

## OMNIMATE Signal - series LM LM3R 5.08/33/90 3.5SN OR BX

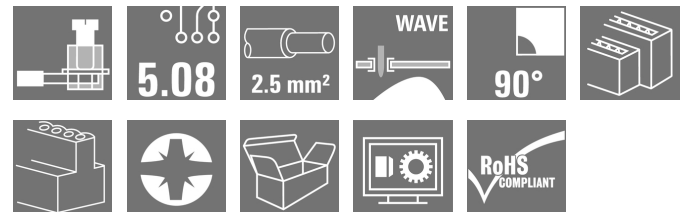
**Weidmüller Interface GmbH & Co. KG**  
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### Product image



Similar to illustration

Single- and multi-row PCB terminal with proven clamping yoke connection at 5.08 mm pitch. Suitable for conductor cross-sections up to 2.5 mm<sup>2</sup>.



### General ordering data

|              |                                                                                                                                                                        |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Type         | LM3R 5.08/33/90 3.5SN OR BX                                                                                                                                            |
| Order No.    | <a href="#">1769710000</a>                                                                                                                                             |
| Version      | PCB terminal, 5.08 mm, No. of poles: 33, 90°, Solder pin length (l): 3.5 mm, tinned, Orange, Clamping yoke connection, Clamping range, max.: 2.5 mm <sup>2</sup> , Box |
| GTIN (EAN)   | 4032248117086                                                                                                                                                          |
| Qty.         | 10 pc(s).                                                                                                                                                              |
| Product data | IEC: 630 V / 17.5 A / 0.2 - 2.5 mm <sup>2</sup><br>UL: 300 V / 15 A / AWG 24 - AWG 14                                                                                  |
| Packaging    | Box                                                                                                                                                                    |

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**Technical data**
**Dimensions and weights**

|                          |            |                 |            |
|--------------------------|------------|-----------------|------------|
| Width                    | 59.42 mm   | Width (inches)  | 2.339 inch |
| Height                   | 40.1 mm    | Height (inches) | 1.579 inch |
| Height of lowest version | 36.6 mm    | Depth           | 31.8 mm    |
| Depth (inches)           | 1.252 inch | Net weight      | 58.7 g     |

**System parameters**

|                                                   |                             |                                              |                          |
|---------------------------------------------------|-----------------------------|----------------------------------------------|--------------------------|
| Product family                                    | OMNIMATE Signal - series LM | Wire connection method                       | Clamping yoke connection |
| Mounting onto the PCB                             | THT solder connection       | Conductor outlet direction                   | 90°                      |
| Pitch in mm (P)                                   | 5.08 mm                     | Pitch in inches (P)                          | 0.2 inch                 |
| No. of poles                                      | 33                          | Fitted by customer                           | Yes                      |
| Max. adjacent poles per row                       | 72                          | Solder pin length (l)                        | 3.5 mm                   |
| Solder pin dimensions                             | 0.95 x 0.8 mm               | Solder eyelet hole diameter (D)              | 1.3 mm                   |
| Solder eyelet hole diameter tolerance (D)+ 0,1 mm |                             | Number of solder pins per pole               | 1                        |
| Screwdriver blade                                 | 0.6 x 3.5                   | Screwdriver blade standard                   | DIN 5264                 |
| Tightening torque, min.                           | 0.4 Nm                      | Tightening torque, max.                      | 0.5 Nm                   |
| Clamping screw                                    | M 2.5                       | Stripping length                             | 6 mm                     |
| L1 in mm                                          | 50.8 mm                     | L1 in inches                                 | 2 inch                   |
| Touch-safe protection acc. to DIN VDE 0470        | IP 20                       | Touch-safe protection acc. to DIN VDE 57 106 | Safe from finger touch   |
| Volume resistance                                 | 1.20 mΩ                     |                                              |                          |

