    |              |                                              | 4                            | - Max. I/O channels = 16                                      | E.12 |
| 4                                   | 4        |         |    |     |         |                                    |          |              | 2                                            | 2                            | -10...+10 V, 0...+10 V, 0...20 mA, 4...20 mA                  | E.13 |
| 16                                  |          |         |    |     |         |                                    |          |              |                                              | 2                            |                                                               | E.16 |
| Max. 16, min. 8 (can be configured) |          |         |    |     |         | Max. 8, min. 0 (can be configured) | 0.5 A    |              |                                              | 4                            | - Max. I/O channels = 16                                      | E.16 |
| 16                                  |          |         |    |     |         |                                    |          |              |                                              | 2                            |                                                               | E.16 |
| Max. 16, min. 8 (can be configured) |          |         |    |     |         | Max. 8, min. 0 (can be configured) | 0.5 A    |              |                                              | 4                            | - Max. I/O channels = 16                                      | E.16 |
| 4                                   | 4        |         |    |     |         |                                    |          |              | 2                                            | 2                            | -10...+10 V, 0...+10 V, 0...20 mA, 4...20 mA                  | E.17 |
| 16                                  |          |         |    |     |         |                                    |          |              |                                              | 2                            |                                                               | E.24 |
| Max. 16, min. 8 (can be configured) |          |         |    |     |         | Max. 8, min. 0 (can be configured) | 0.5 A    |              |                                              | 4                            | - Max. I/O channels = 16                                      | E.24 |
| 16                                  |          |         |    |     |         |                                    |          |              |                                              | 2                            |                                                               | E.24 |
| Max. 16, min. 8 (can be configured) |          |         |    |     |         | Max. 8, min. 0 (can be configured) | 0.5 A    |              |                                              | 4                            | - Max. I/O channels = 16                                      | E.24 |
| 4                                   | 4        |         |    |     |         |                                    |          |              | 2                                            | 2                            | -10...+10 V, 0...+10 V, 0...20 mA, 4...20 mA                  | E.25 |
| 16                                  |          |         |    |     |         |                                    |          |              |                                              | 2                            |                                                               | E.20 |
| Max. 16, min. 8 (can be configured) |          |         |    |     |         | Max. 8, min. 0 (can be configured) | 0.5 A    |              |                                              | 4                            | - Max. I/O channels = 16                                      | E.20 |
| 16                                  |          |         |    |     |         |                                    |          |              |                                              | 2                            |                                                               | E.20 |
| Max. 16, min. 8 (can be configured) |          |         |    |     |         | Max. 8, min. 0 (can be configured) |          |              |                                              | 4                            | - Max. I/O channels = 16                                      | E.20 |
| 4                                   | 4        |         |    |     |         |                                    |          |              | 2                                            | 2                            | -10...+10 V, 0...+10 V, 0...20 mA, 4...20 mA                  | E.21 |
| 16                                  |          |         |    |     |         |                                    |          |              |                                              | 2                            |                                                               | E.30 |
| 16                                  |          |         |    |     |         |                                    |          |              |                                              | 2                            |                                                               | E.30 |
| 16                                  |          |         |    |     |         |                                    |          |              |                                              | 2                            |                                                               | E.32 |
| 8                                   |          |         |    |     |         | 8                                  | 0.5 A    |              |                                              | 2                            |                                                               | E.34 |
| 16                                  |          |         |    |     |         |                                    |          |              |                                              | 2                            |                                                               | E.34 |
| 16                                  |          |         |    |     |         |                                    |          |              |                                              | 2                            |                                                               | E.32 |
| 8                                   |          |         |    |     |         |                                    |          |              |                                              |                              |                                                               | E.36 |
|                                     |          |         |    |     |         | 8                                  | 2 A      |              |                                              | 2                            | - Max. total current, output = 8 A                            | E.36 |
| Max. 8, min. 0 (can be configured)  |          |         |    |     |         | Max. 8, min. 0 (can be configured) | 0.5 A    |              |                                              | 2                            | - Max. I/O channels = 8<br>- Max. total current, output = 4 A | E.36 |
| 8                                   |          |         |    |     |         |                                    |          |              |                                              |                              |                                                               | E.36 |
|                                     |          |         |    |     |         | 8                                  | 2 A      |              |                                              | 2                            | - Max. I/O channels = 8<br>- Max. total current, output = 4 A | E.36 |
| Max. 8, min. 0 (can be configured)  |          |         |    |     |         | Max. 8, min. 0 (can be configured) | 0.5 A    |              |                                              | 2                            | - Max. I/O channels = 8                                       | E.36 |
|                                     | 4        |         |    |     |         |                                    |          |              |                                              |                              |                                                               | E.37 |
|                                     |          |         |    |     |         |                                    |          |              | 4                                            |                              | -10...+10 V, 0...+10 V, 0...20 mA, 4...20 mA                  | E.37 |
|                                     |          |         | 2  |     |         |                                    |          |              |                                              | 2                            |                                                               | E.38 |
|                                     |          |         |    | 4   |         |                                    |          |              |                                              |                              |                                                               | E.39 |
|                                     |          |         |    |     | 4       |                                    |          |              |                                              |                              |                                                               | E.40 |
| 12                                  |          |         |    |     |         |                                    |          |              |                                              | 2                            |                                                               | E.44 |
| 16                                  |          |         |    |     |         |                                    |          |              |                                              | 2                            |                                                               | E.45 |
| Max. 16, min. 8 (can be configured) |          |         |    |     |         | Max. 8, min. 0 (can be configured) | 0.5 A    |              |                                              | 4                            | - Max. I/O channels = 16                                      | E.45 |
| Max. 4, min. 2 (can be configured)  | 4        |         |    |     |         | Max. 2, min. 0 (can be configured) | 0.5 A    | 2            | -10...+10 V, 0...+10 V, 0...20 mA, 4...20 mA | 2                            | - Max. I/O channels = 10                                      | E.46 |

# SAI Active Universal

## Compact, basic versions of the Remote I/O system with IP67 protection

The SAI Active Universal consists of basic, compact designed variants that include a variety of modules for digital and analogue inputs and outputs. The housing has a sturdy construction in compliance with strict industrial requirements. It is resistant against aggressive materials, vibration, shock, temperature, water and dust.

The high quality connection system uses conventional, standardised M8 and M12 connectors with standard compliant coding. They ensure a reliable wiring process with less risk of errors. Two M12 connections for the fieldbus allow for a continuous bus installation without any additional T-distributor. The functional earth connection is automatically created when installing on a metallic earthed base.

E





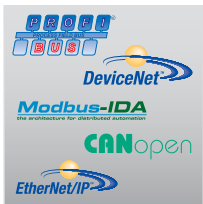
#### 4 independent voltage circuits

The modules can be supplied with up to four different voltage potentials. The module voltage can be simultaneously used for the inputs. In addition, up to three feed points are available for outputs; these can be switched off individually depending on the application requirements. Plug in cross connectors can be used to merge voltage potentials on the module.



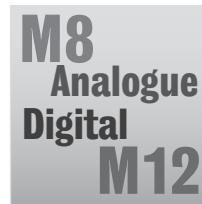
#### Efficient diagnostics and status alerts

The status of the I/Os is shown directly on the module using arrow icons. The arrows point to the label and the plug in position. Up to seven status LEDs are available for displaying additional information about the power supply, fieldbus status and group diagnostics. The information is simultaneously transmitted to the controller unit via the bus system.



#### Freedom of choice

Total compliance with many industrial fieldbus standards: this permits integration with all conventional controllers so that the modules can be used in practically all applications. SAI Active Universal supports PROFIBUS-DP, CANopen, DeviceNet, Modbus TCP and Ethernet/IP communication protocols.



#### A wide variety of variants

All SAI Active modules with digital inputs or digital outputs are optionally available with standard M8 or M12 connection systems. For modules in the 16DI/8DO series, the configuration can be customised to fit the application so that anywhere between 16DI to 8DI/8DO can be used. Output cables with up to 2 A per channel are used to connect almost any load. Analogue modules can be configured flexibly for current or voltage outputs.

SAI Active Universal - PROFIBUS-DP

PROFIBUS-DP  
Remote I/O for digital  
signal processing



SAI-AU



SAI-AU



Ordering data

| Module variants                                                              |
|------------------------------------------------------------------------------|
| 16 Digital In; 16 Digital In / 8 Digital Out                                 |
| 16 Digital In; 16 Digital In / 8 Digital Out<br>8 Digital In / 8 Digital Out |
| 8 Digital In / 8 Digital Out                                                 |

Note

| Type               | Qty. | Order No.  |
|--------------------|------|------------|
| SAI-AU M8 PB 16DI  | 1    | 1906550000 |
| SAI-AU M12 PB 16DI | 1    | 1890020000 |

| Type                    | Qty. | Order No.  |
|-------------------------|------|------------|
| SAI-AU M8 PB 16DI/8DO   | 1    | 1906640000 |
| SAI-AU M12 PB 16DI/8DO  | 1    | 1890010000 |
| SAI-AU M8 PB 8DI8DO 2A  | 1    | 1975450000 |
| SAI-AU M12 PB 8DI8DO 2A | 1    | 1968220000 |

Technical data

| Connections                                               |
|-----------------------------------------------------------|
| Fieldbus (BUS-IN)                                         |
| Fieldbus (BUS-OUT)                                        |
| Supply voltage (AUX-IN)                                   |
| Supply voltage (AUX-OUT)                                  |
| I/O connections                                           |
| Voltage supply                                            |
| Operating voltage                                         |
| Contact load                                              |
| Max. total current module                                 |
| Digital inputs                                            |
| Permitted input voltage                                   |
| Input voltage, low                                        |
| Input voltage, high                                       |
| Input current, low                                        |
| Input current, high                                       |
| Input filter                                              |
| Digital outputs                                           |
| max. current-carrying capacity per output signal          |
| Switching frequency load (resistive / inductive / inrush) |
| Short-circuit-proof                                       |
| Output voltage, low                                       |
| Output voltage, high                                      |
| Max. total current of outputs                             |
| Fieldbus                                                  |
| Bus system                                                |
| Transmission rate                                         |
| Addressing                                                |
| System integration                                        |
| General data                                              |
| L x W x H                                                 |
| Earth                                                     |
| Protection class                                          |
| operating temperature                                     |
| Storage temperature                                       |
| Housing main material / Flammability class UL 94          |
| Certificate                                               |

|                                                       |
|-------------------------------------------------------|
| 1x M12 plug 5-pole, B-coded                           |
| 1x M12 female 5-pole, B-coded                         |
| 1x M12 plug 5-pole, A-coded                           |
| 1x M12 female 5-pole, A-coded                         |
| 16x M8 female 3-pole / 8 x M12 female 5-pole, A-coded |
| 24 V (18 V DC ... 30 V DC)                            |
| Per PIN max. 4 A                                      |
| 10 A                                                  |
| -30 V to +30 V (protected against polarity reversal)  |
| <5 V in accordance with EN 61131-2 Typ 1              |
| >15 V in accordance with EN 61131-2 Typ 1             |
| < 15 mA in accordance with EN 61131-2 Type 1          |
| 2 mA to 15 mA in accordance with EN 61131-2 Type 1    |
| 3 ms                                                  |
| Profibus-DP                                           |
| Max. 12 Mbit/s (automatic detection)                  |
| Via rotary coding switch (1 – 126)                    |
| GSD file (Device-specific for each module)            |
| 210 mm / 54 mm / 32 mm                                |
| < 400 g                                               |
| IP 67                                                 |
| 0 °C...+60 °C                                         |
| -25 °C...+85 °C                                       |
| Pocan, PBT / V-0                                      |
| CE, cULus                                             |

|                                                       |
|-------------------------------------------------------|
| 1x M12 plug 5-pole, B-coded                           |
| 1x M12 female 5-pole, B-coded                         |
| 2x M12 plug 5-pole, A-coded                           |
| 16x M8 female 3-pole / 8 x M12 female 5-pole, A-coded |
| 24 V (18 V DC ... 30 V DC)                            |
| Per PIN max. 4 A                                      |
| 10 A                                                  |
| -30 V to +30 V (protected against polarity reversal)  |
| < 15 mA in accordance with EN 61131-2 Type 1          |
| 2 mA to 15 mA in accordance with EN 61131-2 Type 1    |
| < 15 mA in accordance with EN 61131-2 Type 1          |
| 2 mA to 15 mA in accordance with EN 61131-2 Type 1    |
| 3 ms                                                  |
| 0.5 A, 2 A                                            |
| max. 100 Hz / max. 1 Hz / max. 8 Hz                   |
| Yes, cut-off for short circuit and error message      |
| 0 V DC                                                |
| Supply voltage less 0.7 V DC                          |
| 7 A, 8 A (1975450000, 1968220000)                     |
| Profibus-DP                                           |
| Max. 12 Mbit/s (automatic detection)                  |
| Via rotary coding switch (1 – 126)                    |
| GSD file (Device-specific for each module)            |
| 210 mm / 54 mm / 32 mm                                |
| < 400 g                                               |
| IP 67                                                 |
| 0 °C...+60 °C                                         |
| -25 °C...+85 °C                                       |
| Pocan, PBT / V-0                                      |
| CE, cULus                                             |

Note

**PROFIBUS-DP**

Remote I/O for digital and analogue signal processing

**SAI-AU****Ordering data**

| Module variants                               |
|-----------------------------------------------|
| 4 Analogue In / 2 Analogue Out / 4 Digital In |
| Note                                          |

| Type                   | Qty. | Order No.  |
|------------------------|------|------------|
| SAI-AU M12 PB AI/AO/DI | 1    | 1890000000 |

**Technical data**

| Connections                                      |
|--------------------------------------------------|
| Fieldbus (BUS-IN)                                |
| Fieldbus (BUS-OUT)                               |
| Supply voltage (AUX-IN)                          |
| Supply voltage (AUX-OUT)                         |
| I/O connections                                  |
| Voltage supply                                   |
| Operating voltage                                |
| Contact load                                     |
| Max. total current module                        |
| Digital inputs                                   |
| Permitted input voltage                          |
| Input voltage, low                               |
| Input voltage, high                              |
| Input current, low                               |
| Input current, high                              |
| Input filter                                     |
| Analogue inputs                                  |
| Measurement range                                |
| Maximum input voltage in relation to GND         |
| Input resistance (load)                          |
| Max. input current (differential)                |
| Short-circuit-proof                              |
| Resolution / Accuracy                            |
| Analogue outputs                                 |
| Measurement range                                |
| Output interval                                  |
| Short-circuit-proof                              |
| Resolution / Accuracy                            |
| Fieldbus                                         |
| Bus system                                       |
| Transmission rate                                |
| Addressing                                       |
| System integration                               |
| General data                                     |
| L x W x H                                        |
| Earth                                            |
| Protection class                                 |
| operating temperature                            |
| Storage temperature                              |
| Housing main material / Flammability class UL 94 |
| Certificate                                      |

|                                                        |
|--------------------------------------------------------|
| 1x M12 plug 5-pole, B-coded                            |
| 1x M12 female 5-pole, B-coded                          |
| 1x M12 plug 5-pole, A-coded                            |
| 1x M12 female 5-pole, A-coded                          |
| 8 x M12 female 5-pole, A-coded                         |
| 24 V (18 V DC ... 30 V DC)                             |
| Per PIN max. 4 A                                       |
| 10 A                                                   |
| -30 V to +30 V (protected against polarity reversal)   |
| <5 V in accordance with EN 61131-2 Typ 1               |
| >15 V in accordance with EN 61131-2 Typ 1              |
| < 15 mA in accordance with EN 61131-2 Type 1           |
| 2 mA to 15 mA in accordance with EN 61131-2 Type 1     |
| 3 ms                                                   |
| -10 V ... +10 V, 0 V ... 10V, 0 ... 20 mA, 4...20 mA   |
| 35 V                                                   |
| <125 Ohm                                               |
| -50 mA to +50 mA (protected against polarity reversal) |
| Yes                                                    |
| 12-bit / < 0.2 %                                       |
| -10 V ... +10 V, 0 V ... 10V, 0 ... 20 mA, 4...20 mA   |
| 5 ms to 250 ms (can be configured)                     |
| Yes                                                    |
| 12-bit / < 0.2 %                                       |
| Profibus-DP                                            |
| Max. 12 Mbit/s (automatic detection)                   |
| Via rotary coding switch (1 – 126)                     |
| GSD file (Device-specific for each module)             |
| 210 mm / 54 mm / 32 mm                                 |
| < 400 g                                                |
| IP 67                                                  |
| 0 °C...+60 °C                                          |
| -25 °C...+85 °C                                        |
| Pocan, PBT / V-0                                       |
| CE, cULus                                              |

| Note |
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| Note |
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# Engineering tables for PROFIBUS

When planning the automation of a facility, you must have a wide variety of components available. These engineering tables list all the components required for wiring up the SAI Active modules.

## PROFIBUS modules



## PROFIBUS accessories



## Sensor/actuator accessories



## Markers



## Protective caps



## Ordering data

| Description                                          | Typee                    | Qty. | Order No.  |
|------------------------------------------------------|--------------------------|------|------------|
| <b>PROFIBUS modules</b>                              |                          |      |            |
| 16 Digital In                                        | SAI-AU M12 PB 16DI       | 1    | 1890020000 |
| 16 Digital In / 8 Digital Out                        | SAI-AU M12 PB 16DI/8DO   | 1    | 1890010000 |
| 4 Analogue In / 2 Analogue Out / 4 Digital In        | SAI-AU M12 PB AI/AO/DI   | 1    | 1890000000 |
| 8 Digital In / 8 Digital Out                         | SAI-AU M12 PB 8DI/8DO 2A | 1    | 1968220000 |
| 16 Digital In                                        | SAI-AU M8 PB 16DI        | 1    | 1906550000 |
| 16 Digital In / 8 Digital Out                        | SAI-AU M8 PB 16DI/8DO    | 1    | 1906640000 |
| 8 Digital In / 8 Digital Out                         | SAI-AU M8 PB 8DI/8DO 2A  | 1    | 1975450000 |
| <b>PROFIBUS accessories</b>                          |                          |      |            |
| PROFIBUS cables with female plug and male plug       |                          |      | Chapter C  |
| PROFIBUS cables with female plug and other side open |                          |      | Chapter C  |
| PROFIBUS cables with male plug and other side open   |                          |      | Chapter C  |
| PROFIBUS plug-in connector                           |                          |      | Chapter C  |
| PROFIBUS terminating resistor                        | SAIEND PB M12 5P B-COD   | 1    | 1784770000 |
| <b>Sensor/actuator accessories</b>                   |                          |      |            |
| Sensor-actuator cables                               |                          |      | Chapter B  |
| Sensor-actuator plugs                                |                          |      | Chapter D  |
| <b>Markers</b>                                       |                          |      |            |
| Semi-transparent markers for PrintJet printing       | ESG 8/13.5/43.3 SAI AU   | 5    | 1912130000 |
| <b>Protective caps</b>                               |                          |      |            |
| M8 Dust cap (Sensor connections)                     | SAI-SK M8                | 50   | 1802760000 |
| M12 Dust cap (Sensor connections)                    | SAI-SK                   | 30   | 9456050000 |
| M12 Dust cap (Bus-in and power-in)                   | SAI-SK-M12-UNI           | 20   | 2330260000 |
| M12 Dust cap (Bus-in and power-in)                   | SAI-SK plug M12          | 50   | 1781520000 |



## SAI Active Universal - CANopen

### CANopen Remote I/O for digital signal processing



#### SAI-AU



#### SAI-AU



#### Ordering data

| Module variants                              |
|----------------------------------------------|
| 16 Digital In; 16 Digital In / 8 Digital Out |
| 16 Digital In; 16 Digital In / 8 Digital Out |

| Note |
|------|
|      |

#### Technical data

##### Connections

|                          |
|--------------------------|
| Fieldbus (BUS-IN)        |
| Fieldbus (BUS-OUT)       |
| Supply voltage (AUX-IN)  |
| Supply voltage (AUX-OUT) |
| I/O connections          |

##### Voltage supply

|                           |
|---------------------------|
| Operating voltage         |
| Contact load              |
| Max. total current module |

##### Digital inputs

|                         |
|-------------------------|
| Permitted input voltage |
| Input voltage, low      |
| Input voltage, high     |
| Input current, low      |
| Input current, high     |
| Input filter            |

##### Digital outputs

|                                                           |
|-----------------------------------------------------------|
| max. current-carrying capacity per output signal          |
| Switching frequency load (resistive / inductive / inrush) |
| Short-circuit-proof                                       |
| Output voltage, low                                       |
| Output voltage, high                                      |
| Max. total current outputs                                |

##### Fieldbus

|                    |
|--------------------|
| Bus system         |
| Transmission rate  |
| Addressing         |
| System integration |

##### General data

|                                                  |
|--------------------------------------------------|
| L x W x H                                        |
| Earth                                            |
| Protection class                                 |
| operating temperature                            |
| Storage temperature                              |
| Housing main material / Flammability class UL 94 |
| Certificate                                      |

| Type                | Qty. | Order No.  |
|---------------------|------|------------|
| SAI-AU M8 CAN 16DI  | 1    | 1906680000 |
| SAI-AU M12 CAN 16DI | 1    | 1906650000 |

| Note |
|------|
|      |

##### Connections

|                                                       |
|-------------------------------------------------------|
| 1x M12 plug 5-pole, A-coded                           |
| 1x M12 female 5-pole, A-coded                         |
| 1x M12 plug 5-pole, A-coded                           |
| 1x M12 female 5-pole, A-coded                         |
| 16x M8 female 3-pole / 8 x M12 female 5-pole, A-coded |

|                            |
|----------------------------|
| 24 V (18 V DC ... 30 V DC) |
| Per PIN max. 4 A           |
| 8 A                        |

|                                                      |
|------------------------------------------------------|
| -30 V to +30 V (protected against polarity reversal) |
| <5 V in accordance with EN 61131-2 Typ 1             |
| >15 V in accordance with EN 61131-2 Typ 1            |
| < 15 mA in accordance with EN 61131-2 Type 1         |
| 2 mA to 15 mA in accordance with EN 61131-2 Type 1   |
| 3 ms                                                 |

|                                                  |
|--------------------------------------------------|
| 0.5 A, 2 A                                       |
| max. 100 Hz / max. 1 Hz / max. 8 Hz              |
| Yes, cut-off for short circuit and error message |
| 0 V DC                                           |
| Supply voltage less 0.7 V DC                     |
| 7 A                                              |

|                                            |
|--------------------------------------------|
| CANopen                                    |
| Max. 1 Mbit/s (automatic detection)        |
| Via rotary coding switch (1 – 127)         |
| EDS file (Device-specific for each module) |

|                                 |
|---------------------------------|
| 210 mm / 54 mm / 32 mm          |
| < 400 g                         |
| IP 67                           |
| 0 °C...+60 °C                   |
| -25 °C...+85 °C                 |
| Pocan, PBT / V-0                |
| CE, cULus (planned for 4Q/2010) |

| Type                    | Qty. | Order No.  |
|-------------------------|------|------------|
| SAI-AU M8 CAN 16DI/8DO  | 1    | 1906690000 |
| SAI-AU M12 CAN 16DI/8DO | 1    | 1906660000 |

| Note |
|------|
|      |

##### Connections

|                                                       |
|-------------------------------------------------------|
| 1x M12 plug 5-pole, A-coded                           |
| 1x M12 female 5-pole, A-coded                         |
| 2x M12 plug 5-pole, A-coded                           |
| 16x M8 female 3-pole / 8 x M12 female 5-pole, A-coded |

|                            |
|----------------------------|
| 24 V (18 V DC ... 30 V DC) |
| Per PIN max. 4 A           |
| 8 A                        |

|                                                      |
|------------------------------------------------------|
| -30 V to +30 V (protected against polarity reversal) |
| <5 V in accordance with EN 61131-2 Typ 1             |
| >15 V in accordance with EN 61131-2 Typ 1            |
| < 15 mA in accordance with EN 61131-2 Type 1         |
| 2 mA to 15 mA in accordance with EN 61131-2 Type 1   |
| 3 ms                                                 |

|                                                  |
|--------------------------------------------------|
| 0.5 A, 2 A                                       |
| max. 100 Hz / max. 1 Hz / max. 8 Hz              |
| Yes, cut-off for short circuit and error message |
| 0 V DC                                           |
| Supply voltage less 0.7 V DC                     |
| 7 A                                              |

|                                            |
|--------------------------------------------|
| CANopen                                    |
| Max. 1 Mbit/s (automatic detection)        |
| Via rotary coding switch (1 – 127)         |
| EDS file (Device-specific for each module) |

|                                 |
|---------------------------------|
| 210 mm / 54 mm / 32 mm          |
| < 400 g                         |
| IP 67                           |
| 0 °C...+60 °C                   |
| -25 °C...+85 °C                 |
| Pocan, PBT / V-0                |
| CE, cULus (planned for 4Q/2010) |

| Note |
|------|
|      |

## CANopen

### Remote I/O for digital and analogue signal processing



## SAI-AU



### Ordering data

| Module variants                               |
|-----------------------------------------------|
| 4 Analogue In / 2 Analogue Out / 4 Digital In |
| Note                                          |

| Type                    | Qty. | Order No.  |
|-------------------------|------|------------|
| SAI-AU M12 CAN AI/AO/DI | 1    | 1906670000 |

### Technical data

| Connections                                      |
|--------------------------------------------------|
| Fieldbus (BUS-IN)                                |
| Fieldbus (BUS-OUT)                               |
| Supply voltage (AUX-IN)                          |
| Supply voltage (AUX-OUT)                         |
| I/O connections                                  |
| Digital inputs                                   |
| Permitted input voltage                          |
| Input voltage, low                               |
| Input voltage, high                              |
| Input current, low                               |
| Input current, high                              |
| Input filter                                     |
| Analogue inputs                                  |
| Measurement range                                |
| Maximum input voltage in relation to GND         |
| Input resistance (load)                          |
| Max. input current (differential)                |
| Short-circuit-proof                              |
| Resolution / Accuracy                            |
| Analogue outputs                                 |
| Measurement range                                |
| Output interval                                  |
| Short-circuit-proof                              |
| Resolution / Accuracy                            |
| Fieldbus                                         |
| Bus system                                       |
| Transmission rate                                |
| Addressing                                       |
| System integration                               |
| General data                                     |
| L x W x H                                        |
| Earth                                            |
| Protection class                                 |
| operating temperature                            |
| Storage temperature                              |
| Housing main material / Flammability class UL 94 |
| Certificate                                      |

|                                                        |
|--------------------------------------------------------|
| 1x M12 plug 5-pole, A-coded                            |
| 1x M12 female 5-pole, A-coded                          |
| 1x M12 plug 5-pole, A-coded                            |
| 1x M12 female 5-pole, A-coded                          |
| 8 x M12 female 5-pole, A-coded                         |
| -30 V to +30 V (protected against polarity reversal)   |
| <5 V in accordance with EN 61131-2 Typ 1               |
| >15 V in accordance with EN 61131-2 Typ 1              |
| < 15 mA in accordance with EN 61131-2 Type 1           |
| 2 mA to 15 mA in accordance with EN 61131-2 Type 1     |
| 3 ms                                                   |
| -10 V ... +10 V, 0 V ... 10V, 0 ... 20 mA, 4...20 mA   |
| 35 V                                                   |
| <125 Ohm                                               |
| -50 mA to +50 mA (protected against polarity reversal) |
| Yes                                                    |
| 12-bit / < 0.2 %                                       |
| -10 V ... +10 V, 0 V ... 10V, 0 ... 20 mA, 4...20 mA   |
| 5 ms to 250 ms (can be configured)                     |
| Yes                                                    |
| 12-bit / < 0.2 %                                       |
| CANopen                                                |
| Max. 1 Mbit/s (automatic detection)                    |
| Via rotary coding switch (1 – 127)                     |
| EDS file (Device-specific for each module)             |
| 210 mm / 54 mm / 32 mm                                 |
| < 400 g                                                |
| IP 67                                                  |
| 0 °C...+60 °C                                          |
| -25 °C...+85 °C                                        |
| Pocan, PBT / V-0                                       |
| CE, cULus (planned for 4Q/2010)                        |

| Note |
|------|
|      |

| Note |
|------|
|      |

# Engineering tables for CANopen



When planning the automation of a facility, you must have a wide variety of components available. These engineering tables list all the components required for wiring up the SAI Active modules.

## CANopen modules



## CANopen accessories



## Sensor/actuator accessories



## Markers



## Protective caps



## Ordering data

| Description                                         | Type                    | Qty. | Order No.  |
|-----------------------------------------------------|-------------------------|------|------------|
| <b>CANopen modules</b>                              |                         |      |            |
| 16 Digital In                                       | SAI-AU M12 CAN 16DI     | 1    | 1906650000 |
| 16 Digital In / 8 Digital Out                       | SAI-AU M12 CAN 16DI/8DO | 1    | 1906660000 |
| 4 Analogue In / 2 Analogue Out / 4 Digital In       | SAI-AU M12 CAN AI/AO/DI | 1    | 1906670000 |
| 16 Digital In                                       | SAI-AU M8 CAN 16DI      | 1    | 1906680000 |
| 16 Digital In / 8 Digital Out                       | SAI-AU M8 CAN 16DI/8DO  | 1    | 1906690000 |
| <b>CANopen accessories</b>                          |                         |      |            |
| CANopen cables with female plug and male plug       |                         |      | Chapter C  |
| CANopen cables with female plug and other side open |                         |      | Chapter C  |
| CANopen cables with male plug and other side open   |                         |      | Chapter C  |
| CANopen plug-in connector                           |                         |      | Chapter C  |
| CANopen terminating resistor                        | SAIEND CAN-M12 5P A-COD | 1    | 1784760000 |
| <b>Sensor/actuator accessories</b>                  |                         |      |            |
| Sensor-actuator cables                              |                         |      | Chapter B  |
| Sensor-actuator plugs                               |                         |      | Chapter D  |
| <b>Markers</b>                                      |                         |      |            |
| Semi-transparent markers for PrintJet printing      | ESG 8/13.5/43.3 SAI AU  | 5    | 1912130000 |
| <b>Protective caps</b>                              |                         |      |            |
| M8 Dust cap (Sensor connections)                    | SAI-SK M8               | 50   | 1802760000 |
| M12 Dust cap (Sensor connections)                   | SAI-SK                  | 30   | 9456050000 |
| M12 Dust cap (Bus-in and power-in)                  | SAI-SK-M12-UNI          | 20   | 2330260000 |
| M12 Dust cap (Bus-in and power-in)                  | SAI-SK plug M12         | 50   | 1781520000 |



## DeviceNet™

Remote I/O for digital  
signal processing

## Ordering data

| Module variants                              |
|----------------------------------------------|
| 16 Digital In; 16 Digital In / 8 Digital Out |
| 16 Digital In; 16 Digital In / 8 Digital Out |

## Note

## Technical data

## Connections

Fieldbus (BUS-IN)  
Fieldbus (BUS-OUT)  
Supply voltage (AUX-IN)  
Supply voltage (AUX-OUT)  
I/O connections

## Voltage supply

Operating voltage  
Contact load  
Max. total current module

## Digital inputs

Permitted input voltage  
Input voltage, low  
Input voltage, high  
Input current, low  
Input current, high  
Input filter

## Digital outputs

max. current-carrying capacity per output signal  
Switching frequency load (resistive / inductive / inrush)  
Short-circuit-proof  
Output voltage, low  
Output voltage, high  
Max. total current outputs

## Fieldbus

Bus system  
Transmission rate  
Addressing  
System integration

## General data

L x W x H  
Earth  
Protection class  
operating temperature  
Storage temperature  
Housing main material / Flammability class UL 94  
Certificate

## SAI-AU



| Type               | Qty. | Order No.  |
|--------------------|------|------------|
| SAI-AU M8 DN 16DI  | 1    | 1906730000 |
| SAI-AU M12 DN 16DI | 1    | 1906700000 |

1x M12 plug 5-pole, A-coded  
1x M12 female 5-pole, A-coded  
1x M12 plug 5-pole, A-coded  
1x M12 female 5-pole, A-coded  
16x M8 female 3-pole / 8 x M12 female 5-pole, A-coded

24 V (18 V DC ... 30 V DC)  
Per PIN max. 4 A  
8 A

-30 V to +30 V (protected against polarity reversal)  
<5 V in accordance with EN 61131-2 Typ 1  
>15 V in accordance with EN 61131-2 Typ 1  
< 15 mA in accordance with EN 61131-2 Type 1  
2 mA to 15 mA in accordance with EN 61131-2 Type 1  
3 ms

DeviceNet  
Max. 500 kBit/s (automatic detection)  
Via rotary coding switch (0 – 63)  
EDS file (Device-specific for each module)

210 mm / 54 mm / 32 mm  
< 400 g  
IP 67  
0 °C...+60 °C  
-25 °C...+85 °C  
Pocan, PBT / V-0  
CE, cULus (planned for 4Q/2010)

## SAI-AU



| Type                   | Qty. | Order No.  |
|------------------------|------|------------|
| SAI-AU M8 DN 16DI/8DO  | 1    | 1906740000 |
| SAI-AU M12 DN 16DI/8DO | 1    | 1906710000 |

1x M12 plug 5-pole, A-coded  
1x M12 female 5-pole, A-coded  
2x M12 plug 5-pole, A-coded  
16x M8 female 3-pole / 8 x M12 female 5-pole, A-coded

24 V (18 V DC ... 30 V DC)  
Per PIN max. 4 A  
8 A

-30 V to +30 V (protected against polarity reversal)  
<5 V in accordance with EN 61131-2 Typ 1  
>15 V in accordance with EN 61131-2 Typ 1  
< 15 mA in accordance with EN 61131-2 Type 1  
2 mA to 15 mA in accordance with EN 61131-2 Type 1  
3 ms

0.5 A, 2 A  
max. 100 Hz / max. 1 Hz / max. 8 Hz  
Yes, cut-off for short circuit and error message  
0 V DC  
Supply voltage less 0.7 V DC  
7 A

DeviceNet  
Max. 500 kBit/s (automatic detection)  
Via rotary coding switch (0 – 63)  
EDS file (Device-specific for each module)

210 mm / 54 mm / 32 mm  
< 400 g  
IP 67  
0 °C...+60 °C  
-25 °C...+85 °C  
Pocan, PBT / V-0  
CE, cULus (planned for 4Q/2010)

## Note

## DeviceNet™

### Remote I/O for digital and analogue signal processing



## SAI-AU



### Ordering data

| Module variants                               |
|-----------------------------------------------|
| 4 Analogue In / 2 Analogue Out / 4 Digital In |
| Note                                          |

| Type                   | Qty. | Order No.  |
|------------------------|------|------------|
| SAI-AU M12 DN AI/AO/DI | 1    | 1906720000 |

### Technical data

| Connections                                      |
|--------------------------------------------------|
| Fieldbus (BUS-IN)                                |
| Fieldbus (BUS-OUT)                               |
| Supply voltage (AUX-IN)                          |
| Supply voltage (AUX-OUT)                         |
| I/O connections                                  |
| Voltage supply                                   |
| Operating voltage                                |
| Contact load                                     |
| Max. total current module                        |
| Digital inputs                                   |
| Permitted input voltage                          |
| Input voltage, low                               |
| Input voltage, high                              |
| Input current, low                               |
| Input current, high                              |
| Input filter                                     |
| Analogue inputs                                  |
| Measurement range                                |
| Maximum input voltage in relation to GND         |
| Input resistance (load)                          |
| Max. input current (differential)                |
| Short-circuit-proof                              |
| Resolution / Accuracy                            |
| Analogue outputs                                 |
| Measurement range                                |
| Output interval                                  |
| Short-circuit-proof                              |
| Resolution / Accuracy                            |
| Fieldbus                                         |
| Bus system                                       |
| Transmission rate                                |
| Addressing                                       |
| System integration                               |
| General data                                     |
| L x W x H                                        |
| Earth                                            |
| Protection class                                 |
| operating temperature                            |
| Storage temperature                              |
| Housing main material / Flammability class UL 94 |
| Certificate                                      |

|                                                        |
|--------------------------------------------------------|
| 1x M12 plug 5-pole, A-coded                            |
| 1x M12 female 5-pole, A-coded                          |
| 1x M12 plug 5-pole, A-coded                            |
| 1x M12 female 5-pole, A-coded                          |
| 8 x M12 female 5-pole, A-coded                         |
| 24 V (18 V DC ... 30 V DC)                             |
| Per PIN max. 4 A                                       |
| 8 A                                                    |
| -30 V to +30 V (protected against polarity reversal)   |
| <5 V in accordance with EN 61131-2 Typ 1               |
| >15 V in accordance with EN 61131-2 Typ 1              |
| < 15 mA in accordance with EN 61131-2 Type 1           |
| 2 mA to 15 mA in accordance with EN 61131-2 Type 1     |
| 3 ms                                                   |
| -10 V ... +10 V, 0 V ... 10V, 0 ... 20 mA, 4...20 mA   |
| 35 V                                                   |
| <125 Ohm                                               |
| -50 mA to +50 mA (protected against polarity reversal) |
| Yes                                                    |
| 12-bit / < 0.2 %                                       |
| -10 V ... +10 V, 0 V ... 10V, 0 ... 20 mA, 4...20 mA   |
| 5 ms to 250 ms (can be configured)                     |
| Yes                                                    |
| 12-bit / < 0.2 %                                       |
| DeviceNet                                              |
| Max. 500 kBit/s (automatic detection)                  |
| Via rotary coding switch (0 – 63)                      |
| EDS file (Device-specific for each module)             |
| 210 mm / 54 mm / 32 mm                                 |
| < 400 g                                                |
| IP 67                                                  |
| 0 °C...+60 °C                                          |
| -25 °C...+85 °C                                        |
| Pocan, PBT / V-0                                       |
| CE, cULus (planned for 4Q/2010)                        |

| Note |
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| Note |
|------|
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# Engineering tables for DeviceNet™



When planning the automation of a facility, you must have a wide variety of components available. These engineering tables list all the components required for wiring up the SAI Active modules.

## DeviceNet™ modules



## DeviceNet™ accessories



## Sensor/actuator accessories



## Markers



## Protective caps



## Ordering data

| Description                                            | Type                    | Qty. | Order No.  |
|--------------------------------------------------------|-------------------------|------|------------|
| <b>DeviceNet™ modules</b>                              |                         |      |            |
| 16 Digital In                                          | SAI-AU M12 DN 16DI      | 1    | 1906700000 |
| 16 Digital In / 8 Digital Out                          | SAI-AU M12 DN 16DI/8DO  | 1    | 1906710000 |
| 4 Analogue In / 2 Analogue Out / 4 Digital In          | SAI-AU M12 DN AI/AO/DI  | 1    | 1906720000 |
| 16 Digital In                                          | SAI-AU M8 DN 16DI       | 1    | 1906730000 |
| 16 Digital In / 8 Digital Out                          | SAI-AU M8 DN 16DI/8DO   | 1    | 1906740000 |
| <b>DeviceNet™ accessories</b>                          |                         |      |            |
| DeviceNet™ cables with female plug and male plug       |                         |      | Chapter C  |
| DeviceNet™ cables with female plug and other side open |                         |      | Chapter C  |
| DeviceNet™ cables with male plug and other side open   |                         |      | Chapter C  |
| DeviceNet™ plug-in connector                           |                         |      | Chapter C  |
| DeviceNet™ terminating resistor                        | SAIEND CAN-M12 5P A-COD | 1    | 1784760000 |
| <b>Sensor/actuator accessories</b>                     |                         |      |            |
| Sensor-actuator cables                                 |                         |      | Chapter B  |
| Sensor-actuator plugs                                  |                         |      | Chapter D  |
| <b>Markers</b>                                         |                         |      |            |
| Semi-transparent markers for PrintJet printing         | ESG 8/13.5/43.3 SAI AU  | 5    | 1912130000 |
| <b>Protective caps</b>                                 |                         |      |            |
| M8 Dust cap (Sensor connections)                       | SAI-SK M8               | 50   | 1802760000 |
| M12 Dust cap (Sensor connections)                      | SAI-SK                  | 30   | 9456050000 |
| M12 Dust cap (Bus-in and power-in)                     | SAI-SK-M12-UNI          | 20   | 2330260000 |
| M12 Dust cap (Bus-in and power-in)                     | SAI-SK plug M12         | 50   | 1781520000 |



## EtherNet/IP™

## Remote I/O for digital signal processing



## Ordering data

| Module variants                              |
|----------------------------------------------|
| 16 Digital In; 16 Digital In / 8 Digital Out |
| 16 Digital In; 16 Digital In / 8 Digital Out |

## Note

## Technical data

## Connections

Fieldbus (BUS-IN)  
Supply voltage (AUX-IN)  
Supply voltage (AUX-OUT)  
I/O connections

## Voltage supply

Operating voltage  
Contact load  
Max. total current module

## Digital inputs

Permitted input voltage  
Input voltage, low  
Input voltage, high  
Input current, low  
Input current, high  
Input filter

## Digital outputs

max. current-carrying capacity per output signal  
Switching frequency load (resistive / inductive / inrush)  
Short-circuit-proof  
Output voltage, low  
Output voltage, high  
Max. total current outputs

## Fieldbus

Bus system  
Transmission rate  
Addressing  
System integration

## General data

L x W x H  
Earth  
Protection class  
operating temperature  
Storage temperature  
Housing main material / Flammability class UL 94  
Certificate

## SAI-AU



| Type                | Qty. | Order No.  |
|---------------------|------|------------|
| SAI-AU M8 EIP 16DI  | 1    | 1906930000 |
| SAI-AU M12 EIP 16DI | 1    | 1906900000 |

1x M12 female 4-pole, D-coded  
1x M12 plug 5-pole, A-coded  
1x M12 female 5-pole, A-coded  
16x M8 female 3-pole

24 V (18 V DC ... 30 V DC)  
Per PIN max. 4 A  
8 A

-30 V to +30 V (protected against polarity reversal)  
<5 V in accordance with EN 61131-2 Typ 1  
>15 V in accordance with EN 61131-2 Typ 1  
< 15 mA in accordance with EN 61131-2 Type 1  
2 mA to 15 mA in accordance with EN 61131-2 Type 1  
3 ms

EtherNet/IP  
10/100 Mbit/s  
DHCP, BOOTP, Static  
EDS file, Web server

210 mm / 54 mm / 32 mm  
< 400 g  
IP 67  
0 °C...+60 °C  
-25 °C...+85 °C  
Pocan, PBT / V-0  
CE, cULus (planned for 4Q/2010)

## SAI-AU



| Type                    | Qty. | Order No.  |
|-------------------------|------|------------|
| SAI-AU M8 EIP 16DI/8DO  | 1    | 1906940000 |
| SAI-AU M12 EIP 16DI/8DO | 1    | 1906910000 |

1x M12 female 4-pole, D-coded  
2x M12 plug 5-pole, A-coded

16x M8 female 3-pole

24 V (18 V DC ... 30 V DC)  
Per PIN max. 4 A  
8 A

-30 V to +30 V (protected against polarity reversal)  
<5 V in accordance with EN 61131-2 Typ 1  
>15 V in accordance with EN 61131-2 Typ 1  
< 15 mA in accordance with EN 61131-2 Type 1  
2 mA to 15 mA in accordance with EN 61131-2 Type 1  
3 ms

0.5 A, 2 A  
max. 100 Hz / max. 1 Hz / max. 8 Hz  
Yes, cut-off for short circuit and error message  
0 V DC  
Supply voltage less 0.7 V DC  
7 A

EtherNet/IP  
10/100 Mbit/s  
DHCP, BOOTP, Static  
EDS file, Web server

210 mm / 54 mm / 32 mm  
< 400 g  
IP 67  
0 °C...+60 °C  
-25 °C...+85 °C  
Pocan, PBT / V-0  
CE, cULus (planned for 4Q/2010)

## Note

## EtherNet/IP™

Remote I/O for digital and analogue signal processing



## SAI-AU



## Ordering data

| Module variants                               |
|-----------------------------------------------|
| 4 Analogue In / 2 Analogue Out / 4 Digital In |
| Note                                          |

| Type                    | Qty. | Order No.  |
|-------------------------|------|------------|
| SAI-AU M12 EIP AI/AO/DI | 1    | 1906920000 |

## Technical data

| Connections                                      |                                                        |
|--------------------------------------------------|--------------------------------------------------------|
| Fieldbus (BUS-IN)                                | 1x M12 female 4-pole, D-coded                          |
| Supply voltage (AUX-IN)                          | 1x M12 plug 5-pole, A-coded                            |
| Supply voltage (AUX-OUT)                         | 1x M12 female 5-pole, A-coded                          |
| I/O connections                                  | 8 x M12 female 5-pole, A-coded                         |
| Voltage supply                                   |                                                        |
| Operating voltage                                | 24 V (18 V DC ... 30 V DC)                             |
| Contact load                                     | Per PIN max. 4 A                                       |
| Max. total current module                        | 8 A                                                    |
| Digital inputs                                   |                                                        |
| Permitted input voltage                          | -30 V to +30 V (protected against polarity reversal)   |
| Input voltage, low                               | < 15 mA in accordance with EN 61131-2 Type 1           |
| Input voltage, high                              | < 5 V in accordance with EN 61131-2 Typ 1              |
| Input current, low                               | > 15 V in accordance with EN 61131-2 Typ 1             |
| Input current, high                              | 2 mA to 15 mA in accordance with EN 61131-2 Type 1     |
| Input filter                                     | 3 ms                                                   |
| Analogue inputs                                  |                                                        |
| Measurement range                                | -10 V ... +10 V, 0 V ... 10V, 0 ... 20 mA, 4...20 mA   |
| Maximum input voltage in relation to GND         | 35 V                                                   |
| Input resistance (load)                          | < 125 Ohm                                              |
| Max. input current (differential)                | -50 mA to +50 mA (protected against polarity reversal) |
| Short-circuit-proof                              | Yes                                                    |
| Resolution / Accuracy                            | 12-bit / < 0.2 %                                       |
| Analogue outputs                                 |                                                        |
| Measurement range                                | -10 V ... +10 V, 0 V ... 10V, 0 ... 20 mA, 4...20 mA   |
| Output interval                                  | 5 ms to 250 ms (can be configured)                     |
| Short-circuit-proof                              | Yes                                                    |
| Resolution / Accuracy                            | 12-bit / < 0.2 %                                       |
| Fieldbus                                         |                                                        |
| Bus system                                       | EtherNet/IP                                            |
| Transmission rate                                | 10/100 Mbit/s                                          |
| Addressing                                       | DHCP, BOOTP, Static                                    |
| System integration                               | EDS file, Web server                                   |
| General data                                     |                                                        |
| L x W x H                                        | 210 mm / 54 mm / 32 mm                                 |
| Earth                                            | < 400 g                                                |
| Protection class                                 | IP 67                                                  |
| operating temperature                            | 0 °C...+60 °C                                          |
| Storage temperature                              | -25 °C...+85 °C                                        |
| Housing main material / Flammability class UL 94 | Pocan, PBT / V-0                                       |
| Certificate                                      | CE, cULus (planned for 4Q/2010)                        |

| Note |
|------|
|------|

| Note |
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# Engineering tables for EtherNet/IP™



When planning the automation of a facility, you must have a wide variety of components available. These engineering tables list all the components required for wiring up the SAI Active modules.

## EtherNet/IP™ modules



## EtherNet/IP™ accessories



## Sensor/actuator accessories



## Markers



## Protective caps



## Ordering data

| Description                                                    | Type                    | Qty. | Order No.  |
|----------------------------------------------------------------|-------------------------|------|------------|
| <b>EtherNet/IP™ modules</b>                                    |                         |      |            |
| 16 Digital In                                                  | SAI-AU M12 EIP 16DI     | 1    | 1906900000 |
| 16 Digital In / 8 Digital Out                                  | SAI-AU M12 EIP 16DI/8DO | 1    | 1906910000 |
| 4 Analogue In / 2 Analogue Out / 4 Digital In                  | SAI-AU M12 EIP AI/AO/DI | 1    | 1906920000 |
| 16 Digital In                                                  | SAI-AU M8 EIP 16DI      | 1    | 1906930000 |
| 16 Digital In / 8 Digital Out                                  | SAI-AU M8 EIP 16DI/8DO  | 1    | 1906940000 |
| <b>EtherNet/IP™ accessories</b>                                |                         |      |            |
| EtherNet/IP™ cables and plugs (refer to Catalogue 9/Chapter C) |                         |      |            |
| <b>Sensor/actuator accessories</b>                             |                         |      |            |
| Sensor-actuator cables                                         |                         |      | Chapter B  |
| <b>Markers</b>                                                 |                         |      |            |
| Semi-transparent markers for PrintJet printing                 | ESG 8/13.5/43.3 SAI AU  | 5    | 1912130000 |
| <b>Protective caps</b>                                         |                         |      |            |
| M8 Dust cap (Sensor connections)                               | SAI-SK M8               | 50   | 1802760000 |
| M12 Dust cap (Sensor connections)                              | SAI-SK                  | 30   | 9456050000 |
| M12 Dust cap (Bus-in and power-in)                             | SAI-SK-M12-UNI          | 20   | 2330260000 |
| M12 Dust cap (Bus-in and power-in)                             | SAI-SK plug M12         | 50   | 1781520000 |



## Modbus TCP

### Remote I/O for digital signal processing



#### Ordering data

| Module variants                              |
|----------------------------------------------|
| 16 Digital In; 16 Digital In / 8 Digital Out |
| 16 Digital In; 16 Digital In / 8 Digital Out |

| Note |
|------|
|      |

#### Technical data

##### Connections

Fieldbus (BUS-IN)  
Supply voltage (AUX-IN)  
Supply voltage (AUX-OUT)  
I/O connections

##### Voltage supply

Operating voltage  
Contact load  
Max. total current module

##### Digital inputs

Permitted input voltage  
Input voltage, low  
Input voltage, high  
Input current, low  
Input current, high  
Input filter

##### Digital outputs

max. current-carrying capacity per output signal  
Switching frequency load (resistive / inductive / inrush)  
Short-circuit-proof  
Output voltage, low  
Output voltage, high  
Max. total current outputs

##### Fieldbus

Bus system  
Transmission rate  
Addressing  
System integration

##### General data

L x W x H  
Earth  
Protection class  
operating temperature  
Storage temperature  
Housing main material / Flammability class UL 94  
Certificate

#### SAI-AU



| Type               | Qty. | Order No.  |
|--------------------|------|------------|
| SAI-AU M8 IE 16DI  | 1    | 1906880000 |
| SAI-AU M12 IE 16DI | 1    | 1906850000 |

| Note |
|------|
|      |

1x M12 female 4-pole, D-coded  
1x M12 plug 5-pole, A-coded  
1x M12 female 5-pole, A-coded  
16x M8 female 3-pole

24 V (18 V DC ... 30 V DC)  
Per PIN max. 4 A  
8 A

-30 V to +30 V (protected against polarity reversal)  
<5 V in accordance with EN 61131-2 Typ 1  
>15 V in accordance with EN 61131-2 Typ 1  
< 15 mA in accordance with EN 61131-2 Type 1  
2 mA to 15 mA in accordance with EN 61131-2 Type 1  
3 ms

0.5 A, 2 A  
max. 100 Hz / max. 1 Hz / max. 8 Hz  
Yes, cut-off for short circuit and error message  
0 V DC  
Supply voltage less 0.7 V DC  
7 A

Modbus TCP  
10/100 Mbit/s  
DHCP, BOOTP, Static  
Register, Webserver

210 mm / 54 mm / 32 mm  
< 400 g  
IP 67  
0 °C...+60 °C  
-25 °C...+85 °C  
Pocan, PBT / V-0  
CE, cULus (planned for 4Q/2010)

#### SAI-AU



| Type                   | Qty. | Order No.  |
|------------------------|------|------------|
| SAI-AU M8 IE 16DI/8DO  | 1    | 1906890000 |
| SAI-AU M12 IE 16DI/8DO | 1    | 1906860000 |

| Note |
|------|
|      |

1x M12 female 4-pole, D-coded  
2x M12 plug 5-pole, A-coded

16x M8 female 3-pole

24 V (18 V DC ... 30 V DC)  
Per PIN max. 4 A  
8 A

-30 V to +30 V (protected against polarity reversal)  
<5 V in accordance with EN 61131-2 Typ 1  
>15 V in accordance with EN 61131-2 Typ 1  
< 15 mA in accordance with EN 61131-2 Type 1  
2 mA to 15 mA in accordance with EN 61131-2 Type 1  
3 ms

0.5 A, 2 A  
max. 100 Hz / max. 1 Hz / max. 8 Hz  
Yes, cut-off for short circuit and error message  
0 V DC  
Supply voltage less 0.7 V DC  
7 A

Modbus TCP  
10/100 Mbit/s  
DHCP, BOOTP, Static  
Register, Webserver

210 mm / 54 mm / 32 mm  
< 400 g  
IP 67  
0 °C...+60 °C  
-25 °C...+85 °C  
Pocan, PBT / V-0  
CE, cULus (planned for 4Q/2010)

| Note |
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| Note |
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|      |

## Modbus TCP

### Remote I/O for digital and analogue signal processing

**Modbus-IDA**  
the architecture for distributed automation

## SAI-AU



### Ordering data

| Module variants                               |
|-----------------------------------------------|
| 4 Analogue In / 2 Analogue Out / 4 Digital In |
| Note                                          |

| Type                   | Qty. | Order No.  |
|------------------------|------|------------|
| SAI-AU M12 IE AI/AO/DI | 1    | 1906870000 |

### Technical data

| Connections                                                  |
|--------------------------------------------------------------|
| Fieldbus (BUS-IN)                                            |
| Supply voltage (AUX-IN)                                      |
| Supply voltage (AUX-OUT)                                     |
| I/O connections                                              |
| Voltage supply                                               |
| Operating voltage                                            |
| Contact load                                                 |
| Max. total current module                                    |
| Digital inputs                                               |
| Permitted input voltage                                      |
| Input voltage, low                                           |
| Input voltage, high                                          |
| Input current, low                                           |
| Input current, high                                          |
| Input filter                                                 |
| Analogue inputs                                              |
| Measurement range                                            |
| Maximum input voltage in relation to GND                     |
| Input resistance (load)                                      |
| Max. input current (differential)                            |
| Short-circuit-proof                                          |
| Resolution / Accuracy                                        |
| Analogue outputs                                             |
| Measurement range                                            |
| Output interval                                              |
| Short-circuit-proof                                          |
| Resolution / Accuracy                                        |
| Fieldbus                                                     |
| Bus system                                                   |
| Transmission rate                                            |
| Addressing                                                   |
| System integration                                           |
| General data                                                 |
| L x W x H                                                    |
| Earth                                                        |
| Protection class                                             |
| operating temperature                                        |
| Storage temperature                                          |
| Housing main material / Flammability class UL 94 Certificate |

|                                                        |
|--------------------------------------------------------|
| 1x M12 female 4-pole, D-coded                          |
| 1x M12 plug 5-pole, A-coded                            |
| 1x M12 female 5-pole, A-coded                          |
| 8 x M12 female 5-pole, A-coded                         |
| 24 V (18 V DC ... 30 V DC)                             |
| Per PIN max. 4 A                                       |
| 8 A                                                    |
| -30 V to +30 V (protected against polarity reversal)   |
| <5 V in accordance with EN 61131-2 Typ 1               |
| >15 V in accordance with EN 61131-2 Typ 1              |
| < 15 mA in accordance with EN 61131-2 Type 1           |
| 2 mA to 15 mA in accordance with EN 61131-2 Type 1     |
| 3 ms                                                   |
| -10 V ... +10 V, 0 V ... 10V, 0 ... 20 mA, 4...20 mA   |
| 35 V                                                   |
| <125 Ohm                                               |
| -50 mA to +50 mA (protected against polarity reversal) |
| Yes                                                    |
| 12-bit / < 0.2 %                                       |
| -10 V ... +10 V, 0 V ... 10V, 0 ... 20 mA, 4...20 mA   |
| 5 ms to 250 ms (can be configured)                     |
| Yes                                                    |
| 12-bit / < 0.2 %                                       |
| Modbus TCP                                             |
| 10/100 Mbit/s                                          |
| DHCP, BOOTP, Static                                    |
| Register, Webserver                                    |
| 210 mm / 54 mm / 32 mm                                 |
| < 400 g                                                |
| IP 67                                                  |
| 0 °C...+60 °C                                          |
| -25 °C...+85 °C                                        |
| Pocan, PBT / V-0                                       |
| CE, cULus (planned for 4Q/2010)                        |

| Note |
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| Note |
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# Engineering tables for Modbus TCP

When planning the automation of a facility, you must have a wide variety of components available. These engineering tables list all the components required for wiring up the SAI Active modules.

## Modbus TCP modules



## Modbus TCP accessories



## Sensor/actuator accessories



## Markers



## Protective caps



## Ordering data

| Description                                        | Type                   | Qty. | Order No.  |
|----------------------------------------------------|------------------------|------|------------|
| <b>Modbus TCP modules</b>                          |                        |      |            |
| 16 Digital In                                      | SAI-AU M12 IE 16DI     | 1    | 1906850000 |
| 16 Digital In / 8 Digital Out                      | SAI-AU M12 IE 16DI/8DO | 1    | 1906860000 |
| 4 Analogue In / 2 Analogue Out / 4 Digital In      | SAI-AU M12 IE AI/AO/DI | 1    | 1906870000 |
| 16 Digital In                                      | SAI-AU M8 IE 16DI      | 1    | 1906880000 |
| 16 Digital In / 8 Digital Out                      | SAI-AU M8 IE 16DI/8DO  | 1    | 1906890000 |
| <b>Modbus TCP accessories</b>                      |                        |      |            |
| Modbus TCP cables and plugs (refer to Catalogue 9) |                        |      | Chapter C  |
| <b>Sensor/actuator accessories</b>                 |                        |      |            |
| Sensor-actuator cables                             |                        |      | Chapter B  |
| Sensor-actuator plugs                              |                        |      | Chapter D  |
| <b>Markers</b>                                     |                        |      |            |
| Semi-transparent markers for PrintJet printing     | ESG 8/13.5/43.3 SAI AU | 5    | 1912130000 |
| <b>Protective caps</b>                             |                        |      |            |
| M8 Dust cap (Sensor connections)                   | SAI-SK M8              | 50   | 1802760000 |
| M12 Dust cap (Sensor connections)                  | SAI-SK                 | 30   | 9456050000 |
| M12 Dust cap (Bus-in and power-in)                 | SAI-SK-M12-UNI         | 20   | 2330260000 |
| M12 Dust cap (Bus-in and power-in)                 | SAI-SK plug M12        | 50   | 1781520000 |



# SAI Active Universal Pro

## Professional versions of the Remote I/O System featuring IP67 protection

The modules in the SAI Active Universal Pro systems provide additional I/O and functional modules for more versatile topologies. The extension modules come in a compact, space saving design. They can also be mounted on the side because of the additional drilled holes in the side of the housing. Up to 15 extension modules can be connected over a distance of 50 metres using a shielded, standard M8 sensor cable and the SAI fieldbus module.

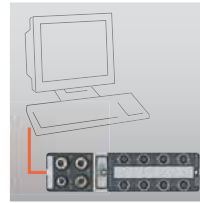
In addition to the digital input and output modules, we also offer counter unit modules, thermal modules, RTD modules and analogue modules. The digital input and output modules are also available in M8 and M12 variants. The analogue modules and functional modules are available with M12 connections. Markers are included with every SAI Active module for labelling the I/O channels and the entire device. These markers can be printed on using the PrintJet system from Weidmüller.





### Cost-effective Subbus system

Subbus modules are wired up using conventional, shielded, standard M8 sensor cables. Thus there is no need for expensive custom cables. The extension modules enable versatile expansion and minimise the costs associated with the fieldbus interface. The modules do not, however, detract from the performance of the fieldbus system.



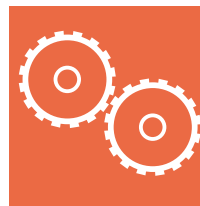
### Integration with an industrial PC

Weidmüller offers an SAI Active Universal Pro module with USB and RS232 interfaces especially for controllers or industrial PCs without any Fieldbus connection. A driver is used to set up the connection; communication is based on the standard Modbus ASCII format. All available extension modules can be used on these components and can be accessed via the controller.



### Simplified installation

The modules have a compact, space saving design with additional holes drilled on the side of the housing: this allows them to be installed in a quick and versatile manner. All SAI Active modules with digital inputs or digital outputs are optionally available with standard M8 or M12 connection systems. The outputs are short-circuit-proof and protected against polarity reversal.



### Efficient engineering

All Pro-System modules are described in the standardised fieldbus specific device description files. They can be integrated into any controller unit and corresponding engineering system regardless of the particular manufacturer. The configuration (whether for the input, DESINA input, or output) is carried out without any additional software. Any user can configure directly from the engineering system.

SAI-Active Universal Pro

Gateway modules with digital inputs



SAI-AU GW



SAI-AU GW



Ordering data

| Module variants |
|-----------------|
| 16 Digital In   |
| Note            |

| Type                  | Qty. | Order No.  |
|-----------------------|------|------------|
| SAI-AU M12 PB GW 16DI | 1    | 1938550000 |

| Type                 | Qty. | Order No.  |
|----------------------|------|------------|
| SAI-AU M8 PB GW 16DI | 1    | 1024310000 |

Technical data

| Connections                                      |
|--------------------------------------------------|
| Fieldbus (BUS-IN)                                |
| Fieldbus (BUS-OUT)                               |
| Supply voltage (AUX-IN)                          |
| Connection to Subbus (SUB-OUT)                   |
| I/O connections                                  |
| Voltage supply                                   |
| Operating voltage                                |
| Contact load                                     |
| Max. total current module                        |
| Digital inputs                                   |
| Permitted input voltage                          |
| Input voltage, low                               |
| Input voltage, high                              |
| Input current, low                               |
| Input current, high                              |
| Input filter                                     |
| Fieldbus                                         |
| Bus system                                       |
| Transmission rate                                |
| Addressing                                       |
| System integration                               |
| General data                                     |
| L x W x H                                        |
| Earth                                            |
| Protection class                                 |
| operating temperature                            |
| Storage temperature                              |
| Housing main material / Flammability class UL 94 |
| Certificate                                      |

|                                                      |
|------------------------------------------------------|
| 1x M12 plug 5-pole, B-coded                          |
| 1x M12 female 5-pole, B-coded                        |
| 1x M12 plug 5-pole, A-coded                          |
| 1 x M8 female 4-pole, A-coded                        |
| 8 x M12 female 5-pole, A-coded                       |
| 24 V (18 V DC ... 30 V DC)                           |
| Per PIN max. 4 A                                     |
| 8 A                                                  |
| -30 V to +30 V (protected against polarity reversal) |
| <5 V in accordance with EN 61131-2 Typ 1             |
| >15 V in accordance with EN 61131-2 Typ 1            |
| < 15 mA in accordance with EN 61131-2 Type 1         |
| 2 mA to 15 mA in accordance with EN 61131-2 Type 1   |
| 1 ms, 3 ms, 5 ms, 10 ms, Configurable                |
| Profibus-DP                                          |
| Max. 12 Mbit/s (automatic detection)                 |
| Via rotary coding switch (1 – 126)                   |
| GSD file                                             |
| 210 mm / 54 mm / 32 mm                               |
| < 350 g                                              |
| IP 67                                                |
| 0 °C...+60 °C                                        |
| -25 °C...+85 °C                                      |
| Pocan, PBT / V-0                                     |
| CE, cULus                                            |

|                                                      |
|------------------------------------------------------|
| 1x M12 plug 5-pole, B-coded                          |
| 1x M12 female 5-pole, B-coded                        |
| 1x M12 plug 5-pole, A-coded                          |
| 1 x M8 female 4-pole, A-coded                        |
| 16x M8 female 3-pole                                 |
| 24 V (18 V DC ... 30 V DC)                           |
| Per PIN max. 4 A                                     |
| 8 A                                                  |
| -30 V to +30 V (protected against polarity reversal) |
| <5 V in accordance with EN 61131-2 Typ 1             |
| >15 V in accordance with EN 61131-2 Typ 1            |
| < 15 mA in accordance with EN 61131-2 Type 1         |
| 2 mA to 15 mA in accordance with EN 61131-2 Type 1   |
| 1 ms, 3 ms, 5 ms, 10 ms, Configurable                |
| Profibus-DP                                          |
| Max. 12 Mbit/s (automatic detection)                 |
| Via rotary coding switch (1 – 126)                   |
| GSD file                                             |
| 210 mm / 54 mm / 32 mm                               |
| < 350 g                                              |
| IP 67                                                |
| 0 °C...+60 °C                                        |
| -25 °C...+85 °C                                      |
| Pocan, PBT / V-0                                     |
| CE, cULus                                            |

| Note |
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| Note |
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| Note |
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|------|

# Engineering tables for PROFIBUS



When planning the automation of a facility, you must have a wide variety of components available. These engineering tables list all the components required for wiring up the SAI Active modules.

## PROFIBUS modules



## PROFIBUS accessories



## Subbus cables / Terminating resistor



## Sensor/actuator accessories



## Markers



## Protective caps

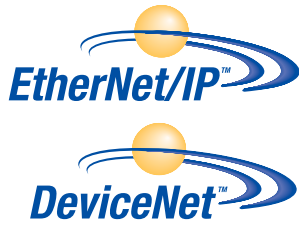


## Ordering data

| Description                                          | Type                   | Qty. | Order No.  |
|------------------------------------------------------|------------------------|------|------------|
| <b>PROFIBUS modules</b>                              |                        |      |            |
| PROFIBUS Gateway M12                                 | SAI-AU M12 PB GW 16DI  | 1    | 1938550000 |
| PROFIBUS Gateway M8                                  | SAI-AU M8 PB GW 16DI   | 1    | 1024310000 |
| Subbus module                                        | SAI-AU M12 SB 8DI      | 1    | 1938610000 |
| Subbus module                                        | SAI-AU M12 SB 8DI/8DO  | 1    | 1938640000 |
| Subbus module                                        | SAI-AU M8 SB 8DI       | 1    | 1938600000 |
| Subbus module                                        | SAI-AU M8 SB 8DI/8DO   | 1    | 1938630000 |
| Subbus module                                        | SAI-AU M12 SB AI       | 1    | 1938690000 |
| Subbus module                                        | SAI-AU M12 SB AO       | 1    | 1938700000 |
| Subbus module                                        | SAI-AU M12 SB PT100    | 1    | 1938710000 |
| Subbus module                                        | SAI-AU M12 SB Thermo   | 1    | 1938720000 |
| Subbus module                                        | SAI-AU M12 SB Zähler   | 1    | 1938730000 |
| Subbus module                                        | SAI-AU M8 SB 8DO 2A    | 1    | 1938660000 |
| Subbus module                                        | SAI-AU M12 SB 8DO 2A   | 1    | 1938680000 |
| <b>PROFIBUS accessories</b>                          |                        |      |            |
| PROFIBUS cables with female plug and male plug       |                        |      | Chapter C  |
| PROFIBUS cables with female plug and other side open |                        |      | Chapter C  |
| PROFIBUS cables with male plug and other side open   |                        |      | Chapter C  |
| PROFIBUS plug-in connector                           |                        |      | Chapter C  |
| PROFIBUS terminating resistor                        | SAIEND PB M12 5P B-COD | 1    | 1784770000 |
| <b>Subbus cables / Terminating resistor</b>          |                        |      |            |
| Subbus cables                                        |                        |      | Chapter C  |
| Subbus terminating resistor                          | SAIEND CAN M8 4P       | 1    | 1955340000 |
| <b>Sensor/actuator accessories</b>                   |                        |      |            |
| Sensor-actuator cables                               |                        |      | Chapter B  |
| Sensor-actuator plugs                                |                        |      | Chapter D  |
| <b>Markers</b>                                       |                        |      |            |
| Semi-transparent markers for PrintJet printing       | ESG 8/13.5/43.3 SAI AU | 5    | 1912130000 |
| <b>Protective caps</b>                               |                        |      |            |
| M8 Dust cap (Sensor connections)                     | SAI-SK M8              | 50   | 1802760000 |
| M12 Dust cap (Sensor connections)                    | SAI-SK                 | 30   | 9456050000 |
| M12 Dust cap (Bus-in and power-in)                   | SAI-SK-M12-UNI         | 20   | 2330260000 |
| M12 Dust cap (Bus-in and power-in)                   | SAI-SK plug M12        | 50   | 1781520000 |

SAI-Active Universal Pro

Gateway modules with digital inputs



Ordering data

|                        |               |
|------------------------|---------------|
| <b>Module variants</b> | 16 Digital In |
| <b>Note</b>            |               |

Technical data

|                       |                                                                                                                                                           |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Connections</b>    | Fieldbus (BUS-IN)<br>Fieldbus (BUS-OUT)<br>Supply voltage (AUX-IN)<br>Connection to Subbus (SUB-OUT)<br>I/O connections                                   |
| <b>Voltage supply</b> | Operating voltage<br>Contact load<br>Max. total current module                                                                                            |
| <b>Digital inputs</b> | Permitted input voltage<br>Input voltage, low<br>Input voltage, high<br>Input current, low<br>Input current, high<br>Input filter                         |
| <b>Fieldbus</b>       | Bus system<br>Transmission rate<br>Addressing<br>System integration                                                                                       |
| <b>General data</b>   | L x W x H<br>Earth<br>Protection class<br>operating temperature<br>Storage temperature<br>Housing main material / Flammability class UL 94<br>Certificate |

SAI-AU GW



|                        |             |                  |
|------------------------|-------------|------------------|
| <b>Type</b>            | <b>Qty.</b> | <b>Order No.</b> |
| SAI-AU M12 EIP GW 16DI | 1           | 1019490000       |

|                                                      |
|------------------------------------------------------|
| 1x M12 female 4-pole, D-coded                        |
| 1x M12 plug 5-pole, A-coded                          |
| 1 x M8 female 4-pole, A-coded                        |
| 8 x M12 female 5-pole, A-coded                       |
| 24 V (18 V DC ... 30 V DC)                           |
| Per PIN max. 4 A                                     |
| 8 A                                                  |
| -30 V to +30 V (protected against polarity reversal) |
| <5 V in accordance with EN 61131-2 Typ 1             |
| >15 V in accordance with EN 61131-2 Typ 1            |
| < 15 mA in accordance with EN 61131-2 Type 1         |
| 2 mA to 15 mA in accordance with EN 61131-2 Type 1   |
| 1 ms, 3 ms, 5 ms, 10 ms, Configurable                |
| EtherNet/IP                                          |
| 10/100 Mbit/s                                        |
| DHCP, BOOTP, Static                                  |
| EDS file, Web server                                 |
| 210 mm / 54 mm / 32 mm                               |
| < 350 g                                              |
| IP 67                                                |
| 0 °C...+60 °C                                        |
| -25 °C...+85 °C                                      |
| Pocan, PBT / V-0                                     |
| CE, cULus (planned for 4Q/2010)                      |

SAI-AU GW



|                       |             |                  |
|-----------------------|-------------|------------------|
| <b>Type</b>           | <b>Qty.</b> | <b>Order No.</b> |
| SAI-AU M12 DN GW 16DI | 1           | 1938570000       |

|                                                      |
|------------------------------------------------------|
| 1x M12 plug 5-pole, A-coded                          |
| 1x M12 female 5-pole, A-coded                        |
| 1x M12 plug 5-pole, A-coded                          |
| 1 x M8 female 4-pole, A-coded                        |
| 8 x M12 female 5-pole, A-coded                       |
| 24 V (18 V DC ... 30 V DC)                           |
| Per PIN max. 4 A                                     |
| 8 A                                                  |
| -30 V to +30 V (protected against polarity reversal) |
| <5 V in accordance with EN 61131-2 Typ 1             |
| >15 V in accordance with EN 61131-2 Typ 1            |
| < 15 mA in accordance with EN 61131-2 Type 1         |
| 2 mA to 15 mA in accordance with EN 61131-2 Type 1   |
| 1 ms, 3 ms, 5 ms, 10 ms, Configurable                |
| DeviceNet                                            |
| Max. 500 kBit/s (automatic detection)                |
| Via rotary coding switch (0 – 63)                    |
| EDS file                                             |
| 210 mm / 54 mm / 32 mm                               |
| < 350 g                                              |
| IP 67                                                |
| 0 °C...+60 °C                                        |
| -25 °C...+85 °C                                      |
| Pocan, PBT / V-0                                     |
| CE, cULus (planned for 4Q/2010)                      |

|             |
|-------------|
| <b>Note</b> |
|-------------|

# Engineering tables for DeviceNet™ and EtherNet/IP™



When planning the automation of a facility, you must have a wide variety of components available. These engineering tables list all the components required for wiring up the SAI Active modules.

## DeviceNet™ and EtherNet/IP™ modules



## DeviceNet™ und EtherNet/IP™ accessories



## Subbus cables / Terminating resistor



## Sensor/actuator accessories



## Markers



## Protective caps



## Ordering data

| Description                                                    | Type                    | Qty. | Order No.  |
|----------------------------------------------------------------|-------------------------|------|------------|
| <b>DeviceNet™ and EthernetIP™ modules</b>                      |                         |      |            |
| DeviceNet™ Gateway                                             | SAI-AU M12 DN GW 16DI   | 1    | 1938570000 |
| EtherNet/IP™ Gateway                                           | SAI-AU M12 EIP GW 16DI  | 1    | 1019490000 |
| Subbus module                                                  | SAI-AU M12 SB 8DI       | 1    | 1938610000 |
| Subbus module                                                  | SAI-AU M12 SB 8DI/8DO   | 1    | 1938640000 |
| Subbus module                                                  | SAI-AU M8 SB 8DI        | 1    | 1938600000 |
| Subbus module                                                  | SAI-AU M8 SB 8DI/8DO    | 1    | 1938630000 |
| Subbus module                                                  | SAI-AU M12 SB AI        | 1    | 1938690000 |
| Subbus module                                                  | SAI-AU M12 SB AO        | 1    | 1938700000 |
| Subbus module                                                  | SAI-AU M12 SB PT100     | 1    | 1938710000 |
| Subbus module                                                  | SAI-AU M12 SB Thermo    | 1    | 1938720000 |
| Subbus module                                                  | SAI-AU M12 SB Zähler    | 1    | 1938730000 |
| Subbus module                                                  | SAI-AU M8 SB 8DO 2A     | 1    | 1938660000 |
| Subbus module                                                  | SAI-AU M12 SB 8DO 2A    | 1    | 1938680000 |
| <b>DeviceNET™ and EthernetIP™ accessories</b>                  |                         |      |            |
| DeviceNet™ cables with female plug and male plug               |                         |      | Chapter C  |
| DeviceNet™ cables with female plug and other side open         |                         |      | Chapter C  |
| DeviceNet™ cables with male plug and other side open           |                         |      | Chapter C  |
| DeviceNet™ plug-in connector                                   |                         |      | Chapter C  |
| DeviceNet™ terminating resistor                                | SAIEND CAN-M12 5P A-COD | 1    | 1784760000 |
| EtherNet/IP™ cables and plugs (refer to Catalogue 9/Chapter C) |                         |      |            |
| <b>Subbus cables / Terminating resistor</b>                    |                         |      |            |
| Subbus cables                                                  |                         |      | Chapter C  |
| Subbus terminating resistor                                    | SAIEND CAN M8 4P        | 1    | 1955340000 |
| <b>Sensor/actuator accessories</b>                             |                         |      |            |
| Sensor-actuator cables                                         |                         |      | Chapter B  |
| Sensor-actuator plugs                                          |                         |      | Chapter D  |
| <b>Markers</b>                                                 |                         |      |            |
| Semi-transparent markers for PrintJet printing                 | ESG 8/13.5/43.3 SAI AU  | 5    | 1912130000 |
| <b>Protective caps</b>                                         |                         |      |            |
| M8 Dust cap (Sensor connections)                               | SAI-SK M8               | 50   | 1802760000 |
| M12 Dust cap (Sensor connections)                              | SAI-SK                  | 30   | 9456050000 |
| M12 Dust cap (Bus-in and power-in)                             | SAI-SK-M12-UNI          | 20   | 2330260000 |
| M12 Dust cap (Bus-in and power-in)                             | SAI-SK plug M12         | 50   | 1781520000 |

## Gateway modules with digital inputs/outputs



## Ordering data

| Module variants                             |
|---------------------------------------------|
| 16 Digital In; 8 Digital In / 8 Digital Out |
| Note                                        |

## Technical data

| Connections                                               |
|-----------------------------------------------------------|
| Fieldbus (BUS-IN)                                         |
| Fieldbus (BUS-OUT)                                        |
| Supply voltage (AUX-IN)                                   |
| Connection to Subbus (SUB-OUT)                            |
| I/O connections                                           |
| Voltage supply                                            |
| Operating voltage                                         |
| Contact load                                              |
| Max. total current module                                 |
| Digital inputs                                            |
| Permitted input voltage                                   |
| Input voltage, low                                        |
| Input voltage, high                                       |
| Input current, low                                        |
| Input current, high                                       |
| Input filter                                              |
| Digital outputs                                           |
| max. current-carrying capacity per output signal          |
| Switching frequency load (resistive / inductive / inrush) |
| Short-circuit-proof                                       |
| Output voltage, low                                       |
| Output voltage, high                                      |
| Max. total current outputs                                |
| Fieldbus                                                  |
| Bus system                                                |
| Transmission rate                                         |
| Addressing                                                |
| System integration                                        |
| General data                                              |
| L x W x H                                                 |
| Earth                                                     |
| Protection class                                          |
| operating temperature                                     |
| Storage temperature                                       |
| Housing main material / Flammability class UL 94          |
| Certificate                                               |

## SAI-AU GW



| Type                  | Qty. | Order No.  |
|-----------------------|------|------------|
| SAI-AU M12 IE GW 16DI | 1    | 1938580000 |

|                                                      |
|------------------------------------------------------|
| 1x M12 female 4-pole, D-coded                        |
| 1x M12 plug 5-pole, A-coded                          |
| 1 x M8 female 4-pole, A-coded                        |
| 8 x M12 female 5-pole, A-coded                       |
| 24 V (18 V DC ... 30 V DC)                           |
| Per PIN max. 4 A                                     |
| 8 A                                                  |
| -30 V to +30 V (protected against polarity reversal) |
| <5 V in accordance with EN 61131-2 Typ 1             |
| >15 V in accordance with EN 61131-2 Typ 1            |
| < 15 mA in accordance with EN 61131-2 Type 1         |
| 2 mA to 15 mA in accordance with EN 61131-2 Type 1   |
| 1 ms, 3 ms, 5 ms, 10 ms, Configurable                |
| Modbus TCP                                           |
| 10/100 Mbit/s                                        |
| DHCP, BOOTP, Static                                  |
| Register, Webserver                                  |
| 210 mm / 54 mm / 32 mm                               |
| < 350 g                                              |
| IP 67                                                |
| 0 °C...+60 °C                                        |
| -25 °C...+85 °C                                      |
| Pocan, PBT / V-0                                     |
| CE, cULus (planned for 4Q/2010)                      |

## SAI-AU GW



| Type                   | Qty. | Order No.  |
|------------------------|------|------------|
| SAI-AU M12 USB GW 8I8O | 1    | 1962240000 |

|                                                      |
|------------------------------------------------------|
| 1x M12 plug 5-pole, B-coded (BUS-USB)                |
| 1x M12 female 5-pole, B-coded (BUS-RS232)            |
| 1x M12 plug 5-pole, A-coded                          |
| 1 x M8 female 4-pole, A-coded                        |
| 8 x M12 female 5-pole, A-coded                       |
| 24 V (18 V DC ... 30 V DC)                           |
| Per PIN max. 4 A                                     |
| 8 A                                                  |
| -30 V to +30 V (protected against polarity reversal) |
| <5 V in accordance with EN 61131-2 Typ 1             |
| >15 V in accordance with EN 61131-2 Typ 1            |
| < 15 mA in accordance with EN 61131-2 Type 1         |
| 2 mA to 15 mA in accordance with EN 61131-2 Type 1   |
| 1 ms, 3 ms, 5 ms, 10 ms, Configurable                |
| 0.5 A                                                |
| max. 100 Hz / max. 1 Hz / max. 8 Hz                  |
| Yes, cut-off for short circuit and error message     |
| 0 V DC                                               |
| Supply voltage less 0.7 V DC                         |
| 4 A                                                  |
| Modbus ASCII (RS 232 / USB)                          |
| 115.2 kBit/s                                         |
| Static                                               |
| Register                                             |
| 210 mm / 54 mm / 32 mm                               |
| < 350 g                                              |
| IP 67                                                |
| 0 °C...+60 °C                                        |
| -20 °C...                                            |
| Pocan, PBT / V-0                                     |
| CE, cULus (planned for 4Q/2010)                      |

Note

# Engineering tables for Modbus TCP and USB

**Modbus-IDA**  
the architecture for distributed automation

**USB** 

When planning the automation of a facility, you must have a wide variety of components available. These engineering tables list all the components required for wiring up the SAI Active modules.

