

**OMNIMATE Signal - series B2L/S2L 3.50 - 2-row
B2L 3.50/22/180F SN BK BX**

Weidmüller Interface GmbH & Co. KG
 Klingenbergstraße 26
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 Germany
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 www.weidmueller.com

Product image

Similar to illustration

Component density redefined: the future standard for signal connection

A maximum number of connections requiring minimum space - the double-row B2L sets the bar for field connections of typical sensor cables up to 1 mm² very high and closes the gap between "less space" and "more functions".

The result is a connection solution for standard industrial cables in 1.75 pitch - 30% smaller than equivalent solutions in 2.5 pitch, and with the 140% robustness of the 3.5 pitch

Dimensions: double the connection density with a 3.5mm pitch size

Connection system: tried and tested maintenance-free Weidmüller tension clamp connection

The basic application advantages:

Efficient: maximum component density on the PCB

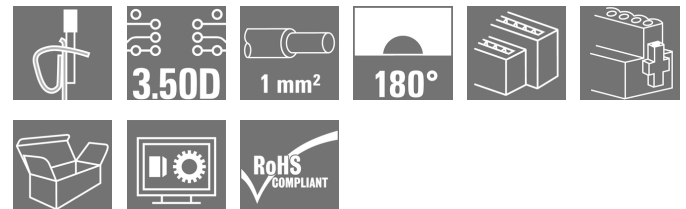
Suitable for industrial use - minimum dimensions, maximum robustness

Process-optimised - automatic assembly and reflow soldering, fast connection

User-friendly - patented release lever for the easy release of larger numbers of poles

Application-oriented: easy labelling and reliable coding despite compact dimensions

Miniaturisation is more than just a larger number of functions within a smaller space:



Each reduction in size decreases space requirements and so reduces overall system costs for the end customer. Thus, Weidmüller fulfils a growing demand in the engineering and industrial automation sectors.

General ordering data

| | |
|--------------|--|
| Type | B2L 3.50/22/180F SN BK BX |
| Order No. | 1748250000 |
| Version | PCB plug-in connector, female plug, 3.50 mm, Number of poles: 22, 180°, Tension-clamp connection, Clamping range, max. : 1 mm ² , Box |
| GTIN (EAN) | 4032248038084 |
| Qty. | 36 pc(s). |
| Product data | IEC: 250 V / 10.3 A / 0.2 - 1 mm ² UL: 300 V / 10 A / AWG 28 - AWG 16 |
| Packaging | Box |

Creation date April 22, 2020 12:06:32 AM CEST

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Technical data**Dimensions and weights**

| | | | |
|------------|---------|-----------------|------------|
| Width | 45.3 mm | Width (inches) | 1.783 inch |
| Height | 15.7 mm | Height (inches) | 0.618 inch |
| Depth | 20.6 mm | Depth (inches) | 0.811 inch |
| Net weight | 12.95 g | | |

System Parameters

| Product family | OMNIMATE Signal - series B2L/S2L 3.50 - 2-row | Type of connection | Field connection |
|--|--|--|-------------------|
| Wire connection method | Tension-clamp connection | Pitch in mm (P) | 3.5 mm |
| Pitch in inches (P) | 0.138 inch | Conductor outlet direction | 180° |
| Number of poles | 22 | L1 in mm | 35 mm |
| L1 in inches | 1.378 inch | Number of rows | 1 |
| Pin series quantity | 2 | Rated cross-section | 1 mm ² |
| Touch-safe protection acc. to DIN VDE 57 106 | Safe from finger touch | Touch-safe protection acc. to DIN VDE 0470 | IP 20 |
| Can be coded | Yes | Stripping length | 7 mm |
| Tightening torque for screw flange, min. | 0.2 Nm | Tightening torque for screw flange, max. | 0.25 Nm |
| Screwdriver blade | 0.4 x 2.5 | Screwdriver blade standard | DIN 5264 |
| Plugging cycles | 25 | Plugging force/pole, max. | 5 N |
| Pulling force/pole, max. | 4 N | | |

