

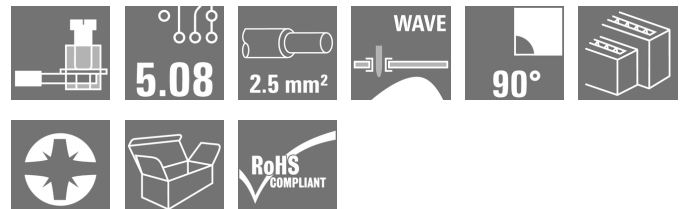
**LM2N 5.08/20/90 3.5SN BK BX****Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

www.weidmueller.com

**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**

|              |                                                                                                                                                                                              |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Version      | Printed circuit board terminals, 5.08 mm, Number of poles: 20, 90°, Solder pin length (l): 3.5 mm, tinned, black, Clamping yoke connection, Clamping range, max. : 2.5 mm <sup>2</sup> , Box |
| Order No.    | <a href="#">1769160000</a>                                                                                                                                                                   |
| Type         | LM2N 5.08/20/90 3.5SN BK BX                                                                                                                                                                  |
| GTIN (EAN)   | 4032248115990                                                                                                                                                                                |
| Qty.         | 20 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                                                                                                                                                                                          |

Creation date September 16, 2022 10:59:03 AM CEST

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## Technical data

## Dimensions and weights

|                          |            |                 |           |
|--------------------------|------------|-----------------|-----------|
| Depth                    | 21.6 mm    | Depth (inches)  | 0.85 inch |
| Height                   | 28.7 mm    | Height (inches) | 1.13 inch |
| Height of lowest version | 25.2 mm    | Width           | 54.34 mm  |
| Width (inches)           | 2.139 inch | Net weight      | 29.5 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                 |
| Number of poles                              | 20                          | Pin series quantity                        | 2                        |
| Fitted by customer                           | Yes                         | Max. adjacent poles per row                | 48                       |
| 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                                   | 45.72 mm                 |
| L1 in inches                                 | 1.8 inch                    | Touch-safe protection acc. to DIN VDE 0470 | IP 20                    |
| Touch-safe protection acc. to DIN VDE 57 106 | Safe from finger touch      | Protection degree                          | IP20                     |
| Volume resistance                            | 1.20 mΩ                     |                                            |                          |

## Material data

|                                       |                                |                                       |        |
|---------------------------------------|--------------------------------|---------------------------------------|--------|
| Insulating material                   | Wemid (PA)                     | Colour                                | black  |
| Colour chart (similar)                | RAL 9011                       | Insulating material group             | I      |
| Comparative Tracking Index (CTI)      | ≥ 600                          | 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.             | -40 °C |
| Storage temperature, max.             | 70 °C                          | 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 mm² |
| Clamping range, max.                                     | 2.5 mm² |
| Wire connection cross section AWG, min.                  | AWG 24  |
| Wire connection cross section AWG, max.                  | AWG 14  |
| Solid, min. H05(07) V-U                                  | 0.2 mm² |
| Solid, max. H05(07) V-U                                  | 2.5 mm² |
| Flexible, min. H05(07) V-K                               | 0.2 mm² |
| Flexible, max. H05(07) V-K                               | 2.5 mm² |
| w. plastic collar ferrule, DIN 46228 pt 4, 0.25 mm² min. |         |
| w. plastic collar ferrule, DIN 46228 pt 4, 1.5 mm² max.  |         |
| w. wire end ferrule, DIN 46228 pt 1, 0.25 mm² min.       |         |

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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

|                     |                                        |                              |                              |
|---------------------|----------------------------------------|------------------------------|------------------------------|
| Clampable conductor | Cross-section for conductor connection | Type                         | fine-wired                   |
|                     |                                        | nominal                      | 0.5 mm <sup>2</sup>          |
|                     | wire end ferrule                       | Stripping length             | nominal 8 mm                 |
|                     |                                        | Recommended wire-end ferrule | <a href="#">H0.5/12 OR</a>   |
|                     |                                        | Stripping length             | nominal 6 mm                 |
|                     |                                        | Recommended wire-end ferrule | <a href="#">H0.5/6</a>       |
|                     | Cross-section for conductor connection | Type                         | fine-wired                   |
|                     |                                        | nominal                      | 0.75 mm <sup>2</sup>         |
|                     | wire end ferrule                       | Stripping length             | nominal 8 mm                 |
|                     |                                        | Recommended wire-end ferrule | <a href="#">H0.75/12 W</a>   |
|                     |                                        | Stripping length             | nominal 6 mm                 |
|                     |                                        | Recommended wire-end ferrule | <a href="#">H0.75/6</a>      |
|                     | Cross-section for conductor connection | Type                         | fine-wired                   |
|                     |                                        | nominal                      | 1 mm <sup>2</sup>            |
|                     | wire end ferrule                       | Stripping length             | nominal 8 mm                 |
|                     |                                        | Recommended wire-end ferrule | <a href="#">H1.0/12 GE</a>   |
|                     |                                        | Stripping length             | nominal 6 mm                 |
|                     |                                        | Recommended wire-end ferrule | <a href="#">H1.0/6</a>       |
|                     | Cross-section for conductor connection | Type                         | fine-wired                   |
|                     |                                        | nominal                      | 0.25 mm <sup>2</sup>         |
|                     | wire end ferrule                       | Stripping length             | nominal 8 mm                 |
|                     |                                        | Recommended wire-end ferrule | <a href="#">H0.25/10 HBL</a> |
|                     |                                        | Stripping length             | nominal 5 mm                 |
|                     |                                        | Recommended wire-end ferrule | <a href="#">H0.25/5</a>      |
|                     | Cross-section for conductor connection | Type                         | fine-wired                   |
|                     |                                        | nominal                      | 0.34 mm <sup>2</sup>         |
|                     | wire end ferrule                       | Stripping length             | nominal 8 mm                 |
|                     |                                        | Recommended wire-end ferrule | <a href="#">H0.34/10 TK</a>  |

