

**LL2N 5.00/36/90 3.2SN OR BX****Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

www.weidmueller.com

**Product image**

Similar to illustration

Multi-row PCB terminals with proven clamping yoke connections, in 5.00 and 5.08 mm pitch. 90° conductor outlet direction. Suitable for conductor cross-sections up to 6.0 mm<sup>2</sup>.

**General ordering data**

|              |                                                                                                                                                                                             |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Version      | Printed circuit board terminals, 5.00 mm, Number of poles: 36, 90°, Solder pin length (l): 3.2 mm, tinned, orange, Clamping yoke connection, Clamping range, max. : 6 mm <sup>2</sup> , Box |
| Order No.    | <a href="#">1977410000</a>                                                                                                                                                                  |
| Type         | LL2N 5.00/36/90 3.2SN OR BX                                                                                                                                                                 |
| GTIN (EAN)   | 4032248673025                                                                                                                                                                               |
| Qty.         | 10 pc(s).                                                                                                                                                                                   |
| Product data | IEC: 500 V / 32.5 A / 0.5 - 6 mm <sup>2</sup><br>UL: 300 V / 20 A / AWG 26 - AWG 12                                                                                                         |
| Packaging    | Box                                                                                                                                                                                         |

Creation date March 26, 2021 6:22:01 PM CET

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## Technical data

## Dimensions and weights

|                          |          |                 |            |
|--------------------------|----------|-----------------|------------|
| Depth                    | 21.99 mm | Depth (inches)  | 0.866 inch |
| Height                   | 34.32 mm | Height (inches) | 1.351 inch |
| Height of lowest version | 31.12 mm | Net weight      | 64.35 g    |
| Width                    | 88.19 mm | Width (inches)  | 3.472 inch |

## System parameters

|                                                   |                             |                                              |                          |
|---------------------------------------------------|-----------------------------|----------------------------------------------|--------------------------|
| Product family                                    | OMNIMATE Signal - series LL | Wire connection method                       | Clamping yoke connection |
| Property, clamping point                          | WireReady                   | Mounting onto the PCB                        | THT solder connection    |
| Conductor outlet direction                        | 90°                         | Pitch in mm (P)                              | 5 mm                     |
| Pitch in inches (P)                               | 0.197 inch                  | Number of poles                              | 36                       |
| Pin series quantity                               | 2                           | Fitted by customer                           | Yes                      |
| Max. adjacent poles per row                       | 24                          | Solder pin length (l)                        | 3.2 mm                   |
| Solder pin dimensions                             | 0.75 x 0.9 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.                           | 0.5 Nm                      | Tightening torque, max.                      | 0.6 Nm                   |
| Clamping screw                                    | M 3                         | Stripping length                             | 6 mm                     |
| L1 in mm                                          | 92.5 mm                     | L1 in inches                                 | 3.642 inch               |
| Touch-safe protection acc. to DIN VDE 0470        | IP 20                       | Touch-safe protection acc. to DIN VDE 57 106 | Safe from finger touch   |

## Material data

|                                       |                                |                                       |        |
|---------------------------------------|--------------------------------|---------------------------------------|--------|
| Insulating material                   | Wemid (PA)                     | Colour                                | orange |
| Colour chart (similar)                | RAL 2000                       | Insulating material group             | I      |
| Comparative Tracking Index (CTI)      | ≥ 600                          | UL 94 flammability rating             | V-0    |
| Contact material                      | Copper alloy                   | Contact surface                       | tinned |
| Coating                               | 4-6 µm SN                      | Tinning type                          | matt   |
| Layer structure of solder connection  | 2...4 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.                                                | 0.08 mm <sup>2</sup> |
| Clamping range, max.                                                | 6 mm <sup>2</sup>    |
| Wire connection cross section AWG, min.                             | AWG 26               |
| Wire connection cross section AWG, max.                             | AWG 12               |
| Solid, min. H05(07) V-U                                             | 0.5 mm <sup>2</sup>  |
| Solid, max. H05(07) V-U                                             | 6 mm <sup>2</sup>    |
| Flexible, min. H05(07) V-K                                          | 0.5 mm <sup>2</sup>  |
| Flexible, max. H05(07) V-K                                          | 4 mm <sup>2</sup>    |
| w. plastic collar ferrule, DIN 46228 pt 4, 0.5 mm <sup>2</sup> min. |                      |
| w. plastic collar ferrule, DIN 46228 pt 4, 2.5 mm <sup>2</sup> max. |                      |
| w. wire end ferrule, DIN 46228 pt 1, min.                           | 0.5 mm <sup>2</sup>  |
| w. wire end ferrule, DIN 46228 pt 1, max.                           | 2.5 mm <sup>2</sup>  |