## Modbus TCP and USB modules



## Modbus TCP and USB accessories



## Subbus cables / Terminating resistor



## Sensor/actuator accessories



## Markers



## Protective caps



## Ordering data

| Description                                                  | Type                   | Qty. | Order No.  |
|--------------------------------------------------------------|------------------------|------|------------|
| <b>Modbus TCP and USB modules</b>                            |                        |      |            |
| USB Gateway                                                  | SAI-AU M12 USB GW 8I8O | 1    | 1962240000 |
| Modbus TCP Gateway                                           | SAI-AU M12 IE GW 16DI  | 1    | 1938580000 |
| Subbus module                                                | SAI-AU M12 SB 8DI      | 1    | 1938610000 |
| Subbus module                                                | SAI-AU M12 SB 8DI/8DO  | 1    | 1938640000 |
| Subbus module                                                | SAI-AU M8 SB 8DI       | 1    | 1938600000 |
| Subbus module                                                | SAI-AU M8 SB 8DI/8DO   | 1    | 1938630000 |
| Subbus module                                                | SAI-AU M12 SB AI       | 1    | 1938690000 |
| Subbus module                                                | SAI-AU M12 SB AO       | 1    | 1938700000 |
| Subbus module                                                | SAI-AU M12 SB PT100    | 1    | 1938710000 |
| Subbus module                                                | SAI-AU M12 SB Thermo   | 1    | 1938720000 |
| Subbus module                                                | SAI-AU M12 SB Zähler   | 1    | 1938730000 |
| Subbus module                                                | SAI-AU M8 SB 8DO 2A    | 1    | 1938660000 |
| Subbus module                                                | SAI-AU M12 SB 8DO 2A   | 1    | 1938680000 |
| <b>Modbus TCP and USB accessories</b>                        |                        |      |            |
| USB module plug-in connector                                 |                        |      | Chapter C  |
| Modbus TCP cables and plugs (refer to Catalogue 9/Chapter C) |                        |      |            |
| <b>Subbus cables / Terminating resistor</b>                  |                        |      |            |
| Subbus cables                                                |                        |      | Chapter C  |
| Subbus terminating resistor                                  | SAIEND CAN M8 4P       | 1    | 1955340000 |
| <b>Sensor/actuator accessories</b>                           |                        |      |            |
| Sensor-actuator cables                                       |                        |      | Chapter B  |
| Sensor-actuator plugs                                        |                        |      | Chapter D  |
| <b>Markers</b>                                               |                        |      |            |
| Semi-transparent markers for PrintJet printing               | ESG 8/13.5/43.3 SAI AU | 5    | 1912130000 |
| <b>Protective caps</b>                                       |                        |      |            |
| M8 Dust cap (Sensor connections)                             | SAI-SK M8              | 50   | 1802760000 |
| M12 Dust cap (Sensor connections)                            | SAI-SK                 | 30   | 9456050000 |
| M12 Dust cap (Bus-in and power-in)                           | SAI-SK-M12-UNI         | 20   | 2330260000 |
| M12 Dust cap (Bus-in and power-in)                           | SAI-SK plug M12        | 50   | 1781520000 |

## SAI Active Universal Pro

### Subbus modules with digital inputs/ outputs

#### SAI-AU Digital



#### SAI-AU Digital



### Ordering data

| Module variants                            |  |
|--------------------------------------------|--|
| 8 Digital In; 8 Digital In / 8 Digital Out |  |
| 8 Digital In; 8 Digital In / 8 Digital Out |  |
| 8 Digital Out 2A                           |  |
| 8 Digital Out 2A                           |  |

#### Note

### Technical data

| Connections                                      |  |
|--------------------------------------------------|--|
| Supply voltage (AUX-IN)                          |  |
| Connection to Subbus (SUB-IN)                    |  |
| Connection to Subbus (SUB-OUT)                   |  |
| I/O connections                                  |  |
| Voltage supply                                   |  |
| Operating voltage                                |  |
| Contact load                                     |  |
| Max. total current module                        |  |
| Digital inputs                                   |  |
| Permitted input voltage                          |  |
| Input voltage, low                               |  |
| Input voltage, high                              |  |
| Input current, low                               |  |
| Input current, high                              |  |
| Input filter                                     |  |
| Separation of potentials to module electronics   |  |
| Digital outputs                                  |  |
| max. current-carrying capacity per output signal |  |
| Separation of potentials to module electronics   |  |
| Switching frequency, resistive load              |  |
| Switching frequency, inductive load              |  |
| Switching frequency, lamp load                   |  |
| Short-circuit-proof                              |  |
| Output voltage, low                              |  |
| Output voltage, high                             |  |
| Max. total current outputs                       |  |
| Fieldbus                                         |  |
| Bus system                                       |  |
| Addressing                                       |  |
| System integration                               |  |
| General data                                     |  |
| L x W x H                                        |  |
| Earth                                            |  |
| Protection class                                 |  |
| operating temperature                            |  |
| Storage temperature                              |  |
| Housing main material / Flammability class UL 94 |  |
| Certificate                                      |  |

| Type              | Qty. | Order No.  |
|-------------------|------|------------|
| SAI-AU M8 SB 8DI  | 1    | 1938600000 |
| SAI-AU M12 SB 8DI | 1    | 1938610000 |

|                                                      |  |
|------------------------------------------------------|--|
| 1 x M8 plug 4-pole, A-coded                          |  |
| 1 x M8 female 4-pole, A-coded                        |  |
| 4 x M12 female, 5-pole A-coded                       |  |
| 24 V (18 V DC ... 30 V DC)                           |  |
| -30 V to +30 V (protected against polarity reversal) |  |
| <5 V in accordance with EN 61131-2 Typ 1             |  |
| >15 V in accordance with EN 61131-2 Typ 1            |  |
| < 15 mA in accordance with EN 61131-2 Type 1         |  |
| 2 mA to 15 mA in accordance with EN 61131-2 Type 1   |  |
| 1 ms, 3 ms, 5 ms, 10 ms, Configurable                |  |
| none                                                 |  |
| Subbus                                               |  |
| automatic                                            |  |
| automatic                                            |  |
| 155 mm / 30 mm / 32 mm                               |  |
| < 200 g                                              |  |
| IP 67                                                |  |
| 0 °C...+60 °C                                        |  |
| -25 °C...+85 °C                                      |  |
| Pocan, PBT / 5VA                                     |  |
| CE, cULus                                            |  |

| Type                 | Qty. | Order No.  |
|----------------------|------|------------|
| SAI-AU M8 SB 8DIO    | 1    | 1938630000 |
| SAI-AU M12 SB 8DIO   | 1    | 1938640000 |
| SAI-AU M8 SB 8DO 2A  | 1    | 1938660000 |
| SAI-AU M12 SB 8DO 2A | 1    | 1938680000 |

|                                                      |  |
|------------------------------------------------------|--|
| 1x M12 plug 5-pole, A-coded                          |  |
| 1 x M8 plug 4-pole, A-coded                          |  |
| 1 x M8 female 4-pole, A-coded                        |  |
| 4 x M12 female, 5-pole A-coded                       |  |
| 24 V (18 V DC ... 30 V DC)                           |  |
| Per PIN max. 4 A                                     |  |
| 8 A                                                  |  |
| -30 V to +30 V (protected against polarity reversal) |  |
| <5 V in accordance with EN 61131-2 Typ 1             |  |
| >15 V in accordance with EN 61131-2 Typ 1            |  |
| < 15 mA in accordance with EN 61131-2 Type 1         |  |
| 2 mA to 15 mA in accordance with EN 61131-2 Type 1   |  |
| 1 ms, 3 ms, 5 ms, 10 ms, Configurable                |  |
| none                                                 |  |
| 2 A                                                  |  |
| none                                                 |  |
| max. 100 Hz                                          |  |
| max. 1 Hz                                            |  |
| max. 8 Hz                                            |  |
| Yes, cut-off for short circuit and error message     |  |
| 0 V DC                                               |  |
| Supply voltage less 0.7 V DC                         |  |
| 4 A                                                  |  |
| Subbus                                               |  |
| automatic                                            |  |
| automatic                                            |  |
| 180 mm / 30 mm / 32 mm                               |  |
| < 200 g                                              |  |
| IP 67                                                |  |
| 0 °C...+60 °C                                        |  |
| -25 °C...+85 °C                                      |  |
| Pocan, PBT / 5VA                                     |  |
| CE, cULus                                            |  |

#### Note

Subbus modules with analogue input/  
outputs

## SAI-AU Analog



## SAI-AU Analog



## Ordering data

| Module variants                |
|--------------------------------|
| 4 Analogue Out / 4 Analogue In |
| Note                           |

| Type              | Qty. | Order No.  |
|-------------------|------|------------|
| SAI-AU M12 SB 4AO | 1    | 1938700000 |
| Note              |      |            |

| Type              | Qty. | Order No.  |
|-------------------|------|------------|
| SAI-AU M12 SB 4AI | 1    | 1938690000 |
| Note              |      |            |

## Technical data

| Connections                                      |
|--------------------------------------------------|
| Connection to Subbus (SUB-IN)                    |
| Connection to Subbus (SUB-OUT)                   |
| I/O connections                                  |
| Voltage supply                                   |
| Operating voltage                                |
| Analogue inputs                                  |
| Measurement range                                |
| Maximum input voltage in relation to GND         |
| Input resistance (load)                          |
| Max. input current (differential)                |
| Short-circuit-proof                              |
| Resolution / Accuracy                            |
| Analogue outputs                                 |
| Measurement range                                |
| Output interval                                  |
| Short-circuit-proof                              |
| Resolution / Accuracy                            |
| Fieldbus                                         |
| Bus system                                       |
| Addressing                                       |
| System integration                               |
| General data                                     |
| L x W x H                                        |
| Earth                                            |
| Protection class                                 |
| operating temperature                            |
| Storage temperature                              |
| Housing main material / Flammability class UL 94 |
| Certificate                                      |

|                                                      |
|------------------------------------------------------|
| 1 x M8 plug 4-pole, A-coded                          |
| 1 x M8 female 4-pole, A-coded                        |
| 4 x M12 female, 5-pole A-coded                       |
| 24 V (18 V DC ... 30 V DC)                           |
| -10 V ... +10 V, 0 V ... 10V, 0 ... 20 mA, 4...20 mA |
| 5 ms to 250 ms (can be configured)                   |
| Yes                                                  |
| 12-bit / < 0.2 %                                     |
| Subbus                                               |
| automatic                                            |
| automatic                                            |
| 155 mm / 30 mm / 32 mm                               |
| < 200 g                                              |
| IP 67                                                |
| 0 °C...+60 °C                                        |
| -25 °C...+85 °C                                      |
| Pocan, PBT / 5VA                                     |
| CE, cULus                                            |

|                                                        |
|--------------------------------------------------------|
| 1 x M8 plug 4-pole, A-coded                            |
| 1 x M8 female 4-pole, A-coded                          |
| 4 x M12 female, 5-pole A-coded                         |
| 24 V (18 V DC ... 30 V DC)                             |
| -10 V ... +10 V, 0 V ... 10V, 0 ... 20 mA, 4...20 mA   |
| 35                                                     |
| <125 Ohm                                               |
| -50 mA to +50 mA (protected against polarity reversal) |
| Yes                                                    |
| 12-bit / < 0.2 %                                       |
| Subbus                                                 |
| automatic                                              |
| automatic                                              |
| 155 mm / 30 mm / 32 mm                                 |
| < 200 g                                                |
| IP 67                                                  |
| 0 °C...+60 °C                                          |
| -25 °C...+85 °C                                        |
| Pocan, PBT / 5VA                                       |
| CE, cULus                                              |

| Note |
|------|
|      |

| Note |
|------|
|      |

| Note |
|------|
|      |

## SAI Active Universal Pro

### Subbus modules with functional inputs

### SAI-AU Counter



#### Ordering data

| Module variants                   |
|-----------------------------------|
| 2 counter inputs / 2 gate outputs |
| Note                              |

| Type                   | Qty. | Order No.  |
|------------------------|------|------------|
| SAI-AU M12 SB 2Counter | 1    | 1938730000 |

#### Technical data

| Connections                                      |
|--------------------------------------------------|
| Supply voltage (AUX-IN)                          |
| Connection to Subbus (SUB-IN)                    |
| Connection to Subbus (SUB-OUT)                   |
| I/O connections                                  |
| Voltage supply                                   |
| Operating voltage                                |
| Contact load                                     |
| Max. total current module                        |
| Functional inputs                                |
| Counting breadth                                 |
| Switching frequency                              |
| No. Inputs                                       |
| Fieldbus                                         |
| Bus system                                       |
| Addressing                                       |
| System integration                               |
| General data                                     |
| L x W x H                                        |
| Earth                                            |
| Protection class                                 |
| operating temperature                            |
| Storage temperature                              |
| Housing main material / Flammability class UL 94 |
| Certificate                                      |

|                                                 |
|-------------------------------------------------|
| 1x M12 plug 5-pole, A-coded                     |
| 1x M8 plug 4-pole, A-coded                      |
| 1x M8 female 4-pole, A-coded                    |
| 4 x M12 female, 5-pole A-coded                  |
| 24 V (18 V DC ... 30 V DC)                      |
| Per PIN max. 4 A                                |
| 8 A                                             |
| 32 Bit                                          |
| 100                                             |
| 2 x enables, 2 x counters, 2 x count directions |
| Subbus                                          |
| automatic                                       |
| automatic                                       |
| 180 mm / 30 mm / 32 mm                          |
| < 200 g                                         |
| IP 67                                           |
| 0 °C...+60 °C                                   |
| -25 °C...+85 °C                                 |
| Pocan, PBT / 5VA                                |
| CE, cULus                                       |

| Note |
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Subbus modules with  
functional inputs

## SAI-AU Thermo



## Ordering data

| Module variants |
|-----------------|
| 4 Thermo inputs |
| Note            |

| Type                  | Qty. | Order No.  |
|-----------------------|------|------------|
| SAI-AU M12 SB 4Thermo | 1    | 1938720000 |

## Technical data

| Connections                                      |                                                       |
|--------------------------------------------------|-------------------------------------------------------|
| Connection to Subbus (SUB-IN)                    | 1 x M8 plug 4-pole, A-coded                           |
| Connection to Subbus (SUB-OUT)                   | 1 x M8 female 4-pole, A-coded                         |
| I/O connections                                  | 4 x M12 female, 5-pole A-coded                        |
| Voltage supply                                   |                                                       |
| Operating voltage                                | 24 V (18 V DC ... 30 V DC)                            |
| Functional inputs                                |                                                       |
| Sensor                                           | Type J, K, L, B, E, N, R, S, T, U, mV measurement     |
| Temperature range                                | Typical for sensor, Preset Type K, -100 °C to 1370 °C |
| Resolution                                       | 0.1 °C per digit                                      |
| Conversion time                                  | 250 ms (can be configured to 70 ms)                   |
| Measurement error                                | < ± 0.5% (of measuring range limit)                   |
| Input filter                                     | Configurable                                          |
| cold junction compensation                       | External PT1000 connection on pins 1 and 3 (GND)      |
| Fieldbus                                         |                                                       |
| Bus system                                       | Subbus                                                |
| Addressing                                       | automatic                                             |
| System integration                               | automatic                                             |
| General data                                     |                                                       |
| L x W x H                                        | 155 mm / 30 mm32 mm                                   |
| Earth                                            | < 200 g                                               |
| Protection class                                 | IP 67                                                 |
| operating temperature                            | 0 °C...+60 °C                                         |
| Storage temperature                              | -25 °C...+85 °C                                       |
| Housing main material / Flammability class UL 94 | Pocan, PBT / 5VA                                      |
| Certificate                                      | CE, cULus                                             |

| Note |
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| Note |
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## SAI Active Universal Pro

### Subbus modules with functional inputs

#### SAI-AU PT100



#### Ordering data

|                        |                |
|------------------------|----------------|
| <b>Module variants</b> | 4 PT100 inputs |
| <b>Note</b>            |                |

| Type                 | Qty. | Order No.  |
|----------------------|------|------------|
| SAI-AU M12 SB 4PT100 | 1    | 1938710000 |

#### Technical data

|                          |                                                                                    |
|--------------------------|------------------------------------------------------------------------------------|
| <b>Connections</b>       | Connection to Subbus (SUB-IN)<br>Connection to Subbus (SUB-OUT)<br>I/O connections |
| <b>Voltage supply</b>    | Operating voltage                                                                  |
| <b>Functional inputs</b> | Sensor                                                                             |
|                          | Resolution                                                                         |
|                          | Conversion time                                                                    |
|                          | Measurement error                                                                  |
|                          | Input filter                                                                       |
|                          | Measurement range for PT sensors                                                   |
|                          | Measurement range for Ni sensors                                                   |
|                          | Resistance measurement                                                             |
|                          | Potentiometer                                                                      |
|                          | Measurement current                                                                |
| <b>Fieldbus</b>          | Bus system                                                                         |
|                          | Addressing                                                                         |
|                          | System integration                                                                 |
| <b>General data</b>      | L x W x H                                                                          |
|                          | Earth                                                                              |
|                          | Protection class                                                                   |
|                          | operating temperature                                                              |
|                          | Storage temperature                                                                |
|                          | Housing main material / Flammability class UL 94                                   |
|                          | Certificate                                                                        |

|                                                                                             |
|---------------------------------------------------------------------------------------------|
| 1 x M8 plug 4-pole, A-coded                                                                 |
| 1 x M8 female 4-pole, A-coded                                                               |
| 4 x M12 female, 5-pole A-coded                                                              |
| 24 V (18 V DC ... 30 V DC)                                                                  |
| N100, N1000, N120, PT100, PT1000, PT200, PT300, PT500, *UNDEFINED TEXT*, Widerstandsmessung |
| 0.1 °C per digit                                                                            |
| 250 ms (can be configured to 65 ms)                                                         |
| < ± 1 °C                                                                                    |
| Configurable                                                                                |
| -200 °C ... + 850 °C                                                                        |
| -60 °C ... +250 °C                                                                          |
| max. 4000 Ohm                                                                               |
| 100 bis 4000 Ω (Three-conductor)                                                            |
| Typically 0.5 mA                                                                            |
| Subbus                                                                                      |
| automatic                                                                                   |
| automatic                                                                                   |
| 155 mm / 30 mm / 32 mm                                                                      |
| < 200 g                                                                                     |
| IP 67                                                                                       |
| 0 °C...+60 °C                                                                               |
| -25 °C...+85 °C                                                                             |
| Pocan, PBT / 5VA                                                                            |
| CE, cULus                                                                                   |

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| <b>Note</b> |
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# SAI Active Universal Wireless

## Wireless versions of the Remote I/O System with IP67 protection

Weidmüller offers a remote wireless solution – the SAI Active Universal Wireless series – for providing radio based communication to movable facility units. The remote modules form a safe, wireless I/O communications network and thus completely replace drag lines containing bus cables or interference-prone slip-ring assemblies. Maintenance and servicing is reduced because no communication cables are needed. Potential sources of error, such as broken shielding in the communication cables, are eliminated all together. Thus the user benefits from a long-term cost savings. He requires neither new cables nor installation material for the new communication system. For the engineering system, the change to a wireless system is transparent; it behaves in an identical manner as the cable bound SAI Active Universal Pro System. No complex programming using proprietary software is required. Safe and reliable operations are ensured by the comprehensive diagnostics options on the module and through the higher-level controller.

All wireless modules feature integrated radio-wave antennae and IP67 protection. They may be used directly in surroundings containing hazardous substances or humidity. The wireless modules bring together the required inputs and outputs in a very compact size. This ensures that the robot arms are not weighted down with bulky modules, additional components or external antennae. The wireless fieldbus module is a master module responsible for establishing communication with the higher-level controller unit and with the wireless I/O (slave) modules. Various slave modules with digital and analogue inputs and outputs are available and enable exact adjustments to the requirements of a given application. The wireless connection between the modules is established automatically and remains invisible to other wireless devices. This ensures that there will be no interference on the connection. The output power and, thus, the range, can be set individually on the module.





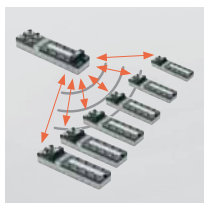
#### Can be used instead of bus cables in drag line or slip chains

In non stationary applications, a wireless connection can be used instead of the error prone drag-line based bus cable or slip chain transmission. This helps to minimise facility downtimes and reduce costs for maintenance, installation and materials. The SAI wireless system has a similar handling method compared to cable bound systems so installation is simple and safe.

Bluetooth  
WLAN  
ZigBee

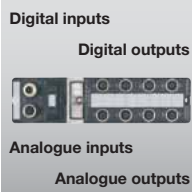
#### Coexistence with other wireless systems

The wireless modules transmit in the license free ISM frequency band. This allows them to be used throughout the world. Integrated wireless mechanisms ensure that the modules can be operated at the same time as other wireless systems from other vendors. This ensures communication with no interference and also allows the system to coexist alongside other wireless systems (such as WLAN, ZigBee or Bluetooth).



#### A maximum of 186 modules can be used simultaneously.

The SAI Active Universal Wireless System allows 31 wireless fieldbus modules to be operated simultaneously with six remote I/O modules each. This makes it possible to design an automation solution that can process up to 3348 digital signals. Standardised device description files are provided so that the modules can be integrated into other systems not manufactured by Weidmüller. No special proprietary software is required.



#### A wide variety of variants

The SAI Active Universal Wireless product line includes the wireless fieldbus module with its 12 integrated digital input channels. This product line also features additional wireless I/O modules with up to 16 digital inputs than can be optionally configured by the user as outputs. A mixed module with both digital and analogue inputs and outputs is also available. The outputs can be supplied with power separate from the input channels.

SAI-Active Universal Wireless

Wireless gateway with digital inputs



Wireless-Gateway



Ordering data

| Module variants |
|-----------------|
| 12 Digital In   |
| Note            |

| Type                    | Qty. | Order No.  |
|-------------------------|------|------------|
| SAI-AU M12 GW PB/BT 12I | 1    | 1006980000 |

Technical data

| Connections                                      |
|--------------------------------------------------|
| Fieldbus (BUS-IN)                                |
| Fieldbus (BUS-OUT)                               |
| Supply voltage (AUX-IN)                          |
| Supply voltage (AUX-OUT)                         |
| I/O connections                                  |
| Voltage supply                                   |
| Operating voltage                                |
| Contact load                                     |
| Digital inputs                                   |
| Permitted input voltage                          |
| Input voltage, low                               |
| Input voltage, high                              |
| Input current, low                               |
| Input current, high                              |
| Input filter                                     |
| Fieldbus                                         |
| Bus system                                       |
| System integration                               |
| Range of coverage                                |
| Addressing                                       |
| Communication coexistence                        |
| Properties of radio system                       |
| Frequency band / Channel usage                   |
| Transmit power                                   |
| General data                                     |
| L x W x H                                        |
| Earth                                            |
| Protection class                                 |
| operating temperature                            |
| Storage temperature                              |
| Housing main material / Flammability class UL 94 |
| Certificate                                      |

|                                                              |
|--------------------------------------------------------------|
| 1x M12 plug 5-pole, B-coded                                  |
| 1x M12 female 5-pole, B-coded                                |
| 1x M12 plug 5-pole, A-coded                                  |
| 1x M12 female 5-pole, A-coded                                |
| 6x M12 female 5-pole                                         |
| 24 V DC (18 V DC ... 30 V DC)                                |
| Per PIN max. 4 A                                             |
| -30 V to +30 V (protected against polarity reversal)         |
| <5 V in accordance with EN 61131-2 Typ 1                     |
| >15 V in accordance with EN 61131-2 Typ 1                    |
| < 15 mA in accordance with EN 61131-2 Type 1                 |
| 2 mA to 15 mA in accordance with EN 61131-2 Type 1           |
| 1 ms, 3 ms, 5 ms, 10 ms, Configurable                        |
| Profibus-DP                                                  |
| GSD file / WIAU0A75.GSD                                      |
| In accordance with the PROFIBUS specification                |
| Via rotary coding switch (1 – 126)                           |
| Max. 31 wireless gateways                                    |
| 2,401 GHz – 2,480 GHz / 1 to 79 channels (can be configured) |
| 0 dBm to 20 dBm / max 100 mW (can be configured)             |
| 210 mm / 54 mm / 52 mm                                       |
| < 400 g                                                      |
| IP 67                                                        |
| 0 °C...+60 °C                                                |
| -25 °C...+85 °C                                              |
| PBT, Pocan / V-0                                             |
| CE, cULus (planned for 4Q/2010)                              |

| Note |
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| Note |
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# Engineering tables for PROFIBUS



When planning the automation of a facility, you must have a wide variety of components available. These engineering tables list all the components required for wiring up the SAI Active modules.

## PROFIBUS modules



## PROFIBUS accessories



## Sensor/actuator accessories



## Markers



## Protective caps



## Ordering data

| Description                                                                      | Type                    | Qty. | Order No.  |
|----------------------------------------------------------------------------------|-------------------------|------|------------|
| <b>PROFIBUS modules</b>                                                          |                         |      |            |
| Gateway module with 12 Digital In                                                | SAI-AU M12 GW PB/BT 12I | 1    | 1006980000 |
| Subbus module with 16 Digital In                                                 | SAI-AU M12 BT 16DI      | 1    | 1006940000 |
| Subbus module with 16 Digital In / 8 Digital Out                                 | SAI-AU M12 BT 16DI/8DO  | 1    | 1006930000 |
| Subbus module with 4 Analogue In / 2 Analogue Out / 2 Digital In / 2 Digital Out | SAI-AU M12 BT4AI2AO2DIO | 1    | 1006920000 |
| <b>PROFIBUS accessories</b>                                                      |                         |      |            |
| PROFIBUS cables with female plug and male plug                                   |                         |      | Chapter C  |
| PROFIBUS cables with female plug and other side open                             |                         |      | Chapter C  |
| PROFIBUS cables with male plug and other side open                               |                         |      | Chapter C  |
| PROFIBUS plug-in connector                                                       |                         |      | Chapter C  |
| PROFIBUS terminating resistor                                                    | SAIEND PB M12 5P B-COD  | 1    | 1784770000 |
| <b>Sensor/actuator accessories</b>                                               |                         |      |            |
| Sensor-actuator cables                                                           |                         |      | Chapter B  |
| Sensor-actuator plugs                                                            |                         |      | Chapter D  |
| <b>Markers</b>                                                                   |                         |      |            |
| Semi-transparent markers for PrintJet printing                                   | ESG 8/13.5/43.3 SAI AU  | 5    | 1912130000 |
| <b>Protective caps</b>                                                           |                         |      |            |
| M12 Dust cap (Sensor connections)                                                | SAI-SK                  | 30   | 9456050000 |
| M12 Dust cap (Bus-in and power-in)                                               | SAI-SK-M12-UNI          | 20   | 2330260000 |
| M12 Dust cap (Bus-in and power-in)                                               | SAI-SK plug M12         | 50   | 1781520000 |

SAI-Active Universal Wireless

Wireless slave modules for digital signal processing



Wireless-Slave



Wireless-Slave



Ordering data

| Module variants                                                               |
|-------------------------------------------------------------------------------|
| 16 Digital In; 16 Digital In / 8 Digital Out<br>16 Digital In / 8 Digital Out |
| <b>Note</b>                                                                   |

| Type               | Qty. | Order No.  |
|--------------------|------|------------|
| SAI-AU M12 BT 16DI | 1    | 1006940000 |

| Type                   | Qty. | Order No.  |
|------------------------|------|------------|
| SAI-AU M12 BT 16DI/8DO |      | 1006930000 |

Technical data

| Connections                                      |
|--------------------------------------------------|
| Supply voltage (AUX-IN)                          |
| Supply voltage (AUX-OUT)                         |
| I/O connections                                  |
| Voltage supply                                   |
| Operating voltage                                |
| Contact load                                     |
| Digital inputs                                   |
| Permitted input voltage                          |
| Input voltage, low                               |
| Input voltage, high                              |
| Input current, low                               |
| Input current, high                              |
| Input filter                                     |
| Fieldbus                                         |
| Bus system                                       |
| System integration                               |
| Range of coverage                                |
| Addressing                                       |
| Communication coexistence                        |
| Properties of radio system                       |
| Frequency band / Channel usage                   |
| Transmit power                                   |
| General data                                     |
| L x W x H                                        |
| Earth                                            |
| Protection class                                 |
| operating temperature                            |
| Storage temperature                              |
| Housing main material / Flammability class UL 94 |
| Certificate                                      |

|                                                                 |
|-----------------------------------------------------------------|
| 1x M12 plug 5-pole, A-coded                                     |
| 1x M12 female 5-pole, A-coded                                   |
| 8 x M12 female 5-pole, A-coded                                  |
| 24 V DC (18 V DC ... 30 V DC)                                   |
| Per PIN max. 4 A                                                |
| -30 V to +30 V (protected against polarity reversal)            |
| <5 V in accordance with EN 61131-2 Typ 1                        |
| >15 V in accordance with EN 61131-2 Typ 1                       |
| < 15 mA in accordance with EN 61131-2 Type 1                    |
| 2 mA to 15 mA in accordance with EN 61131-2 Type 1              |
| 1 ms, 3 ms, 5 ms, 10 ms, Configurable                           |
| Radio in ISM band                                               |
| automatic                                                       |
| Max. 100 m (open air), Max. 50 m (industrial surroundings)      |
| Via rotary coding switch                                        |
| Max. 186 (for 31 wireless gateways each with 6 wireless slaves) |
| 2.401 GHz – 2.480 GHz / 1 to 79 channels (can be configured)    |
| 0 dBm to 20 dBm / max 100 mW (can be configured)                |
| 210 mm / 54 mm / 52 mm                                          |
| < 400 g                                                         |
| IP 67                                                           |
| 0 °C...+60 °C                                                   |
| -25 °C...+85 °C                                                 |
| PBT, Pocan / V-0                                                |
| CE, cULus (planned for 4Q/2010)                                 |

|                                                                 |
|-----------------------------------------------------------------|
| 2x M12 plug 5-pole, A-coded                                     |
| 8 x M12 female 5-pole, A-coded                                  |
| 24 V DC (18 V DC ... 30 V DC)                                   |
| Per PIN max. 4 A                                                |
| -30 V to +30 V (protected against polarity reversal)            |
| <5 V in accordance with EN 61131-2 Typ 1                        |
| >15 V in accordance with EN 61131-2 Typ 1                       |
| < 15 mA in accordance with EN 61131-2 Type 1                    |
| 2 mA to 15 mA in accordance with EN 61131-2 Type 1              |
| 1 ms, 3 ms, 5 ms, 10 ms, Configurable                           |
| Radio in ISM band                                               |
| automatic                                                       |
| Max. 100 m (open air), Max. 50 m (industrial surroundings)      |
| Via rotary coding switch                                        |
| Max. 186 (for 31 wireless gateways each with 6 wireless slaves) |
| 2.401 GHz – 2.480 GHz / 1 to 79 channels (can be configured)    |
| 0 dBm to 20 dBm / max 100 mW (can be configured)                |
| 210 mm / 54 mm / 52 mm                                          |
| < 400 g                                                         |
| IP 67                                                           |
| 0 °C...+60 °C                                                   |
| -25 °C...+85 °C                                                 |
| PBT, Pocan / V-0                                                |
| CE, Gost R ME25, cULus (planned for 4Q/2010)                    |

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| <b>Note</b> |
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## Wireless slave module for digital and analogue signal processing



### Wireless-Slave



#### Ordering data

| Module variants                                               |
|---------------------------------------------------------------|
| 4 Analogue In / 2 Analogue Out / 2 Digital In / 2 Digital Out |
| Note                                                          |

| Type                    | Qty. | Order No.  |
|-------------------------|------|------------|
| SAI-AU M12 BT4AI2AO2DIO |      | 1006920000 |

#### Technical data

| Connections                                               |                                                                 |
|-----------------------------------------------------------|-----------------------------------------------------------------|
| Supply voltage (AUX-IN)                                   | 1x M12 plug 5-pole, A-coded                                     |
| Supply voltage (AUX-OUT)                                  | 1x M12 female 5-pole, A-coded                                   |
| I/O connections                                           | 8 x M12 female 5-pole, A-coded                                  |
| Voltage supply                                            |                                                                 |
| Operating voltage                                         | 24 V DC (18 V DC ... 30 V DC)                                   |
| Contact load                                              | Per PIN max. 4 A                                                |
| Max. total current module                                 | 8 A                                                             |
| Digital inputs                                            |                                                                 |
| Permitted input voltage                                   | -30 V to +30 V (protected against polarity reversal)            |
| Input voltage, low                                        | <5 V in accordance with EN 61131-2 Typ 1                        |
| Input voltage, high                                       | >15 V in accordance with EN 61131-2 Typ 1                       |
| Input current, low                                        | < 15 mA in accordance with EN 61131-2 Type 1                    |
| Input current, high                                       | 2 mA to 15 mA in accordance with EN 61131-2 Type 1              |
| Input filter                                              | 1 ms, 3 ms, 5 ms, 10 ms, Configurable                           |
| Digital outputs                                           |                                                                 |
| max. current-carrying capacity per output signal          | 0.5 A                                                           |
| Switching frequency load (resistive / inductive / inrush) | max. 100 Hz / max. 1 Hz / max. 8 Hz                             |
| Short-circuit-proof                                       | Yes, cut-off for short circuit and error message                |
| Output voltage, low / Output voltage, high                | 0 V DC / Supply voltage less 0.7 V DC                           |
| Max. total current outputs                                | 1 A                                                             |
| Analogue inputs                                           |                                                                 |
| Measurement range                                         | -10 V ... +10 V, 0 V ... 10V, 0 ... 20 mA, 4...20 mA            |
| Maximum input voltage in relation to GND                  | 35 V                                                            |
| Input resistance (load)                                   | <125 Ohm                                                        |
| Max. input current (differential)                         | -50 mA to +50 mA (protected against polarity reversal)          |
| Short-circuit-proof                                       | Yes                                                             |
| Resolution / Accuracy                                     | 12-bit / < 0.2 %                                                |
| Analogue outputs                                          |                                                                 |
| Measurement range                                         | -10 V ... +10 V, 0 V ... 10V, 0 ... 20 mA, 4...20 mA            |
| Output interval                                           | 20 ms to 250 ms (can be configured)                             |
| Short-circuit-proof                                       | Yes                                                             |
| Resolution / Accuracy                                     | 12-bit / < 0.2 %                                                |
| Fieldbus                                                  |                                                                 |
| Bus system                                                | Radio in ISM band                                               |
| System integration                                        | automatic                                                       |
| Range of coverage                                         | Max. 100 m (open air), Max. 50 m (industrial surroundings)      |
| Addressing                                                | Via rotary coding switch                                        |
| Communication coexistence                                 | Max. 186 (for 31 wireless gateways each with 6 wireless slaves) |
| Properties of radio system                                |                                                                 |
| Frequency band / Channel usage                            | 2.401 GHz – 2.480 GHz / 1 to 79 channels (can be configured)    |
| Transmit power                                            | 0 dBm to 20 dBm / max 100 mW (can be configured)                |
| General data                                              |                                                                 |
| L x W x H                                                 | 210 mm / 54 mm / 52 mm                                          |
| Earth                                                     | < 400 g                                                         |
| Protection class                                          | IP 67                                                           |
| operating temperature                                     | 0 °C...+60 °C                                                   |
| Storage temperature                                       | -25 °C...+85 °C                                                 |
| Housing main material / Flammability class UL 94          | Pocan, PBT / V-0                                                |
| Certificate                                               | CE, Gost R ME25, cULus (planned for 4Q/2010)                    |

| Note |
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| Note |
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# JACKPAC® (IP67)

|                        |                                                           |     |
|------------------------|-----------------------------------------------------------|-----|
| <b>JACKPAC® (IP67)</b> | JACKPAC® – overview                                       | F.2 |
|                        | JACKPAC® relay module                                     | F.3 |
|                        | JACKPAC® timer                                            | F.4 |
|                        | JACKPAC® signal inverter                                  | F.5 |
|                        | JACKPAC® test                                             | F.6 |
|                        | JACKPAC® – General Data and Accessories                   | F.7 |
|                        | Empty housing SAI JACKPAC® for custom built in components | F.8 |

# The Concept

## The IP20 Solution

Until now, all signal conditioning tasks were carried out by modules designed to IP20. For their own protection, these need to be installed in central switchgear cabinets.

However, decentralised solutions that do not require large switchgear cabinets are increasingly being sought for use in modern industrial automation technology.

It is true that shielded signals can be fed to the machinery via powerful fieldbus systems; but in each case, however, there remains an interconnecting cable between the subdistribution boards and the sensors/actuators that is susceptible to interference from surrounding operations.

**F** As has always been the case, signals are still influenced by over-voltages and earth loops; interference pulses are superimposed on sensor signals and malfunctions can be initiated.

The result is that signal conditioning modules sealed to IP20 require terminal boxes, such as switchgear cabinets, or even cost intensive special solutions (for example, sensor-actuator distributors with integrated signal conditioning functions providing as many functionalities as possible, even when these are surplus to requirements).

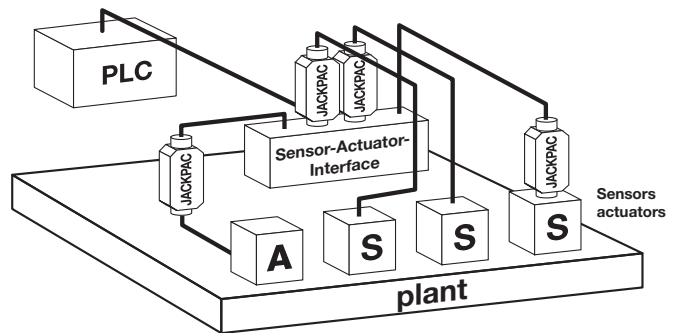
## The JACKPAC® Solution

By introducing **JACKPAC®**, the new M12 Signal Box with the high IP67 ingress protection. Weidmüller can now provide a modular and versatile concept that makes it possible to condition signals in an industrial environment. Requiring no additional enclosure, these modules can be installed directly on the machine, in the production plant, conveyor system or within a process.

The M12 connector, which is standardised all over the world, makes it possible to integrate the **JACKPAC®** at any point in the sensor-actuator cabling. The fixed pin assignment means it is easy to install and is protected against polarity reversal.

This versatility really comes into its own when an installation needs to be altered or modernised, simply because no additional enclosures or cabling are required.

By providing this high degree of protection and versatility, **JACKPAC®** renders possible innovative automation concepts based on decentralised applications (without large control cabinets or small distribution boards) for consistent, transparent, efficient and cost-efficient installations.

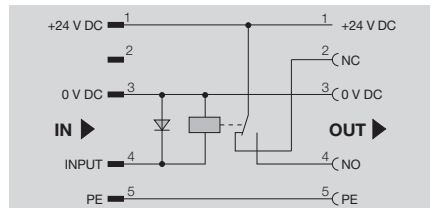


- Easy 'Plug and Play' installation
- Universal and versatile usage
- No additional enclosure required
- Saves time and costs
- Ideal for decentralised concepts and plant modernisation (retrofitting)

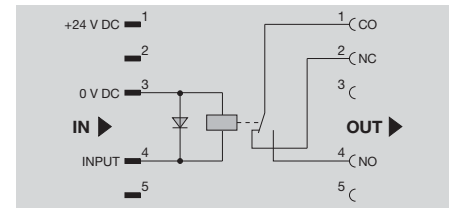
**Switching amplifier**

- The switching amplifiers are simply built into the actuator system controls.
- For example, switching outputs can be amplified from 24 V DC / 0.5 A to 24 V DC / 2 A.
- Optionally with galvanic isolation for insulating between the input and output circuits, which prevents conducted interference on the switching output.
- Switched voltage feed at output via T-distributor.

**JPR 24 V DC 1CO M12**



**JPR 24 V DC ISO 1CO M12**



**Technical data**

| Input                                           |                                                   |
|-------------------------------------------------|---------------------------------------------------|
| Rated control voltage                           | 24 V DC ±20 %                                     |
| Rated current DC                                | 8 mA                                              |
| Power rating                                    | 200 mW                                            |
| DC Response/dropout Volt                        | 16.8 V / 1.2 V                                    |
| DC pickup/dropout current                       | 5 mA / 1 mA                                       |
| Free-wheel diode                                | Yes                                               |
| Output                                          |                                                   |
| max. switching capacity                         | 24 V / 2 A                                        |
| min. switching capacity                         | 12 V / 10 mA                                      |
| Contact material                                | AgSnO                                             |
| Mechanical service life                         | 10 <sup>7</sup> ·10 <sup>6</sup> switching cycles |
| Max. switching frequency at rated load          | 0.1 Hz                                            |
| Sparkover time / Drop-out time                  | ca. 5 ms                                          |
| Insulation coordination (EN 50 178)             |                                                   |
| Rated voltage                                   | 300                                               |
| Overvoltage category                            | III                                               |
| Pollution severity                              | 2                                                 |
| Protective separation acc. to VDE 0106 part 101 | No                                                |
| General data                                    |                                                   |
| operating temperature                           | -25 °C...+70 °C                                   |
| Storage temperature                             | -25 °C...+70 °C                                   |
| Conductor connection system                     | M12 plug / socket, A-coded                        |
| Approvals                                       | cULus; CE                                         |

| Input                                           |                                                   |
|-------------------------------------------------|---------------------------------------------------|
| Rated control voltage                           | 24 V DC ±20 %                                     |
| Rated current DC                                | 8 mA                                              |
| Power rating                                    | 200 mW                                            |
| DC Response/dropout Volt                        | 16.8 V / 1.2 V                                    |
| DC pickup/dropout current                       | 5 mA / 1 mA                                       |
| Free-wheel diode                                | Yes                                               |
| Output                                          |                                                   |
| max. switching capacity                         | 24 V / 2 A                                        |
| min. switching capacity                         | 12 V / 10 mA                                      |
| Contact material                                | AgSnO                                             |
| Mechanical service life                         | 10 <sup>7</sup> ·10 <sup>6</sup> switching cycles |
| Max. switching frequency at rated load          | 0.1 Hz                                            |
| Sparkover time / Drop-out time                  | ca. 5 ms                                          |
| Insulation coordination (EN 50 178)             |                                                   |
| Rated voltage                                   | 300                                               |
| Overvoltage category                            | III                                               |
| Pollution severity                              | 2                                                 |
| Protective separation acc. to VDE 0106 part 101 | No                                                |
| General data                                    |                                                   |
| operating temperature                           | -25 °C...+70 °C                                   |
| Storage temperature                             | -25 °C...+70 °C                                   |
| Conductor connection system                     | M12 plug / socket, A-coded                        |
| Approvals                                       | cULus; CE                                         |

| Input                                           |                                                   |
|-------------------------------------------------|---------------------------------------------------|
| Rated control voltage                           | 24 V DC ±20 %                                     |
| Rated current DC                                | 8 mA                                              |
| Power rating                                    | 200 mW                                            |
| DC Response/dropout Volt                        | 16.8 V / 1.2 V                                    |
| DC pickup/dropout current                       | 5 mA / 1 mA                                       |
| Free-wheel diode                                | Yes                                               |
| Output                                          |                                                   |
| max. switching capacity                         | 24 V / 2 A                                        |
| min. switching capacity                         | 12 V / 10 mA                                      |
| Contact material                                | AgSnO                                             |
| Mechanical service life                         | 10 <sup>7</sup> ·10 <sup>6</sup> switching cycles |
| Max. switching frequency at rated load          | 0.1 Hz                                            |
| Sparkover time / Drop-out time                  | ca. 5 ms                                          |
| Insulation coordination (EN 50 178)             |                                                   |
| Rated voltage                                   | 300                                               |
| Overvoltage category                            | III                                               |
| Pollution severity                              | 2                                                 |
| Protective separation acc. to VDE 0106 part 101 | Yes                                               |
| General data                                    |                                                   |
| operating temperature                           | -25 °C...+70 °C                                   |
| Storage temperature                             | -25 °C...+70 °C                                   |
| Conductor connection system                     | M12 plug / socket, A-coded                        |
| Approvals                                       | cULus; CE                                         |

| Dimensions                             |                 |
|----------------------------------------|-----------------|
| Clamping range (nominal / min. / max.) | mm <sup>2</sup> |
| Length x width x height                | mm              |
| 83 / 36 / 14.4                         |                 |
| Note                                   |                 |
| Details for TU = 20°C                  |                 |

| Dimensions                             |                 |
|----------------------------------------|-----------------|
| Clamping range (nominal / min. / max.) | mm <sup>2</sup> |
| Length x width x height                | mm              |
| 83 / 36 / 14.4                         |                 |
| Note                                   |                 |
| Details for TU = 20°C                  |                 |

| Dimensions                             |                 |
|----------------------------------------|-----------------|
| Clamping range (nominal / min. / max.) | mm <sup>2</sup> |
| Length x width x height                | mm              |
| 83 / 36 / 14.4                         |                 |
| Note                                   |                 |
| Details for TU = 20°C                  |                 |

**Ordering data**

| Connection system |  |
|-------------------|--|
|-------------------|--|

| Type              | Qty. | Order No.  |
|-------------------|------|------------|
| JPR 24VDC 1CO M12 | 1    | 8771420000 |

| Type                  | Qty. | Order No.  |
|-----------------------|------|------------|
| JPR 24VDC ISO 1CO M12 | 1    | 8771430000 |

| Note |  |
|------|--|
|------|--|

| Note |  |
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| Note |  |
|------|--|
|------|--|

**Accessories**

|                                         |
|-----------------------------------------|
| Retaining clip<br>JP CLIP M: 8778490000 |
|-----------------------------------------|

|                                         |
|-----------------------------------------|
| Retaining clip<br>JP CLIP M: 8778490000 |
|-----------------------------------------|

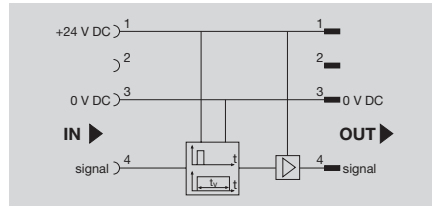
|                                         |
|-----------------------------------------|
| Retaining clip<br>JP CLIP M: 8778490000 |
|-----------------------------------------|

**JACKPAC® timer**

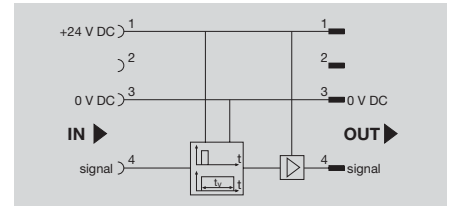
**Timer relay**

Signal extenders can be simply connected on the cable between the sensor and the input modules. They extend the pulse length from 1 ms. to 50 or 100 ms. Short sensor signals can also this enables short sensor signals to also be reliably recognized and evaluated by the controller.

**JPTA 50 MS 24VDC PNP M12**



**JPTA 100 MS 24VDC PNP M12**



**Technical data**

|                                            |                            |
|--------------------------------------------|----------------------------|
| <b>Input</b>                               |                            |
| Rated control voltage                      | 18...24...30 V DC          |
| Rated current DC                           | 3,5...7,0...10,0 mA        |
| Switch-off delay                           | 50 ms                      |
| <b>Output</b>                              |                            |
| Switching voltage DC, max.                 | 30 V                       |
| Max. switching current                     | 400 mA                     |
| <b>Insulation coordination (EN 50 178)</b> |                            |
| Rated voltage                              | 32 V                       |
| Impulse withstand voltage                  | 330 V                      |
| Overtoltage category                       | 1                          |
| Pollution severity                         | 2                          |
| <b>General data</b>                        |                            |
| operating temperature                      | 0 °C...+60 °C              |
| Storage temperature                        | -20 °C...+85 °C            |
| Conductor connection system                | M12 plug / socket, A-coded |
| Approvals                                  | cULus; CE                  |

|                                            |                            |
|--------------------------------------------|----------------------------|
| <b>Input</b>                               |                            |
| Rated control voltage                      | 18...24...30 V DC          |
| Rated current DC                           | 3,5...7,0...10,0 mA        |
| Switch-off delay                           | 100 ms                     |
| <b>Output</b>                              |                            |
| Switching voltage DC, max.                 | 30 V                       |
| Max. switching current                     | 400 mA                     |
| <b>Insulation coordination (EN 50 178)</b> |                            |
| Rated voltage                              | 32 V                       |
| Impulse withstand voltage                  | 330 V                      |
| Overtoltage category                       | 1                          |
| Pollution severity                         | 2                          |
| <b>General data</b>                        |                            |
| operating temperature                      | 0 °C...+60 °C              |
| Storage temperature                        | -20 °C...+85 °C            |
| Conductor connection system                | M12 plug / socket, A-coded |
| Approvals                                  | cULus; CE                  |

|                                            |                            |
|--------------------------------------------|----------------------------|
| <b>Input</b>                               |                            |
| Rated control voltage                      | 18...24...30 V DC          |
| Rated current DC                           | 3,5...7,0...10,0 mA        |
| Switch-off delay                           | 100 ms                     |
| <b>Output</b>                              |                            |
| Switching voltage DC, max.                 | 30 V                       |
| Max. switching current                     | 400 mA                     |
| <b>Insulation coordination (EN 50 178)</b> |                            |
| Rated voltage                              | 32 V                       |
| Impulse withstand voltage                  | 330 V                      |
| Overtoltage category                       | 1                          |
| Pollution severity                         | 2                          |
| <b>General data</b>                        |                            |
| operating temperature                      | 0 °C...+60 °C              |
| Storage temperature                        | -20 °C...+85 °C            |
| Conductor connection system                | M12 plug / socket, A-coded |
| Approvals                                  | cULus; CE                  |

|                                        |                 |
|----------------------------------------|-----------------|
| <b>Dimensions</b>                      |                 |
| Clamping range (nominal / min. / max.) | mm <sup>2</sup> |
| Length x width x height                | mm              |
| <b>Note</b>                            |                 |

|                                        |                 |
|----------------------------------------|-----------------|
| <b>Dimensions</b>                      |                 |
| Clamping range (nominal / min. / max.) | mm <sup>2</sup> |
| Length x width x height                | mm              |
| <b>Note</b>                            |                 |

|                                        |                 |
|----------------------------------------|-----------------|
| <b>Dimensions</b>                      |                 |
| Clamping range (nominal / min. / max.) | mm <sup>2</sup> |
| Length x width x height                | mm              |
| <b>Note</b>                            |                 |

**Ordering data**

|                          |  |
|--------------------------|--|
| <b>Connection system</b> |  |
|--------------------------|--|

| Type                    | Qty. | Order No.  |
|-------------------------|------|------------|
| JPTA 50MS 24VDC PNP M12 | 1    | 8771440000 |

| Type                    | Qty. | Order No.  |
|-------------------------|------|------------|
| JPTA100MS 24VDC PNP M12 | 1    | 8836630000 |

|             |  |
|-------------|--|
| <b>Note</b> |  |
|-------------|--|

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| <b>Note</b> |  |
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| <b>Note</b> |  |
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**Accessories**

|  |  |
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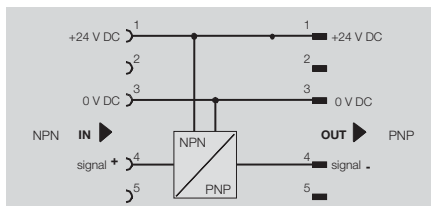
|                                         |  |
|-----------------------------------------|--|
| Retaining clip<br>JP CLIP M: 8778490000 |  |
|-----------------------------------------|--|

|                                         |  |
|-----------------------------------------|--|
| Retaining clip<br>JP CLIP M: 8778490000 |  |
|-----------------------------------------|--|

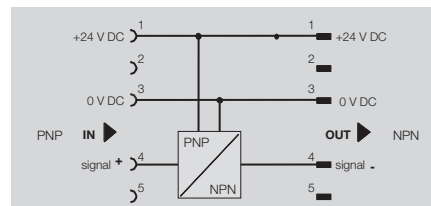
**Signal inverter**

Signal inverters convert PNP sensor signals to NPN signals and NPN signals back to PNP. Thus, existing circuits require no complex adaptation and the existing inputs on the I/O cards can be put to best use. This is particularly well suited for the Asian and North American markets.

**JPP NPN PNP 24 V DC**



**JPP PNP NPN 24 V DC**



**Technical data**

|                                            |                                 |
|--------------------------------------------|---------------------------------|
| <b>Input</b>                               |                                 |
| Sensor                                     | 2-/ 3-Conductor Sensor NPN-type |
| Rated control voltage                      | 18...24...30 V DC               |
| Input current for sensor                   | < 200 mA                        |
| Type of contact                            | NO contact                      |
| <b>Output</b>                              |                                 |
| Solid-state type                           | Solid state relay               |
| Rated switching voltage                    | 18...30 V DC                    |
| Rated switching current                    | 400 mA                          |
| Voltage drop at max. load                  | ≤ 1 V                           |
| <b>Insulation coordination (EN 50 178)</b> |                                 |
| Rated voltage                              | 32 V                            |
| Impulse withstand voltage                  | 330 V                           |
| Overvoltage category                       | I                               |
| Pollution severity                         | 2                               |
| <b>General data</b>                        |                                 |
| operating temperature                      | 0 °C...+60 °C                   |
| Storage temperature                        | -20 °C...+85 °C                 |
| Conductor connection system                | M12 plug / socket, A-coded      |
| Approvals                                  | cULus; CE                       |

|                                            |                                 |
|--------------------------------------------|---------------------------------|
| <b>Input</b>                               |                                 |
| Sensor                                     | 2-/ 3-Conductor Sensor PNP-Type |
| Rated control voltage                      | 18...24...30 V DC               |
| Input current for sensor                   | < 200 mA                        |
| Type of contact                            | NO contact                      |
| <b>Output</b>                              |                                 |
| Solid-state type                           | Solid state relay               |
| Rated switching voltage                    | 18...30 V DC                    |
| Rated switching current                    | 400 mA                          |
| Voltage drop at max. load                  | ≤ 1 V                           |
| <b>Insulation coordination (EN 50 178)</b> |                                 |
| Rated voltage                              | 32 V                            |
| Impulse withstand voltage                  | 330 V                           |
| Overvoltage category                       | I                               |
| Pollution severity                         | 2                               |
| <b>General data</b>                        |                                 |
| operating temperature                      | 0 °C...+60 °C                   |
| Storage temperature                        | -20 °C...+85 °C                 |
| Conductor connection system                | M12 plug / socket, A-coded      |
| Approvals                                  | cULus; CE                       |

|                                            |                                 |
|--------------------------------------------|---------------------------------|
| <b>Input</b>                               |                                 |
| Sensor                                     | 2-/ 3-Conductor Sensor PNP-Type |
| Rated control voltage                      | 18...24...30 V DC               |
| Input current for sensor                   | < 200 mA                        |
| Type of contact                            | NO contact                      |
| <b>Output</b>                              |                                 |
| Solid-state type                           | Solid state relay               |
| Rated switching voltage                    | 18...30 V DC                    |
| Rated switching current                    | 400 mA                          |
| Voltage drop at max. load                  | ≤ 1 V                           |
| <b>Insulation coordination (EN 50 178)</b> |                                 |
| Rated voltage                              | 32 V                            |
| Impulse withstand voltage                  | 330 V                           |
| Overvoltage category                       | I                               |
| Pollution severity                         | 2                               |
| <b>General data</b>                        |                                 |
| operating temperature                      | 0 °C...+60 °C                   |
| Storage temperature                        | -20 °C...+85 °C                 |
| Conductor connection system                | M12 plug / socket, A-coded      |
| Approvals                                  | cULus; CE                       |

|                                        |                 |
|----------------------------------------|-----------------|
| <b>Dimensions</b>                      |                 |
| Clamping range (nominal / min. / max.) | mm <sup>2</sup> |
| Length x width x height                | mm              |
| <b>Note</b>                            |                 |

|                                        |                 |
|----------------------------------------|-----------------|
| <b>Dimensions</b>                      |                 |
| Clamping range (nominal / min. / max.) | mm <sup>2</sup> |
| Length x width x height                | mm              |
| <b>Note</b>                            |                 |

|                                        |                 |
|----------------------------------------|-----------------|
| <b>Dimensions</b>                      |                 |
| Clamping range (nominal / min. / max.) | mm <sup>2</sup> |
| Length x width x height                | mm              |
| <b>Note</b>                            |                 |

**Ordering data**

|                          |  |
|--------------------------|--|
| <b>Connection system</b> |  |
|--------------------------|--|

| Type              | Qty. | Order No.  |
|-------------------|------|------------|
| JPP NPN PNP 24VDC | 1    | 8852350000 |

| Type              | Qty. | Order No.  |
|-------------------|------|------------|
| JPP PNP NPN 24VDC | 1    | 8857030000 |

|             |  |
|-------------|--|
| <b>Note</b> |  |
|-------------|--|

|             |  |
|-------------|--|
| <b>Note</b> |  |
|-------------|--|

|             |  |
|-------------|--|
| <b>Note</b> |  |
|-------------|--|

**Accessories**

|  |  |
|--|--|
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|--|--|

|                                         |  |
|-----------------------------------------|--|
| Retaining clip<br>JP CLIP M: 8778490000 |  |
|-----------------------------------------|--|

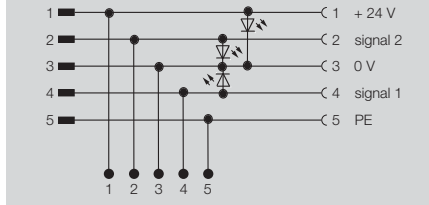
|                                         |  |
|-----------------------------------------|--|
| Retaining clip<br>JP CLIP M: 8778490000 |  |
|-----------------------------------------|--|

**JACKPAC® test**

**Test adapter**

The new JACKPAC® test adapter now provides a simple way of intervening in an M12 network. It can be integrated at any point and enables quick and easy connection of a testing device via the 5 PUSH IN connections. Status indicators show the status of the 2 signal channels as well as the 24 VDC auxiliary voltage.

**JP TEST**



**Technical data**

**Input**

Rated control voltage  
Rated current DC  
Status indicator

18...24...30 V DC  
2.2 mA (LED)  
Green LED

**Output**

Continuous current  
power

2 A

**General data**

operating temperature  
Storage temperature  
Conductor connection system

0 °C...+55 °C  
-25 °C...+70 °C  
M12 plug / socket, A-coded

**Dimensions**

Clamping range (nominal / min. / max.) mm<sup>2</sup>  
Length x width x height mm

83 / 36 / 14.4

**Note**

**Ordering data**

**Connection system**

| Type    | Qty. | Order No.  |
|---------|------|------------|
| JP TEST | 1    | 8794120000 |

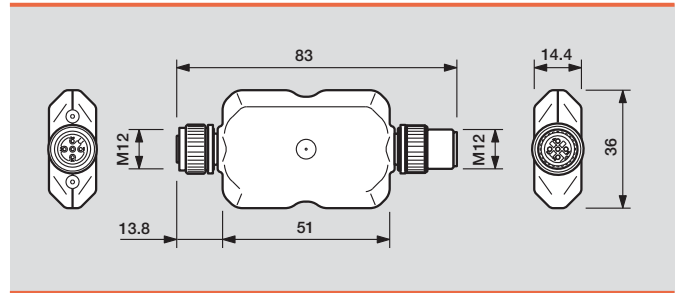
**Note**

**Accessories**

Retaining clip  
JP CLIP M: 8778490000

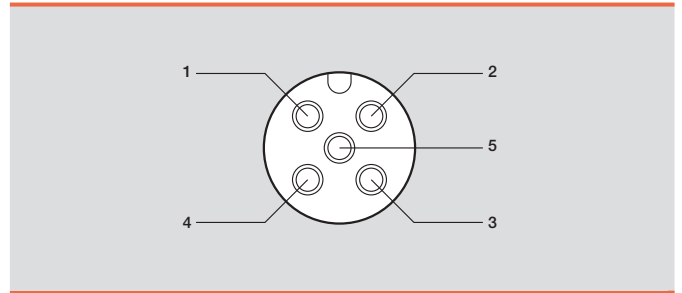
**General data**

|                          |                                   |
|--------------------------|-----------------------------------|
| Ingress protection class | IP67                              |
| Housing material         | PBT, RAL 7032 (grey)              |
| Flammability class       | V0 to UL94                        |
| Screw socket             | M12, CuZn, nickel plated, A-coded |
| Rated torque             | 0.8 ... 1 Nm                      |



**Contact assignment (socket)**

| Pole | Assignment       |
|------|------------------|
| 1    | +24 V DC         |
| 2    | Input / output 2 |
| 3    | 0 V DC           |
| 4    | Input / output 1 |
| 5    | PE / Earth       |



**Accessories**

**Retaining clip**



| Version         | Type      | Qty. | Order No.  |
|-----------------|-----------|------|------------|
| Stainless steel | JP CLIP M | 1    | 8778490000 |

**Twin plug**



| Type   | Qty. | Order No.  |
|--------|------|------------|
| 5-pole | 1    | 1783430000 |

**Screwy M12**



| Type        | Qty. | Order No.  |
|-------------|------|------------|
| With torque | 1    | 1900001000 |

**Sensor cables**



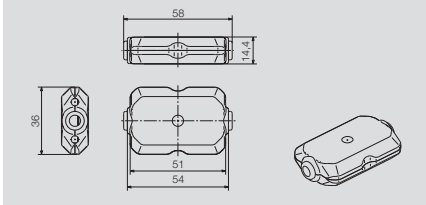
| Type                 | Qty. | Order No.  |
|----------------------|------|------------|
| 4-pole, length 0.3 m | 1    | 9457150000 |
| 4-pole, length 0.6 m | 1    | 9457160000 |
| 4-pole, length 1.5 m | 1    | 9457170000 |
| 5-pole, length 0.3 m | 1    | 9457340030 |
| 5-pole, length 0.6 m | 1    | 9457340060 |
| 5-pole, length 1.5 m | 1    | 9457340150 |

Additional accessories can be found in the Sensor Actuator Interface catalogue.

Empty housing SAI JACKPAC® for custom built-in components

Empty housing SAI JACKPAC® for custom built-in components

SAI JP



Technical data

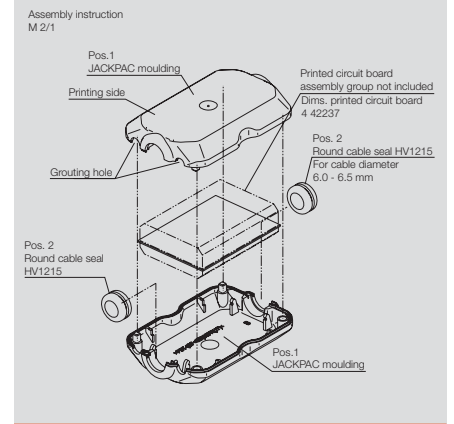
General data

Temperature range  
 Connection system  
 Contact base material  
 Surface finish

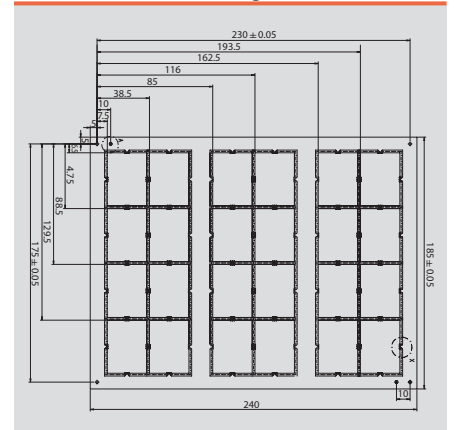
-25 °C ... +70 °C  
 M12 plug/socket, A-coded  
 AgSnO  
 Au

F

Dimensioned drawing SAI JP



Dimensioned drawing, PCBs



Dimensions

Length x width x height mm

83 x 36 x 14.4

Note

Ordering data

Housing with M12 connectors

|          |            |
|----------|------------|
| Contents | 1 piece    |
|          | 1 piece    |
|          | 100 pieces |
|          | 100 pieces |

Note

| Type             | No. of poles | Qty. | Order No.  |
|------------------|--------------|------|------------|
| SAI JP 4P LG     | 4            | 1    | 1915220000 |
| SAI JP 5P LG     | 5            | 1    | 1918520000 |
| SAI JP 4P LG 100 | 4            | 1    | 8794090000 |
| SAI JP 5P LG 100 | 5            | 1    | 8794080000 |

Housing without M12 connectors SAI JP FC SET 1933680000

Accessories

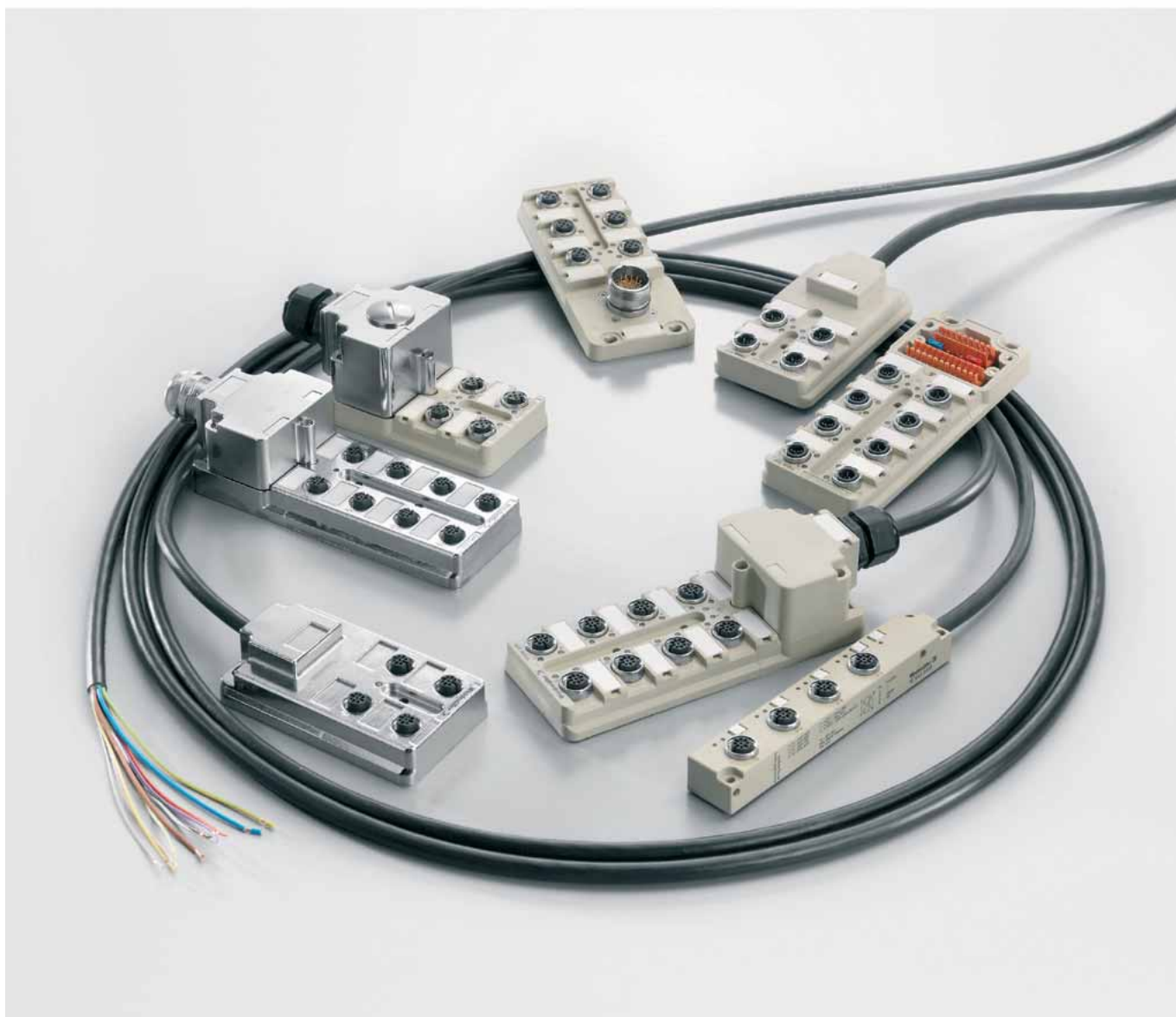
# Passive distributors

|                                         |      |
|-----------------------------------------|------|
| <b>Passive distributors</b>             |      |
| Introduction                            | G.2  |
| M12 distributors                        | G.4  |
| ECO modules                             | G.14 |
| M12 Push-Pull                           | G.16 |
| M12 IDC                                 | G.24 |
| M12 VA stainless steel                  | G.28 |
| M12 metal distributors                  | G.30 |
| M12 distributors 1:1 Passive            | G.36 |
| M12 Combi distributor                   | G.37 |
| M12 distributor for NPN and PNP sensors | G.38 |
| M12 wall bushing                        | G.39 |
| Solutions to customer specification     | G.42 |
| M8 distributors                         | G.44 |
| M5 distributors                         | G.54 |
| M12 Ex i distributors                   | G.58 |

## SAI Passive

SAI Passive products are built with premium materials using the highest quality production methods. The fully encapsulated distributors are designed to meet harsh industrial requirements. Naturally they have also been designed so that they are easy to handle. The self assembled connectors in the hooded version, for example, are joined into a single part so that the entire block is available for the connection. This is a unique solution for distributors that has no equal anywhere. Nothing can break off, get mixed up or wired up incorrectly.

The distributors are equipped by default with threaded metal rings. This ensures a very reliable screw-on connection. The nut is completely threaded without any interruptions. This eliminates the possibility of it getting stuck or jammed. The IDC versions are especially noteworthy. Sensor cables of the proper lengths can be connected directly here.





### Compact

The connection block is a single piece.



### Small

Extremely small M12 distributor



### Fast

Insulation displacement connection can be used to directly connect the sensor cables



### Robust

Threaded metal ring without cut outs for reliable, safe handling



M12 distributor standard



M12 distributor with  
DIP switch coding



M12 distributor with  
stainless steel housing



M12 distributor for Zone 1 and  
Zone 22

## SAI distributor with plug in connection hood: SAI-M



- Integrated plug in connector in connection hood
- M12 robust metal thread for sensor/actuator connection, now also available with plastic thread as an alternative
- Quick replacement of bus cables
- Bus cable can be supplied pre assembled
- Two connection systems for bus cable: screw or tension clamp
- Very flat connection hood: no higher than smallest 90° M12 round plug
- Distributor and connection hood can be supplied separately
- Connection hood compatible with 4 and 8 channel SAI distributors (upgrades only entail changing the base module)
- IP 68 Ingress protection class (IDC IP 67),
- Housing made from Pocan (PBT):
  - high dimensional stability
  - good electrical and mechanical properties
  - flame retardant without dioxin or furan formers
  - resistant to coolants and lubricants
- UL/CSA approvals for M12 SAI distributor
- SAI distributor available in pollution severity class 3
- Cable exit on top
- Weidmüller SAI distributors have the largest storage capacity in the connection hood
- Female connectors integrated into the metal plate for fast and reliable connections
- Wide range of M8 and M12 cables and plug-in connectors
- Various cable length's available
- Metal hoods and housings also available
- Plug-in connection module for bus cables increases flexibility on site
- Integral, plug in electrical isolation for two separate electric circuits (e.g. for emergency stop)
- Simple and vibration resistant connections on site
- Captive metric screws (grade 8.8 steel) have a +/- head
- M12 and IDC connections
- 1:1 arrangement available

# Overview of M12 Distributors



## Fixed cable version

- Pre assembled bus cable minimises installation time and reduces wiring errors
- Cable carrier compatible versions are available with polyurethane (PUR) sheathing



## M12 Push-Pull quick-fit connection system

M12 Push-Pull is the new connection system for sensors and actuators. It is downward compatible to the existing M12 system, which means that both old M12 and new M12 Push-Pull lines can be used together on these SAIs. M12 Push-Pull decreases installation time and increases installation safety by means of colour coding and provides an audible click on locking for added reassurance.



## SAI ECO – the cost-effective alternative

Weidmüller SAI distributors with hood have long since been standard fittings in machines and installations.

### Why plastic threaded rings?

There were some applications, however, that called for a further version. In some applications it is necessary to avoid all metal parts, unless these are made from stainless steel. In such cases stainless steel is then used for screws and nuts only, but the M12 threaded rings can also be made from plastic. Such modules can now be supplied on request.

The use of plastic rings therefore results in a cheaper alternative. Although the service life and resistance are reduced when compared to metal, this is acceptable for some applications.

## M12 distributors

# Overview of SAI

## M12 plastic

|               | Hood       | M23        | 5 m        | 10 m       | 15 m       | 20 m       |
|---------------|------------|------------|------------|------------|------------|------------|
| 4-way, 4-pole | 1705920000 | 9456000000 | 9456190000 | 9456200000 | 9456210000 | 9456230000 |
| 4-way, 5-pole | 1701230000 | 9456000001 | 9456330000 | 9456340000 | 9456350000 | 9456370000 |
| 6-way, 4-pole | 1705930000 | 9456010000 | 9456470000 | 9456480000 | 9456490000 | 9456510000 |
| 6-way, 5-pole | 1701240000 | 9456010001 | 9456610000 | 9456620000 | 9456630000 | 9456650000 |
| 8-way, 4-pole | 1705940000 | 9456020000 | 9456750000 | 9456760000 | 9456770000 | 9456790000 |
| 8-way, 5-pole | 1701250000 | 1795470000 | 9456890000 | 9456900000 | 9456910000 | 9456930000 |

## M12 metal

|               | Hood without shield connection | Hood with shield connection | 5 m        | 10 m       |  |  |
|---------------|--------------------------------|-----------------------------|------------|------------|--|--|
| 4-way, 4-pole |                                | 1783540000                  | 9456190002 | 9456200002 |  |  |
| 4-way, 5-pole | 1783500000                     | 1783520000                  |            |            |  |  |
| 8-way, 4-pole |                                | 1783530000                  | 9456750002 | 9456760002 |  |  |
| 8-way, 5-pole | 1783490000                     | 1783510000                  |            |            |  |  |

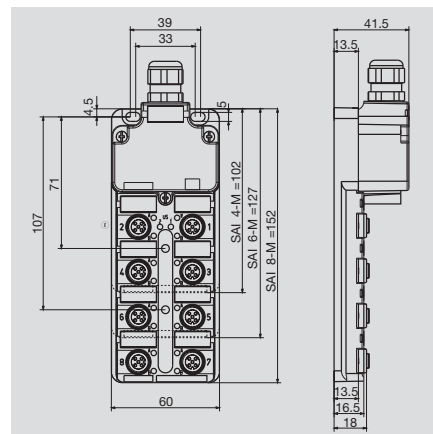
## M8 line

|                | M12 group outlet | Solder version for PCB | 5 m        | 10 m       |  |  |
|----------------|------------------|------------------------|------------|------------|--|--|
| 4-way, 3-pole  | 1828740000       |                        | 1828720000 | 1828710000 |  |  |
| 4-way, 4-pole  |                  |                        | 1849680000 | 1849690000 |  |  |
| 6-way, 3-pole  | 1828730000       | 1057720000             | 1828700000 | 1828690000 |  |  |
| 6-way, 4-pole  |                  |                        | 1849700000 | 1849670000 |  |  |
| 8-way, 3-pole  | 1871680000       |                        | 1828680000 | 1828670000 |  |  |
| 8-way, 4-pole  |                  |                        | 1828620000 | 1828610000 |  |  |
| 10-way, 3-pole | 1877950000       |                        | 1828660000 | 1828650000 |  |  |
| 12-way, 3-pole |                  |                        | 1828640000 | 1828630000 |  |  |



## M12 distributor

## Hood version



## Ordering data

| Complete modules                            |                          |
|---------------------------------------------|--------------------------|
|                                             | 4 channel                |
|                                             | 6 channel                |
|                                             | 8 channel                |
| Without initiator-LED, for analogue signals | 4 channel                |
| Without initiator-LED, for analogue signals | 8 channel                |
| Tension clamp connection                    | 4 plug-in slots          |
| Tension clamp connection                    | 8 channel                |
| Base unit                                   |                          |
|                                             | 4 channel                |
|                                             | 6 channel                |
|                                             | 8 channel                |
| Mounting hood                               |                          |
|                                             | Tension clamp connection |
|                                             | Tension clamp connection |
|                                             | Screw connection         |
|                                             | Screw connection         |
| Complete modules, NPN-switched              | 8 channel                |
| Note                                        |                          |

## SAI-4/6/8-M

## 4-pole

| Type                      | Qty. | Order No.  |
|---------------------------|------|------------|
| SAI-4-M 4P M12            | 1    | 1705920000 |
| SAI-6-M 4P M12            | 1    | 1705930000 |
| SAI-8-M 4P M12            | 1    | 1705940000 |
| SAI-4 M 4P M12 UT         | 2    | 1705921000 |
| SAI-6-M 4P M12 UT         | 2    | 1705931000 |
| SAI-8-M 4P M12 UT         | 2    | 1705941000 |
| SAI-4/6/8-MH BLZF3.5      | 1    | 1752080000 |
| SAI-4/6/8-MH BLZF3.5 SV   | 50   | 1752080050 |
| SAI-4/6/8-MH BL3.5        | 1    | 1724750000 |
| SAI-4/6/8-MH BL3.5 SV     | 50   | 1724750050 |
| Other versions on request |      |            |

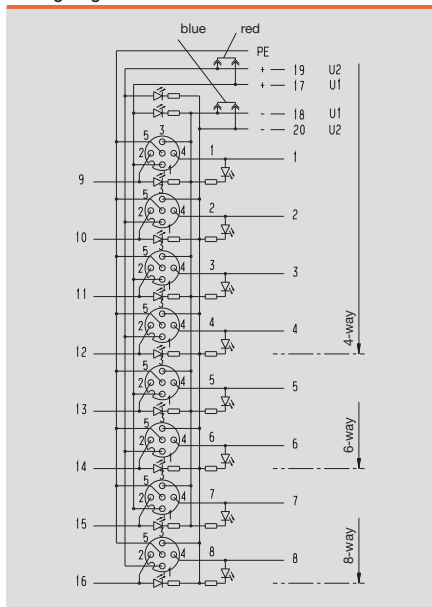
## SAI-4/6/8-M

| Type                      | Qty. | Order No.  |
|---------------------------|------|------------|
| SAI-4-M 5P M12            | 1    | 1701230000 |
| SAI-6-M 5P M12            | 1    | 1701240000 |
| SAI-8-M 5P M12            | 1    | 1701250000 |
| SAI-4-M 5P M12 OL         | 1    | 1800000000 |
| SAI-8-M 5P M12 OL2        | 1    | 1816610000 |
| SAI-4-M 5P M12 ZF         | 1    | 1854000000 |
| SAI-8-M 5P M12 ZF III     | 1    | 1767880000 |
| SAI-4-M 5P M12 UT         | 2    | 1701231000 |
| SAI-6-M 5P M12 UT         | 2    | 1701241000 |
| SAI-8-M 5P M12 UT         | 2    | 1701251000 |
| SAI-4/6/8-MH BLZF3.5      | 1    | 1752080000 |
| SAI-4/6/8-MH BLZF3.5 SV   | 50   | 1752080050 |
| SAI-4/6/8-MH BL3.5        | 1    | 1724750000 |
| SAI-4/6/8-MH BL3.5 SV     | 50   | 1724750050 |
| SAI-8-M 5P M12 NPN        | 1    | 1781060000 |
| Other versions on request |      |            |

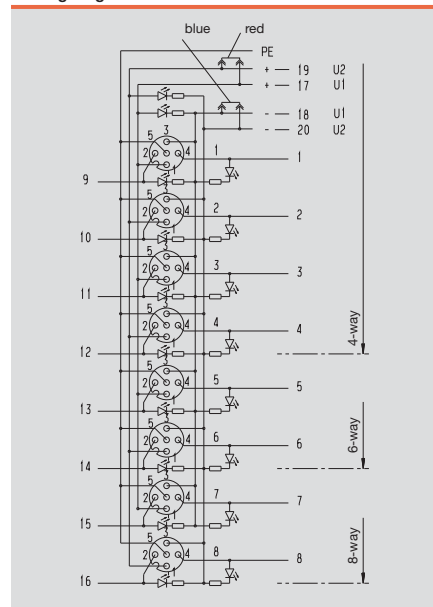
## Technical data

|                                                                |                                 |
|----------------------------------------------------------------|---------------------------------|
| Operating voltage                                              | 10...30 V                       |
| Current of continuous busbars                                  | 2 A                             |
| max. current-carrying capacity per slot                        | 3 A                             |
| Total current                                                  | 10 A                            |
| Pollution severity                                             | 3                               |
| Protection class                                               | IP 68                           |
| Ambient temperature range                                      | -20...+90 °C                    |
| Housing main material                                          | Pocan                           |
| Contact carrier material                                       | PBT UL 94 V0                    |
| Base material of contacts                                      | CuZn, pre-nickeled, gold-plated |
| screw socket                                                   | CuZn, nickel-plated             |
| Housing colour                                                 | grey, RAL 7032                  |
| Flammability class UL 94                                       | V-0                             |
| Clamping range of hood-version                                 | 0.08...1.5 mm <sup>2</sup>      |
| Suitable for dragline cable (fixed cable connection)           |                                 |
| With dual power supply: 2x8 = 16A total current                |                                 |
| Clamping range up to 2.5 mm <sup>2</sup> with screw connection |                                 |

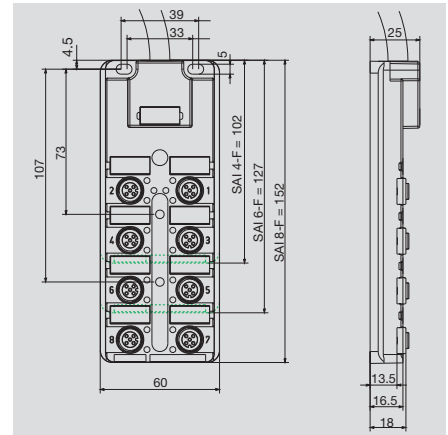
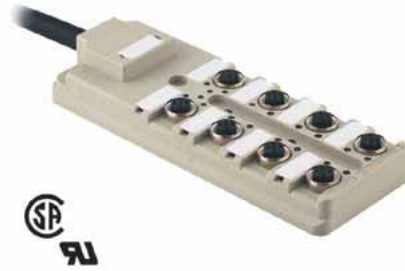
## Wiring diagram



## Wiring diagram



Fixed cable version



Ordering data

| 4 channel                              |                    |
|----------------------------------------|--------------------|
| Cable length 3 m                       | SAI-4-F 4P PUR 3M  |
| Cable length 5 m                       | SAI-4-F 4P PUR 5M  |
| Cable length 10 m                      | SAI-4-F 4P PUR 10M |
| Cable length 15 m                      | SAI-4-F 4P PUR 15M |
| Cable length 20 m                      | SAI-4-F 4P PUR 20M |
| 6 channel                              |                    |
| Cable length 3 m                       | SAI-6-F 4P PUR 3M  |
| Cable length 5 m                       | SAI-6-F 4P PUR 5M  |
| Cable length 10 m                      | SAI-6-F 4P PUR 10M |
| Cable length 15 m                      | SAI-6-F 4P PUR 15M |
| Cable length 20 m                      | SAI-6-F 4P PUR 20M |
| 8 channel                              |                    |
| Cable length 3 m                       | SAI-8-F 4P PUR 3M  |
| Cable length 5 m                       | SAI-8-F 4P PUR 5M  |
| Cable length 10 m                      | SAI-8-F 4P PUR 10M |
| Cable length 15 m                      | SAI-8-F 4P PUR 15M |
| Cable length 20 m                      | SAI-8-F 4P PUR 20M |
| 8 channel with reinforced fixed cable* |                    |
| Cable length 2 m                       |                    |
| Cable length 5 m                       |                    |
| Cable length 10 m                      |                    |
| Cable length 15 m                      |                    |
| Cable length 20 m                      |                    |
| Note                                   |                    |

| SAI-4/6/8-F               |      | 4-pole     |  |
|---------------------------|------|------------|--|
| Type                      | Qty. | Order No.  |  |
| SAI-4-F 4P PUR 3M         | 1    | 9456180000 |  |
| SAI-4-F 4P PUR 5M         | 1    | 9456190000 |  |
| SAI-4-F 4P PUR 10M        | 1    | 9456200000 |  |
| SAI-4-F 4P PUR 15M        | 1    | 9456210000 |  |
| SAI-4-F 4P PUR 20M        | 1    | 9456230000 |  |
| SAI-6-F 4P PUR 3M         | 1    | 9456460000 |  |
| SAI-6-F 4P PUR 5M         | 1    | 9456470000 |  |
| SAI-6-F 4P PUR 10M        | 1    | 9456480000 |  |
| SAI-6-F 4P PUR 15M        | 1    | 9456490000 |  |
| SAI-6-F 4P PUR 20M        | 1    | 9456510000 |  |
| SAI-8-F 4P PUR 3M         | 1    | 9456740000 |  |
| SAI-8-F 4P PUR 5M         | 1    | 9456750000 |  |
| SAI-8-F 4P PUR 10M        | 1    | 9456760000 |  |
| SAI-8-F 4P PUR 15M        | 1    | 9456770000 |  |
| SAI-8-F 4P PUR 20M        | 1    | 9456790000 |  |
| Other versions on request |      |            |  |

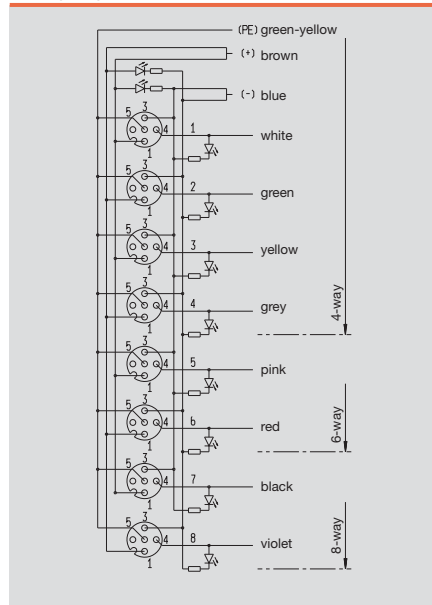
| SAI-4/6/8-F               |      | 5-pole     |  |
|---------------------------|------|------------|--|
| Type                      | Qty. | Order No.  |  |
| SAI-4-F 5P PUR 3M         | 1    | 9456320000 |  |
| SAI-4-F 5P PUR 5M         | 1    | 9456330000 |  |
| SAI-4-F 5P PUR 10M        | 1    | 9456340000 |  |
| SAI-4-F 5P PUR 15M        | 1    | 9456350000 |  |
| SAI-4-F 5P PUR 20M        | 1    | 9456370000 |  |
| SAI-6-F 5P PUR 3M         | 1    | 9456600000 |  |
| SAI-6-F 5P PUR 5M         | 1    | 9456610000 |  |
| SAI-6-F 5P PUR 10M        | 1    | 9456620000 |  |
| SAI-6-F 5P PUR 15M        | 1    | 9456630000 |  |
| SAI-6-F 5P PUR 20M        | 1    | 9456650000 |  |
| SAI-8-F 5P PUR 3M         | 1    | 9456880000 |  |
| SAI-8-F 5P PUR 5M         | 1    | 9456890000 |  |
| SAI-8-F 5P PUR 10M        | 1    | 9456900000 |  |
| SAI-8-F 5P PUR 15M        | 1    | 9456910000 |  |
| SAI-8-F 5P PUR 20M        | 1    | 9456930000 |  |
| SAI-8-F 5P 2M 0.5/1.0U    | 1    | 7915030000 |  |
| SAI-8-F 5P 5M 0.5/1.0U    | 1    | 9457590000 |  |
| SAI-8-F 5P 10M 0.5/1.0U   | 1    | 9457600000 |  |
| SAI-8-F 5P 15M 0.5/1.0U   | 1    | 1784510000 |  |
| SAI-8-F 5P 20M 0.5/1.0U   | 1    | 1784500000 |  |
| Other versions on request |      |            |  |

Technical data

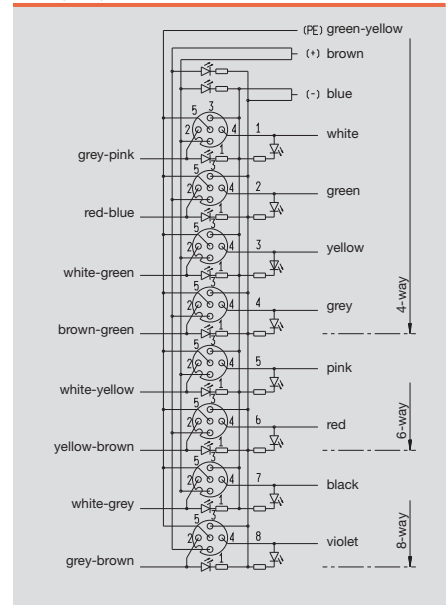
|                                                      |                                  |
|------------------------------------------------------|----------------------------------|
| Operating voltage                                    | 10...30 V                        |
| Current of continuous busbars                        | 2 A                              |
| max. current-carrying capacity per slot              | 3 A                              |
| Total current                                        | 9 A                              |
| Pollution severity                                   | 3                                |
| Protection class                                     | IP 68                            |
| Ambient temperature range                            | -20...+80 °C                     |
| Housing main material                                | Pocan                            |
| Contact carrier material                             | PBT UL 94 V0                     |
| Base material of contacts                            | CuZn, pre-nickel-<br>gold-plated |
| screw socket                                         | CuZn, nickel-<br>plated          |
| Housing colour                                       | grey, RAL 7032                   |
| Flammability class UL 94                             | V-0                              |
| Clamping range of hood-version                       |                                  |
| Suitable for dragline cable (fixed cable connection) | Yes                              |

\* 3x1mm<sup>2</sup> und 16x0.5mm<sup>2</sup> total current 12A

Wiring diagram

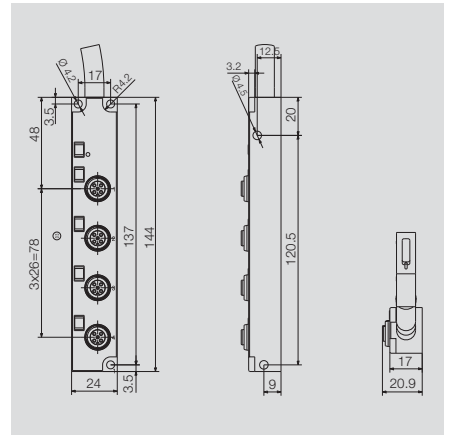


Wiring diagram



M12 distributor

Fixed-cable version  
thin design



Ordering data

|             |                                       |
|-------------|---------------------------------------|
| 4 channel   | Cable length 5 m<br>Cable length 10 m |
| <b>Note</b> |                                       |

SAI-4-F M12 L

4-pole

| Type                      | Qty. | Order No.  |
|---------------------------|------|------------|
| SAI-4-F 4P M12 L 5M       | 1    | 1070650000 |
| SAI-4-F 4P M12 L 10M      | 1    | 1070660000 |
| Other versions on request |      |            |

SAI-4-F M12 L

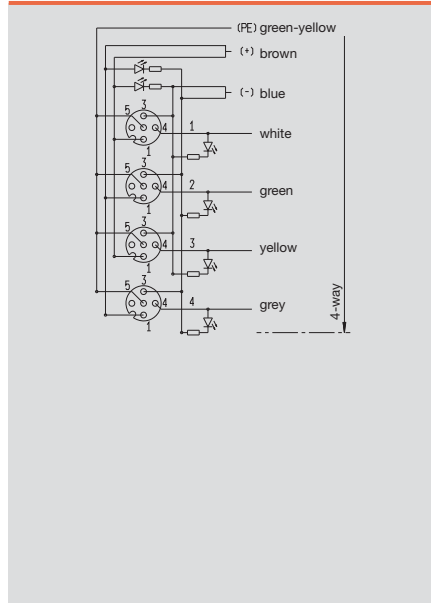
5-pole

| Type                      | Qty. | Order No.  |
|---------------------------|------|------------|
| SAI-4-F 5P M12 L 5M       | 1    | 1070630000 |
| SAI-4-F 5P M12 L 10M      | 1    | 1070640000 |
| Other versions on request |      |            |

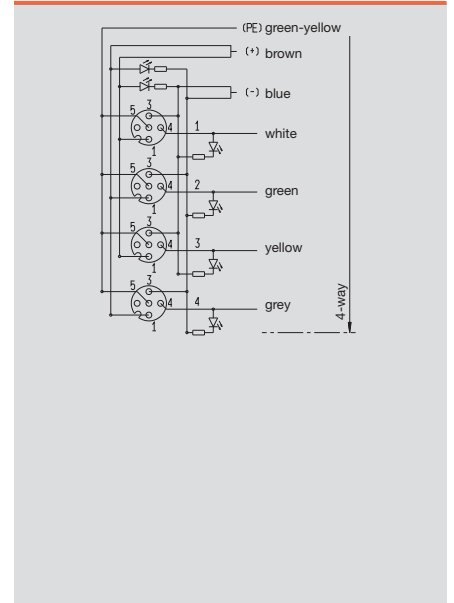
Technical data

|                                                         |                                  |
|---------------------------------------------------------|----------------------------------|
| Operating voltage                                       | 10...30 V                        |
| Current of continuous busbars                           | 2 A                              |
| max. current-carrying capacity per slot                 | 3 A                              |
| Total current                                           | 9 A                              |
| Pollution severity                                      | 3                                |
| Protection class                                        | IP 68                            |
| Ambient temperature range                               | -20...+80 °C                     |
| Housing main material                                   | PA 6 GF                          |
| Contact carrier material                                | PBT UL 94 V0                     |
| Base material of contacts                               | CuZn, pre-nickel-<br>gold-plated |
| screw socket                                            | CuZn, nickel-<br>plated          |
| Housing colour                                          | grey, RAL 7032                   |
| Flammability class UL 94                                | V-0                              |
| Clamping range of hood-version                          |                                  |
| Suitable for dragline cable<br>(fixed cable connection) | Yes                              |

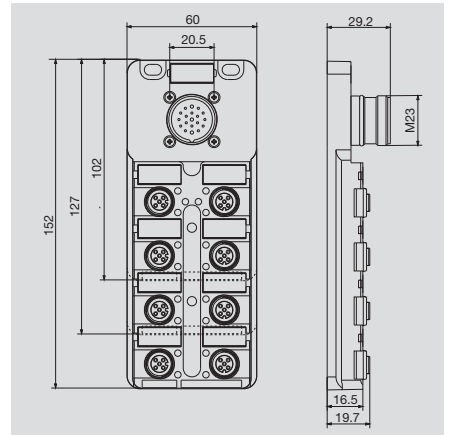
Wiring diagram



Wiring diagram



with M23 outlet



**Ordering data**

| Complete modules |           |
|------------------|-----------|
|                  | 4 channel |
|                  | 6 channel |
|                  | 8 channel |
| Note             |           |

**SAI-4/6/8-S**

**4-pole**

| Type                      | Qty. | Order No.  |
|---------------------------|------|------------|
| SAI-4-S 4P M12            | 1    | 9456000000 |
| SAI-6-S 4P M12            | 1    | 9456010000 |
| SAI-8-S 4P M12            | 1    | 9456020000 |
| Other versions on request |      |            |

**SAI-4/6/8-S**

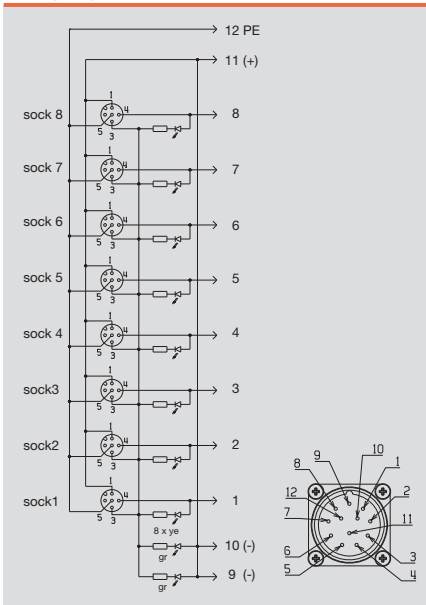
**5-pole**

| Type                      | Qty. | Order No.  |
|---------------------------|------|------------|
| SAI-4-S 5P M12            | 1    | 9456000001 |
| SAI-6-S 5P M12            | 1    | 9456010001 |
| SAI-8-S 5P M12            | 1    | 1795470000 |
| Other versions on request |      |            |

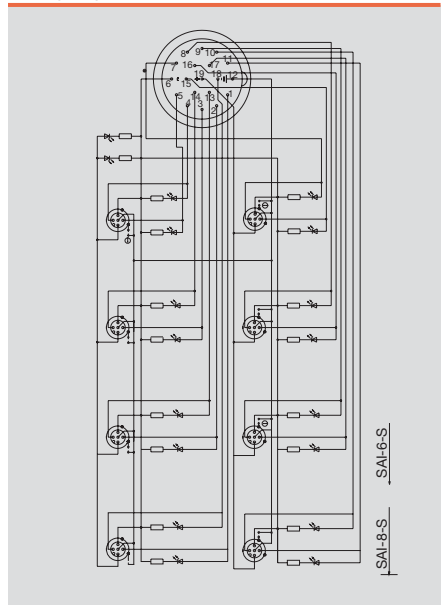
**Technical data**

|                                                      |                                  |
|------------------------------------------------------|----------------------------------|
| Operating voltage                                    | 10...30 V                        |
| Current of continuous busbars                        | 2 A                              |
| max. current-carrying capacity per slot              | 3 A                              |
| Total current                                        | 10 A                             |
| Pollution severity                                   | 3                                |
| Protection class                                     | IP 68                            |
| Ambient temperature range                            | -20...+90 °C                     |
| Housing main material                                | Pocan                            |
| Contact carrier material                             | PBT UL 94 V0                     |
| Base material of contacts                            | CuZn, pre-nickel-<br>gold-plated |
| screw socket                                         | CuZn, nickel-plated              |
| Housing colour                                       | grey, RAL 7032                   |
| Flammability class UL 94                             | V-0                              |
| Clamping range of hood-version                       |                                  |
| Suitable for dragline cable (fixed cable connection) |                                  |

**Wiring diagram**



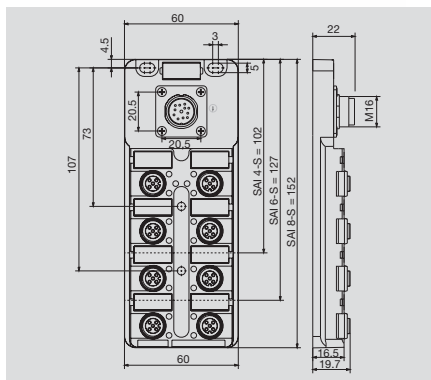
**Wiring diagram**



M12 distributor

with M16 outlet

SAI-8-M16



Ordering data

|                         |           |
|-------------------------|-----------|
| <b>Complete modules</b> | 8 channel |
| <b>Note</b>             |           |

SAI-8-M16

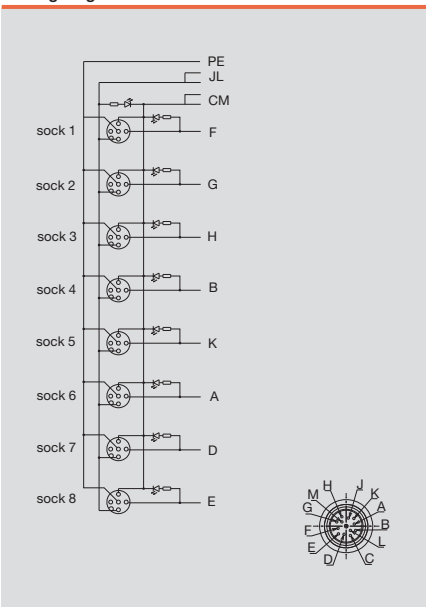
4-pole

| Type                      | Qty. | Order No.  |
|---------------------------|------|------------|
| SAI-8-M16 4P M12          | 1    | 1831020000 |
| Other versions on request |      |            |

Technical data

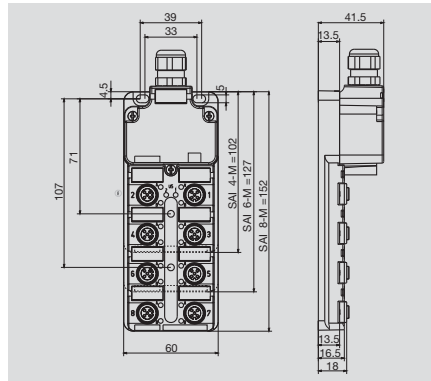
|                                                      |                                 |
|------------------------------------------------------|---------------------------------|
| Operating voltage                                    | 10...30 V                       |
| Current of continuous busbars                        | 2 A                             |
| max. current-carrying capacity per slot              | 3 A                             |
| Total current                                        | 6 A                             |
| Pollution severity                                   | 3                               |
| Protection class                                     | IP 67                           |
| Ambient temperature range                            | -20...+90 °C                    |
| Housing main material                                | Pocan                           |
| Contact carrier material                             | PBT UL 94 V0                    |
| Base material of contacts                            | CuZn, pre-nickeled, gold-plated |
| screw socket                                         | CuZn, nickel-plated             |
| Housing colour                                       | grey, RAL 7032                  |
| Flammability class UL 94                             | V-0                             |
| Clamping range of hood-version                       |                                 |
| Suitable for dragline cable (fixed cable connection) |                                 |

Wiring diagram



**Hood version  
with DIP-switch coding**

**SAI-8-M M12 DIP**



**Ordering data**

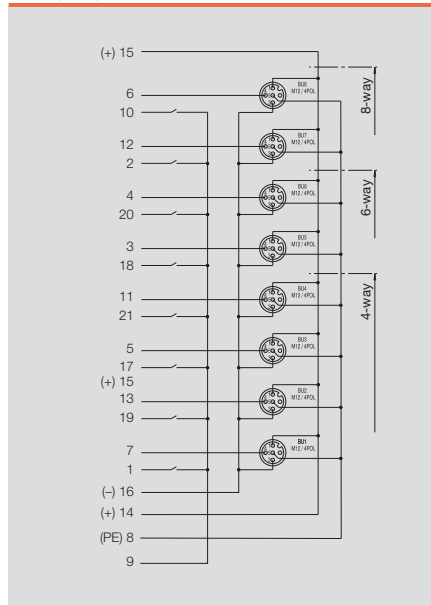
|                         |           |
|-------------------------|-----------|
| <b>Complete modules</b> | 8 channel |
| <b>Note</b>             |           |

| SAI-8-M M12 DIP           |      | 4-pole     |
|---------------------------|------|------------|
| Type                      | Qty. | Order No.  |
| SAI-8-M-4P M12 DIP        | 1    | 1059430000 |
| Other versions on request |      |            |

**Technical data**

|                                                      |                                 |
|------------------------------------------------------|---------------------------------|
| Operating voltage                                    | 10...30 V                       |
| Current of continuous busbars                        | 2 A                             |
| max. current-carrying capacity per slot              | 3 A                             |
| Total current                                        | 8 A                             |
| Pollution severity                                   | 3                               |
| Protection class                                     | IP 68                           |
| Ambient temperature range                            | -20...+90 °C                    |
| Housing main material                                | Pocan                           |
| Contact carrier material                             | PBT UL 94 V0                    |
| Base material of contacts                            | CuZn, pre-nickeled, gold-plated |
| screw socket                                         | CuZn, nickel-plated             |
| Housing colour                                       | grey, RAL 7032                  |
| Flammability class UL 94                             | V-0                             |
| Clamping range of hood-version                       | 0.08...1.5 mm <sup>2</sup>      |
| Suitable for dragline cable (fixed cable connection) |                                 |

**Wiring diagram**



# SAI ECO

## SAI ECO – the cost-effective alternative

The Weidmüller SAI distributors with hoods have long since been standard fittings in machines and installations.

