

**LXXX 15.00/09/90FL 4.5SN BK BX****Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

www.weidmueller.com

**Product image**

The high-current PCB connection for more power on board: 150 A / 1000 V with wires up to 50 mm<sup>2</sup>, transmitted right to the PCB!

The LXXX 15.0 – with its proven steel clamping-yoke technology in a compact standard housing – integrates the latest market requirements for security, power density and miniaturization in power electronics. It connects these requirements into an efficient solution for the entire value-creation chain – including development, production, installation and maintenance.

The function and form of the application's connection method plays a key role. It influences the application's design, reliability, usability and costs. With the Substitution of

For example, with the replacement of complex constructions involving bolts or bus bars, the PCB can be transformed into a system platform that is both consistent and sustainable into the future – even for high-current applications.

The LXXX 15.0 reduces size and complexity while at the same time improving application integration. In so doing, it fulfils the requirements of power electronics better than the established mechanisms and connection elements.

**General ordering data**

Version	Printed circuit board terminals, 15.00 mm, Number of poles: 9, 90°, Solder pin length (l): 4.5 mm, tinned, black, Clamping yoke connection, Clamping range, max.: 50 mm <sup>2</sup> , Box
Order No.	<a href="#">1386930000</a>
Type	LXXX 15.00/09/90FL 4.5SN BK BX
GTIN (EAN)	4050118187649
Qty.	8 pc(s).
Product data	IEC: 1000 V / 150 A / 0.5 - 50 mm <sup>2</sup> UL: 600 V / 126 A / AWG 20 - AWG 1
Packaging	Box

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## Technical data

## Dimensions and weights

Depth	31 mm	Depth (inches)	1.22 inch
Height	56 mm	Height (inches)	2.205 inch
Height of lowest version	51.5 mm	Width	150.5 mm
Width (inches)	5.925 inch	Net weight	266.795 g

## System parameters

Product family	OMNIMATE Power - series LXXX	Wire connection method	Clamping yoke connection
Mounting onto the PCB	THT solder connection	Conductor outlet direction	90°
Pitch in mm (P)	15 mm	Pitch in inches (P)	0.591 "
Number of poles	9	Pin series quantity	1
Fitted by customer	No	Number of rows	1
Solder pin length (l)	4.5 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	4	Screwdriver blade	1.2 x 6.5
Screwdriver blade standard	DIN 5264	Tightening torque, min.	2.5 Nm
Tightening torque, max.	4 Nm	Clamping screw	M 6
Stripping length	18 mm	L1 in mm	120 mm
L1 in inches	4.727 "	Touch-safe protection acc. to DIN VDE 0470	IP 20
Protection degree	IP20		

## 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
Coating	4-6 µm SN	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.	0.5 mm <sup>2</sup>
Clamping range, max.	50 mm <sup>2</sup>
Wire connection cross section AWG, min.	AWG 20
Wire connection cross section AWG, max.	AWG 1
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	50 mm <sup>2</sup>
Flexible, min. H05(07) V-K	0.5 mm <sup>2</sup>
Flexible, max. H05(07) V-K	35 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, 35 mm <sup>2</sup> max.	
w. wire end ferrule, DIN 46228 pt 1, 0.5 mm <sup>2</sup> min.	

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w. wire end ferrule, DIN 46228 pt 1, 35 mm<sup>2</sup>  
max.

