

# LUP 10.16/02/90V 5.0SN GY BX

**Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

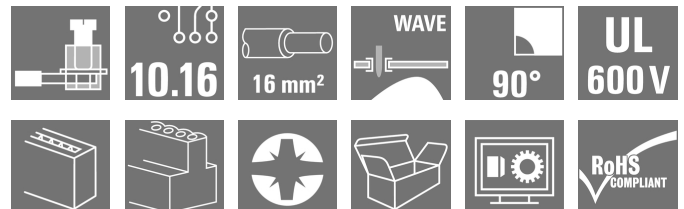
[www.weidmueller.com](http://www.weidmueller.com)

## Product image



Similar to illustration

This PCB terminal with proven clamping yoke connection with 10.16 mm pitch and 90° conductor outlet direction offers the following features: 1000 V, offset solder pins, test point, 76 A and 16 mm<sup>2</sup> wire cross-section.



## General ordering data

|              |                                                                                                                                                                                                 |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Version      | Printed circuit board terminals, 10.16 mm, Number of poles: 2, 90°, Solder pin length (l): 5 mm, tinned, Pebble grey, Clamping yoke connection, Clamping range, max. : 16 mm <sup>2</sup> , Box |
| Order No.    | <a href="#">2013930000</a>                                                                                                                                                                      |
| Type         | LUP 10.16/02/90V 5.0SN GY BX                                                                                                                                                                    |
| GTIN (EAN)   | 4050118399004                                                                                                                                                                                   |
| Qty.         | 20 pc(s).                                                                                                                                                                                       |
| Product data | IEC: 1000 V / 76 A / 0.5 - 16 mm <sup>2</sup><br>UL: 600 V / 51 A / AWG 22 - AWG 6                                                                                                              |
| Packaging    | Box                                                                                                                                                                                             |

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## Technical data

## Dimensions and weights

|                          |          |                 |            |
|--------------------------|----------|-----------------|------------|
| Depth                    | 25.1 mm  | Depth (inches)  | 0.988 inch |
| Height                   | 36.5 mm  | Height (inches) | 1.437 inch |
| Height of lowest version | 31.5 mm  | Net weight      | 18.42 g    |
| Width                    | 21.12 mm | Width (inches)  | 0.831 inch |

## System parameters

|                                              |                             |                                                   |                              |
|----------------------------------------------|-----------------------------|---------------------------------------------------|------------------------------|
| Product family                               | OMNIMATE Power - series LUP | Wire connection method                            | Clamping yoke connection     |
| Mounting onto the PCB                        | THT solder connection       | Conductor outlet direction                        | 90°                          |
| Pitch in mm (P)                              | 10.16 mm                    | Pitch in inches (P)                               | 0.4 inch                     |
| Number of poles                              | 2                           | Pin series quantity                               | 1                            |
| Fitted by customer                           | Yes                         | Max. adjacent poles per row                       | 12                           |
| Solder pin length (l)                        | 5 mm                        | Solder pin dimensions                             | 1.2 x 1.2 mm                 |
| Solder eyelet hole diameter (D)              | 1.6 mm                      | Solder eyelet hole diameter tolerance (D)+ 0,1 mm |                              |
| Number of solder pins per pole               | 2                           | Screwdriver blade                                 | 1.0 x 5.5, PZ 2              |
| Screwdriver blade standard                   | DIN 5264                    | Tightening torque, min.                           | 1.2 Nm                       |
| Tightening torque, max.                      | 1.5 Nm                      | Clamping screw                                    | M 4                          |
| Stripping length                             | 12 mm                       | L1 in mm                                          | 10.16 mm                     |
| L1 in inches                                 | 0.4 inch                    | Touch-safe protection acc. to DIN VDE 0470        | IP20 plugged/ IP10 unplugged |
| Touch-safe protection acc. to DIN VDE 57 106 | Safe from finger touch      | Volume resistance                                 | 0.50 mΩ                      |

## Material data

|                                       |                                  |                                       |             |
|---------------------------------------|----------------------------------|---------------------------------------|-------------|
| Insulating material                   | Wemid (PA)                       | Colour                                | Pebble grey |
| Colour chart (similar)                | RAL 7032                         | Insulating material group             | I           |
| Comparative Tracking Index (CTI)      | ≥ 600                            | UL 94 flammability rating             | V-0         |
| Contact material                      | E-Cu                             | Contact surface                       | tinned      |
| Layer structure of solder connection  | 1.5...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.                                                | 0.13 mm <sup>2</sup> |
| Clamping range, max.                                                | 16 mm <sup>2</sup>   |
| Wire connection cross section AWG, min.                             | AWG 22               |
| Wire connection cross section AWG, max.                             | AWG 6                |
| Solid, min. H05(07) V-U                                             | 0.5 mm <sup>2</sup>  |
| Solid, max. H05(07) V-U                                             | 16 mm <sup>2</sup>   |
| Stranded, min. H07V-R                                               | 6 mm <sup>2</sup>    |
| Stranded, max. H07V-R                                               | 16 mm <sup>2</sup>   |
| Flexible, min. H05(07) V-K                                          | 0.5 mm <sup>2</sup>  |
| Flexible, max. H05(07) V-K                                          | 16 mm <sup>2</sup>   |
| w. plastic collar ferrule, DIN 46228 pt 4, 2.5 mm <sup>2</sup> min. |                      |
| w. plastic collar ferrule, DIN 46228 pt 4, 10 mm <sup>2</sup> max.  |                      |
| w. wire end ferrule, DIN 46228 pt 1, 2.5 mm <sup>2</sup> min.       |                      |