### Why plastic threaded rings?

There were some applications, however, that called for a further version. In some applications it is necessary to avoid all metal parts. In such cases stainless steel is then used for screws and nuts only, but the M12 threaded rings can also be made from plastic. Such modules can now be supplied on request.

The use of plastic rings therefore results in a cheaper alternative. Although the service life and resistance are reduced when compared to metal, this is acceptable for some applications.

## Cost-effective alternative

The ECO modules were developed to optimise costs. Many details of these modules were adapted in such a way that they can still be used wherever standard modules were used in the past, but the individual solutions have now become simpler:

- One way disconnecter: Up until now it was usual to achieve electrical isolation devised by Weidmüller by way of jumpers. To reduce costs, these jumpers have been replaced by solder bridges. These are simply cut to provide electrical isolation.
- No protective caps: Normally, Weidmüller M12 distributors are always supplied with two protective caps. These were not always required and so they have been omitted.
- Standard cable gland: The vibration resistant black screw cable gland has been replaced by a standard IP 68 cable gland.

These cost-cutting measures result in yet more applications for Weidmüller SAI distributors.

## Greater reliability than with comparable systems

Plastic threaded rings are nothing new. However, the problem in the past was that the threaded rings formed part of the housing and were therefore made from the same plastic.

Weidmüller has once again pioneered a new and better solution. Weidmüller plastic rings are manufactured separately, which means that a more suitable, more durable material can be chosen. The Weidmüller production method is also patented.



Special threaded ring increases durability



# M12 Push-Pull: SAI distributors and cables, with rapid-connection technology

## SAI distributors with M12 Push-Pull plug



Whereas the standard M12 system requires the sleeves to be laboriously screwed on and that operation is hindered by the vibration guard, M12 Push-Pull works with one click, just like those well-known garden hose systems. The audible locking function guarantees a safe and reliable connection as well as a good seal.

M12 Push-Pull is currently supplied by Weidmüller and five other international companies

M12 Push-Pull connections provide sufficient space for using T-pieces. The SAI module is slimmer and now only 54 mm wide.

The new SAI M12 Push-Pull distributors can be used with M12 plug-in connectors but also with the new M12 Push-Pull plug-in connectors.

The SAI distributors are available in fixed cable, hood, bayonet connection and M23 versions.

M12 Push-Pull speeds up installation and increases installation reliability thanks to the colour coding and the audible click when locking it into place.

## M12 Push-Pull M23 versions



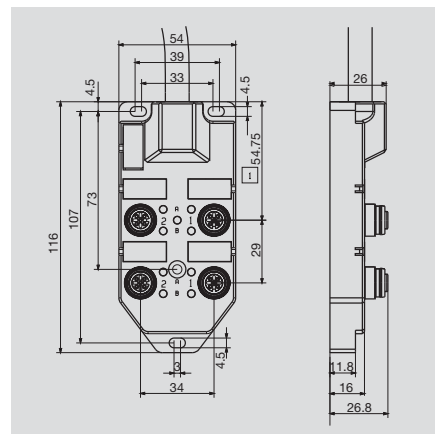
## M12 Push-Pull hood version



## M12 Push-Pull with bayonet connection



Fixed cable version



Ordering data

| 4 channel |                   |
|-----------|-------------------|
|           | Cable length 2 m  |
|           | Cable length 5 m  |
|           | Cable length 10 m |
| 8 channel |                   |
|           | Cable length 2 m  |
|           | Cable length 5 m  |
|           | Cable length 10 m |
| Note      |                   |

SAI-4/8-F

4-pole

| Type                      | Qty. | Order No.  |
|---------------------------|------|------------|
| SAI-4-F 4P FC 2M          | 1    | 1848080000 |
| SAI-4-F 4P FC 5M          | 1    | 1848060000 |
| SAI-4-F 4P FC 10M         | 1    | 1848050000 |
| Other versions on request |      |            |

SAI-4/8-F

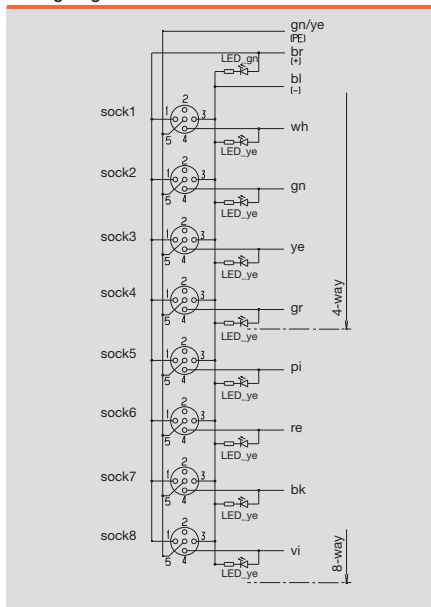
5-pole

| Type                      | Qty. | Order No.  |
|---------------------------|------|------------|
| SAI-4-F 5P FC 2M          | 1    | 1847940000 |
| SAI-4-F 5P FC 5M          | 1    | 1847950000 |
| SAI-4-F 5P FC 10M         | 1    | 1847930000 |
| Other versions on request |      |            |

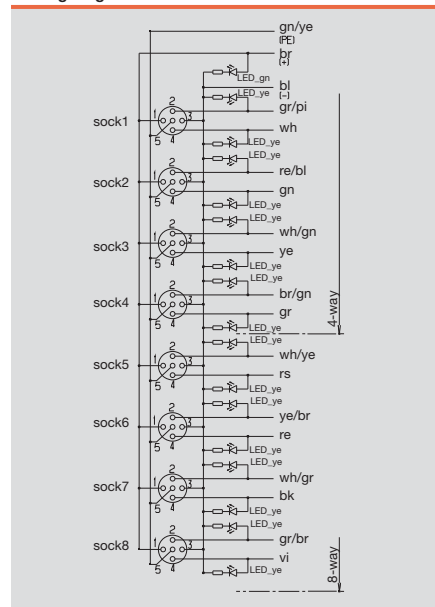
Technical data

|                                                                            |                                 |
|----------------------------------------------------------------------------|---------------------------------|
| Operating voltage                                                          | 10...30 V                       |
| Current of continuous busbars                                              | 2 A                             |
| max. current-carrying capacity per slot                                    | 4 A                             |
| Total current                                                              | 10 A                            |
| Pollution severity                                                         | 3                               |
| Protection class                                                           | IP 67                           |
| Ambient temperature range                                                  | -25...+80 °C                    |
| Housing main material                                                      | PA 6 GF                         |
| Contact carrier material                                                   | PBT UL 94 V0                    |
| Base material of contacts                                                  | CuZn, pre-nickeled, gold-plated |
| screw socket                                                               | CuZn, nickel-plated             |
| Housing colour                                                             | grey, RAL 7032                  |
| Flammability class UL 94                                                   | V-0                             |
| Clamping range of hood-version                                             |                                 |
| Suitable for dragline cable (fixed cable connection)                       | Yes                             |
| Master trunk cable 3x1mm <sup>2</sup> x n x 0.34mm <sup>2</sup> ; Hallogen |                                 |

Wiring diagram

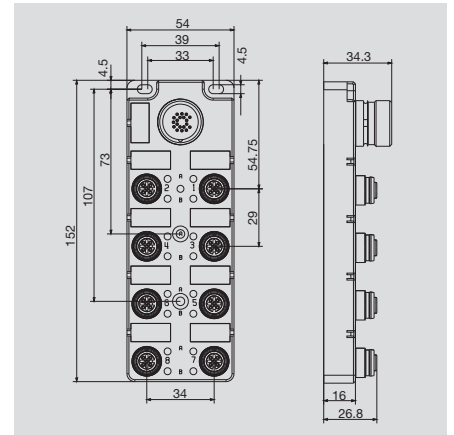


Wiring diagram



## M12 Push-Pull

with M23 outlet



### Ordering data

| Complete modules |           |
|------------------|-----------|
|                  | 4 channel |
|                  | 8 channel |
| Note             |           |

### SAI-4/8-S

### 4-pole

| Type                      | Qty. | Order No.  |
|---------------------------|------|------------|
| SAI-4-S 4P FC             | 1    | 1847960000 |
| SAI-8-S 4P FC             | 1    | 1847920000 |
| Other versions on request |      |            |

### SAI-4/8-S

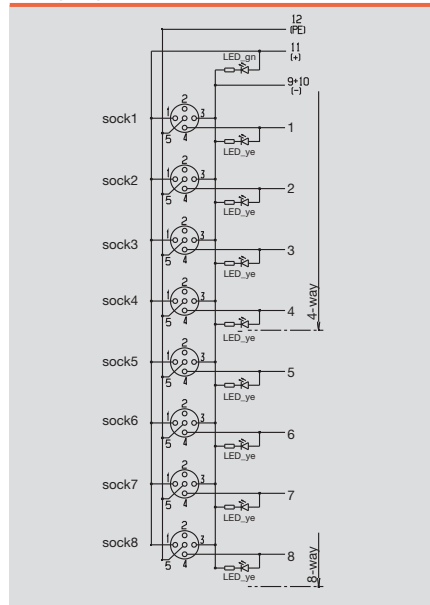
### 5-pole

| Type                      | Qty. | Order No.  |
|---------------------------|------|------------|
| SAI-4-S 5P FC             | 1    | 1847970000 |
| SAI-8-S 5P FC             | 1    | 1848040000 |
| Other versions on request |      |            |

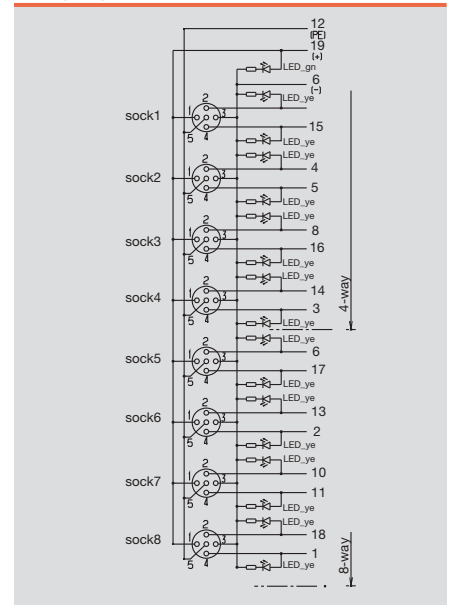
### Technical data

|                                                      |                                 |
|------------------------------------------------------|---------------------------------|
| Operating voltage                                    | 10...30 V                       |
| Current of continuous busbars                        | 2 A                             |
| max. current-carrying capacity per slot              | 4 A                             |
| Total current                                        | 9 A                             |
| Pollution severity                                   | 3                               |
| Protection class                                     | IP 67                           |
| Ambient temperature range                            | -25...+80 °C                    |
| Housing main material                                | PA 6 GF                         |
| Contact carrier material                             | PBT UL 94 V0                    |
| Base material of contacts                            | CuZn, pre-nickeled, gold-plated |
| screw socket                                         | CuZn, nickel-plated             |
| Housing colour                                       | grey, RAL 7032                  |
| Flammability class UL 94                             | V-0                             |
| Clamping range of hood-version                       |                                 |
| Suitable for dragline cable (fixed cable connection) |                                 |

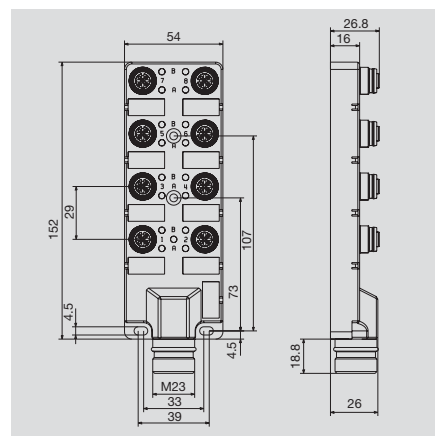
### Wiring diagram



### Wiring diagram



with M23 outlet on front



**Ordering data**

| Complete modules |           |
|------------------|-----------|
|                  | 4 channel |
|                  | 8 channel |
| Note             |           |

**SAI-4/8-SH 4-pole**

| Type           | Qty. | Order No.  |
|----------------|------|------------|
| SAI-4-SH 4P FC | 1    | 1859110000 |
| SAI-8-SH 4P FC | 1    | 1859120000 |

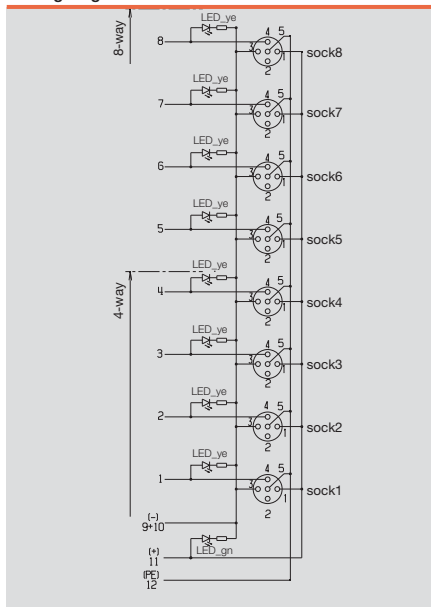
**SAI-4/8-SH 5-pole**

| Type           | Qty. | Order No.  |
|----------------|------|------------|
| SAI-4-SH 5P FC | 1    | 1859130000 |
| SAI-8-SH 5P FC | 1    | 1859140000 |

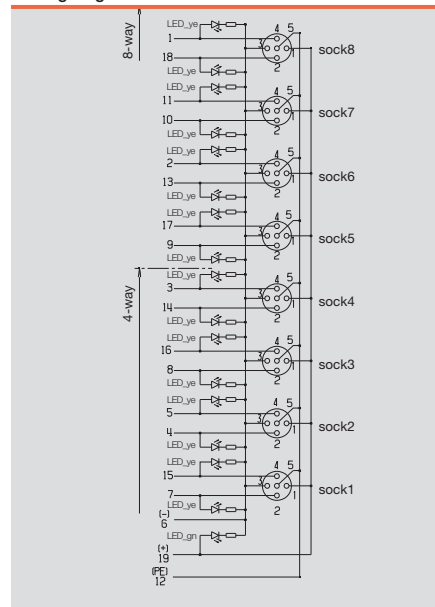
**Technical data**

|                                                      |                                 |
|------------------------------------------------------|---------------------------------|
| Operating voltage                                    | 10...30 V                       |
| Current of continuous busbars                        | 2 A                             |
| max. current-carrying capacity per slot              | 4 A                             |
| Total current                                        | 9 A                             |
| Pollution severity                                   | 3                               |
| Protection class                                     | IP 67                           |
| Ambient temperature range                            | -25...+80 °C                    |
| Housing main material                                | PA 6 GF                         |
| Contact carrier material                             | PBT UL 94 V0                    |
| Base material of contacts                            | CuZn, pre-nickeled, gold-plated |
| screw socket                                         | CuZn, nickel-plated             |
| Housing colour                                       | grey, RAL 7032                  |
| Flammability class UL 94                             | V-0                             |
| Clamping range of hood-version                       |                                 |
| Suitable for dragline cable (fixed cable connection) |                                 |

Wiring diagram



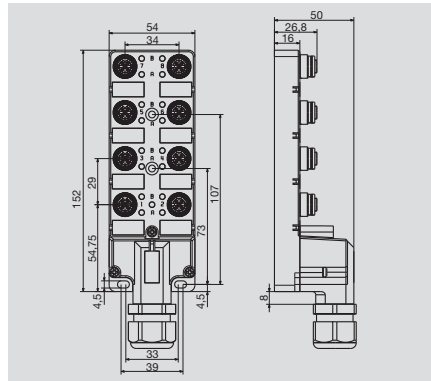
Wiring diagram



M12 Push-Pull

Hood version

SAI-8-M



Ordering data

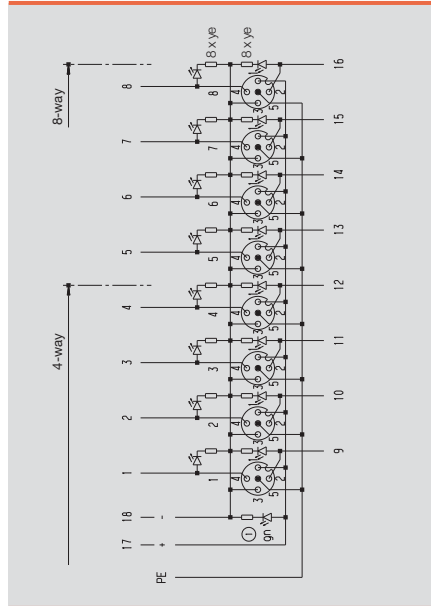
|                         |           |
|-------------------------|-----------|
| <b>Complete modules</b> | 8 channel |
| <b>Note</b>             |           |

| SAI-8-M                   |      | 5-pole     |
|---------------------------|------|------------|
| Type                      | Qty. | Order No.  |
| SAI-8-M 5P FC             | 1    | 1848070000 |
| Other versions on request |      |            |

Technical data

|                                                                                |                                 |
|--------------------------------------------------------------------------------|---------------------------------|
| Operating voltage                                                              | 10...30 V                       |
| Current of continuous busbars                                                  | 2 A                             |
| max. current-carrying capacity per slot                                        | 4 A                             |
| Total current                                                                  |                                 |
| Pollution severity                                                             | 3                               |
| Protection class                                                               | IP 67                           |
| Ambient temperature range                                                      | -25...+80 °C                    |
| Housing main material                                                          | PA 6 GF                         |
| Contact carrier material                                                       | PBT UL 94 V0                    |
| Base material of contacts                                                      | CuZn, pre-nickeled, gold-plated |
| screw socket                                                                   | CuZn, nickel-plated             |
| Housing colour                                                                 | grey, RAL 7032                  |
| Flammability class UL 94                                                       | V-0                             |
| Clamping range of hood-version                                                 |                                 |
| Suitable for dragline cable (fixed cable connection)                           |                                 |
| Master trunk cable 3x1mm <sup>2</sup> x n x 0.34mm <sup>2</sup> ; halogen-free |                                 |

Wiring diagram

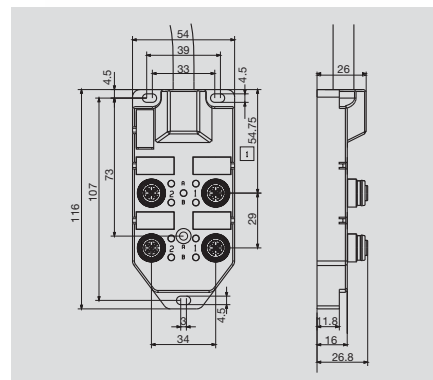
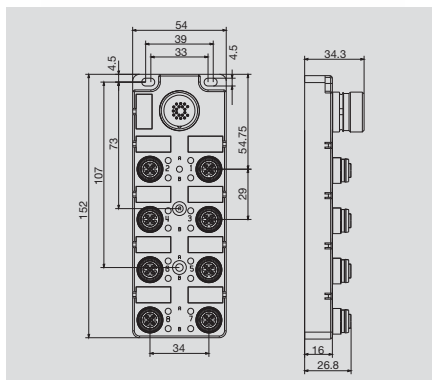


| Terminal | Slot M12 | Contact | Colour            |
|----------|----------|---------|-------------------|
| 1        | 1        | 4       | white             |
| 2        | 2        | 4       | green             |
| 3        | 3        | 4       | yellow            |
| 4        | 4        | 4       | grey              |
| 5        | 5        | 4       | pink              |
| 6        | 6        | 4       | red               |
| 7        | 7        | 4       | black             |
| 8        | 8        | 4       | violet            |
| 9        | 1        | 2       | grey/pink         |
| 10       | 2        | 2       | red/blue          |
| 11       | 3        | 2       | white/green       |
| 12       | 4        | 2       | brown/green       |
| 13       | 5        | 2       | white/yellow      |
| 14       | 6        | 2       | yellow/brown      |
| 15       | 7        | 2       | white/grey        |
| 16       | 8        | 2       | grey/brown        |
| 17       | 1-8      | 1       | brown (+)         |
| 18       | 1-8      | 3       | blue (-)          |
| PE       | 1-8      | 5       | green/yellow (PE) |

CNOMO

SAI-4/8-S

SAI-4/8-F



Ordering data

|                  |                                       |
|------------------|---------------------------------------|
| <b>4 channel</b> | Cable length 5 m<br>Cable length 10 m |
| <b>8 channel</b> | Cable length 5 m<br>Cable length 10 m |
| <b>M23</b>       | 4 channel<br>8 channel                |
| <b>Note</b>      |                                       |

| SAI-4/8-S        |      | 5-pole     |  |
|------------------|------|------------|--|
| Type             | Qty. | Order No.  |  |
| SAI-4-S 5P CNOMO | 1    | 1861540000 |  |
| SAI-8-S 5P CNOMO | 1    | 1861580000 |  |

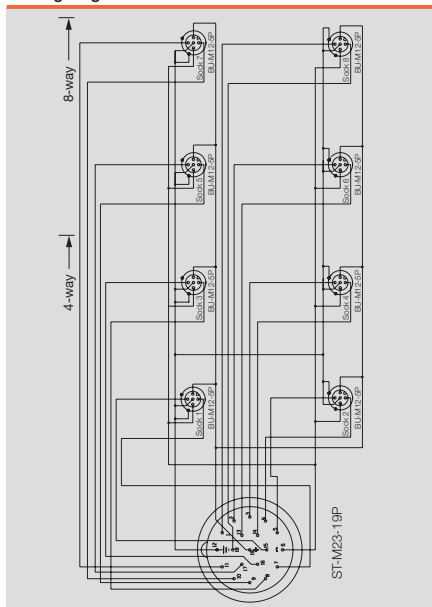
| SAI-4/8-F            |      | 5-pole     |  |
|----------------------|------|------------|--|
| Type                 | Qty. | Order No.  |  |
| SAI-4-F 5P CNOMO 5M  | 1    | 1861570000 |  |
| SAI-4-F 5P CNOMO 10M | 1    | 1861560000 |  |
| SAI-8-F 5P CNOMO 5M  | 1    | 1861550000 |  |
| SAI-8-F 5P CNOMO 10M | 1    | 1861590000 |  |

Technical data

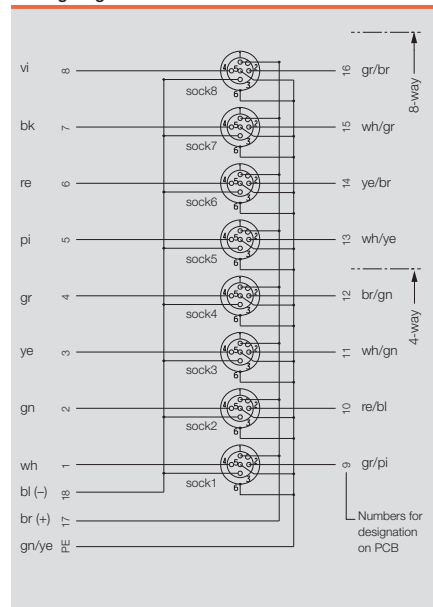
|                                                      |                                 |
|------------------------------------------------------|---------------------------------|
| Operating voltage                                    | 10...50 V                       |
| Current of continuous busbars                        | 2 A                             |
| max. current-carrying capacity per slot              | 4 A                             |
| Total current                                        | 8 A                             |
| Pollution severity                                   | 3                               |
| Protection class                                     | IP 67                           |
| Ambient temperature range                            | -25...+80 °C                    |
| Housing main material                                | PA 6 GF                         |
| Contact carrier material                             | PBT UL 94 V0                    |
| Base material of contacts                            | CuZn, pre-nickeled, gold-plated |
| screw socket                                         | CuZn, nickel-plated             |
| Housing colour                                       | grey, RAL 7032                  |
| Flammability class UL 94                             | V-0                             |
| Clamping range of hood-version                       |                                 |
| Suitable for dragline cable (fixed cable connection) | Yes                             |

Max. total current with 4-channel distributor is 8A. And with 8-channel distributor is 12A

Wiring diagram



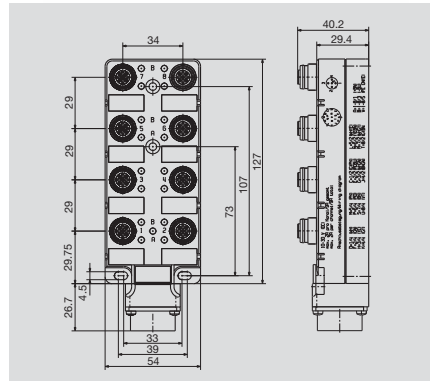
Wiring diagram



M12 Push-Pull

Bayonet joint

SAI-8-SHB



Ordering data

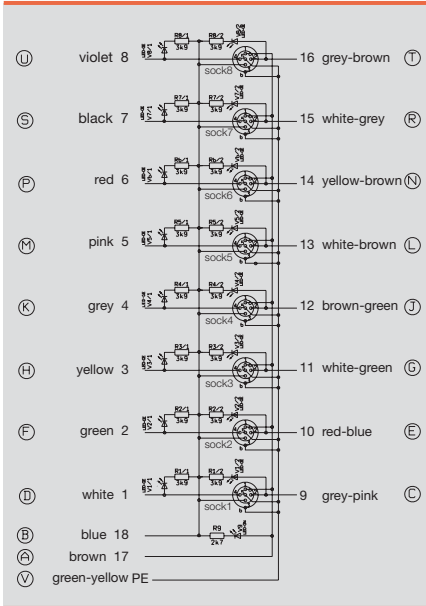
|                         |           |
|-------------------------|-----------|
| <b>Complete modules</b> | 8 channel |
| <b>Note</b>             |           |

| Type                      | Qty. | Order No.  |
|---------------------------|------|------------|
| SAI-8-SHB 5P FC           | 1    | 1872440000 |
| Other versions on request |      |            |

Technical data

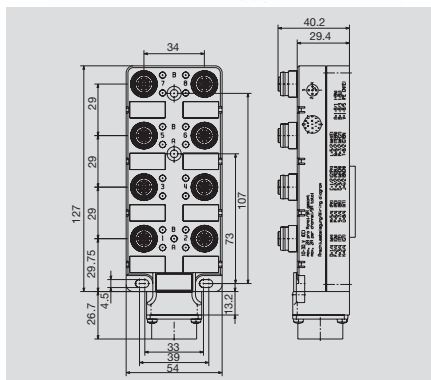
|                                                         |                             |
|---------------------------------------------------------|-----------------------------|
| Operating voltage                                       | 10...30 V                   |
| Current of continuous busbars                           | 2 A                         |
| max. current-carrying capacity per slot                 | 4 A                         |
| Total current                                           | 9 A                         |
| Pollution severity                                      | 3                           |
| Protection class                                        | IP 67                       |
| Ambient temperature range                               | -25...+80 °C                |
| Housing main material                                   | PA 6 GF                     |
| Contact carrier material                                | PBT UL 94 V0                |
| Base material of contacts                               | CuZn, pre-nickel-<br>plated |
| screw socket                                            | CuZn, nickel-<br>plated     |
| Housing colour                                          | grey, RAL 7032              |
| Flammability class UL 94                                | V-0                         |
| Clamping range of hood-version                          |                             |
| Suitable for dragline cable<br>(fixed cable connection) |                             |

Wiring diagram



Bayonet joint with socket connector on reverse

SAI-8-SHB



Ordering data

|                         |           |
|-------------------------|-----------|
| <b>Complete modules</b> | 8 channel |
| <b>Note</b>             |           |

SAI-8-SHB

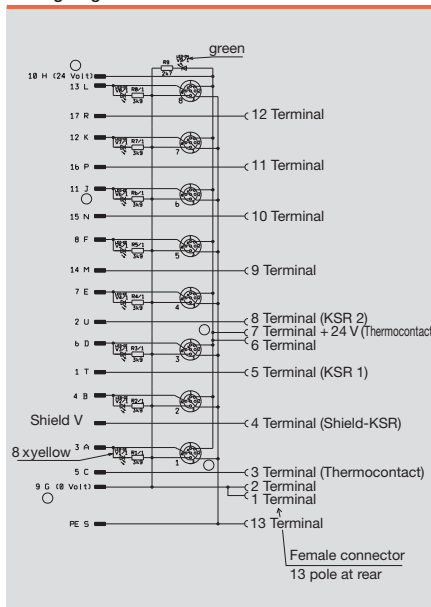
5-pole

| Type                      | Qty. | Order No.  |
|---------------------------|------|------------|
| SAI-8-SHB 5P F13 FC       | 1    | 1872460000 |
| Other versions on request |      |            |

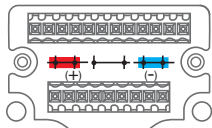
Technical data

|                                                      |                                 |
|------------------------------------------------------|---------------------------------|
| Operating voltage                                    | 10...30 V                       |
| Current of continuous busbars                        | 2 A                             |
| max. current-carrying capacity per slot              | 4 A                             |
| Total current                                        | 9 A                             |
| Pollution severity                                   | 3                               |
| Protection class                                     | IP 67                           |
| Ambient temperature range                            | -25...+80 °C                    |
| Housing main material                                | PA 6 GF                         |
| Contact carrier material                             | PBT UL 94 V0                    |
| Base material of contacts                            | CuZn, pre-nickeled, gold-plated |
| screw socket                                         | CuZn, nickel-plated             |
| Housing colour                                       | grey, RAL 7032                  |
| Flammability class UL 94                             | V-0                             |
| Clamping range of hood-version                       |                                 |
| Suitable for dragline cable (fixed cable connection) |                                 |

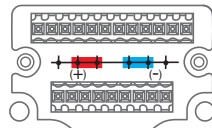
Wiring diagram



# IDC - the quick connection



Factory setting  
(see wiring diagram)  
Current bridged



Current isolated



## Hood version

- Compact IDC connection cuts production, commissioning and maintenance work
- Robust, knurled metal nut, safe handling requiring little force
- The dimensions of the IDC distributor correspond to and are compatible with the standard SAI distributor.
- Plug-in connection module for bus cables enhances on-site flexibility
- Three sizes for 4, 6 and 8 channels
- 3-pole version with one I/O signal per channel, 4-pole version with two I/O signals per channel
- Individual on site assembly of sensor/actuator lines
- Fast, reliable connection with IDC connection element
- IP 67 Ingress protection classification.

## SAI fixed cable version

- Pre-assembled bus cables minimise installation work and avoid wiring errors
- 3 sizes for 4, 6 and 8 channels
- Highly flexible, cable carrier compatible bus cables with polyurethane (PUR/PVC) sheathing
  - 3 x 0.75 mm<sup>2</sup>
  - n x 0.34 mm<sup>2</sup>,
- 3-pole version with one I/O signal per channel, 4-pole version with two I/O signals per channel

## IDC connection element

### Ordering data

| Type         | Qty. | Order No.  |
|--------------|------|------------|
| SAI-SA-3-IDC | 1    | 9457720000 |
| SAI-SA-4-IDC | 1    | 1766810000 |



#### The significant advantages of Weidmüller tools:

- Easy handling
- Very small, ideal for confined assembly conditions
- Patented solution
- Metal Connectors

Insulation displacement connections on Weidmüller SAI distributors are currently the smallest but also the most robust connection elements on the market. Thanks to their extremely small dimensions, corresponding distributors are available with the same dimensions in M12 or IDC versions.

For large series, e.g. where more than 100 modules are used every year, we recommend using a special tool to simplify the handling of the connected lines even further. However, this tool is not always necessary because all connection elements can be readily tightened by hand.

#### IDC tool



#### Ordering data

| Type         | Qty. | Order No.  |
|--------------|------|------------|
| SAI-IDC-Tool | 1    | 1795020000 |

#### Screwty®

The IDC elements can also be tightened with the Weidmüller Screwty®.



#### Ordering data

| Type        | Qty. | Order No.  |
|-------------|------|------------|
| Screwty M12 | 1    | 1900001000 |

#### Protective cap M12 for IDC

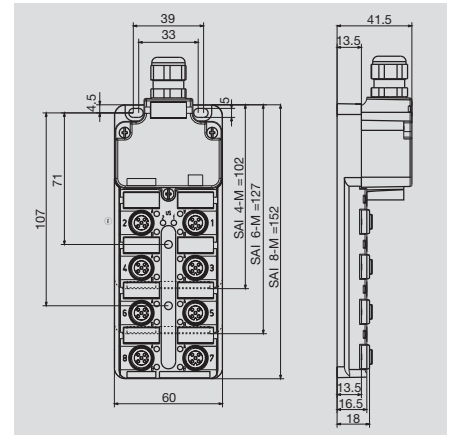


#### Ordering data

| Type           | Qty. | Order No.  |
|----------------|------|------------|
| SAI-SK-M12 IDC | 10   | 1794850000 |

M12 IDC

Hood version



Ordering data

| Complete modules |                          |
|------------------|--------------------------|
|                  | 4 channel                |
|                  | 6 channel                |
|                  | 8 channel                |
| Base unit        |                          |
|                  | 4 channel                |
|                  | 6 channel                |
|                  | 8 channel                |
| Mounting hood    |                          |
|                  | Tension clamp connection |
|                  | Tension clamp connection |
|                  | Screw connection         |
|                  | Screw connection         |
| Note             |                          |

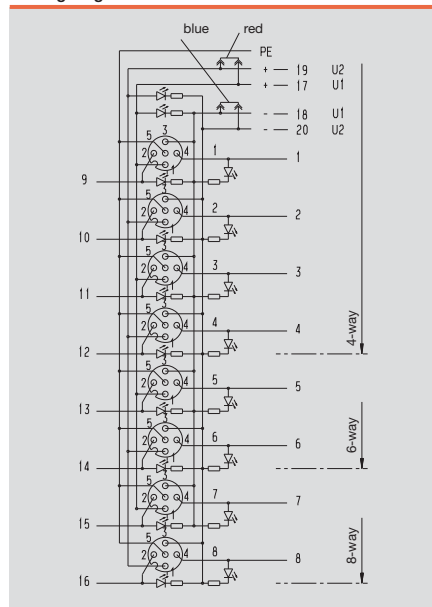
| SAI-4/6/8-M IDC           |      | 4-pole     |  |
|---------------------------|------|------------|--|
| Type                      | Qty. | Order No.  |  |
| SAI-4-M 3P IDC            | 1    | 1760040000 |  |
| SAI-6-M 3P IDC            | 1    | 1760050000 |  |
| SAI-8-M 3P IDC            | 1    | 1760060000 |  |
|                           |      |            |  |
| SAI-4-M 3P IDC UT         | 2    | 1760041000 |  |
| SAI-6-M 3P IDC UT         | 2    | 1760051000 |  |
| SAI-8-M 3P IDC UT         | 2    | 1760061000 |  |
|                           |      |            |  |
| SAI-4/6/8-MH BLZF3.5      | 1    | 1752080000 |  |
| SAI-4/6/8-MH BLZF3.5 SV   | 50   | 1752080050 |  |
| SAI-4/6/8-MH BL3.5        | 1    | 1724750000 |  |
| SAI-4/6/8-MH BL3.5 SV     | 50   | 1724750050 |  |
| Other versions on request |      |            |  |

| SAI-4/6/8-M IDC           |      | 4-pole     |  |
|---------------------------|------|------------|--|
| Type                      | Qty. | Order No.  |  |
| SAI-4-M 4P IDC            | 1    | 1766780000 |  |
| SAI-6-M 4P IDC            | 1    | 1766790000 |  |
| SAI-8-M 4P IDC            | 1    | 1766800000 |  |
|                           |      |            |  |
| SAI-4-M 4P IDC UT         | 2    | 1766781000 |  |
| SAI-6-M 4P IDC UT         | 2    | 1766791000 |  |
| SAI-8-M 4P IDC UT         | 2    | 1766801000 |  |
|                           |      |            |  |
| SAI-4/6/8-MH BLZF3.5      | 1    | 1752080000 |  |
| SAI-4/6/8-MH BLZF3.5 SV   | 50   | 1752080050 |  |
| SAI-4/6/8-MH BL3.5        | 1    | 1724750000 |  |
| SAI-4/6/8-MH BL3.5 SV     | 50   | 1724750050 |  |
| Other versions on request |      |            |  |

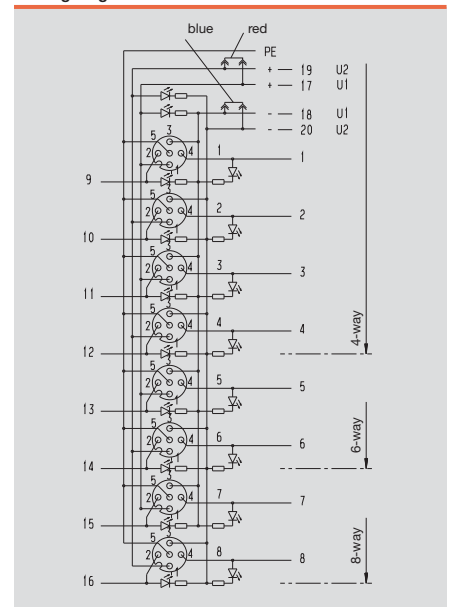
Technical data

|                                                                |                                 |
|----------------------------------------------------------------|---------------------------------|
| Operating voltage                                              | 10...30 V                       |
| Current of continuous busbars                                  | 2 A                             |
| max. current-carrying capacity per slot                        | 3 A                             |
| Total current                                                  | 10 A                            |
| Pollution severity                                             | 3                               |
| Protection class                                               | IP 68                           |
| Ambient temperature range                                      | -20...+90 °C                    |
| Housing main material                                          | Pocan                           |
| Contact carrier material                                       | PBT UL 94 V0                    |
| Base material of contacts                                      | CuZn, pre-nickeled, gold-plated |
| screw socket                                                   | CuZn, nickel-plated             |
| Housing colour                                                 | grey, RAL 7032                  |
| Flammability class UL 94                                       | V-0                             |
| Clamping range of hood-version                                 | 0.08...1.5 mm <sup>2</sup>      |
| Suitable for dragline cable (fixed cable connection)           |                                 |
| With dual power supply: 2x8 = 16A total current                |                                 |
| Clamping range up to 2.5 mm <sup>2</sup> with screw connection |                                 |

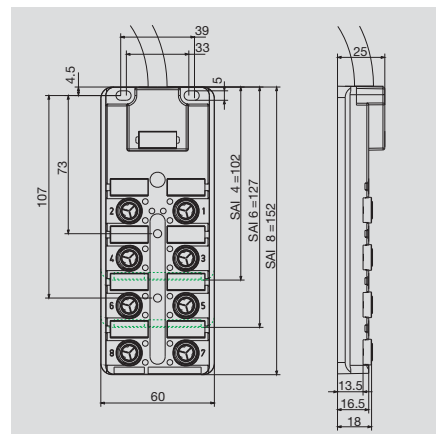
Wiring diagram



Wiring diagram



Fixed cable version



Ordering data

| 4 channel |                   |
|-----------|-------------------|
|           | Cable length 5 m  |
|           | Cable length 10 m |
| 6 channel |                   |
|           | Cable length 5 m  |
|           | Cable length 10 m |
| 8 channel |                   |
|           | Cable length 5 m  |
|           | Cable length 10 m |
| Note      |                   |

SAI-4/6/8-F IDC

3-pole

| Type                      | Qty. | Order No.  |
|---------------------------|------|------------|
| SAI-4-F 3P IDC PUR 5M     | 1    | 1766720000 |
| SAI-4-F 3P IDC PUR 10M    | 1    | 1766730000 |
|                           |      |            |
| SAI-6-F 3P IDC PUR 5M     | 4    | 1766740000 |
| SAI-6-F 3P IDC PUR 10M    | 1    | 1766750000 |
|                           |      |            |
| SAI-8-F 3P IDC PUR 5M     | 1    | 1766760000 |
| SAI-8-F 3P IDC PUR 10M    | 1    | 1766770000 |
| Other versions on request |      |            |

SAI-4/6/8-F IDC

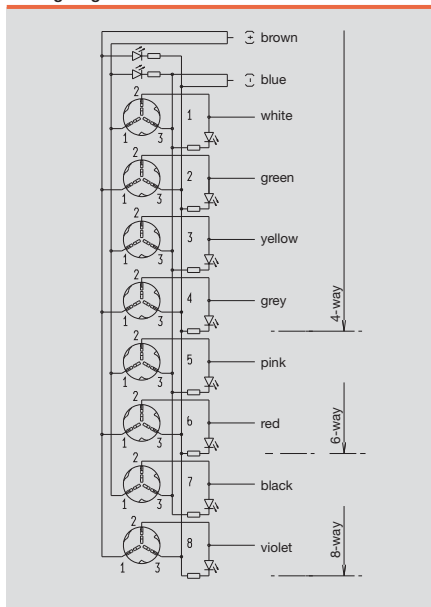
4-pole

| Type                      | Qty. | Order No.  |
|---------------------------|------|------------|
| SAI-4-F 4P IDC PUR 5M     | 1    | 1766660000 |
| SAI-4-F 4P IDC PUR 10M    | 1    | 1766670000 |
|                           |      |            |
| SAI-6-F 4P IDC PUR 5M     | 1    | 1766680000 |
| SAI-6-F 4P IDC PUR 10M    | 1    | 1766690000 |
|                           |      |            |
| SAI-8-F 4P IDC PUR 5M     | 1    | 1766700000 |
| SAI-8-F 4P IDC PUR 10M    | 1    | 1766710000 |
| Other versions on request |      |            |

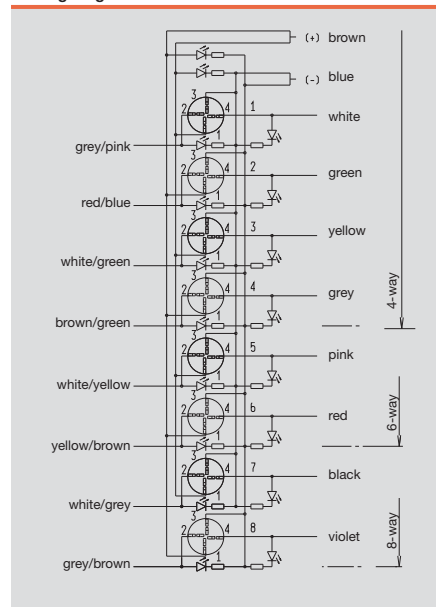
Technical data

|                                                      |                     |
|------------------------------------------------------|---------------------|
| Operating voltage                                    | 10...30 V           |
| Current of continuous busbars                        | 2 A                 |
| max. current-carrying capacity per slot              | 3 A                 |
| Total current                                        | 9 A                 |
| Pollution severity                                   | 2                   |
| Protection class                                     | IP 67               |
| Ambient temperature range                            | -20...+80 °C        |
| Housing main material                                | Pocan               |
| Contact carrier material                             | PBT UL 94 V0        |
| Base material of contacts                            |                     |
| screw socket                                         | CuZn, nickel-plated |
| Housing colour                                       | grey, RAL 7032      |
| Flammability class UL 94                             | V-0                 |
| Clamping range of hood-version                       |                     |
| Suitable for dragline cable (fixed cable connection) | Yes                 |

Wiring diagram



Wiring diagram



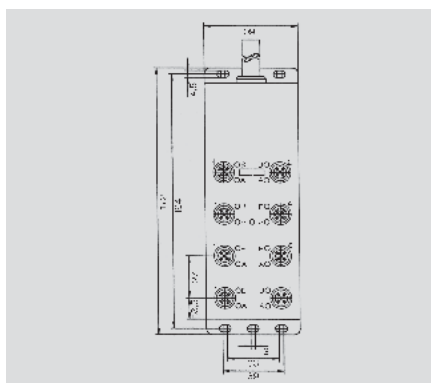
## M12 VA stainless steel

### Fixed cable version

- 5-pole, 2 signals per socket
- green LED operating indicator and yellow LED function indicator
- with stainless steel housing and cable glands

Ideal for machinery within the Food and Beverage Industries

### SAI-8-F 5P M12 5M VA



### Ordering data

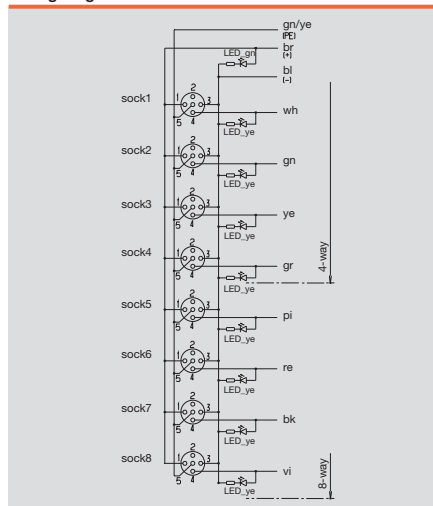
|                  |                                   |
|------------------|-----------------------------------|
| <b>Male plug</b> |                                   |
|                  | M12 connectors in stainless steel |
| <b>Note</b>      |                                   |

| SAI-8-F 5P M12 5M VA |      | 5-pole     |
|----------------------|------|------------|
| Type                 | Qty. | Order No.  |
| SAI-8-F 5P M12 5M VA | 1    | 1865310000 |
| SAIS-5/9-VA          | 1    | 1920700000 |

### Technical data

|                               |                                                                     |
|-------------------------------|---------------------------------------------------------------------|
| Temperature range             | 0 °C/+ 60 °C                                                        |
| <b>Materials:</b>             |                                                                     |
| Housing                       | stainless steel 1.4404/316L                                         |
| Contact carrier               | PVC                                                                 |
| Contact                       | CuZn, pre-nickel & 0.8 µm gold platin                               |
| Threaded bush                 | stainless steel 1.4404/316L                                         |
| O-ring                        | EPDM                                                                |
| <b>Mechanical data:</b>       |                                                                     |
| Ingress protection class      | IP69K<br>only in screwed condition<br>with associated mating pieces |
| <b>Electrical data:</b>       |                                                                     |
| Contact resistance            | ≤ 5mΩ                                                               |
| Current-carrying capacity     | 4 A per channel<br>12 A max. total                                  |
| Operating voltage             | 10-30 V DC                                                          |
| Rated voltage                 | 32 V AC eff                                                         |
| Pollution severity            | 2 to VDE 0110                                                       |
| <b>Accessories (included)</b> | 4 protective caps for channels not assigned                         |

### Wiring diagram



Tension-clamp connection M12, stainless steel

SAIS / SAIB VA

straight



Ordering data

|               |              |
|---------------|--------------|
| <b>Male</b>   |              |
|               | 5-pole, PG 9 |
|               | 5-pole, PG 9 |
| <b>Socket</b> |              |
|               | 5-pole, PG 9 |
|               | 5-pole, PG 9 |
| <b>Note</b>   |              |

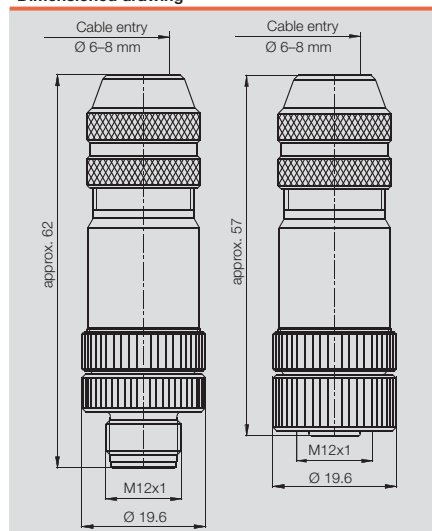
| Type              | Qty. | Order No.  |
|-------------------|------|------------|
| SAIS 5/9-VA       | 1    | 1920700000 |
| SAIS 5/9-VA-B-COD | 1    | 1920720000 |
| SAIB 5/9-VA       | 1    | 1920710000 |
| SAIB 5/9-VA-B-COD | 1    | 1920730000 |

Technical data

|                                  |                            |
|----------------------------------|----------------------------|
| Type of connection               | Tension clamp connection   |
| Housing main material            | 1.4404/316L                |
| Contact tube diameter            | M12                        |
| Cable diameter                   | 6...8 mm                   |
| Cross-section for connected wire | 0.25 - 0.5 mm <sup>2</sup> |
| Rated current                    | 4 A                        |
| Rated voltage                    | 125 V                      |
| Temperature range of housing     | -25...+85 °C               |
| Protection class                 | IP 69 k                    |
| Contact surface                  | gold-plated                |
| <b>Note</b>                      | PB = PROFIBUS (B-COD)      |

|                                  |                            |
|----------------------------------|----------------------------|
| Type of connection               | Tension clamp connection   |
| Housing main material            | 1.4404/316L                |
| Contact tube diameter            | M12                        |
| Cable diameter                   | 6...8 mm                   |
| Cross-section for connected wire | 0.25 - 0.5 mm <sup>2</sup> |
| Rated current                    | 4 A                        |
| Rated voltage                    | 125 V                      |
| Temperature range of housing     | -25...+85 °C               |
| Protection class                 | IP 69 k                    |
| Contact surface                  | gold-plated                |
| <b>Note</b>                      | PB = PROFIBUS (B-COD)      |

Dimensioned drawing



PB = PROFIBUS (B-COD)

# Sensor-actuator distributors for special applications

## All-metal

### SAI-4/8-FMM M12



## Shielded cable, e.g. for analogue initiators

Some applications need full shielding from sensor to control. This is possible with the all metal SAI distributors. The distributors are supplied with an EMC cable gland. Initiator LEDs are omitted.

## Especially thick trunk cable

It is sometimes advisable to use the machine manufacturer's standard trunk cable. This cable will usually have a relatively large outside diameter and will therefore require plenty of space (SAI-4/6/8 MHD).

## All-metal fixed cable distributors

Weidmüller metal distributors have proved their worth in many situations. They are available as 4 and 8 channel M12 versions with cable lengths of 5 or 10 m. Metal distributors are also necessary when ESD requirements must be complied with. The conductive metal surface provides low surface resistance.

## Advantages:

- no ESD/EMC problems
- high resistance to chemicals or mechanical loads
- standard mounting dimensions

## SAI-M with metal hood

### SAI-4/6/8 MMS SAI-4/6/8 MM

MMS: **M**odular, **M**etal, **S**hield

MM: **M**odular, **M**etal



### SAI-4/6/8 MH

MH: **M**odular, **H**igh



### SAI-4/6/8 MHD

MHD: **M**odular, **H**igh, sealed

(for especially thick cables)



## SAI-4/6/8 MMS with EMC cable gland in metal housing

Especially tough conditions where plastic is totally unsuitable. In certain cases it makes sense to avoid the use of plastics altogether. In such cases a distributor made completely from metal is required that can be connected to others using metal cable glands, without additional connections for the shielding.

## Cable gland: M20

For cables with outside insulation diameter from 10 mm to 14 mm. Listed below are just some of the cable sizes that are suitable for the SAI distributor with M20 cable gland:

- 14 x 0.50 mm<sup>2</sup> bis 16 x 0.50 mm<sup>2</sup>
- 8 x 0.75 mm<sup>2</sup> bis 15 x 0.75 mm<sup>2</sup>
- 8 x 1.00 mm<sup>2</sup> bis 10 x 1.00 mm<sup>2</sup>
- 5 x 1.50 mm<sup>2</sup> bis 7 x 1.50 mm<sup>2</sup>

## Cable gland: M25

For cables with outside insulation diameter from 13 mm to 18 mm. Listed below are just some of the cable sizes that are suitable for the SAI distributor with M25 cable gland:

- 21 x 0.50 mm<sup>2</sup>
- 18 x 0.75 mm<sup>2</sup> bis 21 x 0.75 mm<sup>2</sup>
- 14 x 1.00 mm<sup>2</sup> bis 20 x 1.00 mm<sup>2</sup>
- 8 x 1.50 mm<sup>2</sup> bis 16 x 1.50 mm<sup>2</sup>

## Overview of metal distributors

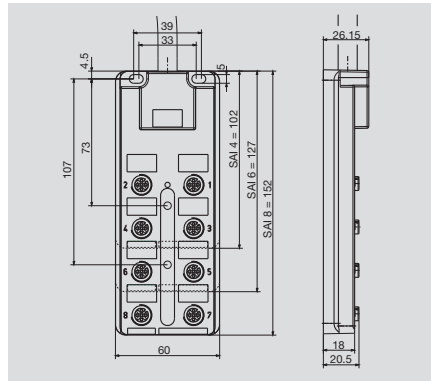
| Type                      | SAI-UT | Sockets | M12 | Poles-Hood | Form | Cable gland | Cable gland | Length | Order No.  |
|---------------------------|--------|---------|-----|------------|------|-------------|-------------|--------|------------|
| SAI-4-MH-4P M12           | PBT    | 4       | 4   | Zn-G       | high | M20         | plastic     |        | 1705922000 |
| SAI-6-MH-4P M12           | PBT    | 6       | 4   | Zn-G       | high | M20         | plastic     |        | 1705932000 |
| SAI-8-MH-4P M12           | PBT    | 8       | 4   | Zn-G       | high | M20         | plastic     |        | 1705942000 |
| SAI-4-MH-5P M12           | PBT    | 4       | 5   | Zn-G       | high | M20         | plastic     |        | 1701232000 |
| SAI-6-MH-5P M12           | PBT    | 6       | 5   | Zn-G       | high | M20         | plastic     |        | 1701242000 |
| SAI-8-MH-5P M12           | PBT    | 8       | 5   | Zn-G       | high | M20         | plastic     |        | 1701252000 |
| SAI-4-MHD-5P M12          | PBT    | 4       | 5   | Zn-G       | high | M25         | plastic     |        | 1701233000 |
| SAI-6-MHD-5P M12          | PBT    | 6       | 5   | Zn-G       | high | M25         | plastic     |        | 1701243000 |
| SAI-8-MHD-5P M12          | PBT    | 8       | 5   | Zn-G       | high | M25         | plastic     |        | 1701253000 |
| SAI-4-MHD-4P M12          | PBT    | 4       | 4   | Zn-G       | high | M25         | plastic     |        | 1705923000 |
| SAI-6-MHD-4P M12          | PBT    | 6       | 4   | Zn-G       | high | M25         | plastic     |        | 1705933000 |
| SAI-8-MHD-4P M12          | PBT    | 8       | 4   | Zn-G       | high | M25         | plastic     |        | 1705943000 |
| SAI-4-MMS-4P M12          | Zn-G   | 4       | 4   | Zn-G       | low  | M20         | EMC         |        | 1783540000 |
| SAI-8-MMS-4P M12          | Zn-G   | 8       | 4   | Zn-G       | low  | M20         | EMC         |        | 1783530000 |
| SAI-4-MMS-5P M12          | Zn-G   | 4       | 5   | Zn-G       | low  | M20         | EMC         |        | 1783520000 |
| SAI-8-MMS-5P M12          | Zn-G   | 8       | 5   | Zn-G       | low  | M20         | EMC         |        | 1783510000 |
| SAI-4-MM-5P M12           | Zn-G   | 4       | 5   | Zn-G       | low  | M20         | brass       |        | 1783500000 |
| SAI-8-MM-5P M12           | Zn-G   | 8       | 5   | Zn-G       | low  | M20         | brass       |        | 1783490000 |
| SAI-4/6/8 MH-MH BL 3.5    |        |         |     | Zn-G       | high | M20         | plastic     |        | 1724752000 |
| SAI-4/6/8 MH-MHD BL 3.5   |        |         |     | Zn-G       | high | M25         | plastic     |        | 1724753000 |
| SAI-8-MH-5P M12 ZF III    | PBT    | 8       | 5   | Zn-G       | high | M20         | plastic     |        | 1782760000 |
| SAI-8-MMS-5P M12 ZF III   | Zn-G   | 8       | 5   | Zn-G       | high | M20         | plastic     |        | 1782740000 |
| SAI-4/6/8 MH-MH BL-ZF 3.5 |        |         |     | Zn-G       | high | M20         | plastic     |        | 1782750000 |
| SAI-4-FMM-4P M12 5M       | Zn-G   | 4       | 4   |            |      |             |             | 5 m    | 9456190002 |
| SAI-4-FMM-4P M12 10M      | Zn-G   | 4       | 4   |            |      |             |             | 10 m   | 9456200002 |
| SAI-8-FMM-4P M12 5M       | Zn-G   | 8       | 4   |            |      |             |             | 5 m    | 9456750002 |
| SAI-8-FMM-4P M12 10M      | Zn-G   | 8       | 4   |            |      |             |             | 10 m   | 9456760002 |

**Note:** The cable outside diameter can vary from manufacturer to manufacturer. It is therefore possible that the cable glands hold other cables firmly despite a different strand lay-up. In each case, it is best to first measure the cable diameter and then choose an appropriate distributor.

## M12 metal distributors

## Fixed cable version

## SAI-4-FMM



## Ordering data

|                  |                                       |
|------------------|---------------------------------------|
| <b>4 channel</b> | Cable length 5 m<br>Cable length 10 m |
| <b>8 channel</b> | Cable length 5 m<br>Cable length 10 m |
| <b>Note</b>      |                                       |

## SAI-4-FMM

## 4-pole

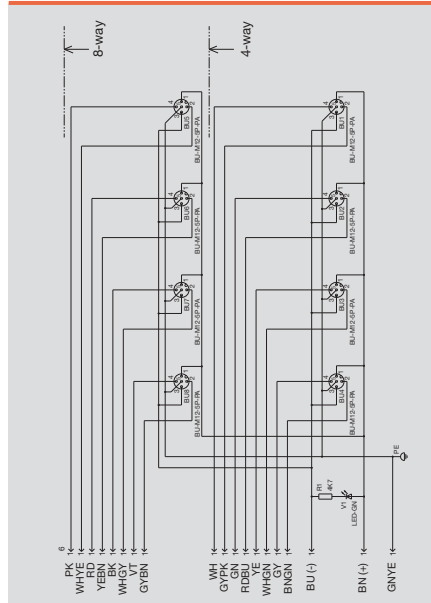
| Type                 | Qty. | Order No.  |
|----------------------|------|------------|
| SAI-4-FMM-4P M12 5M  | 4    | 9456190002 |
| SAI-4-FMM-4P M12 10M | 3    | 9456200002 |
| SAI-8-FMM-4P M12 5M  | 1    | 9456750002 |
| SAI-8-FMM-4P M12 10M | 3    | 9456760002 |

Additional variants on request  
Bus cable is not shielded

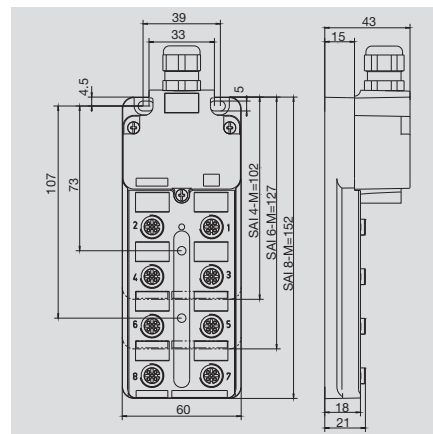
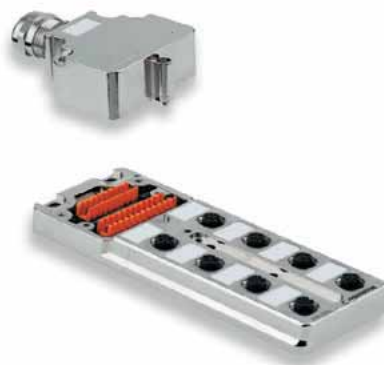
## Technical data

|                                                      |                                 |
|------------------------------------------------------|---------------------------------|
| Operating voltage                                    | 10...30 V                       |
| Current of continuous busbars                        | 2 A                             |
| max. current-carrying capacity per slot              | 3 A                             |
| Total current                                        | 9 A                             |
| Pollution severity                                   | 3                               |
| Protection class                                     | IP 68                           |
| Ambient temperature range                            | -20...+90 °C                    |
| Housing main material                                | CuZn, nickel-plated             |
| Contact carrier material                             | PBT UL 94 V0                    |
| Base material of contacts                            | CuZn, pre-nickeled, gold-plated |
| screw socket                                         | CuZn, nickel-plated             |
| Housing colour                                       | silver                          |
| Flammability class UL 94                             | V-0                             |
| Clamping range of hood-version                       |                                 |
| Suitable for dragline cable (fixed cable connection) | Yes                             |

## Wiring diagram



Hood version



Ordering data

|                                     |                  |
|-------------------------------------|------------------|
| <b>Complete modules,4-pole</b>      |                  |
|                                     | 4 channel        |
|                                     | 8 channel        |
| <b>Complete modules,5-pole</b>      |                  |
|                                     | 4 channel        |
|                                     | 8 channel        |
| Tension-clamp connection,high cover |                  |
|                                     | 8 channel        |
| <b>Base unit</b>                    |                  |
|                                     | 8 channel        |
| <b>Mounting hood</b>                |                  |
|                                     | Screw connection |
| <b>Note</b>                         |                  |

SAI-4/6/8-MMS

| Type                   | Qty. | M12 Order No. |
|------------------------|------|---------------|
| SAI-4-MMS 4P M12       | 1    | 1783540000    |
| SAI-8-MMS 4P M12       | 1    | 1783530000    |
| SAI-4-MMS 5P M12       | 1    | 1783520000    |
| SAI-8-MMS 5P M12       | 1    | 1783510000    |
| SAI-4/6/8 MH-MM BL 3.5 | 1    | 1724754000    |
| With EMC cable gland   |      |               |

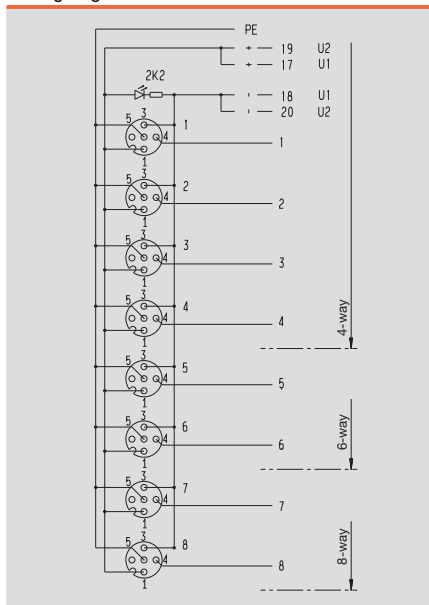
SAI-4/6/8-MM

| Type                                                         | Qty. | M12 Order No. |
|--------------------------------------------------------------|------|---------------|
| SAI-4-MM 5P M12                                              | 1    | 1783500000    |
| SAI-8-MM 5P M12                                              | 1    | 1783490000    |
| SAI-8-MMH 5P M12 ZF                                          | 1    | 1782740000    |
| SAI-8-MM 5P M12 UT                                           | 2    | 1783491000    |
| SAI-4/6/8 MH-MM BL 3.5                                       | 1    | 1724754000    |
| MM without initiator LED and with standard metal cable gland |      |               |

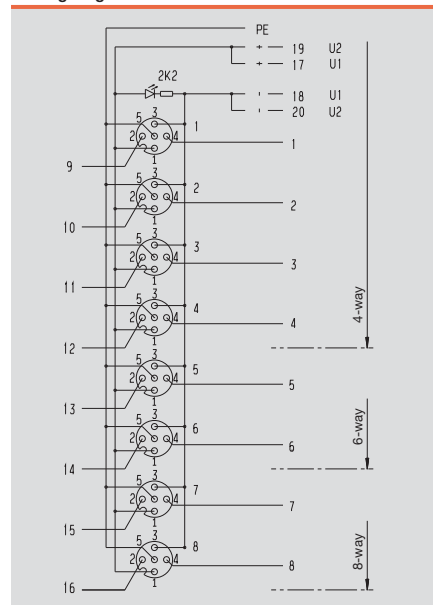
Technical data

|                                                      |                                 |
|------------------------------------------------------|---------------------------------|
| Operating voltage                                    | 10...30 V                       |
| Current of continuous busbars                        | 2 A                             |
| max. current-carrying capacity per slot              | 3 A                             |
| Total current                                        | 10 A                            |
| Pollution severity                                   | 3                               |
| Protection class                                     | IP 68                           |
| Ambient temperature range                            | -20...+90 °C                    |
| Housing main material                                | CuZn, nickel-plated             |
| Contact carrier material                             | PBT UL 94 V0                    |
| Base material of contacts                            | CuZn, pre-nickeled, gold-plated |
| screw socket                                         | CuZn, nickel-plated             |
| Housing colour                                       | silver                          |
| Flammability class UL 94                             | V-0                             |
| Clamping range of hood-version                       | 0.08...1.5 mm <sup>2</sup>      |
| Suitable for dragline cable (fixed cable connection) |                                 |

Wiring diagram



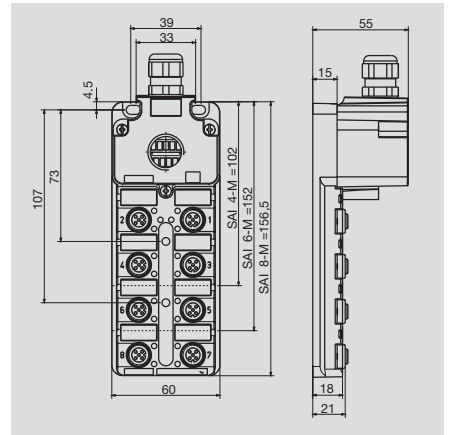
Wiring diagram



## M12 metal distributors

### Hood version with M20 outlet

For cables with 10-14 mm outer diameter



### Ordering data

| Complete modules         |                          |
|--------------------------|--------------------------|
|                          | 4 channel                |
|                          | 6 channel                |
|                          | 8 channel                |
| Tension clamp connection | 8 channel                |
| Mounting hood            |                          |
|                          | Tension clamp connection |
|                          | Screw connection         |
| Note                     |                          |

### SAI-4/6/8-MH

### 4-pole

| Type                      | Qty. | Order No.  |
|---------------------------|------|------------|
| SAI-4-MH-4P M12           | 1    | 1705922000 |
| SAI-6-MH-4P M12           | 1    | 1705932000 |
| SAI-8-MH-4P M12           | 1    | 1705942000 |
|                           |      |            |
| SAI-4/6/8 MH MH BLZF3,5   | 1    | 1782750000 |
| SAI-4/6/8 MH-MH BL 3.5    | 1    | 1724752000 |
| Other versions on request |      |            |

### SAI-4/6/8-MH

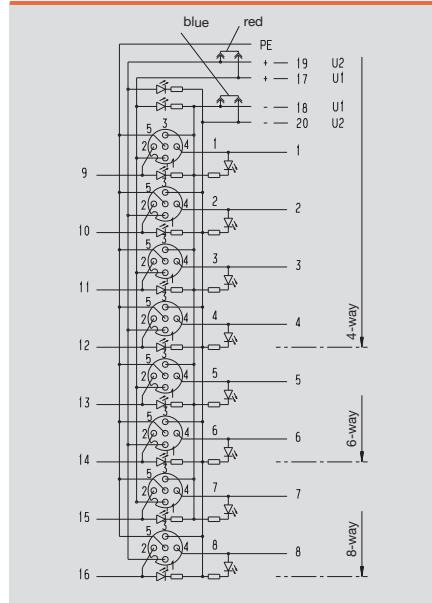
### 5-pole

| Type                      | Qty. | Order No.  |
|---------------------------|------|------------|
| SAI-4-MH-5P M12           | 1    | 1701232000 |
| SAI-6-MH-5P M12           | 1    | 1701242000 |
| SAI-8-MH-5P M12           | 1    | 1701252000 |
| SAI-8-MH-5P M12 ZF III    | 1    | 1782760000 |
|                           |      |            |
| SAI-4/6/8 MH MH BLZF3,5   | 1    | 1782750000 |
| SAI-4/6/8 MH-MH BL 3.5    | 1    | 1724752000 |
| Other versions on request |      |            |

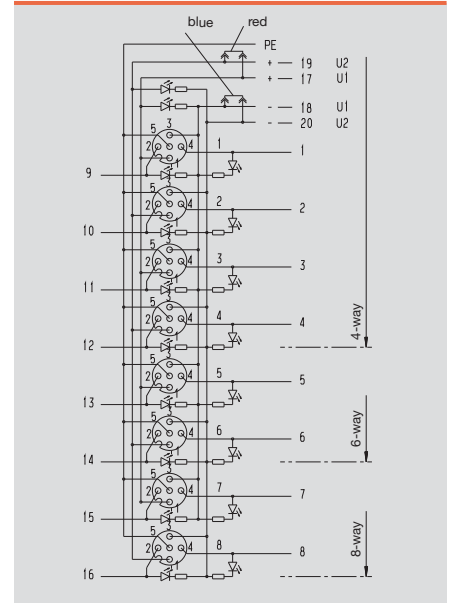
### Technical data

|                                                                |                                 |
|----------------------------------------------------------------|---------------------------------|
| Operating voltage                                              | 10...30 V                       |
| Current of continuous busbars                                  | 2 A                             |
| max. current-carrying capacity per slot                        | 3 A                             |
| Total current                                                  | 10 A                            |
| Pollution severity                                             | 3                               |
| Protection class                                               | IP 68                           |
| Ambient temperature range                                      | -20...+90 °C                    |
| Housing main material                                          | CuZn, nickel-plated             |
| Contact carrier material                                       | PBT UL 94 V0                    |
| Base material of contacts                                      | CuZn, pre-nickeled, gold-plated |
| screw socket                                                   | CuZn, nickel-plated             |
| Housing colour                                                 | silver                          |
| Flammability class UL 94                                       | V-0                             |
| Clamping range of hood-version                                 | 0.08...1.5 mm <sup>2</sup>      |
| Suitable for dragline cable (fixed cable connection)           |                                 |
| With dual power supply: 2x8 = 16A total current                |                                 |
| Clamping range up to 2.5 mm <sup>2</sup> with screw connection |                                 |

### Wiring diagram

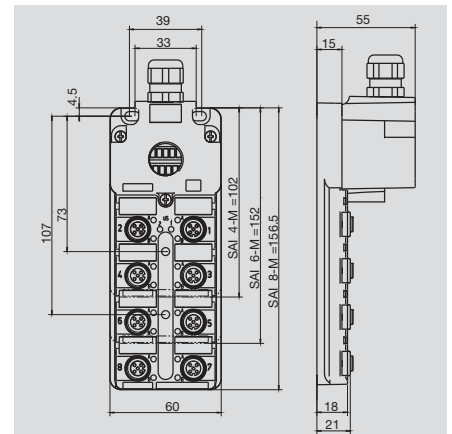


### Wiring diagram



**Hood version with M25 outlet**

For cables with 13-18 mm outer diameter



**Ordering data**

| Complete modules |                  |
|------------------|------------------|
| 4 channel        |                  |
| 6 channel        |                  |
| 8 channel        |                  |
| Mounting hood    |                  |
|                  | Screw connection |
| Note             |                  |

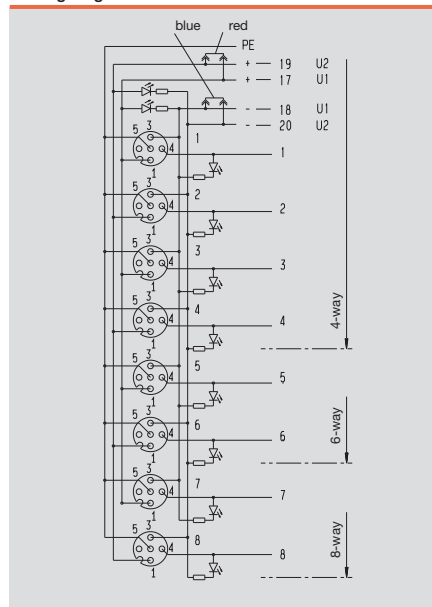
| SAI-4/6/8-MHD             |      | 4-pole     |  |
|---------------------------|------|------------|--|
| Type                      | Qty. | Order No.  |  |
| SAI-4-MHD-4P M12          | 1    | 1705923000 |  |
| SAI-6-MHD-4P M12          | 1    | 1705933000 |  |
| SAI-8-MHD-4P M12          | 1    | 1705943000 |  |
| SAI-4/6/8 MH-MHD BL 3.5   |      |            |  |
| Other versions on request |      |            |  |

| SAI-4/6/8-MHD             |      | 5-pole     |  |
|---------------------------|------|------------|--|
| Type                      | Qty. | Order No.  |  |
| SAI-4-MHD-5P M12          | 1    | 1701233000 |  |
| SAI-6-MHD-5P M12          | 1    | 1701243000 |  |
| SAI-8-MHD-5P M12          | 1    | 1701253000 |  |
| SAI-4/6/8 MH-MHD BL 3.5   |      |            |  |
| Other versions on request |      |            |  |

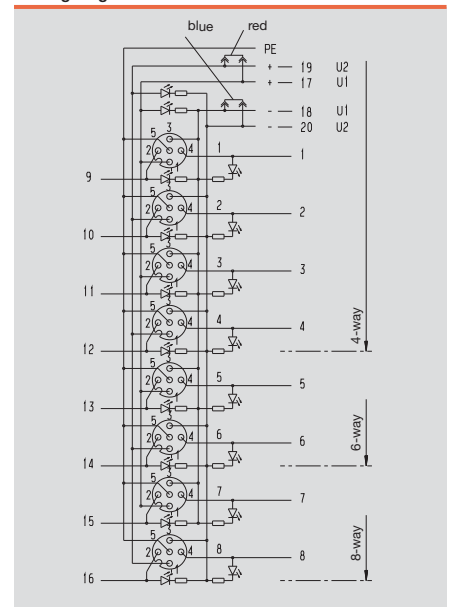
**Technical data**

|                                                                |                                 |
|----------------------------------------------------------------|---------------------------------|
| Operating voltage                                              | 10...30 V                       |
| Current of continuous busbars                                  | 2 A                             |
| max. current-carrying capacity per slot                        | 3 A                             |
| Total current                                                  | 10 A                            |
| Pollution severity                                             | 3                               |
| Protection class                                               | IP 68                           |
| Ambient temperature range                                      | -20...+90 °C                    |
| Housing main material                                          | CuZn, nickel-plated             |
| Contact carrier material                                       | PBT UL 94 V0                    |
| Base material of contacts                                      | CuZn, pre-nickeled, gold-plated |
| screw socket                                                   | CuZn, nickel-plated             |
| Housing colour                                                 | silver                          |
| Flammability class UL 94                                       | V-0                             |
| Clamping range of hood-version                                 | 0.08...1.5 mm <sup>2</sup>      |
| Suitable for dragline cable (fixed cable connection)           |                                 |
| With dual power supply: 2x8 = 16A total current                |                                 |
| Clamping range up to 2.5 mm <sup>2</sup> with screw connection |                                 |

Wiring diagram



Wiring diagram



# For switching with five no-voltage contacts in an M12 without LED

## with hood



## Emergency stop wiring

Sometimes a machine builder will need more than two floating contacts in one M12 plug-in connector. This is the case, for example, in the wiring for some “emergency stop” circuits. It was for this application that Weidmüller developed the 1:1 SAI distributor.

This SAI distributor has four M12 plug-in connectors with five floating contacts in one socket connector. The distributor is supplied complete with hood.

When connecting PT100 3- and 4-conductor initiators, we recommend the new shielded metal version. If you need other circuit configurations, simply contact us.

**Note:** This distributor should not be used as base module for active bus distributors.

## base element



## Wiring diagram

| Socket | Contact | BL 3.5 contact |
|--------|---------|----------------|
| 1      | 1       | 1              |
| 1      | 2       | 2              |
| 1      | 3       | 3              |
| 1      | 4       | 4              |
| 1      | 5       | 5              |
| 2      | 1       | 6              |
| 2      | 2       | 7              |
| 2      | 3       | 8              |
| 2      | 4       | 9              |
| 2      | 5       | 10             |
| 3      | 1       | 11             |
| 3      | 2       | 12             |
| 3      | 3       | 13             |
| 3      | 4       | 14             |
| 3      | 5       | 15             |
| 4      | 1       | 16             |
| 4      | 2       | 17             |
| 4      | 3       | 18             |
| 4      | 4       | 19             |
| 4      | 5       | 20             |
| -      | -       | 21             |

## metal



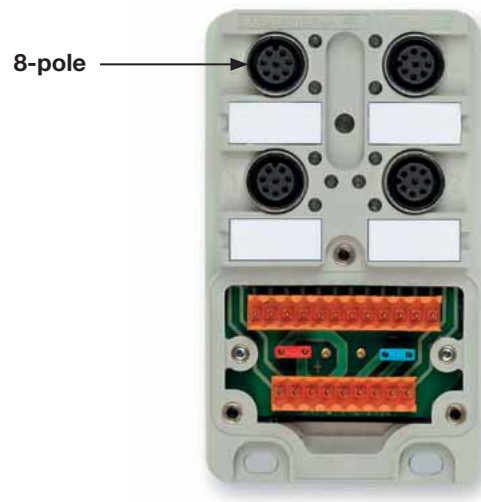
## Technical data

|                     |                                      |
|---------------------|--------------------------------------|
| Current per channel | 2A                                   |
| Total current       | 8A                                   |
| LEDs                | No LEDs are integrated at any point. |

## Ordering data

| Type                              | Qty. | Order No.  |
|-----------------------------------|------|------------|
| SAI-4-M 5P M12 1:1 (plastic hood) | 1    | 1806010000 |
| Base element (plastic)            | 1    | 1806011000 |
| SAI-4-MMS 5P M12 1:1 (Metal hood) | 1    | 1897680000 |

## SAI distributor with 8 poles per M12



## Applications

This distributor can be used both as a base module for satellite solutions (SAI-Combi) and for connecting sensors/units with more than two contacts.

## SAI-Combi

A sub-distribution board can be connected to every M12 with the help of the SAI-4-M 8P in conjunction with the SAI Active bus hood. This SAI should then be a 4-channel distributor with one channel per socket. The SAI-4-M 4P M12 is particularly suitable.

Part No. **1705920000**.

## Sensors, units with more than two signals in one line

As one socket in this module contains four signal paths and, in addition, two +, two – and one PE, components with more than two signal lines can be connected to this module. Eight-pole connecting cables are available on request.

## Wiring

| M12 socket | M12 contact | BL 3.5 connection | PLC input | Supply |
|------------|-------------|-------------------|-----------|--------|
| 1          | 1           | 1                 | E0.0      |        |
| 1          | 2           | 3                 | E0.1      |        |
| 1          | 3           | 5                 | E0.2      |        |
| 1          | 4           | 7                 | E0.3      |        |
| 2          | 1           | 2                 | E0.4      |        |
| 2          | 2           | 4                 | E0.5      |        |
| 2          | 3           | 6                 | E0.6      |        |
| 2          | 4           | 8                 | E0.7      |        |
| 3          | 1           | 9                 | E1.0      |        |
| 3          | 2           | 11                | E1.1      |        |
| 3          | 3           | 13                | E1.2      |        |
| 3          | 4           | 15                | E1.3      |        |
| 4          | 1           | 10                | E1.4      |        |
| 4          | 2           | 12                | E1.5      |        |
| 4          | 3           | 14                | E1.6      |        |
| 4          | 4           | 16                | E1.7      |        |
| 1/3        | 5           | 17                |           | 24 V   |
| 2/4        | 5           | 19                |           | 24 V   |
| 1/3        | 6/7         | 18                |           | 0 V    |
| 2/4        | 6/7         | 20                |           | 0 V    |
| 1/2/3/4    | 8           | PE                |           | PE     |

The jumpers in the distributor enable the potentials of 17 and 19 or 18 and 20 to be bridged. Contacts 6 and 7 are bridged in the 8-pole M12 in order to increase the current-carrying capacity, total current per M12: 2 A, signal current per pin: 1 A

## Ordering data

| Type                                      | Qty. | Order No.         |
|-------------------------------------------|------|-------------------|
| Complete module: SAI-4-M 8P M12           | 1    | <b>1807640000</b> |
| Base separate: SAI-4-M M12 UT             | 1    | <b>1807641000</b> |
| Matching hood passive: SAI-4/6/8-MH-BL3.5 | 1    | <b>1724750000</b> |

**Technical information:** The distributor does not include any signalling LEDs. Supply LEDs and electrical isolation are provided.

# Fixed cable version

## Fixed cable version



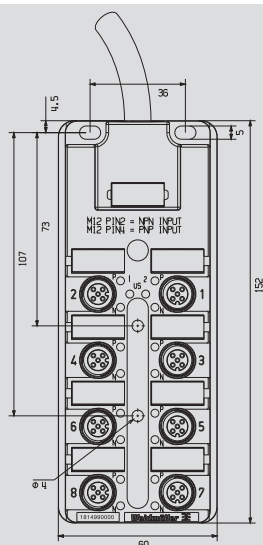
This distributor includes the option of attaching either a PNP sensor or an NPN sensor with 2 or 3 conductor connection to an M12 socket.

Eight inputs are available in total. In the case of a switched sensor, a + signal on the corresponding wire is connected through and the appropriate LED is illuminated.

The upper LED "N" is illuminated for NPN sensors and the lower LED "P" for PNP sensors. Do not connect a T-piece to the M12 socket.

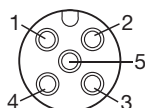
The existing M12 plug-in connectors are wired in such a manner that the PNP sensor can be connected to pin 4 and the NPN sensor to pin 2.

The distributor has eight channels and 5 m of cable. Other versions are also available.

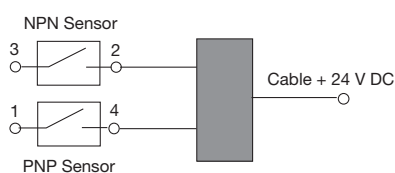


## M12 sockets

Pin 1 = +24 V DC  
Pin 2 = NPN input  
Pin 3 = 0 V DC  
Pin 4 = PNP input  
Pin 5 = PE



## Wiring diagram (schematic)



## Pin assignment

| M12 socket | Pin | Function | Pin | Function | Output | Wire colour  | Wire size            |
|------------|-----|----------|-----|----------|--------|--------------|----------------------|
| 1          | 4   | PNP      | 2   | NPN      | 1      | white        | 0.34 mm <sup>2</sup> |
| 2          | 4   | PNP      | 2   | NPN      | 2      | green        | 0.34 mm <sup>2</sup> |
| 3          | 4   | PNP      | 2   | NPN      | 3      | yellow       | 0.34 mm <sup>2</sup> |
| 4          | 4   | PNP      | 2   | NPN      | 4      | grey         | 0.34 mm <sup>2</sup> |
| 5          | 4   | PNP      | 2   | NPN      | 5      | pink         | 0.34 mm <sup>2</sup> |
| 6          | 4   | PNP      | 2   | NPN      | 6      | red          | 0.34 mm <sup>2</sup> |
| 7          | 4   | PNP      | 2   | NPN      | 7      | black        | 0.34 mm <sup>2</sup> |
| 8          | 4   | PNP      | 2   | NPN      | 8      | violet       | 0.34 mm <sup>2</sup> |
| all        | 1   | 24 V DC  |     |          |        | brown        | 0.75 mm <sup>2</sup> |
| all        | 3   | 0 V DC   |     |          |        | blue         | 0.75 mm <sup>2</sup> |
| all        | 5   | PE       |     |          |        | green/yellow | 0.75 mm <sup>2</sup> |

## Technical data

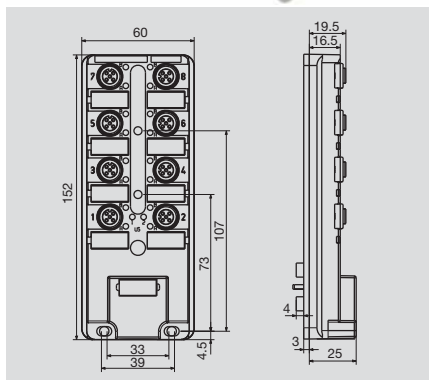
|                                             |               |
|---------------------------------------------|---------------|
| Operating voltage                           | 24 V DC ±20 % |
| Operation temperature                       | 0...80 °C     |
| Storage temperature                         | -25...80 °C   |
| Ingress protection class                    | IP68          |
| PUR cable                                   | 5 m           |
| Max. no-load current for 2-wire NPN sensors | 2 mA DC       |

## Ordering data

| Type                  | Qty. | Order No. |
|-----------------------|------|-----------|
| SAI-8-F 5P NPN-PNP 5M | 1    | 181499000 |

Wall bushing

SAI-8-B 5P M12 SL



Ordering data

|             |
|-------------|
|             |
| <b>Note</b> |

SAI-8-B 5P M12 SL

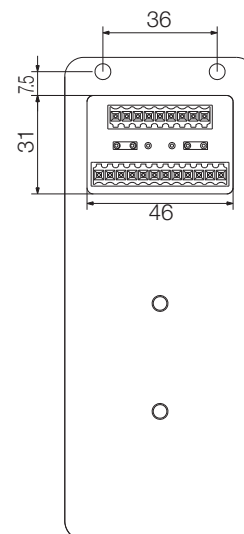
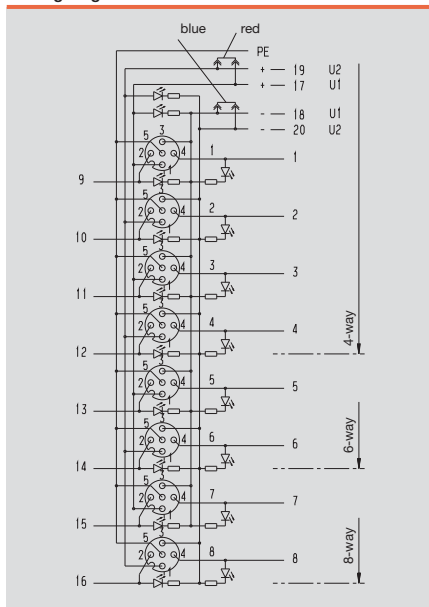
5-pole

| Type                                  | Qty. | Order No.  |
|---------------------------------------|------|------------|
| SAI-8-B 5P M12 SL                     | 1    | 1847560000 |
| BL 3.5 connector included in delivery |      |            |

Technical data

|                                                      |                                 |
|------------------------------------------------------|---------------------------------|
| Operating voltage                                    | 10...30 V                       |
| Current of continuous busbars                        | 2 A                             |
| max. current-carrying capacity per slot              | 3 A                             |
| Total current                                        | 10 A                            |
| Pollution severity                                   | 3                               |
| Protection class                                     | IP 65                           |
| Ambient temperature range                            | -20...+90 °C                    |
| Housing main material                                | Pocan                           |
| Contact carrier material                             | PBT UL 94 V0                    |
| Base material of contacts                            | CuZn, pre-nickeled, gold-plated |
| screw socket                                         | CuZn, nickel-plated             |
| Housing colour                                       | grey, RAL 7032                  |
| Flammability class UL 94                             | V-0                             |
| Clamping range of hood-version                       | 0.08...1.5 mm <sup>2</sup>      |
| Suitable for dragline cable (fixed cable connection) |                                 |

Wiring diagram



# Overview

## Distributors for system cabling

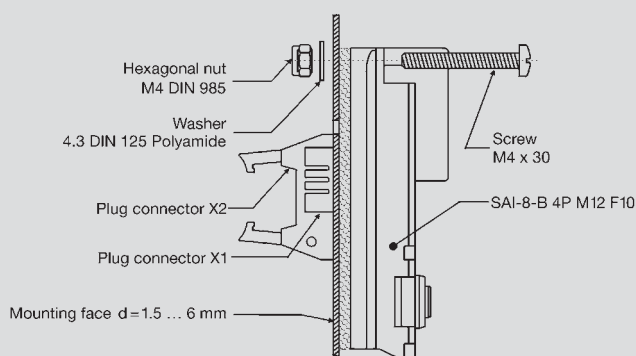
On site distribution is becoming more important. For example, in some places the IP 20 I/O module has to be mounted in housings directly on the machine. This is where a simplified form of wiring is essential.