Material data

| | | | |
|---------------------------------------|--------------|---------------------------------------|---------------------|
| Insulating material | PBT | Colour | black |
| Colour chart (similar) | RAL 9011 | Insulation strength | ≥ 10 ⁸ Ω |
| UL 94 flammability rating | V-0 | GWFI | 960 °C |
| Contact material | Copper alloy | Contact surface | tinned |
| Storage temperature, min. | -25 °C | Storage temperature, max. | 50 °C |
| Max. relative humidity during storage | 70 % | Operating temperature, min. | -50 °C |
| Operating temperature, max. | 100 °C | Temperature range, installation, min. | -30 °C |
| Temperature range, installation, max. | 100 °C | | |

Conductors suitable for connection

| | |
|---|----------------------|
| Clamping range, min. | 0.08 mm ² |
| Clamping range, max. | 1 mm ² |
| Wire connection cross section AWG, min. | AWG 28 |
| Wire connection cross section AWG, max. | AWG 18 |
| Solid, min. H05(07) V-U | 0.2 mm ² |
| Solid, max. H05(07) V-U | 1 mm ² |
| Flexible, min. H05(07) V-K | 0.2 mm ² |
| Flexible, max. H05(07) V-K | 1 mm ² |
| w. plastic collar ferrule, DIN 46228 pt 4, min. | 0.14 mm ² |
| w. plastic collar ferrule, DIN 46228 pt 4, max. | 0.34 mm ² |
| w. wire end ferrule, DIN 46228 pt 1, min. | 0.14 mm ² |
| w. wire end ferrule, DIN 46228 pt 1, max. | 0.34 mm ² |

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Technical data

| | | | |
|--|--|------------------------------|--------------------------------|
| Clampable conductor | Cross-section for conductor connection | Type | fine-wired |
| | wire end ferrule | nominal | 0.14 mm ² |
| | | Stripping length | nominal 10 mm |
| | | Recommended wire-end ferrule | HO.14/12 GR SV |
| Cross-section for conductor connection | Cross-section for conductor connection | Type | fine-wired |
| | wire end ferrule | nominal | 0.25 mm ² |
| | | Stripping length | nominal 10 mm |
| | | Recommended wire-end ferrule | HO.25/12 HBL |
| Reference text | The outside diameter of the plastic collar should not be larger than the pitch (P). Length of ferrules is to be chosen depending on the product and the rated voltage. | | |
| Max. clamping range | 1 mm ² | | |

Rated data acc. to IEC

| | | |
|---|------------------------|--|
| tested acc. to standard | IEC 60664-1, IEC 61984 | |
| Rated current, max. number of poles (Tu=20°C) | 8.7 A | Rated current, min. number of poles (Tu=20°C) 10.3 A |
| Rated current, max. number of poles (Tu=40°C) | 7.4 A | Rated current, min. number of poles (Tu=40°C) 8.9 A |
| Rated voltage for surge voltage class / pollution degree III/2 | 160 V | Rated voltage for surge voltage class / pollution degree II/2 250 V |
| Rated impulse voltage for surge voltage class/ pollution degree II/2 | 2.5 kV | Rated voltage for surge voltage class / pollution degree III/3 80 V |
| Rated impulse voltage for surge voltage class/ contamination degree III/3 | 2.5 kV | Rated impulse voltage for surge voltage class/ pollution degree III/2 2.5 kV |
| | | Short-time withstand current resistance 3 x 1s with 77 A |

Rated data acc. to CSA

| | | | |
|-----------------------------------|---|-----------------------------------|----------------|
| Institute (CSA) |  | Certificate No. (CSA) | 200039-1488444 |
| Rated voltage (Use group B / CSA) | 300 V | Rated current (Use group B / CSA) | 5 A |
| Wire cross-section, AWG, min. | AWG 28 | Wire cross-section, AWG, max. | AWG 18 |
| Reference to approval values | Specifications are maximum values, details - see approval certificate. | | |

Rated data acc. to UL 1059

| | | | |
|---------------------------------------|---|---------------------------------------|--------|
| Institute (UR) |  | Certificate No. (UR) | E60693 |
| Rated voltage (Use group B / UL 1059) | 300 V | Rated voltage (Use group C / UL 1059) | 50 V |
| Rated current (Use group B / UL 1059) | 10 A | Rated current (Use group C / UL 1059) | 10 A |
| Wire cross-section, AWG, min. | AWG 28 | Wire cross-section, AWG, max. | AWG 16 |
| Reference to approval values | Specifications are maximum values, details - see approval certificate. | | |

Packing

| | | | |
|-----------|--------|------------|--------|
| Packaging | Box | VPE length | 30 mm |
| VPE width | 135 mm | VPE height | 350 mm |