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## Technical data

Clampable conductor	Cross-section for conductor connection	Type	fine-wired
		nominal	2.5 mm <sup>2</sup>
wire end ferrule		Stripping length	nominal 20 mm
		Recommended wire-end ferrule	<a href="#">H2.5/25D BL</a>
		Stripping length	nominal 18 mm
		Recommended wire-end ferrule	<a href="#">H2.5/18</a>
Cross-section for conductor connection		Type	fine-wired
		nominal	4 mm <sup>2</sup>
wire end ferrule		Stripping length	nominal 20 mm
		Recommended wire-end ferrule	<a href="#">H4.0/26D GR</a>
		Stripping length	nominal 18 mm
		Recommended wire-end ferrule	<a href="#">H4.0/18</a>
Cross-section for conductor connection		Type	fine-wired
		nominal	6 mm <sup>2</sup>
wire end ferrule		Stripping length	nominal 20 mm
		Recommended wire-end ferrule	<a href="#">H6.0/26 SW</a>
		Stripping length	nominal 18 mm
		Recommended wire-end ferrule	<a href="#">H6.0/18</a>
Cross-section for conductor connection		Type	fine-wired
		nominal	10 mm <sup>2</sup>
wire end ferrule		Stripping length	nominal 21 mm
		Recommended wire-end ferrule	<a href="#">H10.0/28 EB</a>
		Stripping length	nominal 18 mm
		Recommended wire-end ferrule	<a href="#">H10.0/18</a>
Cross-section for conductor connection		Type	fine-wired
		nominal	16 mm <sup>2</sup>
wire end ferrule		Stripping length	nominal 21 mm
		Recommended wire-end ferrule	<a href="#">H16.0/28 GN</a>
		Stripping length	nominal 18 mm
		Recommended wire-end ferrule	<a href="#">H16.0/18</a>
Cross-section for conductor connection		Type	fine-wired
		nominal	1.5 mm <sup>2</sup>
wire end ferrule		Stripping length	nominal 20 mm
		Recommended wire-end ferrule	<a href="#">H1.5/24 R</a>
		Stripping length	nominal 18 mm
		Recommended wire-end ferrule	<a href="#">H1.5/18</a>
Cross-section for conductor connection		Type	fine-wired
		nominal	35 mm <sup>2</sup>
wire end ferrule		Stripping length	nominal 19 mm
		Recommended wire-end ferrule	<a href="#">H35.0/32D R</a>
		Stripping length	nominal 18 mm
		Recommended wire-end ferrule	<a href="#">H35.0/18</a>
Cross-section for conductor connection		Type	fine-wired
		nominal	50 mm <sup>2</sup>
wire end ferrule		Stripping length	nominal 18 mm
		Recommended wire-end ferrule	<a href="#">H50.0/18</a>

Creation date October 2, 2024 5:22:30 PM CEST

Catalogue status 28.09.2024 / We reserve the right to make technical changes.

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**Technical data**

## 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=40°C)

150 A

Rated voltage for surge voltage class /  
pollution degree III/2

1,000 V

Rated impulse voltage for surge voltage  
class/ pollution degree II/2

8 kV

Rated impulse voltage for surge voltage  
class/ contamination degree III/3

8 kV

Rated current, min. number of poles  
(Tu=20°C)

150 A

Rated voltage for surge voltage class /  
pollution degree II/2

1,000 V

Rated voltage for surge voltage class /  
pollution degree III/3

1,000 V

Rated impulse voltage for surge voltage  
class/ pollution degree III/2

8 kV

**Rated data acc. to CSA**

Rated voltage (Use group B / CSA)

600 V

Rated voltage (Use group D / CSA)

600 V

Rated current (Use group C / CSA)

127 A

Wire cross-section, AWG, min.

AWG 20

Rated voltage (Use group C / CSA)

600 V

Rated current (Use group B / CSA)

127 A

Rated current (Use group D / CSA)

5 A

Wire cross-section, AWG, max.

AWG 1

**Rated data acc. to UL 1059**

Institute (UR)



Certificate No. (UR)

E60693

Rated voltage (Use group B / UL 1059)

600 V

Rated current (Use group B / UL 1059)

126 A

Wire cross-section, AWG, min.

AWG 20

Reference to approval values

Specifications are maximum values, details - see approval certificate.

Rated voltage (Use group C / UL 1059)

600 V

Rated current (Use group C / UL 1059)

126 A

Wire cross-section, AWG, max.

AWG 1

**Packing**

Packaging

Box

VPE length

356 mm

VPE width

142 mm

VPE height

63 mm

**Type tests**

Test: Durability of markings

Test

mark of origin, type identification, type of material, pitch, date clock, approval marking CSA, approval marking UL, durability

Evaluation

available

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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 solid 0.5 mm <sup>2</sup> conductor cross-section
		Type of conductor and stranded 0.5 mm <sup>2</sup> conductor cross-section
		Type of conductor and solid 16 mm <sup>2</sup> conductor cross-section
		Type of conductor and AWG 20/1 conductor cross-section
		Type of conductor and AWG 20/19 conductor cross-section
		Type of conductor and AWG 10/1 conductor cross-section
	Evaluation	passed
Test for damage to and accidental loosening of conductors	Standard	DIN EN 60999-1 section 9.5 / 12.00
	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
		Type of conductor and AWG 20/1 conductor cross-section
		Type of conductor and AWG 20/19 conductor cross-section
	Evaluation	passed
	Requirement	1.4 kg
	Conductor type	Type of conductor and AWG 10/1 conductor cross-section
	Evaluation	passed
	Requirement	2.0 kg
	Conductor type	Type of conductor and stranded 10 mm <sup>2</sup> conductor cross-section
	Evaluation	passed