## Weidmüller now offers two simple solutions

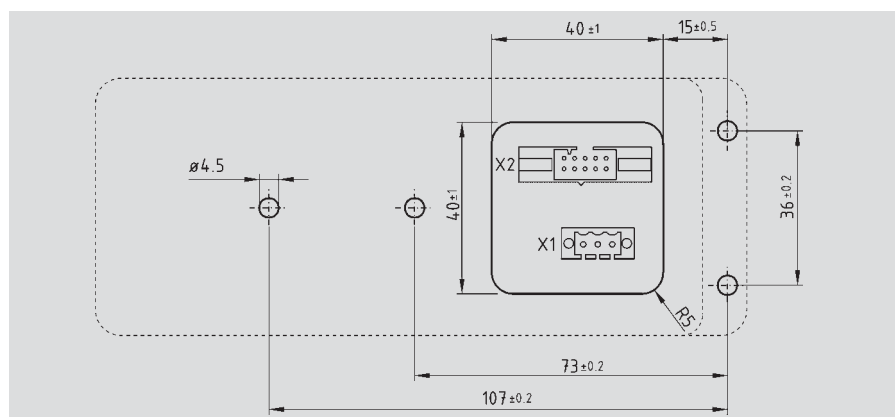
- A distributor equipped at the rear with a standardised ribbon cable connector, which is compatible with the Weidmüller PLC system interface.
- Weidmüller also offers a unique solution for feeding bus cables through panels that can be plugged in from both sides.

## Advantages

- Sensors and actuators can be plugged in from outside
- Through-panel version can be mounted in cut outs in steel panels
- Standardised ribbon cable connector inside
- Plus: M12 through-panel feed that can be plugged in from both sides



## Drilling template



### Advantages of system cabling

#### Fast

- Time saving installation
- Reduces commissioning and troubleshooting times
- On site wiring cuts wiring costs

#### Safe

- Reduces installation errors
- Using system cables instead of individual wires improves clarity in control cabinets
- Direct marking corresponding to the PLC

#### Variability

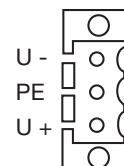
- Additional I/O modules available
- Cable length options
- Easy replacement of I/O interfaces provides flexibility

### Contact assignment

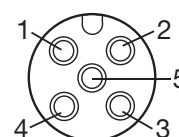
#### Male connector X1

| M12 socket |       | Male connector X1 |
|------------|-------|-------------------|
| 1 ... 8    | Pin 1 | U +               |
| 1 ... 8    | Pin 3 | U -               |
| 1 ... 8    | Pin 5 | PE                |

#### Male connector X1



#### M12 socket

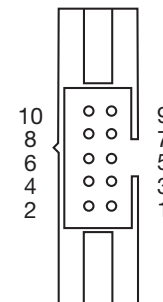


### Contact assignment

#### Male connector X2

| M12 socket |       | Male connector X2 |
|------------|-------|-------------------|
| 1          | Pin 4 | 1                 |
| 2          | Pin 4 | 2                 |
| 3          | Pin 4 | 3                 |
| 4          | Pin 4 | 4                 |
| 5          | Pin 4 | 5                 |
| 6          | Pin 4 | 6                 |
| 7          | Pin 4 | 7                 |
| 8          | Pin 4 | 8                 |
| 1 - 8      | Pin 1 | 9                 |
| 1 - 8      | Pin 3 | 10                |

#### Male connector X2



#### Note:

You will find further products for Interface units and PLC solutions in the Electronic catalogue 4.5.

### Technical data

Operating voltage  
Outputs  
Inputs

#### Mounting conditions

Mounting surface

Surface temperature  
Ingress protection class

Fixings

#### Note:

10 - 30 V (DC)  
max. 1 A per channel / max. 8 A in total  
max. 1 A in total

sheet steel, flat, min. 1.5 mm thick, or panels with at least equivalent stability, max. 6 mm thick  
max. 40 °C

IP67/IP68 only in conjunction  
with control cabinets with equivalent class of protection  
4 screws + washers + nuts / torque: 0.8 Nm

Connect the male connector 3.5 (X1) when using actuators

### Ordering data

Distributor  
Male connector X1

| Type                      | Qty. | Order No.  |
|---------------------------|------|------------|
| SAI-8-B 4P M12 F10        | 1    | 1812170000 |
| BL 3.50/07/180 SN DKGX BX | 50   | 1606550000 |

# Pre-assembled hood version

In some instances it is helpful to order the hoods pre-assembled.



## SAI distributor with pre-assembled hood Colour-coded cable

| Ordering data       |        | 4-pole     |
|---------------------|--------|------------|
| Type                | Length | Order No.  |
| 8-channel           |        |            |
| SAI-8-MF 4P PUR 5M  | 5 m    | 1799960000 |
| SAI-8-MF 4P PUR 10M | 10 m   | 1789190000 |

| Ordering data                    |        | 5-pole     |
|----------------------------------|--------|------------|
| Type                             | Length | Order No.  |
| 4-channel                        |        |            |
| SAI-4-MF 5P PUR 5M               | 5 m    | 1804600000 |
| SAI-4-MF 5P PUR 10M              | 10 m   | 1804580000 |
| 8-channel                        |        |            |
| SAI-8-MF 5P PUR 5M               | 5 m    | 1804590000 |
| SAI-8-MF 5P PUR 10M              | 10 m   | 9457430000 |
| 8-channel, without initiator LED |        |            |
| SAI-8-MF 5P PUR 5M OL            | 5 m    | 9457350000 |

## Pre-assembled hood Colour-coded cable

| Ordering data           |        | 4-pole     |
|-------------------------|--------|------------|
| Type                    | Length | Order No.  |
| SAI-4/6/8-MHF 4P PUR 4M | 4 m    | 1791450400 |
| SAI-4/6/8-MHF 4P PUR 6M | 6 m    | 1791450600 |
| SAI-4/6/8-MHF 4P PUR 9M | 9 m    | 1791450900 |
| SAI-4/6/8-MHF 4P PUR14M | 14 m   | 1791451400 |
| SAI-4/6/8-MHF 4P PUR20M | 20 m   | 1791452000 |
| SAI-4/6/8-MHF 4P PUR28M | 28 m   | 1791452800 |
| SAI-4/6/8-MHF 4P PUR34M | 34 m   | 1791453400 |

## Matching base module

| Type            | Qty. | Order No.  |
|-----------------|------|------------|
| SAI-4-M-4PM12UT | 1    | 1705921000 |
| SAI-6-M-4PM12UT | 1    | 1705931000 |
| SAI-8-M-4PM12UT | 1    | 1705941000 |

## Pre-assembled hood

| Ordering data           |        | 5-pole     |
|-------------------------|--------|------------|
| Type                    | Length | Order No.  |
| SAI-4/6/8-MHF 5P PUR 4M | 4 m    | 1791460400 |
| SAI-4/6/8-MHF 5P PUR 6M | 6 m    | 1791460600 |
| SAI-4/6/8-MHF 5P PUR 9M | 9 m    | 1791460900 |
| SAI-4/6/8-MHF 5P PUR14M | 14 m   | 1791461400 |
| SAI-4/6/8-MHF 5P PUR16M | 16 m   | 1791461600 |
| SAI-4/6/8-MHF 5P PUR20M | 20 m   | 1791462000 |
| SAI-4/6/8-MHF 5P PUR28M | 28 m   | 1791462800 |
| SAI-4/6/8-MHF 5P PUR34M | 34 m   | 1791463400 |
| SAI-4/6/8-MHF 5P PUR40M | 40 m   | 1791464000 |
| SAI-4/6/8-MHF 5P PUR50M | 50 m   | 1791465000 |
| SAI-4/6/8-MHF 5P PUR55M | 55 m   | 1791465500 |

## Matching base module

| Type            | Qty. | Order No.  |
|-----------------|------|------------|
| SAI-4-M-5PM12UT | 1    | 1701231000 |
| SAI-6-M-5PM12UT | 1    | 1701241000 |
| SAI-8-M-5PM12UT | 1    | 1701251000 |



## SAI M8

Weidmüller offers two different series for the M8 range. Both of these series offer key advantages: while one is optimised for size, the other has a patented shape and protected design that make it easy to handle. The SAI M8 product line is available with up to 12 plug-in slots (as a fixed-cable version) and with up to 10 plug-in slots (as a pluggable version). The housings can be screwed on from the side or from the top which makes them more versatile. They are durable and well-sealed with a sturdy, fully encapsulated construction. These single row distributors

are easy to handle; their compact shape makes them one of the smallest product solutions available on the market. The hooded distributor is a favourite from the line or ergonomic distributors (also known as the hedgehog distributor). The cable outlet is customisable and can exit from the top or from the back. These distributors are of course also fully encapsulated.



**Easily accessible**

The side-mounted M8 connector ensures very convenient handling

**Directly on the PCB**

Custom versions are also available. This is the PCB connection module.

**Space-saving**

The line version has a very small size.

# Overview

## Fixed cable version



### Compact dimensions, readily accessible M8 connections, eye-catching design

The unconventional design of this generation of SAI M8 distributors catches the eye immediately. Their shape is helpful because in this patented design the sockets are no longer arranged in simple rows. Instead, some are on 45° bevelled surfaces. That considerably improves the accessibility of the screw connections for the sensor and actuator cables. Ease of use, compact dimensions and the eye catching design are the obvious advantages of this M8 generation.

The following variations are available:

- SAI M8 distributor with removable connection hood; the bus cable can be connected either vertically or horizontally
- SAI M8 distributor with permanently attached, pre-assembled bus cable, 5 or 10 m long; this version is particularly slim and is therefore ideal for mounting in confined spaces
- SAI M8 distributor with metal plated M23 thread

## Hood version



## M23 version



# SAI-M8-Line

## M8 distributor with M12 outlet



## M8 distributor line / fixed-cable version



## M8 distributor with solder pins



n

## Extra-narrow M8 distributor for confined spaces

Single-row M8 distributors are the smallest sensor-actuator modules currently available with this thread size and it is precisely their size that is decisive for applications. Therefore, this form has become very popular. It is important to maintain the widest possible range of options. The SAI-M8-Line products can provide many interesting solutions:

- 4 and 6 channel modules with 8 pole M12 bus connection
- 8 and 10 channel modules with 12 pole bus connection
- 4, 10 and 12 channel distributors with fixed cable connection, the 4 and 8 channel modules also with 4 poles

It is important to note that the distributors can be labelled with the same markers as the Weidmüller 5 mm modular terminals. Therefore, no new tags had to be introduced. The modules can also be mounted sideways and are completely encapsulated.

Consequently, Weidmüller SAI distributors represent stability, robustness, flexibility and compactness in one unit.

## PCB version of a complete SAI distributor

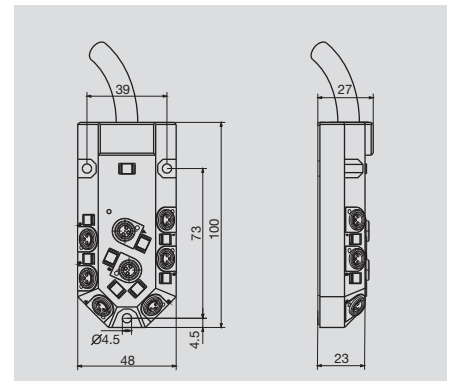
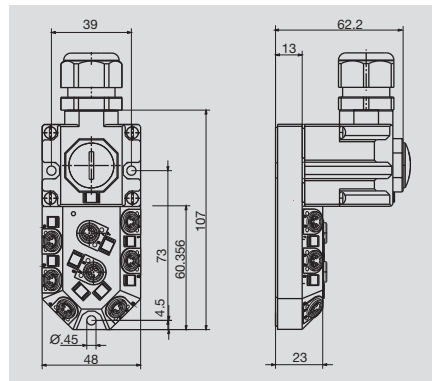
During the design of PCBs, it is often necessary to plug in different external data lines. There are a variety of connectors available for this purpose. For machine construction, the M8 and M12 connectors have become established as the standard solutions for sensor and actuator wiring. When attempting to mount these PCB-type connectors to the PCB, there is a significant risk that they will not be firmly attached to the board. Now, the SL version of the SAI distributor series solves this problem. The distributor can be completely mounted onto a PCB. It features soldering pins for the electrical connection to the PCB. The distributor itself should be slightly raised up during assembly by means of washers. This provides some clearance under the box. Naturally, the power supply channels are bridged in the distributor. This saves space on the PCB since there is no need for holes on any assembly surface. Thus the reverse side can be used for other purposes.

## M8 distributors

### Hooded/fixed cable version

#### SAI-4/8-M

#### SAI-4/8-F



### Ordering data

| 3-pole                                       |                        |
|----------------------------------------------|------------------------|
| Cable length 5 m (with fixed cable version)  | 4 channel<br>8 channel |
| Cable length 10 m (with fixed cable version) | 4 channel<br>8 channel |
| 4-pole                                       |                        |
| Cable length 5 m (with fixed cable version)  | 4 channel<br>8 channel |
| Cable length 10 m (with fixed cable version) | 4 channel<br>8 channel |
| <b>Note</b>                                  |                        |

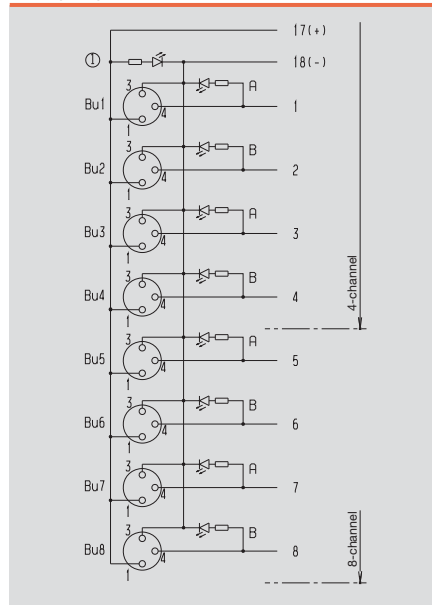
| SAI-4/8-M                 | M8   |            |
|---------------------------|------|------------|
| Type                      | Qty. | Order No.  |
| SAI-4-M 3P M8             | 1    | 1784680000 |
| SAI-8-M 3P M8             | 1    | 1784670000 |
|                           |      |            |
| SAI-4-M 4P M8             | 1    | 1784700000 |
| SAI-8-M 4P M8             | 1    | 1784690000 |
| Other versions on request |      |            |

| SAI-4/8-F                 | M8   |            |
|---------------------------|------|------------|
| Type                      | Qty. | Order No.  |
| SAI-4-F 3P M8 PUR 5M      | 1    | 1784640000 |
| SAI-8-F 3P M8 PUR 5M      | 1    | 1784620000 |
| SAI-4-F 3P M8 PUR 10M     | 1    | 1784630000 |
| SAI-8-F 3P M8 PUR 10M     | 1    | 1784610000 |
|                           |      |            |
| SAI-4-F 4P M8 PUR 5M      | 1    | 1784600000 |
| SAI-8-F 4P M8 PUR 5M      | 1    | 1784580000 |
| SAI-4-F 4P M8 PUR 10M     | 1    | 1784590000 |
| SAI-8-F 4P M8 PUR 10M     | 1    | 1784570000 |
| Other versions on request |      |            |

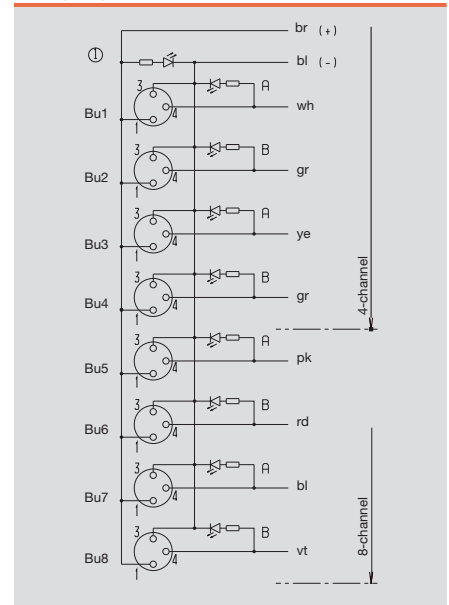
### Technical data

|                                                      |                                  |
|------------------------------------------------------|----------------------------------|
| Operating voltage                                    | 10...30 V                        |
| Current of continuous busbars                        | 2 A                              |
| max. current-carrying capacity per slot              | 2 A                              |
| Total current                                        | 8 A                              |
| Pollution severity                                   | 3                                |
| Protection class                                     | IP 68                            |
| Ambient temperature range                            | -20...+80 °C                     |
| Housing main material                                | Pocan                            |
| Contact carrier material                             | PBT UL 94 V0                     |
| Base material of contacts                            | CuZn, pre-nickel-<br>gold-plated |
| screw socket                                         | CuZn, nickel-<br>plated          |
| Housing colour                                       | grey, RAL 7032                   |
| Flammability class UL 94                             | V-0                              |
| Clamping range of hood-version                       | 0.08...1 mm <sup>2</sup>         |
| Suitable for dragline cable (fixed cable connection) | Yes                              |

### Wiring diagram



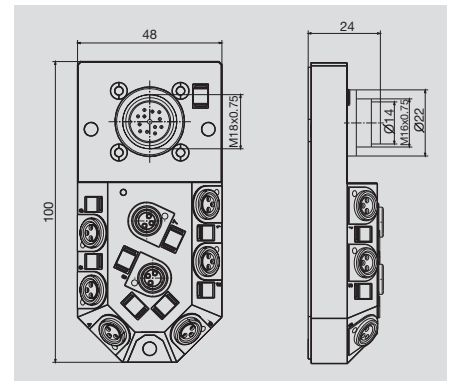
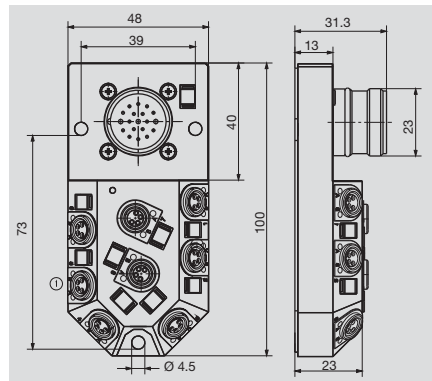
### Wiring diagram



With M23/ M16 outlet

SAI-4/8-M23

SAI-8-M16



Ordering data

|             |           |
|-------------|-----------|
| 3-pole      | 8 channel |
| 4-pole      | 4 channel |
|             | 8 channel |
| <b>Note</b> |           |

SAI-4/8-M23

M23

| Type                      | Qty. | Order No.  |
|---------------------------|------|------------|
| SAI-4-M23 4P M8           | 1    | 1784660000 |
| SAI-8-M23 4P M8           | 1    | 1784650000 |
| Other versions on request |      |            |

SAI-8-M16

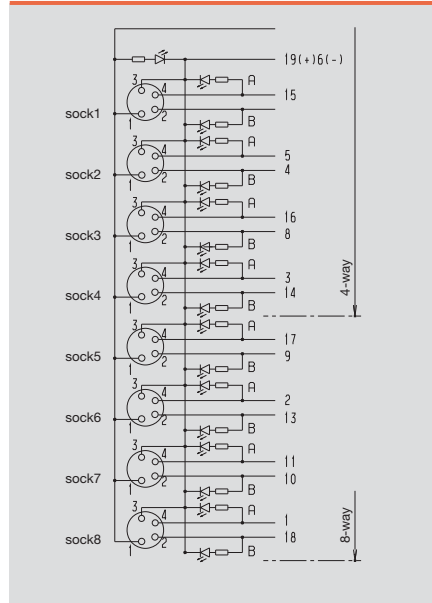
M16

| Type                      | Qty. | Order No.  |
|---------------------------|------|------------|
| SAI-8-M16 3P M8           | 1    | 1795900000 |
| Other versions on request |      |            |

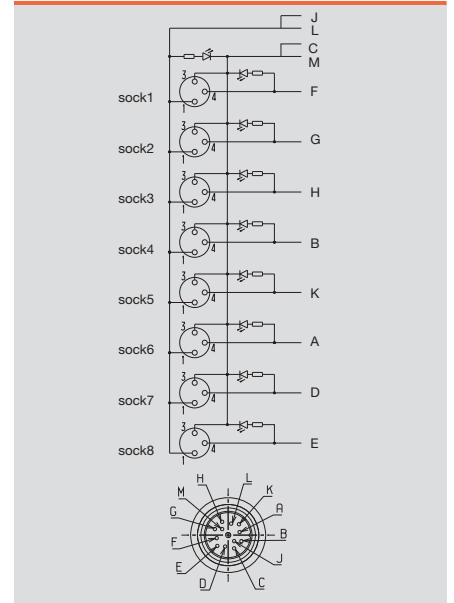
Technical data

|                                                      |                                 |
|------------------------------------------------------|---------------------------------|
| Operating voltage                                    | 10...30 V                       |
| Current of continuous busbars                        | 2 A                             |
| max. current-carrying capacity per slot              | 2 A                             |
| Total current                                        | 8 A                             |
| Pollution severity                                   | 3                               |
| Protection class                                     | IP 68                           |
| Ambient temperature range                            | -20...+90 °C                    |
| Housing main material                                | Pocan                           |
| Contact carrier material                             | PBT UL 94 V0                    |
| Base material of contacts                            | CuZn, pre-nickeled, gold-plated |
| screw socket                                         | CuZn, nickel-plated             |
| Housing colour                                       | grey, RAL 7032                  |
| Flammability class UL 94                             | V-0                             |
| Clamping range of hood-version                       |                                 |
| Suitable for dragline cable (fixed cable connection) |                                 |

Wiring diagram



Wiring diagram

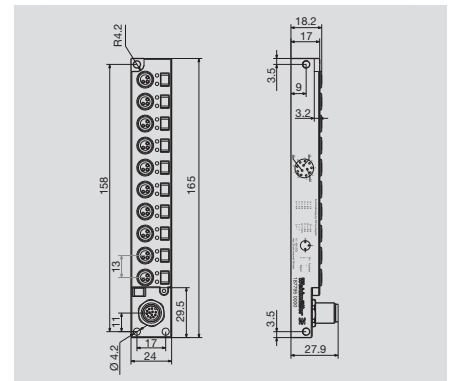
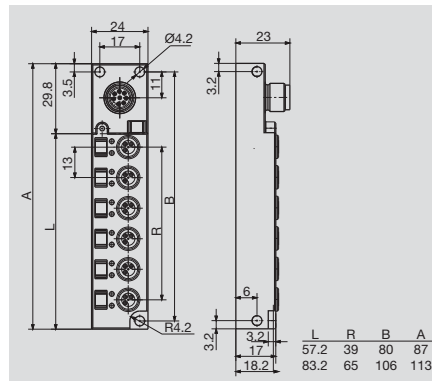


## M8 distributors

### Line

#### SAI-4/6-S

#### SAI-5/8-S



### Ordering data

| 3-pole             |  |
|--------------------|--|
| 4 channel          |  |
| 6 channel          |  |
| 8 channel          |  |
| 10 channel         |  |
| 3-pole without LED |  |
| 4 channel          |  |
| 6 channel          |  |

**Note**

#### SAI-4/6-S

#### M12

| Type                      | Qty. | Order No.  |
|---------------------------|------|------------|
| SAI-4-S 3P M8 L           | 1    | 1828740000 |
| SAI-6-S 3P M8 L           | 1    | 1828730000 |
|                           |      |            |
| SAI-4-S 3P M8 L OL        | 1    | 1051760000 |
| SAI-6-S 3P M8 L OL        | 1    | 1932380000 |
| Other versions on request |      |            |

#### SAI-5/8-S

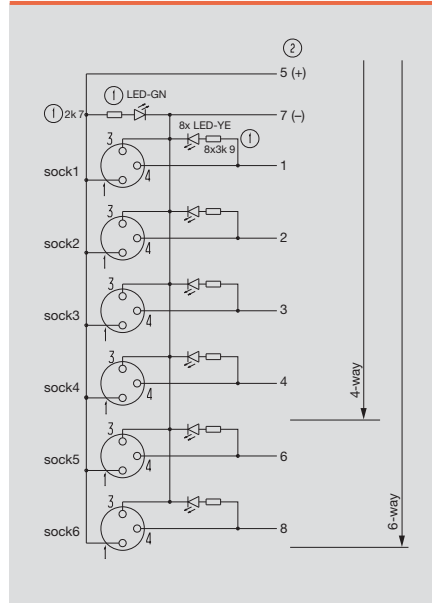
#### M12

| Type               | Qty. | Order No.  |
|--------------------|------|------------|
| SAI-8-S12 3P M8 L  | 1    | 1871680000 |
| SAI-10-S12 3P M8 L | 1    | 1877950000 |
|                    |      |            |
|                    |      |            |
|                    |      |            |

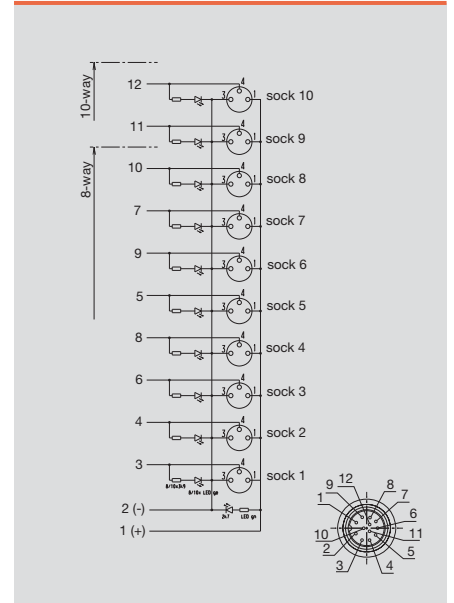
### Technical data

|                                                      |                                 |
|------------------------------------------------------|---------------------------------|
| Operating voltage                                    | 10...30 V                       |
| Current of continuous busbars                        | 1 A                             |
| max. current-carrying capacity per slot              | 2 A                             |
| Total current                                        | 6 A                             |
| Pollution severity                                   | 3                               |
| Protection class                                     | IP 68                           |
| Ambient temperature range                            | -25...+80 °C                    |
| Housing main material                                | Pocan                           |
| Contact carrier material                             | PBT UL 94 V0                    |
| Base material of contacts                            | CuZn, pre-nickeled, gold-plated |
| screw socket                                         | CuZn, nickel-plated             |
| Housing colour                                       | grey, RAL 7032                  |
| Flammability class UL 94                             | V-0                             |
| Clamping range of hood-version                       |                                 |
| Suitable for dragline cable (fixed cable connection) | Yes                             |

### Wiring diagram

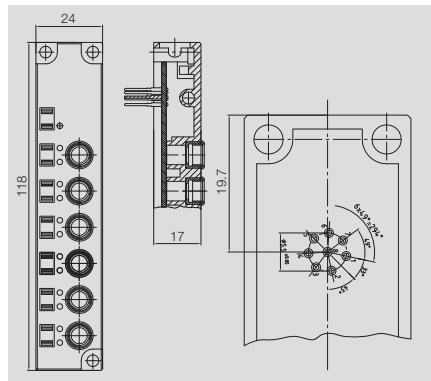


### Wiring diagram



Line  
PCB version

SAI-6-S M8 L SL



Ordering data

|               |           |
|---------------|-----------|
| <b>3-pole</b> | 6 channel |
| <b>Note</b>   |           |

SAI-6-S M8 L SL

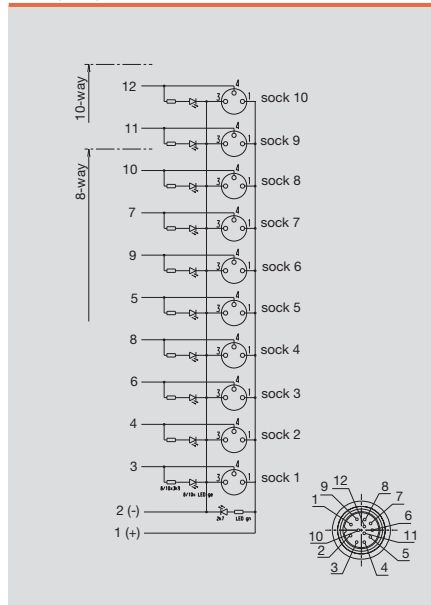
3-pole

| Type                      | Qty. | Order No.  |
|---------------------------|------|------------|
| SAI-6-S 3P M8 L SL        | 1    | 1057720000 |
| Other versions on request |      |            |

Technical data

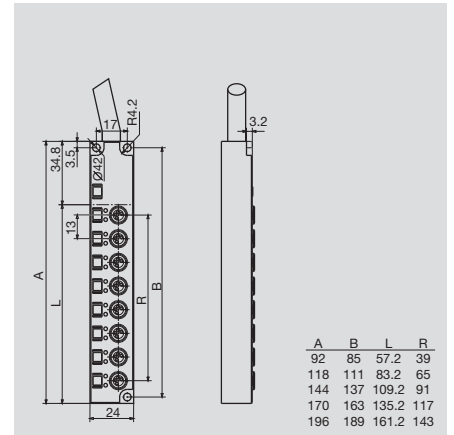
|                                                      |                                 |
|------------------------------------------------------|---------------------------------|
| Operating voltage                                    | 10...30 V                       |
| Current of continuous busbars                        | 1 A                             |
| max. current-carrying capacity per slot              | 2 A                             |
| Total current                                        | 6 A                             |
| Pollution severity                                   | 3                               |
| Protection class                                     | IP 68                           |
| Ambient temperature range                            | -25...+80 °C                    |
| Housing main material                                | Pocan                           |
| Contact carrier material                             | PBT UL 94 V0                    |
| Base material of contacts                            | CuZn, pre-nickeled, gold-plated |
| screw socket                                         | CuZn, nickel-plated             |
| Housing colour                                       | grey, RAL 7032                  |
| Flammability class UL 94                             | V-0                             |
| Clamping range of hood-version                       |                                 |
| Suitable for dragline cable (fixed cable connection) | Yes                             |

Wiring diagram



## M8 distributors

### Line / Fixed cable version



### Ordering data

| Cable length 5 m (with fixed cable version)  |                      |
|----------------------------------------------|----------------------|
| 4 channel                                    | SAI-4-F 3P M8 L 5M   |
| 6 channel                                    | SAI-6-F 3P M8 L 5M   |
| 8 channel                                    | SAI-8-F 3P M8 L 5M   |
| 10 channel                                   | SAI-10-F 3P M8 L 5M  |
| 12 channel                                   | SAI-12-F 3P M8 L 5M  |
| Cable length 10 m (with fixed cable version) |                      |
| 4 channel                                    | SAI-4-F 3P M8 L 10M  |
| 6 channel                                    | SAI-6-F 3P M8 L 10M  |
| 8 channel                                    | SAI-8-F 3P M8 L 10M  |
| 10 channel                                   | SAI-10-F 3P M8 L 10M |
| 12 channel                                   | SAI-12-F 3P M8 L 10M |

**Note**

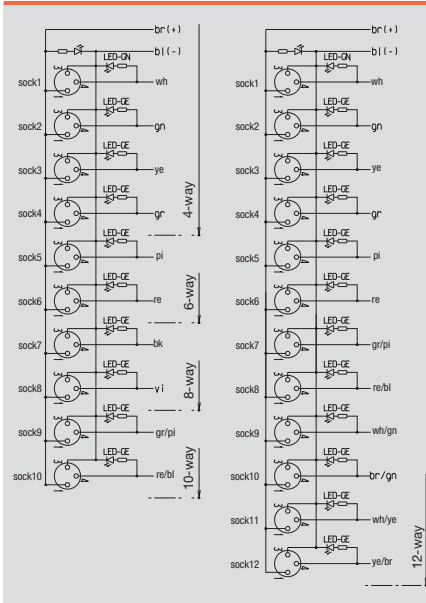
| SAI-4/6/8/10/12-L   |      | 3-pole     |  |
|---------------------|------|------------|--|
| Type                | Qty. | Order No.  |  |
| SAI-4-F 3P M8 L 5M  | 1    | 1828720000 |  |
| SAI-6-F 3P M8 L 5M  | 1    | 1828700000 |  |
| SAI-8-F 3P M8 L 5M  | 1    | 1828680000 |  |
| SAI-10-F 3P M8 L 5M | 1    | 1828660000 |  |
| SAI-12-F 3P M8 L 5M | 1    | 1828640000 |  |

| SAI-4/6/8/10/12-L  |      | 4-pole     |  |
|--------------------|------|------------|--|
| Type               | Qty. | Order No.  |  |
| SAI-4-F 4P M8 L 5M | 1    | 1849680000 |  |
| SAI-6-F 4P M8 L 5M | 1    | 1849700000 |  |
| SAI-8-F 4P M8 L 5M | 1    | 1828620000 |  |

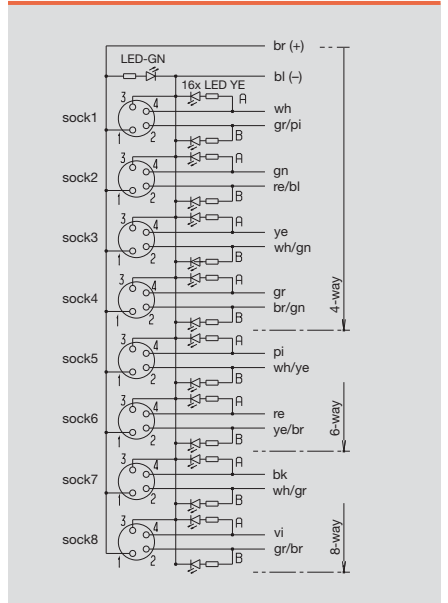
### Technical data

|                                                      |                                 |
|------------------------------------------------------|---------------------------------|
| Operating voltage                                    | 10...30 V                       |
| Current of continuous busbars                        | 1 A                             |
| max. current-carrying capacity per slot              | 2 A                             |
| Total current                                        | 6 A                             |
| Pollution severity                                   | 3                               |
| Protection class                                     | IP 68                           |
| Ambient temperature range                            | -25...+80 °C                    |
| Housing main material                                | Pocan                           |
| Contact carrier material                             | PBT UL 94 V0                    |
| Base material of contacts                            | CuZn, pre-nickeled, gold-plated |
| screw socket                                         | CuZn, nickel-plated             |
| Housing colour                                       | grey, RAL 7032                  |
| Flammability class UL 94                             | V-0                             |
| Clamping range of hood-version                       |                                 |
| Suitable for dragline cable (fixed cable connection) | Yes                             |

### Wiring diagram



### Wiring diagram





# Overview

## M5-Line with M12 outlet



### The Weidmüller SAI-M5 distributors are currently the smallest SAI distributors in the world

Whether mobile phones or computers as the functionality increases so the size of the components decreases! Today, machine designers face the same problem. Space is at a premium here as well, even in large machines, particularly where the sensor components are located. In the past the M8 distributor solved these problems. However, these units are now considered to be too large. The first move was to make the sensors smaller. Then it was the turn of the cables and distributors.

These extremely small units are surprisingly easy to handle. M5 plug in connectors have three or four poles and are thus equivalent to M8 plug-in connectors.

## Fixed cable version



But in contrast to the M8 plug in connectors, the different pole numbers here are compatible with each other. The advantage is obvious: 4 pole units which are required, for example, for antivalent sensors can now be plugged into one and the same distributor with standard NOC applications. In the M8 system special adapters are required. Besides their actual size, in some applications module weight is critical too.

For example, the speed of a handling machine is influenced by the weight of the moving parts. Here again, the M5 system offers outstanding advantages, with its almost unrivalled small size and light weight.

## M5-Line with M16 outlet



There is no version for custom bus cable assembly for this SAI distributor, which is delivered with a plug in connection and a fixed cable connection. A compact 12 pole M12 plug in connector has been developed as a plug in connection specifically for this distributor.

This ratio of surface area to number of connections is reminiscent of the computer industry. The M16 bus connection is also integrated in the module as an option, so the SAI M5 can be used as a combined SAI system as well. A Y-configuration is possible in conjunction with the M16 splitter.

The fixed cable version is particularly suitable for standard applications where the distributor is permanently installed and the electrical installation does not have to be disconnected after installation. The bus cable is reduced in cross section to save weight here too.

**M5 distributors**



**Quality comes in little packages...**

This is the motto with which Weidmüller developed its distributor with M5 plug in connectors. The outstanding feature of these connectors is their size. Attention has also been given to stability and good conductivity.

For a comparison of sizes, take a look at the photos on the left.

These products are ideal for handling machines where light weight and small size are vital.

**Comparing the sizes**



**M12 M8 M5**



**M12 M8 M5**

**Marking**

Each channel is marked with the channel number. Each initiator LED can be exactly allocated with the letters A and B. In addition, the distributor and every channel can be marked.

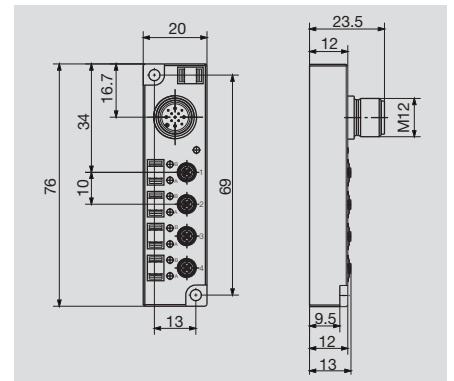
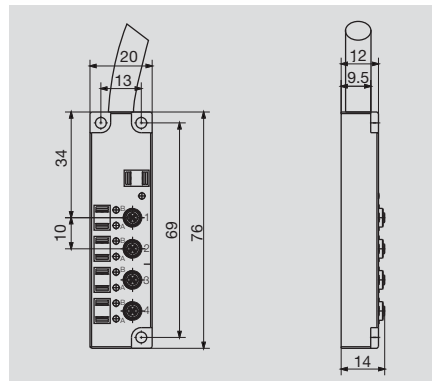


## M5 distributors

### Line

### SAI-4/8-F

### SAI-4/8-S



### Ordering data

| 3-pole                                       |           |
|----------------------------------------------|-----------|
| Cable length 5 m (with fixed cable version)  | 4 channel |
|                                              | 8 channel |
| Cable length 10 m (with fixed cable version) | 4 channel |
|                                              | 8 channel |
| 4-pole                                       |           |
| Cable length 5 m (with fixed cable version)  | 4 channel |
|                                              | 8 channel |
| Cable length 10 m (with fixed cable version) | 4 channel |
|                                              | 8 channel |
| Note                                         |           |

### SAI-4/8-F

### M5

| Type                      | Qty. | Order No.  |
|---------------------------|------|------------|
| SAI-4-F 3P M5 L5M         | 1    | 1851740000 |
| SAI-8-F 3P M5 L5M         | 1    | 1851760000 |
| SAI-4-F 3P M5 L10M        | 1    | 1845820000 |
| SAI-8-F 3P M5 L10M        | 1    | 1845830000 |
|                           |      |            |
| SAI-4-F 4P M5 L5M         | 1    | 1851770000 |
| SAI-8-F 4P M5 L5M         | 1    | 1851750000 |
| SAI-4-F 4P M5 L10M        | 1    | 1845800000 |
| SAI-8-F 4P M5 L10M        | 1    | 1845810000 |
| Other versions on request |      |            |

### SAI-4/8-S

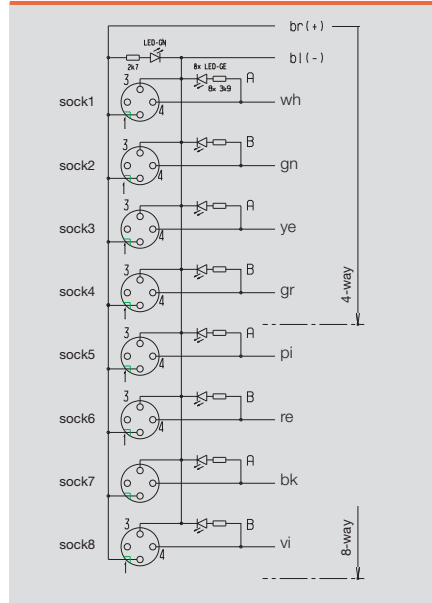
### M5

| Type                      | Qty. | Order No.  |
|---------------------------|------|------------|
| SAI-8-S 3P M5             | 1    | 1845850000 |
|                           |      |            |
| SAI-4-S 4P M5             | 1    | 1845840000 |
|                           |      |            |
| Other versions on request |      |            |

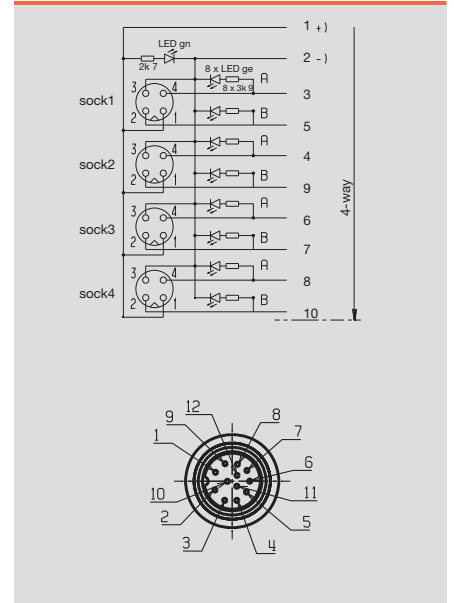
### Technical data

|                                                      |                     |
|------------------------------------------------------|---------------------|
| Operating voltage                                    | 10...30 V           |
| Current of continuous busbars                        | 1 A                 |
| max. current-carrying capacity per slot              | 3 A                 |
| Total current                                        | 3 A                 |
| Pollution severity                                   | 3                   |
| Protection class                                     | IP 67               |
| Ambient temperature range                            | -25...+80 °C        |
| Housing main material                                | PA 6 GF             |
| Contact carrier material                             | CuZn, nickel-plated |
| Base material of contacts                            | Au (Gold)           |
| screw socket                                         | CuZn, nickel-plated |
| Housing colour                                       | grey, RAL 7032      |
| Flammability class UL 94                             | V-0                 |
| Clamping range of hood-version                       |                     |
| Suitable for dragline cable (fixed cable connection) | Yes                 |

### Wiring diagram

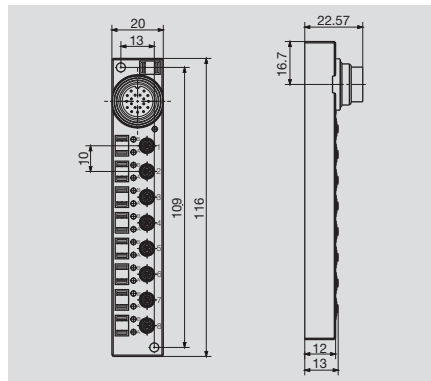


### Wiring diagram



Line

SAI-4/8-S16



Ordering data

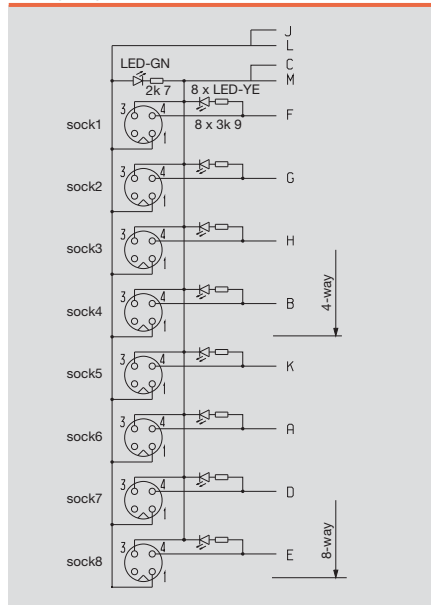
|               |           |
|---------------|-----------|
| <b>3-pole</b> | 4 channel |
|               | 8 channel |
| <b>4-pole</b> | 4 channel |
|               | 8 channel |
| <b>Note</b>   |           |

| SAI-4/8-S16                                                                               | M5   |            |
|-------------------------------------------------------------------------------------------|------|------------|
| Type                                                                                      | Qty. | Order No.  |
| SAI-4-S16 3P M5                                                                           | 1    | 1845890000 |
| SAI-8-S16 3P M5                                                                           | 1    | 1845880000 |
| SAI-4-S16 4P M5                                                                           | 1    | 1845870000 |
| SAI-8-S16/19P 4P M5                                                                       | 1    | 1845860000 |
| 1845870000, 1845880000 and 1845890000 with M16 / 12-pole<br>1845860000 with M16 / 19-pole |      |            |

Technical data

|                                                      |                     |
|------------------------------------------------------|---------------------|
| Operating voltage                                    | 10...30 V           |
| Current of continuous busbars                        | 1 A                 |
| max. current-carrying capacity per slot              | 3 A                 |
| Total current                                        | 3 A                 |
| Pollution severity                                   | 3                   |
| Protection class                                     | IP 67               |
| Ambient temperature range                            | -25...+80 °C        |
| Housing main material                                | PA 6 GF             |
| Contact carrier material                             | CuZn, nickel-plated |
| Base material of contacts                            | Au (Gold)           |
| screw socket                                         | CuZn, nickel-plated |
| Housing colour                                       | grey, RAL 7032      |
| Flammability class UL 94                             | V-0                 |
| Clamping range of hood-version                       |                     |
| Suitable for dragline cable (fixed cable connection) |                     |

Wiring diagram



# SAI Ex i distributor for Ex i zone 1

## Hooded version with 4 plug-in slots



## SAI distributor for Ex i zone 1

Available for the first time: passive SAI distributors with M12 connection technology in IP 68 ingress protection classification for Ex i hazardous area applications.

SAI Ex i distributor certified for zone 1 of potentially explosive areas, even for G and D zones.

The SAI Ex i distributors are available with four or eight connections for simple connection of NAMUR sensors. Distribution boxes with costly certification are thus a thing of the past. These modules are suitable for process engineering, but also for “standard” machine applications. The versions are available with or without yellow LEDs.

## Hooded version with 8 plug-in slots



The distributors are provided with a removable connection hood. This detail also helps to reduce costs because only the defective bus cable needs to be replaced and not the entire distributor.

## SAI Ex i distributor for Ex i zone 22



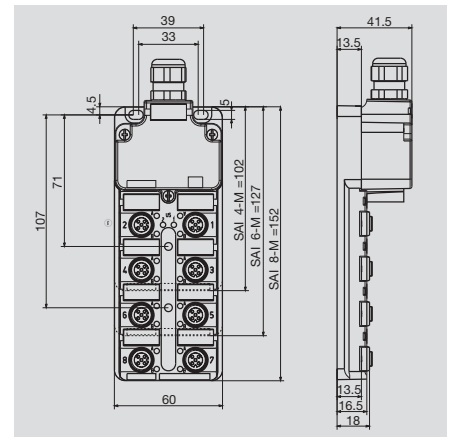
## World first: SAI distributor for Ex i zone 22

In some areas of machine design only Ex i certified devices are permitted.

The wiring of these modules corresponds to that of standard SAI distributors. However, these components were specially developed, manufactured, checked and certified for zone 22 modules. All zone 22 modules are therefore provided with suitable printing.

**Hood version**

Zone 1



**Ordering data**

| Complete modules      |           |
|-----------------------|-----------|
|                       | 4 channel |
|                       | 6 channel |
|                       | 8 channel |
| Without initiator LED | 4 channel |
| Without initiator LED | 8 channel |
| <b>Note</b>           |           |

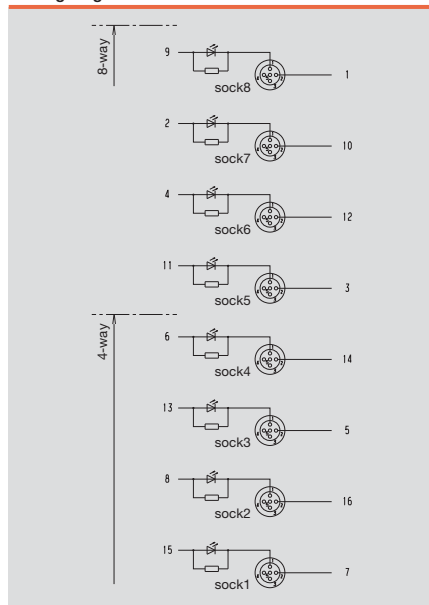
| SAI-4/8-M Ex i       |      | 4-pole     |  |
|----------------------|------|------------|--|
| Type                 | Qty. | Order No.  |  |
| SAI-4-M 4P Exi Z1 IL | 1    | 1868360000 |  |
| SAI-8-M 4P Exi Z1 IL | 1    | 1868370000 |  |
| SAI-4-M 4P Exi Z1 OL | 1    | 1868350000 |  |
| SAI-8-M 4P Exi Z1 OL | 1    | 1894380000 |  |

| SAI-4/8-M Ex ia      |      | 5-pole     |  |
|----------------------|------|------------|--|
| Type                 | Qty. | Order No.  |  |
| SAI-4-M 5P M12 Ex ia | 1    | 1896050000 |  |
| SAI-6-M 5P M12 Ex ia | 1    | 1896070000 |  |
| SAI-8-M 5P M12 Ex ia | 1    | 1896090000 |  |

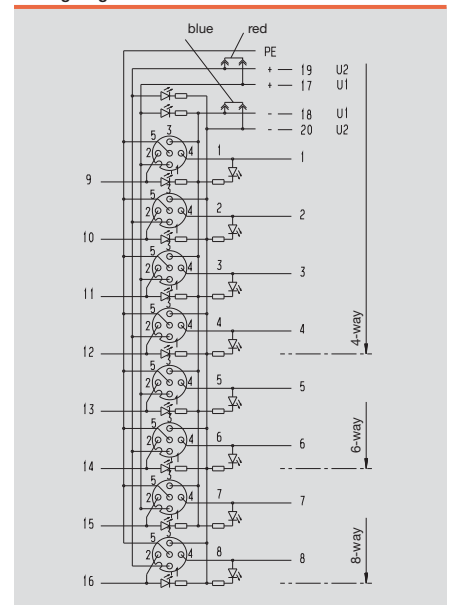
**Technical data**

|                                                      |                                 |
|------------------------------------------------------|---------------------------------|
| Operating voltage                                    | 10...30 V                       |
| Current of continuous busbars                        | 100 mA                          |
| max. current-carrying capacity per slot              | 100 mA                          |
| Total current                                        | 2.3 A                           |
| Pollution severity                                   | 3                               |
| Protection class                                     | IP 68                           |
| Ambient temperature range                            | -20...+40 °C                    |
| Housing main material                                | Pocan                           |
| Contact carrier material                             | PBT UL 94 V0                    |
| Base material of contacts                            | CuZn, pre-nickeled, gold-plated |
| screw socket                                         | CuZn, nickel-plated             |
| Housing colour                                       | grey, RAL 7032                  |
| Flammability class UL 94                             | V-0                             |
| Clamping range of hood-version                       | 0.1...1.5 mm <sup>2</sup>       |
| Suitable for dragline cable (fixed cable connection) |                                 |

**Wiring diagram**



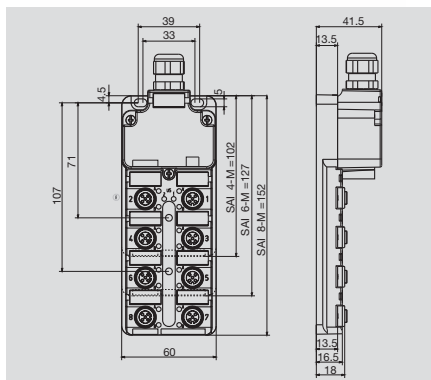
**Wiring diagram**



M12 Ex i distributors

Ex i distributor for the Ex i zone 22

SAI-4/6/8-M



Ordering data

| Complete modules |           |
|------------------|-----------|
|                  | 4 channel |
|                  | 6 channel |
|                  | 8 channel |
| Note             |           |

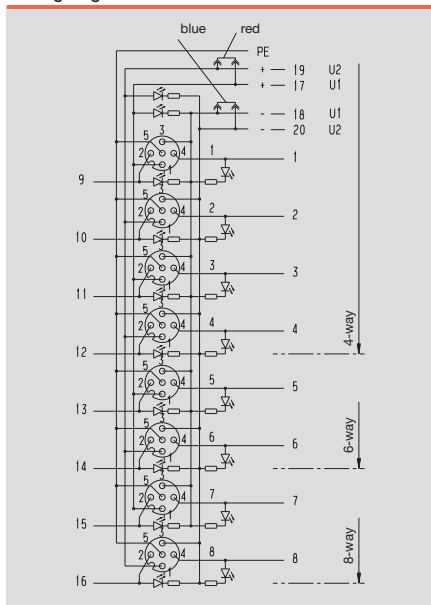
| SAI-4/6/8-M       |      | 5-pole     |
|-------------------|------|------------|
| Type              | Qty. | Order No.  |
| SAI-4-M 5P Ex Z22 | 1    | 1861850000 |
| SAI-6-M 5P Ex Z22 | 1    | 1861840000 |
| SAI-8-M 5P Ex Z22 | 1    | 1861530000 |

Technical data

|                                                      |                                 |
|------------------------------------------------------|---------------------------------|
| Operating voltage                                    | 10...30 V                       |
| Current of continuous busbars                        | 100 mA                          |
| max. current-carrying capacity per slot              | 100 mA                          |
| Total current                                        | 2.3 A                           |
| Pollution severity                                   | 3                               |
| Protection class                                     | IP 68                           |
| Ambient temperature range                            | -20...+80 °C                    |
| Housing main material                                | Pocan                           |
| Contact carrier material                             | PBT UL 94 V0                    |
| Base material of contacts                            | CuZn, pre-nickeled, gold-plated |
| screw socket                                         | CuZn, nickel-plated             |
| Housing colour                                       | grey, RAL 7032                  |
| Flammability class UL 94                             | V-0                             |
| Clamping range of hood-version                       | 0.1...1.5 mm <sup>2</sup>       |
| Suitable for dragline cable (fixed cable connection) |                                 |

A higher current is allowed when using a lower voltage. A total capacity of 3W per plug-in station should not be exceeded.

Wiring diagram



# M23 Connectors and cables

|                                  |                                               |      |
|----------------------------------|-----------------------------------------------|------|
| <b>M23 Connectors and cables</b> | Product Description: SAI M23 Connectors       | H.2  |
|                                  | Contact assignment                            | H.7  |
|                                  | Technical data                                | H.8  |
|                                  | Overview                                      | H.10 |
|                                  | M23 connector for signal transmission         | H.12 |
|                                  | M23 connector for power transmission          | H.18 |
|                                  | Moulded M23 cables                            | H.22 |
|                                  | SAI distributor M12 with M23                  | H.23 |
|                                  | SAI distributor M18 with M23                  | H.25 |
|                                  | Installation instructions – Signal connectors | H.26 |
|                                  | Installation instructions – Power connectors  | H.31 |
|                                  | M23 connector                                 | H.35 |

# SAI M23



## A comprehensive product line of connectors, distributors and cables

M23 connectors are mainly used for connecting electrical drives and servo-motors into industrial automation applications. The M23 connectors are very easy to handle and operate. In addition to the injection-moulded variants and the SAI distributors with M23 connectors, Weidmüller is now offering customisable versions and built in plugs.





**The M23 built in connector**

The M23 built in connector provides a custom fit solution for building directly into the device.



**M23 connectors for crimping**

M23 connectors are easy to handle and operate. This is supported by the type of crimping that is used.



**Robust metal housing**

The M23 connectors feature an extra robust design.



**Solutions for power and signals**

The extensive product line includes the key housing shapes, such as angled connectors, coupling connectors and device connectors.



**M23 connector for signal transmission**

Housings



**M23 connector for signal transmission**

Built in connector



**M23 connector for power transmission**

Housings



**M23 connector for power transmission**

Built-in connector



**Moulded M23 cables**



**SAI distributors**



# Product Description: SAI M23 Connectors

## Technology and requirements

The M23 connectors are mainly used for integrating electrical drives and servo motors into industrial automation facilities. The M23 designation is based on the thread diameter of the connector, as shown in Figures 1 and 2.

With their wide variety of inserts and housings, these connectors are equally suited for applications involving signal or power transmission. Applications set in harsh industrial environments place strict requirements on the connector. Much is demanded of the housing, the inner insert and the connector contact as well. Thermal loads, physical loads, and loads from the transmitted electrical power are commonplace. M23 connectors are capable of carrying a load of up to 250/630 V at 9/30 A.

The connectors must be resistant to the penetration of all particles and substances. They must also comply with the required class of IP protection. The material used for manufacture must be resistant to acid and alkaline solutions that may be used during cleaning or production processes. Also it must not be possible for residues to accumulate in the plug which could later contaminate the production flow. It must not be possible for the plug components to loosen due to vibration. In addition, the cable and connector must have EMC shielding for some applications. This keeps external interference from influencing the signals and it also prevents the transmitted signals in the cable from interfering with other cables or components. The standards and directives (such as the German or European standards) that are followed are basically only recommendations concerning the composition of the connector. A so-called "cold standard" exists for the M23 connectors.

## Variants and designs

The variants can be classified generally according to their outer design into either customisable types or plastic moulded connectors with pre connected cables. Both variants are available in male or female versions, and in straight or angled design. Different designs and inserts can be combined to fit the particular application so that an almost limitless variety of combinations is possible. The connector inserts are available in a variety of different pole counts and as either male or female versions. The pole counts also vary in that some contacts in the mating profile may have a larger cross-section than the others. Other types include the device connector variants which are used for contacting and connecting housings. These also come in a variety of designs. The metal alloy in use may differ depending on the particular type of application. For example, stainless steel is used for those variants that will be used in the food processing industry. Each connector is optionally available with EMC protection and a plastic surface.

## Customisable connectors

The customisable connectors are almost all manufactured from metal alloys. Variants with plastic housings or fitting nuts are rare and then used mostly for customer-specific solutions. Customisable connectors are made up of a housing, a plastic contact carrier, and the contacts themselves. The various housing types can be equipped with the corresponding contact carriers. The carriers differ in their number of poles and the arrangement of the poles. Different types of contacts may also be used within the contact carriers. The shape of the contacts is either male or female. There are also difference in the width, material, and connection system (such as soldered, crimped or screwed).

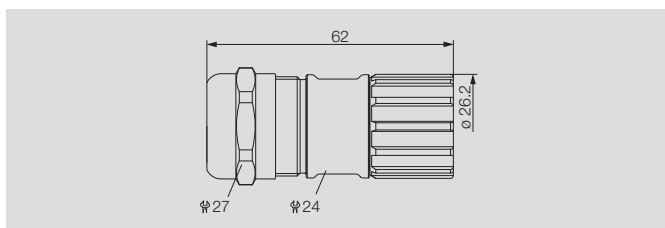


Figure 1: M23 cable connector

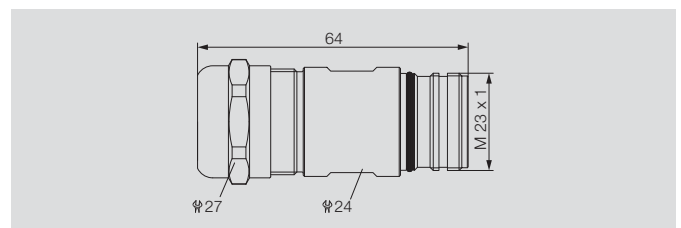


Figure 2: M23 coupling connector

This modular construction allows for a wide variety of combinations to fit any application type. Figure 3 shows the design and assembly of a M23 signal connector. Since the connector is usually put together in the field, the key requirement is that the connector is easy and reliable for the electrician to handle on-site. A good example of convenient handling is the integrated

EMC shielding. An improved shield connection results because the shielding can be connected in less steps and with fewer tools. The complete assembly process must be clear and concise, and should only take a few steps.

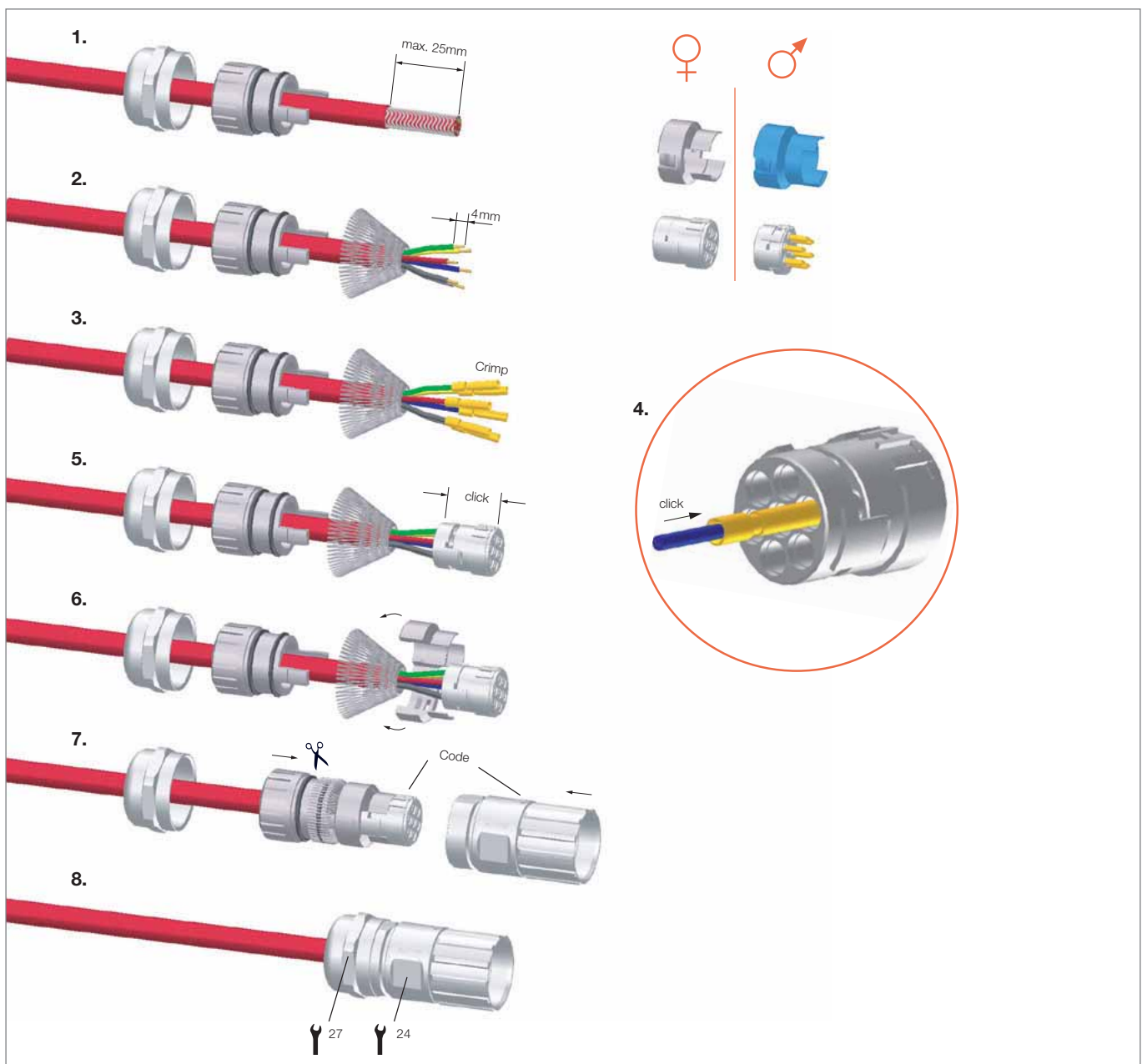


Figure 3: Design and assembly of an M23 connector

## Product Description: SAI M23 Connectors

### Plastic injection moulded connector with connected cable

The plastic injection moulded cables are cables that have already been fitted with connectors. First the cables are connected with the contacts and then these are mounted into the contact carrier. Next, plastic injection moulding is used to cover the cable and contact carrier with a plastic moulding. This ensures a highly stable and well sealed connector housing. The connector must be destroyed for it to be disconnected from its cable. The connector's outer form and material is arranged by a plastic processing tool.

The advantage of a moulded cable is that the connection between the cable and the connector has already been tested at



*Plastic injection-moulded M23 connector*

the production factory. The electrician need only adjust the length. Depending on the application, he may choose to use another connector on the open end or connect the individual cable wires directly (for example, to a terminal block). These advantages of this variant type includes the inexpensive assembly of large batches, the high degree of automation and minimal amount of material used. High reliability and an excellent seal are two additional advantages.

### Connector usage and application

M23 connectors are mainly used for integrating within machine and facility construction applications. These applications require connections with a long life span and high reliability. The failure of a single connector could lead to the failure of the entire production line. It's important to avoid facility outages caused by a connector malfunction, so the machine and facility construction industry relies on connectors with the advantages listed above. Both signals and power must be transferred in such applications. The connector and the cable must be able to withstand harsh industrial conditions. Cables may be under stress from constant motion, in particular for applications involving robotics or dragline chains. Special cables with a specific maximum

bending radius are used for such applications (for example, the bending radius may be 10d, i.e., ten times the cable diameter). When constructing a facility, a variety of connection scenarios are possible based on the particular conditions or adaptations on existing facilities. The length or configuration of the cable must be adapted to fit these conditions. If space is constricted, for instance, it may be necessary to replace a straight connector with an angled one.

Cables can be equipped with both a moulded (extruded) connector and a customizable connector. This ensures proper functionality while providing the flexibility to adapt to changing conditions on location. Safe connections can thus be established with any possible connector combination or at any protective class



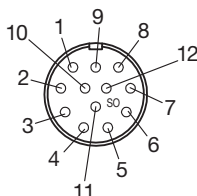
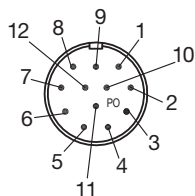
*SAI distributor with M23 connector*

required. This gives the facility planner the safety he needs. And the electrician on-site can set up the facility properly because he has sufficient flexibility to adapt to uncertain conditions. For sensor systems, connectors with high pole counts are often used on SAI distributors. Individual sensors are connected to the distributors where the signals are then centralized. They are then transferred to the controller using a cable with an M23 connector. The most common use for transmitting power involves the connection of servo-motors in machines. M23 connectors are used for this purpose because of their sturdy and compact design and their high power-carrying capacities. Because of the size of the M23 connector, it can also be used in a hybrid version for transmitting both signals and power. The signal-carrying contacts are then shielded within the connector to ensure that the transmitted voltages do not interfere with the signals.

# Contact assignment SAI M23

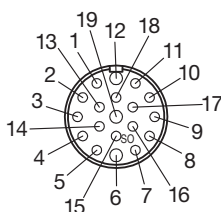
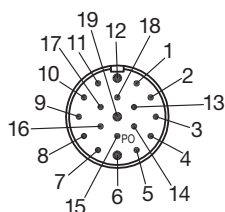
## M23 12- and 19-pole, for SAI distributors and cables

### 12-pole



| Pole | Colour code       | Plug-in station | Contact M12 |
|------|-------------------|-----------------|-------------|
| 1    | white             | 1               | 4           |
| 2    | green             | 2               | 4           |
| 3    | yellow            | 3               | 4           |
| 4    | grey              | 4               | 4           |
| 5    | pink              | 5               | 4           |
| 6    | red               | 6               | 4           |
| 7    | black             | 7               | 4           |
| 8    | violet            | 8               | 4           |
| 9    | blue (-)          | 1-8             | 3           |
| 10   | blue (-)          | 1-8             | 3           |
| 11   | brown (+)         | 1-8             | 1           |
| 12   | green-yellow (PE) | 1-8             | 5           |

### 19-pole



| Pole | Colour code       | Plug-in station | Contact M12 |
|------|-------------------|-----------------|-------------|
| 1    | violet            | 8               | 4           |
| 2    | red               | 6               | 4           |
| 3    | grey              | 4               | 4           |
| 4    | red/blue          | 2               | 2           |
| 5    | green             | 2               | 4           |
| 7    | grey/pink         | 1               | 2           |
| 8    | white/green       | 3               | 2           |
| 9    | white/yellow      | 5               | 2           |
| 10   | white/grey        | 7               | 2           |
| 11   | black             | 7               | 4           |
| 13   | yellow/brown      | 6               | 2           |
| 14   | brown/green       | 4               | 2           |
| 15   | white             | 1               | 4           |
| 16   | yellow            | 3               | 4           |
| 17   | pink              | 5               | 4           |
| 18   | grey/brown        | 8               | 2           |
| 6    | blue (-)          | 1-8             | 3           |
| 12   | green-yellow (PE) | 1-8             | 5           |
| 19   | brown (+)         | 1-8             | 1           |

### Description code

| Housing            |                                                            |
|--------------------|------------------------------------------------------------|
| G                  | Inner thread                                               |
| K                  | Outer thread                                               |
| W                  | angled                                                     |
| S                  | Signal connectors                                          |
| L                  | Power connectors                                           |
| 7/12               | Cable passage                                              |
| Inserts            |                                                            |
| BE                 | Female insert                                              |
| SE                 | Male insert                                                |
| 4/4                | Number of contacts, here for 4 sensor and 4 power contacts |
| Contacts           |                                                            |
| KBC                | Female contact                                             |
| Wire cross-section |                                                            |
| 0.08/0.56          | 0.08 mm <sup>2</sup> – 0.56 mm <sup>2</sup>                |
| 0.25/1.0           | 0.25 mm <sup>2</sup> – 1.0 mm <sup>2</sup>                 |
| 0.75/2.5           | 0.75 mm <sup>2</sup> – 2.5 mm <sup>2</sup>                 |
| Moulded M23 cables |                                                            |
| SAIS               | Cable with male plug                                       |
| SAIB               | Cable with female plug                                     |
| 12p                | 12-pole                                                    |
| 19p                | 19-pole                                                    |
| AN                 | angled                                                     |
| ST                 | straight                                                   |
| ...M               | Length in metres                                           |

### Contact partitioning

| Signal connectors |              |                |              |
|-------------------|--------------|----------------|--------------|
| Type              | 1 mm contact | 1.5 mm contact | 2 mm contact |
| 6-pole            |              |                | 6            |
| 7-pole            |              |                | 7            |
| 9-pole            | 8            |                | 1            |
| 12-pole           | 12           |                |              |
| 16-pole           | 16           |                |              |
| 17-pole           | 17           |                |              |
| 19-pole           | 16           | 3              |              |
| Power connectors  |              |                |              |
| Type              | 1 mm contact | 1.5 mm contact | 2 mm contact |
| 6-pole            |              |                | 6            |
| 4+4-pole          | 4            |                | 4            |

Contacts for signal plugs cannot be used in inserts for power plugs and vice versa.

## Technical data

## Signal connectors

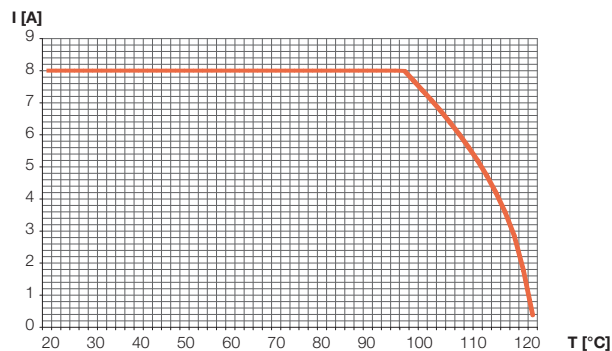
## Technical data

| Mechanical data                     |                                                                                |
|-------------------------------------|--------------------------------------------------------------------------------|
| Housing                             | Copper-Zinc alloy<br>Die Casting                                               |
| Housing surface                     | Nickel plated brass<br>other surface upon request                              |
| Inserts (for contacts)              | Thermoplastic Polyamid PA 6 (Nylon 6/6), PBT / Fire protection class V-0       |
| Contacts                            | Brass Alloy                                                                    |
| Contact surface at point of contact | Nickel and gold plated (0.25 µm Au)                                            |
| Minimum mating cycles               | > 1000                                                                         |
| Seals / O-Rings                     | Buna-N standard<br>optional Viton® (Viton is a registered trademark of DuPont) |
| Temperature range                   | -40 °C – 125 °C                                                                |
| Type of contacts                    | Crimp, solder, dip-solder (PCB)                                                |
| Protection                          | IP 67 / IP 69 K per EN 60 529 (connected)                                      |
| Cable diameter range                | 3 – 17 mm                                                                      |

| Electrical Data                       |    | 6                  |  | 7                  |  | 9                  |  | 12                 |  | 16                |  | 17                |  | 19                |  |
|---------------------------------------|----|--------------------|--|--------------------|--|--------------------|--|--------------------|--|-------------------|--|-------------------|--|-------------------|--|
| Number of positions                   |    | 6                  |  | 7                  |  | 9                  |  | 12                 |  | 16                |  | 17                |  | 19                |  |
| Number of contacts                    |    | 6                  |  | 7                  |  | 8                  |  | 1                  |  | 12                |  | 16                |  | 17                |  |
| Contact-Ø                             | mm | 2                  |  | 2                  |  | 1                  |  | 2                  |  | 1                 |  | 1                 |  | 1                 |  |
| Nominal current                       | A  | 20                 |  | 20                 |  | 8                  |  | 20                 |  | 8                 |  | 8                 |  | 8                 |  |
| Nominal voltage at pollution degree 2 | V~ | 630                |  | 630                |  | 500                |  | 500                |  | 400               |  | 400               |  | 320               |  |
| Nominal voltage at pollution degree 3 | V~ | 300                |  | 300                |  | 200                |  | 200                |  | 160               |  | 160               |  | 100               |  |
| Test voltage                          | V~ | 2500               |  | 2500               |  | 2500               |  | 2500               |  | 1500              |  | 1500              |  | 1500              |  |
| Insulation resistance                 | MΩ | > 10 <sup>10</sup> |  | > 10 <sup>10</sup> |  | > 10 <sup>10</sup> |  | > 10 <sup>10</sup> |  | > 10 <sup>6</sup> |  | > 10 <sup>6</sup> |  | > 10 <sup>6</sup> |  |
| Max. contact resistance               | mΩ | 3                  |  | 3                  |  | 3                  |  | 3                  |  | 3                 |  | 3                 |  | 3                 |  |

## Derating curve

Straight Connectors male + female M 23, 12-pole,  
wires 12 x AWG17



# Power connectors

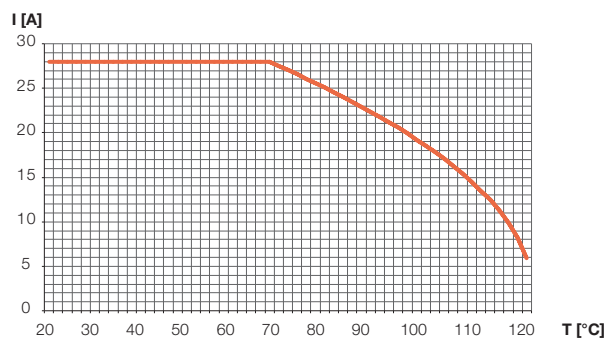
## Technical data

| Mechanical data                     |                                                                                |
|-------------------------------------|--------------------------------------------------------------------------------|
| Housing                             | Copper-Zinc alloy<br>Die Casting                                               |
| Housing surface                     | Nickel plated brass<br>other surface upon request                              |
| Inserts (for contacts)              | Thermoplastic Polyamid PA 6 (Nylon 6/6), PBT / Fire protection class V-0       |
| Contacts                            | Brass Alloy                                                                    |
| Contact surface at point of contact | Nickel and gold plated (0.25 µm Au)                                            |
| Minimum mating cycles               | > 1000                                                                         |
| Seals / O-Rings                     | Buna-N standard<br>optional Viton® (Viton is a registered trademark of DuPont) |
| Temperature range                   | -40 °C – 125 °C                                                                |
| Type of contacts                    | Crimp                                                                          |
| Protection                          | IP 67 / IP 69 K per EN 60 529 (connected)                                      |
| Cable diameter range                | 7 – 17 mm                                                                      |

| Electrical Data                       |    |                    |                    |
|---------------------------------------|----|--------------------|--------------------|
|                                       |    | 5 + PE             | 4/4                |
| Number of positions                   |    | 5 + PE             | 4/4                |
| Number of contacts                    |    | 6                  | 4      4           |
| Contact-Ø                             | mm | 2                  | 1      2           |
| Nominal current                       | A  | 28                 | 8      28          |
| Nominal voltage at pollution degree 2 | V~ | 800                | 300      800       |
| Nominal voltage at pollution degree 3 | V~ | 600                | 300      600       |
| Test voltage                          | V~ | 4000               | 2500      4000     |
| Insulation resistance                 | MΩ | > 10 <sup>13</sup> | > 10 <sup>13</sup> |
| Max. Max. contact resistance          | mΩ | 3                  | 3                  |

## Derating curve


Straight connectors male + female M 23, 5 + PE, wires 5 x AWG12






















## Overview

# M23 connector for signal transmission

All customizable connectors can also be assembled together with shielded cables.

| Housing                                                                                                                  | Contact inserts*                                                                            | Contacts                                                                                                                                          |
|--------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Cable connector                         | 6-pole     | Crimp pin<br>1 mm rotated<br>0.08 – 0.56 mm <sup>2</sup>       |
| Coupling connector                      | 7-pole     | Crimp pin<br>1 mm rotated<br>0.14 – 1.00 mm <sup>2</sup>       |
| Angled connector                        | 9-pole     | Crimp pin<br>1 mm rotated<br>1.00 – 1.50 mm <sup>2</sup>       |
| Angled connector (coupling)             | 12-pole    | Crimp socket<br>1 mm rotated<br>0.08 – 0.56 mm <sup>2</sup>    |
| Device connector (front panel)          | 16-pole    | Crimp socket<br>1 mm rotated<br>0.14 – 1.00 mm <sup>2</sup>    |
| Device connector with knurled nut      | 17-pole   | Crimp socket<br>1 mm rotated<br>1.00 – 1.50 mm <sup>2</sup>   |
| Device connector (single-hole mount)  | 19-pole  | Crimp pin<br>2 mm rotated<br>0.14 – 0.56 mm <sup>2</sup>     |
| Device connector (angled)             |                                                                                             | Crimp socket<br>2 mm rotated<br>0.56 – 1.00 mm <sup>2</sup>  |
| Device connector (back panel)         |                                                                                             | Crimp pin<br>2 mm rotated<br>0.75 – 2.50 mm <sup>2</sup>     |
|                                                                                                                          |                                                                                             | Crimp socket<br>2 mm rotated<br>0.75 – 2.50 mm <sup>2</sup>  |
|                                                                                                                          | * Solder and crimp inserts                                                                  |                                                                                                                                                   |

# M23 connector for power transmission

| Housing                                                                                                              | Contact inserts*                                                                                                     | Contacts                                                                                                                                         |
|----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| Cable connector                     | 6 x Male 2 mm                       | Crimp pin<br>1 mm turned<br>0.25 – 1.00 mm <sup>2</sup>       |
| Coupling connector                  | 6 x Socket 2 mm                     | Crimp socket<br>1 mm turned<br>0.25 – 1.00 mm <sup>2</sup>    |
| Angled connector                    | 4 x Male 1 mm<br>4 x Male 2 mm      | Crimp pin<br>2 mm turned<br>0.75 – 2.50 mm <sup>2</sup>       |
| Angled connector (coupling)         | 4 x Socket 1 mm<br>4 x Socket 2 mm  | Crimp pin<br>2 mm turned<br>2.50 – 4.00 mm <sup>2</sup>       |
| Device connector (front panel)      |                                                                                                                      | Crimp socket<br>2 mm turned<br>0.75 – 2.50 mm <sup>2</sup>    |
| Device connector with knurled nut  |                                                                                                                      | Crimp socket<br>2 mm turned<br>2.50 – 4.00 mm <sup>2</sup>  |
| Device connector (back panel)     |                                                                                                                      |                                                                                                                                                  |
| Device connector (back panel)     |                                                                                                                      |                                                                                                                                                  |
| Device connector (angled)         |                                                                                                                      |                                                                                                                                                  |
|                                                                                                                      | * Crimp inserts                                                                                                      |                                                                                                                                                  |

## Moulded M23 cables

| Housing                     |
|-----------------------------|
| Cable connector             |
| Coupling connector          |
| Angled connector            |
| Angled connector (coupling) |

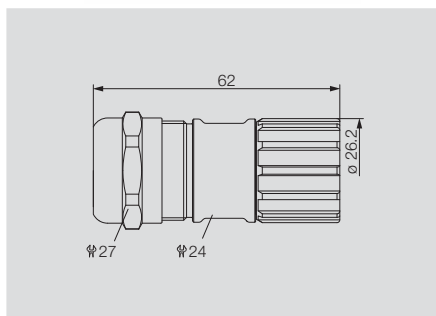


**M23 connector for signal transmission**

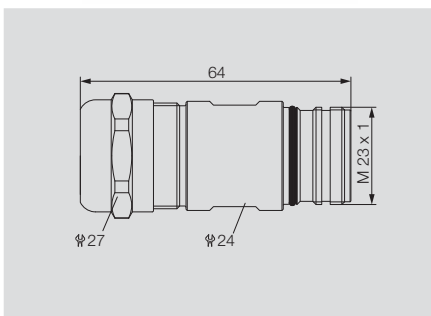
**Housing**

For cables with outer diameter of: 7–12 mm

**Cable connector**



**Coupling connector**



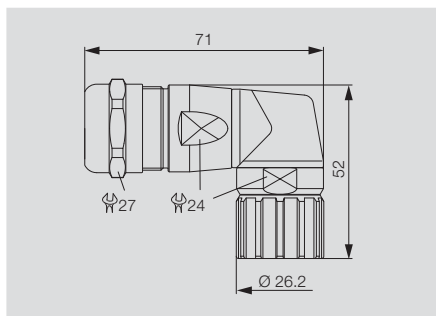
**Ordering data**

| Type            | Qty. | Order No.  |
|-----------------|------|------------|
| SAI-M23-GS-7/12 | 1    | 1995840000 |

**Ordering data**

| Type            | Qty. | Order No.  |
|-----------------|------|------------|
| SAI-M23-KS-7/12 | 1    | 1169900000 |

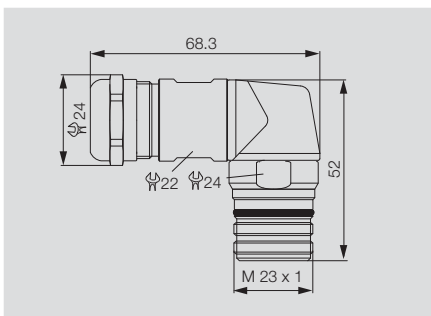
**Angled connector**



**Ordering data**

| Type               | Qty. | Order No.  |
|--------------------|------|------------|
| SAIL-M23-GS-S-7/12 | 1    | 1169920000 |

**Angled connector (coupling)**



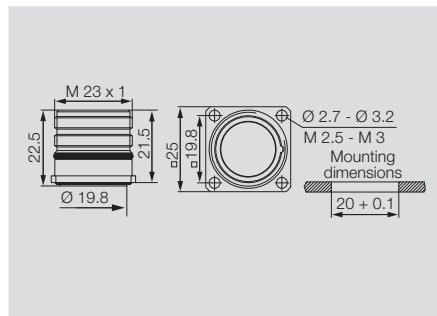
**Ordering data**

| Type              | Qty. | Order No.  |
|-------------------|------|------------|
| SAIL-M23-KSW-7/12 | 1    | 1169930000 |

**Built-in connector**

With 3.2-mm mounting holes

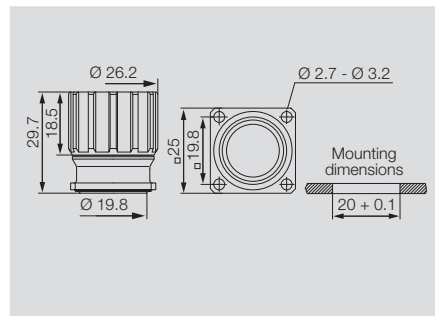
**Device connector (front panel)**



**Ordering data**

| Type          | Qty. | Order No.  |
|---------------|------|------------|
| SAIE-M23-S-VW | 1    | 1169940000 |

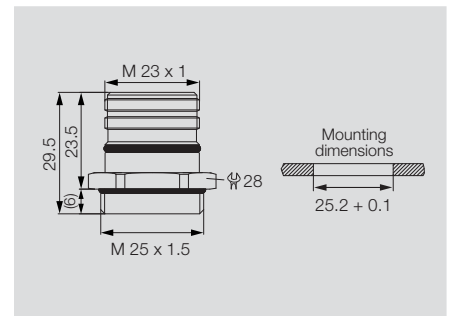
**Device connector with knurled nut**



**Ordering data**

| Type          | Qty. | Order No.  |
|---------------|------|------------|
| SAIE-M23-S-RM | 1    | 1169950000 |

**Device connector (single-hole mount)**

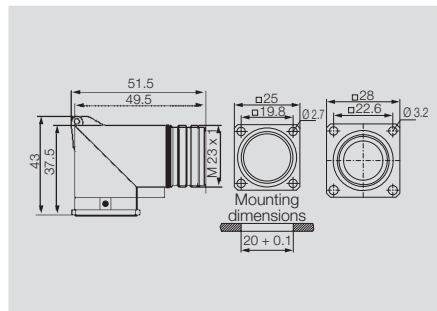


**Ordering data**

| Type          | Qty. | Order No.  |
|---------------|------|------------|
| SAIE-M23-S-EM | 1    | 1169970000 |

H

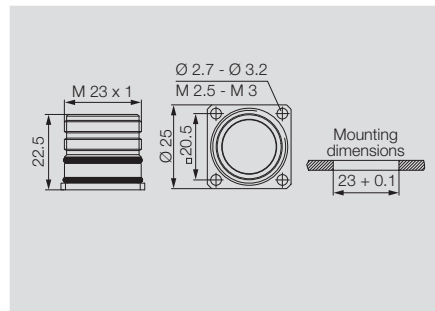
**Device connector (angled)**



**Ordering data**

| Type         | Qty. | Order No.  |
|--------------|------|------------|
| SAIE-M23-S-W | 1    | 1169980000 |

**Device connector (back panel)**



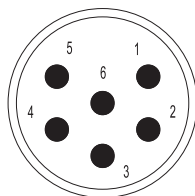
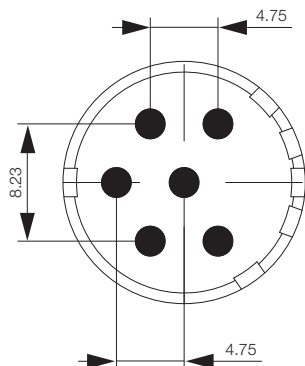
**Ordering data**

| Type          | Qty. | Order No.  |
|---------------|------|------------|
| SAIE-M23-S-HW | 1    | 1169990000 |

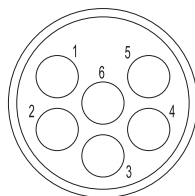
M23 connector for signal transmission

Inserts

6-pole



Male insert on plug side

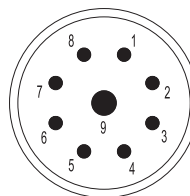
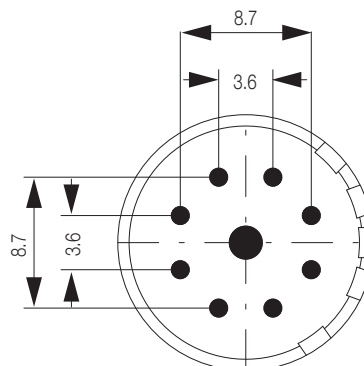


Female insert on plug side

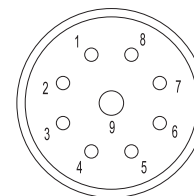
Ordering data

| Type                 | Qty. | Order No.  |
|----------------------|------|------------|
| Insert 6-pole male   | 1    | 1170000000 |
| Insert 6-pole socket | 1    | 1170020000 |

9-pole



Male insert on plug side

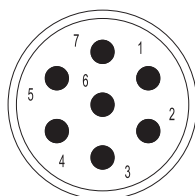
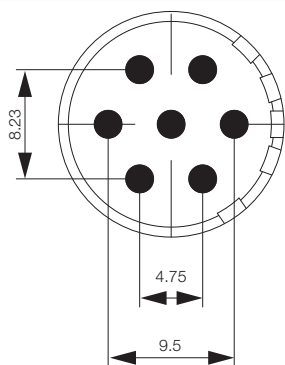


Female insert on plug side

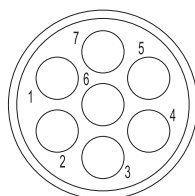
Ordering data

| Type                 | Qty. | Order No.  |
|----------------------|------|------------|
| Insert 9-pole male   | 1    | 1170050000 |
| Insert 9-pole socket | 1    | 1170060000 |

7-pole



Male insert on plug side

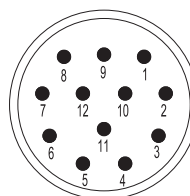
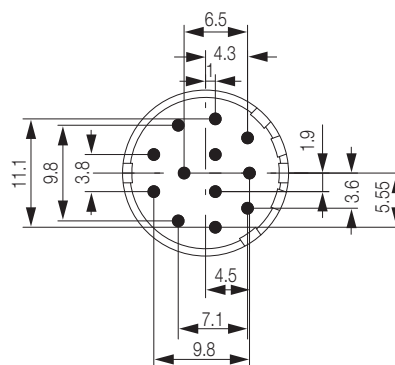


