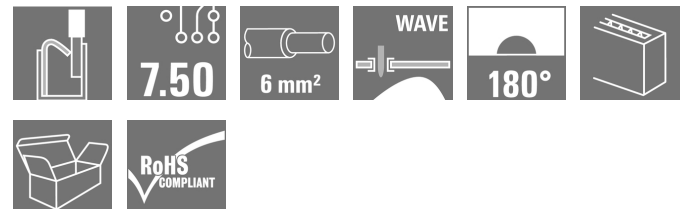


## OMNIMATE Power - series LL LLFS 7.50/06/180V 5.0SN BK BX

**Weidmüller Interface GmbH & Co. KG**  
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### Product image



similar to illustration

**The sturdy, direct connection for extreme current and voltage requirements in all power electronics applications such as solar inverters, frequency converters, servo-controllers and power supplies.**

### General ordering data

Type	LLFS 7.50/06/180V 5.0SN BK BX
Order No.	<a href="#">2491660000</a>
Version	Printed circuit board terminals, 7.50 mm, Number of poles: 6, 180°, Solder pin length (l): 5 mm, tinned, black, PUSH IN without actuator, Clamping range, max.: 6 mm <sup>2</sup> , Box
GTIN (EAN)	4050118607819
Qty.	50 pc(s).
Product data	IEC: 1000 V / 41 A / 0.5 - 6 mm <sup>2</sup> UL: 600 V / 37 A / AWG 24 - AWG 8
Packaging	Box

Creation date September 9, 2020 11:07:49 AM CEST

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**Technical data****Dimensions and weights**

Width	39.3 mm	Width (inches)	1.547 inch
Height	29.15 mm	Height (inches)	1.148 inch
Height of lowest version	24.15 mm	Depth	18.5 mm
Depth (inches)	0.728 inch	Net weight	21.61 g

**System parameters**

Product family	OMNIMATE Power - series LL	Wire connection method	PUSH IN without actuator
Mounting onto the PCB	THT solder connection	Conductor outlet direction	180°
Pitch in mm (P)	7.5 mm	Pitch in inches (P)	0.295 inch
Number of poles	6	Fitted by customer	No
Solder pin length (l)	5 mm	Solder pin dimensions	d = 1.5 mm
Solder eyelet hole diameter (D)	2 mm	Solder eyelet hole diameter tolerance (D)+	0,1 mm
Number of solder pins per pole	1	Stripping length	12 mm
L1 in mm	30 mm	L1 in inches	1.181 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	black
Colour chart (similar)	RAL 9011	Insulating material group	I
Insulation strength	$\geq 10^8 \Omega$	UL 94 flammability rating	V-0
Contact material	E-Cu	Contact surface	tinned
Layer structure of solder connection	4...10 $\mu$ Sn matt	Storage temperature, min.	-40 °C
Storage temperature, max.	70 °C	Operating temperature, min.	-40 °C
Operating temperature, max.	120 °C		

**Conductors suitable for connection**

Clamping range, min.	0.25 mm <sup>2</sup>
Clamping range, max.	6 mm <sup>2</sup>
Wire connection cross section AWG, min.	AWG 24
Wire connection cross section AWG, max.	AWG 8
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	6 mm <sup>2</sup>
w. plastic collar ferrule, DIN 46228 pt 4, 0.25 mm <sup>2</sup> min.	
w. plastic collar ferrule, DIN 46228 pt 4, 6 mm <sup>2</sup> max.	
w. wire end ferrule, DIN 46228 pt 1, min.	0.25 mm <sup>2</sup>
w. wire end ferrule, DIN 46228 pt 1, max.	6 mm <sup>2</sup>