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Technical data**Classifications**

| | | | |
|-------------|-------------|------------|-------------|
| ETIM 6.0 | EC002638 | ETIM 7.0 | EC002638 |
| eClass 9.0 | 27-44-03-09 | eClass 9.1 | 27-44-03-09 |
| eClass 10.0 | 27-44-03-09 | UNSPSC | 30-21-18-10 |

Notes

| | |
|-------|---|
| Notes | <ul style="list-style-type: none"> • Additional colours on request • Gold-plated contact surfaces on request • Rated current related to rated cross-section & min. No. of poles. • Wire end ferrule with plastic collar to DIN 46228/4 • Wire end ferrule without plastic collar to DIN 46228/1 • P on drawing = pitch • Crimp shape A for wire-end ferrules with crimping tools PZ 1,5 (order no. 9005990000) or PZ 6/5 (order no. 9011460000) for larger wire cross-sections recommended. • Rated data refer only to the component itself. Clearance and creepage distances to other components are to be designed in accordance with the relevant application standards. |
|-------|---|

| | |
|----------------|--|
| IPC conformity | Conformity: The products are developed, manufactured and delivered according international recognized standards and norms and comply with the assured properties in the data sheet resp. fulfill decorative properties in accordance with IPC-A-610 "Class 2". Further claims on the products can be evaluated on request. |
|----------------|--|

Approvals

Approvals



| | |
|------|---------|
| ROHS | Conform |
|------|---------|

Downloads

| | |
|---|--|
| Approval/Certificate/Document of Conformity | Declaration of the Manufacturer |
| Brochure/Catalogue | FL DRIVES EN MB DEVICE MANUF. EN FL DRIVES DE FL BUILDING SAFETY EN FL APPL LED LIGHTING EN FL INDUSTR.CONTROLS EN FL MACHINE SAFETY EN FL HEATING ELECTR EN FL APPL INVERTER EN FL_BASE_STATION_EN FL ELEVATOR EN FL POWER SUPPLY EN FL 72H SAMPLE SER EN PO OMNIMATE EN |
| Engineering Data | EPLAN_WSCAD |
| Engineering Data | STEP |

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Catalogue status 17.04.2020 / We reserve the right to make technical changes.

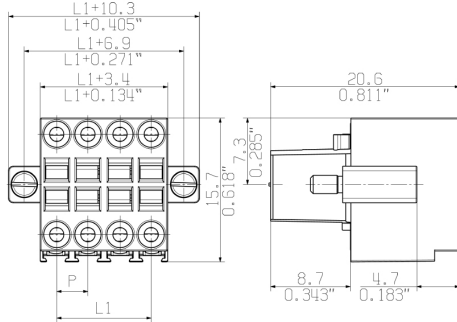
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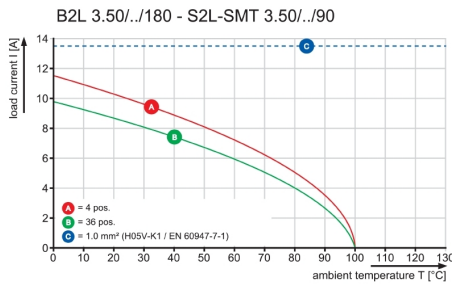
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Drawings

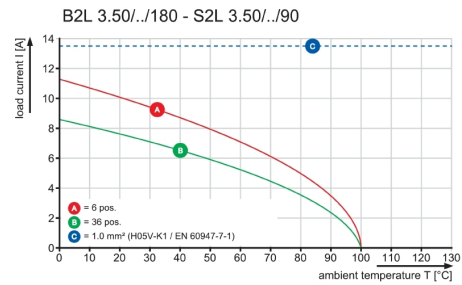
Dimensional drawing



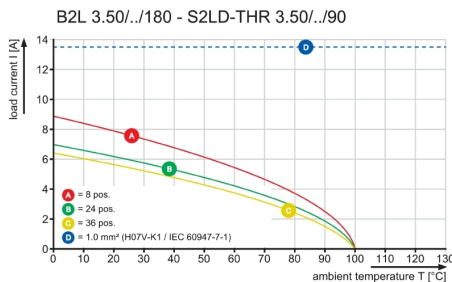
Graph



Graph



Graph



MASSE OHNE TOLERANZ SIND KEINE PRUEFMASSE
 DIMS. WITHOUT TOLERANCE ARE NOT CONTROL DIMS.