Female insert on plug side

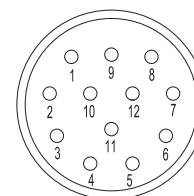
Ordering data

| Type                 | Qty. | Order No.  |
|----------------------|------|------------|
| Insert 7-pole male   | 1    | 1170030000 |
| Insert 7-pole socket | 1    | 1170040000 |

12-pole



Male insert on plug side

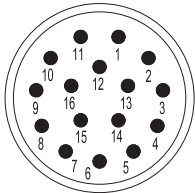
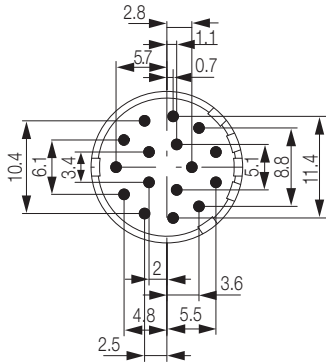


Female insert on plug side

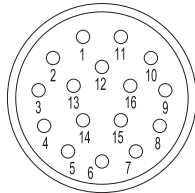
Ordering data

| Type                  | Qty. | Order No.  |
|-----------------------|------|------------|
| Insert 12-pole male   | 1    | 1170070000 |
| Insert 12-pole socket | 1    | 1995850000 |

16-pole



Male insert on plug side

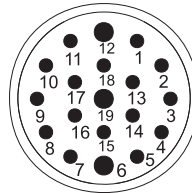
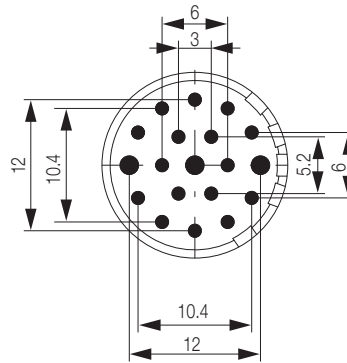


Female insert on plug side

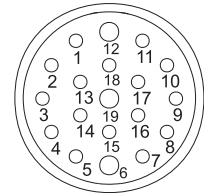
Ordering data

|                       | Type          | Qty. | Order No.  |
|-----------------------|---------------|------|------------|
| Insert 16-pole male   | SAI-M23-SE-16 | 1    | 1170080000 |
| Insert 16-pole socket | SAI-M23-BE-16 | 1    | 1170090000 |

19-pole



Male insert on plug side

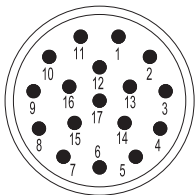
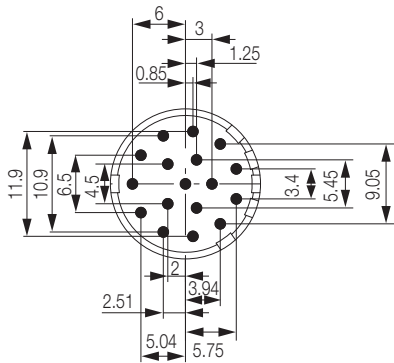


Female insert on plug side

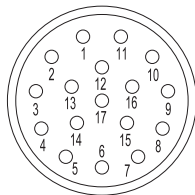
Ordering data

|                       | Type          | Qty. | Order No.  |
|-----------------------|---------------|------|------------|
| Insert 19-pole male   | SAI-M23-SE-19 | 1    | 1170120000 |
| Insert 19-pole socket | SAI-M23-BE-19 | 1    | 1170130000 |

17-pole



Male insert on plug side



Female insert on plug side

Ordering data

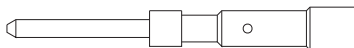
|                       | Type          | Qty. | Order No.  |
|-----------------------|---------------|------|------------|
| Insert 17-pole male   | SAI-M23-SE-17 | 1    | 1170100000 |
| Insert 17-pole socket | SAI-M23-BE-17 | 1    | 1170110000 |

## M23 connector for signal transmission

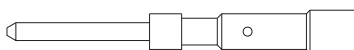
## Contacts

## Male, 1 mm

0.08-0.56



0.14-1.00

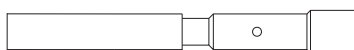


1.00-1.50



## Female, 1 mm

0.08-0.56



0.34-1.00

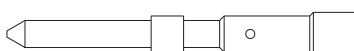


1.00-1.50



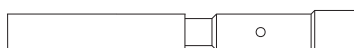
## Male, 1.5 mm

0.14-1.00

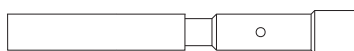


## Female, 1.5 mm

0.14-0.56



0.56-1.00



## Ordering data

|                         | Type                  | Qty. | Order No.  |
|-------------------------|-----------------------|------|------------|
| 1.0 mm Male (0.08-0.56) | SAI-M23-KSC-0.08/0.56 | 50   | 1170140000 |
| 1.0 mm Male (0.14-1.00) | SAI-M23-KSC-0.14/1.00 | 50   | 1170150000 |
| 1.0 mm Male (1.00-1.50) | SAI-M23-KSC-1.00-1.5  | 50   | 1170170000 |

## Ordering data

|                           | Type                  | Qty. | Order No.  |
|---------------------------|-----------------------|------|------------|
| 1.0 mm Socket (0.08-0.56) | SAI-M23-KBC-0.08/0.56 | 50   | 1995860000 |
| 1.0 mm Socket (0.34-1.00) | SAI-M23-KBC-0.34/1.00 | 50   | 1170180000 |
| 1.0 mm Male (1.00-1.50)   | SAI-M23-KBC-1.00-1.5  | 50   | 1170210000 |

## Ordering data

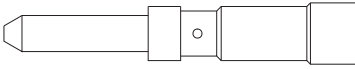
|                         | Type                   | Qty. | Order No.  |
|-------------------------|------------------------|------|------------|
| 1.5 mm Male (0.14-1.00) | SAI-M23-KSC-1.5-0.14-1 | 50   | 1170220000 |

## Ordering data

|                           | Type                    | Qty. | Order No.  |
|---------------------------|-------------------------|------|------------|
| 1.5 mm Socket (0.14-0.56) | SAI-M23-KBC-1.5-.14-.56 | 50   | 1170230000 |
| 1.5 mm Socket (0.56-1.00) | SAI-M23-KBC-1.5-.56-1.0 | 50   | 1170240000 |

**Male, 2 mm**

0.75-2.00

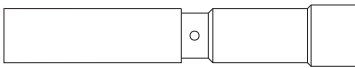


**Ordering data**

|                         | Type                    | Qty. | Order No.  |
|-------------------------|-------------------------|------|------------|
| 2.0 mm Male (0.75-2.00) | SAI-M23-KSC-2-0.75-2.00 | 50   | 1170250000 |

**Female, 2 mm**

0.75-2.00



**Ordering data**

|                           | Type                    | Qty. | Order No.  |
|---------------------------|-------------------------|------|------------|
| 2.0 mm Socket (0.75-2.00) | SAI-M23-KBC-2-0.75-2.00 | 50   | 1170260000 |

**Technical data**

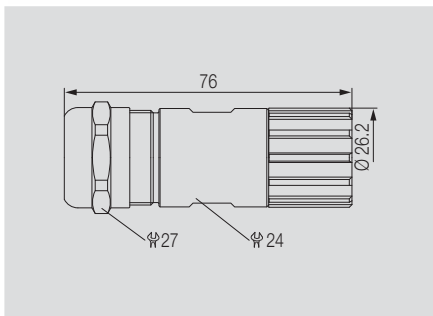
|                     |    |   |   |    |    |    |    |    |   |     |
|---------------------|----|---|---|----|----|----|----|----|---|-----|
| Number of positions | 6  | 7 | 9 | 12 | 16 | 17 | 19 |    |   |     |
| Number of contacts  | 6  | 7 | 8 | 1  | 12 | 16 | 17 | 16 | 3 |     |
| Contact-Ø           | mm | 2 | 2 | 1  | 2  | 1  | 1  | 1  | 1 | 1.5 |

## M23 connector for power transmission

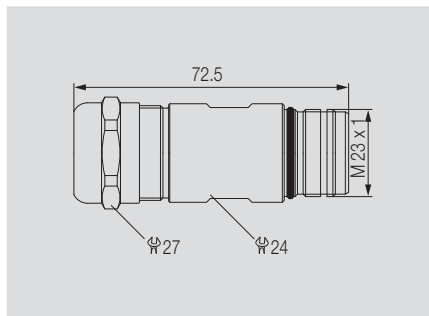
### Housing

For cables with outer diameter of: 7–12 mm

#### Cable connector



#### Coupling connector



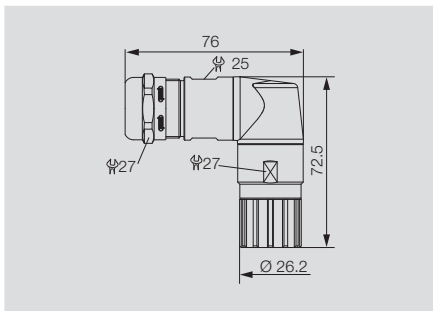
#### Ordering data

| Type              | Qty. | Order No.  |
|-------------------|------|------------|
| SAI-M23-GS-L-7/12 | 1    | 1995800000 |

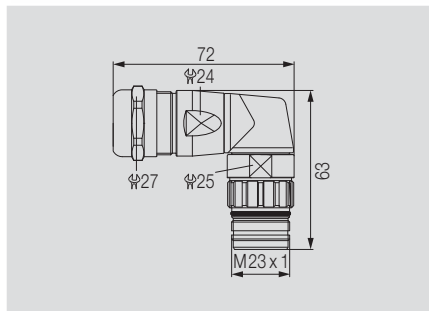
#### Ordering data

| Type              | Qty. | Order No.  |
|-------------------|------|------------|
| SAI-M23-KS-L-7/12 | 1    | 1170270000 |

#### Angled connector



#### Angled connector (coupling)



#### Ordering data

| Type                | Qty. | Order No.  |
|---------------------|------|------------|
| SAIL-M23-GSW-L-7/12 | 1    | 1170280000 |

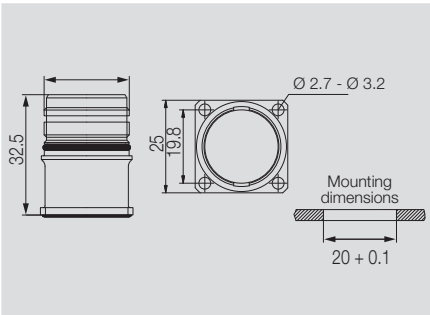
#### Ordering data

| Type                | Qty. | Order No.  |
|---------------------|------|------------|
| SAIL-M23-KSW-L-7/12 | 1    | 1170290000 |

**Built-in connector**

With 3.2-mm mounting holes

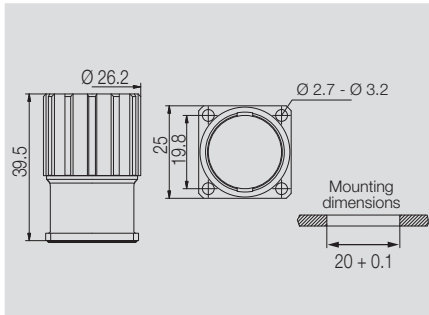
**Device connector (front panel)**



**Ordering data**

| Type          | Qty. | Order No.  |
|---------------|------|------------|
| SAIE-M23-L-VW | 1    | 1170300000 |

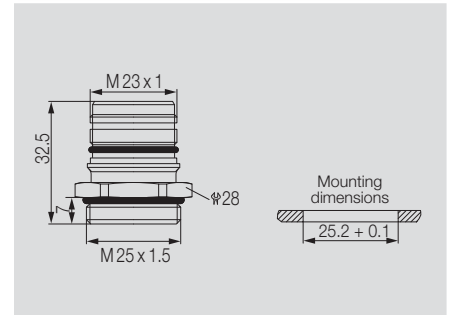
**Device connector with knurled nut**



**Ordering data**

| Type          | Qty. | Order No.  |
|---------------|------|------------|
| SAIE-M23-L-RM | 1    | 1170310000 |

**Device connector (single-hole mount)**

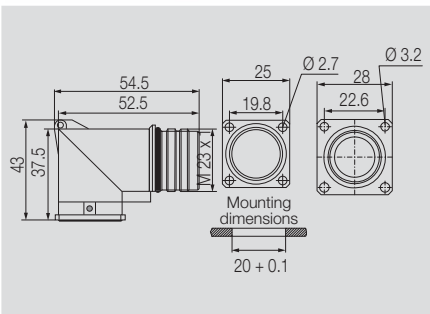


**Ordering data**

| Type          | Qty. | Order No.  |
|---------------|------|------------|
| SAIE-M23-L-EM | 1    | 1170320000 |

H

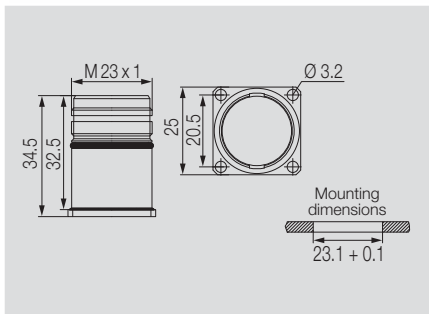
**Device connector (angled)**



**Ordering data**

| Type         | Qty. | Order No.  |
|--------------|------|------------|
| SAIE-M23-L-W | 1    | 1170330000 |

**Device connector (back panel)**



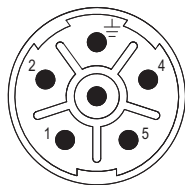
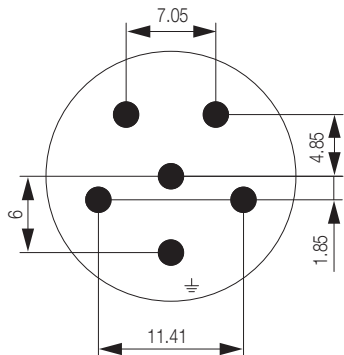
**Ordering data**

| Type          | Qty. | Order No.  |
|---------------|------|------------|
| SAIE-M23-L-HW | 1    | 1170340000 |

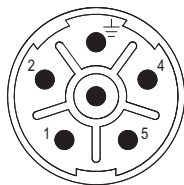
M23 connector for power transmission

Inserts

5 + PE



6 times male, 2 mm

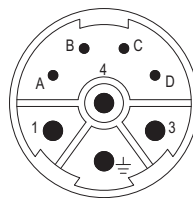
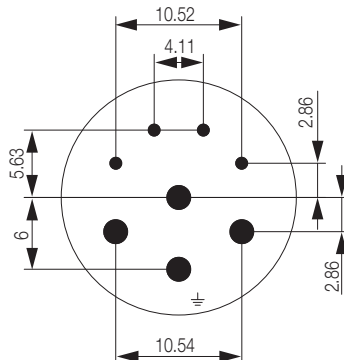


6 times female, 2 mm

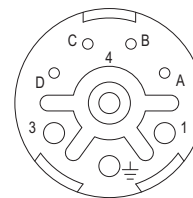
Ordering data

|                      | Type           | Qty. | Order No.  |
|----------------------|----------------|------|------------|
| 6 times male, 2 mm   | SAI-M23-SE-L-6 | 1    | 1170350000 |
| 6 times female, 2 mm | SAI-M23-BE-L-6 | 1    | 1170370000 |

4/4



4 times 1-mm male and 4 times 2-mm male



4 times 1-mm female and 4 times 2-mm female

Ordering data

|                                             | Type             | Qty. | Order No.  |
|---------------------------------------------|------------------|------|------------|
| 4 times 1-mm male and 4 times 2-mm male     | SAI-M23-SE-L-4/4 | 1    | 1170380000 |
| 4 times 1-mm female and 4 times 2-mm female | SAI-M23-BE-L-4/4 | 1    | 1995810000 |

Contacts

Male, 1 mm

0.25 - 1.00

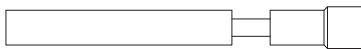


Ordering data

|                       | Type                 | Qty. | Order No.  |
|-----------------------|----------------------|------|------------|
| 1 mm Male (0.25-1.00) | SAI-M23-KSC-0,25-1.0 | 50   | 1170390000 |

Female, 1 mm

0.25 - 1.00

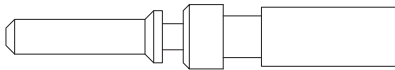


Ordering data

|                         | Type                 | Qty. | Order No.  |
|-------------------------|----------------------|------|------------|
| 1 mm Socket (0.25-1.00) | SAI-M23-KBC-0,25-1.0 | 50   | 1995830000 |

Male, 2 mm

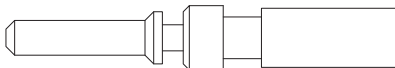
0.75 - 2.5



Ordering data

|                      | Type                   | Qty. | Order No.  |
|----------------------|------------------------|------|------------|
| 2 mm Male (0.75-2.5) | SAI-M23-KSC-L-0,75-2.5 | 50   | 1170400000 |

2.5 - 4.00



|                      |                       |    |            |
|----------------------|-----------------------|----|------------|
| 2 mm Male (2.5-4.00) | SAI-M23-KSC-L-2,5-4.0 | 50 | 1170410000 |
|----------------------|-----------------------|----|------------|

Female, 2 mm

0.75 - 2.5



Ordering data

|                        | Type                   | Qty. | Order No.  |
|------------------------|------------------------|------|------------|
| 2 mm Socket (0.75-2.5) | SAI-M23-KBC-L-0,75-2.5 | 50   | 1995820000 |

2.5 - 4.00



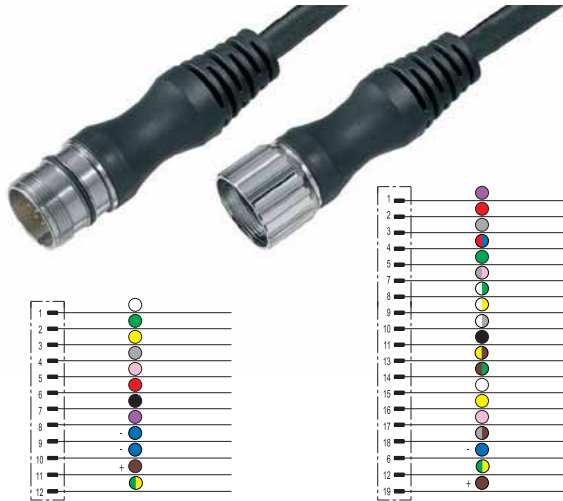
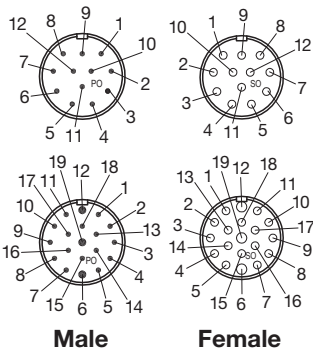
|                        |                       |    |            |
|------------------------|-----------------------|----|------------|
| 2 mm Socket (2.5-4.00) | SAI-M23-KBC-L-2,5-4.0 | 50 | 1170420000 |
|------------------------|-----------------------|----|------------|

Technical data

|                     |        |     |   |
|---------------------|--------|-----|---|
| Number of positions | 5 + PE | 4/4 |   |
| Number of contacts  | 6      | 4   | 4 |
| Contact-Ø           | mm     | 2   | 2 |

Moulded M23 cables

M23 cables



Ordering data

|                         |     |
|-------------------------|-----|
| <b>Male, straight</b>   | 1 m |
| <b>Male, angled</b>     | 1 m |
| <b>Female, straight</b> | 1 m |
| <b>Female, angled</b>   | 1 m |
| <b>Note</b>             |     |

12-pole

| Type                 | Order No.  |
|----------------------|------------|
| SAIS-M23-12P-AN-1,0M | 1906290100 |
| SAIS-M23-12P-ST-1,0M | 1906280100 |
| SAIB-M23-12P-AN-1,0M | 1877440100 |
| SAIB-M23-12P-ST-1,0M | 1886440100 |

ST = straight  
AN = 90° elbow

19-pole

| Type                 | Order No.  |
|----------------------|------------|
| SAIS-M23-19P-AN-1,0M | 1818090100 |
| SAIS-M23-19P-ST-1,0M | 1818160100 |
| SAIB-M23-19P-AN-1,0M | 1818140100 |
| SAIB-M23-19P-ST-1,0M | 1818180100 |

Other versions on request

Standard cable lengths

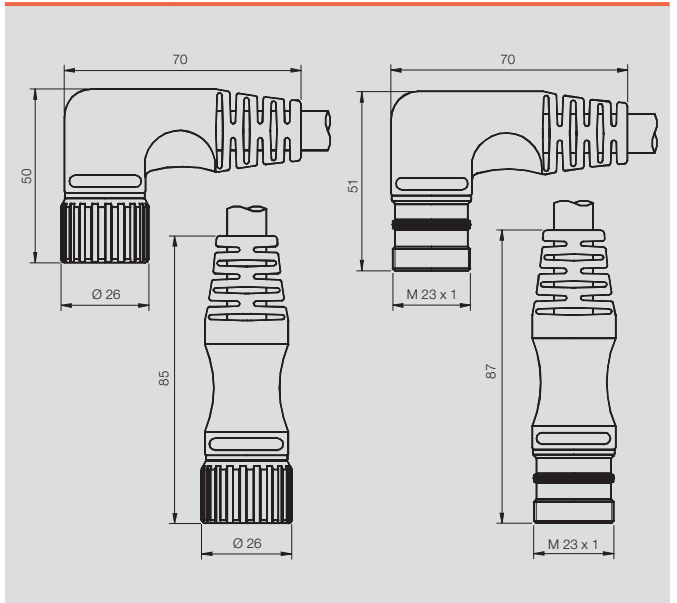
|                                                                                                                                                                  |        |            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------|
| All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths. | 1.5 m  | xxxxxx0150 |
|                                                                                                                                                                  | 3.0 m  | xxxxxx0300 |
|                                                                                                                                                                  | 5.0 m  | xxxxxx0500 |
|                                                                                                                                                                  | 10.0 m | xxxxxx1000 |

Technical data

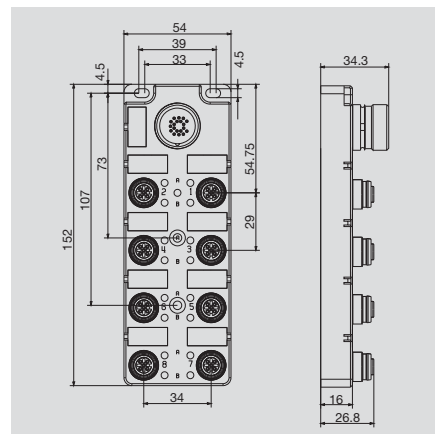
|                                         |                      |
|-----------------------------------------|----------------------|
| Rated current                           | 8 A                  |
| Protection class                        | IP 67                |
| Core cross-section                      | 0.75 mm <sup>2</sup> |
| Contact surface                         | gold-plated          |
| Temperature range of housing            | -25...+85 °C         |
| Rated voltage                           | 150 V                |
| (acc. to VDE standard 0110 ISO group C) |                      |

Chapter W includes additional technical specifications for the cable

Dimensioned drawing



with M23 outlet



**Ordering data**

| Complete modules |           |
|------------------|-----------|
|                  | 4 channel |
|                  | 8 channel |
| Note             |           |

**SAI-4/8-S**

**4-pole**

| Type                      | Qty. | Order No.  |
|---------------------------|------|------------|
| SAI-4-S 4P FC             | 1    | 1847960000 |
| SAI-8-S 4P FC             | 1    | 1847920000 |
| Other versions on request |      |            |

**SAI-4/8-S**

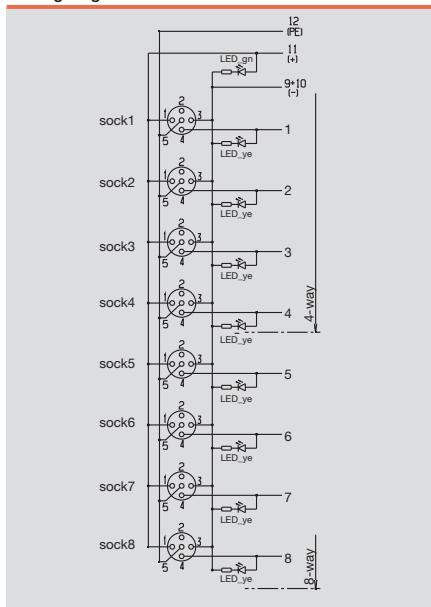
**5-pole**

| Type                      | Qty. | Order No.  |
|---------------------------|------|------------|
| SAI-4-S 5P FC             | 1    | 1847970000 |
| SAI-8-S 5P FC             | 1    | 1848040000 |
| Other versions on request |      |            |

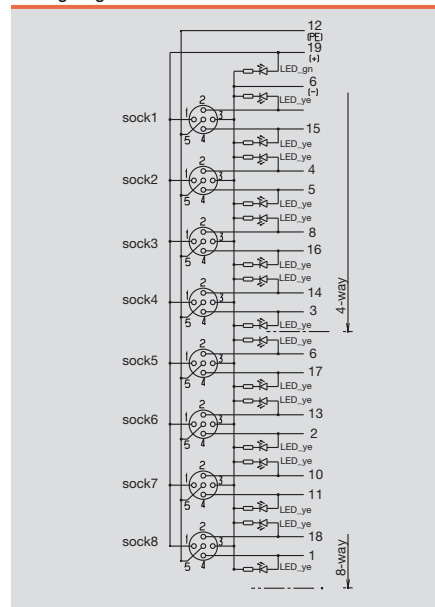
**Technical data**

|                                                      |                                 |
|------------------------------------------------------|---------------------------------|
| Operating voltage                                    | 10...30 V                       |
| Current of continuous busbars                        | 2 A                             |
| max. current-carrying capacity per slot              | 4 A                             |
| Total current                                        | 9 A                             |
| Pollution severity                                   | 3                               |
| Protection class                                     | IP 67                           |
| Ambient temperature range                            | -25...+80 °C                    |
| Housing main material                                | PA 6 GF                         |
| Contact carrier material                             | PBT UL 94 V0                    |
| Base material of contacts                            | CuZn, pre-nickeled, gold-plated |
| screw socket                                         | CuZn, nickel-plated             |
| Housing colour                                       | grey, RAL 7032                  |
| Flammability class UL 94                             | V-0                             |
| Clamping range of hood-version                       |                                 |
| Suitable for dragline cable (fixed cable connection) |                                 |

**Wiring diagram**

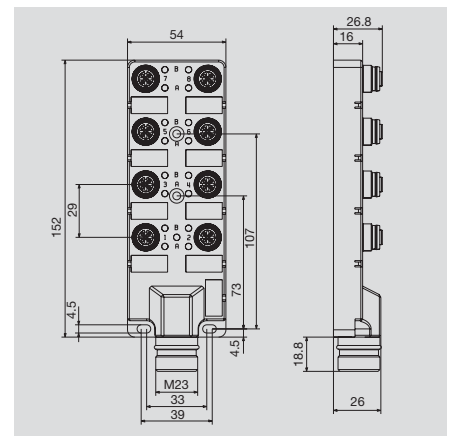


**Wiring diagram**



SAI distributor M12 with M23

with M23 outlet on front



Ordering data

| Complete modules |           |
|------------------|-----------|
|                  | 4 channel |
|                  | 8 channel |
| Note             |           |

SAI-4/8-SH

4-pole

| Type           | Qty. | Order No.  |
|----------------|------|------------|
| SAI-4-SH 4P FC | 1    | 1859110000 |
| SAI-8-SH 4P FC | 1    | 1859120000 |

SAI-4/8-SH

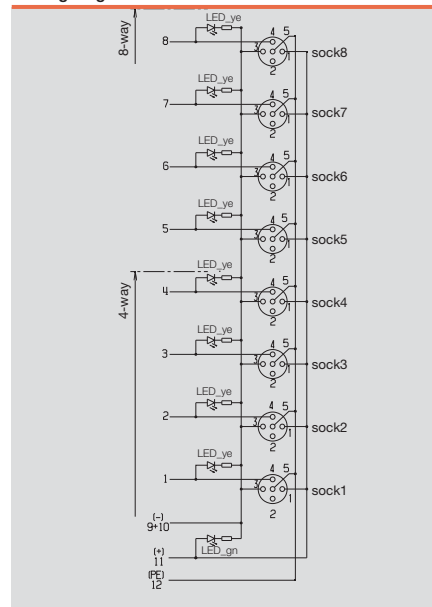
5-pole

| Type           | Qty. | Order No.  |
|----------------|------|------------|
| SAI-4-SH 5P FC | 1    | 1859130000 |
| SAI-8-SH 5P FC | 1    | 1859140000 |

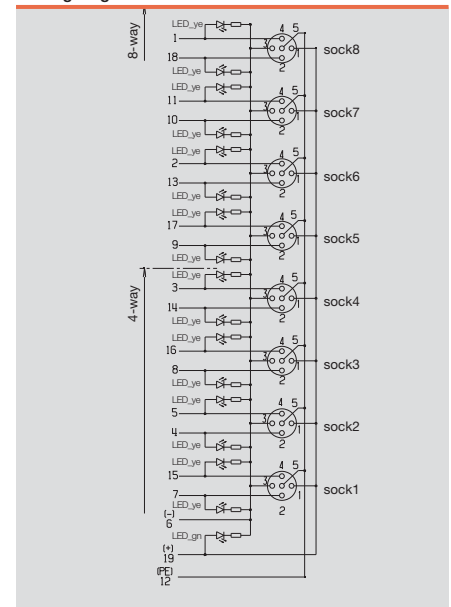
Technical data

|                                                      |                                 |
|------------------------------------------------------|---------------------------------|
| Operating voltage                                    | 10...30 V                       |
| Current of continuous busbars                        | 2 A                             |
| max. current-carrying capacity per slot              | 4 A                             |
| Total current                                        | 9 A                             |
| Pollution severity                                   | 3                               |
| Protection class                                     | IP 67                           |
| Ambient temperature range                            | -25...+80 °C                    |
| Housing main material                                | PA 6 GF                         |
| Contact carrier material                             | PBT UL 94 V0                    |
| Base material of contacts                            | CuZn, pre-nickeled, gold-plated |
| screw socket                                         | CuZn, nickel-plated             |
| Housing colour                                       | grey, RAL 7032                  |
| Flammability class UL 94                             | V-0                             |
| Clamping range of hood-version                       |                                 |
| Suitable for dragline cable (fixed cable connection) |                                 |

Wiring diagram

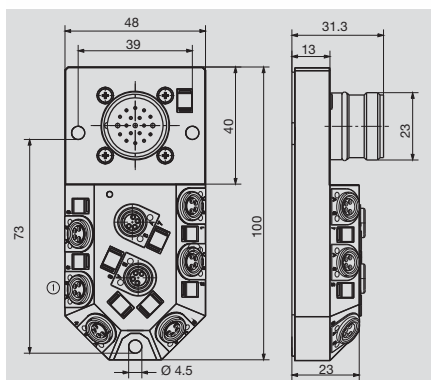


Wiring diagram



With M23/ M16 outlet

## SAI-4/8-M23



## Ordering data

|             |           |
|-------------|-----------|
| 3-pole      | 8 channel |
| 4-pole      | 4 channel |
|             | 8 channel |
| <b>Note</b> |           |

## SAI-4/8-M23

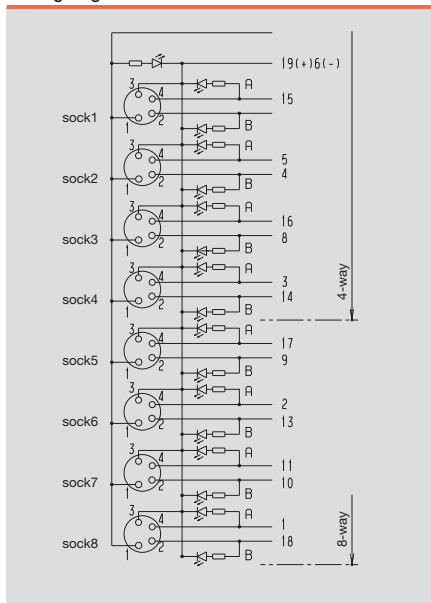
## M23

| Type                      | Qty. | Order No.  |
|---------------------------|------|------------|
| SAI-4-M23 4P M8           | 1    | 1784660000 |
| SAI-8-M23 4P M8           | 1    | 1784650000 |
| Other versions on request |      |            |

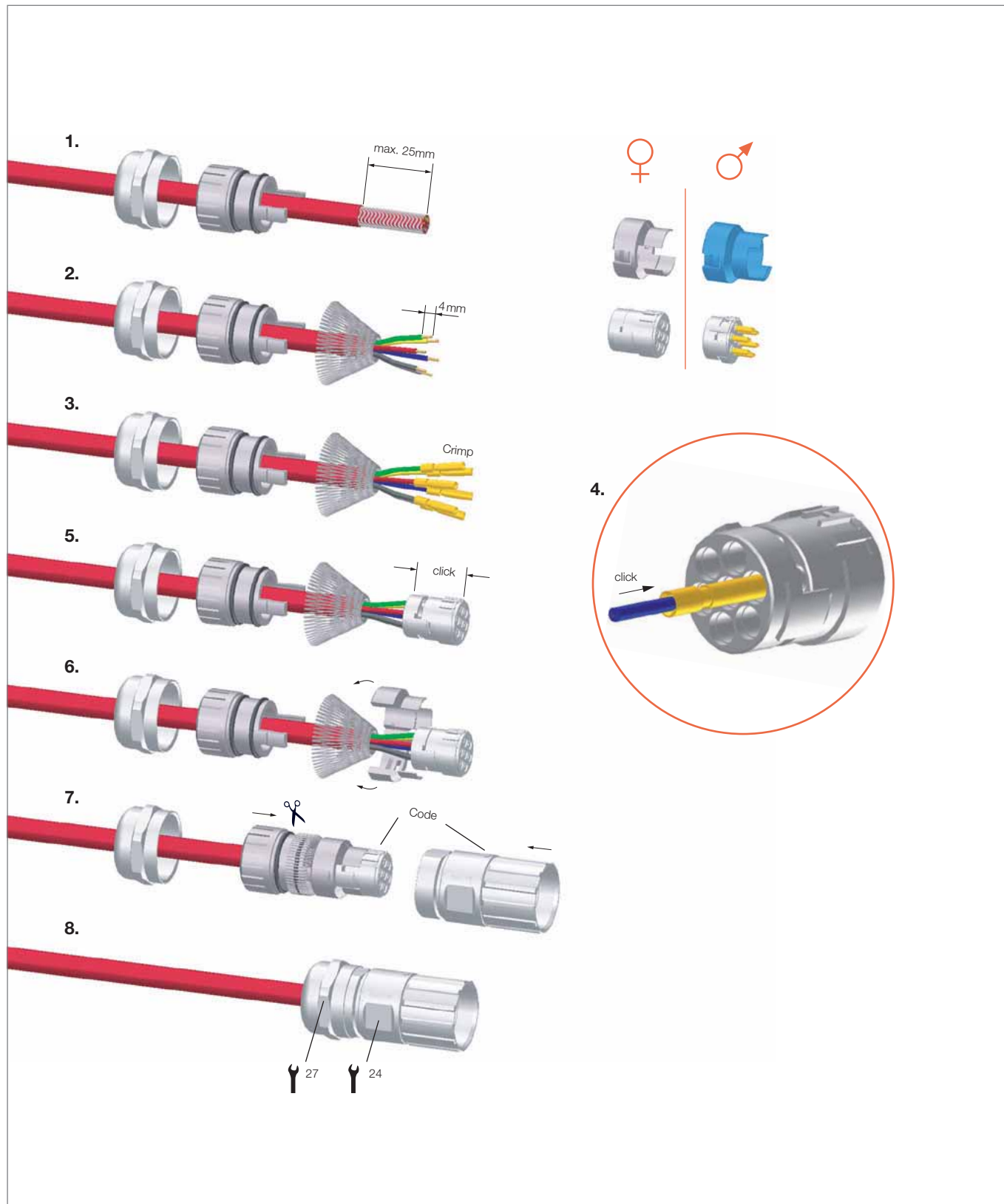
## Technical data

|                                                      |                                 |
|------------------------------------------------------|---------------------------------|
| Operating voltage                                    | 10...30 V                       |
| Current of continuous busbars                        | 2 A                             |
| max. current-carrying capacity per slot              | 2 A                             |
| Total current                                        | 8 A                             |
| Pollution severity                                   | 3                               |
| Protection class                                     | IP 68                           |
| Ambient temperature range                            | -20...+90 °C                    |
| Housing main material                                | Pocan                           |
| Contact carrier material                             | PBT UL 94 V0                    |
| Base material of contacts                            | CuZn, pre-nickeled, gold-plated |
| screw socket                                         | CuZn, nickel-plated             |
| Housing colour                                       | grey, RAL 7032                  |
| Flammability class UL 94                             | V-0                             |
| Clamping range of hood-version                       |                                 |
| Suitable for dragline cable (fixed cable connection) |                                 |

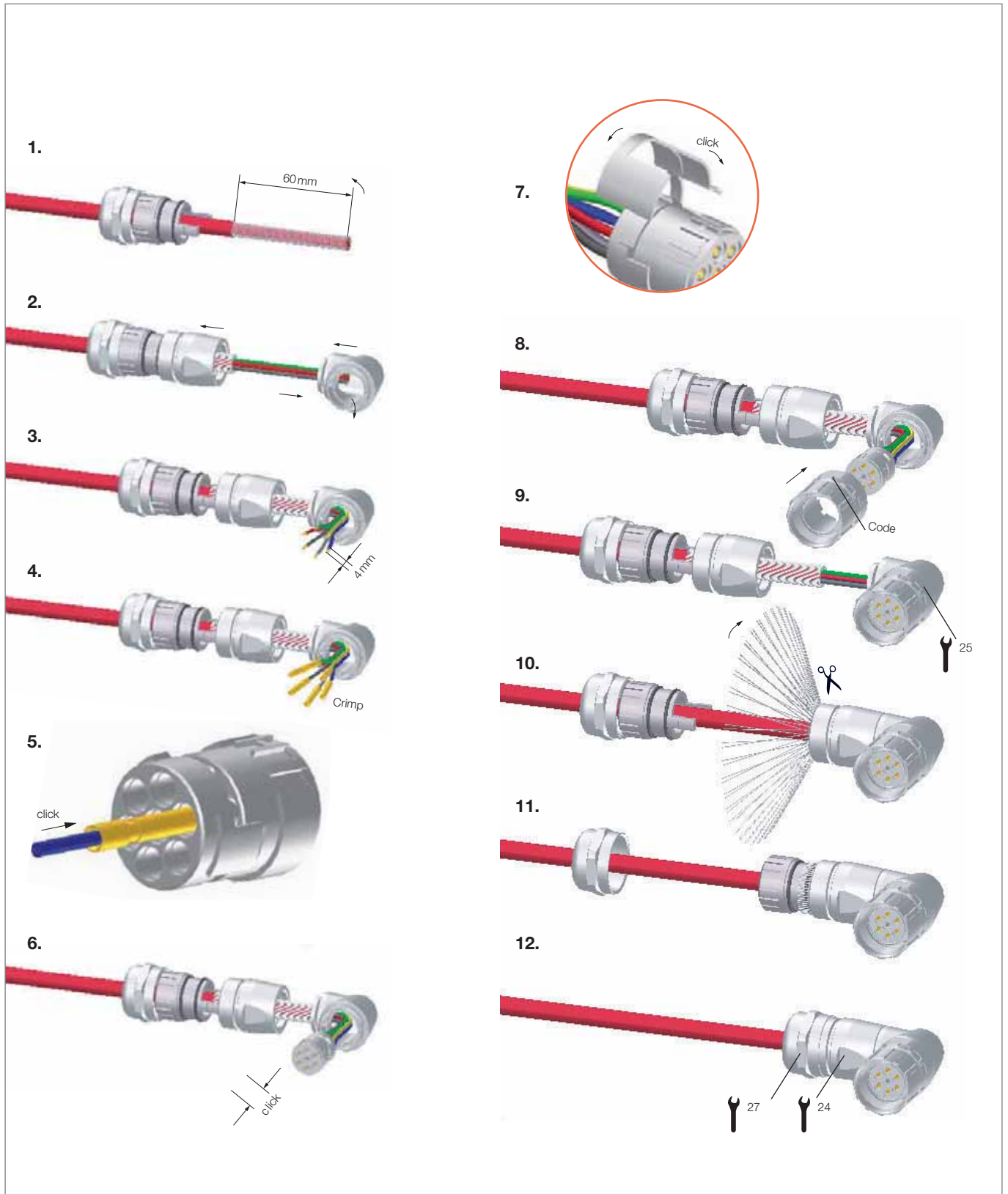
## Wiring diagram



# Cable connector

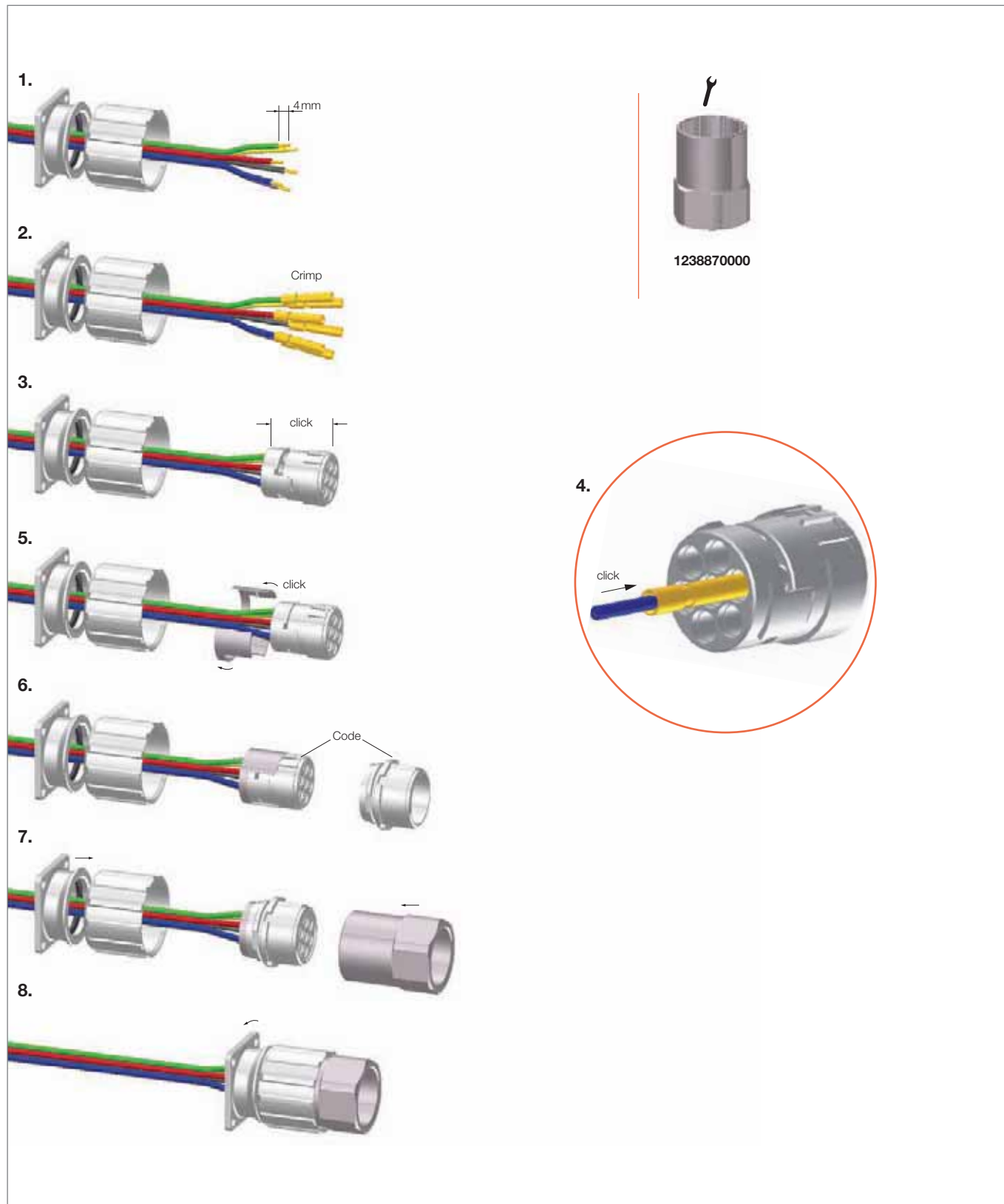


# Angled connector

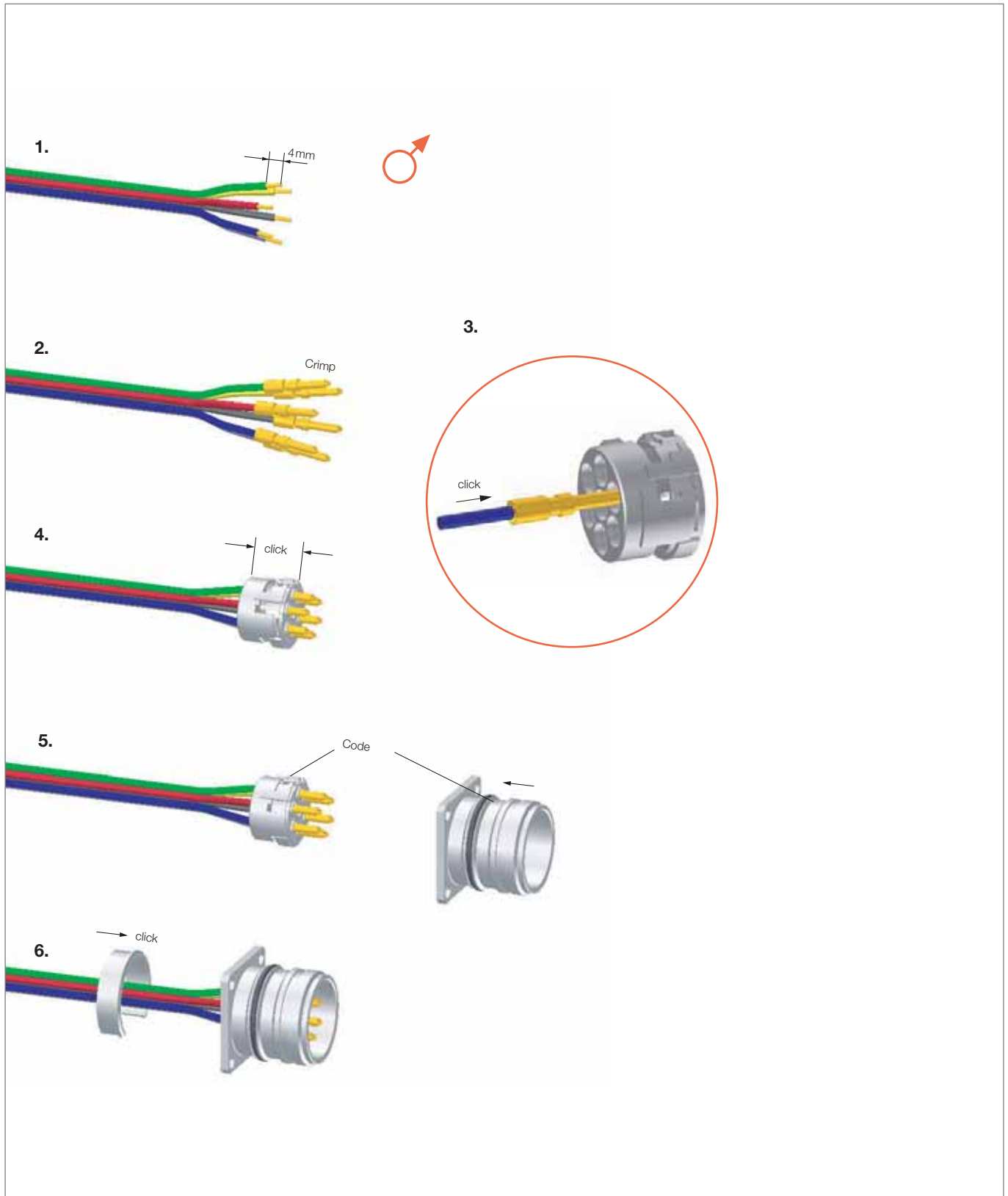


H

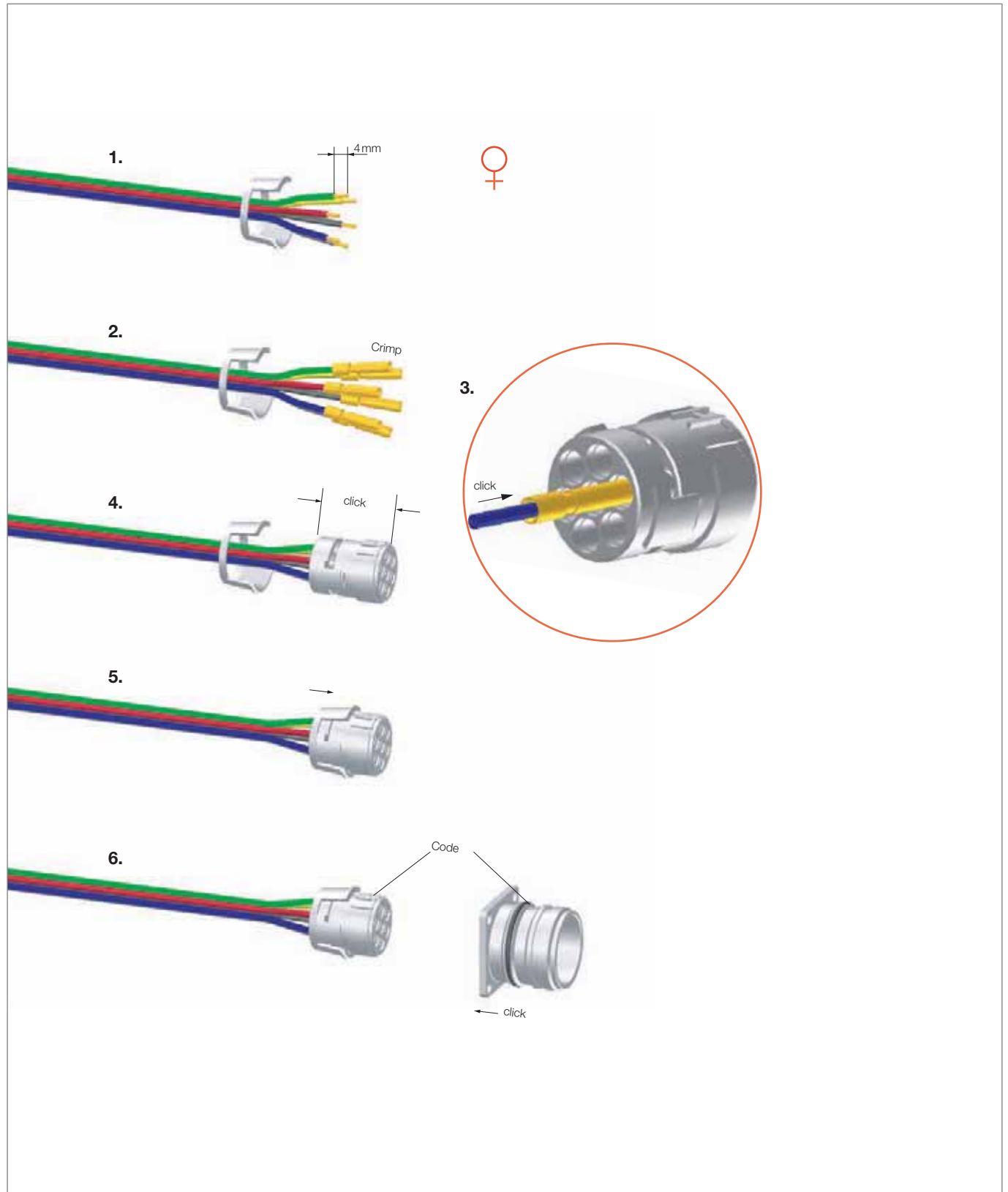
# Device connector with knurled nut



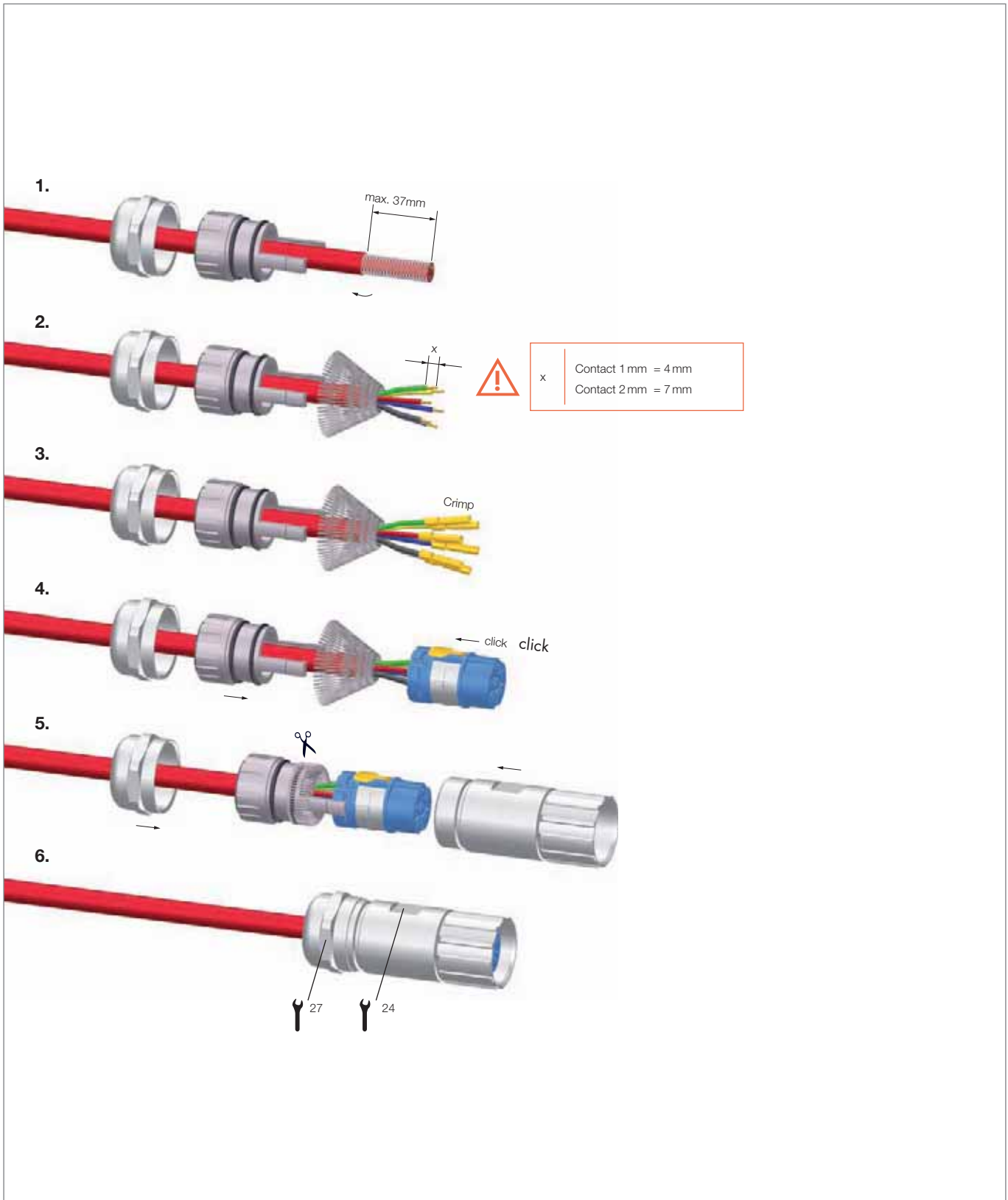
# Device connector, male



# Device connector, female

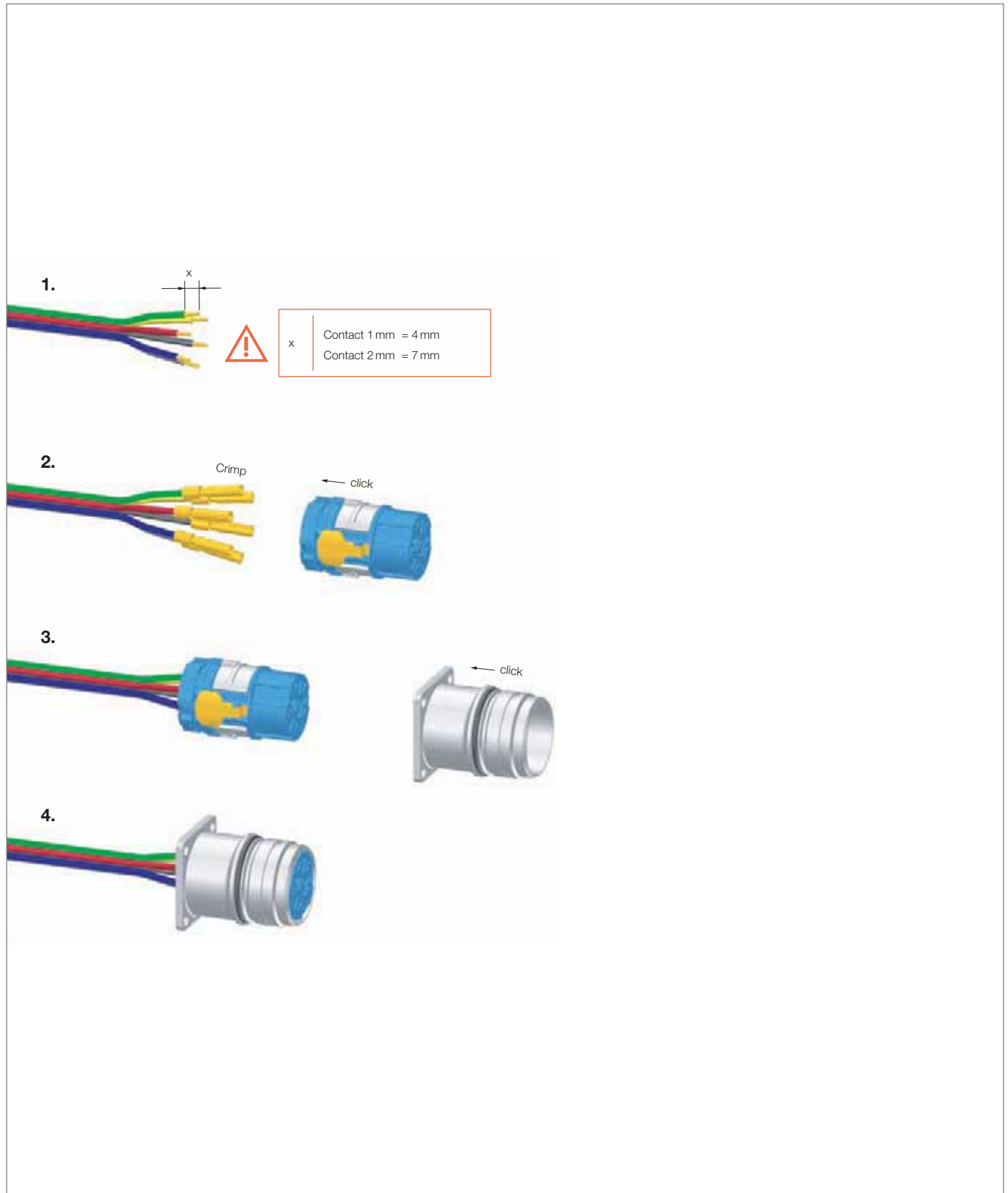


# Cable connector

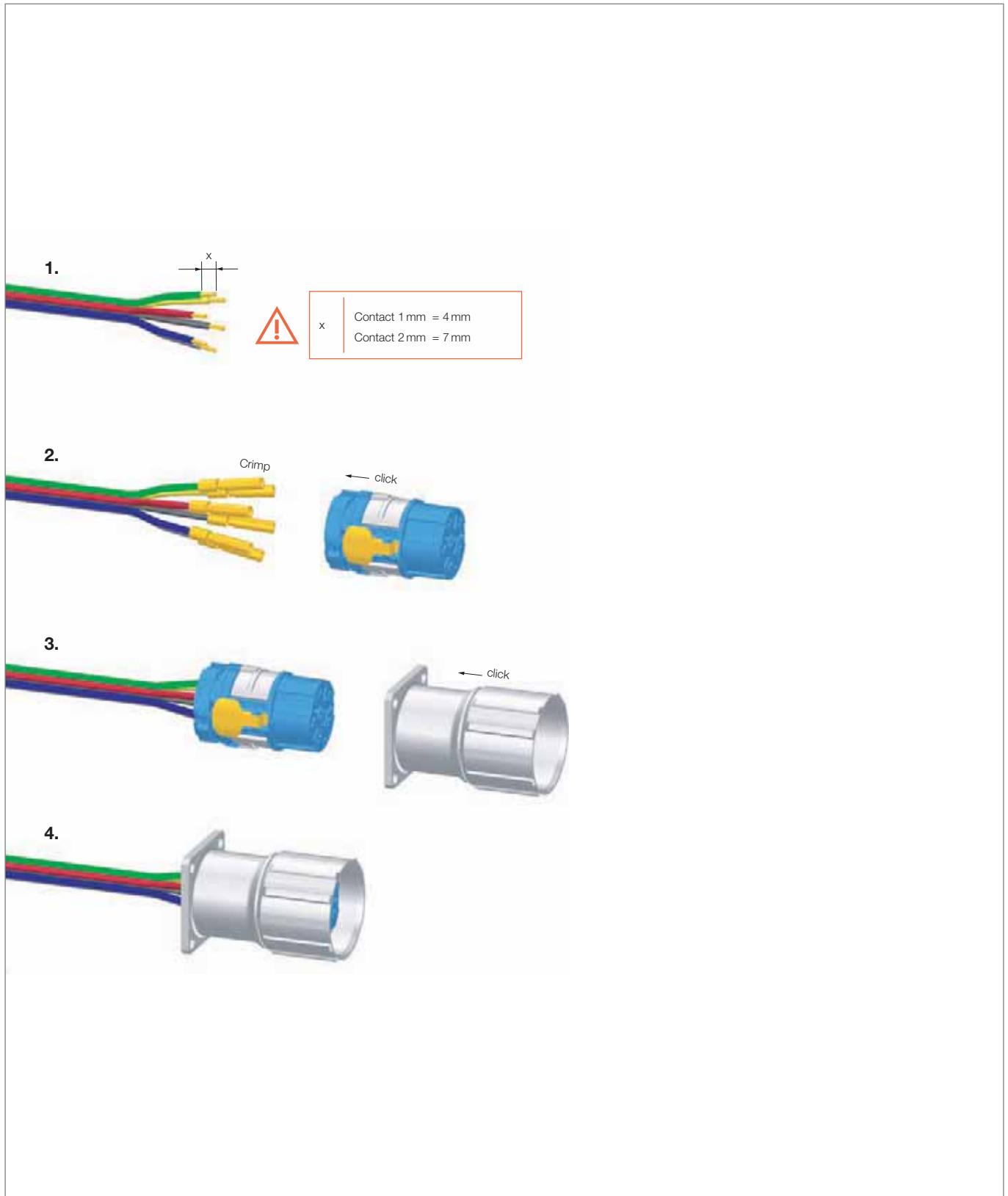


H

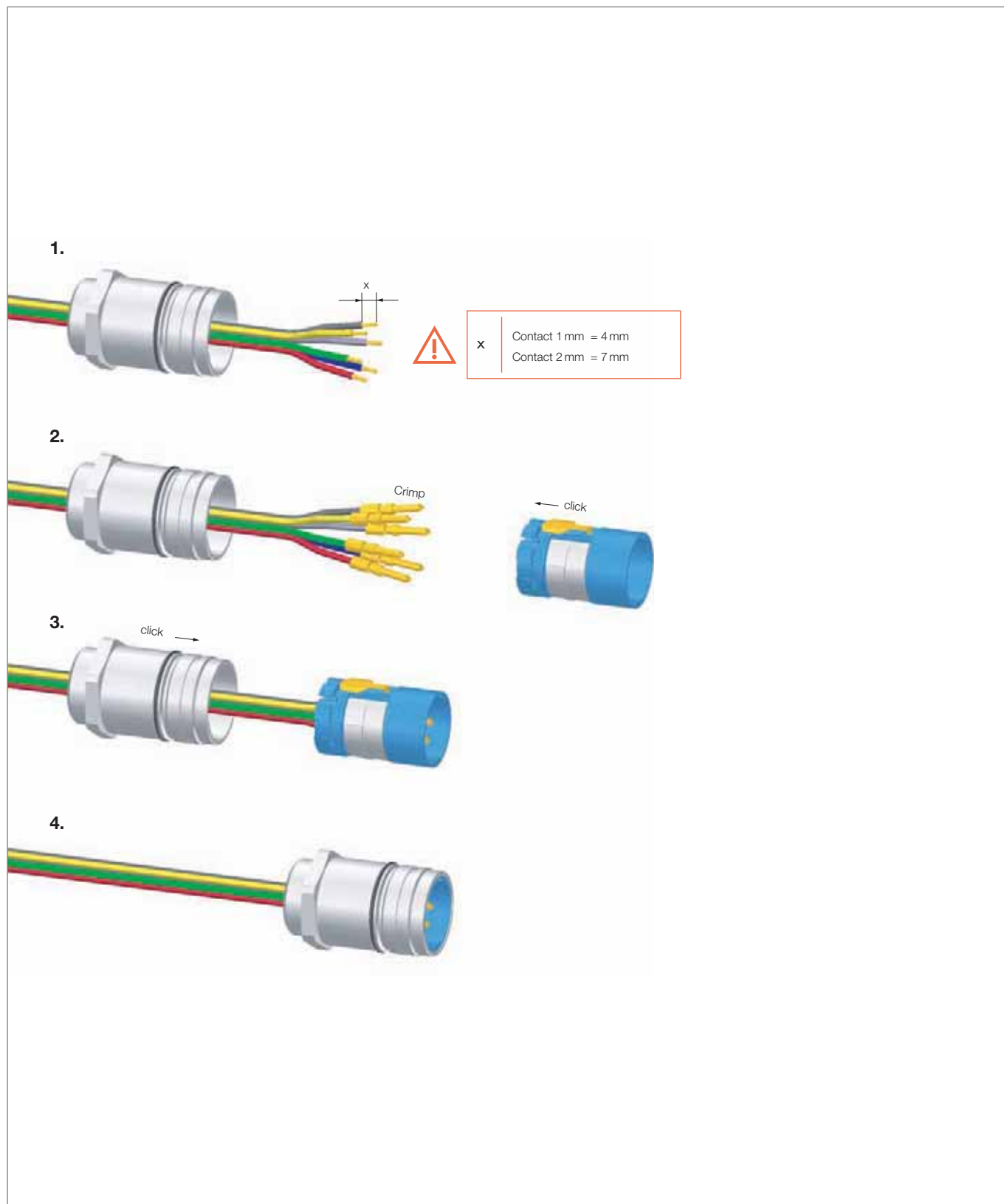
# Device connector



# Device connector



# Device connector, single-hole mount



# M23 connector

## Easy to assemble

- An integrated approach for all plug sizes
- A patented assembly module consisting of terminal insert and insulating body
- Assembly and shield connection combined into one step
- Simple, quick and safe assembly in the housing



## Flexibility



Total modularity means flexibility. Male or female inserts can even be used with any of the housing types for the M23 power connectors.



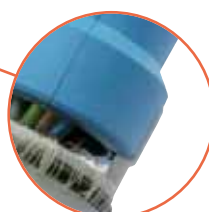
The concise layout of this connector range and the reduced number of individual parts has clear benefits for the user – speedier assembly and easier installation.



The spacer sleeves are colour-coded for the male and female inserts.



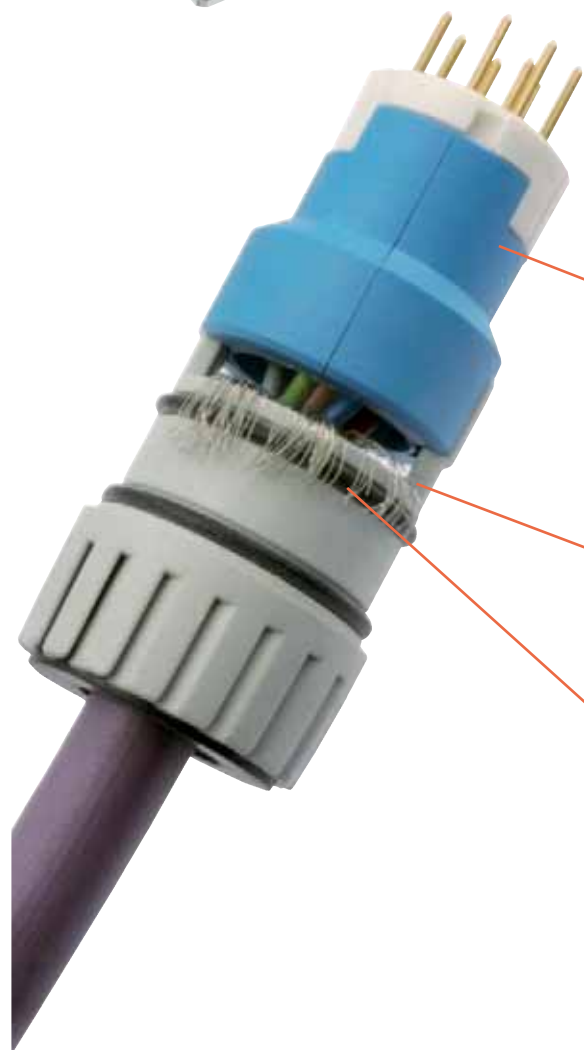
Assembly and shield connection are combined into one step.



The snap-on terminal insert protects the cable outlet from getting twisted.



The variable shield connection ensures secure EMC protection for both light and heavy shielding braid.

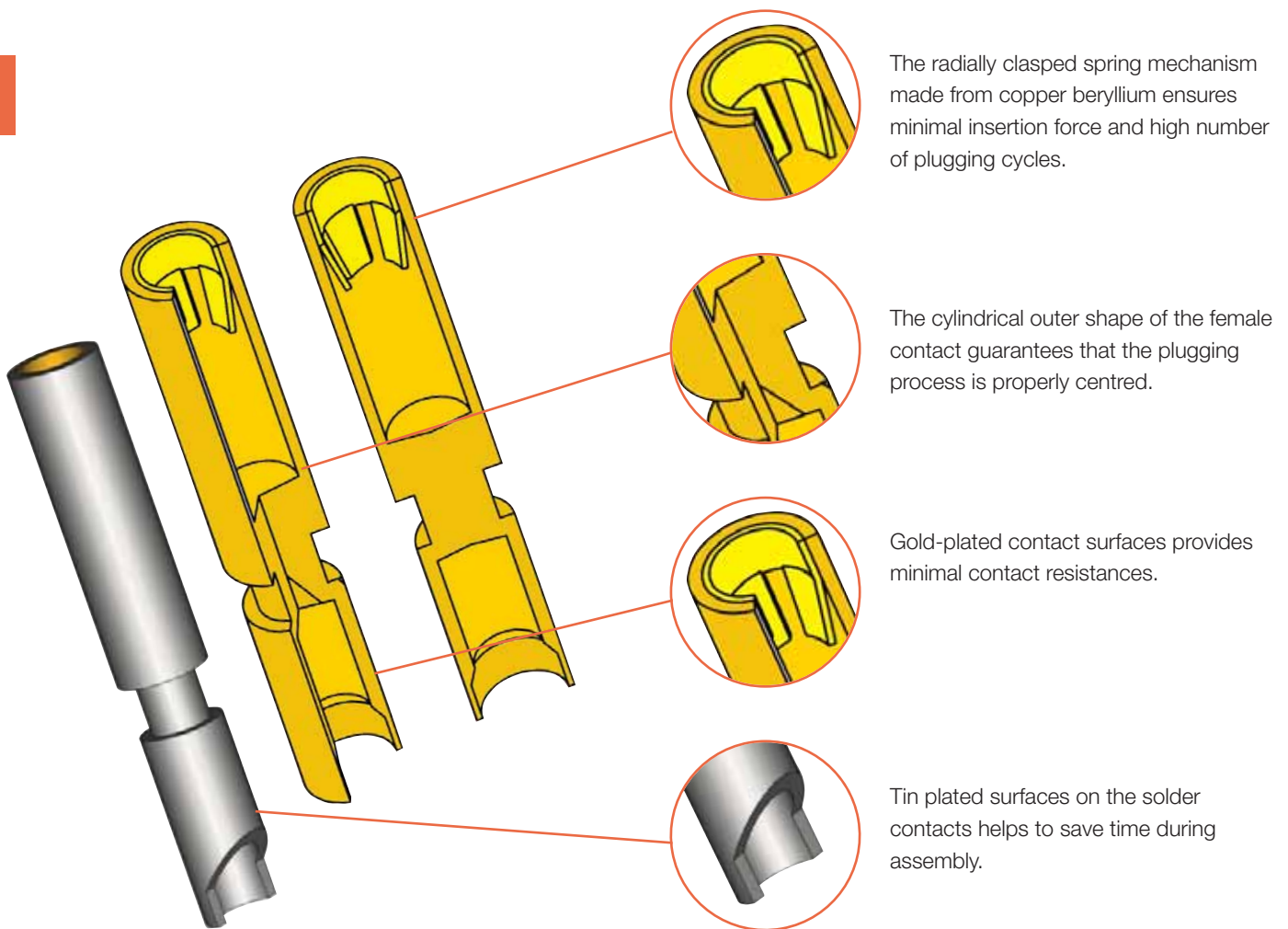


## M23 connector

### Secure contact with SLS® technology

The new, premium-grade contact – the spring-loaded socket (SLS®) system

- Integrated spring takes the pin contact and clasps it radially
- Outstanding electrical characteristics with the most secure contact
- Quick assembly: solder contacts already tin-plated



H

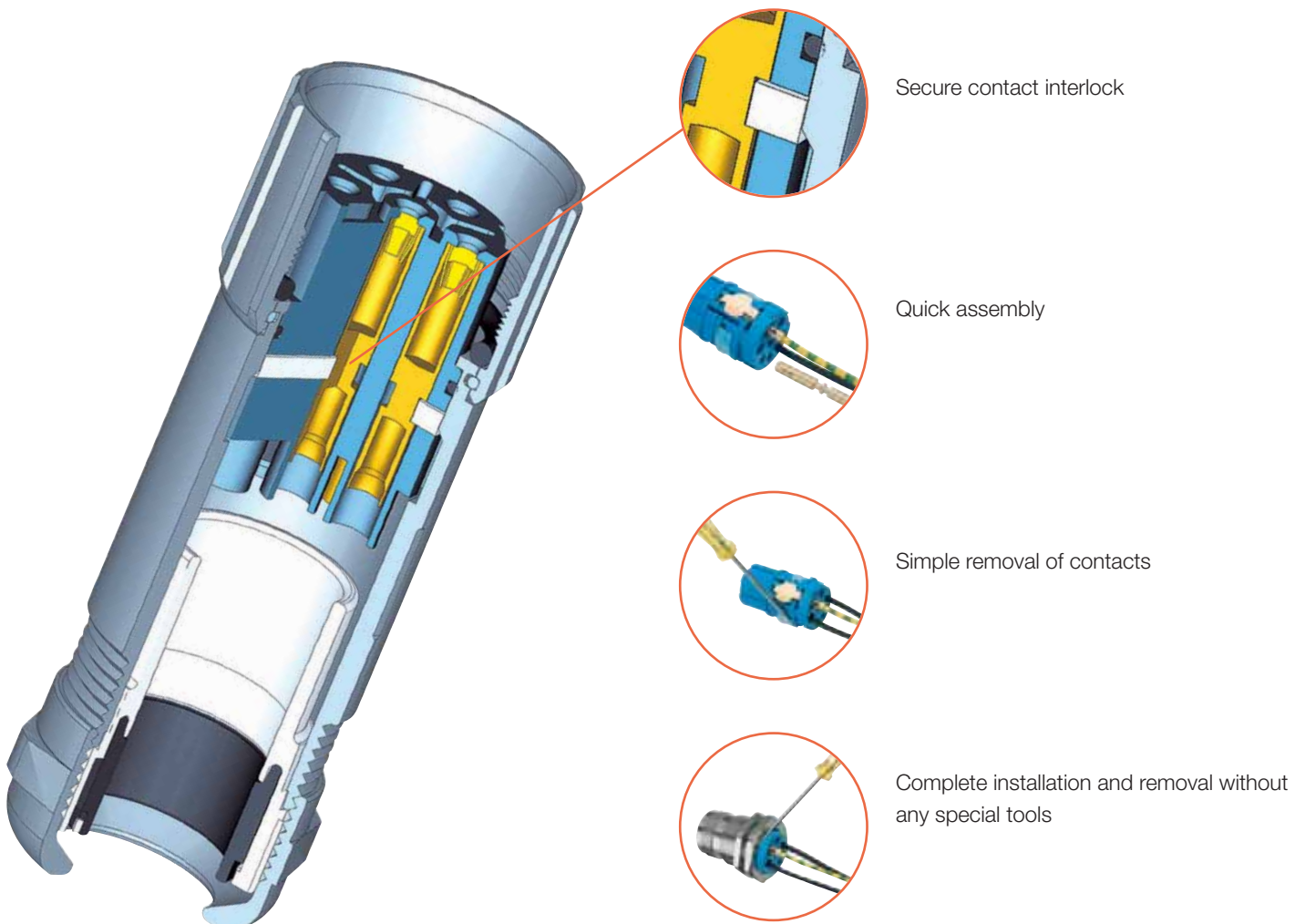
### Euro-Lock system® for a secure mount

Euro-Lock system® – the patented interlock system

- The integrated support clip locks the contacts into the insulating body
- Contacts are easy to install and remove
- No special tool is required

### High-quality cable gland

- Replaceable male or female inserts in each type of housing
- Integrated strain relief mechanism with patented HSK cable gland
- Internationally certified, with proven and established quality





# Tools and markers

---

|                          |                                          |      |
|--------------------------|------------------------------------------|------|
| <b>Tools and markers</b> | Introduction                             | I.2  |
|                          | Screwty®                                 | I.4  |
|                          | Cutting tools                            | I.7  |
|                          | Sheathing and insulation stripping tools | I.8  |
|                          | Stripping and cutting tools              | I.9  |
|                          | M23 crimping tools                       | I.12 |
|                          | Identification systems                   | I.14 |

---

## SAI tools

The Screwty® is a state of the art tool that features a unique, patented retention method. The adjustable torque ensures that the connectors have actually been sealed tightly. The Screwty® attachment for M23 is also very important. The sealing method for the M8 and M12 connectors is comparable to the M23.

The fact that the Screwty® attachment slips back is also a major advantage of this system. This means that it does not have to be re-applied, as would be the case when using an open ended

wrench. There is also no risk that the screw can loosen when you turn the tool the wrong way since the Screwty® is only capable of exerting force in one direction.

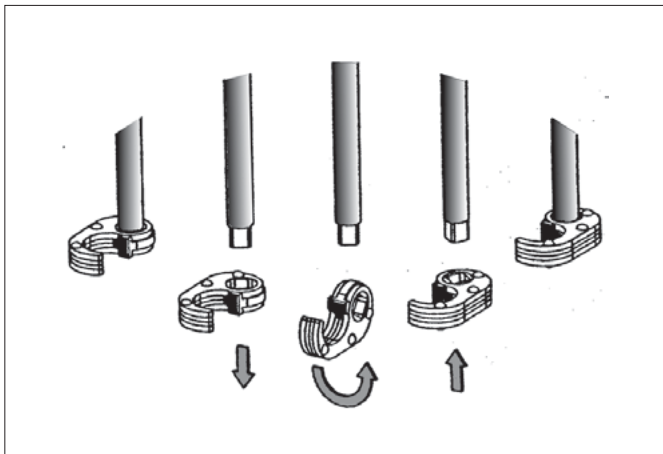
It is also possible to put other tool attachments on the 1/4"-drive. This allows the use of torque spanner wrenches or torque screwdrivers. This is also available without torque for those who cannot fit a torque tool into their budgets.



The Screwty® can also be used to screw on M23 connectors.



The tool does not have to be re applied. During the follow-up it simply slips back.



You can change the function from close to open by simply turning it around.



The Screwty® can also be purchased as a set with other suitable attachments.



### Screwty® torque

- Screw-on circular plug, safety sealed
- Easier work



### Cutting tools

- Cutting shape for various cable sizes
- Cutting without deformation of the conductor



### Sheathing and insulation stripping tools

- No need to adjust cutting depth
- No damage to inner conductors



### Stripping and cutting tool

- Special, self adjusting stripping blades do not damage the conductor



### Screwty®

Bolting tools



### Cutting tools



### Sheathing and insulation stripping tools



### Stripping and cutting tools



### SAI M23 crimping tool



### Identification systems

# Screwty® for M8/M12/M23



## The Torque Screwty®

- Easier work
- Screw on circular plug, safety sealed

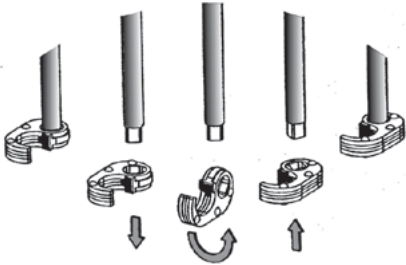
## The perfect tool for all situations

Screwty® is the ideal, universal tool for tightening and releasing cable glands on all common sensor and actuator cables. The Screwty® can also reach those round plugs normally considered inaccessible! No great force is required, simply turn the tool to tighten or release the plug in connector as required.

The Screwty® also fits the majority (more than 90 %) of the cables and plug-in connectors of other suppliers and is therefore a unique tool useful throughout the world. The Screwty® consists of a handle with a conventional 1/4" fitting. This means it can be used for all sizes: for M12 and M8 round plugs, and the M12F and M8F types, also for plugs and sockets on custom cables.

The Screwty® is suitable for the following round plugs:

| Size   | M8         | M8F          | M12          | M12F         |
|--------|------------|--------------|--------------|--------------|
|        | 10 ±0.3 mm | 11.9 ±0.3 mm | 14.5 ±0.3 mm | 19.8 ±0.3 mm |
| Thread | M8x1       | M8x1         | M12x1        | M12x1        |



An adjustable torque fitting is also available for the Screwty®, for guaranteeing extra reliability during installation.

The torque can be infinitely adjusted between 0.5 and 1.7 Nm. This accurate setting enables all round plugs to be tightened precisely with a pre set torque.

Weidmüller specifies the following torques for its round plugs:

| Size   | M8         | M8F        | M12        | M12F       | M12 plastic |
|--------|------------|------------|------------|------------|-------------|
| Torque | 0.5-0.6 Nm | 0.5-0.6 Nm | 0.8-1.2 Nm | 0.8-1.2 Nm | 0.9-1.1 Nm  |
| Thread | M8x1       | M8x1       | M12x1      | M12x1      | M12x1       |

Simply turn the ratchet to tighten or loosen the cable gland.

The Screwty® can also be fitted with other blades to create a torque screwdriver. You can find these blades in our catalogue "Tools".



Use of a M12 Screwty®

1. Position Screwty®,
2. tighten connector,
3. finished!



Use of a M23 Screwty®

## Screwty® standard



### Ordering data

| Type           | Use                           | Qty. | Order No.  |
|----------------|-------------------------------|------|------------|
| Screwty® M12   | moulded M12 lines             | 1    | 1900000000 |
| Screwty® M8    | moulded M8 lines              | 1    | 1900010000 |
| Screwty® M12 F | M12 plugs for custom assembly | 1    | 1900020000 |
| Screwty® M8 F  | M8 plugs for custom assembly  | 1    | 1900030000 |

## Screwty® Set



### Ordering data

| Type         | Qty. | Order No.  |
|--------------|------|------------|
| Screwty® Set | 1    | 1910000000 |

| Type         | Contents                                                        |
|--------------|-----------------------------------------------------------------|
| Screwty® Set | 1 Screwty® standard handle + 1 M12, M8, M12 F, M8 F attachments |

## Screwty® attachments



Screwty® M8 attachment    Screwty® M8 F attachment    Screwty® M12 attachment    Screwty® M12 F attachment    Screwty® M23 attachment

### Ordering data

| Type                   | Qty. | Order No.  |
|------------------------|------|------------|
| Screwty® M12 KO o. SD  | 1    | 1900100000 |
| Screwty® M8 KO o. SD   | 1    | 1900110000 |
| Screwty® M12F KO o. SD | 1    | 1900120000 |
| Screwty® M8F KO o. SD  | 1    | 1900130000 |
| Screwty® M23           | 1    | 1981560000 |

#### Legend:

|             |                                           |
|-------------|-------------------------------------------|
| F           | for custom assemblies                     |
| DM          | torque                                    |
| KO or SD    | ratchet only (attachment)                 |
| Screwty®    | screwdriver                               |
| Screwty® DM | torque screwdriver, interchangeable blade |
| WK          | interchangeable blade                     |
| LS          | power plug                                |

## Screwty® with torque fitting

Setting aid for Screwty® with torque fitting (included)

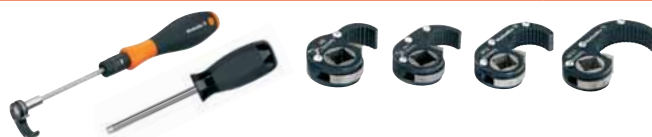


### Ordering data

| Type              | Use                                               | Qty. | Order No.  |
|-------------------|---------------------------------------------------|------|------------|
| Screwty®-M12-DM   | moulded M12 lines with torque requirement         | 1    | 1900001000 |
| Screwty®-M8-DM    | moulded M8 lines with torque requirement          | 1    | 1900011000 |
| Screwty®-M12 F-DM | M12 plugs, custom assembly w. torque requirement  | 1    | 1900021000 |
| Screwty®-M8 F-DM  | M8 plugs, custom assembly with torque requirement | 1    | 1900031000 |

| Fittings          | Contents                                                                                                 |
|-------------------|----------------------------------------------------------------------------------------------------------|
| Screwty®-M12-DM   | 1 interchangeable blade, 1 torque handle, 1 setting aid for Screwty® torque, 1 Screwty® M12 attachment   |
| Screwty®-M8-DM    | 1 interchangeable blade, 1 torque handle, 1 setting aid for Screwty® torque, 1 Screwty® M18 attachment   |
| Screwty®-M12 F-DM | 1 interchangeable blade, 1 torque handle, 1 setting aid for Screwty® torque, 1 Screwty® M12 F attachment |
| Screwty®-M8 F-DM  | 1 interchangeable blade, 1 torque handle, 1 setting aid for Screwty® torque, 1 Screwty® M18 F attachment |

## Screwty® Set-DM



### Ordering data

| Type            | Qty. | Order No.  |
|-----------------|------|------------|
| Screwty® Set-DM | 1    | 1920000000 |

| Fittings        | Contents                                                                                                                         |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------|
| Screwty® Set-DM | 1 interchangeable blade, 1 torque handle, 1 setting aid for Screwty® torque, 1 each of Screwty® M12, M8, M12 F, M8 F attachments |

## Screwty® interchangeable handle/interchangeable bit



### Ordering data

| Type               | Use | Qty. | Order No.  |
|--------------------|-----|------|------------|
| 1/4" handle        |     | 1    | 4294820000 |
| WK-1/4" (Screwty®) |     | 1    | 1862200000 |



### Cutting tools

- Cutting formation for different cable sizes increases the quality of the cuts for smaller cross sections
- Not suitable for steel wires, steel armoured cables, aluminium alloys and hard drawn copper conductors!
- Cutting without deformation of the conductor



### KT 8



-  max. 8 mm
-  max. 16 mm<sup>2</sup>
-  max. 16 mm<sup>2</sup>
-  max. 16 mm<sup>2</sup>

### KT 12



-  max. 12 mm
-  max. 16 mm<sup>2</sup>
-  max. 25 mm<sup>2</sup>
-  max. 35 mm<sup>2</sup>

### Technical data

| Max. cutting performance, copper cable       |                     |
|----------------------------------------------|---------------------|
| Solid (max. conductor cross-section)         | mm <sup>2</sup> / - |
| Stranded (max. conductor cross-section)      | mm <sup>2</sup> / - |
| Flexible (max. conductor cross-section)      | mm <sup>2</sup> / - |
| Flexible, stranded (max. conductor diameter) | mm                  |
| Max. cutting performance, aluminium cable    |                     |
| Stranded (max. conductor cross-section)      | mm <sup>2</sup> / - |
| Stranded (max. conductor diameter)           | mm                  |
| solid                                        | mm <sup>2</sup>     |
| Data / telephone / control cable             |                     |
| Max. outer diameter                          | mm                  |
| Tool data                                    |                     |
| Length / Width / Height                      | mm                  |
| Weight                                       | g                   |
| Note                                         |                     |

| KT8           |  |  |
|---------------|--|--|
| 16 / 6        |  |  |
| 16 / 6        |  |  |
| 16 / 6        |  |  |
| 8             |  |  |
| 16 / 6        |  |  |
| 8             |  |  |
| 16            |  |  |
| 8             |  |  |
| 165 / 65 / 25 |  |  |
| 180           |  |  |
| Tool closed   |  |  |

| KT12          |  |  |
|---------------|--|--|
| 16 / 6        |  |  |
| 25 / 3        |  |  |
| 35 / 2        |  |  |
| 12            |  |  |
| 25 / 6        |  |  |
| 8             |  |  |
| 25            |  |  |
| 12            |  |  |
| 215 / 66 / 28 |  |  |
| 300           |  |  |
| Tool closed   |  |  |

### Ordering data

| Version |
|---------|
|         |
| Note    |
|         |

| Type | Qty | Order No.  |
|------|-----|------------|
| KT 8 | 1   | 9002650000 |
|      |     |            |
| Note |     |            |
|      |     |            |

| Type  | Qty | Order No.  |
|-------|-----|------------|
| KT 12 | 1   | 9002660000 |
|       |     |            |
| Note  |     |            |
|       |     |            |

## Sheathing and insulation stripping tools

## Special sheathing and insulation stripping tools

- Quick and accurate stripping
- No need to adjust cutting depth
- No damage to inner conductors

## Stripper 6-16



## AM12

For UTP and STP data cables



## Stripper 6-16

The Stripper 6-16 insulation stripping tool is for removing the outer sheath of sensor cables. No damage to inner wires can occur because the blades have a specially ground surface. Adjusting the tool to different cross-sections is unnecessary. The visual scale of 15 to 20 mm enables quick and precise stripping of outer insulation.