**Material data**

|                                       |            |                                       |                            |
|---------------------------------------|------------|---------------------------------------|----------------------------|
| Insulating material                   | Wemid (PA) | Colour                                | Orange                     |
| Colour chart (similar)                | RAL 2000   | Insulating material group             | I                          |
| CTI                                   | ≥ 600      | Insulation resistance                 | ≥ 10 <sup>8</sup> Ω        |
| UL 94 flammability rating             | V-0        | Contact material                      | Copper alloy               |
| Contact surface                       | tinned     | Coating                               | 1-3 μm Ni, 4-6 μm Sn       |
| Tinning type                          | matt       | Layer structure of solder connection  | 1-3 μm Ni / 4-6 μm Sn matt |
| Storage temperature, min.             | -25 °C     | Storage temperature, max.             | 55 °C                      |
| Max. relative humidity during storage | 80 %       | Operating temperature, min.           | -50 °C                     |
| Operating temperature, max.           | 120 °C     | Temperature range, installation, min. | -25 °C                     |
| Temperature range, installation, max. | 120 °C     |                                       |                            |

**Conductors suitable for connection**

|                                                 |                        |                                                 |                     |
|-------------------------------------------------|------------------------|-------------------------------------------------|---------------------|
| Clamping range, min.                            | 0.2 mm <sup>2</sup>    | Clamping range, max.                            | 2.5 mm <sup>2</sup> |
| Wire connection cross section AWG, min.         | AWG 24                 | Wire connection cross section AWG, max.         | AWG 14              |
| Solid, min. H05(07) V-U                         | 0.2 mm <sup>2</sup>    | Solid, max. H05(07) V-U                         | 2.5 mm <sup>2</sup> |
| Flexible, min. H05(07) V-K                      | 0.2 mm <sup>2</sup>    | Flexible, max. H05(07) V-K                      | 2.5 mm <sup>2</sup> |
| w. plastic collar ferrule, DIN 46228 pt 4, min. | 0.25 mm <sup>2</sup>   | w. plastic collar ferrule, DIN 46228 pt 4, max. | 1.5 mm <sup>2</sup> |
| w. wire end ferrule, DIN 46228 pt 1, min.       | 0.25 mm <sup>2</sup>   | w. wire end ferrule, DIN 46228 pt 1, max.       | 1.5 mm <sup>2</sup> |
| Plug gauge in accordance with EN 60999 a x b; ø | 2.4 mm x 1.5 mm; 1.9mm |                                                 |                     |

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**Technical data**

**Rated data acc. to IEC**

|                                                                           |                        |                                                                       |                   |
|---------------------------------------------------------------------------|------------------------|-----------------------------------------------------------------------|-------------------|
| tested acc. to standard                                                   | IEC 60664-1, IEC 61984 | Rated current, min. no. of poles (Tu=20°C)                            | 17.5 A            |
| Rated current, max. no. of poles (Tu=20°C)                                | 16 A                   | Rated current, min. no. of poles (Tu=40°C)                            | 17.5 A            |
| Rated current, max. no. of poles (Tu=40°C)                                | 14.2 A                 | Rated voltage for surge voltage class / pollution degree II/2         | 630 V             |
| Rated voltage for surge voltage class / pollution degree III/2            | 320 V                  | Rated voltage for surge voltage class / pollution degree III/3        | 250 V             |
| Rated impulse voltage for surge voltage class/ pollution degree II/2      | 4 kV                   | Rated impulse voltage for surge voltage class/ pollution degree III/2 | 4 kV              |
| Rated impulse voltage for surge voltage class/ contamination degree III/3 | 4 kV                   | Short-time withstand current resistance                               | 3 x 1s with 120 A |

**Rated data acc. to CSA**

|                                   |                                                                        |                                   |                |
|-----------------------------------|------------------------------------------------------------------------|-----------------------------------|----------------|
| Institute (CSA)                   |                                                                        | Certificate No. (CSA)             | 200039-1815154 |
| Rated voltage (Use group B / CSA) | 300 V                                                                  | Rated voltage (Use group D / CSA) | 300 V          |
| Rated current (Use group B / CSA) | 18 A                                                                   | Rated current (Use group D / CSA) | 10 A           |
| Wire cross-section, AWG, min.     | AWG 24                                                                 | Wire cross-section, AWG, max.     | AWG 14         |
| Reference to approval values      | Specifications are maximum values, details - see approval certificate. |                                   |                |