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w. wire end ferrule, DIN 46228 pt 1, max. 10 mm<sup>2</sup>

Plug gauge in accordance with EN 60999 a x b; ø 5.4 mm x 5.1 mm; 5.3 mm

|                     |                                        |                              |                             |       |
|---------------------|----------------------------------------|------------------------------|-----------------------------|-------|
| Clampable conductor | Cross-section for conductor connection | Type                         | fine-wired                  |       |
|                     |                                        | nominal                      | 2.5 mm <sup>2</sup>         |       |
|                     | wire end ferrule                       | Stripping length             | nominal                     | 12 mm |
|                     |                                        | Recommended wire-end ferrule | <a href="#">H2.5/12</a>     |       |
|                     |                                        | Stripping length             | nominal                     | 14 mm |
|                     |                                        | Recommended wire-end ferrule | <a href="#">H2.5/19D BL</a> |       |
|                     | Cross-section for conductor connection | Type                         | fine-wired                  |       |
|                     |                                        | nominal                      | 4 mm <sup>2</sup>           |       |
|                     | wire end ferrule                       | Stripping length             | nominal                     | 12 mm |
|                     |                                        | Recommended wire-end ferrule | <a href="#">H4.0/12</a>     |       |
|                     |                                        | Stripping length             | nominal                     | 14 mm |
|                     |                                        | Recommended wire-end ferrule | <a href="#">H4.0/20D GR</a> |       |
|                     | Cross-section for conductor connection | Type                         | fine-wired                  |       |
|                     |                                        | nominal                      | 6 mm <sup>2</sup>           |       |
|                     | wire end ferrule                       | Stripping length             | nominal                     | 12 mm |
|                     |                                        | Recommended wire-end ferrule | <a href="#">H6.0/12</a>     |       |
|                     |                                        | Stripping length             | nominal                     | 14 mm |
|                     |                                        | Recommended wire-end ferrule | <a href="#">H6.0/20 SW</a>  |       |
|                     | Cross-section for conductor connection | Type                         | fine-wired                  |       |
|                     |                                        | nominal                      | 10 mm <sup>2</sup>          |       |
|                     | wire end ferrule                       | Stripping length             | nominal                     | 15 mm |
|                     |                                        | Recommended wire-end ferrule | <a href="#">H10.0/22 EB</a> |       |
|                     |                                        | Stripping length             | nominal                     | 12 mm |
|                     |                                        | Recommended wire-end ferrule | <a href="#">H10.0/12</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)                         | 76 A              |
| Rated current, max. number of poles (Tu=20°C)                             | 72 A                   | Rated current, min. number of poles (Tu=40°C)                         | 72 A              |
| Rated current, max. number of poles (Tu=40°C)                             | 62 A                   | Rated voltage for surge voltage class / pollution degree II/2         | 1,000 V           |
| Rated voltage for surge voltage class / pollution degree III/2            | 1,000 V                | Rated voltage for surge voltage class / pollution degree III/3        | 800 V             |
| Rated impulse voltage for surge voltage class/ pollution degree II/2      | 6 kV                   | Rated impulse voltage for surge voltage class/ pollution degree III/2 | 8 kV              |
| Rated impulse voltage for surge voltage class/ contamination degree III/3 | 8 kV                   | Short-time withstand current resistance                               | 1 x 1s with 700 A |

## Rated data acc. to CSA

|                                   |        |                                   |       |
|-----------------------------------|--------|-----------------------------------|-------|
| Rated voltage (Use group B / CSA) | 600 V  | Rated voltage (Use group C / CSA) | 600 V |
| Rated voltage (Use group D / CSA) | 600 V  | Rated current (Use group B / CSA) | 51 A  |
| Rated current (Use group C / CSA) | 51 A   | Rated current (Use group D / CSA) | 5 A   |
| Wire cross-section, AWG, min.     | AWG 22 | Wire cross-section, AWG, max.     | AWG 6 |