- Cutting of UTP and STP data cables and other flexible copper cables with a diameter of up to 4 mm<sup>2</sup> (~AWG11)
- Stripping of the outer insulation of UTP and STP data cables and other round cables with  $\varnothing$  0.5 ... 12.5 mm
- No damage to the shielding or conductor due to adjustable stripping blade
- Length end stop for repeated cutting or stripping lengths

## Technical data

| Max. stripping performance              |                 |
|-----------------------------------------|-----------------|
| Cable model                             |                 |
| Conductor cross-section                 | AWG             |
| Conductor diameter                      | mm              |
| Depth of cut                            |                 |
| Cutting performance                     |                 |
| UTP und STP data cables, max. diameter  | mm              |
| Flexible (max. conductor cross-section) | mm <sup>2</sup> |
| Tool data                               |                 |
| Length                                  | mm              |
| Weight                                  | g               |
| Information                             |                 |

## Ordering data

| Version     |
|-------------|
|             |
| Information |

## Accessories

| Type        | Qty. | Order No. |
|-------------|------|-----------|
|             |      |           |
| Information |      |           |

| Stripper 6-16                   |    |     |  |
|---------------------------------|----|-----|--|
| suitable for PVC and PUR cables |    |     |  |
| Cutting performance             |    |     |  |
|                                 |    |     |  |
|                                 |    |     |  |
|                                 |    |     |  |
| Tool data                       |    |     |  |
| Length                          | mm | 165 |  |
| Weight                          | g  | 120 |  |
| Information                     |    |     |  |

| Type                   | Qty. | Order No.  |
|------------------------|------|------------|
| STRIPPER 6-16 RED-LINE | 1    | 9203110000 |
| Information            |      |            |

| Type        | Qty. | Order No. |
|-------------|------|-----------|
|             |      |           |
| Information |      |           |

| AM12                    |    |    |  |
|-------------------------|----|----|--|
| UTP and STP data cables |    |    |  |
| 20...11                 |    |    |  |
| 0.5...12.5              |    |    |  |
| adjustable              |    |    |  |
|                         |    |    |  |
|                         |    |    |  |
|                         |    |    |  |
| Tool data               |    |    |  |
| Length                  | mm | 97 |  |
| Weight                  | g  | 36 |  |
| Information             |    |    |  |

| Type        | Qty. | Order No.  |
|-------------|------|------------|
| AM 12       | 1    | 9030060000 |
| Information |      |            |

| Type               | Qty. | Order No. |
|--------------------|------|-----------|
|                    |      |           |
| Information        |      |           |
| Sheathing stripper |      |           |

### Stripping and cutting tools

- for flexible and solid conductors with PVC insulation
- Cable with double insulation in two processing steps without special adjustment
- Automatic opening of clamping jaws after stripping
- No play in self adjusting cutting unit
- Long-lasting
- No splicing of single conductors
- Optimised ergonomic design
- Stripping length adjustable via stop
- Adjustable for different insulation thicknesses
- Switchable partial stripping function
- Removable handle shells
- Fold-out cutting protection
- Custom marking with ESG device markers

### stripax®

0.08 - 10 mm<sup>2</sup>



- Stripping: PVC insulated flexible conductor, size 0.08...10 mm<sup>2</sup> (~AWG 28...7)
- Cutting: PVC insulated flexible conductor, size 0.08...6 mm<sup>2</sup> (~AWG 28...10)
- Conductors undamaged due to self adjusting stripping blades.
- Processing of multi-conductors, with thin flat ribbon cables and even multiple conductors in one operation



### Technical data

| Max. stripping performance |                 |
|----------------------------|-----------------|
| Cable type                 |                 |
| Conductor cross-section    | mm <sup>2</sup> |
| Stripping length, max.     | mm              |
| Cutting performance        |                 |
| Max. cutting performance   | mm <sup>2</sup> |
| Tool data                  |                 |
| Length                     | mm              |
| Weight                     | g               |
| Note                       |                 |

| stripax®                                          |  |
|---------------------------------------------------|--|
| Flexible and solid conductors with PVC insulation |  |
| 0.08...10                                         |  |
| 25                                                |  |
| 6                                                 |  |
| 190                                               |  |
| 175                                               |  |
| Note                                              |  |

### Ordering data

| Version |
|---------|
|         |
| Note    |
|         |

| Type     | Qty. | Order No.  |
|----------|------|------------|
| stripax® | 1    | 9005000000 |
| Note     |      |            |
|          |      |            |

### Accessories

| Type |
|------|
|      |
| Note |
|      |

| Type                   | Qty. | Order No.  |
|------------------------|------|------------|
| Spare stripping blades | 1    | 1119030000 |
| Note                   |      |            |
|                        |      |            |

## Stripping and cutting tools

### multi-stripax®

**Multifunctional stripping tool for use on a multitude of conductor insulation forms and configurations – even those not covered by the standard**

#### multi-stripax® – the troubleshooter

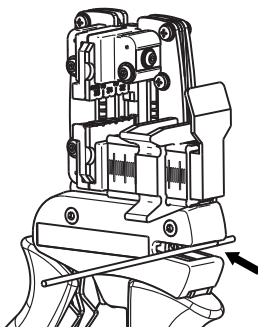
- Interchangeable stripping units
- Proper stripping of any conductor, round, flat or special profiles, thanks to the specially shaped stripping blades
- Incorporates cutting function for up to 2.5 mm<sup>2</sup> solid and 6 mm<sup>2</sup> fine
- Fatigueless operation thanks to ergonomic design
- No damage to conductor or remaining insulation
- Best stripping results for industrial applications
- Stripping results reproduced accurately time and time again
- A long lasting, reliable tool thanks to its robust design
- Plus, the customary Weidmüller repair service

#### Special stripping units – the answer to diverse stripping tasks

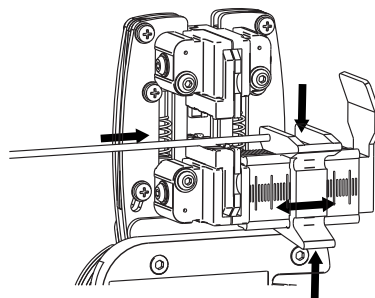
The multi-stripax® tool – distinguished by its robust design, was developed to handle all the stripping tasks met with in practice. Thanks to the interchangeable stripping units, a special solution can be found for every challenge in the marketplace.

The specially shaped stripping blades guarantee perfect stripping results. The guide plates ensure the correct positioning of the wire and therefore prevent damage to the remaining wire. The clamping jaws hold the conductor with just the right force during the stripping operation and are matched to the specific situation. This flexibility within the variables that affect the result of the stripping operation turns the multi-stripax® tool into a universal troubleshooter.

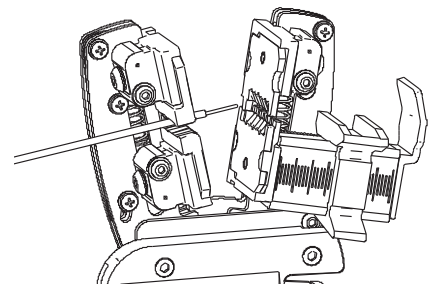
#### Cutting



#### Positioning



#### Stripping



### multi-stripax®

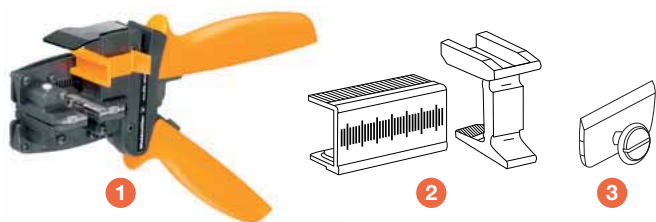


#### Technical data

|                                    |                                               |
|------------------------------------|-----------------------------------------------|
| Cable type                         | PVC, Teflon, PTE, PUR, silicone, halogen-free |
| Conductor cross-section, min.      | 2 mm                                          |
| Conductor cross-section, max.      | no limit (in several steps)                   |
| max. cutting capacity, fine-strand | 6 mm <sup>2</sup>                             |
| max. cutting capacity, solid       | 2.5 mm <sup>2</sup>                           |
| max. cutting capacity, ribbon      | 10.2 x 4 mm                                   |
| Length/Width/Height                | 250 / 85 / 40 mm                              |
| Weight                             | 250 g                                         |






#### Information

multi-stripax® incl. stripping unit



- High quality stripping for industrial applications
- Specially shaped stripping blades enable stripping of special types of insulation and conductor configurations
- Adjustable stop for setting stripping lengths from 2.3 to 30 mm
- Highly flexible thanks to interchangeable stripping units
- Stripping results reproduced accurately time and time again
- No damage to the conductor or insulation
- A long lasting, reliable tool thanks to its robust design
- Integral cutting function for max. 2.5 mm<sup>2</sup> solid or 6 mm<sup>2</sup> flexible cables

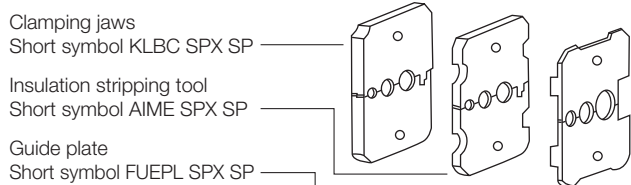
Ordering data

| Illustration                                                                        | Type                  | Qty. | Order No.  | Features                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------------------------------------------------------------------------|-----------------------|------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | multi-stripax® 6-16   | 1    | 9202210000 | PVC-insulated cables; Cable cross-section 6 up to 16 mm <sup>2</sup> ; max. stripping lengths depends on cable design / cable type<br>1. station solid, stranded and flexible 6 mm <sup>2</sup><br>2. station solid, stranded and flexible 10 mm <sup>2</sup><br>3. station solid, stranded and flexible 16 mm <sup>2</sup> double stranded (flexible)<br>Cutting function up to 6 mm <sup>2</sup> |
|    | multi-stripax® ASI    | 1    | 9202250000 | ASI Bus cables 2 x 1.5 mm <sup>2</sup> flexible for PTE, PUR and EPDM insulated cables<br>Stripping of outer insulation and inner cable<br>Cutting function up to 6 mm <sup>2</sup>                                                                                                                                                                                                                |
|    | multi-stripax® GKW LW | 1    | 9205760000 | Railway cable Radox GKW LW; Cable cross-section 1.0; 1.5 and 2.5 mm <sup>2</sup><br>max. stripping lengths depends on cable design / cable type<br>Cutting function up to 6 mm <sup>2</sup>                                                                                                                                                                                                        |
|   | ERAN multi-stripax®   | 1    | 9203100000 | Length stop                                                                                                                                                                                                                                                                                                                                                                                        |
|  | ERME multi-stripax®   | 1    | 9203070000 | Cutting knife                                                                                                                                                                                                                                                                                                                                                                                      |

Information

Stripping units for multi-stripax®

Stripping unit consists of:



- High flexible thanks to interchangeable stripping units
- High quality stripping for industrial applications
- Specially shaped stripping blades enable stripping of special types of insulation and conductor configurations

Ordering data

| Type                      | Qty. | Order No.  | Features                                                                                                                                                                                                                                                                                                                                               |
|---------------------------|------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AIE multi-stripax® 6-16   | 1    | 9202260000 | PVC-insulated cables; Cable cross-section 6 up to 16 mm <sup>2</sup> ; max. stripping lengths depends on cable design / cable type<br>1. station solid, stranded and flexible 6 mm <sup>2</sup><br>2. station solid, stranded and flexible 10 mm <sup>2</sup><br>3. station solid, stranded and flexible 16 mm <sup>2</sup> double stranded (flexible) |
| AIE multi-stripax® ASI    | 1    | 9202300000 | ASI Bus cables 2 x 1.5 mm <sup>2</sup> flexible for PTE, PUR and EPDM insulated cables<br>Stripping of outer insulation and inner cable                                                                                                                                                                                                                |
| AIE multi-stripax® GKW LW | 1    | 9205770000 | Railway cable Radox GKW LW; Cable cross-section 1.0; 1.5 and 2.5 mm <sup>2</sup><br>max. stripping lengths depends on cable design / cable type                                                                                                                                                                                                        |

## M23 crimping tools

## SAI M23 crimping tool 1

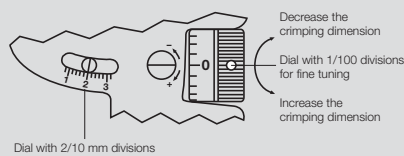
n

**Adjusting the crimping dimensions**

The adjustment mechanism is used to set the crimping depth of the crimping mandrel as described below. The adjusting dial is used to prepare the feed; the dial can be turned clockwise (for decreasing the dimension) or counter-clockwise (for increasing the dimension).

**Adjustment precision**

- 1 division mark on the dial  $\cong$  1/100 mm adjustment
- 1 complete revolution of the dial  $\cong$  0,2 mm adjustment read from scale
- 5 revolutions of the dial  $\cong$  1 mm adjustment read from scale

**Verifying the crimping dimension**

The four-mandrel crimping tool is pre-set at the factory. The actual crimping size should still be checked periodically. It should be checked using the plug gauge ( $\varnothing$  2.0 mm) that is included with the crimping tool as described below. Use the dial on the stationary tool shank to set the size to 2.0 mm on the scale. Set to the zero-point tick mark on the dial and close the tool. (Refer to the diagram showing the crimping size adjustment.) At this setting, it should be possible to move the 2.00-mm- $\varnothing$  plug gauge without any play or extra room. If this is not possible, then the size deviation (+/-) can be determined using the dial's fine-adjustment mechanism. If this size check reveals that the tool is not within the tolerance range specified by the manufacturer of the contacts, then you should contact the manufacture of the tool for further inspection.

**Servicing and maintenance**

Before you start to use the hand crimping tool, it must be clean and in proper working condition. Crimp residue or fragments must be removed from the crimping jaws and locator. The joints should be regularly lubricated using machine oil to protect them from dirt. Make sure that all bolts are secured with locking rings.

**Technical data**

| Crimp contact                                                 | Wire cross-section (mm <sup>2</sup> ) | Crimping mandrel adjustment | Locator position | Order No.  |
|---------------------------------------------------------------|---------------------------------------|-----------------------------|------------------|------------|
| Crimp male, signal 1 mm                                       | 0.14                                  | 0.75                        | 11               | 1170150000 |
|                                                               | 0.25                                  | 0.82                        |                  |            |
|                                                               | 0.34                                  | 0.90                        |                  |            |
|                                                               | 0.50                                  | 1.00                        |                  |            |
|                                                               | 0.75                                  | 1.08                        |                  |            |
|                                                               | 1.00                                  | 1.20                        |                  |            |
| Crimp female, signal 1 mm<br>(0.08 - 0.56 mm <sup>2</sup> )   | 0.14                                  | 0.75                        | 12               | 1995860000 |
|                                                               | 0.25                                  | 0.80                        |                  |            |
|                                                               | 0.35                                  | 0.87                        |                  |            |
|                                                               | 0.50                                  | 0.97                        |                  |            |
| Crimp female, signal 1 mm<br>(0.34 - 1.00 mm <sup>2</sup> )   | 0.50                                  | 0.95                        | 12               | 1170180000 |
|                                                               | 0.75                                  | 4.00                        |                  |            |
|                                                               | 1.00                                  | 1.05                        |                  |            |
|                                                               |                                       |                             |                  |            |
| Crimp male, signal 1.5 mm                                     | 0.14                                  | 0.75                        | 3                | 1170220000 |
|                                                               | 0.25                                  | 0.82                        |                  |            |
|                                                               | 0.35                                  | 0.90                        |                  |            |
|                                                               | 0.50                                  | 0.96                        |                  |            |
|                                                               | 0.75                                  | 1.03                        |                  |            |
|                                                               | 1.00                                  | 1.00                        |                  |            |
| Crimp female, signal 1.5 mm                                   | 0.14                                  | 0.75                        | 4                | 1170230000 |
|                                                               | 0.25                                  | 0.80                        |                  |            |
|                                                               | 0.35                                  | 0.87                        |                  |            |
|                                                               | 0.50                                  | 0.97                        |                  |            |
| Crimp female, signal 1.5 mm<br>(0.34 - 1.00 mm <sup>2</sup> ) | 0.50                                  | 0.95                        | 4                | 1170240000 |
|                                                               | 0.75                                  | 1.00                        |                  |            |
|                                                               | 1.00                                  | 1.05                        |                  |            |
| Crimp male, signal 2 mm                                       | 0.75                                  | 1.30                        | 5                | 1170250000 |
|                                                               | 1.00                                  | 1.40                        |                  |            |
|                                                               | 1.50                                  | 1.55                        |                  |            |
|                                                               | 2.50                                  | 1.75                        |                  |            |
|                                                               |                                       |                             |                  |            |
| Crimp female, signal 2 mm                                     | 0.75                                  | 1.30                        | 6                | 1170260000 |
|                                                               | 1.00                                  | 1.40                        |                  |            |
|                                                               | 1.50                                  | 1.55                        |                  |            |
|                                                               | 2.50                                  | 1.75                        |                  |            |
|                                                               |                                       |                             |                  |            |
| Crimp male, power 1 mm                                        | 0.14                                  | 0.75                        | 1                | 1170390000 |
|                                                               | 0.25                                  | 0.80                        |                  |            |
|                                                               | 0.35                                  | 0.85                        |                  |            |
|                                                               | 0.50                                  | 1.03                        |                  |            |
|                                                               | 0.75                                  | 1.08                        |                  |            |
|                                                               | 1.00                                  | 1.13                        |                  |            |
| Crimp female, power 1 mm                                      | 0.14                                  | 0.75                        | 2                | 1995830000 |
|                                                               | 0.25                                  | 0.80                        |                  |            |
|                                                               | 0.35                                  | 0.85                        |                  |            |
|                                                               | 0.50                                  | 0.89                        |                  |            |
|                                                               | 0.75                                  | 0.95                        |                  |            |
|                                                               | 1.00                                  | 1.02                        |                  |            |
| Crimp male, power 2 mm                                        | 0.75                                  | 1.20                        | 7                | 1170400000 |
|                                                               | 1.00                                  | 1.40                        |                  |            |
|                                                               | 1.50                                  | 1.55                        |                  |            |
|                                                               | 2.50                                  | 1.70                        |                  |            |
|                                                               |                                       |                             |                  |            |
| Crimp male, power 2 mm                                        | 2.50                                  | 1.47                        | 7                | 1170410000 |
|                                                               | 4.00                                  | 1.60                        |                  |            |
|                                                               |                                       |                             |                  |            |
| Crimp female, power 2 mm                                      | 0.75                                  | 1.20                        | 8                | 1995820000 |
|                                                               | 1.00                                  | 1.40                        |                  |            |
|                                                               | 1.50                                  | 1.55                        |                  |            |
|                                                               | 2.50                                  | 1.70                        |                  |            |
| Crimp female, power 2 mm                                      | 2.50                                  | 1.47                        | 8                | 1170420000 |
|                                                               | 4.00                                  | 1.60                        |                  |            |
|                                                               |                                       |                             |                  |            |

**Ordering data**

| Type                    | Order No.  |
|-------------------------|------------|
| SAI M23 CRIMPING TOOL 1 | 1203840000 |

**Operation mode**

The following table specifies the locator positions and the crimping dimensions for various crimping contacts. The contact is inserted through the tool into the locator; this ensures the proper crimping position. The inserted contact is secured by closing gently (approximately to first snap-close level). Now the cable can be easily inserted and it is not possible for the contact to fall out. The tool must be pressed together until it reaches the end stop position in order to function properly. They are then able to open automatically which brings the crimping process to a close in the intended manner.

**SAI M23 crimping tool 2**



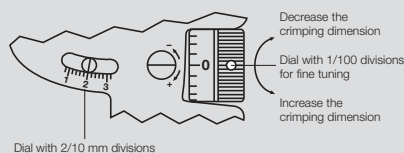
**Adjusting the crimping dimensions**

The adjustment mechanism is used to set the crimping depth of the crimping mandrel as described below. The adjusting dial is used to prepare the infeed; the dial can be turned clockwise (for decreasing the dimension) or counter-clockwise (for increasing the dimension).

**Adjustment precision**

- 1 division mark on the dial  $\cong$  1/100 mm adjustment
- 1 complete revolution of the dial  $\cong$  0,2 mm adjustment read from scale
- 5 revolutions of the dial  $\cong$  1 mm adjustment read from scale

**Verifying the crimping dimension**



The four-mandrel crimping tool is pre-set at the factory. The actual crimping size should still be checked periodically. It should be checked using the plug gauge ( $\varnothing$  1.0 mm) that is included with the crimping tool as described below. Use the dial on the stationary tool shank to set the size to 1.0 mm on the scale. Set to the zero-point tick mark on the dial and close the tool. (Refer to the diagram showing the crimping size adjustment.) At this setting, it should be possible to move the 1.00-mm- $\varnothing$  plug gauge without any play or extra room. If this is not possible, then the size deviation (+/-) can be determined using the dial's fine-adjustment mechanism. If this size check reveals that the tool is not within the tolerance range specified by the manufacturer of the contacts, then you should contact the manufacture of the tool for further inspection.

**Servicing and maintenance**

Before you start to use the hand crimping tool, it must be clean and in proper working condition. Crimp residue or fragments must be removed from the crimping jaws and locator. The joints should be regularly lubricated using machine oil to protect them from dirt. Make sure that all bolts are secured with locking rings.

**Technical data**

| Crimp contact                                    | Wire cross-section (mm <sup>2</sup> ) | Crimping mandrel adjustment | Locator position | Order No.  |
|--------------------------------------------------|---------------------------------------|-----------------------------|------------------|------------|
| Crimp male 1 mm                                  | 0.14                                  | 0.86                        | 1                | 1170150000 |
|                                                  | 0.25                                  | 0.90                        |                  |            |
|                                                  | 0.34                                  | 0.95                        |                  |            |
|                                                  | 0.56                                  | 0.98                        |                  |            |
|                                                  | 0.75                                  | 1.03                        |                  |            |
|                                                  | 1.00                                  | 1.08                        |                  |            |
| Crimp female 1 mm (0.08-0.56 mm <sup>2</sup> )   | 0.08                                  | 0.75                        | 2                | 1995860000 |
|                                                  | 0.14                                  | 0.78                        |                  |            |
|                                                  | 0.25                                  | 0.82                        |                  |            |
|                                                  | 0.34                                  | 0.86                        |                  |            |
|                                                  | 0.56                                  | 0.90                        |                  |            |
|                                                  | 0.34-1.00 mm <sup>2</sup>             | 0.77                        |                  |            |
| 0.56                                             | 0.82                                  |                             |                  |            |
| 0.75                                             | 0.88                                  |                             |                  |            |
| 1.00                                             | 0.95                                  |                             |                  |            |
| Crimp male 1.5 mm                                | 0.14                                  | 0.65                        | 3                | 1170220000 |
|                                                  | 0.25                                  | 0.68                        |                  |            |
|                                                  | 0.34                                  | 0.72                        |                  |            |
|                                                  | 0.56                                  | 0.81                        |                  |            |
|                                                  | 0.75                                  | 0.95                        |                  |            |
|                                                  | 1.00                                  | 1.07                        |                  |            |
| Crimp female 1.5 mm (0.14-0.75 mm <sup>2</sup> ) | 0.14                                  | 0.70                        |                  | 1170230000 |
|                                                  | 0.25                                  | 0.73                        |                  |            |
|                                                  | 0.34                                  | 0.77                        |                  |            |
|                                                  | 0.56                                  | 0.85                        |                  |            |
|                                                  | 0.75                                  | 1.05                        |                  |            |
| Crimp female 1.5 mm (0.34-1.00 mm <sup>2</sup> ) | 0.34                                  | 0.88                        |                  | 1170240000 |
|                                                  | 0.56                                  | 0.95                        |                  |            |
|                                                  | 0.75                                  | 1.05                        |                  |            |
|                                                  | 1.00                                  | 1.13                        |                  |            |
| Crimp male 2.0 mm                                | 0.75                                  | 1.20                        |                  | 1170250000 |
|                                                  | 1.00                                  | 1.35                        |                  |            |
|                                                  | 1.50                                  | 1.45                        |                  |            |
|                                                  | 2.50                                  | 1.60                        |                  |            |
| Crimp female 2.0 mm                              | 0.75                                  | 1.25                        |                  | 1170260000 |
|                                                  | 1.00                                  | 1.35                        |                  |            |
|                                                  | 1.50                                  | 1.45                        |                  |            |
|                                                  | 2.50                                  | 1.60                        |                  |            |

**Ordering data**

| Type                    | Order No.  |
|-------------------------|------------|
| SAI M23 CRIMPING TOOL 2 | 1203960000 |

# SlimFix Clip

The SlimFix Clip combines two advantages in one: its unique closure mechanism offers the reliability of a closed marker with ease of attaching an open marker. The Clip closure mechanism also allows quick, no fuss attachment of the markers after the wires have been installed. SlimFix Clip markers are suitable for wires and cables with external diameters up to 5 mm. Long sequences of characters are possible on the large marking surface – up to 30 mm.

- Halogen free, flammability class V2 material
- Narrow markers with reliable attachment thanks to compensation feature
- Clip closure mechanism ensures permanent attachment following wire installation
- Rapid attachment without tools
- Three sizes for wire cross-sections from 0.5 – 10.0 mm<sup>2</sup>
- Available in lengths of 12, 21 and 30 mm
- Markers available in the proven MultiCard format
- Additional marking surface for precise assignment to projects
- Custom-printed markers supplied to your specifications



## Technical data

|                           |                            |
|---------------------------|----------------------------|
| Material                  | Polyamide 66, halogen-free |
| UL 94 flammability rating | V2                         |
| Temperature range         | -40 °C to 100 °C           |
| Printing                  | black                      |

## Ordering data

| Type    | Wire, ext. ø             | Wire cross-section         |
|---------|--------------------------|----------------------------|
| SFC 0   | 1.5 - 2.5 mm             | 0.5 - 1.0 mm <sup>2</sup>  |
| SFC 1   | 2.0 - 3.5 mm             | 0.75 - 2.5 mm <sup>2</sup> |
| SFC 2   | 2.5 - 5.0 mm             | 2.5 - 4.0 mm <sup>2</sup>  |
| SFC 2,5 | 4.0 - 6.0 mm             | 4.0 - 10.0 mm <sup>2</sup> |
| Colour  | Other colours on request |                            |

- brown
- orange
- green
- violet
- grey

Special printing Specify special printing and colours per diskette, Excel file or using the M-Print® PRO software.

Minimum order quantity 1 pack

**Note:** SlimFix Clip markers can be printed with PrintJet.



## SFC - blank

### Technical specification

|                              |           |
|------------------------------|-----------|
| Material                     | Polyamide |
| UL 94 flammability rating    | V2        |
| Min. temperature, continuous | -40 °C    |
| Max. temperature, continuous | 100 °C    |

## Ordering data

| Type       | Length | Qty. | Order No. white | Order No. yellow | Order No. blue | Order No. red | Custom printing |
|------------|--------|------|-----------------|------------------|----------------|---------------|-----------------|
| SFC 0/12   | 12     | 200  | 1813130000      | 1813160000       | 1813170000     | 1813150000    |                 |
| SFC 1/12   | 12     | 200  | 1747320001      | 1747320004       | 1747320002     | 1747320003    |                 |
| SFC 2/12   | 12     | 120  | 1758320001      | 1758320004       | 1758320002     | 1758320003    |                 |
| SFC 2,5/12 | 12     | 120  | 1062000000      | 1062010000       | 1062030000     | 1062020000    | 1062040000      |
| SFC 0/21   | 21     | 200  | 1813190000      | 1813210000       | 1813220000     | 1813200000    |                 |
| SFC 1/21   | 21     | 200  | 1779080001      | 1779080004       | 1779080002     | 1779080003    |                 |
| SFC 2/21   | 21     | 120  | 1805810000      | 1805780000       | 1805770000     | 1805790000    |                 |
| SFC 2,5/21 | 21     | 120  | 1062050000      | 1062070000       | 1062090000     | 1062080000    | 1062110000      |
| SFC 0/30   | 30     | 150  | 1813240000      | 1813260000       | 1813270000     | 1813250000    |                 |
| SFC 1/30   | 30     | 150  | 1805760000      | 1805730000       | 1805720000     | 1805740000    |                 |
| SFC 2/30   | 30     | 90   | 1805870000      | 1805830000       | 1805820000     | 1805850000    |                 |

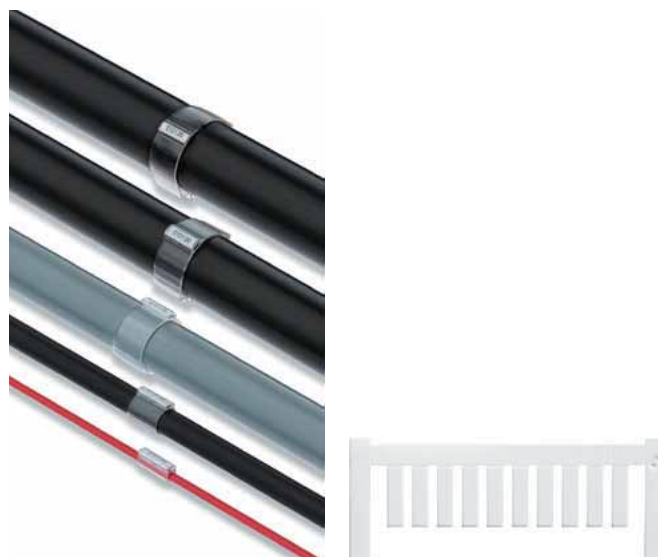
# Marker tags for sensor cables

## Sleeves for marking sensor cables

To enable unique marking of sensor/actuator cables, these can be identified with a marker tag. Each cable has a sleeve that accepts a marker tag TM-I 18. Cables open at one end have one sleeve, connecting cables have two marker sleeves. The TM-I 18 is available in various colours.

### Ordering data

| Type Sleeve        | Colour      | Order No.  |
|--------------------|-------------|------------|
| TM 203/18 VO       | transparent | 1798480000 |
| TM 4/18 HF/HB      | transparent | 1719850000 |
| Marker             |             |            |
| TM-I 18 NEUTRAL WS | white       | 1718431044 |
| TM-I 18 NEUTRAL GE | yellow      | 1718431687 |



## The Weidmüller PrintJet marking system prints marker tags quickly, reliably and individually.

The **PrintJet PRO** inkjet printer prints markers for electric connectivity. These markers can be used for clear equipment identification on devices, cables and connectors. The labelling makes servicing, maintenance and troubleshooting much easier. Water-based ink is used for the spot colour printing. The print is crystal clear and resistant to environmental influences. The **PrintJet PRO** prints plastic markers in **MultiCard** format.

In combination with the user-friendly **M-Print® PRO** software and the attached loader, the printer becomes an essential part of the production. The inkjet process being used, the subsequent fusing, as well as the printer cartridge and ink have all been specially adapted by Weidmüller for industrial use. The printer has excellent long-term use capabilities, thanks to its integrated loader.

### Ordering data

### PrintJet PRO

| Type                    | Order No.                    |            |
|-------------------------|------------------------------|------------|
| PrintJet PRO 115V       | 1024050000                   |            |
| PrintJet PRO 230V       | 1001180001                   |            |
| Accessories             |                              |            |
| PJ PRO TNTK INK SET COL | Ink tank starter set, colour | 1027110000 |
| PJ PRO TNTK INK K       | ● Ink tank Black             | 1027040000 |
| PJ PRO TNTK INK C       | ● Ink tank Cyan              | 1027050000 |
| PJ PRO TNTK INK M       | ● Ink tank Magenta           | 1027060000 |
| PJ PRO TNTK INK Y       | ● Ink tank Yellow            | 1027070000 |
| PJ PRO TNAW             | Ink collecting tray          | 1024140000 |



# Marker tags for distributors

Marker tags can be affixed to distributors to ensure unique identification. For marking of our standard M12 products, ESG 9/20 tags are used, M8 and M5 distributors can be labelled with WS 10/5 and DEK 5 markers. For labelling metal distributors, self-adhesive ESG 9/17 must be used.

In the case of the SAI Active family, we differentiate between SAI Active Universal and SAI Active Line. For labelling of Active Universal, we offer ESG 8/13.5/43.3 SAI AU. For labelling of Active Line, the ESG 9/6 is used.

All of these markers are available in MultiCard format and can therefore also be printed using our innovative PrintJet PRO marking solutions.

## DEK for marking of M8 and M5 distributors



### DEK – Blank

| Type       | Colour | Width/Length | Qty. | Order No.  |
|------------|--------|--------------|------|------------|
| DEK 5/5 MC | white  | 5 mm/5 mm    | 1000 | 1609801044 |

### DEK – Custom printing

| Type       | Colour | Width/Length | Qty. | Order No.  |
|------------|--------|--------------|------|------------|
| DEK 5/5 MC | white  | 5 mm/5 mm    | 200  | 1609810000 |

## WS for marking of M8 and M5 distributors



### WS – Blank

| Type       | Colour | Width/Length | Qty. | Order No.  |
|------------|--------|--------------|------|------------|
| WS 10/5 MC | white  | 5 mm/10 mm   | 720  | 1635000000 |
| WS 15/5 MC | white  | 5 mm/15 mm   | 480  | 1609880000 |

### WS – Custom printing

| Type       | Colour | Width/Length | Qty. | Order No.  |
|------------|--------|--------------|------|------------|
| WS 10/5 MC | white  | 5 mm/10 mm   | 144  | 1635010000 |
| WS 15/5 MC | white  | 5 mm/15 mm   | 96   | 1609890000 |

## ESG for marking of M12 Universal distributors



### Ordering data

| Type                   | Colour | Width/Length | Qty. | Order No.  |
|------------------------|--------|--------------|------|------------|
| ESG 9/20 MC NEUTRAL WS | white  | 20 mm/9 mm   | 200  | 1609940000 |

## ESG for marking of M12 Universal distributors



### Ordering data

| Type                   | Colour      | Width/Length         | Qty. | Order No.  |
|------------------------|-------------|----------------------|------|------------|
| ESG 8/13.5/43.3 SAI AU | transparent | 13,5 mm/43,3 mm/8 mm | 5    | 1912130000 |

# Technical appendix

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|                           |                                                     |      |
|---------------------------|-----------------------------------------------------|------|
| <b>Technical appendix</b> | Sensor Actuator Interface Passive – Overview        | W.2  |
|                           | Coding systems                                      | W.4  |
|                           | Sensor Actuator Interface Passive – Connection plan | W.9  |
|                           | Overview of sensor cables                           | W.10 |
|                           | Overview of bus cables                              | W.13 |
|                           | Drilling templates                                  | W.14 |
|                           | Resistances table                                   | W.24 |

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# Sensor Actuator Interface Passive – Overview



## Technical data

| Material data                                              |                      | M5                           | M8                           | M12                          |
|------------------------------------------------------------|----------------------|------------------------------|------------------------------|------------------------------|
| Insulating material                                        | Housing              | PA 6 GF                      | PBT (UL 94 V0)               | PBT (UL 94 V0)               |
|                                                            | Contact carrier      | PA66                         | PBT (UL 94 V0)               | PBT (UL 94 V0)               |
| Base material                                              | Contact              | CuSn4                        | CuSn6                        | CuSn6                        |
|                                                            | Screw socket         | CuZn, nickel-plated          | CuZn, nickel-plated          | CuZn, nickel-plated          |
| Temperature range                                          |                      | -25 ...+90                   | -20...+90                    | -20...+90                    |
| Colour                                                     | Housing              | grey, RAL 7032s              | grey, RAL 7032               | grey, RAL 7032               |
|                                                            | PG & contact carrier |                              | black                        | black                        |
| Cable sheathing                                            |                      | PUR                          | PUR                          | PUR                          |
| Cable type                                                 |                      | PUR/PVC                      | halogen free                 | halogen free, UL             |
| O-ring                                                     |                      | Viton                        | Viton                        | Viton                        |
| Housing seal                                               |                      |                              |                              | foamed PUR                   |
| Type of connection, hood version                           |                      |                              | tension clamp                | screw/tension clamp          |
| Clamping range                                             | mm <sup>2</sup>      |                              | 0.08...1.0                   | 0.08...1.5                   |
| AWG No.                                                    |                      |                              | 28...18                      | 22...14                      |
| Stripping length, hood version                             | mm                   |                              | 100                          | 100                          |
| Stripping length, screw version                            | mm                   |                              | –                            | 7                            |
| Stripping length, tension clamp version                    | mm                   |                              | 7                            | 10                           |
| Contact surface                                            |                      |                              | tinned                       | tinned                       |
| BL3.5 / B2L                                                |                      |                              |                              |                              |
| Contact base material                                      |                      |                              | Cu alloy                     | Cu alloy                     |
| BL3.5 / B2L                                                |                      |                              |                              |                              |
| Torques                                                    |                      |                              |                              |                              |
| Hoods                                                      | Nm                   |                              | 0.8                          | 0.8                          |
| Blanking plugs                                             | Nm                   |                              | 0.5                          | 0.5                          |
| <b>Mechanical data</b>                                     |                      |                              |                              |                              |
| Ingress Protection Class*                                  | IP                   | 67                           | 68 (M16/M23 IP67)            | 68                           |
| Suitability for cable carrier                              | cycles at 15d        | 1 million 15d                | 1 million 15d                | 2 million 10d                |
| <b>IDC connection</b>                                      |                      |                              |                              |                              |
| Max. connect. frequency of a cable with same cross-section |                      |                              |                              | –                            |
| Stripping length                                           | mm                   |                              |                              | –                            |
| Conductor cross-section (flexible)                         | mm <sup>2</sup>      |                              |                              | –                            |
| Smallest strand diameter                                   | mm                   |                              |                              | –                            |
| Conductor insulation material                              |                      |                              |                              | –                            |
| Conductor outside diameter                                 | mm                   |                              |                              | –                            |
| Cable outside diameter                                     | mm                   |                              |                              | –                            |
| Pin assignment                                             |                      |                              |                              | –                            |
| <b>Electrical data to VDE 110 (Apr 97)</b>                 |                      |                              |                              |                              |
| Operating voltage                                          | V-                   | 10 ... 30                    | 10 ... 30                    | 10 ... 30                    |
| Max. current carrying capacity per I/O signal              | A                    | 1                            | 2 (Derating)                 | 2 (Derating)                 |
| – total with single supply                                 | A                    | 3                            | 8                            | 10 (9 A for F-version)       |
| – total with dual supply                                   | A                    | –                            | –                            | 2 x 8 = 16                   |
| Rated voltage                                              | V <sub>eff</sub>     | 24                           | 32                           | 32                           |
| Test voltage                                               | kV <sub>eff</sub>    |                              | 1.0                          | 1.0                          |
| Pollution severity                                         |                      |                              | 3                            | 3                            |
| Insulation resistance                                      | Ω                    |                              | > 10 <sup>9</sup>            | > 10 <sup>9</sup>            |
| <b>Other data</b>                                          |                      |                              |                              |                              |
| Dimensions                                                 | see chapter G        |                              |                              |                              |
| Fixing holes                                               | see chapter G        |                              |                              |                              |
| Function indicators                                        |                      |                              |                              |                              |
| for operating voltage                                      |                      | 1 LED, green                 | 1 LED, green                 | 2 LEDs, green                |
| for I/O function                                           |                      | 1 LED, yellow (per function) | 1 LED, yellow (per function) | 1 LED, yellow (per function) |
| Current isolation (SAI-... -M)                             |                      |                              | –                            | via 2 jumper plugs           |
| Cable strain relief (SAI-... -M)                           |                      |                              | M20                          | M20                          |
| Max. cable diameter (SAI-... -M)                           | mm                   |                              | 10–14                        | 6–12                         |

\* only when plugged in and secured



**Technical data**

| Material data                                              |                                 |
|------------------------------------------------------------|---------------------------------|
| Insulating material                                        | Housing<br>Contact carrier      |
| Base material                                              | Contact<br>Screw socket         |
| Temperature range                                          | °C                              |
| Colour                                                     | Housing<br>PG & contact carrier |
| Cable sheathing                                            |                                 |
| Cable type                                                 |                                 |
| O-ring                                                     |                                 |
| Housing seal                                               |                                 |
| Type of connection, hood version                           |                                 |
| Clamping range                                             | mm <sup>2</sup>                 |
| AWG No.                                                    |                                 |
| Stripping length, hood version                             | mm                              |
| Stripping length, screw version                            | mm                              |
| Stripping length, tension clamp version                    | mm                              |
| Contact surface                                            |                                 |
| BL3.5 / B2L                                                |                                 |
| Contact base material                                      |                                 |
| BL3.5 / B2L                                                |                                 |
| Torques                                                    |                                 |
| Hoods                                                      | Nm                              |
| Blanking plugs                                             | Nm                              |
| Mechanical data                                            |                                 |
| Ingress Protection Class*                                  | IP                              |
| Suitability for cable carrier                              | cycles at 15d                   |
| IDC connection                                             |                                 |
| Max. connect. frequency of a cable with same cross-section |                                 |
| Stripping length                                           | mm                              |
| Conductor cross-section (flexible)                         | mm <sup>2</sup>                 |
| Smallest strand diameter                                   | mm                              |
| Conductor insulation material                              |                                 |
| Conductor outside diameter                                 | mm                              |
| Cable outside diameter                                     | mm                              |
| Pin assignment                                             |                                 |
| Electrical data to VDE 110 (Apr 97)                        |                                 |
| Operating voltage                                          | V-                              |
| Max. current carrying capacity per I/O signal              | A                               |
| – total with single supply                                 | A                               |
| – total with dual supply                                   | A                               |
| Rated voltage                                              | V <sub>eff</sub>                |
| Test voltage                                               | kV <sub>eff</sub>               |
| Pollution severity                                         |                                 |
| Insulation resistance                                      | Ω                               |
| Other data                                                 |                                 |
| Dimensions                                                 | see chapter G                   |
| Fixing holes                                               | see chapter G                   |
| Function indicators                                        |                                 |
| for operating voltage                                      |                                 |
| for I/O function                                           |                                 |
| Current isolation (SAI-... -M)                             |                                 |
| Cable strain relief (SAI-... -M)                           |                                 |
| Max. cable diameter (SAI-... -M)                           | mm                              |

\* only when plugged in and secured

| IDC                             |
|---------------------------------|
| PBT (UL 94 V0)                  |
| PBT (UL 94 V0)                  |
| CuZn, pre-nickel- & gold-plated |
| CuZn, nickel-plated             |
| -20 ... +90                     |
| grey, RAL 7032                  |
| black                           |
| PUR                             |
| PUR/PVC                         |
| Viton                           |
| foamed PUR                      |
| screw/tension clamp             |
| 0.08 ... 1.5                    |
| 22 ... 14                       |
| 100                             |
| 7                               |
| 10                              |
| tinned                          |
| CU-Alloy                        |

|     |
|-----|
| 0.8 |
| 0.5 |

|               |
|---------------|
| 67            |
| 1 million 15d |

|               |
|---------------|
| 10            |
| 15 ... 20     |
| 0.25 ... 0.5  |
| 0.1           |
| PVC/PE/PUR    |
| 1.2 ... 1.6   |
| 3.5 ... 5.0   |
| see next page |

|                        |
|------------------------|
| 10 ... 30              |
| 2 (Derating)           |
| 10 (9 A bei F-Version) |
| 2 x 8 = 16             |
| 32                     |
| 1.0                    |
| 2                      |
| > 10 <sup>9</sup>      |

|                              |
|------------------------------|
| 2 LEDs, green                |
| 1 LED, yellow (per function) |
| via 2 jumper plugs           |
| M20                          |
| 6-12                         |

| M12 Push-Pull       |
|---------------------|
| PA 6 GF             |
| PBT (UL 94 V0)      |
| CuSn6               |
| CuZn, nickel-plated |
| -25 ... +80         |
| grey, RAL 7032      |
| black               |
| PUR                 |
| halogen free, UL    |
| Viton               |
| foamed PUR          |
| tension clamp       |
| 0.08 ... 1.5        |
| 22 ... 14           |
| 100                 |
| 7                   |
| 10                  |
| tinned              |
| CU-Alloy            |

|     |
|-----|
| 0.8 |
|-----|

|               |
|---------------|
| 68            |
| 2 million 10d |

|           |
|-----------|
| 10 ... 30 |
| 2         |
| 10        |
| 32        |
| 1.0       |
| 3         |

|                              |
|------------------------------|
| 1 LED, green                 |
| 1 LED, yellow (per function) |

|      |
|------|
| M20  |
| 6-12 |

# Contact assignment

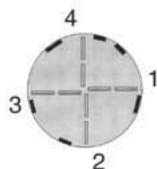
## SAI-M/SAI-F – IDC

### 3-pole



| Pole | Colour code | Assignment   |
|------|-------------|--------------|
| 1    | brown       | + 24 V DC    |
| 2    | white       | input/output |
| 3    | blue        | 0 V DC       |
|      |             |              |
|      |             |              |
|      |             |              |

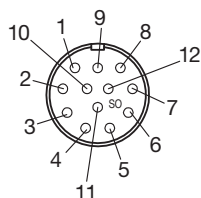
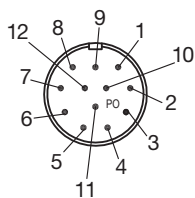
### 4-pole



| Pole | Colour code | Assignment     |
|------|-------------|----------------|
| 1    | brown       | + 24 V DC      |
| 2    | no colour   | Input/output 2 |
| 3    | blue        | 0 V DC         |
| 4    | black       | Input/output 1 |
|      |             |                |
|      |             |                |
|      |             |                |

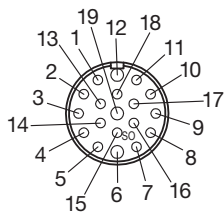
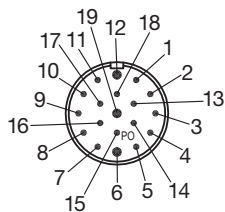
## M23

### 12-pole



| Pole | Colour code       | Plug-in station | Contact M12 |
|------|-------------------|-----------------|-------------|
| 1    | white             | 1               | 4           |
| 2    | green             | 2               | 4           |
| 3    | yellow            | 3               | 4           |
| 4    | grey              | 4               | 4           |
| 5    | pink              | 5               | 4           |
| 6    | red               | 6               | 4           |
| 7    | black             | 7               | 4           |
| 8    | violet            | 8               | 4           |
| 9    | blue (-)          | 1-8             | 3           |
| 10   | blue (-)          | 1-8             | 3           |
| 11   | brown (+)         | 1-8             | 1           |
| 12   | green-yellow (PE) | 1-8             | 5           |

### 19-pole



| Pole | Colour code       | Plug-in station | Contact M12 |
|------|-------------------|-----------------|-------------|
| 1    | violet            | 8               | 4           |
| 2    | red               | 6               | 4           |
| 3    | grey              | 4               | 4           |
| 4    | red/blue          | 2               | 2           |
| 5    | green             | 2               | 4           |
| 7    | grey/pink         | 1               | 2           |
| 8    | white/green       | 3               | 2           |
| 9    | white/yellow      | 5               | 2           |
| 10   | white/grey        | 7               | 2           |
| 11   | black             | 7               | 4           |
| 13   | yellow/brown      | 6               | 2           |
| 14   | brown/green       | 4               | 2           |
| 15   | white             | 1               | 4           |
| 16   | yellow            | 3               | 4           |
| 17   | pink              | 5               | 4           |
| 18   | grey/brown        | 8               | 2           |
| 6    | blue (-)          | 1-8             | 3           |
| 12   | green-yellow (PE) | 1-8             | 5           |
| 19   | brown (+)         | 1-8             | 1           |

# Coding systems for round connectors

Round connectors are used for wiring sensors, actuators and data cables. To prevent wiring errors, there are different coding systems: for M12, the plug-in connectors are coded A, B and D. The M12 A-coded plug-in connector is available with 3 to 5 pins, 6 to 8 and 9 to 12 pins. There is no coding for M8 and M5.

The arrangement of the pins in the M8 plug-in connector (asymmetrical) rules out the possibility of 3 and 4-pole M8 plug-in connectors being connected together. In the case of M5 plug-in connectors, 3 and 4-pole plug-in connectors can be connected together since the pins are symmetrically arranged.

## A-coded, M12, Sensor wiring

| 2- to 5-pole: |               | Pole                     | Colour code | Assignment                        |
|---------------|---------------|--------------------------|-------------|-----------------------------------|
| <p>Male</p>   | <p>Female</p> | 1                        | brown       | + 24 V DC                         |
|               |               | 2                        | white       | Input/output 2*                   |
|               |               | 3                        | blue        | 0 V DC                            |
|               |               | 4                        | black       | Input/output 1                    |
|               |               | 5                        | grey        | FE                                |
|               |               | Housing                  |             | shield**                          |
|               |               | *) = only 5-pole version |             | ***) = only with shielded version |

## A-coded, M12, PROFIBUS-PA



| 2- to 5-pole: |               | Pole    | Assignment          |
|---------------|---------------|---------|---------------------|
| <p>Male</p>   | <p>Female</p> | 1       | DATA-B (red wire)   |
|               |               | 3       | DATA-A (green wire) |
|               |               | Housing | shield              |
|               |               |         |                     |
|               |               |         |                     |
|               |               |         |                     |

## A-coded, M12, CANopen/DeviceNet



| 2- to 5-pole: |               | Pole | Assignment   |
|---------------|---------------|------|--------------|
| <p>Male</p>   | <p>Female</p> | 1    | shield       |
|               |               | 2    | V+           |
|               |               | 3    | V- (CAN_GND) |
|               |               | 4    | CAN_H signal |
|               |               | 5    | CAN_L signal |
|               |               |      |              |
|               |               |      |              |

Coding systems

**B-coded, M12, PROFIBUS-DP**



| 3- to 5-pole: |               | Pin     | Assignment          |
|---------------|---------------|---------|---------------------|
| <p>Male</p>   | <p>Female</p> | 2       | Data A (green wire) |
|               |               | 4       | Data B (red wire)   |
|               |               | Housing | shield              |
|               |               |         |                     |
|               |               |         |                     |

**D-coded, M12, Industrial Ethernet**

*Industrial Ethernet*

| 4-pole:     |               | Pin     | Assignment             |
|-------------|---------------|---------|------------------------|
| <p>Male</p> | <p>Female</p> | 1       | TD+ (transmit data +)  |
|             |               | 2       | RD+ (receive data +)   |
|             |               | 3       | TD - (transmit data -) |
|             |               | 4       | RD - (receive data -)  |
|             |               | Housing | shield                 |
|             |               |         |                        |

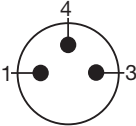
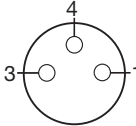
**M12**

| 8-pole:     |               | Pole | Colour code | Assignment |
|-------------|---------------|------|-------------|------------|
| <p>Male</p> | <p>Female</p> | 1    | white       | signal     |
|             |               | 2    | brown       | signal     |
|             |               | 3    | green       | signal     |
|             |               | 4    | yellow      | signal     |
|             |               | 5    | grey        | + 24 V DC  |
|             |               | 6    | pink        | signal     |
|             |               | 7    | blue        | 0 V DC     |
|             |               | 8    | red         | signal     |

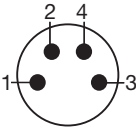
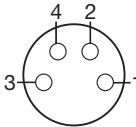
**M12**

| 12-pole:    |               | Pole | Colour code | Assignment     |
|-------------|---------------|------|-------------|----------------|
| <p>Male</p> | <p>Female</p> | 1    | brown       | + 24 V DC      |
|             |               | 2    | blue        | 0 V DC         |
|             |               | 3    | white       | input/output 1 |
|             |               | 4    | green       | input/output 1 |
|             |               | 5    | pink        | input/output 1 |
|             |               | 6    | yellow      | input/output 1 |
|             |               | 7    | black       | input/output 1 |
|             |               | 8    | grey        | input/output 1 |
|             |               | 9    | red         | input/output 1 |
|             |               | 10   | violet      | input/output 1 |
|             |               | 11   | grey/pink   | input/output 1 |
|             |               | 12   | red/blue    | input/output 1 |

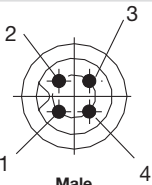
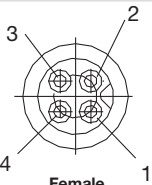
**M8 connector position**

| 3-pole:                                                                                       |                                                                                                 | Pole | Colour code | Assignment     |
|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|------|-------------|----------------|
|  <p>Male</p> |  <p>Female</p> | 1    | brown       | + 24 V DC      |
|                                                                                               |                                                                                                 | 3    | blue        | 0 V DC         |
|                                                                                               |                                                                                                 | 4    | black       | Input/output 1 |
|                                                                                               |                                                                                                 |      |             |                |
|                                                                                               |                                                                                                 |      |             |                |
|                                                                                               |                                                                                                 |      |             |                |

**M8 connector position**

| 4-pole:                                                                                        |                                                                                                  | Pole | Colour code | Assignment     |
|------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|------|-------------|----------------|
|  <p>Male</p> |  <p>Female</p> | 1    | brown       | + 24 V DC      |
|                                                                                                |                                                                                                  | 2    | white       | Input/output 2 |
|                                                                                                |                                                                                                  | 3    | blue        | 0 V DC         |
|                                                                                                |                                                                                                  | 4    | black       | Input/output 1 |
|                                                                                                |                                                                                                  |      |             |                |
|                                                                                                |                                                                                                  |      |             |                |
|                                                                                                |                                                                                                  |      |             |                |

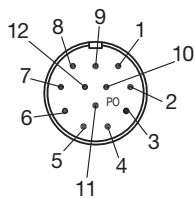
**M5 connector position**

| 4-pole:                                                                                         |                                                                                                   | Pole | Colour code | Assignment     |
|-------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|------|-------------|----------------|
|  <p>Male</p> |  <p>Female</p> | 1    | brown       | + 24 V DC      |
|                                                                                                 |                                                                                                   | 2    | white       | Input/output 2 |
|                                                                                                 |                                                                                                   | 3    | blue        | 0 V DC         |
|                                                                                                 |                                                                                                   | 4    | black       | Input/output 1 |
|                                                                                                 |                                                                                                   |      |             |                |
|                                                                                                 |                                                                                                   |      |             |                |
|                                                                                                 |                                                                                                   |      |             |                |

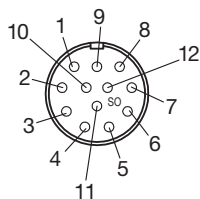
Coding systems

M23

12-pole:



Male

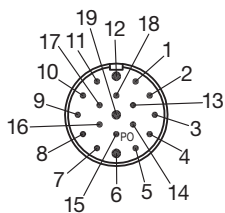


Female

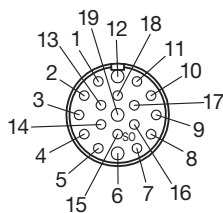
| Pole | Colour code  | Assignment | Cross-section |
|------|--------------|------------|---------------|
| 1    | white        | signal     | 0.34          |
| 2    | green        | signal     | 0.34          |
| 3    | yellow       | signal     | 0.34          |
| 4    | grey         | signal     | 0.34          |
| 5    | pink         | signal     | 0.34          |
| 6    | red          | signal     | 0.34          |
| 7    | black        | signal     | 0.34          |
| 8    | violet       | signal     | 0.34          |
| 9    | nc           | nc         | nc            |
| 10   | blue         | 0 V DC     | 0.75          |
| 11   | brown        | + 24 V DC  | 0.75          |
| 12   | green/yellow | PE         | 0.75          |

M23

19-pole:



Male



Female

| Pole | Colour code  | Assignment | Cross-section |
|------|--------------|------------|---------------|
| 1    | violet       | signal     | 0.34          |
| 2    | red          | signal     | 0.34          |
| 3    | grey         | signal     | 0.34          |
| 4    | red/blue     | signal     | 0.34          |
| 5    | green        | signal     | 0.34          |
| 6    | blue         | 0 V DC     | 0.75          |
| 7    | grey/pink    | signal     | 0.34          |
| 8    | white/green  | signal     | 0.34          |
| 9    | white/yellow | signal     | 0.34          |
| 10   | white/grey   | signal     | 0.34          |
| 11   | black        | signal     | 0.34          |
| 12   | green/yellow | PE         | 0.75          |
| 13   | yellow/brown | signal     | 0.34          |
| 14   | brown/green  | signal     | 0.34          |
| 15   | white        | signal     | 0.34          |
| 16   | yellow       | signal     | 0.34          |
| 17   | pink         | signal     | 0.34          |
| 18   | grey/brown   | signal     | 0.34          |
| 19   | brown        | + 24 V DC  | 0.75          |

# Sensor Actuator Interface Passive – Connection plan

## Connection plan

| Terminal<br>Connection No. | Connector position       | M5/M8 contact |        | M12-<br>contact | IDC contact |        | Potential      | Conductor colour |             |
|----------------------------|--------------------------|---------------|--------|-----------------|-------------|--------|----------------|------------------|-------------|
|                            |                          | 3-pole        | 4-pole |                 | 3-pole      | 4-pole |                | Conductor colour | Colour code |
| 1                          | = 1                      | 4             | 4      | 4               | 2           | 4      | E/A 1-1        | white            | WH          |
| 2                          | = 2                      | 4             | 4      | 4               | 2           | 4      | E/A 2-1        | green            | GN          |
| 3                          | = 3                      | 4             | 4      | 4               | 2           | 4      | E/A 3-1        | yellow           | YE          |
| 4                          | = 4                      | 4             | 4      | 4               | 2           | 4      | E/A 4-1        | grey             | GY          |
| 5                          | = 5                      | 4             | 4      | 4               | 2           | 4      | E/A 5-1        | pink             | PK          |
| 6                          | = 6                      | 4             | 4      | 4               | 2           | 4      | E/A 6-1        | red              | RD          |
| 7                          | = 7                      | 4             | 4      | 4               | 2           | 4      | E/A 7-1        | black            | BK          |
| 8                          | = 8                      | 4             | 4      | 4               | 2           | 4      | E/A 8-1        | violet           | VT          |
| 9                          | = 1                      | -             | 2      | 2*              |             | 2      | E/A 1-2        | grey/pink        | GYPK        |
| 10                         | = 2                      | -             | 2      | 2*              |             | 2      | E/A 2-2        | red/blue         | RDBL        |
| 11                         | = 3                      | -             | 2      | 2*              |             | 2      | E/A 3-2        | white/green      | WHGN        |
| 12                         | = 4                      | -             | 2      | 2*              |             | 2      | E/A 4-2        | brown/green      | BNGN        |
| 13                         | = 5                      | -             | 2      | 2*              |             | 2      | E/A 5-2        | white/yellow     | WHYE        |
| 14                         | = 6                      | -             | 2      | 2*              |             | 2      | E/A 6-2        | yellow/brown     | YEBN        |
| 15                         | = 7                      | -             | 2      | 2*              |             | 2      | E/A 7-2        | white/grey       | WHGY        |
| 16                         | = 8                      | -             | 2      | 2*              |             | 2      | E/A 8-2        | grey/brown       | GYBN        |
| 17                         | = 1, 3, 5, 7             | 1             | 1      | 1               | 1           | 1      | U1 + (24 V DC) | brown            | BN          |
| 18                         | = 1, 3, 5, 7             | 3             | 3      | 3               | 3           | 3      | U1 - (0 V)     | blue             | BU          |
| 19                         | = 2, 4, 6, 8             | -             | -      | 1               | 1           | 1      | U2 + (24 V DC) | red*             | RD*         |
| 20                         | = 2, 4, 6, 8             | -             | -      | 3               | 3           | 3      | U2 - (0 V)     | black*           | BK*         |
| 21                         | = 1, 2, 3, 4, 5, 6, 7, 8 | -             | -      | 5               | -           | -      | PE             | green/yellow     | GNYE        |

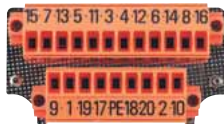
\* Contact used in 5-pole version only

## Plug insert, hood version

### Note:

SAI distributors with fixed cable have a single supply conductor as standard. The voltage U1 is supplied to all the sockets. An SAI distributor with fixed cable but with separate supply voltage is available on request.

## Pin assignment



## Tension clamp connection



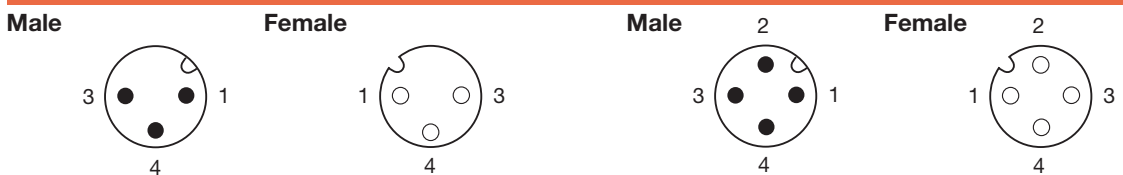
## Screw connection



# Technical data for sensor cables



## M12



### Technical data

| Material properties                  |
|--------------------------------------|
| Core cross-section                   |
| Cladding material                    |
| Wire core insulation                 |
| Conductor cross-section              |
| Colour coding                        |
| Suitable for dragline cable carriers |
| Min. bending radius, flexible        |
| Min. bending radius, rigid           |
| Temperature, flexible                |
| Temperature, rigid                   |
| UL                                   |
| Colour                               |
| Free from halogens                   |

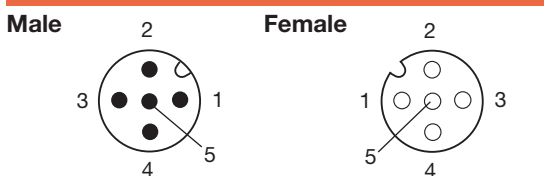
| 3-pole                       |                              |                              |
|------------------------------|------------------------------|------------------------------|
| PUR/TPE (Q)                  | PUR/PVC (U)                  | PVC/PVC (V)                  |
| 0.34 mm <sup>2</sup>         | 0.34 mm <sup>2</sup>         | 0.34 mm <sup>2</sup>         |
| PUR                          | PUR                          | PVC                          |
| TPE                          | PVC                          | PVC                          |
| 4.3 ± 0.2                    | 4.8 ± 0.2                    | 4.8 ± 0.2                    |
| brown, blue, black           | brown, blue, black           | brown, blue, black           |
| Yes*                         | Yes*                         | Reduced*                     |
| 10 x conductor cross-section | 10 x conductor cross-section | 10 x conductor cross-section |
| 5 x conductor cross-section  | 5 x conductor cross-section  | 5 x conductor cross-section  |
| -25 °C / +80 °C              | -5 °C / +80 °C               | -5 °C / +80 °C               |
| -50 °C / +80 °C              | -30 °C / +80 °C              | -30 °C / +80 °C              |
| Yes                          | Yes                          | Yes                          |
| black                        | black                        | black                        |
| Yes                          | No                           | No                           |

| 4-pole                       |                              |                              |
|------------------------------|------------------------------|------------------------------|
| PUR/TPE (Q)                  | PUR/PVC (U)                  | PVC/PVC (V)                  |
| 0.34 mm <sup>2</sup>         | 0.34 mm <sup>2</sup>         | 0.34 mm <sup>2</sup>         |
| PUR                          | PUR                          | PVC                          |
| TPE                          | PVC                          | PVC                          |
| 4.7 ± 0.2                    | 5.2 ± 0.2                    | 5.3 ± 0.2                    |
| brown, white, blue, black    | brown, white, blue, black    | brown, white, blue, black    |
| Yes*                         | Yes*                         | Reduced*                     |
| 10 x conductor cross-section | 10 x conductor cross-section | 10 x conductor cross-section |
| 5 x conductor cross-section  | 5 x conductor cross-section  | 5 x conductor cross-section  |
| -25 °C / +80 °C              | -5 °C / +80 °C               | -5 °C / +80 °C               |
| -50 °C / +80 °C              | -30 °C / +80 °C              | -30 °C / +80 °C              |
| Yes                          | Yes                          | Yes                          |
| black                        | black                        | black                        |
| Yes                          | No                           | No                           |

\* Additional information available on request. Applies to unshielded M12 and M8 cables.

\* Additional information available on request. Applies to unshielded M12 and M8 cables.

## M12



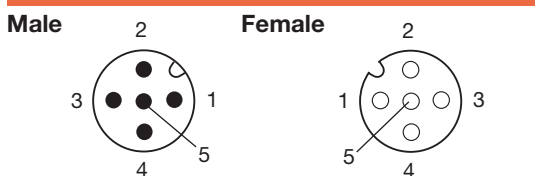
### Technical data

| Material properties                  |
|--------------------------------------|
| Core cross-section                   |
| Cladding material                    |
| Wire core insulation                 |
| Conductor cross-section              |
| Colour coding                        |
| Suitable for dragline cable carriers |
| Min. bending radius, flexible        |
| Min. bending radius, rigid           |
| Temperature, flexible                |
| Temperature, rigid                   |
| UL                                   |
| Colour                               |
| Free from halogens                   |
| Suitable for torsion                 |

| 5-pole                          |                                 |                                 |
|---------------------------------|---------------------------------|---------------------------------|
| PUR/TPE (Q)                     | PUR/PVC (U)                     | PVC/PVC (V)                     |
| 0.34 mm <sup>2</sup>            | 0.34 mm <sup>2</sup>            | 0.34 mm <sup>2</sup>            |
| PUR                             | PUR                             | PVC                             |
| TPE                             | PVC                             | PVC                             |
| 5.0 ± 0.2                       | 5.6 ± 0.2                       | 5.7 ± 0.1                       |
| brown, white, blue, black, grey | brown, white, blue, black, grey | brown, white, blue, black, grey |
| Yes*                            | Yes*                            | Reduced*                        |
| 10 x conductor cross-section    | 10 x conductor cross-section    | 10 x conductor cross-section    |
| 5 x conductor cross-section     | 5 x conductor cross-section     | 5 x conductor cross-section     |
| -25 °C / +80 °C                 | -5 °C / +80 °C                  | -5 °C / +80 °C                  |
| -50 °C / +80 °C                 | -30 °C / +80 °C                 | -30 °C / +80 °C                 |
| Yes                             | Yes                             | Yes                             |
| black                           | black                           | black                           |
| Yes                             | No                              | No                              |

\* Additional information available on request. Applies to unshielded M12 and M8 cables.

## M12 Protected against welding splatter

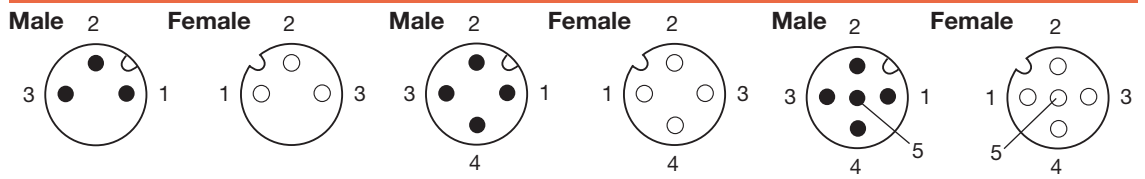


| 3-pole                        |                               | 4-pole                        |                               | 5-pole                          |                                 |
|-------------------------------|-------------------------------|-------------------------------|-------------------------------|---------------------------------|---------------------------------|
| PUR/PVC (T)                   | PUR/PVC (T)                   | PUR/PVC (T)                   | PUR/PVC (T)                   | PUR/PVC (T)                     | PUR/PVC (T)                     |
| 0.34 mm <sup>2</sup>          | 0.34 mm <sup>2</sup>          | 0.34 mm <sup>2</sup>          | 0.34 mm <sup>2</sup>          | 0.34 mm <sup>2</sup>            | 0.34 mm <sup>2</sup>            |
| PUR                           | PUR                           | PUR                           | PUR                           | PUR                             | PUR                             |
| PVC                           | PVC                           | PVC                           | PVC                           | PVC                             | PVC                             |
| 4.9 ± 0.2                     | 4.9 ± 0.2                     | 4.9 ± 0.2                     | 4.9 ± 0.2                     | 5.1 ± 0.2                       | 5.1 ± 0.2                       |
| brown, blue, black            | brown, white, blue, black     | brown, white, blue, black     | brown, white, blue, black     | brown, white, blue, black, grey | brown, white, blue, black, grey |
| Yes*                          | Yes*                          | Yes*                          | Yes*                          | Yes*                            | Yes*                            |
| 7.5 x conductor cross-section | 7.5 x conductor cross-section | 7.5 x conductor cross-section | 7.5 x conductor cross-section | 7.5 x conductor cross-section   | 7.5 x conductor cross-section   |
| -30 °C / +120 °C              | -30 °C / +120 °C              | -30 °C / +120 °C              | -30 °C / +120 °C              | -30 °C / +120 °C                | -30 °C / +120 °C                |
| -40 °C / +120 °C              | -40 °C / +120 °C              | -40 °C / +120 °C              | -40 °C / +120 °C              | -40 °C / +120 °C                | -40 °C / +120 °C                |
| Yes                           | Yes                           | Yes                           | Yes                           | Yes                             | Yes                             |
| black                         | black                         | black                         | black                         | black                           | black                           |
| Yes                           | Yes                           | Yes                           | Yes                           | Yes                             | Yes                             |

\* Additional information available on request.



**M12 shielded**



**Technical data**

**Material properties**

- Core cross-section
- Cladding material
- Wire core insulation
- Conductor cross-section
- Colour coding
- Suitable for dragline cable carriers
- Min. bending radius, flexible
- Min. bending radius, rigid
- Temperature, flexible
- Temperature, rigid
- UL
- Colour
- Free from halogens

|                                      | 3-pole                       | 4-pole                       | 5-pole                          |
|--------------------------------------|------------------------------|------------------------------|---------------------------------|
| <b>PUR/TPE</b>                       | <b>PUR</b>                   | <b>PUR</b>                   | <b>PUR</b>                      |
| <b>(Q)</b>                           | <b>(Q)</b>                   | <b>(Q)</b>                   | <b>(Q)</b>                      |
| Core cross-section                   | 0.34 mm <sup>2</sup>         | 0.34 mm <sup>2</sup>         | 0.34 mm <sup>2</sup>            |
| Cladding material                    | PUR                          | PUR                          | PUR                             |
| Wire core insulation                 | TPE                          | TPE                          | TPE                             |
| Conductor cross-section              | 5.0 ± 0.2                    | 5.4 ± 0.2                    | 5.7 ± 0.2                       |
| Colour coding                        | brown, blue, black           | brown, white, blue, black    | brown, white, blue, black, grey |
| Suitable for dragline cable carriers | Yes*                         | Yes*                         | Yes*                            |
| Min. bending radius, flexible        | 10 x conductor cross-section | 10 x conductor cross-section | 10 x conductor cross-section    |
| Min. bending radius, rigid           | 5 x conductor cross-section  | 5 x conductor cross-section  | 5 x conductor cross-section     |
| Temperature, flexible                | -25 °C / +80 °C              | -25 °C / +80 °C              | -25 °C / +80 °C                 |
| Temperature, rigid                   | -40 °C / +80 °C              | -40 °C / +80 °C              | -40 °C / +80 °C                 |
| UL                                   | Yes                          | Yes                          | Yes                             |
| Colour                               | black                        | black                        | black                           |
| Free from halogens                   | Yes                          | Yes                          | Yes                             |

**Note**

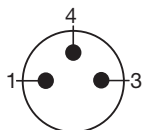
\* Additional information available on request.

Overview of sensor cables

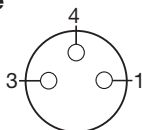


M8

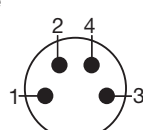
Male



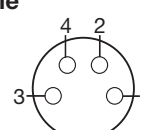
Female



Male



Female



Technical data

| Material properties                  |                              |
|--------------------------------------|------------------------------|
| Core cross-section                   | 0.25 mm <sup>2</sup>         |
| Cladding material                    | PUR                          |
| Wire core insulation                 | TPE                          |
| Conductor cross-section              | 4.1 ± 0.2                    |
| Colour coding                        | brown, blue, black           |
| Suitable for dragline cable carriers | Yes*                         |
| Min. bending radius, flexible        | 10 x conductor cross-section |
| Min. bending radius, rigid           | 5 x conductor cross-section  |
| Temperature, flexible                | -25 °C / +80 °C              |
| Temperature, rigid                   | -50 °C / +80 °C              |
| UL                                   | No                           |
| Colour                               | black                        |
| Free from halogens                   | Yes                          |
| <b>Note</b>                          |                              |

| 3-pole                                                                                     |                              |                              |
|--------------------------------------------------------------------------------------------|------------------------------|------------------------------|
| PUR/TPE                                                                                    | PUR/PVC                      | PVC/PVC                      |
| 0.25 mm <sup>2</sup>                                                                       | 0.25 mm <sup>2</sup>         | 0.25 mm <sup>2</sup>         |
| PUR                                                                                        | PUR                          | PVC                          |
| TPE                                                                                        | PVC                          | PVC                          |
| 4.1 ± 0.2                                                                                  | 4.6 ± 0.2                    | 4.5 ± 0.2                    |
| brown, blue, black                                                                         | brown, blue, black           | brown, blue, black           |
| Yes*                                                                                       | Yes*                         | Reduced*                     |
| 10 x conductor cross-section                                                               | 10 x conductor cross-section | 10 x conductor cross-section |
| 5 x conductor cross-section                                                                | 5 x conductor cross-section  | 5 x conductor cross-section  |
| -25 °C / +80 °C                                                                            | -5 °C / +80 °C               | -5 °C / +80 °C               |
| -50 °C / +80 °C                                                                            | -30 °C / +80 °C              | -30 °C / +80 °C              |
| No                                                                                         | No                           | No                           |
| black                                                                                      | black                        | black                        |
| Yes                                                                                        | No                           | No                           |
| * Additional information available on request.<br>Applies to unshielded M12 and M8 cables. |                              |                              |

| 4-pole                                                                                     |                              |                              |
|--------------------------------------------------------------------------------------------|------------------------------|------------------------------|
| PUR/TPE                                                                                    | PUR/PVC                      | PVC/PVC                      |
| 0.25 mm <sup>2</sup>                                                                       | 0.25 mm <sup>2</sup>         | 0.25 mm <sup>2</sup>         |
| PUR                                                                                        | PUR                          | PVC                          |
| TPE                                                                                        | PVC                          | PVC                          |
| 4.4 ± 0.2                                                                                  | 5.0 ± 0.2                    | 4.8 ± 0.2                    |
| black, brown, white, blue                                                                  | black, brown, white, blue    | brown, blue, black           |
| Yes*                                                                                       | Yes*                         | Reduced*                     |
| 10 x conductor cross-section                                                               | 10 x conductor cross-section | 10 x conductor cross-section |
| 5 x conductor cross-section                                                                | 5 x conductor cross-section  | 5 x conductor cross-section  |
| -25 °C / +80 °C                                                                            | -5 °C / +80 °C               | -5 °C / +80 °C               |
| -50 °C / +80 °C                                                                            | -30 °C / +80 °C              | -30 °C / +80 °C              |
| No                                                                                         | No                           | No                           |
| black                                                                                      | black                        | black                        |
| Yes                                                                                        | No                           | No                           |
| * Additional information available on request.<br>Applies to unshielded M12 and M8 cables. |                              |                              |

# Technical data for bus cables



## M 12



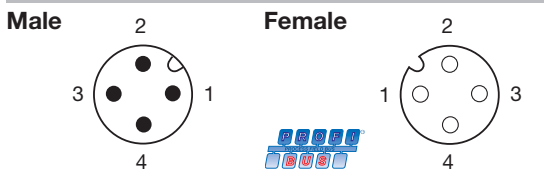
### Technical data

| Material properties                  |                               |
|--------------------------------------|-------------------------------|
| Core cross-section                   | 0.24 mm <sup>2</sup>          |
| Cladding material                    | PUR                           |
| Wire core insulation                 | TPE                           |
| Conductor cross-section              | 7.8 ± 0.2                     |
| Colour coding                        | red, green                    |
| Suitable for dragline cable carriers | Yes*                          |
| Min. bending radius, flexible        | 15 x conductor cross-section  |
| Min. bending radius, rigid           | 7.5 x conductor cross-section |
| Temperature, flexible                | -20 °C / +60 °C               |
| Temperature, rigid                   | -40 °C / +70 °C               |
| UL                                   | No                            |
| Colour                               | violet                        |
| Free from halogens                   | Yes                           |

| 2-pole                               |                              |
|--------------------------------------|------------------------------|
| PUR/TPE                              | PVC/PVC                      |
| Core cross-section                   | 0.34 mm <sup>2</sup>         |
| Cladding material                    | PVC                          |
| Wire core insulation                 | PVC                          |
| Conductor cross-section              | 7.8 ± 0.2                    |
| Colour coding                        | red, green                   |
| Suitable for dragline cable carriers | No**                         |
| Min. bending radius, flexible        | 9 x conductor cross-section  |
| Min. bending radius, rigid           | 18 x conductor cross-section |
| Temperature, flexible                | -5 °C / +60 °C               |
| Temperature, rigid                   | -20 °C / +70 °C              |
| UL                                   | No                           |
| Colour                               | violet                       |
| Free from halogens                   | No                           |

| 4-pole                               |                                                                          |
|--------------------------------------|--------------------------------------------------------------------------|
| PUR/TPE                              | PVC/PVC                                                                  |
| Core cross-section                   | 2x 0.34 + 2x 0.22 mm <sup>2</sup>                                        |
| Cladding material                    | PVC                                                                      |
| Wire core insulation                 | PVC                                                                      |
| Conductor cross-section              | 7.0 ± 0.3                                                                |
| Colour coding                        | red, black (0.34 mm <sup>2</sup> ) + white, blue (0.22 mm <sup>2</sup> ) |
| Suitable for dragline cable carriers | Yes*                                                                     |
| Min. bending radius, flexible        | 10 x conductor cross-section                                             |
| Min. bending radius, rigid           | 5 x conductor cross-section                                              |
| Temperature, flexible                | -10 °C / +80 °C                                                          |
| Temperature, rigid                   | -40 °C / +80 °C                                                          |
| UL                                   | Yes                                                                      |
| Colour                               | black                                                                    |
| Free from halogens                   | Yes                                                                      |

## M 12



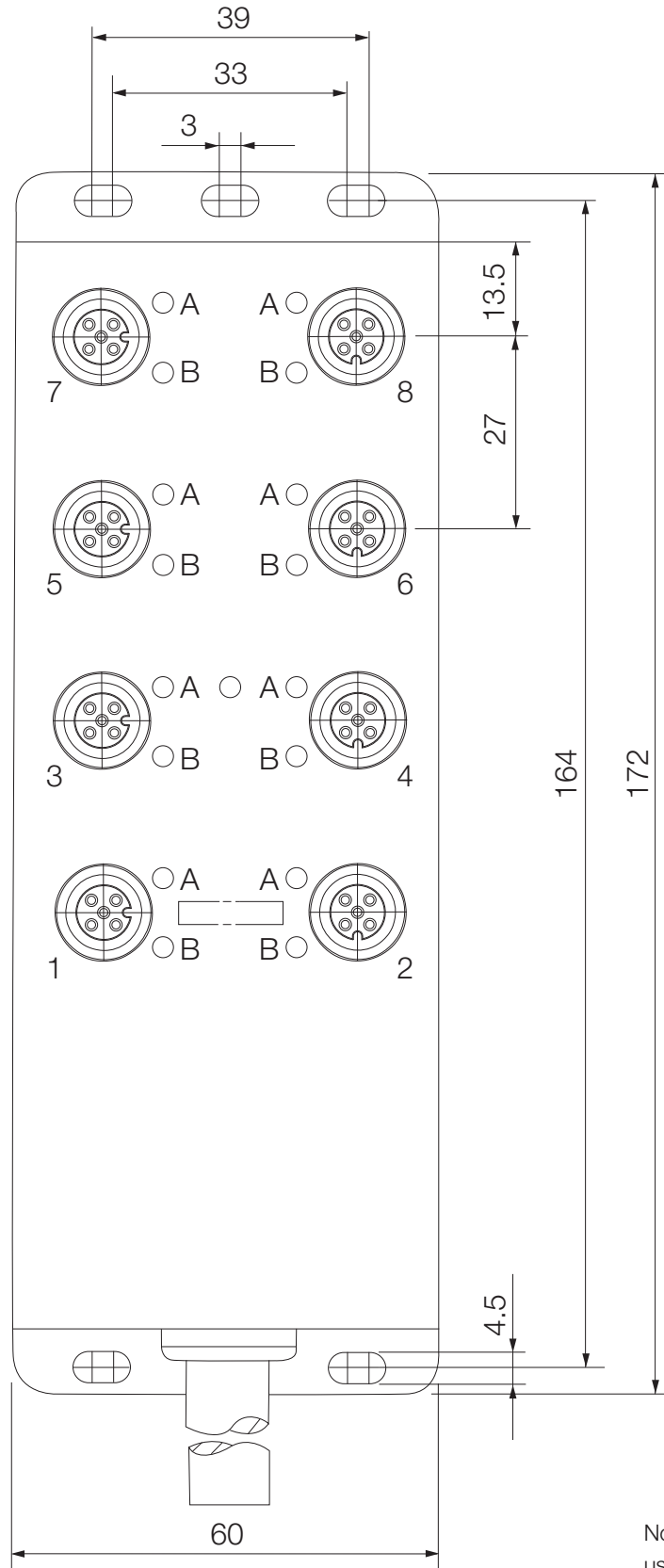
### Technical data

| Material properties                  |                     |
|--------------------------------------|---------------------|
| Core cross-section                   | 1.0 mm <sup>2</sup> |
| Cladding material                    | PVC                 |
| Wire core insulation                 | PE                  |
| Conductor cross-section              | 8.0 ± 0.4           |
| Colour coding                        | red, green          |
| Suitable for dragline cable carriers | No                  |
| Min. bending radius, flexible        | -                   |
| Min. bending radius, rigid           | -                   |
| Temperature, flexible                | -5 °C / +60 °C      |
| Temperature, rigid                   | -30 °C / +80 °C     |
| UL                                   | No                  |
| Colour                               | black               |
| Free from halogens                   | -                   |

| 2-pole                               |                     |
|--------------------------------------|---------------------|
| PVC/PE                               | PVC/PE              |
| Core cross-section                   | 1.0 mm <sup>2</sup> |
| Cladding material                    | PVC                 |
| Wire core insulation                 | PE                  |
| Conductor cross-section              | 8.0 ± 0.4           |
| Colour coding                        | red, green          |
| Suitable for dragline cable carriers | No                  |
| Min. bending radius, flexible        | -                   |
| Min. bending radius, rigid           | -                   |
| Temperature, flexible                | -5 °C / +60 °C      |
| Temperature, rigid                   | -30 °C / +80 °C     |
| UL                                   | No                  |
| Colour                               | blue                |
| Free from halogens                   | -                   |



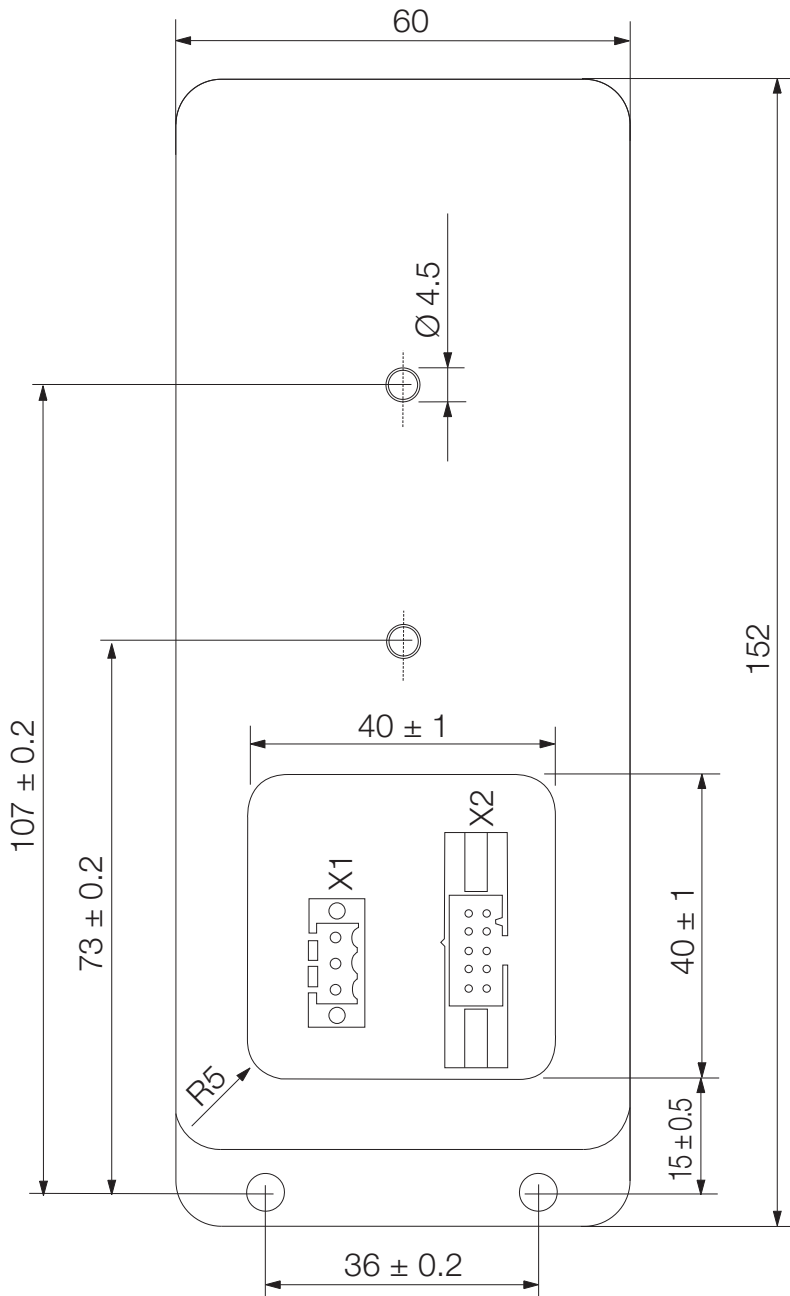
SAI stainless steel



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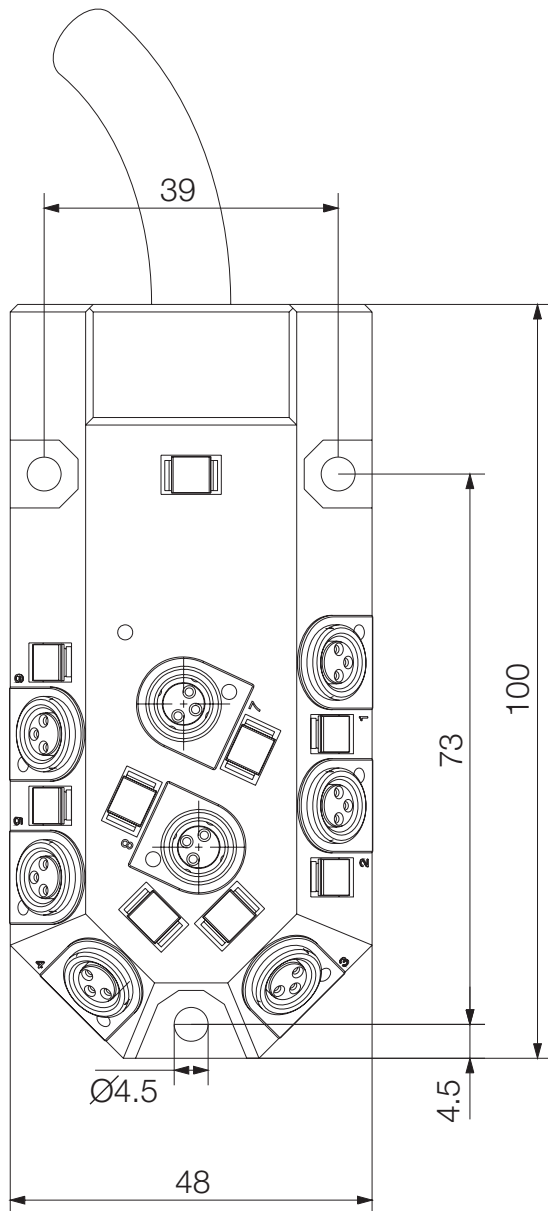
Drilling templates