**Rated data acc. to UL 1059**

|                                       |                                                                        |                                       |        |
|---------------------------------------|------------------------------------------------------------------------|---------------------------------------|--------|
| Institute (cURus)                     |                                                                        | Certificate No. (cURus)               | E60693 |
| Rated voltage (Use group B / UL 1059) | 300 V                                                                  | Rated voltage (Use group D / UL 1059) | 300 V  |
| Rated current (Use group B / UL 1059) | 15 A                                                                   | Rated current (Use group D / UL 1059) | 10 A   |
| Wire cross-section, AWG, min.         | AWG 24                                                                 | Wire cross-section, AWG, max.         | AWG 14 |
| Reference to approval values          | Specifications are maximum values, details - see approval certificate. |                                       |        |

**Packaging**

|           |        |            |        |
|-----------|--------|------------|--------|
| Packaging | Box    | VPE length | 60 mm  |
| VPE width | 110 mm | VPE height | 140 mm |

**Classifications**

|            |             |            |             |
|------------|-------------|------------|-------------|
| ETIM 3.0   | EC001284    | ETIM 4.0   | EC002643    |
| ETIM 5.0   | EC002643    | ETIM 6.0   | EC002643    |
| UNSPSC     | 30-21-18-01 | eClass 6.2 | 27-26-11-01 |
| eClass 7.1 | 27-44-04-01 | eClass 8.1 | 27-44-04-01 |
| eClass 9.0 | 27-44-04-01 | eClass 9.1 | 27-44-04-01 |

**Data sheet**

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**Technical data**

**Notes**

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Notes          | <ul style="list-style-type: none"> <li>• Rated current related to rated cross-section &amp; min. No. of poles.</li> <li>• Wire end ferrule without plastic collar to DIN 46228/1</li> <li>• Wire end ferrule with plastic collar to DIN 46228/4</li> <li>• P on drawing = pitch</li> <li>• 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.</li> </ul> |
| 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**

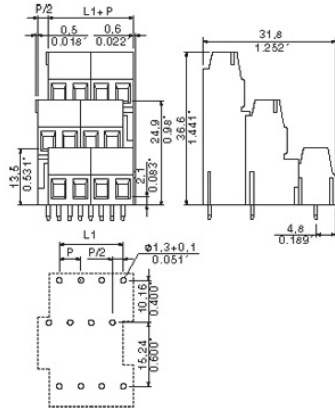
|                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Approval/Certificate/Document of Conformity | <a href="#">Declaration of the Manufacturer</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Brochure/Catalogue                          | <a href="#">FL DRIVES EN</a><br><a href="#">FL ANALO.SIGN.CONV. EN</a><br><a href="#">MB DEVICE MANUF. EN</a><br><a href="#">FL DRIVES DE</a><br><a href="#">CAT 2 PORTFOLIOGUIDE EN</a><br><a href="#">FL BUILDING SAFETY EN</a><br><a href="#">FL APPL LED LIGHTING EN</a><br><a href="#">FLIndustr.CONTROLS EN</a><br><a href="#">FL MACHINE SAFETY EN</a><br><a href="#">FL HEATING ELECTR EN</a><br><a href="#">FL APPL INVERTER EN</a><br><a href="#">FL_BASE_STATION_EN</a><br><a href="#">FL ELEVATOR EN</a><br><a href="#">FL POWER SUPPLY EN</a><br><a href="#">FL 72H SAMPLE SER EN</a><br><a href="#">PO OMNIMATE EN</a> |
| Engineering Data                            | <a href="#">EPLAN, WSCAD</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Engineering Data                            | <a href="#">LM3R.zip</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

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**Drawings**

**Dimensional drawing**



**Graph**

**Technical Data** 07

Rev.