Reference text Length of ferrules is to be chosen depending on the product and the rated voltage. The outside diameter of the plastic collar should not be larger than the pitch (P)

## Rated data acc. to IEC

tested acc. to standard

IEC 60664-1, IEC 61984

|                                                                           |        |
|---------------------------------------------------------------------------|--------|
| Rated current, max. number of poles (Tu=20°C)                             | 16 A   |
| Rated current, max. number of poles (Tu=40°C)                             | 14.2 A |
| Rated voltage for surge voltage class / pollution degree III/2            | 320 V  |
| Rated impulse voltage for surge voltage class/ pollution degree II/2      | 4 kV   |
| Rated impulse voltage for surge voltage class/ contamination degree III/3 | 4 kV   |

|                                                                       |                   |
|-----------------------------------------------------------------------|-------------------|
| Rated current, min. number of poles (Tu=20°C)                         | 17.5 A            |
| Rated current, min. number of poles (Tu=40°C)                         | 17.5 A            |
| Rated voltage for surge voltage class / pollution degree II/2         | 630 V             |
| Rated voltage for surge voltage class / pollution degree III/3        | 250 V             |
| Rated impulse voltage for surge voltage class/ pollution degree III/2 | 4 kV              |
| Short-time withstand current resistance                               | 3 x 1s with 120 A |

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## Technical data

## 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.

## Packing

|           |        |            |        |
|-----------|--------|------------|--------|
| Packaging | Box    | VPE length | 350 mm |
| VPE width | 136 mm | VPE height | 41 mm  |

## Classifications

|             |             |             |             |
|-------------|-------------|-------------|-------------|
| ETIM 6.0    | EC002643    | ETIM 7.0    | EC002643    |
| ETIM 8.0    | EC002643    | ECLASS 9.0  | 27-44-04-01 |
| ECLASS 9.1  | 27-44-04-01 | ECLASS 10.0 | 27-44-04-01 |
| ECLASS 11.0 | 27-46-01-01 | ECLASS 12.0 | 27-46-01-01 |

## Important note

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.

Notes

- Rated current related to rated cross-section & min. No. of poles.
- Wire end ferrule without plastic collar to DIN 46228/1
- Wire end ferrule with plastic collar to DIN 46228/4
- The data given under CSA relates to a cUL approval - E60693
- P on drawing = pitch
- 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.
- Long term storage of the product with average temperature of 50 °C and average humidity 70%, 36 months

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Catalogue status 09.09.2022 / We reserve the right to make technical changes.

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[www.weidmueller.com](http://www.weidmueller.com)**Technical data****Approvals**

Approvals



ROHS Conform

UL File Number Search UL Website

Certificate No. (cURus) E60693

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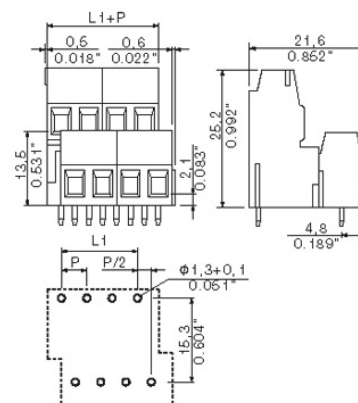
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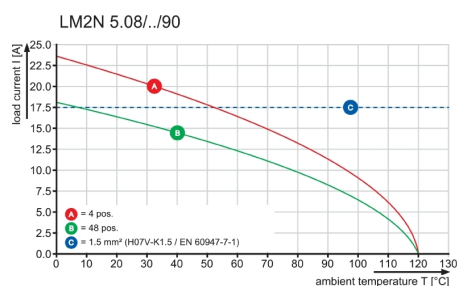
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# Drawings

## Dimensional drawing



## Graph



## 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.

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