DIE DEUTSCHE VERSION IST VERBINDLICH
 THE GERMAN VERSION IS BINDING

WEITERGABE SOWIE VERVIELFAELTIGUNG DIESES DOKUMENTS, VERWERTUNG UND MITTEILUNG SEINES INHALTS SIND VERBOTEN, SOWEIT NICHT AUSDRUECKLICH GESTATTET.
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| | | | | | | | | |
|----|------|----------|------|----------|------|----------|------|----------|
| 36 | 59,5 | 2,344 | 62,9 | 2,479 | 66,4 | 2,617 | 69,8 | 2,751 |
| 34 | 56,0 | 2,206 | 59,4 | 2,341 | 62,9 | 2,479 | 66,3 | 2,613 |
| 32 | 52,5 | 2,069 | 55,9 | 2,203 | 59,4 | 2,341 | 62,8 | 2,475 |
| 30 | 49,0 | 1,931 | 52,4 | 2,065 | 55,9 | 2,203 | 59,3 | 2,337 |
| 28 | 45,5 | 1,793 | 48,9 | 1,927 | 52,4 | 2,065 | 55,8 | 2,199 |
| 26 | 42,0 | 1,655 | 45,4 | 1,789 | 48,9 | 1,927 | 52,3 | 2,061 |
| 24 | 38,5 | 1,517 | 41,9 | 1,651 | 45,4 | 1,789 | 48,8 | 1,923 |
| 22 | 35,0 | 1,379 | 38,4 | 1,513 | 41,9 | 1,651 | 45,3 | 1,785 |
| 20 | 31,5 | 1,241 | 34,9 | 1,375 | 38,4 | 1,513 | 41,8 | 1,647 |
| 18 | 28,0 | 1,103 | 31,4 | 1,237 | 34,9 | 1,375 | 38,3 | 1,509 |
| 16 | 24,5 | 0,965 | 27,9 | 1,099 | 31,4 | 1,237 | 34,8 | 1,371 |
| 14 | 21,0 | 0,827 | 24,4 | 0,961 | 27,9 | 1,099 | 31,3 | 1,233 |
| 12 | 17,5 | 0,690 | 20,9 | 0,823 | 24,4 | 0,961 | 27,8 | 1,095 |
| 10 | 14,0 | 0,552 | 17,4 | 0,685 | 20,9 | 0,823 | 24,3 | 0,957 |
| 8 | 10,5 | 0,414 | 13,9 | 0,547 | 17,4 | 0,685 | 20,8 | 0,819 |
| 6 | 7,0 | 0,276 | 10,4 | 0,409 | 13,9 | 0,547 | 17,3 | 0,681 |
| 4 | 3,5 | 0,138 | 6,9 | 0,271 | 10,4 | 0,409 | 13,8 | 0,543 |
| n | L1 | L1[inch] | L2 | L2[inch] | L3 | L3[inch] | L4 | L4[inch] |

n = POLZAHL/NO OF POLES

P = RASTER/PITCH

SHOWN: B2L 3.50/08/180F

For the mounting of PCBs, it should be noted that the rated data given in the catalogue relates only to the connection elements. The necessary creepage and clearance paths must be observed in connection with the respective applicant in accordance to VDE 0110. The current-carrying capacity and pitch tolerance is to be determined according to DIN IEC 326 part 3 very fine.

Weidmüller connectors are tested to the DIN VDE 0627 standard, and are valid for its field of application. Provided that the components are used to the intended purpose, all requirements with respect to the occurring of electrical, mechanical, thermic and corrosive stress will be satisfied.

| | | |
|---|--|-----------|
| DIN ISO 2768-m 69611/5 25.04.13 HELIS_MA 00 | CAT.NO.: C 55622 02 | |
| | DRAWING NO. SHEET 02 OF 03 SHEETS ISSUE NO. | |
| MODIFICATION | | |
| DRAWN | DATE: 16.01.2012 NAME: HELIS_MA | |
| RESPONSIBLE | LANG_T | |
| CHECKED | 22.05.2013 HECKERT_M | |
| SCALE: 2:1 SUPERSEDES: 26643/31 | APPROVED | HECKERT_M |
| B2L 3.50/.. /180... BUCHSENLEISTE SOCKET BLOCK | | |
| PRODUCT FILE: B2L 3.50 | | 7110 |