**Material data**

|                                        |                        |
|----------------------------------------|------------------------|
| Insulation material type               | PA 66/6(WEMID)         |
| Insulation material colours            | orange,black,green,gre |
| Insulation material flammability class | UL94                   |
| Insulation resistance                  | MΩhm                   |
| Contact base material                  | Cu-alloy               |
| Contact plating                        | Tin-plated             |

**System characteristic values**

|                                                      |         |                         |
|------------------------------------------------------|---------|-------------------------|
| Pitch <b>P</b>                                       | mm/inch | 5.08 / 0.200            |
| Number of rows                                       |         | 3                       |
| Dielectric strength (r.m.s withstand voltage)        | kV      | >2.5                    |
| Through resistance (typical)                         | mΩhm    | 1.7                     |
| Operating temperature range                          | °C      | -55°...+120° 1)         |
| Degree of protection acc. to VDE 0106                |         | finger safe             |
| Degree of protection acc. to DIN EN 60529            |         | IP20                    |
| Conductor connection method                          |         | clamping yoke           |
| Screw size                                           |         | M2.5                    |
| Screw torque max. acc. to EN 60999                   | Nm      | 0.4 - 0.5               |
| Screwdriver type                                     |         | SD 0.6 x 3.5 / SDK PZ0  |
| Solder pin length <b>L</b>                           | mm/inch | 3.5 / 0.138             |
| PCB hole diameter <b>D</b> (wave soldering)          | mm/inch | 1.3+0.10/0.051+0.004 2) |
| PCB hole diameter <b>D</b> (reflow soldering)        | mm/inch | n.a. 3)                 |
| Resistance to soldering heat acc. to DIN IEC 60512-6 | °C/sec  | 260/10 4)               |
| Resistance to soldering heat acc. to EN 61760-1      | °C/sec  | n.a. 5)                 |
| Solderability classification acc. to EN 61760-1      |         | n.a.                    |
| Solder connection type                               |         | wave soldering          |
| Solder pin diameter <b>d</b> (max.)                  | mm/inch | 1.24/0.049              |

**Application notes**

|                                |        |     |
|--------------------------------|--------|-----|
| Coding possibility             | yes/no | no  |
| Joinable without loss of pitch | yes/no | yes |
| Manual assembly of modules     | yes/no | yes |
| Max. number of poles           |        | 72  |

**Conductor**

|                                             |                 |                         |
|---------------------------------------------|-----------------|-------------------------|
| Clamping range                              | mm <sup>2</sup> | 0.20 - 2.5              |
| "e" solid H05(07) V-U                       | mm <sup>2</sup> | 0.20 - 2.5              |
| "f" flexible H05(07) V-K                    | mm <sup>2</sup> | 0.20 - 1.5              |
| "f" with ferrule acc. to DIN 46228/1        | mm <sup>2</sup> | 0.25 - 1.5              |
| ... with plastic collar acc. to DIN 46228/4 | mm <sup>2</sup> | 0.25 - 1.5              |
| Conductor insulation stripping length       | mm/inch         | 6.0                     |
| Conductor insulation diameter max.          | mm/inch         | n.a.                    |
| Two wire clamping range                     | mm <sup>2</sup> | n.a.                    |
| Gauge to EN 60999 (a x b ; Ø)               | mm              | 2.4x1.5 (A1); Ø1.9 (B1) |

**IEC 664-1 / VDE0110 (4.97) rated data**

|                                                      |                 |         |
|------------------------------------------------------|-----------------|---------|
| Rated cross section acc. to EN 60999                 | mm <sup>2</sup> | 1.5     |
| Rated current @ 20°C ambient (min. pole , max. wire) | A               | 17.5 6) |
| Rated current @ 40°C ambient (min. pole , max. wire) | A               | 17.5 6) |

**Overvoltage category / Pollution degree**

|                       |    |     |     |     |
|-----------------------|----|-----|-----|-----|
| Rated voltage         | V  | 250 | 320 | 630 |
| Rated impulse voltage | kV | 4.0 | 4.0 | 4.0 |