SAI wall bushing



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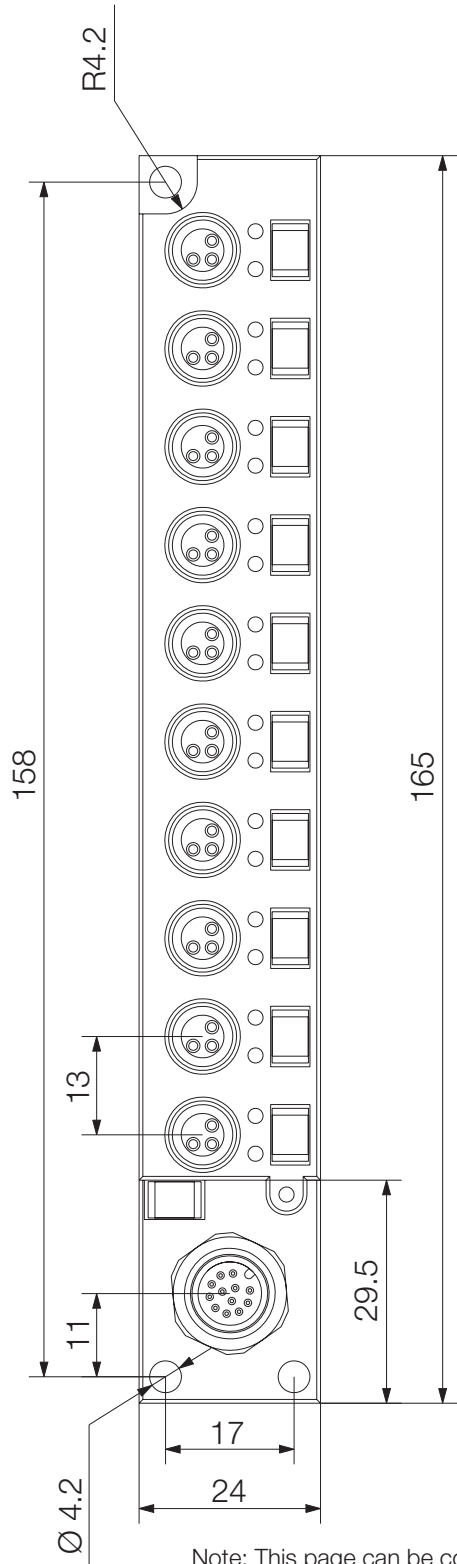
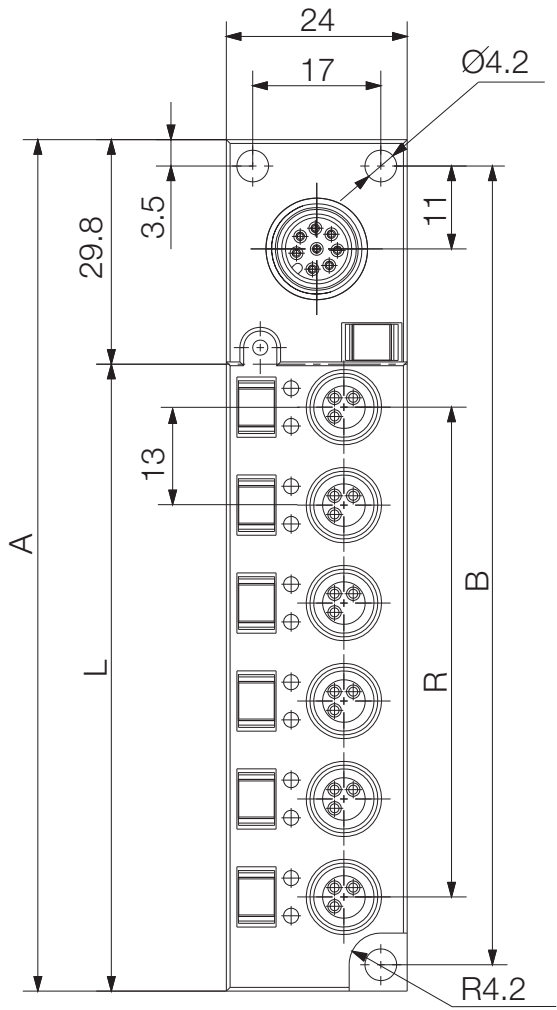
SAI M8 standard



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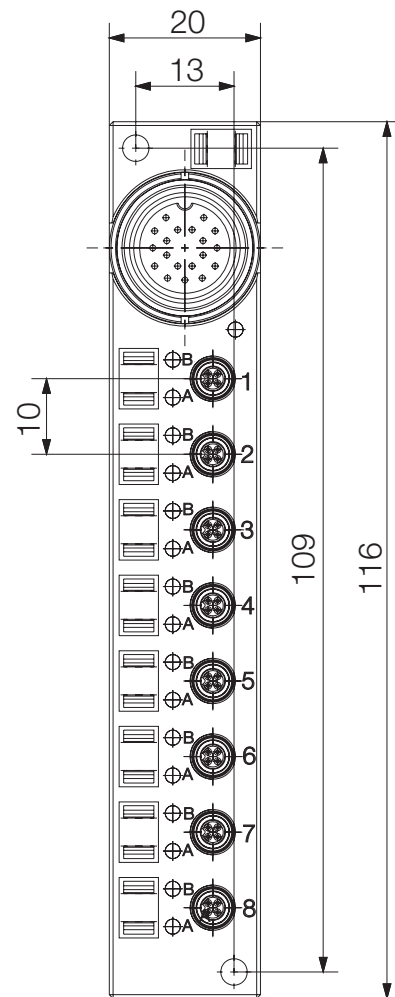
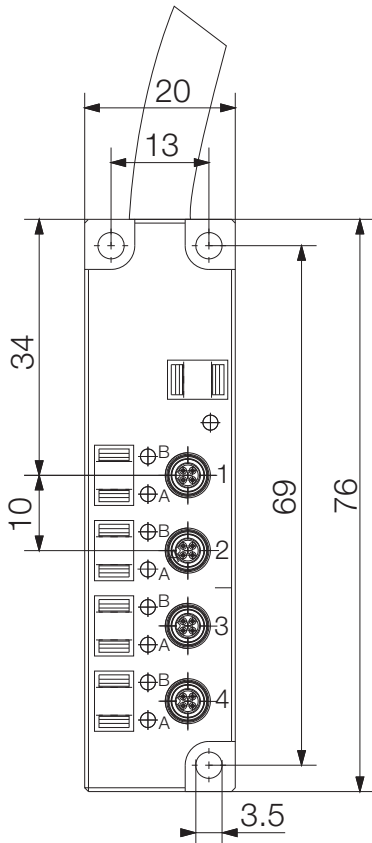
Drilling templates

SAI M8 line



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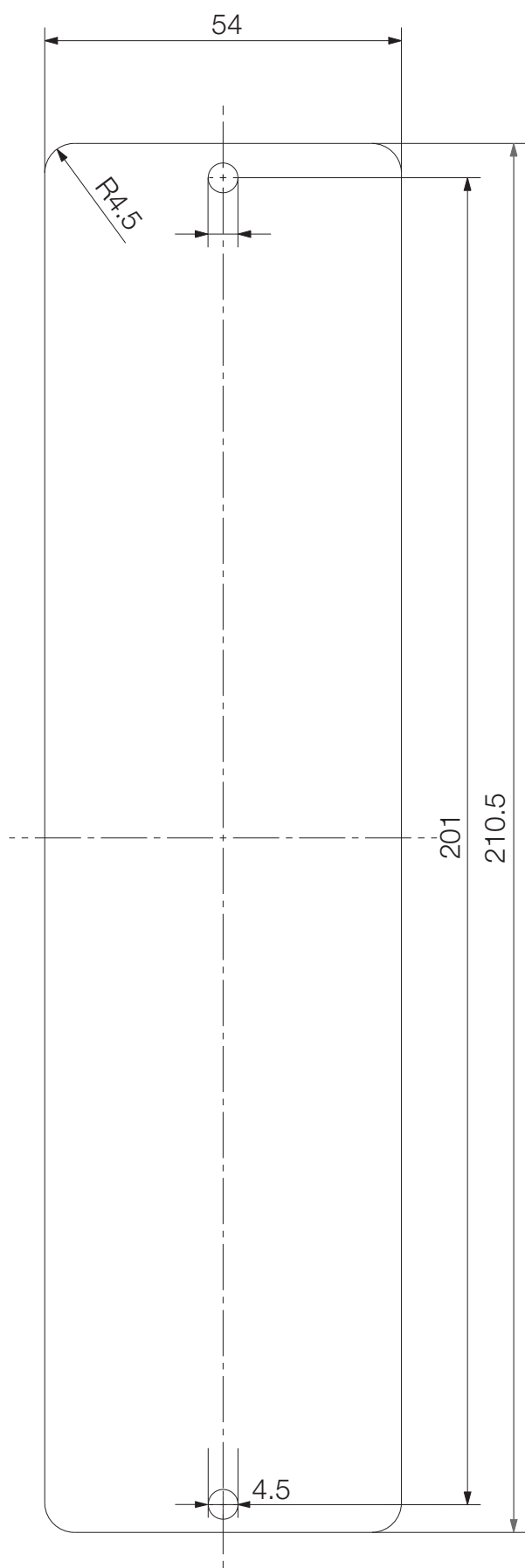
SAI M5



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Drilling templates

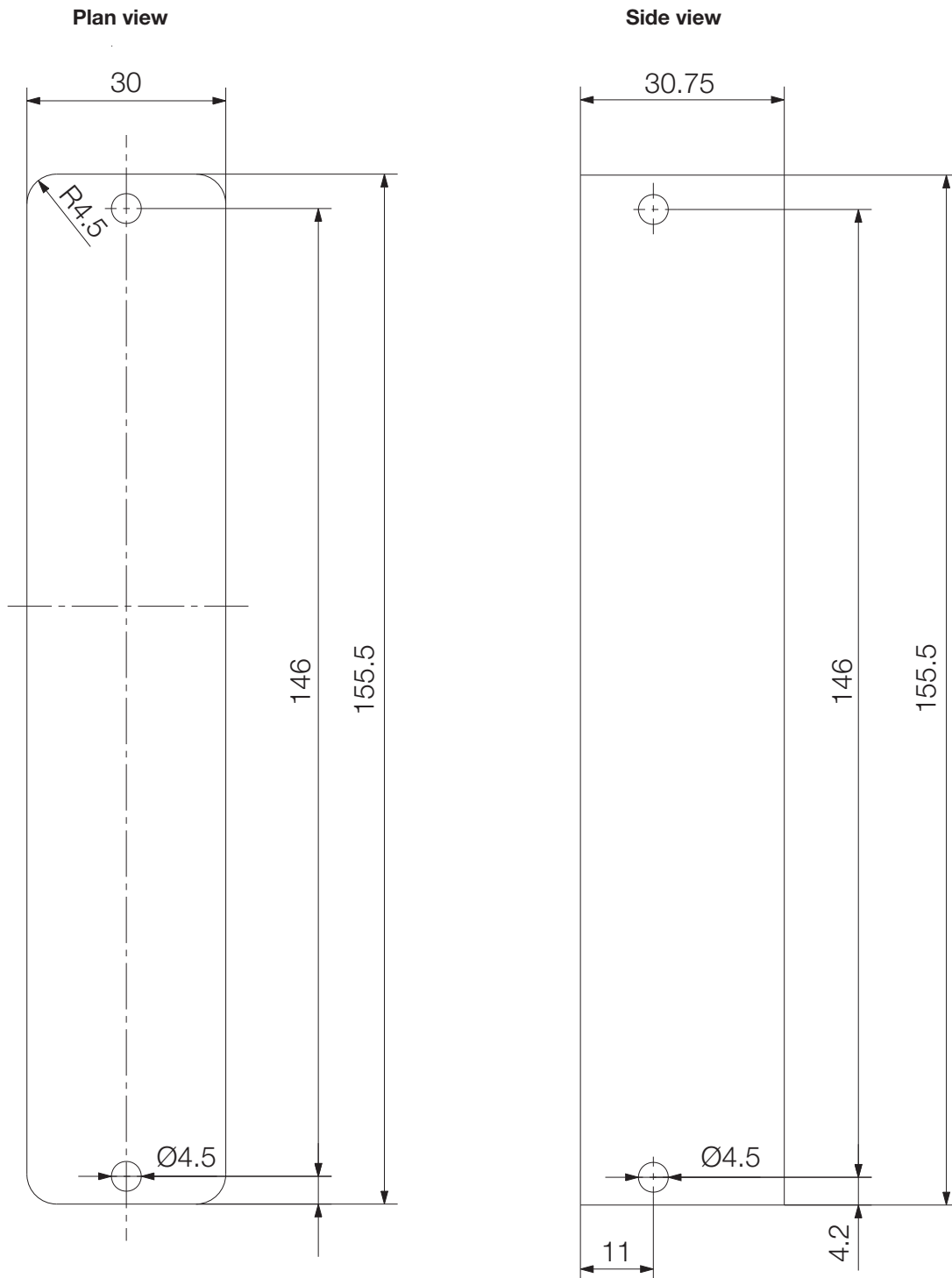
SAI Active Universal



W

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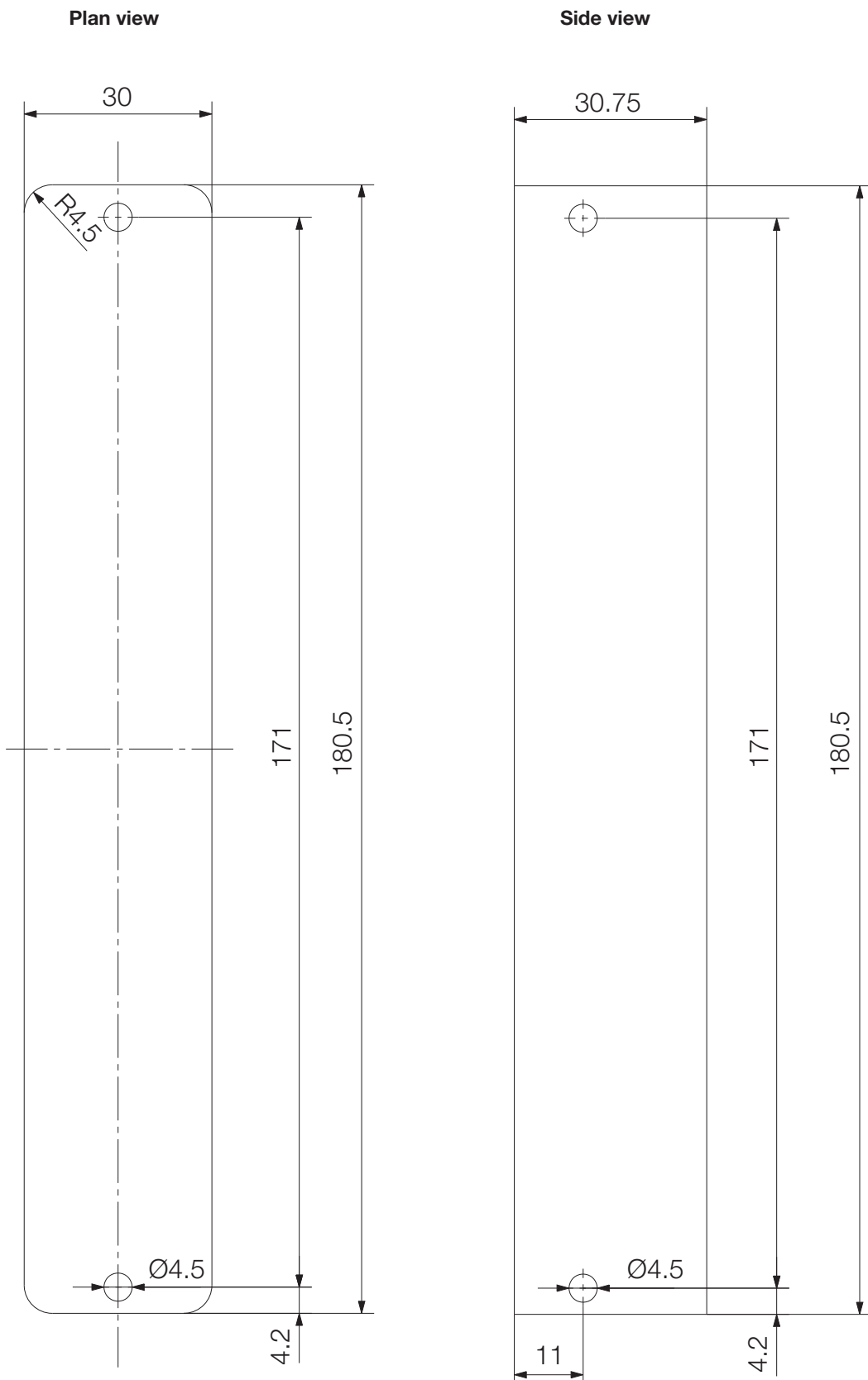
**SAI Active Universal Pro:**  
**Subbus modules with digital outputs**



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Drilling templates

SAI Active Universal Pro:  
Subbus modules without digital outputs



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# Chemical resistance of nickel

The statements on the resistance of nickel to chemicals only apply when the coating is undamaged and is not subject to any mechanical loads. These statements are based on a review of the literature available and it should be noted that pure nickel is not considered in the literature – only alloyed nickel steels.

The statements on page W.15 are based on research, and once again please note that pure nickel has not been included in the testing. The findings in the research are based on undamaged alloyed nickel steels that have not been subject to any mechanical loads.

The six materials in question are:

|                                |   |
|--------------------------------|---|
| Chlorobenzene                  | 1 |
| Chloroform                     | 1 |
| Chromic acid hydride           | 1 |
| Acetic acid                    | 1 |
| Hydrofluoric acid              | 2 |
| Concentrated hydrochloric acid | 2 |

The findings for the two materials above marked with a “2” could have a critical impact on applications. The findings for the four materials marked with a “1” should be taken into account but would not be considered critical for applications.

A further advantage of nickel is its thermal stability. The resistance does not change up to a temperature of 120 °C.

Pure nickel:

Corrosion properties are determined by the resistance of the passive layer.

Good resistance in:

- water containing oxygen
- flowing seawater
- alkalis (very good resistance) even at high temperatures and high concentrations
- neutral and alkaline salt solutions (carbonates, phosphates, sulphates, chlorides and nitrates) even at high concentrations and temperatures

Known problems:

- corrosion attack in heavily oxidising acids and solutions containing chlorides
- in inorganic and organic acids only resistant in diluted solutions and at low temperatures
- coating is not toxic (formation of deposits by micro-organisms can lead to destruction of the passive coating)

# Chemical resistance of Pocan® (PBT)

Pocan offers good resistance to chemicals. Organic solvents, such as aliphatic hydrocarbons, alcohols, ether, long-chain ester as well as fats, oils and perchlorinated hydrocarbons do not corrode Pocan.

This is also true for water and aqueous solutions, neutral and acid salts, as well as diluted acids.

On the other hand, it is susceptible to alkalis, oxidising acids, ketones and phenols.

Susceptibility to universal alcohols, aromatics and ketones increases as the ambient temperature rises above 60 °C.

In the presence of water and aqueous solutions, hydrolytic degradation at higher temperatures increasingly leads to a decline in stability.

Substances like motor and transformer oils, petrol and brake fluids do not corrode Pocan, even at higher temperatures.

| Medium                          | 23 °C | 60 °C |
|---------------------------------|-------|-------|
| Acetic acid 10%                 | ±     | ±     |
| Acetone                         | +     | -     |
| Ammonia 10%                     | +     | -     |
| Ammonia, concentrated           | ±     | -     |
| Benzene                         | +     | -     |
| Brake fluid                     | +     | +     |
| Butane                          | +     | +     |
| Butanol                         | +     | ±     |
| Butyl acetate                   | +     | +     |
| Calcium chloride 10%            | +     | ±     |
| Carbon disulphide               | +     | ±     |
| Carbon tetrachloride            | +     | ±     |
| Chlorobenzene                   | -     | -     |
| Chloroform                      | -     | -     |
| Chromic acid hydride 10%        | +     | +     |
| Citric acid 10%                 | +     | ±     |
| Cresol                          | -     | -     |
| Curd soap                       | +     | +     |
| Dibutyl phthalate               | +     | ±     |
| Diesel oil                      | +     | +     |
| Diethyl ether                   | +     | ±     |
| Dioxan                          | +     | -     |
| Ethanol                         | +     | +     |
| Ethyl acetate                   | ±     | -     |
| Ethyl dichloride                | -     | -     |
| Ethylene glycol                 | +     | ±     |
| Formic acid 10%                 | +     | ±     |
| Freon 11                        | +     | +     |
| Frigen 113                      | +     | +     |
| Glacial acetic acid 10%         | -     | -     |
| Glycerine                       | +     | +     |
| Heptane                         | +     | +     |
| Hexane                          | +     | +     |
| Hydraulic oil                   | +     | +     |
| Hydrochloric acid 10%           | +     | -     |
| Hydrochloric acid, concentrated | -     | -     |
| Hydrofluoric acid 10%           | +     | +     |
| Hydrogen peroxide 20%           | +     | ±     |
| Isopropyl alcohol               | +     | ±     |
| Kerosene                        | +     | +     |

| Medium                        | 23 °C | 60 °C |
|-------------------------------|-------|-------|
| Linseed oil                   | +     | +     |
| Lubricating greases           | +     | +     |
| Methanol                      | +     | ±     |
| Methyl ethyl ketone           | +     | ±     |
| Methylene chloride            | -     | -     |
| Mineral oils                  | +     | +     |
| Motor oils                    | +     | +     |
| Nitric acid 10%               | +     | ±     |
| Nitric acid, concentrated     | -     | -     |
| Octane                        | +     | +     |
| Olive oil                     | +     | +     |
| Paraffin oil                  | +     | +     |
| Perchloroethylene             | ±     | -     |
| Petrol, normal and lead-free  | +     | +     |
| Petrol, super                 | +     | +     |
| Petrol/methanol 85/15         | +     | +     |
| Petroleum                     | +     | +     |
| Phenol 10%                    | -     | -     |
| Phosphoric acid 20%           | +     | ±     |
| Potassium chloride 10%        | +     | +     |
| Potassium dichromate 10%      | +     | +     |
| Potassium hydroxide 10%       | -     | -     |
| Potassium permanganate 10%    | +     | ±     |
| Soap suds 10%                 | +     | ±     |
| Sodium bisulphite 10%         | +     | +     |
| Sodium carbonate 10%          | +     | +     |
| Sodium chloride 10%           | +     | +     |
| Sodium hydroxide 10%          | -     | -     |
| Sulphuric acid 10%            | +     | ±     |
| Sulphuric acid, concentrated  | -     | -     |
| Tetrahydrofuran               | -     | -     |
| Toluene                       | ±     | -     |
| Transformer oil               | +     | +     |
| Trichlorethene/chloroform 1/1 | ±     | -     |
| Turpentine oil                | +     | +     |
| Vegetable oils                | +     | +     |
| Washing liquid                | +     | +     |
| Washing powder, synthetic     | +     | +     |
| Water                         | +     | +     |
| Xylol                         | ±     | -     |

The above values are for guidance only. A definite statement can only be made when based on the respective case in question.

+ = resistant  
- = not resistant  
± = partly resistant



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| IE-C5DB4RE0015MCSMCA-E | 1059940015  | C.69 |
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| IE-C5DD4UG0015MCAACA-E | 1059890015  | C.67 |
| IE-C5DD4UG0015MCAXXX-X | 1059750015  | C.67 |
| IE-C5DD4UG0015MCSA20-E | 1044470015  | C.66 |
| IE-C5DD4UG0015MCSMCA-E | 1059770015  | C.67 |
| IE-C5DD4UG0015MCSMCS-E | 1025950015  | C.66 |
| IE-C5DD4UG0015MCSXXX-X | 1025940015  | C.66 |
| IE-C5DD4UG0015MSSMCS-E | 1059830015  | C.66 |
| IE-C5DD4UG0030MCAMCA-E | 1059890030  | C.67 |
| IE-C5DD4UG0030MCAXXX-X | 1059750030  | C.67 |
| IE-C5DD4UG0030MCSA20-E | 1044470030  | C.66 |
| IE-C5DD4UG0030MCSMCA-E | 1059770030  | C.67 |
| IE-C5DD4UG0030MCSMCS-E | 1025950030  | C.66 |
| IE-C5DD4UG0030MCSXXX-X | 1025940030  | C.66 |
| IE-C5DD4UG0030MSSMCS-E | 1059830030  | C.66 |
| IE-C5DD4UG0050MCAMCA-E | 1059890050  | C.67 |
| IE-C5DD4UG0050MCAXXX-X | 1059750050  | C.67 |
| IE-C5DD4UG0050MCSA20-E | 1044470050  | C.66 |
| IE-C5DD4UG0050MCSMCA-E | 1059770050  | C.67 |
| IE-C5DD4UG0050MCSMCS-E | 1025950050  | C.66 |
| IE-C5DD4UG0050MCSXXX-X | 1025940050  | C.66 |
| IE-C5DD4UG0050MSSMCS-E | 1059830050  | C.66 |
| IE-C5DD4UG0100MCAMCA-E | 1059890100  | C.67 |
| IE-C5DD4UG0100MCAXXX-X | 1059750100  | C.67 |
| IE-C5DD4UG0100MCSA20-E | 1044470100  | C.66 |
| IE-C5DD4UG0100MCSMCA-E | 1059770100  | C.67 |
| IE-C5DD4UG0100MCSMCS-E | 1025950100  | C.66 |
| IE-C5DD4UG0100MCSXXX-X | 1025940100  | C.66 |
| IE-C5DD4UG0100MSSMCS-E | 1059830100  | C.66 |

## J

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| JP CLIP M | 8778490000 | F.7 |
| JP TEST   | 8794120000 | F.6 |

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| JPP NPN PNP 24VDC       | 8852350000 | F.5 |
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| JPR 24VDC 1CO M12       | 8771420000 | F.3 |
| JPR 24VDC ISO 1CO M12   | 8771430000 | F.3 |
| JPTA 50MS 24VDC PNP M12 | 8771440000 | F.4 |
| JPTA100MS 24VDC PNP M12 | 8836630000 | F.4 |

## K

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| KT 12 | 9002660000 | L.7 |
| KT 8  | 9002650000 | L.7 |

## M

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| multi-stripax 6-16   | 9202210000 | L.11 |
| multi-stripax ASI    | 9202250000 | L.11 |
| multi-stripax GKW LW | 9205760000 | L.11 |

## P

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| PB SUB-D IDC TERM PS     | 1919680000 | C.15 |
| PB SUB-D ZF TERM PS      | 1934200000 | C.15 |
| PB-DP SUB-D              | 8395500000 | C.14 |
| PB-DP SUB-D M12 TERM     | 1140650000 | C.16 |
| PB-DP SUB-D M12 TERM PS  | 1140640000 | C.17 |
| PB-DP SUB-D TERM         | 8460860000 | C.15 |
| PB-DP SUB-D ZF           | 1161890000 | C.20 |
| PB-DP SUB-D ZF TERM      | 1161870000 | C.21 |
| PB-DP SUB-D ZF TERM PS   | 1161880000 | C.21 |
| PB-DP SUB-D ZF35TERM     | 1173220000 | C.18 |
| PB-DP SUB-D ZF35TERM PS  | 1173240000 | C.19 |
| PJ PRO TNAW              | 1024140000 | L.15 |
| PJ PRO TINTK INK C       | 1027050000 | L.15 |
| PJ PRO TINTK INK K       | 1027040000 | L.15 |
| PJ PRO TINTK INK M       | 1027060000 | L.15 |
| PJ PRO TINTK INK SET COL | 1027110000 | L.15 |
| PJ PRO TINTK INK Y       | 1027070000 | L.15 |
| POS-4P M12 M20 150mm     | 8425930000 | C.33 |
| POS-4P M12 M20 300mm     | 8425940000 | C.33 |
| POS-4P M12 PG13.5 150mm  | 9455650000 | C.33 |
| POS-4P M12 PG13.5 300 mm | 8425910000 | C.33 |
| POS-5P M12/M20 300MM     | 1795500000 | C.33 |
| PRINTJET PRO 115V        | 1024050000 | L.15 |
| PRINTJET PRO 230V        | 1001180001 | L.15 |

## R

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| RS PB-DP T       | 8800040000 | C.25 |
| RS PB-DP T SUB-D | 8788580000 | C.25 |

## S

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| SAI JP 4P LG            | 1915220000 | F.8  |
| SAI JP 4P LG 100        | 8794090000 | F.8  |
| SAI JP 5P LG            | 1918520000 | F.8  |
| SAI JP 5P LG 100        | 8794080000 | F.8  |
| SAI M23 CRIMPING TOOL 1 | 1203940000 | L.12 |
| SAI M23 CRIMPING TOOL 2 | 1203960000 | L.13 |
| SAI Y-4S M8-M8          | 1805660000 | D.25 |
| SAI-10-F 3P M8 L 10M    | 1828650000 | G.52 |
| SAI-10-F 3P M8 L 10M    | 1828650000 | G.6  |
| SAI-10-F 3P M8 L 5M     | 1828660000 | G.52 |
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| SAI-4-MM 5P M12        | 1783500000 | G.31  | SAI-8-F 3P M8 L 5M      | 1828680000 | G.52 | SAI-8-MM 5P M12         | 1783490000 | G.6  | SAI-AU M12 PB AI/AO/DI | 1890000000 | E.4  |
| SAI-4-MM 5P M12        | 1783500000 | G.33  | SAI-8-F 3P M8 L 5M      | 1828680000 | G.6  | SAI-8-MM 5P M12 UT      | 1783491000 | G.33 | SAI-AU M12 PB AI/AO/DI | 1890000000 | E.9  |
| SAI-4-MM 5P M12        | 1783500000 | G.6   | SAI-8-F 3P M8 PUR 10M   | 1784610000 | G.48 | SAI-8-MMH 5P M12 ZF     | 1782740000 | G.31 | SAI-AU M12 PB GW 16DI  | 1938550000 | E.30 |
| SAI-4-MMS 4P M12       | 1783540000 | G.31  | SAI-8-F 3P M8 PUR 5M    | 1784620000 | G.48 | SAI-8-MMH 5P M12 ZF     | 1782740000 | G.33 | SAI-AU M12 PB GW 16DI  | 1938550000 | E.30 |
| SAI-4-MMS 4P M12       | 1783540000 | G.33  | SAI-8-F 4P FC 10M       | 1847980000 | G.17 | SAI-8-MMS 4P M12        | 1783530000 | G.31 | SAI-AU M12 PB GW 16DI  | 1938550000 | E.4  |
| SAI-4-MMS 4P M12       | 1783540000 | G.6   | SAI-8-F 4P FC 2M        | 1847990000 | G.17 | SAI-8-MMS 4P M12        | 1783530000 | G.33 | SAI-AU M12 SB 2Counter | 1938730000 | E.31 |
| SAI-4-MMS 5P M12       | 1783520000 | G.31  | SAI-8-F 4P FC 5M        | 1848000000 | G.17 | SAI-8-MMS 4P M12        | 1783530000 | G.6  | SAI-AU M12 SB 2Counter | 1938730000 | E.33 |
| SAI-4-MMS 5P M12       | 1783520000 | G.33  | SAI-8-F 4P IDC PUR 10M  | 1766710000 | G.27 | SAI-8-MMS 5P M12        | 1783510000 | G.31 | SAI-AU M12 SB 2Counter | 1938730000 | E.35 |
| SAI-4-MMS 5P M12       | 1783520000 | G.6   | SAI-8-F 4P IDC PUR 5M   | 1766700000 | G.27 | SAI-8-MMS 5P M12        | 1783510000 | G.33 | SAI-AU M12 SB 2Counter | 1938730000 | E.38 |
| SAI-4-MMS 5P M12 1:1   | 1897680000 | G.36  | SAI-8-F 4P M5 L10M      | 1845810000 | G.56 | SAI-8-MMS 5P M12        | 1783510000 | G.6  | SAI-AU M12 SB 2Counter | 1938730000 | E.4  |
| SAI-4-S 3P M8 L        | 1828740000 | G.50  | SAI-8-F 4P M5 L5M       | 1851750000 | G.56 | SAI-8-S 3P M8 L         | 1845850000 | G.56 | SAI-AU M12 SB 4AI      | 1938690000 | E.31 |
| SAI-4-S 3P M8 L        | 1828740000 | G.6   | SAI-8-F 4P M8 L 10M     | 1828610000 | G.52 | SAI-8-S 4P FC           | 1847920000 | G.18 | SAI-AU M12 SB 4AI      | 1938690000 | E.33 |
| SAI-4-S 3P M8 L OL     | 1051760000 | G.50  | SAI-8-F 4P M8 L 10M     | 1828610000 | G.6  | SAI-8-S 4P FC           | 1847920000 | H.23 | SAI-AU M12 SB 4AI      | 1938690000 | E.35 |
| SAI-4-S 4P FC          | 1847960000 | G.18  | SAI-8-F 4P M8 L 5M      | 1828620000 | G.52 | SAI-8-S 4P M12          | 9456020000 | G.11 | SAI-AU M12 SB 4AI      | 1938690000 | E.37 |
| SAI-4-S 4P FC          | 1847960000 | H.23  | SAI-8-F 4P M8 L 5M      | 1828620000 | G.6  | SAI-8-S 4P M12          | 9456020000 | G.6  | SAI-AU M12 SB 4AI      | 1938690000 | E.4  |
| SAI-4-S 4P M12         | 9456000000 | G.11  | SAI-8-F 4P M8 PUR 10M   | 1784570000 | G.48 | SAI-8-S 4P M12          | 9456020000 | G.21 | SAI-AU M12 SB 4AO      | 1938700000 | E.31 |
| SAI-4-S 4P M12         | 9456000000 | G.6   | SAI-8-F 4P M8 PUR 5M    | 1784580000 | G.48 | SAI-8-S 5P CNOMO        | 1848040000 | G.18 | SAI-AU M12 SB 4AO      | 1938700000 | E.33 |
| SAI-4-S 4P M5          | 1845840000 | G.56  | SAI-8-F 4P PUR 10M      | 9456760000 | G.9  | SAI-8-S 5P FC           | 1848040000 | H.23 | SAI-AU M12 SB 4AO      | 1938700000 | E.35 |
| SAI-4-S 5P CNOMO       | 1861540000 | G.21  | SAI-8-F 4P PUR 10M      | 9456760000 | G.9  | SAI-8-S 5P M12          | 1795470000 | G.11 | SAI-AU M12 SB 4AO      | 1938700000 | E.37 |
| SAI-4-S 5P FC          | 1847970000 | G.18  | SAI-8-F 4P PUR 15M      | 9456770000 | G.9  | SAI-8-S 5P M12          | 1795470000 | G.6  | SAI-AU M12 SB 4AO      | 1938700000 | E.4  |
| SAI-4-S 5P FC          | 1847970000 | H.23  | SAI-8-F 4P PUR 15M      | 9456770000 | G.9  | SAI-8-S12 3P M8 L       | 1871680000 | G.50 | SAI-AU M12 SB 4PT100   | 1938710000 | E.31 |
| SAI-4-S 5P M12         | 9456000000 | G.11  | SAI-8-F 4P PUR 20M      | 9456790000 | G.6  | SAI-8-S12 3P M8 L       | 1871680000 | G.6  | SAI-AU M12 SB 4PT100   | 1938710000 | E.33 |
| SAI-4-S 5P M12         | 9456000000 | G.6   | SAI-8-F 4P PUR 20M      | 9456790000 | G.6  | SAI-8-S16 3P M5         | 1845880000 | G.57 | SAI-AU M12 SB 4PT100   | 1938710000 | E.35 |
| SAI-4-S16 3P M5        | 1845890000 | G.57  | SAI-8-F 4P PUR 3M       | 9456740000 | G.9  | SAI-8-S16/19P 4P M5     | 1845860000 | G.57 | SAI-AU M12 SB 4PT100   | 1938710000 | E.4  |
| SAI-4-S16 4P M5        | 1845870000 | G.57  | SAI-8-F 4P PUR 5M       | 9456750000 | G.9  | SAI-8-SH 4P FC          | 1859120000 | G.19 | SAI-AU M12 SB 4PT100   | 1938710000 | E.4  |
| SAI-4-SH 4P FC         | 1859110000 | G.19  | SAI-8-F 4P PUR 5M       | 9456750000 | G.9  | SAI-8-SH 4P FC          | 1859120000 | H.24 | SAI-AU M12 SB 4Thermo  | 1938720000 | E.31 |
| SAI-4-SH 4P FC         | 1859110000 | H.24  | SAI-8-F 5P 10M 0.5/1.0U | 9457600000 | G.9  | SAI-8-SH 5P FC          | 1859140000 | G.19 | SAI-AU M12 SB 4Thermo  | 1938720000 | E.33 |
| SAI-4-SH 5P FC         | 1859130000 | G.19  | SAI-8-F 5P 15M 0.5/1.0U | 1784510000 | G.9  | SAI-8-SH 5P FC          | 1859140000 | H.24 | SAI-AU M12 SB 4Thermo  | 1938720000 | E.35 |
| SAI-4-SH 5P FC         | 1859130000 | H.24  | SAI-8-F 5P 20M 0.5/1.0U | 1784500000 | G.9  | SAI-8-SHB 5P F13 FC     | 1872460000 | G.23 | SAI-AU M12 SB 4Thermo  | 1938720000 | E.39 |
| SAI-4-SH 5P M12        | 1766750000 | G.27  | SAI-8-F 5P 2M 0.5/1.0U  | 7915030000 | G.9  | SAI-8-SHB 5P FC         | 1872440000 | G.22 | SAI-AU M12 SB 4Thermo  | 1938720000 | E.4  |
| SAI-6-F 3P IDC PUR 10M | 1766740000 | G.27  | SAI-8-F 5P 5M 0.5/1.0U  | 9457590000 | G.21 | SAI-ASI T FF small      | 1026090000 | C.65 | SAI-AU M12 SB 8DI      | 1938610000 | E.31 |
| SAI-6-F 3P IDC PUR 5M  | 1766740000 | G.27  | SAI-8-F 5P CNOMO 10M    | 1861590000 | G.9  | SAI-ASI T FFR           | 1924980000 | C.65 | SAI-AU M12 SB 8DI      | 1938610000 | E.33 |
| SAI-6-F 3P M8 L 10M    | 1828690000 | G.52  | SAI-8-F 5P CNOMO 5M     | 1861550000 | G.21 | SAI-ASI T FFR           | 1925010000 | C.64 | SAI-AU M12 SB 8DI      | 1938610000 | E.35 |
| SAI-6-F 3P M8 L 10M    | 1828690000 | G.6   | SAI-8-F 5P FC 10M       | 1848010000 | G.17 | SAI-AU M12 BT 16DI      | 1006940000 | E.4  | SAI-AU M12 SB 8DI      | 1938610000 | E.36 |
| SAI-6-F 3P M8 L 5M     | 1828700000 | G.52  | SAI-8-F 5P FC 2M        | 1848020000 | G.17 | SAI-AU M12 BT 16DI      | 1006940000 | E.45 | SAI-AU M12 SB 8DI      | 1938610000 | E.4  |
| SAI-6-F 3P M8 L 5M     | 1828700000 | G.6   | SAI-8-F 5P FC 5M        | 1848030000 | G.17 | SAI-AU M12 BT 16DI      | 1006940000 | E.46 | SAI-AU M12 SB 8DI      | 1938640000 | E.31 |
| SAI-6-F 4P IDC PUR 10M | 1766690000 | G.27  | SAI-8-F 5P FC 10M       | 1865310000 | G.28 | SAI-AU M12 BT 16DI/8DO  | 1006930000 | E.4  | SAI-AU M12 SB 8DI      | 1938640000 | E.33 |
| SAI-6-F 4P IDC PUR 5M  | 1766680000 | G.27  | SAI-8-F 5P M12 5M VA    | 1865310000 | G.17 | SAI-AU M12 BT 16DI/8DO  | 1006930000 | E.4  | SAI-AU M12 SB 8DI      | 1938640000 | E.35 |
| SAI-6-F 4P M8 L 10M    | 1849670000 | G.52  | SAI-8-F 5P NPN-PNP 5M   | 1814990000 | G.38 | SAI-AU M12 BT 16DI/8DO  | 1006930000 | E.45 | SAI-AU M12 SB 8DI      | 1938640000 | E.36 |
| SAI-6-F 4P M8 L 10M    | 1849670000 | G.6   | SAI-8-F 5P PUR 10M      | 9456900000 | G.9  | SAI-AU M12 BT 16DI/8DO  | 1006930000 | E.46 | SAI-AU M12 SB 8DI      | 1938640000 | E.39 |
| SAI-6-F 4P M8 L 5M     | 1849700000 | G.52  | SAI-8-F 5P PUR 10M      | 9456900000 | G.6  | SAI-AU M12 BT 16DI/8DO  | 1006930000 | E.4  | SAI-AU M12 SB 8DI      | 1938640000 | E.4  |
| SAI-6-F 4P M8 L 5M     | 1849700000 | G.6   | SAI-8-F 5P PUR 15M      | 9456910000 | G.9  | SAI-AU M12 BT 16DI/8DO  | 1006920000 | E.45 | SAI-AU M12 SB 8DO 2A   | 1938680000 | E.31 |
| SAI-6-F 4P M8 L 5M     | 1849700000 | G.6   | SAI-8-F 5P PUR 15M      | 9456910000 | G.6  | SAI-AU M12 BT 16DI/8DO  | 1006920000 | E.47 | SAI-AU M12 SB 8DO 2A   | 1938680000 | E.33 |
| SAI-6-F 4P M8 L 5M     | 1849700000 | G.6   | SAI-8-F 5P PUR 20M      | 9456930000 | G.9  | SAI-AU M12 CAN 16DI     | 1906650000 | E.12 | SAI-AU M12 SB 8DO 2A   | 1938680000 | E.35 |
| SAI-6-F 4P M8 L 5M     | 1849700000 | G.6   | SAI-8-F 5P PUR 20M      | 9456930000 | G.6  | SAI-AU M12 CAN 16DI     | 1906650000 | E.14 | SAI-AU M12 SB 8DO 2A   | 1938680000 | E.36 |
| SAI-6-F 4P M8 L 5M     | 1849700000 | G.6   | SAI-8-F 5P PUR 20M      | 9456930000 | G.9  | SAI-AU M12 CAN 16DI     | 1906650000 | E.4  | SAI-AU M12 SB 8DO 2A   | 1938680000 | E.4  |
| SAI-6-F 4P M8 L 5M     | 1849700000 | G.6   | SAI-8-F 5P PUR 3M       | 9456880000 | G.9  | SAI-AU M12 CAN 16DI     | 1906650000 | E.12 | SAI-AU M12 USB GW 8IBO | 1962240000 | E.34 |
| SAI-6-F 4P M8 L 5M     | 1849700000 | G.6   | SAI-8-F 5P PUR 5M       | 9456890000 | G.9  | SAI-AU M12 CAN 16DI/8DO | 1906660000 | E.12 | SAI-AU M12 USB GW 8IBO | 1962240000 | E.35 |
| SAI-6-F 4P M8 L 5M     | 1849700000 | G.6   | SAI-8-F 5P PUR 5M       | 9456890000 | G.6  | SAI-AU M12 CAN 16DI/8DO | 1906660000 | E.14 | SAI-AU M12 USB GW 8IBO | 1962240000 | E.4  |
| SAI-6-F 4P M8 L 5M     | 1849700000 | G.6   | SAI-8-FMM-4P M12 10M    | 9456760002 | G.31 | SAI-AU M12 CAN 16DI/8DO | 1906660000 | E.13 | SAI-AU M12 USB GW 8IBO | 1962240000 | E.12 |
| SAI-6-F 4P M8 L 5M     | 1849700000 | G.6   | SAI-8-FMM-4P M12 10M    | 9456760002 | G.32 | SAI-AU M12 CAN AI/AO/DI | 1906670000 | E.4  | SAI-AU M8 CAN 16DI     | 1906680000 | E.14 |
| SAI-6-F 4P M8 L 5M     | 1849700000 | G.6   | SAI-8-FMM-4P M12 10M    | 9456760002 | G.6  | SAI-AU M12 CAN AI/AO/DI | 1906670000 | E.14 | SAI-AU M8 CAN 16DI     | 1906680000 | E.4  |
| SAI-6-F 4P M8 L 5M     | 1849700000 | G.6   | SAI-8-FMM-4P M12 5M     | 9456750002 | G.32 | SAI-AU M12 CAN AI/AO/DI | 1906670000 | E.16 | SAI-AU M8 CAN 16DI/8DO | 1906690000 | E.12 |
| SAI-6-F 4P M8 L 5M     | 1849700000 | G.6   | SAI-8-FMM-4P M12 5M     | 9456750002 | G.6  | SAI-AU M12 DN 16DI      | 1906700000 | E.18 | SAI-AU M8 CAN 16DI/8DO | 1906690000 | E.14 |
| SAI-6-F 4P M8 L 5M     | 1849700000 | G.6   | SAI-8-M 3P IDC          | 1760061000 | G.26 | SAI-AU M12 DN 16DI      | 1906700000 | E.4  | SAI-AU M8 CAN 16DI/8DO | 1906690000 | E.4  |
| SAI-6-F 4P M8 L 5M     | 1849700000 | G.6   | SAI-8-M 3P IDC UT       | 1760061000 | G.26 | SAI-AU M12 DN 16DI      | 1906700000 | E.4  | SAI-AU M8 CAN 16DI/8DO | 1906690000 | E.4  |
| SAI-6-F 4P M8 L 5M     | 1849700000 | G.6   | SAI-8-M 3P M8           | 1784670000 | G.48 | SAI-AU M12 DN 16DI/8DO  | 1906710000 | E.16 | SAI-AU M8 DN 16DI      | 1906730000 | E.18 |
| SAI-6-F 4P M8 L 5M     | 1849700000 | G.6   | SAI-8-M 4P Exi Z1 IL    | 1868370000 | G.59 | SAI-AU M12 DN 16DI/8DO  | 1906710000 | E.4  | SAI-AU M8 DN 16DI      | 1906730000 | E.16 |
| SAI-6-F 4P M8 L 5M     | 1849700000 | G.6   | SAI-8-M 4P Exi Z1 OL    | 1894380000 | G.59 | SAI-AU M12 DN 16DI/8DO  | 1906710000 | E.17 | SAI-AU M8 DN 16DI/8DO  | 1906740000 | E.16 |
| SAI-6-F 4P M8 L 5M     | 1849700000 | G.6   | SAI-8-M 4P IDC          | 1766800000 | G.26 | SAI-AU M12 DN AI/AO/DI  | 1906720000 | E.18 | SAI-AU M8 DN 16DI/8DO  | 1906740000 | E.18 |
| SAI-6-F 4P M8 L 5M     | 1849700000 | G.6   | SAI-8-M 4P IDC          | 1766800000 | G.26 | SAI-AU M12 DN AI/AO/DI  | 1906720000 | E.4  | SAI-AU M8 DN 16DI/8DO  | 1906740000 | E.4  |
| SAI-6-F 4P M8 L 5M     | 1849700000 | G.6   | SAI-8-M 4P M12          | 1705940000 | G.8  | SAI-AU M12 DN AI/AO/DI  | 1906720000 | E.32 | SAI-AU M8 EIP 16DI     | 1906930000 | E.20 |
| SAI-6-F 4P M8 L 5M     | 1849700000 | G.6   | SAI-8-M 4P M12          | 1705940000 | G.8  | SAI-AU M12 DN GW 16DI   | 1938570000 | E.33 | SAI-AU M8 EIP 16DI     | 1906930000 | E.22 |
| SAI-6-F 4P M8 L 5M     | 1849700000 | G.6   | SAI-8-M 4P M12 UT       | 1705941000 | G.42 | SAI-AU M12 DN GW 16DI   | 1938570000 | E.4  | SAI-AU M8 EIP 16DI     | 1906930000 | E.4  |
| SAI-6-F 4P M8 L 5M     | 1849700000 | G.6   | SAI-8-M 4P M12 UT       | 1705941000 | G.6  | SAI-AU M12 EIP 16DI     | 1906900000 | E.20 | SAI-AU M8 EIP 16DI/8DO | 1906940000 | E.20 |
| SAI-6-F 4P M8 L 5M     | 1849700000 | G.6   | SAI-8-M 4P M8           | 1784690000 | G.48 | SAI-AU M12 EIP 16DI     | 1906900000 | E.22 | SAI-AU M8 EIP 16DI/8DO | 1906940000 | E.22 |
| SAI-6-F 4P M8 L 5M     | 1849700000 | G.6   | SAI-8-M 5P Ex Z22       | 1861530000 | G.60 | SAI-AU M12 EIP 16DI     | 1906900000 | E.4  | SAI-AU M8 EIP 16DI/8DO | 1906940000 | E.4  |
| SAI-6-F 4P M8 L 5M     | 1849700000 | G.6   | SAI-8-M 5P FC           | 1848070000 | G.20 | SAI-AU M12 EIP 16DI/8DO | 1906910000 | E.20 | SAI-AU M8 IE 16DI      | 1906880000 | E.24 |
| SAI-6-F 4P M8 L 5M     | 1849700000 | G.6   | SAI-8-M 5P M12          | 1701250000 | G.6  | SAI-AU M12 EIP 16DI/8DO | 1906910000 | E.22 | SAI-AU M8 IE 16DI      | 1906880000 | E.26 |
| SAI-6-F 4P M8 L 5M     | 1849700000 | G.6   | SAI-8-M 5P M12          | 1701250000 | G.8  | SAI-AU M12 EIP 16DI/8DO | 1906910000 | E.4  | SAI-AU M8 IE 16DI      | 1906880000 | E.4  |
| SAI-6-F 4P M8 L 5M     | 1849700000 | G.6   | SAI-8-M 5P M12 ECO      | 1892080000 | G.15 | SAI-AU M12 EIP AI/AO/DI | 1906920000 | E.21 | SAI-AU M8 IE 16DI/8DO  | 1906890000 | E.24 |
| SAI-6-F 4P M8 L 5M     | 1849700000 | G.6   | SAI-8-M 5P M12 ECO UT   | 1892081000 | G.15 | SAI-AU M12 EIP AI/AO/DI | 1906920000 | E.22 | SAI-AU M8 IE 16DI/8DO  | 1906890000 | E.26 |
| SAI-6-F 4P M8 L 5M     | 1849700000 | G.6   | SAI-8-M 5P M12 Ex ia    | 1896090000 | G.59 | SAI-AU M12 EIP AI/AO/DI | 1906920000 | E.4  | SAI-AU M8 IE 16DI/8DO  | 1906890000 | E.4  |
| SAI-6-F 4P M8 L 5M     | 1849700000 | G.6</ |                         |            |      |                         |            |      |                        |            |      |

| Type                     | Order No.  | Page | Type                      | Order No.  | Page | Type                   | Order No.  | Page | Type                  | Order No.  | Page |
|--------------------------|------------|------|---------------------------|------------|------|------------------------|------------|------|-----------------------|------------|------|
| SAIB 5/9-VA              | 1920710000 | D.10 | SAIBW-M-4/8 M12           | 1803910000 | D.12 | SAIL-M12BG-3-3.0Q      | 1926760300 | B.6  | SAIL-M12BW-3L3.0Q     | 1926650300 | B.8  |
| SAIB 5/9-VA-B-COD        | 1920710000 | G.29 | SAIBW-M-4/8 M12           | 1803910000 | D.5  | SAIL-M12BG-3-3.0U      | 9457820300 | B.6  | SAIL-M12BW-3L3.0U     | 9457800300 | B.8  |
| SAIB 5/9-VA-B-COD        | 1920730000 | C.10 | SAIBW-M-5/8 M12           | 1803920000 | C.31 | SAIL-M12BG-3-3.0V      | 1925570300 | B.6  | SAIL-M12BW-3L3.0V     | 1925460300 | B.8  |
| SAIB 5/9-VA-B-COD        | 1920730000 | D.10 | SAIBW-M-5/8 M12           | 1803920000 | C.63 | SAIL-M12BG-3-5.0Q      | 1926760500 | B.6  | SAIL-M12BW-3L5.0Q     | 1926650500 | B.8  |
| SAIB 5/9-VA-B-COD        | 1920730000 | G.29 | SAIBW-M-5/8 M12           | 1803920000 | D.12 | SAIL-M12BG-3-5.0U      | 9457820500 | B.6  | SAIL-M12BW-3L5.0U     | 9457800500 | B.8  |
| SAIB-12/9-(TL)           | 1924960000 | D.5  | SAIBW-M-5/8 M12           | 1803920000 | D.5  | SAIL-M12BG-3-5.0V      | 1925570500 | B.6  | SAIL-M12BW-3L5.0V     | 1925460500 | B.8  |
| SAIB-3/7                 | 1924940000 | D.5  | SAIBW-M-5/8 M12 B-COD     | 1944580000 | C.11 | SAIL-M12BG-3B-1.5Q     | 1057740150 | B.41 | SAIL-M12BW-3LX.XQ     | 1926650000 | B.8  |
| SAIB-3/7                 | 1021490000 | D.7  | SAIBW-M-5/8 M12 B-COD     | 1944580000 | D.14 | SAIL-M12BG-3S1.5Q      | 1867410150 | B.16 | SAIL-M12BW-3LX.XV     | 9457800000 | B.8  |
| SAIB-3/9                 | 1021510000 | D.5  | SAIBW-M-5/8 M12 B-COD     | 1944580000 | D.5  | SAIL-M12BG-3-X.XQ      | 1926760000 | B.6  | SAIL-M12BW-3LX.XV     | 1925460000 | B.8  |
| SAIB-3/9                 | 1021510000 | D.7  | SAIBW-M-8-3P(TL)          | 1920970000 | D.19 | SAIL-M12BG-3-X.XU      | 9457820000 | B.6  | SAIL-M12BW-3S1.5Q     | 1906950150 | B.16 |
| SAIB-3-IDC (0,75) M12    | 1852730000 | D.23 | SAIBW-M-8-3P(TL)          | 1920970000 | D.6  | SAIL-M12BG-3-X.XV      | 1925570000 | B.6  | SAIL-M12BW-3-X.XQ     | 1926820000 | B.7  |
| SAIB-3-IDC (0,75) M12    | 1852730000 | D.5  | SAIBW-M-8-4P(TL)          | 1920980000 | D.19 | SAIL-M12BG-4-1.5Q      | 1926770150 | B.11 | SAIL-M12BW-3-X.XU     | 9457320000 | B.7  |
| SAIB-3-IDC-M12B-COD      | 1864740000 | C.12 | SAIBW-M-8-4P(TL)          | 1920980000 | D.6  | SAIL-M12BG-4-1.5Q      | 1926770150 | B.6  | SAIL-M12BW-3-X.XV     | 1925630000 | B.7  |
| SAIB-3-IDC-M12B-COD      | 1864740000 | D.13 | SAIE-EW-M20/PG9-SW24-VA   | 1950270000 | C.33 | SAIL-M12BG-4-1.5QGE    | 1092920150 | B.11 | SAIL-M12BW-4-1.5Q     | 1926830150 | B.11 |
| SAIB-3-IDC-M8 small      | 1784030001 | D.24 | SAIE-M12B-4-0.5U-PP-M16   | 1861190000 | D.29 | SAIL-M12BG-4-1.5T      | 1968580150 | B.11 | SAIL-M12BW-4-1.5Q     | 1926830150 | B.7  |
| SAIB-3-IDC-M8 small      | 1784030001 | D.6  | SAIE-M12B-4-0.5U-M16      | 1861120000 | D.29 | SAIL-M12BG-4-1.5U      | 9457730150 | B.11 | SAIL-M12BW-4-1.5QGE   | 1092960150 | B.11 |
| SAIB-4/7                 | 9457240000 | D.5  | SAIE-M12B-4-0.5U-PG9      | 1861250000 | D.30 | SAIL-M12BG-4-1.5U      | 9457730150 | B.6  | SAIL-M12BW-4-1.5T     | 1968570150 | B.11 |
| SAIB-4/7                 | 9457240000 | D.7  | SAIE-M12B-5-0.5U-PP-M16   | 1856110000 | D.29 | SAIL-M12BG-4-1.5V      | 1925580150 | B.11 | SAIL-M12BW-4-1.5U     | 9457740150 | B.11 |
| SAIB-4/7-(KV)            | 1921080000 | D.9  | SAIE-M12B-5-0.5U-M16      | 1836910000 | D.29 | SAIL-M12BG-4-1.5V      | 1925580150 | B.6  | SAIL-M12BW-4-1.5U     | 9457740150 | B.7  |
| SAIB-4/9                 | 1807230000 | D.5  | SAIE-M12B-5-0.5U-PG9      | 1814890000 | D.30 | SAIL-M12BG-4-10Q       | 1926771000 | B.6  | SAIL-M12BW-4-1.5V     | 1925640150 | B.11 |
| SAIB-4/9                 | 1807230000 | D.7  | SAIE-M12B-8-0.5U-M16      | 1861140000 | D.29 | SAIL-M12BG-4-10U       | 9457731000 | B.6  | SAIL-M12BW-4-1.5V     | 1925640150 | B.7  |
| SAIB-4-IDC (0,75) M12    | 1852750000 | D.23 | SAIE-M12B-8-0.5U-PP-M16   | 1861210000 | D.29 | SAIL-M12BG-4-10V       | 1925581000 | B.6  | SAIL-M12BW-4-10Q      | 1926831000 | B.7  |
| SAIB-4-IDC-M12 small     | 1781540001 | D.22 | SAIE-M12B-8-0.5U-PG9      | 1861270000 | D.30 | SAIL-M12BG-4-3.0Q      | 1926770300 | B.6  | SAIL-M12BW-4-10U      | 9457741000 | B.7  |
| SAIB-4-IDC-M12 small     | 1781540001 | D.5  | SAIE-M12S-4-0.5U-AEH-VA   | 1861220001 | C.33 | SAIL-M12BG-4-3.0U      | 9457730300 | B.6  | SAIL-M12BW-4-10V      | 1925641000 | B.7  |
| SAIB-4-IDC-M8 small      | 1784050001 | D.24 | SAIE-M12S-4-0.5U-PP-M16   | 1861160000 | D.29 | SAIL-M12BG-4-3.0V      | 1925580300 | B.6  | SAIL-M12BW-4-2L1.5Q   | 1926660150 | B.15 |
| SAIB-4-IDC-M8 small      | 1784050001 | D.6  | SAIE-M12S-4-0.5U-M16      | 1861090000 | D.29 | SAIL-M12BG-4-5.0Q      | 1926770500 | B.6  | SAIL-M12BW-4-2L1.5Q   | 1926660150 | B.8  |
| SAIB-5/6S M12 5P A-COD   | 1191020000 | D.5  | SAIE-M12S-4-0.5U-PG9      | 1861220000 | D.30 | SAIL-M12BG-4-5.0Q      | 9457730600 | B.6  | SAIL-M12BW-4-2L1.5QGE | 1092950150 | B.15 |
| SAIB-5/7                 | 9457250000 | D.5  | SAIE-M12S-5-0.5U-PP-M16   | 1861170000 | D.29 | SAIL-M12BG-4-5.0V      | 1925580500 | B.6  | SAIL-M12BW-4-2L1.5T   | 1007000150 | B.15 |
| SAIB-5/7                 | 9457250000 | D.8  | SAIE-M12S-5-0.5U-M16      | 1861230000 | D.29 | SAIL-M12BG-4B-1.5Q     | 1057750150 | B.41 | SAIL-M12BW-4-2L1.5U   | 9456380150 | B.15 |
| SAIB-5/7-(KV)            | 1921070000 | D.9  | SAIE-M12S-5-0.5U-PG9      | 1856120000 | D.30 | SAIL-M12BG-4S1.5Q      | 1812540150 | B.16 | SAIL-M12BW-4-2L1.5U   | 9456380150 | B.8  |
| SAIB-5/7-ZF              | 1924970000 | D.16 | SAIE-M12S-8-0.5U-PP-M16   | 1861180000 | D.29 | SAIL-M12BG-4-X.XQ      | 1926770000 | B.6  | SAIL-M12BW-4-2L1.5V   | 1925470150 | B.15 |
| SAIB-5/7-ZF              | 1924970000 | D.5  | SAIE-M12S-8-0.5U-M16      | 1861110000 | D.29 | SAIL-M12BG-4-X.XU      | 9457730000 | B.6  | SAIL-M12BW-4-2L1.5V   | 1925470150 | B.8  |
| SAIB-5/9                 | 1807250000 | D.5  | SAIE-M12S-8-0.5U-PG9      | 1861240000 | D.30 | SAIL-M12BG-4-X.XV      | 1925580000 | B.6  | SAIL-M12BW-4-2L10Q    | 1926661000 | B.8  |
| SAIB-5/9                 | 1807250000 | D.8  | SAIE-M23-L-EM             | 1170320000 | H.19 | SAIL-M12BG-5-1.5Q      | 1926780150 | B.11 | SAIL-M12BW-4-2L10U    | 9456381000 | B.8  |
| SAIB-8/9                 | 1836960000 | D.5  | SAIE-M23-L-HW             | 1170340000 | H.19 | SAIL-M12BG-5-1.5Q      | 1926780150 | B.7  | SAIL-M12BW-4-2L10V    | 1925471000 | B.8  |
| SAIB-8/9                 | 1836960000 | D.8  | SAIE-M23-L-RM             | 1170310000 | H.19 | SAIL-M12BG-5-1.5QGE    | 1092930150 | B.11 | SAIL-M12BW-4-2L3.0Q   | 1926660300 | B.8  |
| SAIBM 5/8S M12 5P B-COD  | 1784780000 | C.11 | SAIE-M23-L-VW             | 1170300000 | H.19 | SAIL-M12BG-5-1.5T      | 1021670150 | B.11 | SAIL-M12BW-4-2L3.0U   | 9456380300 | B.8  |
| SAIBM 5/8S M12 5P B-COD  | 1784780000 | D.13 | SAIE-M23-L-W              | 1170330000 | H.19 | SAIL-M12BG-5-1.5U      | 9457910150 | B.11 | SAIL-M12BW-4-2L3.0V   | 1925470300 | B.8  |
| SAIBM 5/8S M12 5P B-COD  | 1784780000 | D.5  | SAIE-M23-S-EM             | 1169970000 | H.13 | SAIL-M12BG-5-1.5U      | 9457910150 | B.7  | SAIL-M12BW-4-2L3.0Q   | 1926660500 | B.8  |
| SAIB-M23-12P-AN-1.0M     | 1877440100 | H.22 | SAIE-M23-S-HW             | 1169990000 | H.13 | SAIL-M12BG-5-1.5V      | 1925590150 | B.11 | SAIL-M12BW-4-2L5.0U   | 9456380500 | B.8  |
| SAIB-M23-12P-ST-1.0M     | 1886440100 | H.22 | SAIE-M23-S-RM             | 1169950000 | H.13 | SAIL-M12BG-5-1.5V      | 1925590150 | B.7  | SAIL-M12BW-4-2L5.0V   | 1925470500 | B.8  |
| SAIB-M23-19P-AN-1.0M     | 1818140100 | H.22 | SAIE-M23-S-VW             | 1169940000 | H.13 | SAIL-M12BG-5-10Q       | 1926781000 | B.7  | SAIL-M12BW-4-2LXLXQ   | 1926660000 | B.8  |
| SAIB-M23-19P-ST-1.0M     | 1818180100 | H.22 | SAIE-M23-S-W              | 1169980000 | H.13 | SAIL-M12BG-5-10U       | 9457911000 | B.7  | SAIL-M12BW-4-2LXLXU   | 9456380000 | B.8  |
| SAIBM-4/8S-M12 4P A-ZF   | 1784740002 | D.5  | SAIE-M5B-3-0.2U           | 1873060000 | D.31 | SAIL-M12BG-5-10V       | 1925591000 | B.7  | SAIL-M12BW-4-2LXLV    | 1925470000 | B.8  |
| SAIBM-4/8S-M12 4P D-ZF   | 1892130001 | D.15 | SAIE-M5B-4-0.2U           | 1873040000 | D.31 | SAIL-M12BG-5-3.0Q      | 1926780300 | B.7  | SAIL-M12BW-4-3.0Q     | 1926830300 | B.7  |
| SAIBM-4/8S-M12 4P D-ZF   | 1892130001 | D.7  | SAIE-M5S-3-0.2U           | 1873050000 | D.31 | SAIL-M12BG-5-3.0Q      | 9457910300 | B.7  | SAIL-M12BW-4-3.0U     | 9457740300 | B.7  |
| SAIBM-4/8S-M12 4P D-COD  | 1892130000 | C.50 | SAIE-M5S-4-0.2U           | 1873030000 | D.31 | SAIL-M12BG-5-3.0V      | 1925590300 | B.7  | SAIL-M12BW-4-3.0V     | 1925640300 | B.7  |
| SAIBM-4/8S-M12 4P D-COD  | 1892130000 | C.71 | SAIE-M8B-3-0.5U-PP-M8     | 1856130000 | D.31 | SAIL-M12BG-5-5.0Q      | 1926780500 | B.7  | SAIL-M12BW-4-3L1.5Q   | 1963950150 | B.15 |
| SAIBM-4/8S-M12 4P D-COD  | 1892130000 | D.13 | SAIE-M8B-4-0.5U-PP-M8     | 1856140000 | D.31 | SAIL-M12BG-5-5.0U      | 9457910500 | B.7  | SAIL-M12BW-4-3L1.5U   | 1963940150 | B.15 |
| SAIBM-4/8S-M12 4P D-COD  | 1892130000 | D.5  | SAIE-M8R-3-0.5U-PP-M8     | 1861280000 | D.31 | SAIL-M12BG-5-5.0V      | 1925590500 | B.7  | SAIL-M12BW-4-3L1.5V   | 1963960150 | B.15 |
| SAIB-M-5/8S M12 5P A-COD | 1784750000 | C.31 | SAIE-M8R-4-0.5U-PP-M8     | 1861290000 | D.31 | SAIL-M12BG-5B-1.5Q     | 1061880150 | B.41 | SAIL-M12BW-4-5.0Q     | 1926830500 | B.7  |
| SAIB-M-5/8S M12 5P A-COD | 1784750000 | C.63 | SAIE-M8S-3-0.5U-PP-M8     | 1078730000 | D.31 | SAIL-M12BG-5S1.5Q      | 9456140150 | B.16 | SAIL-M12BW-4-5.0U     | 9457740500 | B.7  |
| SAIB-M-5/8S M12 5P A-COD | 1784750000 | D.12 | SAIE-M8S-4-0.5U-PP-M8     | 1078720000 | D.31 | SAIL-M12BG-5-X.XQ      | 1926780000 | B.7  | SAIL-M12BW-4-5.0V     | 1925640500 | B.7  |
| SAIB-M-5/8S M12 5P A-COD | 1784750000 | D.5  | SAIEND CAN M8 4P          | 1955340000 | C.61 | SAIL-M12BG-5-X.XU      | 9457910000 | B.7  | SAIL-M12BW-4B-1.5Q    | 1061900150 | B.41 |
| SAIBM-8/11               | 1118920000 | D.11 | SAIEND CAN M8 4P          | 1955340000 | E.31 | SAIL-M12BG-5-X.XV      | 1925590000 | B.7  | SAIL-M12BW-4S1.5Q     | 1808970150 | B.16 |
| SAIB-M8-3P               | 1803870000 | D.17 | SAIEND CAN M8 4P          | 1955340000 | E.33 | SAIL-M12BG-6-(S)-1.5U  | 1890520150 | B.14 | SAIL-M12BW-4-X.XQ     | 1926830000 | B.7  |
| SAIB-M8-3P               | 1803870000 | D.6  | SAIEND CAN M8 4P          | 1955340000 | E.35 | SAIL-M12BG-6-(S)-10U   | 1890521000 | B.14 | SAIL-M12BW-4-X.XV     | 1925640000 | B.7  |
| SAIB-M8-4P               | 1803880000 | D.17 | SAIEND CAN-M12 5P A-COD   | 1784760000 | E.14 | SAIL-M12BG-6-(S)-3.0U  | 1890520300 | B.14 | SAIL-M12BW-4-X.XV     | 1926840100 | B.11 |
| SAIB-M8-4P               | 1803880000 | D.6  | SAIEND CAN-M12 5P A-COD   | 1784760000 | E.18 | SAIL-M12BG-6-(S)-5.0U  | 1890520500 | B.14 | SAIL-M12BW-5-1.5Q     | 1926840150 | B.7  |
| SAIBM-M8-3P-(IF)         | 1010080000 | D.18 | SAIEND CAN-M12 5P A-COD   | 1784760000 | E.33 | SAIL-M12BG-8-1.5U      | 1865870150 | B.14 | SAIL-M12BW-5-1.5QGE   | 1092970150 | B.11 |
| SAIBM-M8-3P-(IF)         | 1010080000 | D.6  | SAIEND PB M12 5P B-COD    | 1784770000 | E.10 | SAIL-M12BG-8-10U       | 1865871000 | B.14 | SAIL-M12BW-5-1.5T     | 1021690150 | B.11 |
| SAIBM-M8-3P(TL)          | 1921010000 | D.8  | SAIEND PB M12 5P B-COD    | 1784770000 | E.31 | SAIL-M12BG-8-3.0U      | 1865870300 | B.14 | SAIL-M12BW-5-1.5U     | 9457690150 | B.11 |
| SAIBM-M8-3P(TL)          | 1921010000 | D.6  | SAIEND PB M12 5P B-COD    | 1784770000 | E.45 | SAIL-M12BG-8-5.0U      | 1865870500 | B.14 | SAIL-M12BW-5-1.5U     | 9457690150 | B.7  |
| SAIBM-M8-4P-(IF)         | 1010090000 | D.18 | SAIH-CD-2x0.34/2x0.22-PUR | 1058630000 | C.62 | SAIL-M12BG-CD-1.5A     | 1964690150 | C.58 | SAIL-M12BW-5-1.5V     | 1925650150 | B.11 |
| SAIBM-M8-4P-(IF)         | 1010090000 | D.6  | SAIH-PB-2X0.24-PUR        | 1232620000 | C.8  | SAIL-M12BG-CD-1.5B     | 1060120150 | C.58 | SAIL-M12BW-5-1.5V     | 1925650150 | B.7  |
| SAIBM-M8-4P(TL)          | 1921020000 | D.18 | SAIH-PB-2X0.34-PVC        | 1933640000 | C.9  | SAIL-M12BG-PB-1.5D     | 1873320150 | C.6  | SAIL-M12BW-5-10Q      | 1926841000 | B.7  |
| SAIBM-M8-4P(TL)          | 1921020000 | D.6  | SAIH-PB-PA-2X1.0-PVC-BL   | 1232630000 | C.30 | SAIL-M12BG-PB-1.5E     | 1058540150 | C.6  | SAIL-M12BW-5-10U      | 9457691000 | B.7  |
| SAIB-VSA-3P/230/11-H/OB  | 1873150000 | D.32 | SAIH-PB-PA-2X1.0-PVC-SW   | 1232640000 | C.30 | SAIL-M12BG-VA-2/4-1.5U | 1939410150 | B.13 | SAIL-M12BW-5-10V      | 1925651000 | B.7  |
| SAIB-VSA-3P/230/9/LD     | 1873110000 | D.32 | SAIH-SLL-3x0,25mm(PUR)    | 1902140000 | B.51 | SAIL-M12BG-VA-4-1.5U   | 9457950150 | B.13 | SAIL-M12BW-5-10V      | 1925651000 | B.7  |
| SAIB-VSA-3P/230/9-H/OB   | 1873130000 | D.32 | SAIH-SLL-3x0,25mm(PVC)    | 1902190000 | B.51 | SAIL-M12BW-12-5.0U     | 1898241000 | B.14 | SAIL-M12BW-5-3.0Q     | 1926840300 | B.7  |
| SAIB-VSA-3P/24/9/LD      | 1873120000 | D.32 | SAIH-SLL-3x0,25mm(TPE)    | 1022970000 | B.51 | SAIL-M12BW-12-10U      | 1898240500 | B.14 | SAIL-M12BW-5-3.0U     | 1925650300 | B.7  |
| SAIB-VSA-3P/250/11-OB    | 1873090000 | D.32 | SAIH-SLL-3x0,34mm(PUR)    | 1902110000 | B.51 | SAIL-M12BW-3L1.5Q      | 1926820150 | B.11 | SAIL-M12BW-5-3.0V     | 1925650300 | B.7  |
| SAIB-VSA-3P/250/9-OB     | 1873070000 | D.32 | SAIH-SLL-3x0,34mm(PVC)    | 1902160000 | B.51 | SAIL-M12BW-3L1.5Q      | 1926820150 | B.7  | SAIL-M12BW-5-5.0Q     | 1926840500 | B.7  |
| SAIB-VSA-4P/230/11-H/OB  | 1873160000 | D.32 | SAIH-SLL-3x0,34mm(TPE)    | 1022940000 | B.51 | SAIL-M12BW-3L1.5Q      | 1926820150 | B.11 | SAIL-M12BW-5-5.0U     | 9457690500 | B.7  |
| SAIB-VSA-4P/230/9-H/OB   | 1873140000 | D.32 | SAIH-SLL-3x0,75-8x0,34    | 9457420000 | B.52 | SAIL                   |            |      |                       |            |      |

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| SAIL-M12G-3-3.0V         | 1925430300 | B.4  | SAIL-M12GM12G-4-5.0V     | 1925310500 | B.6  | SAIL-M12GM12W-4-2L10V     | 1925421000 | B.8  | SAIL-M12GM8W-4-1.5Q    | 1938080150 | B.29 |
| SAIL-M12G-3-5.0Q         | 1926620500 | B.4  | SAIL-M12GM12G-4S1.5Q     | 1058500150 | B.28 | SAIL-M12GM12W-4-2L3.0Q    | 1926610300 | B.8  | SAIL-M12GM8W-4-1.5Q    | 1938080150 | B.5  |
| SAIL-M12G-3-5.0U         | 9457810500 | B.4  | SAIL-M12GM12G-4-X.XQ     | 1926500000 | B.6  | SAIL-M12GM12W-4-2L3.0V    | 1906410300 | B.8  | SAIL-M12GM8W-4-1.5U    | 9456670150 | B.29 |
| SAIL-M12G-3-5.0V         | 1925430500 | B.4  | SAIL-M12GM12G-4-X.XU     | 1906300000 | B.6  | SAIL-M12GM12W-4-2L3.0V    | 1925420300 | B.8  | SAIL-M12GM8W-4-1.5U    | 9456670150 | B.5  |
| SAIL-M12G-3B-1.5Q        | 1057770150 | B.16 | SAIL-M12GM12G-4-X.XV     | 1925310000 | B.6  | SAIL-M12GM12W-4-2L5.0Q    | 1926610500 | B.8  | SAIL-M12GM8W-4-1.5V    | 1938210150 | B.29 |
| SAIL-M12G-3S1.5Q         | 1906470150 | B.41 | SAIL-M12GM12G-5-0.3U     | 9457340030 | F.7  | SAIL-M12GM12W-4-2L5.0U    | 1906410500 | B.8  | SAIL-M12GM8W-4-1.5V    | 1938210150 | B.5  |
| SAIL-M12G-3-X.XQ         | 1926620000 | B.4  | SAIL-M12GM12G-5-0.6U     | 9457340060 | F.7  | SAIL-M12GM12W-4-2L5.0V    | 1925420500 | B.8  | SAIL-M12GM8W-4-10Q     | 1938081000 | B.5  |
| SAIL-M12G-3-X.XU         | 9457810000 | B.4  | SAIL-M12GM12G-5-1.5Q     | 1926510150 | B.25 | SAIL-M12GM12W-4-2LX.XQ    | 1926610000 | B.8  | SAIL-M12GM8W-4-10Q     | 9456671000 | B.5  |
| SAIL-M12G-3-X.XV         | 1925430000 | B.4  | SAIL-M12GM12G-5-1.5Q     | 1926510150 | B.7  | SAIL-M12GM12W-4-2LX.XU    | 1906410000 | B.8  | SAIL-M12GM8W-4-10V     | 1938211000 | B.5  |
| SAIL-M12G-4-1.5Q         | 1926630150 | B.11 | SAIL-M12GM12G-5-1.5QGE   | 1093030150 | B.25 | SAIL-M12GM12W-4-2LX.XV    | 1925420000 | B.8  | SAIL-M12GM8W-4-3.0Q    | 1938080300 | B.5  |
| SAIL-M12G-4-1.5Q         | 1926630150 | B.4  | SAIL-M12GM12G-5-1.5T     | 1011970150 | B.25 | SAIL-M12GM12W-4-3.0Q      | 1926540300 | B.7  | SAIL-M12GM8W-4-3.0U    | 9456670300 | B.5  |
| SAIL-M12G-4-1.5QGE       | 1077750150 | B.11 | SAIL-M12GM12G-5-1.5U     | 9457340150 | B.25 | SAIL-M12GM12W-4-3.0U      | 9457310300 | B.7  | SAIL-M12GM8W-4-3.0V    | 1938210300 | B.5  |
| SAIL-M12G-4-1.5T         | 1021770150 | B.11 | SAIL-M12GM12G-5-1.5U     | 9457340150 | B.7  | SAIL-M12GM12W-4-3.0V      | 1925350300 | B.7  | SAIL-M12GM8W-4-5.0Q    | 1938080500 | B.5  |
| SAIL-M12G-4-1.5U         | 9456100150 | B.11 | SAIL-M12GM12G-5-1.5U     | 9457340150 | F.7  | SAIL-M12GM12W-4-3L1.5Q    | 1232810150 | B.27 | SAIL-M12GM8W-4-5.0U    | 9456670500 | B.5  |
| SAIL-M12G-4-1.5U         | 9456100150 | B.4  | SAIL-M12GM12G-5-1.5U     | 1925320150 | B.25 | SAIL-M12GM12W-4-3L1.5U    | 1963910150 | B.27 | SAIL-M12GM8W-4-5.0U    | 1938210500 | B.5  |
| SAIL-M12G-4-1.5V         | 1925440150 | B.11 | SAIL-M12GM12G-5-1.5V     | 1925320150 | B.7  | SAIL-M12GM12W-4-3L1.5V    | 1963930150 | B.27 | SAIL-M12GM8W-4L1.5Q    | 1962280150 | B.31 |
| SAIL-M12G-4-1.5V         | 1925440150 | B.4  | SAIL-M12GM12G-5-10Q      | 1926511000 | B.7  | SAIL-M12GM12W-4-3LW1.5QGE | 1093060150 | B.27 | SAIL-M12GM8W-4L1.5QGE  | 1093130150 | B.31 |
| SAIL-M12G-4-10Q          | 1926631000 | B.4  | SAIL-M12GM12G-5-10U      | 9457341000 | B.7  | SAIL-M12GM12W-4-3LW1.5T   | 1020930150 | B.27 | SAIL-M12GM8W-4L1.5U    | 1906430150 | B.31 |
| SAIL-M12G-4-10U          | 9456101000 | B.4  | SAIL-M12GM12G-5-10V      | 1925321000 | B.7  | SAIL-M12GM12W-4-5.0Q      | 1926540500 | B.7  | SAIL-M12GM8W-4L1.5V    | 1962300150 | B.31 |
| SAIL-M12G-4-10V          | 1925441000 | B.4  | SAIL-M12GM12G-5-3.0Q     | 1926510300 | B.7  | SAIL-M12GM12W-4-5.0U      | 9457310500 | B.7  | SAIL-M12GM8W-4-X.XQ    | 1938080000 | B.5  |
| SAIL-M12G-3-X.Q          | 1926630300 | B.4  | SAIL-M12GM12G-5-3.0U     | 9457340300 | B.7  | SAIL-M12GM12W-4-5.0V      | 1925350500 | B.7  | SAIL-M12GM8W-4-X.XU    | 9456670000 | B.5  |
| SAIL-M12G-4-3.0U         | 9456100300 | B.4  | SAIL-M12GM12G-5-3.0V     | 1925320300 | B.7  | SAIL-M12GM12W-4S1.5Q      | 1059480150 | B.28 | SAIL-M12GM8W-4-X.VX    | 1938210000 | B.5  |
| SAIL-M12G-4-3.0V         | 1925440300 | B.4  | SAIL-M12GM12G-5-5.0Q     | 1926510500 | B.7  | SAIL-M12GM12W-4-X.XQ      | 1926540000 | B.7  | SAIL-M12GM8WR-3-1.5QGE | 1093150150 | B.30 |
| SAIL-M12G-4-5.0Q         | 1926630500 | B.4  | SAIL-M12GM12G-5-5.0U     | 9457340500 | B.7  | SAIL-M12GM12W-4-X.XU      | 9457310000 | B.7  | SAIL-M12GM8WR-3-1.5U   | 9457570150 | B.30 |
| SAIL-M12G-4-5.0U         | 9456100500 | B.4  | SAIL-M12GM12G-5-5.0V     | 1925320500 | B.7  | SAIL-M12GM12W-4-X.VX      | 1925350000 | B.7  | SAIL-M12G-PB-1.5Q      | 1873900150 | C.6  |
| SAIL-M12G-4-5.0V         | 1925440500 | B.4  | SAIL-M12GM12G-5B-1.5Q    | 1057850150 | B.42 | SAIL-M12GM12W-5-1.5Q      | 1926550150 | B.25 | SAIL-M12G-PB-1.5E      | 1058530150 | C.6  |
| SAIL-M12G-4B-1.5Q        | 1057780150 | B.41 | SAIL-M12GM12G-5S1.5Q     | 1058510150 | B.28 | SAIL-M12GM12W-5-1.5Q      | 1926550150 | B.7  | SAIL-M12W-3-1.5Q       | 1926700150 | B.11 |
| SAIL-M12G-4S1.5Q         | 1906480150 | B.16 | SAIL-M12GM12G-5-X.XQ     | 1926510000 | B.7  | SAIL-M12GM12W-5-1.5QGE    | 1093080150 | B.25 | SAIL-M12W-3-1.5Q       | 1926700150 | B.4  |
| SAIL-M12G-4-X.XQ         | 1926630000 | B.4  | SAIL-M12GM12G-5-X.XU     | 9457740000 | B.7  | SAIL-M12GM12W-5-1.5T      | 1011990150 | B.25 | SAIL-M12W-3-1.5QGE     | 1093160150 | B.11 |
| SAIL-M12G-4-X.XU         | 9456100000 | B.4  | SAIL-M12GM12G-5-X.XU     | 9457340000 | B.7  | SAIL-M12GM12W-5-1.5U      | 9457270150 | B.25 | SAIL-M12W-3-1.5T       | 1021760150 | B.11 |
| SAIL-M12G-4-X.VX         | 1925440000 | B.7  | SAIL-M12GM12G-5-X.VX     | 1925320000 | B.7  | SAIL-M12GM12W-5-1.5U      | 9457270150 | B.25 | SAIL-M12W-3-1.5U       | 9456690150 | B.11 |
| SAIL-M12G-5-1.5Q         | 1926640150 | B.11 | SAIL-M12GM12G-CD-1.5A    | 1964710150 | C.59 | SAIL-M12GM12W-5-1.5V      | 1925360150 | B.25 | SAIL-M12W-3-1.5U       | 9456690150 | B.4  |
| SAIL-M12G-5-1.5QGE       | 1926640150 | B.4  | SAIL-M12GM12G-CD-1.5B    | 1060130150 | C.59 | SAIL-M12GM12W-5-1.5V      | 1925360150 | B.7  | SAIL-M12W-3-1.5V       | 1925510150 | B.11 |
| SAIL-M12G-5-1.5QGE       | 1092990150 | B.11 | SAIL-M12GM12G-PB-1.5E    | 1873310150 | C.7  | SAIL-M12GM12W-5-10Q       | 1926551000 | B.7  | SAIL-M12W-3-1.5V       | 1925510150 | B.4  |
| SAIL-M12G-5-1.5T         | 1021650150 | B.11 | SAIL-M12GM12G-PB-1.5E    | 1058570150 | C.7  | SAIL-M12GM12W-5-10U       | 9457271000 | B.7  | SAIL-M12W-3-10Q        | 1926701000 | B.4  |
| SAIL-M12G-5-1.5U         | 9457610150 | B.11 | SAIL-M12GM12W-2/4-1.5Q   | 1926560150 | B.26 | SAIL-M12GM12W-5-10V       | 1925361000 | B.7  | SAIL-M12W-3-10U        | 9456691000 | B.4  |
| SAIL-M12G-5-1.5U         | 9457610150 | B.4  | SAIL-M12GM12W-2/4-1.5QGE | 1093040150 | B.26 | SAIL-M12GM12W-5-3.0Q      | 1926550300 | B.7  | SAIL-M12W-3-10V        | 1925511000 | B.4  |
| SAIL-M12G-5-1.5V         | 1925450150 | B.11 | SAIL-M12GM12W-2/4-1.5U   | 9457890150 | B.26 | SAIL-M12GM12W-5-3.0U      | 9457270300 | B.7  | SAIL-M12W-3-3.0Q       | 1926700300 | B.4  |
| SAIL-M12G-5-1.5V         | 1925450150 | B.4  | SAIL-M12GM12W-2/4-1.5V   | 1925370150 | B.26 | SAIL-M12GM12W-5-3.0V      | 1925360300 | B.7  | SAIL-M12W-3-3.0U       | 9456690300 | B.4  |
| SAIL-M12G-5-10Q          | 1926641000 | B.4  | SAIL-M12GM12W-3-1.5Q     | 1926530150 | B.25 | SAIL-M12GM12W-5-5.0Q      | 1926550500 | B.7  | SAIL-M12W-3-3.0V       | 1925510300 | B.4  |
| SAIL-M12G-5-10U          | 9457611000 | B.4  | SAIL-M12GM12W-3-1.5Q     | 1926530150 | B.7  | SAIL-M12GM12W-5-5.0U      | 9457270500 | B.7  | SAIL-M12W-3-5.0Q       | 1926700500 | B.4  |
| SAIL-M12G-5-10U          | 1925451000 | B.4  | SAIL-M12GM12W-3-1.5QGE   | 1093050150 | B.25 | SAIL-M12GM12W-5-5.0V      | 1925360500 | B.7  | SAIL-M12W-3-5.0U       | 9456690500 | B.4  |
| SAIL-M12G-5-3.0Q         | 1926640300 | B.4  | SAIL-M12GM12W-3-1.5T     | 1021720150 | B.25 | SAIL-M12GM12W-5S1.5Q      | 1057920150 | B.42 | SAIL-M12W-3-5.0V       | 1925510500 | B.4  |
| SAIL-M12G-5-3.0U         | 9457610300 | B.4  | SAIL-M12GM12W-3-1.5U     | 9457390150 | B.25 | SAIL-M12GM12W-5S1.5U      | 1059540150 | B.28 | SAIL-M12W-3B-1.5Q      | 1057800150 | B.41 |
| SAIL-M12G-5-3.0V         | 1925450300 | B.4  | SAIL-M12GM12W-3-1.5U     | 9457390150 | B.7  | SAIL-M12GM12W-5-X.XQ      | 1926550000 | B.7  | SAIL-M12W-3S1.5Q       | 1906500150 | B.16 |
| SAIL-M12G-5-5.0Q         | 1926640500 | B.4  | SAIL-M12GM12W-3-1.5V     | 1925340150 | B.25 | SAIL-M12GM12W-5-X.XU      | 9457270000 | B.7  | SAIL-M12W-3-X.XQ       | 1926700000 | B.4  |
| SAIL-M12G-5-5.0U         | 9457610500 | B.4  | SAIL-M12GM12W-3-1.5V     | 1925340150 | B.7  | SAIL-M12GM12W-5-X.XV      | 1925360000 | B.7  | SAIL-M12W-3-X.XU       | 9456690000 | B.4  |
| SAIL-M12G-5-5.0V         | 1925450500 | B.4  | SAIL-M12GM12W-3-10Q      | 1926531000 | B.7  | SAIL-M12GM12W-CD-1.5A     | 1061990150 | C.59 | SAIL-M12W-3-X.VX       | 1925510000 | B.4  |
| SAIL-M12G-5B-1.5Q        | 1057790150 | B.41 | SAIL-M12GM12W-3-10U      | 9457391000 | B.7  | SAIL-M12GM12W-CD-1.5B     | 1062190150 | C.59 | SAIL-M12W-4-1.5Q       | 1926710150 | B.11 |
| SAIL-M12G-5S1.5Q         | 1926690150 | B.16 | SAIL-M12GM12W-3-10V      | 1925341000 | B.7  | SAIL-M12GM12W-PB-1.5D     | 1062310150 | C.7  | SAIL-M12W-4-1.5Q       | 1926710150 | B.4  |
| SAIL-M12G-5-X.XQ         | 1926640000 | B.4  | SAIL-M12GM12W-3-3.0Q     | 1926530300 | B.7  | SAIL-M12GM12W-PB-1.5E     | 1062380150 | C.7  | SAIL-M12W-4-1.5QGE     | 1093170150 | B.11 |
| SAIL-M12G-5-X.XU         | 9457610300 | B.4  | SAIL-M12GM12W-3-3.0U     | 9457390300 | B.7  | SAIL-M12GM8G-3-1.5Q       | 1938040150 | B.29 | SAIL-M12W-4-1.5T       | 1021790150 | B.11 |
| SAIL-M12G-5-X.VX         | 1925450000 | B.4  | SAIL-M12GM12W-3-3.0V     | 1925340300 | B.7  | SAIL-M12GM8G-3-1.5U       | 9457770150 | B.29 | SAIL-M12W-4-1.5U       | 1906260150 | B.11 |
| SAIL-M12G-CD-1.5A        | 1964700150 | C.58 | SAIL-M12GM12W-3-5.0Q     | 1926530500 | B.7  | SAIL-M12GM8G-3-1.5V       | 1938170150 | B.29 | SAIL-M12W-4-1.5U       | 1906260150 | B.4  |
| SAIL-M12G-CD-1.5B        | 1060110150 | C.58 | SAIL-M12GM12W-3-5.0U     | 9457390500 | B.7  | SAIL-M12GM8G-4-1.5Q       | 1938070150 | B.29 | SAIL-M12W-4-1.5V       | 1925520150 | B.11 |
| SAIL-M12GM12G-2/4-1.5Q   | 1926520150 | B.26 | SAIL-M12GM12W-3-5.0V     | 1925340500 | B.7  | SAIL-M12GM8G-4-1.5Q       | 1938070150 | B.25 | SAIL-M12W-4-1.5V       | 1925520150 | B.4  |
| SAIL-M12GM12G-2/4-1.5QGE | 1093000150 | B.26 | SAIL-M12GM12W-3B-1.5Q    | 1057900150 | B.42 | SAIL-M12GM8G-4-1.5U       | 9456660150 | B.29 | SAIL-M12W-4-10Q        | 1926711000 | B.4  |
| SAIL-M12GM12G-2/4-1.5U   | 9456990150 | B.26 | SAIL-M12GM12W-3L1.5Q     | 1926600150 | B.27 | SAIL-M12GM8G-4-1.5U       | 9456660150 | B.5  | SAIL-M12W-4-10U        | 1906260150 | B.4  |
| SAIL-M12GM12G-2/4-1.5V   | 1925330150 | B.26 | SAIL-M12GM12W-3L1.5Q     | 1926600150 | B.8  | SAIL-M12GM8G-4-1.5V       | 1938200150 | B.29 | SAIL-M12W-4-10U        | 1925521000 | B.11 |
| SAIL-M12GM12G-3-1.5Q     | 1926490150 | B.25 | SAIL-M12GM12W-3L1.5T     | 1004320150 | B.27 | SAIL-M12GM8G-4-1.5V       | 1938200150 | B.5  | SAIL-M12W-4-3.0Q       | 1926710300 | B.4  |
| SAIL-M12GM12G-3-1.5Q     | 1926490150 | B.6  | SAIL-M12GM12W-3L1.5U     | 9457790150 | B.27 | SAIL-M12GM8G-4-1.5Q       | 1938071000 | B.29 | SAIL-M12W-4-3.0U       | 1906260300 | B.4  |
| SAIL-M12GM12G-3-1.5QGE   | 1093010150 | B.25 | SAIL-M12GM12W-3L1.5U     | 9457790150 | B.8  | SAIL-M12GM8G-4-10U        | 9456661000 | B.5  | SAIL-M12W-4-3.0V       | 1925520300 | B.4  |
| SAIL-M12GM12G-3-1.5T     | 1021710150 | B.25 | SAIL-M12GM12W-3L1.5V     | 1925410150 | B.27 | SAIL-M12GM8G-4-10V        | 1938201000 | B.5  | SAIL-M12W-4-5.0Q       | 1926710500 | B.4  |
| SAIL-M12GM12G-3-1.5U     | 9457230150 | B.25 | SAIL-M12GM12W-3L1.5V     | 1925410150 | B.8  | SAIL-M12GM8G-4-3.0Q       | 9456660300 | B.5  | SAIL-M12W-4-5.0U       | 1925520500 | B.4  |
| SAIL-M12GM12G-3-1.5U     | 1925300150 | B.6  | SAIL-M12GM12W-3L10U      | 9457791000 | B.8  | SAIL-M12GM8G-4-3.0V       | 1938200300 | B.5  | SAIL-M12W-4B-1.5Q      | 1057810150 | B.41 |
| SAIL-M12GM12G-3-1.5V     | 1925300150 | B.6  | SAIL-M12GM12W-3L10U      | 1925410000 | B.8  | SAIL-M12GM8G-4-5.0Q       | 1938070500 | B.5  | SAIL-M12W-4S1.5Q       | 1059650150 | B.16 |
| SAIL-M12GM12G-3-3.0Q     | 1926490100 | B.6  | SAIL-M12GM12W-3L3.0Q     | 1926600300 | B.8  | SAIL-M12GM8G-4-5.0U       | 9456660500 | B.5  | SAIL-M12W-4-X.XQ       | 1926710000 | B.4  |
| SAIL-M12GM12G-3-3.0U     | 9457231000 | B.6  | SAIL-M12GM12W-3L3.0U     | 9457790300 | B.8  | SAIL-M12GM8G-4-5.0V       | 1938200500 | B.5  | SAIL-M12W-4-X.XU       | 1906260000 | B.4  |
| SAIL-M12GM12G-3-3.0V     | 1925301000 | B.6  | SAIL-M12GM12W-3L3.0U     | 1925410300 | B.8  | SAIL-M12GM8G-4-X.XQ       | 1938070000 | B.5  | SAIL-M12W-4-X.VX       | 1925520000 | B.4  |
| SAIL-M12GM12G-3-3.0Q     | 1926490300 | B.6  | SAIL-M12GM12W-3L5.0Q     | 1926600500 | B.8  | SAIL-M12GM8G-4-X.XU       | 9456660000 | B.5  | SAIL-M12W-5-1.5Q       | 1926720150 | B.11 |
| SAIL-M12GM12G-3-3.0U     | 9457230300 | B.6  | SAIL-M12GM12W-3L5.0U     | 9457790500 | B.8  | SAIL-M12GM8G-4-X.VX       | 1938200000 | B.5  | SAIL-M12W-5-1.5Q       | 1926720150 | B.4  |
| SAIL-M12GM12G-3-3.0V     | 1925300300 | B.6  | SAIL-M12GM12W-3L5.0V     | 1925410500 | B.8  | SAIL-M12GM8GR-3-1.5U      | 1984530150 | B.30 | SAIL-M12W-5-1.5QGE     | 1093180150 | B.11 |
| SAIL-M12GM12G-3-5.0Q     | 1926490500 | B.6  |                          |            |      |                           |            |      |                        |            |      |



