

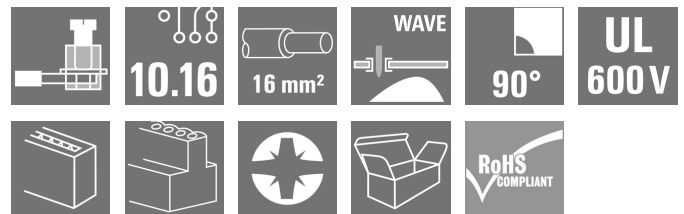
LUP 10.16/09/90V 5.0SN BK BX**Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

www.weidmueller.com

Product image

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 mm² wire cross-section.

General ordering data

| | |
|--------------|---|
| Version | Printed circuit board terminals, 10.16 mm, Number of poles: 9, 90°, Solder pin length (l): 5 mm, tinned, black, Clamping yoke connection, Clamping range, max. : 16 mm ² , Box |
| Order No. | 2013920000 |
| Type | LUP 10.16/09/90V 5.0SN BK BX |
| GTIN (EAN) | 4050118399707 |
| Qty. | 20 pc(s). |
| Product data | IEC: 1000 V / 76 A / 0.5 - 16 mm ² UL: 600 V / 51 A / AWG 22 - AWG 6 |
| Packaging | Box |

Creation date September 21, 2024 1:04:30 AM CEST

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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 | Width | 92.24 mm |
| Width (inches) | 3.631 inch | Net weight | 82.92 g |

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 " |
| Number of poles | 9 | Pin series quantity | 1 |
| Fitted by customer | Yes | Number of rows | 1 |
| 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 | 81.28 mm | L1 in inches | 3.2 " |
| 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 |
| Protection degree | IP20 | Volume resistance | 0.50 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 | Cu-alloy | 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 ² |
| Clamping range, max. | 16 mm ² |
| 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 ² |
| Solid, max. H05(07) V-U | 16 mm ² |
| Stranded, min. H07V-R | 6 mm ² |
| Stranded, max. H07V-R | 16 mm ² |
| Flexible, min. H05(07) V-K | 0.5 mm ² |
| Flexible, max. H05(07) V-K | 16 mm ² |
| w. plastic collar ferrule, DIN 46228 pt 4, 2.5 mm ² min. | |
| w. plastic collar ferrule, DIN 46228 pt 4, 10 mm ² max. | |
| w. wire end ferrule, DIN 46228 pt 1, 2.5 mm ² min. | |

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Technical data

w. wire end ferrule, DIN 46228 pt 1, max. 10 mm²

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 ² | |
| wire end ferrule | Stripping length | nominal | 12 mm |
| | Recommended wire-end ferrule | H2.5/12 | |
| | Stripping length | nominal | 14 mm |
| | Recommended wire-end ferrule | H2.5/19D BL | |
| Cross-section for conductor connection | Type | fine-wired | |
| | nominal | 4 mm ² | |
| wire end ferrule | Stripping length | nominal | 12 mm |
| | Recommended wire-end ferrule | H4.0/12 | |
| | Stripping length | nominal | 14 mm |
| | Recommended wire-end ferrule | H4.0/20D GR | |
| Cross-section for conductor connection | Type | fine-wired | |
| | nominal | 6 mm ² | |
| wire end ferrule | Stripping length | nominal | 12 mm |
| | Recommended wire-end ferrule | H6.0/12 | |
| | Stripping length | nominal | 14 mm |
| | Recommended wire-end ferrule | H6.0/20 SW | |
| Cross-section for conductor connection | Type | fine-wired | |
| | nominal | 10 mm ² | |
| wire end ferrule | Stripping length | nominal | 15 mm |
| | Recommended wire-end ferrule | H10.0/22 EB | |
| | Stripping length | nominal | 12 mm |
| | Recommended wire-end ferrule | H10.0/12 | |

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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Catalogue status 14.09.2024 / We reserve the right to make technical changes.

LUP 10.16/09/90V 5.0SN BK BX

Weidmüller Interface GmbH & Co. KG

Klingenbergstraße 26



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Technical data

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 | 224 mm |
| VPE width | 179 mm | VPE height | 66 mm |