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Plug gauge in accordance with EN 60999 a x b; ø

2.8 mm x 2.4 mm; 3.0 mm

|                     |                                        |                              |                            |      |
|---------------------|----------------------------------------|------------------------------|----------------------------|------|
| 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>     |      |

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, min. number of poles (Tu=20°C)                         | 32.5 A            |
| Rated current, max. number of poles (Tu=20°C)                             | 26 A                   | Rated current, min. number of poles (Tu=40°C)                         | 27.5 A            |
| Rated current, max. number of poles (Tu=40°C)                             | 22 A                   | Rated voltage for surge voltage class / pollution degree II/2         | 500 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)

200039-1202191

|                                   |                                                                        |
|-----------------------------------|------------------------------------------------------------------------|
| Rated voltage (Use group B / CSA) | 300 V                                                                  |
| Rated current (Use group B / CSA) | 20 A                                                                   |
| Wire cross-section, AWG, min.     | AWG 26                                                                 |
| Reference to approval values      | Specifications are maximum values, details - see approval certificate. |

|                                   |        |
|-----------------------------------|--------|
| Rated voltage (Use group D / CSA) | 300 V  |
| Rated current (Use group D / CSA) | 10 A   |
| Wire cross-section, AWG, max.     | AWG 12 |

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## Technical data

## 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 D / UL 1059) 300 V

Rated current (Use group B / UL 1059) 20 A

Rated current (Use group D / UL 1059) 10 A

Wire cross-section, AWG, min. AWG 26

Wire cross-section, AWG, max. AWG 12

Reference to approval values

Specifications are maximum values, details - see approval certificate.

## Packing

Packaging Box

VPE length 0

VPE width 0

VPE height 0

## Classifications

ETIM 6.0 EC002643

ETIM 7.0 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

## 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
- 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

## Approvals

Approvals



ROHS Conform

UL File Number Search E60693

## Downloads

Approval/Certificate/Document of Conformity

[Declaration of the Manufacturer](#)

Engineering Data

[STEP](#)

Engineering Data

[EPLAN, WSCAD](#)

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Catalogue status 12.03.2021 / We reserve the right to make technical changes.

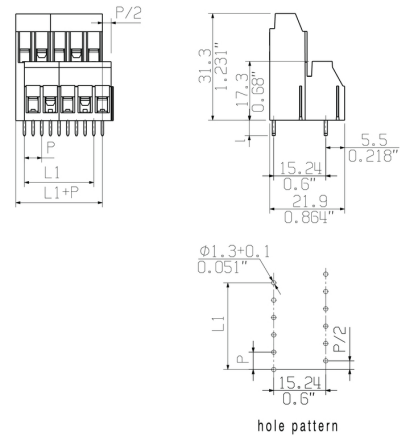
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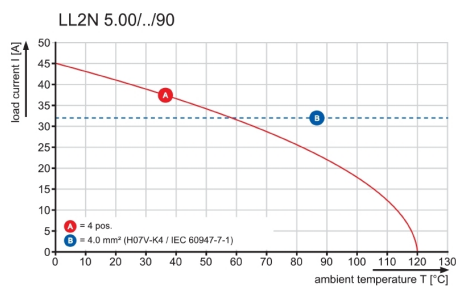
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# Drawings

## 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.

We reserve the right to make technical changes.