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| SAIL-M8GM8W-3-1.5V  | 1927170150 | B.32 | SAIL-M8WM12W-3-10Q  | 1938121000 | B.7  | SAI-M23-BE-16          | 1170090000   | H.15 | SAIS-4-IDC M12 small    | 1781550001 | D.5  |
| SAIL-M8GM8W-3-1.5V  | 1927170150 | B.5  | SAIL-M8WM12W-3-10U  | 1937971000 | B.7  | SAI-M23-BE-17          | 1170110000   | H.15 | SAIS-4-IDC M8 small     | 1784060001 | D.24 |
| SAIL-M8GM8W-3-10Q   | 1926911000 | B.5  | SAIL-M8WM12W-3-10V  | 1938251000 | B.7  | SAI-M23-BE-19          | 1170130000   | H.15 | SAIS-4-IDC M8 small     | 1784060001 | D.6  |
| SAIL-M8GM8W-3-10U   | 1824581000 | B.5  | SAIL-M8WM12W-3-3.0Q | 1938120300 | B.7  | SAI-M23-BE-6           | 1170020000   | H.14 | SAIS-5-7                | 9456940000 | D.5  |
| SAIL-M8GM8W-3-10V   | 1927171000 | B.5  | SAIL-M8WM12W-3-3.0Q | 1937970300 | B.7  | SAI-M23-BE-7           | 1170040000   | H.14 | SAIS-5-7                | 9456940000 | D.8  |
| SAIL-M8GM8W-3-3.0Q  | 1926910300 | B.5  | SAIL-M8WM12W-3-3.0V | 1938250300 | B.7  | SAI-M23-BE-9           | 1170060000   | H.14 | SAIS-5/7-(KV)           | 1921050000 | D.9  |
| SAIL-M8GM8W-3-3.0U  | 1824580300 | B.5  | SAIL-M8WM12W-3-5.0Q | 1938120500 | B.7  | SAI-M23-BE-L-4/4       | 1995810000   | H.20 | SAIS-5/7-ZF             | 1906390000 | D.16 |
| SAIL-M8GM8W-3-3.0V  | 1927170300 | B.5  | SAIL-M8WM12W-3-5.0U | 1937970500 | B.7  | SAI-M23-BE-L-6         | 1170370000   | H.20 | SAIS-5/7-ZF             | 1906390000 | D.5  |
| SAIL-M8GM8W-3-5.0Q  | 1926910500 | B.5  | SAIL-M8WM12W-3-5.0V | 1938250500 | B.7  | SAI-M23-GS-7/12        | 1995840000   | H.12 | SAIS-5/9                | 1807350000 | D.5  |
| SAIL-M8GM8W-3-5.0U  | 1824580500 | B.5  | SAIL-M8WM12W-3-X.XQ | 1938120000 | B.7  | SAI-M23-GS-L-7/12      | 1995800000   | H.18 | SAIS-5/9                | 1807350000 | D.8  |
| SAIL-M8GM8W-3-5.0V  | 1927170500 | B.5  | SAIL-M8WM12W-3-X.XU | 1937970000 | B.7  | SAI-M23-GS-S-7/12      | 1169920000   | H.12 | SAIS-8/9                | 1836970000 | D.5  |
| SAIL-M8GM8W-3L1.5Q  | 1926930150 | B.34 | SAIL-M8WM12W-3-X.XV | 1938250000 | B.7  | SAI-M23-GSW-L-7/12     | 1170280000   | H.18 | SAIS-8/9                | 1836970000 | D.8  |
| SAIL-M8GM8W-3L1.5U  | 1926930150 | B.5  | SAIL-M8WM12W-4-1.5Q | 1938150150 | B.7  | SAI-M23-KBC-0-08/0.56  | 1995860000   | H.16 | SAI-SA-3-IDC            | 9457720000 | D.20 |
| SAIL-M8GM8W-3L1.5U  | 1877250150 | B.34 | SAIL-M8WM12W-4-1.5U | 1938000150 | B.7  | SAI-M23-KBC-0-08/0.56  | 1995860000   | I.12 | SAI-SA-3-IDC            | 9457720000 | G.24 |
| SAIL-M8GM8W-3L1.5U  | 1877250150 | B.5  | SAIL-M8WM12W-4-1.5V | 1938280150 | B.7  | SAI-M23-KBC-0-08/0.56  | 1995860000   | I.13 | SAI-SA-3-IDC (1Set)     | 1896740000 | D.20 |
| SAIL-M8GM8W-3L1.5V  | 1927190150 | B.34 | SAIL-M8WM12W-4-10Q  | 1938151000 | B.7  | SAI-M23-KBC-0.25/1.00  | 1995830000   | H.21 | SAI-SA-4-IDC            | 1766810000 | D.20 |
| SAIL-M8GM8W-3L1.5V  | 1927190150 | B.5  | SAIL-M8WM12W-4-10U  | 1938001000 | B.7  | SAI-M23-KBC-0.25/1.00  | 1995830000   | I.12 | SAI-SA-4-IDC            | 1766810000 | G.24 |
| SAIL-M8GM8W-3L1.5V  | 1927190300 | B.5  | SAIL-M8WM12W-4-10V  | 1938281000 | B.7  | SAI-M23-KBC-0.34/1.00  | 1170180000   | H.16 | SAI-SCREWTY BOX         | 1939180000 | 1.6  |
| SAIL-M8GM8W-3L1.5Q  | 1926931000 | B.5  | SAIL-M8WM12W-4-3.0Q | 1938150300 | B.7  | SAI-M23-KBC-0.34/1.00  | 1170180000   | I.12 | SAI-SCREWTY TOOL BOX    | 1939170000 | 1.6  |
| SAIL-M8GM8W-3L1.5U  | 1877251000 | B.5  | SAIL-M8WM12W-4-3.0U | 1938000300 | B.7  | SAI-M23-KBC-0.34/1.00  | 1170180000   | I.13 | SAI-SK M12 MT           | 1802750000 | D.27 |
| SAIL-M8GM8W-3L1.5V  | 1927191000 | B.5  | SAIL-M8WM12W-4-3.0V | 1938280300 | B.7  | SAI-M23-KBC-0.5/2.50   | 1995820000   | H.21 | SAI-SK M5               | 1855310000 | D.27 |
| SAIL-M8GM8W-3L3.0Q  | 1926930300 | B.5  | SAIL-M8WM12W-4-5.0Q | 1938150500 | B.7  | SAI-M23-KBC-0.75/2.50  | 1995820000   | I.12 | SAI-SK M8               | 1802760000 | D.27 |
| SAIL-M8GM8W-3L3.0U  | 1877250300 | B.5  | SAIL-M8WM12W-4-5.0U | 1938000500 | B.7  | SAI-M23-KBC-1.00-1.5   | 1170210000   | H.16 | SAI-SK M8               | 1802760000 | E.10 |
| SAIL-M8GM8W-3L3.0V  | 1927190300 | B.5  | SAIL-M8WM12W-4-5.0V | 1938280500 | B.7  | SAI-M23-KBC-1.5-14-.56 | 1170230000   | H.16 | SAI-SK M8               | 1802760000 | E.14 |
| SAIL-M8GM8W-3L5.0Q  | 1926930500 | B.5  | SAIL-M8WM12W-4-X.XQ | 1938150000 | B.7  | SAI-M23-KBC-1.5-14-.56 | 1170230000   | I.12 | SAI-SK M8               | 1802760000 | E.18 |
| SAIL-M8GM8W-3L5.0U  | 1877250500 | B.5  | SAIL-M8WM12W-4-X.XU | 1938000000 | B.7  | SAI-M23-KBC-1.5-14-.56 | 1170230000   | I.13 | SAI-SK M8               | 1802760000 | E.22 |
| SAIL-M8GM8W-3L5.0V  | 1927190500 | B.5  | SAIL-M8WM12W-4-X.XV | 1938280000 | B.7  | SAI-M23-KBC-1.5-56-1.0 | 1170240000   | H.16 | SAI-SK M8               | 1802760000 | E.26 |
| SAIL-M8GM8W-3LX.XQ  | 1926930000 | B.5  | SAIL-M8WM8G-3-1.5Q  | 1078750150 | B.32 | SAI-M23-KBC-1.5-56-1.0 | 1170240000   | I.12 | SAI-SK M8               | 1802760000 | E.31 |
| SAIL-M8GM8W-3LX.XU  | 1877250000 | B.5  | SAIL-M8WM8W-3-1.5Q  | 1926950150 | B.5  | SAI-M23-KBC-1.5-56-1.0 | 1170240000   | I.13 | SAI-SK M8               | 1802760000 | E.33 |
| SAIL-M8GM8W-3LX.XV  | 1927190000 | B.5  | SAIL-M8WM8W-3-1.5U  | 1857670150 | B.32 | SAI-M23-KBC-2-0.75-2.0 | 1170260000   | H.17 | SAI-SK M8               | 1802760000 | E.35 |
| SAIL-M8GM8W-3.X.XQ  | 1926910000 | B.5  | SAIL-M8WM8W-3-1.5U  | 1857670150 | B.5  | SAI-M23-KBC-2-0.75-2.0 | 1170260000   | I.12 | SAI-SK Stecker M12      | 1781520000 | D.27 |
| SAIL-M8GM8W-3.X.XU  | 1824580000 | B.5  | SAIL-M8WM8W-3-1.5V  | 1927210150 | B.32 | SAI-M23-KBC-2-0.75-2.0 | 1170260000   | I.13 | SAI-SK Stecker M12      | 1781520000 | E.10 |
| SAIL-M8GM8W-3.X.XV  | 1927170000 | B.5  | SAIL-M8WM8W-3-1.5V  | 1927210150 | B.5  | SAI-M23-KBC-L-2.5-4.0  | 1170420000   | H.21 | SAI-SK Stecker M12      | 1781520000 | E.14 |
| SAIL-M8GM8W-4-1.5Q  | 1926920150 | B.32 | SAIL-M8WM8W-3-10Q   | 1926951000 | B.5  | SAI-M23-KBC-L-2.5-4.0  | 1170420000   | I.12 | SAI-SK Stecker M12      | 1781520000 | E.18 |
| SAIL-M8GM8W-4-1.5Q  | 1857660150 | B.32 | SAIL-M8WM8W-3-10U   | 1857671000 | B.5  | SAI-M23-KS-7/12        | 1169900000   | H.12 | SAI-SK Stecker M12      | 1781520000 | E.22 |
| SAIL-M8GM8W-4-1.5U  | 1857660150 | B.5  | SAIL-M8WM8W-3-10V   | 1927211000 | B.5  | SAI-M23-KSC-0.25-1.0   | 1170390000   | H.21 | SAI-SK Stecker M12      | 1781520000 | E.26 |
| SAIL-M8GM8W-4-1.5U  | 1857660150 | B.32 | SAIL-M8WM8W-3-3.0Q  | 1926950300 | B.5  | SAI-M23-KSC-0.25-1.0   | 1170390000   | I.12 | SAI-SK Stecker M12      | 1781520000 | E.31 |
| SAIL-M8GM8W-4-1.5V  | 1927180150 | B.5  | SAIL-M8WM8W-3-3.0U  | 1857670300 | B.5  | SAI-M23-KSC-0.08/0.56  | 1170140000   | H.16 | SAI-SK Stecker M12      | 1781520000 | E.33 |
| SAIL-M8GM8W-4-1.5V  | 1927180150 | B.5  | SAIL-M8WM8W-3-3.0V  | 1927210300 | B.5  | SAI-M23-KSC-0.14/1.00  | 1170150000   | H.16 | SAI-SK Stecker M12      | 1781520000 | E.35 |
| SAIL-M8GM8W-4-10Q   | 1926921000 | B.5  | SAIL-M8WM8W-3-5.0Q  | 1926950500 | B.5  | SAI-M23-KSC-0.14/1.00  | 1170150000   | I.12 | SAI-SK Stecker M12      | 1781520000 | E.45 |
| SAIL-M8GM8W-4-10U   | 1857661000 | B.5  | SAIL-M8WM8W-3-5.0U  | 1857670500 | B.5  | SAI-M23-KSC-1.00-1.5   | 1170170000   | H.16 | SAI-SK-M12              | 9456050000 | D.27 |
| SAIL-M8GM8W-4-10V   | 1927181000 | B.5  | SAIL-M8WM8W-3-5.0V  | 1927210500 | B.5  | SAI-M23-KSC-1.00-1.5   | 1170170000   | I.12 | SAI-SK-M12              | 9456050000 | E.10 |
| SAIL-M8GM8W-4-3.0Q  | 1926920300 | B.5  | SAIL-M8WM8W-3-X.XQ  | 1926950000 | B.5  | SAI-M23-KSC-1.5-0.14-1 | 1170220000   | H.16 | SAI-SK-M12              | 9456050000 | E.14 |
| SAIL-M8GM8W-4-3.0U  | 1857660300 | B.5  | SAIL-M8WM8W-3-X.XU  | 1857670000 | B.5  | SAI-M23-KSC-1.5-0.14-1 | 1170220000   | I.12 | SAI-SK-M12              | 9456050000 | E.18 |
| SAIL-M8GM8W-4-3.0V  | 1927180300 | B.5  | SAIL-M8WM8W-3-X.XV  | 1927210000 | B.5  | SAI-M23-KSC-1.5-0.14-1 | 1170220000   | I.13 | SAI-SK-M12              | 9456050000 | E.22 |
| SAIL-M8GM8W-4-5.0Q  | 1926920500 | B.5  | SAIL-M8WM8W-4-1.5Q  | 1926960150 | B.32 | SAI-M23-KSC-2-0.75-2.0 | 1170250000   | H.17 | SAI-SK-M12              | 9456050000 | E.26 |
| SAIL-M8GM8W-4-5.0Q  | 1857660500 | B.5  | SAIL-M8WM8W-4-1.5U  | 1926960150 | B.5  | SAI-M23-KSC-2-0.75-2.0 | 1170250000   | I.12 | SAI-SK-M12              | 9456050000 | E.31 |
| SAIL-M8GM8W-4-5.0V  | 1927180500 | B.5  | SAIL-M8WM8W-4-1.5U  | 1857680150 | B.32 | SAI-M23-KSC-2-0.75-2.0 | 1170250000   | I.13 | SAI-SK-M12              | 9456050000 | E.33 |
| SAIL-M8GM8W-4-1.5Q  | 1926920150 | B.34 | SAIL-M8WM8W-4-1.5U  | 1857680150 | B.5  | SAI-M23-KSC-L-0.75-2.5 | 1170400000   | H.21 | SAI-SK-M12              | 9456050000 | E.45 |
| SAIL-M8GM8W-4-1.5U  | 1906450150 | B.34 | SAIL-M8WM8W-4-1.5V  | 1927220150 | B.32 | SAI-M23-KSC-L-0.75-2.5 | 1170400000   | I.12 | SAI-SK-M12 BU           | 9456050000 | D.27 |
| SAIL-M8GM8W-4-1.5V  | 1927200150 | B.34 | SAIL-M8WM8W-4-1.5V  | 1927220150 | B.5  | SAI-M23-KSC-L-2.5-4.0  | 1170410000   | H.21 | SAI-SK-M12 IDC          | 1748450000 | D.27 |
| SAIL-M8GM8W-4-X.XQ  | 1926920000 | B.5  | SAIL-M8WM8W-4-10Q   | 1926961000 | B.5  | SAI-M23-KS-L-7/12      | 1170270000   | H.18 | SAI-SK-M12 IDC          | 1794850000 | G.25 |
| SAIL-M8GM8W-4-X.XU  | 1857660000 | B.5  | SAIL-M8WM8W-4-10U   | 1857681000 | B.5  | SAI-M23-KSW-L-7/12     | 1170290000   | H.18 | SAI-SK-M12-UNI          | 2330260000 | D.27 |
| SAIL-M8GM8W-4-X.XV  | 1927180000 | B.5  | SAIL-M8WM8W-4-10V   | 1927221000 | B.5  | SAI-M23-SE-12          | 1170070000   | H.14 | SAI-SK-M12-UNI          | 2330260000 | E.10 |
| SAIL-M8GM8WR-3-1.5Q | 1948560150 | B.33 | SAIL-M8WM8W-4-3.0Q  | 1926960300 | B.5  | SAI-M23-SE-16          | 1170080000   | H.15 | SAI-SK-M12-UNI          | 2330260000 | E.14 |
| SAIL-M8GM8WR-3-1.5U | 1948480150 | B.33 | SAIL-M8WM8W-4-3.0U  | 1857680300 | B.5  | SAI-M23-SE-17          | 1170100000   | H.15 | SAI-SK-M12-UNI          | 2330260000 | E.18 |
| SAIL-M8GM8WR-3-1.5V | 1948660150 | B.33 | SAIL-M8WM8W-4-3.0V  | 1927220300 | B.5  | SAI-M23-SE-19          | 1170120000   | H.15 | SAI-SK-M12-UNI          | 2330260000 | E.22 |
| SAIL-M8GM8WR-4-1.5Q | 1948590150 | B.33 | SAIL-M8WM8W-4-5.0Q  | 1926960500 | B.5  | SAI-M23-SE-6           | 1170000000   | H.14 | SAI-SK-M12-UNI          | 2330260000 | E.26 |
| SAIL-M8GM8WR-4-1.5U | 1948510150 | B.33 | SAIL-M8WM8W-4-5.0U  | 1857680500 | B.5  | SAI-M23-SE-7           | 1170030000   | H.14 | SAI-SK-M12-UNI          | 2330260000 | E.31 |
| SAIL-M8GM8WR-4-1.5V | 1948690150 | B.33 | SAIL-M8WM8W-4-5.0V  | 1927220500 | B.5  | SAI-M23-SE-9           | 1170050000   | H.14 | SAI-SK-M12-UNI          | 2330260000 | E.33 |
| SAIL-M8W-3-1.5Q     | 1927050150 | B.18 | SAIL-M8WM8W-4-X.XQ  | 1926960000 | B.5  | SAI-M23-SE-L-4/4       | 1170380000   | H.20 | SAI-SK-M12-UNI          | 2330260000 | E.35 |
| SAIL-M8W-3-1.5Q     | 1927050150 | B.18 | SAIL-M8WM8W-4-X.XU  | 1857680000 | B.5  | SAI-M23-SE-L-6         | 1170350000   | H.20 | SAI-SK-M12-UNI          | 2330260000 | E.45 |
| SAIL-M8W-3-1.5U     | 1857550150 | B.18 | SAIL-M8WM8W-4-X.XV  | 1927220000 | B.5  | SAIP-M12BG-3-1.5U      | 1108730150   | B.12 | SAISM 5/8S M12 5P B-COD | 1784790000 | C.11 |
| SAIL-M8W-3-1.5V     | 1927310150 | B.18 | SAIL-M8WM8W-3-1.5Q  | 1948490150 | B.33 | SAIP-M12BG-4-1.5U      | 1108740150   | B.12 | SAISM 5/8S M12 5P B-COD | 1784790000 | D.13 |
| SAIL-M8W-3-1.5V     | 1927310150 | B.4  | SAIL-M8WM8W-3-1.5U  | 1948670150 | B.33 | SAIP-M12BG-5-1.5U      | 1108750150   | B.12 | SAISM 5/8S M12 5P B-COD | 1784790000 | D.5  |
| SAIL-M8W-3-10Q      | 1927051000 | B.4  | SAIL-M8WM8W-3-1.5V  | 1948670150 | B.33 | SAIP-M12BW-3-1.5U      | 1108770150   | B.12 | SAISM-M23-12P-AN-1,0M   | 1906290100 | H.22 |
| SAIL-M8W-3-10U      | 1857511000 | B.4  | SAIL-M8WM8W-3-1.5V  | 1948670150 | B.33 | SAIP-M12BW-4-1.5U      | 1108780150   | B.12 | SAISM-M23-12P-ST-1,0M   | 1906280100 | H.22 |
| SAIL-M8W-3-10V      | 1927311000 | B.4  | SAIL-M8WM8W-4-1.5U  | 1948520150 | B.33 | SAIP-M12BW-5-1.5U      | 1108790150   | B.12 | SAISM-M23-19P-AN-1,0M   | 1818090100 | H.22 |
| SAIL-M8W-3-3.0Q     | 1927050300 | B.4  | SAIL-M8WM8W-4-1.5U  | 1948700150 | B.33 | SAIP-M12G-3-1.5U       | 1108800150   | B.12 | SAISM-M23-19P-ST-1,0M   | 1818160100 | H.22 |
| SAIL-M8W-3-3.0U     | 1857550300 | B.4  | SAIL-VSA-1.5U       | 9457710150 | B.45 | SAIP-M12G-4-1.5U       | 1108810150   | B.12 | SAISM-4/8S-M12 4P D-ZF  | 1892120001 | D.15 |
| SAIL-M8W-3-3.0V     | 1927310300 | B.4  | SAIL-VSA-1.5U(0.5)  | 1845120150 | B.49 | SAIP-M12G-5-1.5U       | 1108820150   | B.12 | SAISM-4/8S-M12 4P D-ZF  | 1892120001 | D.5  |
| SAIL-M8W-3-5.0Q     | 1927050500 | B.4  | SAIL-VSA-M12G-1.5U  | 9457040000 | B.45 | SAIP-M12G-6-1.5U       | 1108830150   | B.12 | SAISM-4/8S-M12 4P D-COD | 1892120000 | C.70 |
| SAIL-M8W-3-5.0U     | 1857550500 | B.4  | SAIL-VSA-M12W-1.5U  | 1857690150 | B.45 | SAIP-M12W-3-1.5U       | 1108680150   | B.12 | SAISM-4/8S-M12-4P D-COD | 1892120000 | C.71 |
| SAIL-M8W-3-5.0V     | 1927310500 | B.4  | SAIL-VSB-1.5U       | 9457930150 | B.46 | SAIP-M12W-4-1.5U       | 1108690150   | B.12 | SAISM-4/8S-M12-4P D-COD | 1892120000 | D.13 |
| SAIL-M8W-3S1.5U     | 1906580150 | B.21 | SAIL-VSB-1.5U(0.5)  | 1845140150 | B.50 | SAIP-M12W-5-1.5U       | 1108690150</ |      |                         |            |      |

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| SAISW-M-5/8 M12         | 1803940000 | D.5  |
| SAISW-M-5/8 M12 B-COD   | 1944570000 | C.11 |
| SAISW-M-5/8 M12 B-COD   | 1944570000 | D.14 |
| SAISW-M-5/8 M12 B-COD   | 1944570000 | D.5  |
| SAISW-M8-3P(TL)         | 1920990000 | D.19 |
| SAISW-M8-3P(TL)         | 1920990000 | D.6  |
| SAISW-M8-4P(TL)         | 1921000000 | D.19 |
| SAISW-M8-4P(TL)         | 1921000000 | D.6  |
| SAIS-ZW-5               | 9457540000 | D.26 |
| SAIS-ZWW                | 1837560000 | D.26 |
| SAI-WDF 5P B M12 60mm   | 1820690000 | D.26 |
| SAI-WDF 5P M12 60mm     | 1819450000 | C.28 |
| SAI-WDF 5P M12 60mm     | 1819450000 | C.29 |
| SAI-WDF 5P M12 60mm     | 1819450000 | D.26 |
| SAI-Y-4-4/2-4 M12/8     | 1783420000 | D.25 |
| SAI-Y-4S-M12/M12        | 1060730000 | D.25 |
| SAI-Y-5S B2-4 2M12      | 1783410000 | D.25 |
| SAI-Y-5S- M12/M12       | 1826880000 | D.25 |
| SAI-Y-5S M12/M12 2Bo    | 1881710000 | D.26 |
| SAI-Y-5S PARA 2M12      | 1783430000 | D.25 |
| SAI-Y-5S PARA 2M12      | 1783430000 | F.7  |
| Screwty- M12            | 1900000000 | I.5  |
| Screwty- M12 F          | 1900020000 | I.5  |
| Screwty M12 KO o. SD    | 1900100000 | I.5  |
| Screwty M12f KO o. SD   | 1900120000 | I.5  |
| Screwty M23             | 1981560000 | I.5  |
| Screwty- M8             | 1900010000 | I.5  |
| Screwty- M8 F           | 1900030000 | I.5  |
| Screwty M8 KO o. SD     | 1900110000 | I.5  |
| Screwty M8F KO o. SD    | 1900130000 | I.5  |
| Screwty Set             | 1910000000 | I.5  |
| Screwty Set -DM         | 1920000000 | I.5  |
| Screwty-M12 F-DM        | 1900021000 | I.5  |
| Screwty-M12-DM          | 1900001000 | F.7  |
| Screwty-M12-DM          | 1900001000 | G.25 |
| Screwty-M12-DM          | 1900001000 | I.5  |
| Screwty-M8 F-DM         | 1900031000 | I.5  |
| Screwty-M8-DM           | 1900011000 | I.5  |
| SFC 0/12 NEUTRAL BL     | 1813170000 | I.14 |
| SFC 0/12 NEUTRAL GE     | 1813160000 | I.14 |
| SFC 0/12 NEUTRAL RT     | 1813150000 | I.14 |
| SFC 0/12 NEUTRAL WS     | 1813130000 | I.14 |
| SFC 0/21 NEUTRAL BL     | 1813220000 | I.14 |
| SFC 0/21 NEUTRAL GE     | 1813210000 | I.14 |
| SFC 0/21 NEUTRAL RT     | 1813200000 | I.14 |
| SFC 0/21 NEUTRAL WS     | 1813190000 | I.14 |
| SFC 0/30 NEUTRAL BL     | 1813270000 | I.14 |
| SFC 0/30 NEUTRAL GE     | 1813260000 | I.14 |
| SFC 0/30 NEUTRAL RT     | 1813250000 | I.14 |
| SFC 0/30 NEUTRAL WS     | 1813240000 | I.14 |
| SFC 1/12 NEUTRAL BL     | 1747320002 | I.14 |
| SFC 1/12 NEUTRAL GE     | 1747320004 | I.14 |
| SFC 1/12 NEUTRAL RT     | 1747320003 | I.14 |
| SFC 1/12 NEUTRAL WS     | 1747320001 | I.14 |
| SFC 1/21 NEUTRAL BL     | 1779080002 | I.14 |
| SFC 1/21 NEUTRAL GE     | 1779080004 | I.14 |
| SFC 1/21 NEUTRAL RT     | 1779080003 | I.14 |
| SFC 1/21 NEUTRAL WS     | 1779080001 | I.14 |
| SFC 1/30 NEUTRAL BL     | 1805720000 | I.14 |
| SFC 1/30 NEUTRAL GE     | 1805730000 | I.14 |
| SFC 1/30 NEUTRAL RT     | 1805740000 | I.14 |
| SFC 1/30 NEUTRAL WS     | 1805760000 | I.14 |
| SFC 2.5/12 MC NE BL     | 1062030000 | I.14 |
| SFC 2.5/12 MC NE GE     | 1062010000 | I.14 |
| SFC 2.5/12 MC NE RT     | 1062020000 | I.14 |
| SFC 2.5/12 MC NE WS     | 1062000000 | I.14 |
| SFC 2.5/12 MC SDR       | 1062040000 | I.14 |
| SFC 2.5/21 MC NE BL     | 1062090000 | I.14 |
| SFC 2.5/21 MC NE GE     | 1062070000 | I.14 |
| SFC 2.5/21 MC NE RT     | 1062080000 | I.14 |
| SFC 2.5/21 MC NE WS     | 1062050000 | I.14 |
| SFC 2.5/21 MC SDR       | 1062110000 | I.14 |
| SFC 2/12 NEUTRAL BL     | 1758320002 | I.14 |
| SFC 2/12 NEUTRAL GE     | 1758320004 | I.14 |
| SFC 2/12 NEUTRAL RT     | 1758320003 | I.14 |
| SFC 2/12 NEUTRAL WS     | 1758320001 | I.14 |
| SFC 2/21 NEUTRAL BL     | 1805770000 | I.14 |
| SFC 2/21 NEUTRAL GE     | 1805780000 | I.14 |
| SFC 2/21 NEUTRAL RT     | 1805790000 | I.14 |
| SFC 2/21 NEUTRAL WS     | 1805810000 | I.14 |
| SFC 2/30 NEUTRAL BL     | 1805820000 | I.14 |
| SFC 2/30 NEUTRAL GE     | 1805830000 | I.14 |
| SFC 2/30 NEUTRAL RT     | 1805850000 | I.14 |

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| SFC 2/30 NEUTRAL WS    | 1805870000 | I.14 |
| STRIPAX                | 9005000000 | I.9  |
| STRIPPER 6-16 RED-LINE | 9203110000 | I.8  |

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| TM 203/18 V0       | 1798480000 | I.15 |
| TM 4/12 HF/HB      | 1719840000 | C.66 |
| TM 4/12 HF/HB      | 1719840000 | C.67 |
| TM 4/12 HF/HB      | 1719840000 | C.68 |
| TM 4/12 HF/HB      | 1719840000 | C.69 |
| TM 4/18 HF/HB      | 1719850000 | C.66 |
| TM 4/18 HF/HB      | 1719850000 | C.67 |
| TM 4/18 HF/HB      | 1719850000 | C.68 |
| TM 4/18 HF/HB      | 1719850000 | C.69 |
| TM 4/18 HF/HB      | 1719850000 | I.15 |
| TM-I 12 NEUTRAL GE | 1718411687 | C.66 |
| TM-I 12 NEUTRAL GE | 1718411687 | C.67 |
| TM-I 12 NEUTRAL GE | 1718411687 | C.68 |
| TM-I 12 NEUTRAL GE | 1718411687 | C.69 |
| TM-I 18 NEUTRAL GE | 1718431687 | C.66 |
| TM-I 18 NEUTRAL GE | 1718431687 | C.67 |
| TM-I 18 NEUTRAL GE | 1718431687 | C.68 |
| TM-I 18 NEUTRAL GE | 1718431687 | C.69 |
| TM-I 18 NEUTRAL GE | 1718431687 | I.15 |
| TM-I 18 NEUTRAL WS | 1718431044 | I.15 |

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| VG M16 - MS 1/EMV | 1909500000 | C.73 |
| VG M16-1/K68      | 1909860000 | C.73 |
| VG M16-1/MS68     | 1909910000 | C.73 |
| VG M16-EXE MS     | 1737210000 | C.73 |
| VP M16-EXE SW     | 1737070000 | C.73 |
| VP M16-MS65       | 1777730000 | C.73 |

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| WK-1/4*(Screwty)    | 1862200000 | I.5  |
| WS 10/5 MC BEDRUCKT | 1635010000 | I.16 |
| WS 10/5 MC NEUTRAL  | 1635000000 | I.16 |
| WS 15/5 MC BEDRUCKT | 1609890000 | I.16 |
| WS 15/5 MC NEUTRAL  | 1609880000 | I.16 |

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| 1001180001 | PRINTJET PRO 230V       | L.15 |
| 1004310150 | SAIL-M12GM12W-4-2L1.5T  | B.27 |
| 1004320150 | SAIL-M12GM12W-3L1.5T    | B.27 |
| 1004330150 | SAIL-M12BW-3L1.5T       | B.15 |
| 1005270150 | SAIL-ZW-M12BW-3-1.5U    | B.37 |
| 1005460150 | SAIL-ZW-M12BG-3-1.5U    | B.37 |
| 1006920000 | SAI-AU M12 BT4A12AO2DIO | E.4  |
| 1006920000 | SAI-AU M12 BT4A12AO2DIO | E.45 |
| 1006920000 | SAI-AU M12 BT4A12AO2DIO | E.47 |
| 1006930000 | SAI-AU M12 BT 16DI/8DO  | E.4  |
| 1006930000 | SAI-AU M12 BT 16DI/8DO  | E.45 |
| 1006930000 | SAI-AU M12 BT 16DI/8DO  | E.46 |
| 1006940000 | SAI-AU M12 BT 16DI      | E.4  |
| 1006940000 | SAI-AU M12 BT 16DI      | E.45 |
| 1006940000 | SAI-AU M12 BT 16DI      | E.46 |
| 1006980000 | SAI-AU M12 GW PB/BT 12I | E.4  |
| 1006980000 | SAI-AU M12 GW PB/BT 12I | E.44 |
| 1006980000 | SAI-AU M12 GW PB/BT 12I | E.45 |
| 1007000150 | SAIL-M12BW-4-2L1.5T     | B.15 |

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| 1010060000 | SAISM-M8-3P-(IF)       | D.18 |
| 1010060000 | SAISM-M8-3P-(IF)       | D.6  |
| 1010070000 | SAISM-M8-4P-(IF)       | D.18 |
| 1010070000 | SAISM-M8-4P-(IF)       | D.6  |
| 1010080000 | SAIBM-M8-3P-(IF)       | D.18 |
| 1010080000 | SAIBM-M8-3P-(IF)       | D.6  |
| 1010090000 | SAIBM-M8-4P-(IF)       | D.18 |
| 1010090000 | SAIBM-M8-4P-(IF)       | D.6  |
| 1010840015 | IE-C5DB4RE0015MCSXXX-X | C.68 |
| 1010840030 | IE-C5DB4RE0030MCSXXX-X | C.68 |
| 1010840050 | IE-C5DB4RE0050MCSXXX-X | C.68 |
| 1010840100 | IE-C5DB4RE0100MCSXXX-X | C.68 |
| 1010850015 | IE-C5DB4RE0015MCSMCS-E | C.68 |
| 1010850030 | IE-C5DB4RE0030MCSMCS-E | C.68 |
| 1010850050 | IE-C5DB4RE0050MCSMCS-E | C.68 |
| 1010850100 | IE-C5DB4RE0100MCSMCS-E | C.68 |
| 1011970150 | SAIL-M12GM12G-5-1.5T   | B.25 |
| 1011990150 | SAIL-M12GM12W-5-1.5T   | B.25 |
| 1019490000 | SAI-AU M12 EIP GW 16DI | E.32 |
| 1019490000 | SAI-AU M12 EIP GW 16DI | E.33 |
| 1019490000 | SAI-AU M12 EIP GW 16DI | E.4  |

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| 1020930150 | SAIL-M12GM12W-4-3LW1.5T  | B.27 |
| 1021280000 | SAISW-3/7                | D.5  |
| 1021280000 | SAISW-3/7                | D.7  |
| 1021290000 | SAISW-3/9                | D.7  |
| 1021310000 | SAIBW-3/7                | D.5  |
| 1021310000 | SAIBW-3/7                | D.7  |
| 1021320000 | SAIBW-3/9                | D.7  |
| 1021470000 | SAIS-3/7                 | D.5  |
| 1021480000 | SAIS-3/9                 | D.7  |
| 1021480000 | SAIS-3/9                 | D.7  |
| 1021490000 | SAIB-3/7                 | D.7  |
| 1021510000 | SAIB-3/9                 | D.5  |
| 1021510000 | SAIB-3/9                 | D.7  |
| 1021650150 | SAIL-M12G-5-1.5T         | B.11 |
| 1021660150 | SAIL-M12W-5-1.5T         | B.11 |
| 1021760150 | SAIL-M12BG-5-1.5T        | B.11 |
| 1021690150 | SAIL-M12BW-5-1.5T        | B.11 |
| 1021710150 | SAIL-M12GM12G-3-1.5T     | B.25 |
| 1021720150 | SAIL-M12GM12W-3-1.5T     | B.25 |
| 1021730150 | SAIL-M12GM12G-4-1.5T     | B.25 |
| 1021740150 | SAIL-M12GM12W-4-1.5T     | B.25 |
| 1021750150 | SAIL-M12G-3-1.5T         | B.11 |
| 1021760150 | SAIL-M12W-3-1.5T         | B.11 |
| 1021770150 | SAIL-M12G-4-1.5T         | B.11 |
| 1021790150 | SAIL-M12W-4-1.5T         | B.11 |
| 1022940000 | SAIH-SLL-3x0,34mm²(TPE)  | B.51 |
| 1022950000 | SAIH-SLL-4x0,34mm²(TPE)  | B.51 |
| 1022960000 | SAIH-SLL-5x0,34mm²(TPE)  | B.51 |
| 1022970000 | SAIH-SLL-3x0,25mm²(TPE)  | B.51 |
| 1022980000 | SAIH-SLL-4x0,25mm²(TPE)  | B.51 |
| 1024050000 | PRINTJET PRO 115V        | L.15 |
| 1024140000 | PJ PRO TNAW              | L.15 |
| 1024310000 | SAI-AU M8 PB GW 16DI     | E.30 |
| 1024310000 | SAI-AU M8 PB GW 16DI     | E.31 |
| 1024310000 | SAI-AU M8 PB GW 16DI     | E.4  |
| 1025940015 | IE-C5DD4UG0015MCSXXX-X   | C.66 |
| 1025940030 | IE-C5DD4UG0030MCSXXX-X   | C.66 |
| 1025940050 | IE-C5DD4UG0050MCSXXX-X   | C.66 |
| 1025940100 | IE-C5DD4UG0100MCSXXX-X   | C.66 |
| 1025950015 | IE-C5DD4UG0015MCSMCS-E   | C.66 |
| 1025950030 | IE-C5DD4UG0030MCSMCS-E   | C.66 |
| 1025950050 | IE-C5DD4UG0050MCSMCS-E   | C.66 |
| 1025950100 | IE-C5DD4UG0100MCSMCS-E   | C.66 |
| 1026090000 | SAI-ASI T FF small       | C.65 |
| 1027040000 | PJ PRO TINTK INK K       | L.15 |
| 1027050000 | PJ PRO TINTK INK C       | L.15 |
| 1027060000 | PJ PRO TINTK INK M       | L.15 |
| 1027070000 | PJ PRO TINTK INK Y       | L.15 |
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| 1044470015 | IE-C5DD4UG0015MCSA20-E | C.66 |
| 1044470030 | IE-C5DD4UG0030MCSA20-E | C.66 |
| 1044470050 | IE-C5DD4UG0050MCSA20-E | C.66 |
| 1044470100 | IE-C5DD4UG0100MCSA20-E | C.66 |

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| 1051760000 | SAI-6-S 3P M8 L OL        | G.50 |
| 1057720000 | SAI-6-S 3P M8 L SL        | G.51 |
| 1057720000 | SAI-6-S 3P M8 L SL        | G.6  |
| 1057740150 | SAIL-M12BG-3B-1.5Q        | B.41 |
| 1057750150 | SAIL-M12BG-4B-1.5Q        | B.41 |
| 1057760150 | SAIL-M12WB-5B-1.5Q        | B.41 |
| 1057770150 | SAIL-M12G-3B-1.5Q         | B.41 |
| 1057780150 | SAIL-M12G-4B-1.5Q         | B.41 |
| 1057790150 | SAIL-M12G-5B-1.5Q         | B.41 |
| 1057800150 | SAIL-M12W-3B-1.5Q         | B.41 |
| 1057810150 | SAIL-M12W-4B-1.5Q         | B.41 |
| 1057820150 | SAIL-M12W-5B-1.5Q         | B.41 |
| 1057830150 | SAIL-M12GM12G-3B-1.5Q     | B.42 |
| 1057850150 | SAIL-M12GM12G-5B-1.5Q     | B.42 |
| 1057870150 | SAIL-M12WM12G-3B-1.5Q     | B.42 |
| 1057890150 | SAIL-M12WM12G-5B-1.5Q     | B.42 |
| 1057900150 | SAIL-M12GM12W-3B-1.5Q     | B.42 |
| 1057920150 | SAIL-M12GM12W-5B-1.5Q     | B.42 |
| 1058490150 | SAIL-M12GM12G-3S1.5Q      | B.28 |
| 1058500150 | SAIL-M12GM12G-4S1.5Q      | B.28 |
| 1058510150 | SAIL-M12GM12G-5S1.5Q      | B.28 |
| 1058530150 | SAIL-M12G-PB-1.5E         | C.6  |
| 1058540150 | SAIL-M12G-PB-1.5E         | C.6  |
| 1058570150 | SAIL-M12GM12G-PB-1.5E     | C.7  |
| 1058630000 | SAIH-CD-2x0.34/2x0.22-PUR | C.62 |
| 1059330015 | IE-C5DD4UG0030MSSMCS-E    | C.66 |
| 1059330030 | IE-C5DD4UG0050MSSMCS-E    | C.66 |
| 1059330050 | IE-C5DD4UG0100MSSMCS-E    | C.66 |
| 1059340015 | IE-C5DB4RE0015MSSMCS-E    | C.68 |
| 1059340030 | IE-C5DB4RE0030MSSMCS-E    | C.68 |
| 1059340050 | IE-C5DB4RE0050MSSMCS-E    | C.68 |
| 1059340100 | IE-C5DB4RE0100MSSMCS-E    | C.68 |
| 1059430000 | SAI-8-M-4P M12 DIP        | G.13 |
| 1059470150 | SAIL-M12GM12W-3S1.5Q      | B.28 |
| 1059480150 | SAIL-M12GM12W-4S1.5Q      | B.28 |
| 1059540150 | SAIL-M12GM12W-5S1.5Q      | B.28 |
| 1059650150 | SAIL-M12W-4S1.5Q          | B.16 |
| 1059720150 | SAIL-M12WM12W-3S1.5Q      | B.28 |
| 1059730150 | SAIL-M12WM12W-4S1.5Q      | B.28 |
| 1059740150 | SAIL-M12WM12W-5S1.5Q      | B.28 |
| 1059750015 | IE-C5DD4UG0015MCAXXX-X    | C.67 |
| 1059750030 | IE-C5DD4UG0030MCAXXX-X    | C.67 |
| 1059750050 | IE-C5DD4UG0050MCAXXX-X    | C.67 |
| 1059750100 | IE-C5DD4UG0100MCAXXX-X    | C.67 |
| 1059770015 | IE-C5DD4UG0015MCSMCA-E    | C.67 |
| 1059770030 | IE-C5DD4UG0030MCSMCA-E    | C.67 |
| 1059770050 | IE-C5DD4UG0050MCSMCA-E    | C.67 |
| 1059770100 | IE-C5DD4UG0100MCSMCA-E    | C.67 |
| 1059890015 | IE-C5DD4UG0015MCAMCA-E    | C.67 |
| 1059890030 | IE-C5DD4UG0030MCAMCA-E    | C.67 |
| 1059890050 | IE-C5DD4UG0050MCAMCA-E    | C.67 |
| 1059890100 | IE-C5DD4UG0100MCAMCA-E    | C.67 |
| 1059900015 | IE-C5DB4RE0015MCAXXX-X    | C.69 |
| 1059900030 | IE-C5DB4RE0030MCAXXX-X    | C.69 |
| 1059900050 | IE-C5DB4RE0050MCAXXX-X    | C.69 |
| 1059900100 | IE-C5DB4RE0100MCAXXX-X    | C.69 |
| 1059940015 | IE-C5DB4RE0015MCSMCA-E    | C.69 |
| 1059940030 | IE-C5DB4RE0030MCSMCA-E    | C.69 |
| 1059940050 | IE-C5DB4RE0050MCSMCA-E    | C.69 |
| 1059940100 | IE-C5DB4RE0100MCSMCA-E    | C.69 |
| 1059970015 | IE-C5DB4RE0015MCAMCA-E    | C.69 |
| 1059970030 | IE-C5DB4RE0030MCAMCA-E    | C.69 |
| 1059970050 | IE-C5DB4RE0050MCAMCA-E    | C.69 |
| 1059970100 | IE-C5DB4RE0100MCAMCA-E    | C.69 |

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| 1060110150 | SAIL-M12G-CD-1.5B     | C.58 |
| 1060120150 | SAIL-M12BG-CD-1.5B    | C.58 |
| 1060130150 | SAIL-M12GM12G-CD-1.5B | C.59 |
| 1060730000 | SAI-Y-4S-M12/M12      | D.25 |
| 1061880150 | SAIL-M12BG-5B-1.5Q    | B.41 |
| 1061890150 | SAIL-M12WB-3B-1.5Q    | B.41 |
| 1061900150 | SAIL-M12WB-4B-1.5Q    | B.41 |
| 1061910150 | SAIL-M12WM12W-3B-1.5Q | B.42 |
| 1061930150 | SAIL-M12WM12W-5B-1.5Q | B.42 |
| 1061970150 | SAIL-M12W-PB-1.5D     | C.6  |
| 1061980150 | SAIL-M12WB-CD-1.5A    | C.58 |
| 1061990150 | SAIL-M12GM12W-CD-1.5A | C.59 |
| 1062000000 | SFC 2.5/12 MC NE WS   | L.14 |
| 1062010000 | SFC 2.5/12 MC NE GE   | L.14 |
| 1062020000 | SFC 2.5/12 MC NE RT   | L.14 |
| 1062030000 | SFC 2.5/12 MC NE BL   | L.14 |
| 1062040000 | SFC 2.5/12 MC SDR     | L.14 |
| 1062050000 | SFC 2.5/21 MC NE WS   | L.14 |
| 1062070000 | SFC 2.5/21 MC NE GE   | L.14 |
| 1062080000 | SFC 2.5/21 MC NE RT   | L.14 |
| 1062090000 | SFC 2.5/21 MC NE BL   | L.14 |
| 1062110000 | SFC 2.5/21 MC SDR     | L.14 |
| 1062150150 | SAIL-M12WM12W-CD-1.5A | C.59 |

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| 1062180150 | SAIL-M12WB-CD-1.5B    | C.58 |
| 1062190150 | SAIL-M12GM12W-CD-1.5B | C.59 |
| 1062210150 | SAIL-M12WM12W-CD-1.5B | C.59 |
| 1062220150 | SAIL-M12W-CD-1.5A     | C.58 |
| 1062300150 | SAIL-M12WB-PB-1.5D    | C.6  |
| 1062310150 | SAIL-M12GM12W-PB-1.5D | C.7  |
| 1062330150 | SAIL-M12WM12W-PB-1.5D | C.7  |
| 1062340150 | SAIL-M12W-PB-1.5E     | C.6  |
| 1062370150 | SAIL-M12WB-PB-1.5E    | C.6  |
| 1062380150 | SAIL-M12GM12W-PB-1.5E | C.7  |
| 1062400150 | SAIL-M12WM12W-PB-1.5E | C.7  |

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| 1070630000 | SAI-4-F 5P M12 L 5M   | G.10 |
| 1070640000 | SAI-4-F 5P M12 L 10M  | G.10 |
| 1070650000 | SAI-4-F 4P M12 L 5M   | G.10 |
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| 1078750150 | SAIL-M8WM8G-3-1.5Q    | B.32 |

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| 1092930150 | SAIL-M12BG-5-1.5QGE       | B.11 |
| 1092940150 | SAIL-M12W-3-1.5QGE        | B.11 |
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| 1092960150 | SAIL-M12W-5-1.5QGE        | B.11 |
| 1092970150 | SAIL-M12GM12W-4-1.5QGE    | B.11 |
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| 1092990150 | SAIL-M12G-5-1.5QGE        | B.11 |
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| 1093010150 | SAIL-M12GM12G-3-1.5QGE    | B.25 |
| 1093020150 | SAIL-M12GM12G-4-1.5QGE    | B.25 |
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| 1093040150 | SAIL-M12GM12W-2/4-1.5QGE  | B.26 |
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| 1093110150 | SAIL-M12GM8W-3L1.5QGE     | B.31 |
| 1093130150 | SAIL-M12GM8W-4L1.5QGE     | B.31 |
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| 1093160150 | SAIL-M12W-3-1.5QGE        | B.11 |
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| 1701232000 | SAI-4-MH-5P M12   | G.31 |
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| 1701233000 | SAI-4-MHD-5P M12  | G.31 |
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| 1701240000 | SAI-6-M 5P M12    | G.6  |
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| 1701243000 | SAI-6-MHD-5P M12  | G.31 |
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| 1705930000 | SAI-6-M 4P M12    | G.6  |
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| 1821051000 | SAIL-M12WM12G-3-10U   | B.6  |
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| 1824570150 | SAIL-M8GM8B-3-1.5U    | B.4  |
| 1824570300 | SAIL-M8GM8B-3-3.0U    | B.4  |
| 1824570500 | SAIL-M8GM8B-3-5.0U    | B.4  |
| 1824571000 | SAIL-M8GM8B-3-10U     | B.4  |
| 1824580000 | SAIL-M8GM8B-3-X.XU    | B.5  |
| 1824580150 | SAIL-M8GM8B-3-1.5U    | B.32 |
| 1824580150 | SAIL-M8GM8B-3-1.5U    | B.5  |
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| 1906410150 | SAIL-M12GM12W-4-2L1.5U  | B.27 |            |                        |      | 1925390500 | SAIL-M12WM12W-4-5.0V   | B.7  | 1925650500 | SAIL-M12BW-5-5.0V      | B.7  |
| 1906410300 | SAIL-M12GM12W-4-2L3.0U  | B.8  |            |                        |      | 1925391000 | SAIL-M12WM12W-4-10V    | B.7  | 1925650500 | SAIL-M12BW-5-5.0V      | B.7  |
| 1906410500 | SAIL-M12GM12W-4-2L5.0U  | B.8  |            |                        |      | 1925400000 | SAIL-M12WM12W-5-X.XV   | B.7  | 1925651000 | SAIL-M12BW-5-10V       | B.7  |
| 1906411000 | SAIL-M12GM12W-4-2L10U   | B.8  |            |                        |      | 1925400000 | SAIL-M12WM12W-5-1.5V   | B.25 | 1926490000 | SAIL-M12GM12G-3-X.XQ   | B.6  |
| 1906430150 | SAIL-M12GM8W-4L1.5U     | B.31 |            |                        |      | 1925400150 | SAIL-M12WM12W-5-1.5V   | B.7  | 1926490150 | SAIL-M12GM12G-3-1.5Q   | B.25 |
| 1906450150 | SAIL-M8GM8W-4L1.5U      | B.34 |            |                        |      | 1925400300 | SAIL-M12WM12W-5-3.0V   | B.7  | 1926490150 | SAIL-M12GM12G-3-1.5Q   | B.6  |
| 1906470150 | SAIL-M12G-3S1.5Q        | B.16 |            |                        |      | 1925400500 | SAIL-M12WM12W-5-5.0V   | B.7  | 1926490300 | SAIL-M12GM12G-3-3.0Q   | B.6  |
| 1906480150 | SAIL-M12G-4S1.5Q        | B.16 |            |                        |      | 1925401000 | SAIL-M12WM12W-5-10V    | B.7  | 1926490500 | SAIL-M12GM12G-3-5.0Q   | B.6  |
| 1906500150 | SAIL-M12W-3S1.5Q        | B.16 |            |                        |      | 1925410000 | SAIL-M12GM12W-3L3.5V   | B.27 | 1926491000 | SAIL-M12GM12G-3-10Q    | B.6  |
| 1906520150 | SAIL-M12W-5S1.5Q        | B.16 |            |                        |      | 1925410150 | SAIL-M12GM12W-3L1.5V   | B.28 | 1926500000 | SAIL-M12GM12G-4-X.XQ   | B.6  |
| 1906540150 | SAIL-M12BW-5S1.5Q       | B.16 |            |                        |      | 1925410300 | SAIL-M12GM12W-3L3.0V   | B.8  | 1926500150 | SAIL-M12GM12G-4-1.5Q   | B.25 |
| 1906550000 | SAI-AU M8 PB 16DI       | E.10 |            |                        |      | 1925410500 | SAIL-M12GM12W-3L5.0V   | B.8  | 1926500150 | SAIL-M12GM12G-4-1.5Q   | B.6  |
| 1906550000 | SAI-AU M8 PB 16DI       | E.4  |            |                        |      | 1925411000 | SAIL-M12GM12W-3L10V    | B.8  | 1926500300 | SAIL-M12GM12G-4-3.0Q   | B.6  |
| 1906550000 | SAI-AU M8 PB 16DI       | E.8  |            |                        |      | 1925420000 | SAIL-M12GM12W-4-2LX.XV | B.8  | 1926500500 | SAIL-M12GM12G-4-5.0Q   | B.6  |
| 1906560150 | SAIL-M8G-3S1.5U         | B.21 |            |                        |      | 1925420150 | SAIL-M12GM12W-4-2L1.5V | B.27 | 1926501000 | SAIL-M12GM12G-4-10Q    | B.6  |
| 1906570150 | SAIL-M8G-4S1.5U         | B.21 |            |                        |      | 1925420150 | SAIL-M12GM12W-4-2L1.5V | B.8  | 1926510000 | SAIL-M12GM12G-5-X.XQ   | B.7  |
| 1906580150 | SAIL-M8W-3S1.5U         | B.21 |            |                        |      | 1925420300 | SAIL-M12GM12W-4-2L3.0V | B.8  | 1926510150 | SAIL-M12GM12G-5-1.5Q   | B.25 |
| 1906590150 | SAIL-M8W-4S1.5U         | B.21 |            |                        |      | 1925420500 | SAIL-M12GM12W-4-2L5.0V | B.8  | 1926510150 | SAIL-M12GM12G-5-1.5Q   | B.7  |
| 1906600150 | SAIL-M8BG-3S1.5U        | B.21 |            |                        |      | 1925421000 | SAIL-M12GM12W-4-2L10V  | B.8  | 1926510300 | SAIL-M12GM12G-5-3.0Q   | B.6  |
| 1906610150 | SAIL-M8BG-4S1.5U        | B.21 |            |                        |      | 1925430000 | SAIL-M12G-3-X.XV       | B.4  | 1926510500 | SAIL-M12GM12G-5-5.0Q   | B.6  |
| 1906620150 | SAIL-M8BW-3S1.5U        | B.21 |            |                        |      | 1925430150 | SAIL-M12G-3-1.5V       | B.11 | 1926511000 | SAIL-M12GM12G-5-10Q    | B.7  |
| 1906630150 | SAIL-M8BW-4S1.5U        | B.21 |            |                        |      | 1925430150 | SAIL-M12G-3-1.5V       | B.4  | 1926520150 | SAIL-M12GM12G-2/4-1.5Q | B.26 |
| 1906640000 | SAI-AU M8 PB 16DI/8DO   | E.10 |            |                        |      | 1925430300 | SAIL-M12G-3-3.0V       | B.4  | 1926530000 | SAIL-M12GM12W-3-X.XQ   | B.7  |
| 1906640000 | SAI-AU M8 PB 16DI/8DO   | E.4  |            |                        |      | 1925430500 | SAIL-M12G-3-5.0V       | B.4  | 1926530150 | SAIL-M12GM12W-3-1.5Q   | B.7  |
| 1906640000 | SAI-AU M8 PB 16DI/8DO   | E.8  |            |                        |      | 1925431000 | SAIL-M12G-3-10V        | B.4  | 1926530150 | SAIL-M12GM12W-3-1.5Q   | B.25 |
| 1906650000 | SAI-AU M12 CAN 16DI     | E.12 |            |                        |      | 1925440000 | SAIL-M12G-4-X.XV       | B.4  | 1926530300 | SAIL-M12GM12W-3-3.0Q   | B.6  |
| 1906650000 | SAI-AU M12 CAN 16DI     | E.14 |            |                        |      | 1925440150 | SAIL-M12G-4-1.5V       | B.11 | 1926530500 | SAIL-M12GM12W-3-5.0Q   | B.6  |
| 1906650000 | SAI-AU M12 CAN 16DI     | E.4  |            |                        |      | 1925440150 | SAIL-M12G-4-1.5V       | B.4  | 1926531000 | SAIL-M12GM12W-3-10Q    | B.7  |
| 1906660000 | SAI-AU M12 CAN 16DI/8DO | E.12 |            |                        |      | 1925440300 | SAIL-M12G-4-3.0V       | B.4  | 1926540000 | SAIL-M12GM12W-3-X.XQ   | B.7  |
| 1906660000 | SAI-AU M12 CAN 16DI/8DO | E.14 |            |                        |      | 1925440500 | SAIL-M12G-4-5.0V       | B.4  | 1926540150 | SAIL-M12GM12W-4-1.5Q   | B.25 |
| 1906660000 | SAI-AU M12 CAN 16DI/8DO | E.4  |            |                        |      | 1925441000 | SAIL-M12G-4-10V        | B.4  | 1926540150 | SAIL-M12GM12W-4-1.5Q   | B.6  |
| 1906670000 | SAI-AU M12 CAN AI/AO/DI | E.13 |            |                        |      | 1925450000 | SAIL-M12G-5-X.XV       | B.4  | 1926540300 | SAIL-M12GM12W-4-3.0Q   | B.6  |
| 1906670000 | SAI-AU M12 CAN AI/AO/DI | E.14 |            |                        |      | 1925450150 | SAIL-M12G-5-1.5V       | B.11 | 1926540500 | SAIL-M12GM12W-4-5.0Q   | B.6  |
| 1906670000 | SAI-AU M12 CAN AI/AO/DI | E.4  |            |                        |      | 1925450150 | SAIL-M12G-5-1.5V       | B.4  | 1926541000 | SAIL-M12GM12W-4-10Q    | B.7  |
| 1906680000 | SAI-AU M8 CAN 16DI      | E.12 |            |                        |      | 1925450300 | SAIL-M12G-5-3.0V       | B.4  | 1926550000 | SAIL-M12GM12W-5-X.XQ   | B.7  |
| 1906680000 | SAI-AU M8 CAN 16DI      | E.14 |            |                        |      | 1925450500 | SAIL-M12G-5-5.0V       | B.4  | 1926550150 | SAIL-M12GM12W-5-1.5Q   | B.25 |
| 1906680000 | SAI-AU M8 CAN 16DI      | E.4  |            |                        |      | 1925451000 | SAIL-M12G-5-10V        | B.4  | 1926550150 | SAIL-M12GM12W-5-1.5Q   | B.7  |
| 1906690000 | SAI-AU M8 CAN 16DI/8DO  | E.12 |            |                        |      | 1925460000 | SAIL-M12BW-3LX.XV      | B.8  | 1926550300 | SAIL-M12GM12W-5-3.0Q   | B.6  |
| 1906690000 | SAI-AU M8 CAN 16DI/8DO  | E.14 |            |                        |      | 1925460150 | SAIL-M12BW-3L1.5V      | B.15 | 1926550500 | SAIL-M12GM12W-5-5.0Q   | B.6  |
| 1906690000 | SAI-AU M8 CAN 16DI/8DO  | E.4  |            |                        |      | 1925460150 | SAIL-M12BW-3L1.5V      | B.8  | 1926551000 | SAIL-M12GM12W-5-10Q    | B.7  |
| 1906700000 | SAI-AU M12 DN 16DI      | E.16 |            |                        |      | 1925460300 | SAIL-M12BW-3L3.0V      | B.8  | 1926560150 | SAIL-M12GM12W-2/4-1.5Q | B.26 |
| 1906700000 | SAI-AU M12 DN 16DI      | E.18 |            |                        |      | 1925460500 | SAIL-M12BW-3L5.0V      | B.8  | 1926570000 | SAIL-M12WM12W-3-X.XQ   | B.7  |
| 1906700000 | SAI-AU M12 DN 16DI      | E.4  |            |                        |      | 1925461000 | SAIL-M12BW-3L10V       | B.8  | 1926570150 | SAIL-M12WM12W-3-1.5Q   | B.25 |
| 1906710000 | SAI-AU M12 DN 16DI/8DO  | E.16 |            |                        |      | 1925470000 | SAIL-M12BW-4-2LX.XV    | B.8  | 1926570150 | SAIL-M12WM12W-3-1.5Q   | B.7  |
| 1906710000 | SAI-AU M12 DN 16DI/8DO  | E.18 |            |                        |      | 1925470150 | SAIL-M12BW-4-2L1.5V    | B.15 | 1926570300 | SAIL-M12WM12W-3-3.0Q   | B.7  |
| 1906710000 | SAI-AU M12 DN 16DI/8DO  | E.4  |            |                        |      | 1925470150 | SAIL-M12BW-4-2L1.5V    | B.8  | 1926570500 | SAIL-M12WM12W-3-5.0Q   | B.6  |
| 1906720000 | SAI-AU M12 DN AI/AO/DI  | E.17 |            |                        |      | 1925470300 | SAIL-M12BW-4-2L3.0V    | B.8  | 1926571000 | SAIL-M12WM12W-3-10Q    | B.7  |
| 1906720000 | SAI-AU M12 DN AI/AO/DI  | E.18 |            |                        |      | 1925470500 | SAIL-M12BW-4-2L5.0V    | B.8  | 1926580000 | SAIL-M12WM12W-4-X.XQ   | B.7  |
| 1906720000 | SAI-AU M12 DN AI/AO/DI  | E.4  |            |                        |      | 1925471000 | SAIL-M12BW-4-2L10V     | B.8  | 1926580150 | SAIL-M12WM12W-4-1.5Q   | B.25 |
| 1906730000 | SAI-AU M8 DN 16DI       | E.16 |            |                        |      | 1925510000 | SAIL-M12W-3-X.XV       | B.4  | 1926580150 | SAIL-M12WM12W-4-1.5Q   | B.6  |
| 1906730000 | SAI-AU M8 DN 16DI       | E.18 |            |                        |      | 1925510150 | SAIL-M12W-3-1.5V       | B.11 | 1926580300 | SAIL-M12WM12W-3-1.5Q   | B.6  |
| 1906730000 | SAI-AU M8 DN 16DI       | E.4  |            |                        |      | 1925510150 | SAIL-M12W-3-1.5V       | B.4  | 1926580500 | SAIL-M12WM12W-4-5.0Q   | B.7  |
| 1906740000 | SAI-AU M8 DN 16DI/8DO   | E.16 |            |                        |      | 1925510300 | SAIL-M12W-3-3.0V       | B.4  | 1926581000 | SAIL-M12WM12W-4-10Q    | B.7  |
| 1906740000 | SAI-AU M8 DN 16DI/8DO   | E.18 |            |                        |      | 1925510500 | SAIL-M12W-3-5.0V       | B.4  | 1926590000 | SAIL-M12WM12W-5-X.XQ   | B.7  |
| 1906740000 | SAI-AU M8 DN 16DI/8DO   | E.4  |            |                        |      | 1925511000 | SAIL-M12W-3-10V        | B.4  | 1926590150 | SAIL-M12WM12W-5-1.5Q   | B.25 |
| 1906850000 | SAI-AU M12 IE 16DI      | E.24 |            |                        |      | 1925520000 | SAIL-M12W-4-X.XV       | B.4  | 1926590150 | SAIL-M12WM12W-5-1.5Q   | B.6  |
| 1906850000 | SAI-AU M12 IE 16DI      | E.26 |            |                        |      | 1925520150 | SAIL-M12W-4-1.5V       | B.11 | 1926590300 | SAIL-M12WM12W-5-3.0Q   | B.7  |
| 1906850000 | SAI-AU M12 IE 16DI      | E.4  |            |                        |      | 1925520150 | SAIL-M12W-4-1.5V       | B.4  | 1926590500 | SAIL-M12WM12W-5-5.0Q   | B.6  |
| 1906860000 | SAI-AU M12 IE 16DI/8DO  | E.24 |            |                        |      | 1925520300 | SAIL-M12W-4-3.0V       | B.4  | 1926591000 | SAIL-M12WM12W-5-10Q    | B.7  |
| 1906860000 | SAI-AU M12 IE 16DI/8DO  | E.26 |            |                        |      | 1925520500 | SAIL-M12W-4-5.0V       | B.4  | 1926600000 | SAIL-M12GM12W-3LX.XQ   | B.8  |
| 1906860000 | SAI-AU M12 IE 16DI/8DO  | E.4  |            |                        |      | 1925521000 | SAIL-M12W-4-10V        | B.4  | 1926600150 | SAIL-M12GM12W-3L1.5Q   | B.27 |
| 1906870000 | SAI-AU M12 IE AI/AO/DI  | E.25 |            |                        |      | 1925530000 | SAIL-M12W-5-X.XV       | B.8  | 1926600150 | SAIL-M12GM12W-3L3.0Q   | B.8  |
| 1906870000 | SAI-AU M12 IE AI/AO/DI  | E.26 |            |                        |      | 1925530150 | SAIL-M12W-5-1.5V       | B.11 | 1926600300 | SAIL-M12GM12W-3L3.0Q   | B.8  |
| 1906870000 | SAI-AU M12 IE AI/AO/DI  | E.4  |            |                        |      | 1925530150 | SAIL-M12W-5-1.5V       | B.4  | 1926600500 | SAIL-M12GM12W-3L5.0Q   | B.8  |
| 1906880000 | SAI-AU M8 IE 16DI       | E.24 |            |                        |      | 1925530300 | SAIL-M12W-5-3.0V       | B.4  | 1926601000 | SAIL-M12GM12W-3L10Q    | B.8  |
| 1906880000 | SAI-AU M8 IE 16DI       | E.26 |            |                        |      | 1925530500 | SAIL-M12W-5-5.0V       | B.4  | 1926610000 | SAIL-M12GM12W-4-2LX.XQ | B.8  |
| 1906880000 | SAI-AU M8 IE 16DI       | E.4  |            |                        |      | 1925531000 | SAIL-M12W-5-10V        | B.4  | 1926610150 | SAIL-M12GM12W-4-2L1.5Q | B.27 |
| 1906890000 | SAI-AU M8 IE 16DI/8DO   | E.24 |            |                        |      | 1925532000 | SAIL-M12GM12G-5-3.0V   | B.7  | 1926610150 | SAIL-M12GM12W-4-2L1.5Q | B.8  |
| 1906890000 | SAI-AU M8 IE 16DI/8DO   | E.26 |            |                        |      | 1925320300 | SAIL-M12GM12G-5-5.0V   | B.7  | 1926610300 | SAIL-M12GM12W-4-2L3.0Q | B.8  |
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| 1926900000 | SAIL-M8GM8G-3-X.XQ  | B.5  |
| 1926900150 | SAIL-M8GM8G-3-1.5Q  | B.5  |
| 1926900500 | SAIL-M8GM8G-3-3.0Q  | B.5  |
| 1926900500 | SAIL-M8GM8G-3-5.0Q  | B.5  |
| 1926901000 | SAIL-M8GM8G-3-10Q   | B.5  |
| 1926960000 | SAIL-M8WM8W-4-X.XQ  | B.5  |
| 1926960150 | SAIL-M8WM8W-4-1.5Q  | B.32 |
| 1926960500 | SAIL-M8WM8W-4-1.5Q  | B.5  |
| 1926960300 | SAIL-M8WM8W-4-3.0Q  | B.5  |
| 1926960500 | SAIL-M8WM8W-4-5.0Q  | B.5  |
| 1926961000 | SAIL-M8WM8W-4-10Q   | B.5  |
| 1926970000 | SAIL-M8G-3-X.XQ     | B.4  |
| 1926970150 | SAIL-M8G-3-1.5Q     | B.18 |
| 1926970500 | SAIL-M8G-3-3.0Q     | B.4  |
| 1926970500 | SAIL-M8G-3-5.0Q     | B.4  |
| 1926971000 | SAIL-M8G-3-10Q      | B.4  |
| 1926980000 | SAIL-M8BGS-3-X.XQ   | B.4  |
| 1926980150 | SAIL-M8BGS-3-1.5Q   | B.18 |
| 1926980500 | SAIL-M8BGS-3-1.5Q   | B.4  |
| 1926980300 | SAIL-M8BGS-3-3.0Q   | B.4  |
| 1926980500 | SAIL-M8BGS-3-5.0Q   | B.4  |
| 1926981000 | SAIL-M8BGS-3-10Q    | B.4  |
| 1926990000 | SAIL-M8G-4-X.XQ     | B.4  |
| 1926990150 | SAIL-M8G-4-1.5Q     | B.18 |
| 1926990500 | SAIL-M8G-4-1.5Q     | B.4  |
| 1926990300 | SAIL-M8G-4-3.0Q     | B.4  |
| 1926990500 | SAIL-M8G-4-5.0Q     | B.4  |
| 1926991000 | SAIL-M8G-4-10Q      | B.4  |
| 1927000000 | SAIL-M8BGS-4-X.XQ   | B.5  |
| 1927000150 | SAIL-M8BGS-4-1.5Q   | B.18 |
| 1927000500 | SAIL-M8BGS-4-1.5Q   | B.5  |
| 1927000300 | SAIL-M8BGS-4-3.0Q   | B.5  |
| 1927000500 | SAIL-M8BGS-4-5.0Q   | B.5  |
| 1927001000 | SAIL-M8BGS-4-10Q    | B.5  |
| 1927050000 | SAIL-M8W-3-X.XQ     | B.4  |
| 1927050150 | SAIL-M8W-3-1.5Q     | B.18 |
| 1927050500 | SAIL-M8W-3-1.5Q     | B.4  |
| 1927050300 | SAIL-M8W-3-3.0Q     | B.4  |
| 1927050500 | SAIL-M8W-3-5.0Q     | B.4  |
| 1927051000 | SAIL-M8W-3-10Q      | B.4  |
| 1927060000 | SAIL-M8BW-3-X.XQ    | B.5  |
| 1927060150 | SAIL-M8BW-3-1.5Q    | B.18 |
| 1927060500 | SAIL-M8BW-3-1.5Q    | B.5  |
| 1927060300 | SAIL-M8BW-3-3.0Q    | B.5  |
| 1927060500 | SAIL-M8BW-3-5.0Q    | B.5  |
| 1927061000 | SAIL-M8BW-3-10Q     | B.5  |
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| 1927070150 | SAIL-M8W-4-1.5Q     | B.18 |
| 1927070500 | SAIL-M8W-4-1.5Q     | B.4  |
| 1927070300 | SAIL-M8W-4-3.0Q     | B.4  |
| 1927070500 | SAIL-M8W-4-5.0Q     | B.4  |
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| 1927080000 | SAIL-M8BW5-4-X.XQ   | B.5  |
| 1927080150 | SAIL-M8BW-4-1.5Q    | B.18 |
| 1927080500 | SAIL-M8BW-4-1.5Q    | B.5  |
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| 1927160150 | SAIL-M8GM8G-4-1.5Q  | B.32 |
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| 1927160300 | SAIL-M8GM8G-4-3.0Q  | B.5  |
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| 1927171000 | SAIL-M8GM8W-3-10Q   | B.5  |
| 1927180000 | SAIL-M8GM8W-4-X.XQ  | B.5  |
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| 1927181000 | SAIL-M8GM8W-4-10Q   | B.5  |
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| 1927190150 | SAIL-M8GM8W-3L1.5Q  | B.34 |
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| 1927191000 | SAIL-M8GM8W-3L10V  | B.5  |
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| 1927210300 | SAIL-M8WM8W-3-3.0V | B.5  |
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| 1927230150 | SAIL-M8G-3-1.5V    | B.18 |
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| 1927260000 | SAIL-M8BGS-4-X.XV  | B.5  |
| 1927260150 | SAIL-M8BGS-4-1.5V  | B.18 |
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| 1927320000 | SAIL-M8BW5-3-X.XV  | B.5  |
| 1927320150 | SAIL-M8BW-3-1.5V   | B.18 |
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| 1927320300 | SAIL-M8BW-3-3.0V   | B.5  |
| 1927320500 | SAIL-M8BW-3-5.0V   | B.5  |
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| 1927330150 | SAIL-M8W-4-1.5V    | B.18 |
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| 1927340300 | SAIL-M8BW-4-3.0V   | B.5  |
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| 1927341000 | SAIL-M8BW-4-10V    | B.5  |
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| 1927350500 | SAIL-M8BW-3L1.5V   | B.5  |
| 1927350300 | SAIL-M8BW-3L3.0V   | B.5  |
| 1927350500 | SAIL-M8BW-3L5.0V   | B.5  |
| 1927351000 | SAIL-M8BW-3L10V    | B.5  |
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| 1937970300 | SAIL-M8WM12W-3-3.0U | B.7  |
| 1937970500 | SAIL-M8WM12W-3-5.0U | B.7  |
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| 1937980000 | SAIL-M8GM12G-4-X.XU | B.6  |
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| 1937980500 | SAIL-M8GM12G-4-5.0U | B.6  |
| 1937981000 | SAIL-M8GM12G-4-10U  | B.6  |
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| 1938240300 | SAIL-M8GM12W-3-3.0V    | B.7  |
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| 1938241000 | SAIL-M8GM12W-3-10V     | B.7  |
| 1938250000 | SAIL-M8WM12W-3-X.XV    | B.7  |
| 1938250150 | SAIL-M8WM12W-3-1.5V    | B.7  |
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| 1938280150 | SAIL-M8WM12W-4-1.5V    | B.7  |
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| 1938570000 | SAI-AU M12 DN GW 16DI  | E.32 |
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| 9456050000 | SAI-SK-M12           | E.33 | 9456760002 | SAI-8-FMM-4P M12 10M   | G.6  | 9457600000 | SAI-8-F 5P 10M 0.5/1.0U | G.9  |            |                         |      |
| 9456050000 | SAI-SK-M12           | E.35 | 9456770000 | SAI-8-F 4P PUR 15M     | G.6  | 9457610000 | SAIL-M12G-5-X.XU        | B.4  |            |                         |      |
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| 9456100500 | SAIL-M12G-4-5.0U     | B.4  | 9456890000 | SAI-8-F 5P PUR 10M     | G.6  | 9457670150 | SAIL-M12W-5-1.5U        | B.11 |            |                         |      |
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| 9456150300 | SAIL-M8BW-4-3.0U     | B.5  | 9456940000 | SAIS-5/7               | D.5  | 9457690000 | SAIL-M12BW-5-X.XU       | B.7  |            |                         |      |
| 9456150500 | SAIL-M8BW-4-5.0U     | B.5  | 9456940000 | SAIS-5/7               | D.8  | 9457690150 | SAIL-M12BW-5-1.5U       | B.11 |            |                         |      |
| 9456151000 | SAIL-M8BW-4-10U      | B.5  | 9456950000 | SAISW-5/7              | D.5  | 9457690150 | SAIL-M12BW-5-1.5U       | B.7  |            |                         |      |
| 9456170150 | SAIL-VSCD-M12G-1.5U  | B.47 | 9456950000 | SAISW-5/7              | D.8  | 9457690300 | SAIL-M12BW-5-3.0U       | B.4  |            |                         |      |
| 9456180000 | SAI-4-F 4P PUR 3M    | G.9  | 9456990150 | SAIL-M12GM12G-2/4-1.5U | B.26 | 9457690500 | SAIL-M12BW-5-5.0U       | B.7  |            |                         |      |
| 9456190000 | SAI-4-F 4P PUR 5M    | G.6  | 9457040000 | SAIL-VSA-M12G-1.5U     | B.45 | 9457691000 | SAIL-M12BW-5-10U        | B.7  |            |                         |      |
| 9456190000 | SAI-4-F 4P PUR 5M    | G.9  | 9457150000 | SAIL-M12GM12G-4-0.3U   | F.7  | 9457700000 | SAIBW-4/7               | D.5  |            |                         |      |
| 9456190002 | SAI-4-FMM-4P M12 5M  | G.31 | 9457160000 | SAIL-M12GM12G-4-0.6U   | F.7  | 9457700000 | SAIBW-4/7               | D.7  |            |                         |      |
| 9456190002 | SAI-4-FMM-4P M12 5M  | G.32 | 9457170000 | SAIL-M12GM12G-4-0.9U   | F.7  | 9457710150 | SAIL-VSA-1.5U           | B.45 |            |                         |      |
| 9456190002 | SAI-4-FMM-4P M12 5M  | G.6  | 9457230000 | SAIL-M12GM12G-3-X.XU   | B.6  | 9457720000 | SAI-SA-3-IDC            | D.20 |            |                         |      |
| 9456200000 | SAI-4-F 4P PUR 10M   | G.6  | 9457230150 | SAIL-M12GM12G-3-1.5U   | B.25 | 9457720000 | SAI-SA-3-IDC            | G.24 |            |                         |      |
| 9456200000 | SAI-4-F 4P PUR 10M   | G.9  | 9457230150 | SAIL-M12GM12G-3-1.5U   | B.6  | 9457730000 | SAIL-M12BG-4-X.XU       | B.6  |            |                         |      |
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| 9456200002 | SAI-4-FMM-4P M12 10M | G.32 | 9457230500 | SAIL-M12GM12G-3-5.0U   | B.6  | 9457730150 | SAIL-M12BG-4-1.5U       | B.6  |            |                         |      |
| 9456200002 | SAI-4-FMM-4P M12 10M | G.6  | 9457231000 | SAIL-M12GM12G-3-10U    | B.6  | 9457730300 | SAIL-M12BG-4-3.0U       | B.6  |            |                         |      |
| 9456210000 | SAI-4-F 4P PUR 15M   | G.6  | 9457240000 | SAIB-4/7               | D.5  | 9457730500 | SAIL-M12BG-4-5.0U       | B.6  |            |                         |      |
| 9456210000 | SAI-4-F 4P PUR 15M   | G.9  | 9457240000 | SAIB-4/7               | D.7  | 9457731000 | SAIL-M12BG-4-10U        | B.6  |            |                         |      |
| 9456230000 | SAI-4-F 4P PUR 20M   | G.6  | 9457250000 | SAIB-5/7               | D.5  | 9457740000 | SAIL-M12GM12G-5-X.XU    | B.7  |            |                         |      |
| 9456230000 | SAI-4-F 4P PUR 20M   | G.9  | 9457250000 | SAIB-5/7               | D.8  | 9457740150 | SAIL-M12BW-4-1.5U       | B.11 |            |                         |      |
| 9456240150 | SAIL-VSCD-1.5U       | B.47 | 9457260000 | SAIBW-5/7              | D.5  | 9457740150 | SAIL-M12BW-4-1.5U       | B.7  |            |                         |      |
| 9456320000 | SAI-4-F 5P PUR 3M    | G.9  | 9457260000 | SAIBW-5/7              | D.8  | 9457740300 | SAIL-M12BW-4-3.0U       | B.7  |            |                         |      |
| 9456330000 | SAI-4-F 5P PUR 5M    | G.6  | 9457270000 | SAIL-M12GM12W-5-X.XU   | B.7  | 9457740500 | SAIL-M12BW-4-5.0U       | B.7  |            |                         |      |
| 9456330000 | SAI-4-F 5P PUR 5M    | G.9  | 9457270150 | SAIL-M12GM12W-5-1.5U   | B.25 | 9457741000 | SAIL-M12BW-4-10U        | B.7  |            |                         |      |
| 9456340000 | SAI-4-F 5P PUR 10M   | G.6  | 9457270150 | SAIL-M12GM12W-5-1.5U   | B.7  | 9457760000 | SAIL-M12GM8W-3LX.XU     | B.5  |            |                         |      |
| 9456340000 | SAI-4-F 5P PUR 10M   | G.9  | 9457270300 | SAIL-M12GM12W-5-3.0U   | B.7  | 9457760150 | SAIL-M12GM8W-3L1.5U     | B.31 |            |                         |      |
| 9456350000 | SAI-4-F 5P PUR 15M   | G.6  | 9457270500 | SAIL-M12GM12W-5-5.0U   | B.7  | 9457760150 | SAIL-M12GM8W-3L1.5U     | B.5  |            |                         |      |
| 9456350000 | SAI-4-F 5P PUR 15M   | G.9  | 9457271000 | SAIL-M12GM12W-5-10U    | B.7  | 9457760300 | SAIL-M12GM8W-3L3.0U     | B.5  |            |                         |      |
| 9456370000 | SAI-4-F 5P PUR 20M   | G.6  | 9457290000 | SAISW-4/7              | D.5  | 9457760500 | SAIL-M12GM8W-3L5.0U     | B.5  |            |                         |      |
| 9456370000 | SAI-4-F 5P PUR 20M   | G.9  | 9457290000 | SAISW-4/7              | D.7  | 9457761000 | SAIL-M12GM8W-3L10U      | B.5  |            |                         |      |
| 9456380000 | SAIL-M12BW-4-2LX.XU  | B.8  | 9457310000 | SAIL-M12GM12W-4-X.XU   | B.7  | 9457770150 | SAIL-M12GM8G-3-1.5U     | B.29 |            |                         |      |
| 9456380150 | SAIL-M12BW-4-2L1.5U  | B.15 | 9457310150 | SAIL-M12GM12W-4-1.5U   | B.25 | 9457780150 | SAIL-VSBD-M12G-1.5U     | B.46 |            |                         |      |
| 9456380150 | SAIL-M12BW-4-2L1.5U  | B.8  | 9457310150 | SAIL-M12GM12W-4-1.5U   | B.7  | 9457790000 | SAIL-M12GM12W-3LX.XU    | B.7  |            |                         |      |
| 9456380300 | SAIL-M12BW-4-2L3.0U  | B.8  | 9457310300 | SAIL-M12GM12W-4-3.0U   | B.7  | 9457790150 | SAIL-M12GM12W-3L1.5U    | B.27 |            |                         |      |
| 9456380500 | SAIL-M12BW-4-2L5.0U  | B.8  | 9457310500 | SAIL-M12GM12W-4-5.0U   | B.7  | 9457790150 | SAIL-M12GM12W-3L1.5U    | B.8  |            |                         |      |
| 9456381000 | SAIL-M12BW-4-2L10U   | B.8  | 9457311000 | SAIL-M12GM12W-4-10U    | B.7  | 9457790300 | SAIL-M12GM12W-3L3.0U    | B.8  |            |                         |      |
| 9456460000 | SAI-6-F 4P PUR 3M    | G.9  | 9457320000 | SAIL-M12BW-3-X.XU      | B.7  | 9457790500 | SAIL-M12GM12W-3L5.0U    | B.8  |            |                         |      |
| 9456470000 | SAI-6-F 4P PUR 5M    | G.6  | 9457320150 | SAIL-M12BW-3-1.5U      | B.11 | 9457791000 | SAIL-M12GM12W-3L10U     | B.8  |            |                         |      |
| 9456470000 | SAI-6-F 4P PUR 5M    | G.9  | 9457320150 | SAIL-M12BW-3-1.5U      | B.7  | 9457800000 | SAIL-M12BW-3LX.XU       | B.8  |            |                         |      |
| 9456490000 | SAI-6-F 4P PUR 10M   | G.6  | 9457320300 | SAIL-M12BW-3-3.0U      | B.7  | 9457800150 | SAIL-M12BW-3L1.5U       | B.15 |            |                         |      |
| 9456490000 | SAI-6-F 4P PUR 10M   | G.9  | 9457320500 | SAIL-M12BW-3-5.0U      | B.7  | 9457800150 | SAIL-M12BW-3L1.5U       | B.8  |            |                         |      |
| 9456490000 | SAI-6-F 4P PUR 15M   | G.6  | 9457321000 | SAIL-M12BW-3-10U       | B.7  | 9457800300 | SAIL-M12BW-3L3.0U       | B.8  |            |                         |      |
| 9456490000 | SAI-6-F 4P PUR 15M   | G.9  | 9457340000 | SAIL-M12GM12G-5-X.XU   | B.7  | 9457800500 | SAIL-M12BW-3L5.0U       | B.8  |            |                         |      |
| 9456500000 | SAIL-M12WM12G-5-X.XU | B.7  | 9457340030 | SAIL-M12GM12G-5-0.3U   | F.7  | 9457801000 | SAIL-M12BW-3L10U        | B.8  |            |                         |      |
| 9456500150 | SAIL-M12WM12G-5-1.5U | B.7  | 9457340060 | SAIL-M12GM12G-5-0.6U   | F.7  | 9457810000 | SAIL-M12G-3-X.XU        | B.4  |            |                         |      |
| 9456500300 | SAIL-M12WM12G-5-3.0U | B.7  | 9457340150 | SAIL-M12GM12G-5-1.5U   | B.25 | 9457810150 | SAIL-M12G-3-1.5U        | B.11 |            |                         |      |
| 9456500500 | SAIL-M12WM12G-5-5.0U | B.7  | 9457340150 | SAIL-M12GM12G-5-1.5U   | B.7  | 9457810150 | SAIL-M12G-3-1.5U        | B.4  |            |                         |      |
| 9456501000 | SAIL-M12WM12G-5-10U  | B.7  | 9457340150 | SAIL-M12GM12G-5-1.5U   | B.7  | 9457810300 | SAIL-M12G-3-3.0U        | B.4  |            |                         |      |
| 9456510000 | SAI-6-F 4P PUR 20M   | G.6  | 9457340300 | SAIL-M12GM12G-5-3.0U   | B.7  | 9457810500 | SAIL-M12G-3-5.0U        | B.4  |            |                         |      |
| 9456510000 | SAI-6-F 4P PUR 20M   | G.9  | 9457340500 | SAIL-M12GM12G-5-5.0U   | B.7  | 9457811000 | SAIL-M12G-3-10U         | B.4  |            |                         |      |
| 9456600000 | SAI-6-F 5P PUR 3M    | G.9  | 9457341000 | SAIL-M12GM12G-5-10U    | B.7  | 9457820000 | SAIL-M12BG-3-X.XU       | B.6  |            |                         |      |
| 9456610000 | SAI-6-F 5P PUR 5M    | G.6  | 9457350000 | SAI-8-MF 5P PUR 5M OL  | G.42 | 9457820150 | SAIL-M12BG-3-1.5U       | B.11 |            |                         |      |
| 9456610000 | SAI-6-F 5P PUR 5M    | G.9  | 9457380000 | SAIL-M8BWS-3-X.XU      | B.5  | 9457820150 | SAIL-M12BG-3-1.5U       | B.6  |            |                         |      |
| 9456620000 | SAI-6-F 5P PUR 10M   | G.6  | 9457380150 | SAIL-M8BW-3-1.5U       | B.18 | 9457820300 | SAIL-M12BG-3-3.0U       | B.6  |            |                         |      |
| 9456620000 | SAI-6-F 5P PUR 10M   | G.9  | 9457380150 | SAIL-M8BW-3-1.5U       | B.5  | 9457820500 | SAIL-M12BG-3-5.0U       | B.6  |            |                         |      |
| 9456630000 | SAI-6-F 5P PUR 15M   | G.6  | 9457380300 | SAIL-M8BW-3-10U        | B.5  | 9457821000 | SAIL-M12BG-3-10U        | B.6  |            |                         |      |
| 9456630000 | SAI-6-F 5P PUR 15M   | G.9  | 9457380500 | SAIL-M8BW-3-5.0U       | B.5  | 9457850000 | SAIL-M8BG-4-X.XU        | B.5  |            |                         |      |
| 9456650000 | SAI-6-F 5P PUR 20M   | G.6  | 9457381000 | SAIL-M8BW-3-10U        | B.5  | 9457850150 | SAIL-M8BG-4-1.5U        | B.18 |            |                         |      |
| 9456650000 | SAI-6-F 5P PUR 20M   | G.9  | 9457390000 | SAIL-M12GM12W-3-X.XU   | B.7  | 9457850150 | SAIL-M8BG-4-1.5U        | B.5  |            |                         |      |
| 9456660000 | SAIL-M12GM8G-4-X.XU  | B.5  | 9457390150 | SAIL-M12GM12W-3-1.5U   | B.25 | 9457850300 | SAIL-M8BG-4-3.0U        | B.5  |            |                         |      |
| 9456660150 | SAIL-M12GM8G-4-1.5U  | B.29 | 9457390150 | SAIL-M12GM12W-3-1.5U   | B.7  | 9457850500 | SAIL-M8BG-4-5.0         |      |            |                         |      |