Type tests

| | | | |
|-------------------------------|----------------|--|------------------------------|
| Test: Durability of markings | Standard | DIN EN 61984 section 7.3.2 / 09.02 taking pattern from DIN EN 60068-2-70 / 07.96 | |
| | Test | mark of origin, type identification, type of material, approval marking UL, durability | |
| | Evaluation | available | |
| Test: Clampable cross section | Standard | DIN EN 60999-1 section 7 and 9.1 / 12.00, DIN EN 60947-1 section 8.2.4.5.1 / 12.02 | |
| | Conductor type | Type of conductor and conductor cross-section | solid 0.5 mm ² |
| | | Type of conductor and conductor cross-section | stranded 0.5 mm ² |
| | | Type of conductor and conductor cross-section | solid 16 mm ² |
| | | Type of conductor and conductor cross-section | stranded 16 mm ² |
| | | Type of conductor and conductor cross-section | AWG 22/1 |
| | | Type of conductor and conductor cross-section | AWG 22/19 |
| | | Type of conductor and conductor cross-section | AWG 6/7 |
| | | Type of conductor and conductor cross-section | AWG 6/19 |
| | | Evaluation | passed |

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| | | |
|---|----------------|--|
| Test for damage to and accidental loosening of conductors | Standard | DIN EN 60999-1 section 9.4 / 12.00 |
| | Requirement | 0.2 kg |
| | Conductor type | Type of conductor and AWG 22/1 conductor cross-section |
| | | Type of conductor and AWG 22/19 conductor cross-section |
| | Evaluation | passed |
| | Requirement | 0.3 kg |
| | Conductor type | Type of conductor and solid 0.5 mm ² conductor cross-section |
| | | Type of conductor and stranded 0.5 mm ² conductor cross-section |
| | Evaluation | passed |
| | Requirement | 2.9 kg |
| Pull-out test | Conductor type | Type of conductor and solid 16 mm ² conductor cross-section |
| | | Type of conductor and stranded 16 mm ² conductor cross-section |
| | Conductor type | Type of conductor and AWG 6/7 conductor cross-section |
| | | |
| | Evaluation | passed |
| | Standard | DIN EN 60999-1 section 9.5 / 12.00 |
| | Requirement | ≥15 N |
| | Conductor type | Type of conductor and AWG 22/1 conductor cross-section |
| | | Type of conductor and AWG 22/19 conductor cross-section |
| | Evaluation | passed |
| | Conductor type | Type of conductor and H05V-U0.5 conductor cross-section |
| | | Type of conductor and H05V-K0.5 conductor cross-section |
| | Evaluation | passed |
| | Requirement | ≥20 N |
| | Conductor type | Type of conductor and H05V-U0.5 conductor cross-section |
| | | Type of conductor and H05V-K0.5 conductor cross-section |
| | Evaluation | passed |
| | Requirement | ≥100 N |
| | Conductor type | Type of conductor and H07V-K16 conductor cross-section |
| | | Type of conductor and H07V-U16 conductor cross-section |
| | Conductor type | Type of conductor and AWG 6/7 conductor cross-section |
| | | |
| | Evaluation | passed |

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Technical data

Classifications

| | | | |
|-------------|-------------|-------------|-------------|
| ETIM 6.0 | EC002643 | ETIM 7.0 | EC002643 |
| ETIM 8.0 | EC002643 | ETIM 9.0 | 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 | ECLASS 13.0 | 27-46-01-01 |
| ECLASS 14.0 | 27-46-01-01 | | |

Environmental Product Compliance

| | |
|------------------------|-----------------------------|
| REACH SVHC | / |
| RoHS Compliance Status | Compliant without exemption |

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"> • Additional variants on request • 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 maximum humidity 70%, 36 months |

Approvals

Approvals



| | |
|-------------------------|------------|
| ROHS | Conform |
| UL File Number Search | UL Website |
| Certificate No. (UR) | E60693 |
| Certificate No. (cURus) | E60693 |

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Technical data

Downloads

Approval/Certificate/Document of Conformity

[Declaration of the Manufacturer](#)

Engineering Data

[CAD data – STEP](#)

Product Change Notification

[20220201 Visual change OMNIMATE® Power PCB terminal blocks and connectors](#)

[20220201 Visuelle Änderung OMNIMATE® Power Leiterplattenklemmen und -steckverbinder](#)

User Documentation

[QR-Code product handling video](#)

Catalogues

[Catalogues in PDF-format](#)

Brochures

[FL DRIVES EN](#)

[MB DEVICE MANUF. EN](#)

[FL DRIVES DE](#)

[FL APPL. INVERTER EN](#)

[FL BASE STATION EN](#)

[FL ELEVATOR EN](#)

[FL POWER SUPPLY EN](#)

[FL 72H SAMPLE SER EN](#)

[PO OMNIMATE EN](#)