**UL 1059 rated data** File No.: E60693

|                                                |   |         |      |     |
|------------------------------------------------|---|---------|------|-----|
| Rated voltage                                  | V | 300     | n.a. | 300 |
| Rated current                                  | A | 15      | n.a. | 10  |
| AWG wire range (field wiring / factory wiring) |   | 24 - 14 |      |     |

**CSA C22.2 rated data** File No.: LR12400

|                                                |   |         |      |     |
|------------------------------------------------|---|---------|------|-----|
| Rated voltage                                  | V | 300     | n.a. | 300 |
| Rated current                                  | A | 18      | n.a. | 10  |
| AWG wire range (field wiring / factory wiring) |   | 24 - 14 |      |     |

**Packaging**

cardboard box

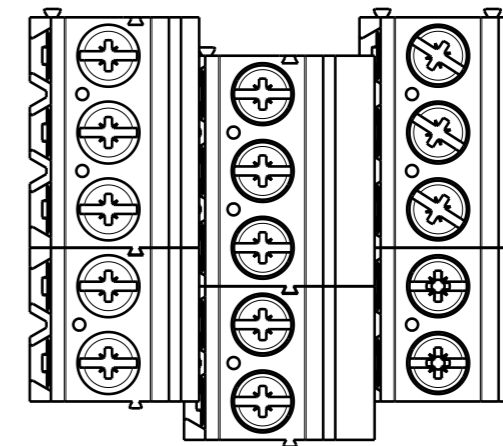
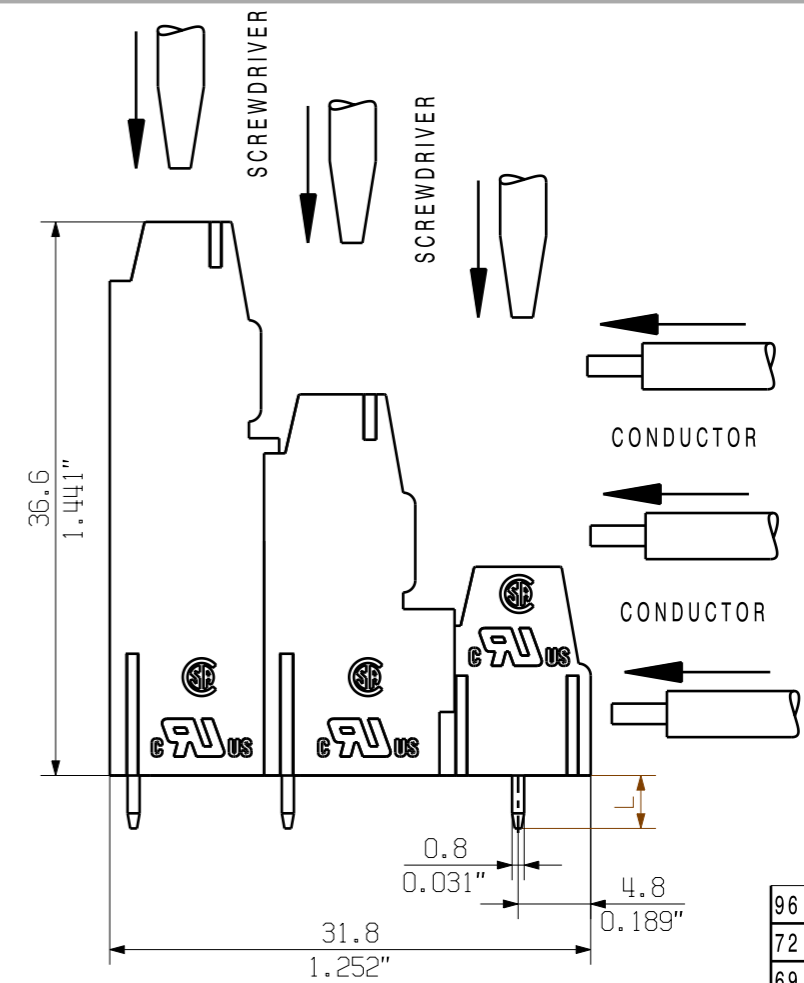
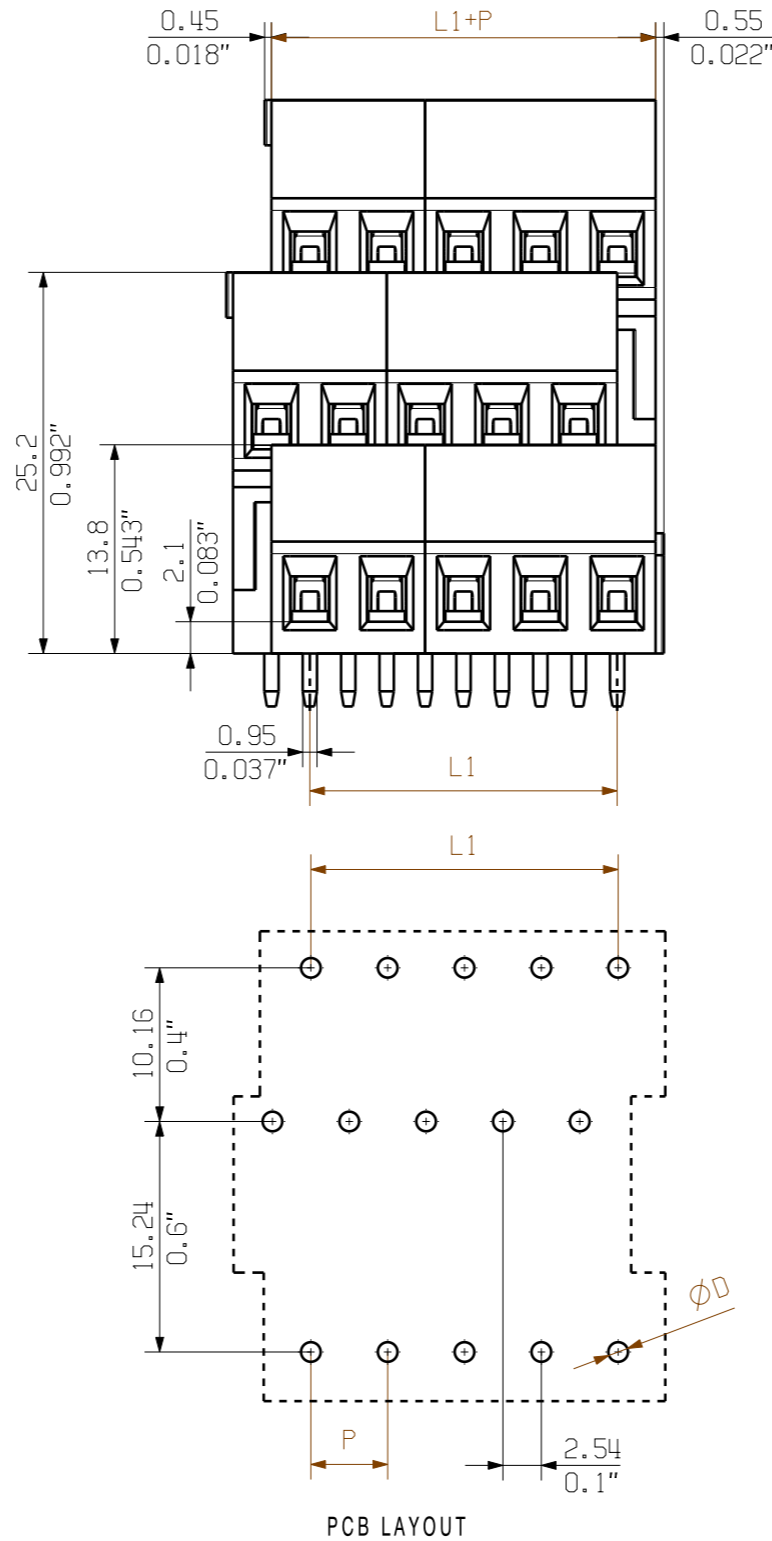
**Downloads**