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**Technical data**

Pull-out test	Standard	DIN EN 60999 section 8.5 / 04.94
	Requirement	≥20 N
	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
		Type of conductor and AWG 20/1 conductor cross-section
		Type of conductor and AWG 20/19 conductor cross-section
	Evaluation	passed
	Requirement	≥80 N
	Conductor type	Type of conductor and AWG 10/1 conductor cross-section
	Evaluation	passed
	Requirement	≥ 90N
	Conductor type	Type of conductor and stranded 10 mm <sup>2</sup> conductor cross-section
	Evaluation	passed

**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

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## 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>• 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>• IP 20 from 16 mm<sup>2</sup> to 50 mm<sup>2</sup></li> <li>• The test point can only be used as potential-pickup point.</li> <li>• Wire-end ferrules are mandatory for stranded wires with more than 19 strands.</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

## Downloads

Approval/Certificate/Document of Conformity	<a href="#">Declaration of the Manufacturer</a>
Engineering Data	<a href="#">CAD data – STEP</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> <a href="#">PO OMNIMATE EN</a>



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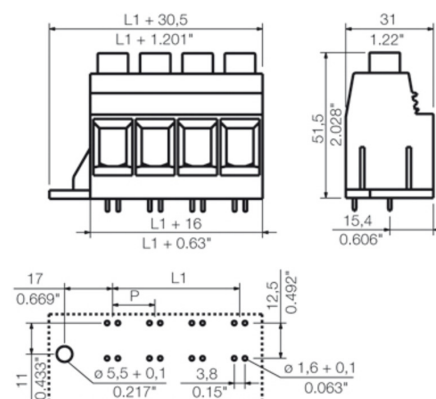
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## Drawings