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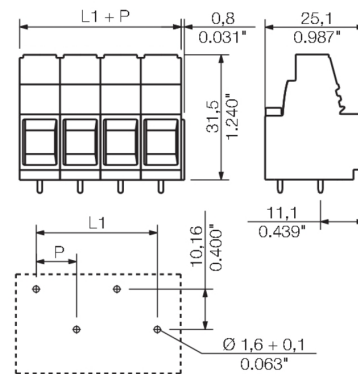
www.weidmueller.com

Drawings

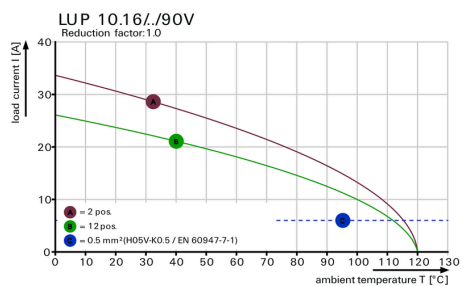
Product image



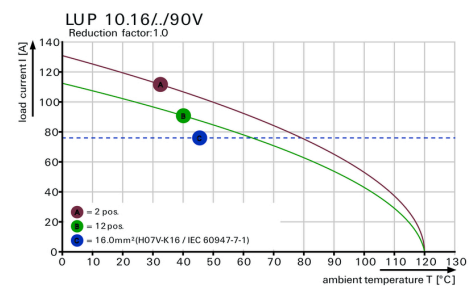
Dimensional drawing



Graph



Graph



LUP 10.16/09/90V 5.0SN BK BX**Weidmüller Interface GmbH & Co. KG**

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www.weidmueller.com**Accessories****Slotted screwdriver**

VDE insulated slot-head screwdriver, SDI DIN 7437, ISO 2380/2, drive output acc. to DIN 5264, ISO 2380/1. SoftFinish grip

General ordering data

| | | |
|------------|----------------------------|--------------------------|
| Type | SDIS 1.0X5.5X175 | Version |
| Order No. | 9205710000 | Screwdriver, Screwdriver |
| GTIN (EAN) | 4032248773015 | |
| Qty. | 1 pc(s). | |

Slotted screwdriver

Slotted screwdriver with rounded blade SD DIN 5265, ISO 2380/2, output to DIN 5264, ISO 2380/1. ChromTop tip, SoftFinish grip

General ordering data

| | | |
|------------|----------------------------|--------------------------|
| Type | SDS 1.0X5.5X150 | Version |
| Order No. | 9008350000 | Screwdriver, Screwdriver |
| GTIN (EAN) | 4032248056316 | |
| Qty. | 1 pc(s). | |

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www.weidmueller.com**Accessories****Crosshead screwdriver Pozidriv**

VDE insulated crosshead screwdriver type Pozidriv SDIK PZ DIN 7438, ISO 8764/2-PZ, output to ISO 8764-PZ, SoftFinish grip

General ordering data

| | | |
|------------|----------------------------|--------------------------|
| Type | SDIK PZ2 | Version |
| Order No. | 9008890000 | Screwdriver, Screwdriver |
| GTIN (EAN) | 4032248266661 | |
| Qty. | 1 pc(s). | |

Crosshead screwdriver Pozidriv

Crosshead screwdriver, Pozidriv, SDK PZ DIN 5262, ISO 8764/2-PZ, output to ISO 8764/1-PZ, ChromTop tip, SoftFinish grip

General ordering data

| | | |
|------------|----------------------------|--------------------------|
| Type | SDK PZ2 | Version |
| Order No. | 9008540000 | Screwdriver, Screwdriver |
| GTIN (EAN) | 4032248056538 | |
| Qty. | 1 pc(s). | |

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Dimensions without tolerances are no check dimensions

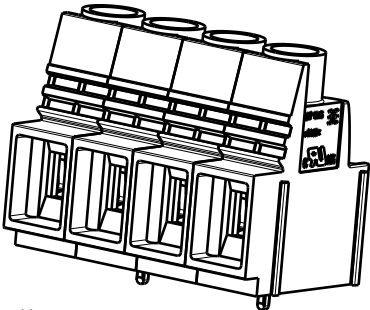
The English version is binding



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 03.03.2018 | Modification | | Weidmüller | | 52588 | | |
| | Drawn | Date | Name | LUP 10.16/././90V... LEITERPLATTENKLEMME PCB TERMINAL | | | | |
| | Responsible | | Amann, Alexand | | | | | |
| Scale: 2:1 | Size: A3 | Approved | 22.11.2018 | Lang, Thomas | Product file: 7233 LUP 10.16/12.7 | | | |
| Drawings Assembly | | | | | | | | |

Recommended wave soldering profiles

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D-32758 Detmold
Germany
Fon: +49 5231 14-0
Fax: +49 5231 14-292083
www.weidmueller.com

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.