

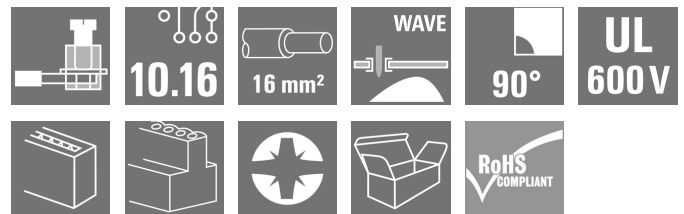
**LUP 10.16/02/90V 5.0SN BK BX****Weidmüller Interface GmbH & Co. KG**

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 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, black, Clamping yoke connection, Clamping range, max. : 16 mm <sup>2</sup> , Box
Order No.	<a href="#">2012810000</a>
Type	LUP 10.16/02/90V 5.0SN BK BX
GTIN (EAN)	4050118398953
Qty.	20 pc(s).
Product data	IEC: 1000 V / 76 A / 0.5 - 16 mm <sup>2</sup> UL: 600 V / 51 A / AWG 22 - AWG 6
Packaging	Box

Creation date July 16, 2024 8:42:13 PM CEST

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

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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	21.12 mm
Width (inches)	0.831 inch	Net weight	18.42 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	2	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	10.16 mm	L1 in inches	0.4 "
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 <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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**Technical data**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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Catalogue status 13.07.2024 / We reserve the right to make technical changes.

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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	128 mm
VPE width	119 mm	VPE height	50 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 <sup>2</sup>
		Type of conductor and conductor cross-section	stranded 0.5 mm <sup>2</sup>
		Type of conductor and conductor cross-section	solid 16 mm <sup>2</sup>
		Type of conductor and conductor cross-section	stranded 16 mm <sup>2</sup>
		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 <sup>2</sup> conductor cross-section
		Type of conductor and stranded 0.5 mm <sup>2</sup> conductor cross-section
	Evaluation	passed
	Requirement	2.9 kg
Pull-out test	Conductor type	Type of conductor and solid 16 mm <sup>2</sup> conductor cross-section
		Type of conductor and stranded 16 mm <sup>2</sup> 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

## 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"> <li>• Additional variants 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 maximum humidity 70%, 36 months</li> </ul>

## Approvals

Approvals



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

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

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## Technical data

### Downloads

Approval/Certificate/Document of Conformity	<a href="#">Declaration of the Manufacturer</a>
Engineering Data	<a href="#">CAD data – STEP</a>
Product Change Notification	<a href="#">20220201 Visual change OMNIMATE® Power PCB terminal blocks and connectors</a> <a href="#">20220201 Visuelle Änderung OMNIMATE® Power Leiterplattenklemmen und -steckverbinder</a>
User Documentation	<a href="#">QR-Code product handling video</a>
Catalogues	<a href="#">Catalogues in PDF-format</a>
Brochures	<a href="#">FL DRIVES EN</a> <a href="#">MB DEVICE MANUF. EN</a> <a href="#">FL DRIVES DE</a> <a href="#">FL APPL. INVERTER EN</a> <a href="#">FL BASE STATION EN</a> <a href="#">FL ELEVATOR EN</a> <a href="#">FL POWER SUPPLY EN</a> <a href="#">FL 72H SAMPLE SER EN</a> <a href="#">PO OMNIMATE EN</a>

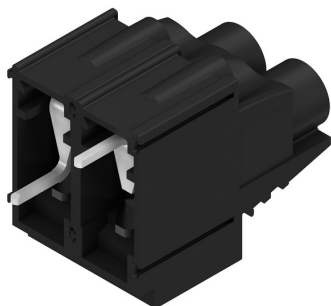
## LUP 10.16/02/90V 5.0SN BK BX

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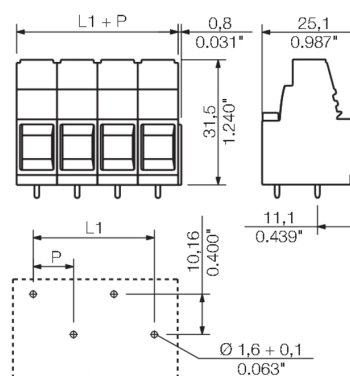
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## Drawings

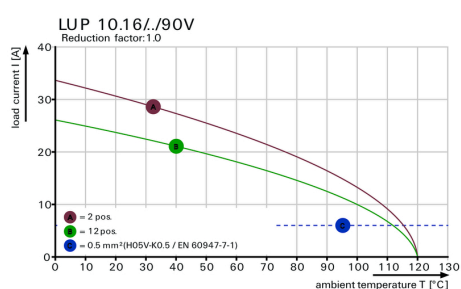
### Product image



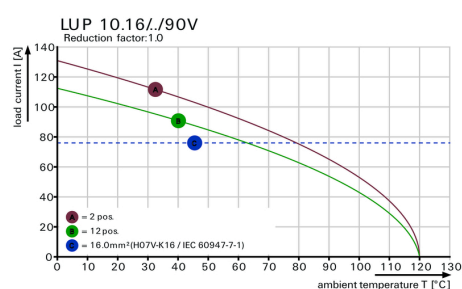
### Dimensional drawing



### Graph



### Graph





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[www.weidmueller.com](http://www.weidmueller.com)**Accessories****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.	<a href="#">9008540000</a>	Screwdriver, Screwdriver
GTIN (EAN)	4032248056538	
Qty.	1 pc(s).	

**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.	<a href="#">9205710000</a>	Screwdriver, Screwdriver
GTIN (EAN)	4032248773015	
Qty.	1 pc(s).	

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[www.weidmueller.com](http://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.	<a href="#">9008890000</a>	Screwdriver, Screwdriver
GTIN (EAN)	4032248266661	
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.	<a href="#">9008350000</a>	Screwdriver, Screwdriver
GTIN (EAN)	4032248056316	
Qty.	1 pc(s).	

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Dimensions without tolerances are no check dimensions

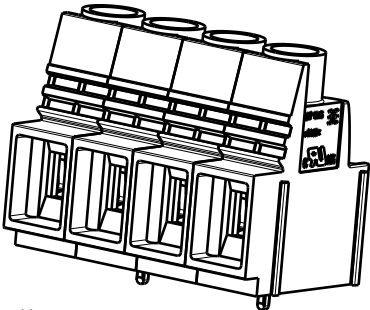
The English version is binding



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

Drawing no. **52588** Issue no. **07**

Sheet 01 of 01 sheets

## Recommended wave soldering profiles

**Weidmüller Interface GmbH & Co. KG**  
Klingenbergstraße 16  
D-32758 Detmold  
Germany  
Fon: +49 5231 14-0  
Fax: +49 5231 14-292083  
[www.weidmueller.com](http://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.