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## Rated data acc. to UL 1059

|                                       |                                                                                   |                                       |        |
|---------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------|--------|
| Institute (UR)                        |  | Certificate No. (UR)                  | E60693 |
| Institute (cURus)                     |  | Certificate No. (cURus)               | E60693 |
| Rated voltage (Use group B / UL 1059) | 600 V                                                                             | Rated voltage (Use group C / UL 1059) | 600 V  |
| Rated voltage (Use group D / UL 1059) | 600 V                                                                             | Rated current (Use group B / UL 1059) | 51 A   |
| Rated current (Use group C / UL 1059) | 51 A                                                                              | Rated current (Use group D / UL 1059) | 5 A    |
| Wire cross-section, AWG, min.         | AWG 22                                                                            | Wire cross-section, AWG, max.         | AWG 6  |
| 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          | <ul style="list-style-type: none"> <li>• Additional colours on request</li> <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>• The data given under CSA relates to a cUL approval - E60693</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> <li>• Long term storage of the product with average temperature of 50 °C and average humidity 70%, 36 months</li> </ul> |

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## Technical data

### 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](#)

User Documentation

[QR-Code product handling video](#)

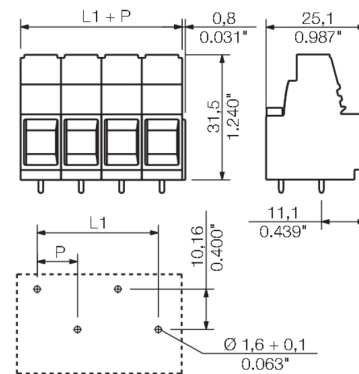
## LUP 10.16/02/90V 5.0SN GY BX

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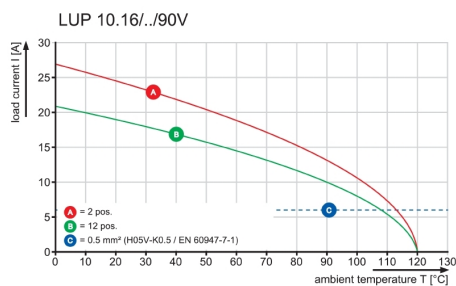
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# Drawings

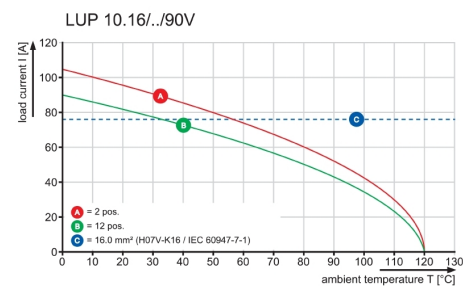
## Dimensional drawing



## Graph



## Graph



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Dimensions without tolerances are no check dimensions

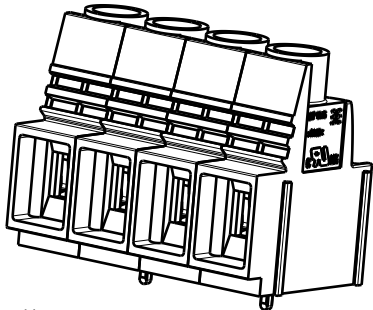
The English version is binding



P=pitch=10.16  
l = pin length  
n = no of poles  
D = 1.6+0.1

GENERAL TOLERANCE:  
DIN ISO 2768-mK

SHOWN: LUP 10.16/04/90V



|    |         |           |
|----|---------|-----------|
| 12 | 111,76  | 4,400     |
| 11 | 101,60  | 4,000     |
| 10 | 91,44   | 3,600     |
| 9  | 81,28   | 3,200     |
| 8  | 71,12   | 2,800     |
| 7  | 60,96   | 2,400     |
| 6  | 50,80   | 2,000     |
| 5  | 40,64   | 1,600     |
| 4  | 30,48   | 1,200     |
| 3  | 20,32   | 0,800     |
| 2  | 10,16   | 0,400     |
| n  | L1 [mm] | L1 [Inch] |

|      |        |
|------|--------|
| 5.0  | 0.196  |
| 3.2  | 0.125  |
| l    | l      |
| [mm] | [inch] |

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 with 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 connectors are used to the intended purpose, all requirements with respect to the occurring of electrical, mechanical, thermic and corrosive stress will be satisfied.

|                   |                                |              |            |                           |                                                             |                               |  |
|-------------------|--------------------------------|--------------|------------|---------------------------|-------------------------------------------------------------|-------------------------------|--|
|                   | 102478                         |              |            | Prim PLM Part No.: 008435 |                                                             | Prim ERP Part No.: 1193000000 |  |
|                   | First Issue Date<br>03.03.2018 | Modification |            |                           |                                                             | 52588                         |  |
|                   |                                | Drawn        | 03.03.2018 | Administrator             | LUP 10.16/././90V...<br>LEITERPLATTENKLEMME<br>PCB TERMINAL |                               |  |
|                   |                                | Responsible  |            | Amann, Alexand            |                                                             |                               |  |
| Scale: 2:1        | Size: A3                       | Approved     | 22.11.2018 | Lang, Thomas              |                                                             |                               |  |
| Drawings Assembly |                                |              |            |                           |                                                             |                               |  |

## Recommended wave soldering profiles

**Weidmüller Interface GmbH & Co. KG**  
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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.