www.weidmueller.de

- 1) Sum of ambient temperature and temperature rise
- 2) Recommendation for manual assembly
- 3) Recommendation for automatic assembly
- 4) Recommendation for wave soldering
- 5) Recommendation for reflow soldering
- 6) Referred to rated cross section and minimum pole number

n.a. = not applicable

Subject to technical changes



KUNDENZEICHNUNG  
CUSTOMER DRAWING

|    |         |           |
|----|---------|-----------|
| 96 | 157.48  | 6.200     |
| 72 | 116.84  | 4.600     |
| 69 | 111.76  | 4.400     |
| 66 | 106.68  | 4.200     |
| 63 | 101.60  | 4.000     |
| 60 | 96.52   | 3.800     |
| 57 | 91.44   | 3.600     |
| 54 | 86.36   | 3.400     |
| 51 | 81.28   | 3.200     |
| 48 | 76.20   | 3.000     |
| 45 | 71.12   | 2.800     |
| 42 | 66.04   | 2.600     |
| 39 | 60.96   | 2.400     |
| 36 | 55.88   | 2.200     |
| 33 | 50.80   | 2.000     |
| 30 | 45.72   | 1.800     |
| 27 | 40.64   | 1.600     |
| 24 | 35.56   | 1.400     |
| 21 | 30.48   | 1.200     |
| 18 | 25.40   | 1.000     |
| 15 | 20.32   | 0.800     |
| 12 | 15.24   | 0.600     |
| 9  | 10.16   | 0.400     |
| 6  | 5.08    | 0.200     |
| N  | L1 [mm] | L1 [inch] |

For the mounting of PCBs, it should be noted that the rated data stated here relates only to the PCB components alone.

The necessary creepage and clearance paths must be observed in connection with the respective applicant in accordance to IEC 664 / VDE 0110. The current-carrying capacity and pitch tolerance is to be determined according to DIN IEC 326 part 3 very fine.

Weidmüller PCB components are tested to the DIN EN 61984 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.

SHOWN: LM3R 5.08/15

|                                                              |  |                              |  |                                     |  |
|--------------------------------------------------------------|--|------------------------------|--|-------------------------------------|--|
| METRIC TOLERANCES<br>X. = ±0.3<br>X.X = ±0.1<br>X.XX = ±0.05 |  | 66212/5<br>14.12.12 SHI_S 01 |  | CAT.NO.: .                          |  |
| MODIFICATION                                                 |  |                              |  | C 41739 07                          |  |
| DRAWN 01.04.2005 XU_S                                        |  | DATE NAME                    |  | DRAWING NO. ISSUE NO.               |  |
| RESPONSIBLE GE_G                                             |  | 20.07.2007 RUHNAU_S          |  | LM3R 5.08/...                       |  |
| CHECKED 20.07.2007 RUHNAU_S                                  |  | APPROVED XU_S                |  | LEITERPLATTENKLEMME<br>PCB TERMINAL |  |
| SUPERSEDES: 4 29162/01                                       |  | PRODUCT FILE: LM3R 5.08      |  | 7065                                |  |
| SUPERSEDED BY: .                                             |  |                              |  |                                     |  |

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## Recommended wave soldering profiles

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### Single Wave:



### Double Wave:



### Wave soldering profiles

Wired connection elements should be processed in accordance with the DIN EN 61760-1 standard. We have included two recommendations for practical wave soldering profiles, with which Weidmüller PCB terminals and connectors are qualified.

When choosing a suitable profile for your application, the following factors also need to be considered:

- PCB thickness
- Proportion of Cu in the layers
- Single/double-sided assembly
- Product range
- Heating and cooling rates

The single and double wave profiles each indicate the recommended operating range, including the maximum soldering temperature of 260°C. In practice, the maximum soldering temperature is quite often well below the above maximum profile.