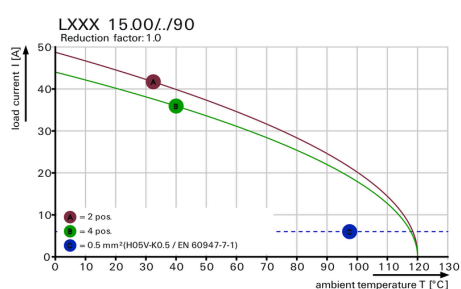
## Product image



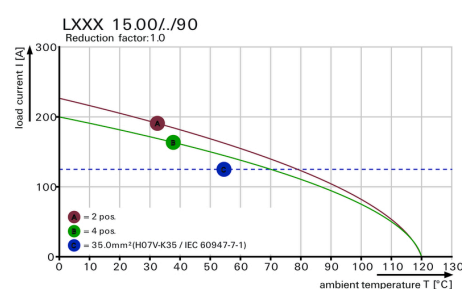
## Dimensional drawing



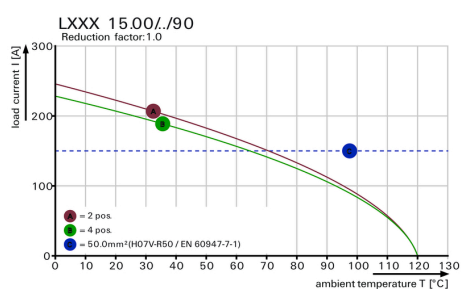
## Graph



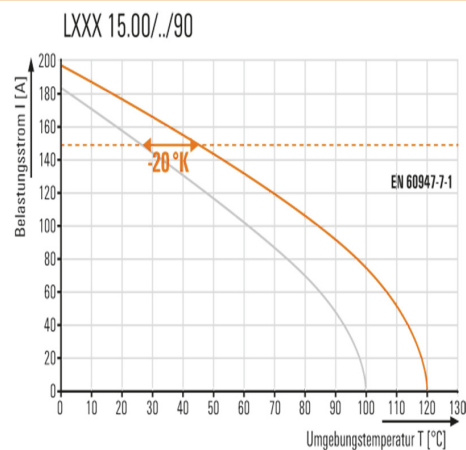
## Graph



## Graph



## Product benefits



Increased power reserves  
 Optimised application safety

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## Drawings



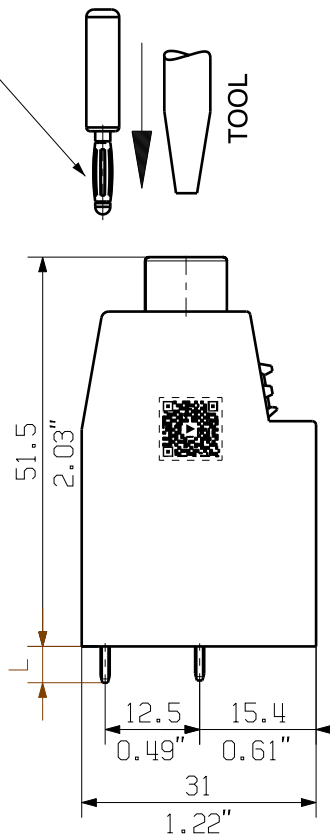
LXXX 15.00/04/90...



HOLE PATTERN



TEST PLUG PS 2.0  
ORDER NO. 031000 0000



LXXX 15.00/04/90FL...



HOLE PATTERN



LXXX 15.00/04/90...

M 1:1



LXXX 15.00/04/90F...

M 1:1



LXXX 15.00/04/90FL...

M 1:1



LXXX 15.00/04/90FR...

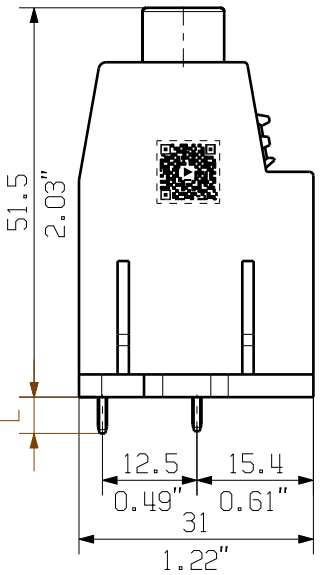
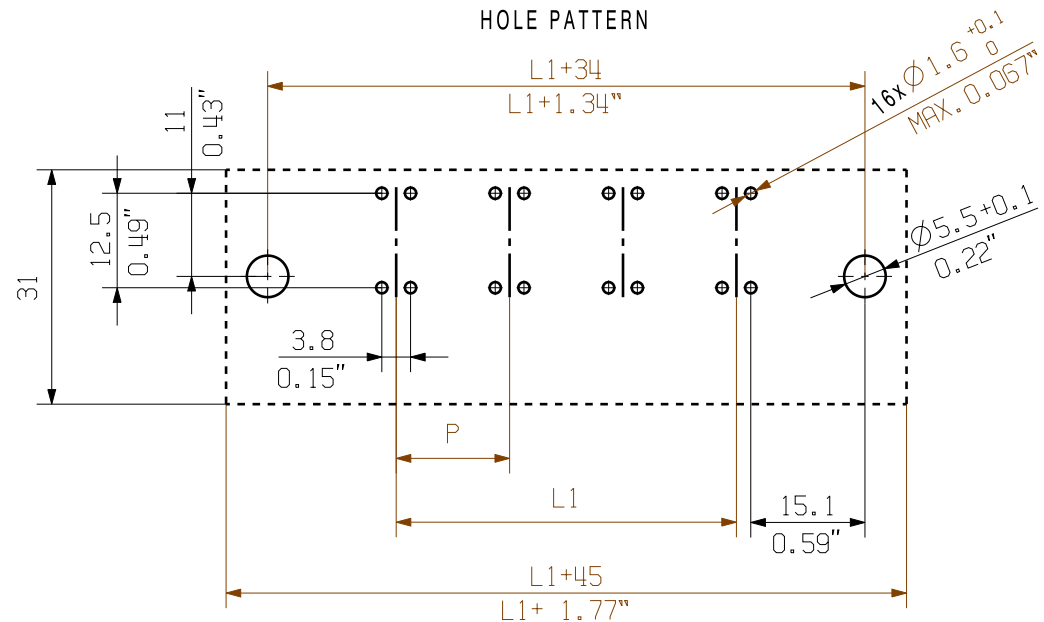
M 1:1



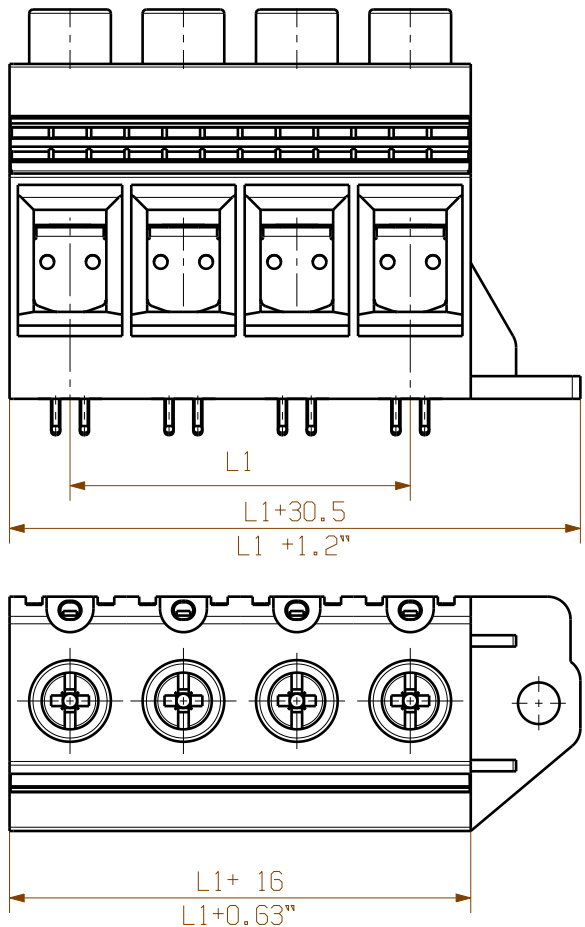
LXXX 15.00/04/90F...



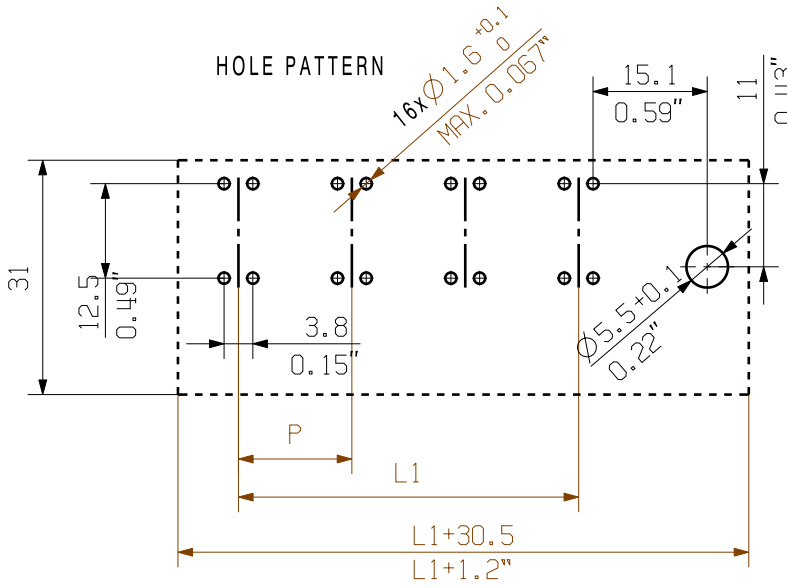
HOLE PATTERN



LXXX 15.00/04/90FR...



HOLE PATTERN



n = No. of poles  
L = 4.8<sup>+0</sup><sub>-0.35</sub>  
P = Pitch

For the mounting of PCBs, it should be noted that the rated data relates only to the PCB components alone. The necessary creepage and clearance paths must be observed in connection with the respective applicant in accordance to IEC 60664-1 (VDE 0110). The current-carrying capacity and pitch tolerance is to be determined according to DIN IEC 60326-3 very fine. Weidmüller PCB components are tested to the IEC 60947-7-4 standard, and are valid for its field of application. Provided that the components are used to the intended purpose, all requirements with respect to the occurring of electrical, mechanical, thermic and corrosive stress will be satisfied.

	9	120	1.372
	8	105	1.313
	7	90	1.254
	6	75	1.195
	5	60	1.136
	4	45	1.77
	3	30	1.18
	2	15	0.59
	n	L1[mm]	L1[inch]

GENERAL TOLERANCE:  
DIN ISO 2768-m

	EC00000683	00	Prim PLM Part No.: 004587			Prim ERP Part No.: 1047150000		
	First Issue Date 14.05.2018	Max. nos.				46279	5	
	Modification							
		Date	Name	LXXX 15.00/.../90... LEITERPLATTENKLEMME PCB TERMINAL				
		Drawn	03.12.2018					Xiang, Kegin
Scale: 1/1                      Size: A2		Responsible	Xiang, Kegin					
		Approved	04.12.2018	Xu, Shary				
Drawings Assembly			Product file: 7082 LXXX 15.00					

Customer drawing

## 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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