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**Technical data**

Clampable conductor	Cross-section for conductor connection	Type	fine-wired
		nominal	0.5 mm <sup>2</sup>
wire end ferrule	Cross-section for conductor connection	Stripping length	nominal 14 mm
		Recommended wire-end ferrule	<a href="#">H0.5/18 OR</a>
Cross-section for conductor connection	Type	nominal	1 mm <sup>2</sup>
		Type	fine-wired
wire end ferrule	Cross-section for conductor connection	Stripping length	nominal 15 mm
		Recommended wire-end ferrule	<a href="#">H1.0/18 GE</a>
Cross-section for conductor connection	Type	nominal	1.5 mm <sup>2</sup>
		Type	fine-wired
wire end ferrule	Cross-section for conductor connection	Stripping length	nominal 15 mm
		Recommended wire-end ferrule	<a href="#">H1.5/18D SW</a>
		Stripping length	nominal 12 mm
		Recommended wire-end ferrule	<a href="#">H1.5/12</a>
Cross-section for conductor connection	Type	nominal	0.75 mm <sup>2</sup>
		Type	fine-wired
wire end ferrule	Cross-section for conductor connection	Stripping length	nominal 14 mm
		Recommended wire-end ferrule	<a href="#">H0.75/18 W</a>
Cross-section for conductor connection	Type	nominal	2.5 mm <sup>2</sup>
		Type	fine-wired
wire end ferrule	Cross-section for conductor connection	Stripping length	nominal 14 mm
		Recommended wire-end ferrule	<a href="#">H2.5/19D BL</a>
		Stripping length	nominal 12 mm
		Recommended wire-end ferrule	<a href="#">H2.5/12</a>
Cross-section for conductor connection	Type	nominal	4 mm <sup>2</sup>
		Type	fine-wired
wire end ferrule	Cross-section for conductor connection	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	nominal	6 mm <sup>2</sup>
		Type	fine-wired
wire end ferrule	Cross-section for conductor connection	Stripping length	nominal 14 mm
		Recommended wire-end ferrule	<a href="#">H6.0/20 SW</a>
		Stripping length	nominal 12 mm
		Recommended wire-end ferrule	<a href="#">H6.0/12</a>
Cross-section for conductor connection	Type	nominal	10 mm <sup>2</sup>
		Type	fine-wired
wire end ferrule	Cross-section for conductor connection	Stripping length	nominal 12 mm
		Recommended wire-end ferrule	
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)		
Max. clamping range	6 mm <sup>2</sup>		

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**Technical data****Rated data acc. to IEC**

tested acc. to standard	In accordance with IEC 60947-7-1	Rated current, min. number of poles (Tu=20°C)	41 A
Rated current, max. number of poles (Tu=20°C)	32 A	Rated current, min. number of poles (Tu=40°C)	38 A
Rated current, max. number of poles (Tu=40°C)	28 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	1,000 V
Rated impulse voltage for surge voltage class/ pollution degree II/2	8 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		

**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)	37 A
Rated current (Use group C / CSA)	37 A	Rated current (Use group D / CSA)	5 A

**Rated data acc. to UL 1059**

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)	37 A
Rated current (Use group C / UL 1059)	37 A	Rated current (Use group D / UL 1059)	5 A
Wire cross-section, AWG, min.	AWG 24	Wire cross-section, AWG, max.	AWG 8
Reference to approval values	Specifications are maximum values, details - see approval certificate.		

**Packing**

Packaging	Box	VPE length	0 m
VPE width	0 m	VPE height	0 m

**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		

**Data sheet**

**OMNIMATE Power - series LL  
LLFS 7.50/06/180V 5.0SN BK BX**

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**Technical data**

**Notes**

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>• 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>• The test point can only be used as potential-pickup point.</li> <li>• Long term storage of the product with average temperature of 50 °C and average humidity 70%, 36 months</li> </ul>
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.

**Approvals**

Approvals	
ROHS	Conform

**Downloads**

Approval/Certificate/Document of Conformity	<a href="#">Declaration of the Manufacturer</a>
Engineering Data	<a href="#">STEP</a>
White paper power electronics connected correctly	<a href="#">Download Whitepaper</a>
White paper UL 600 V	<a href="#">Download Whitepaper</a>

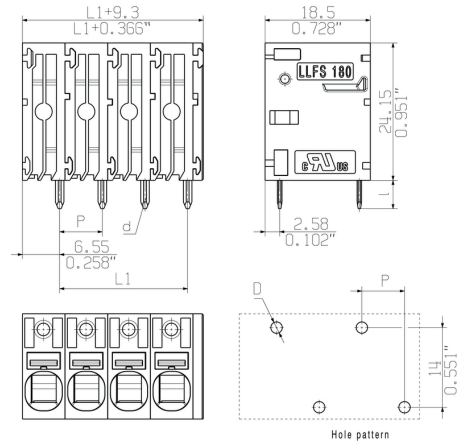
**Data sheet**

**OMNIMATE Power - series LL  
LLFS 7.50/06/180V 5.0SN BK BX**

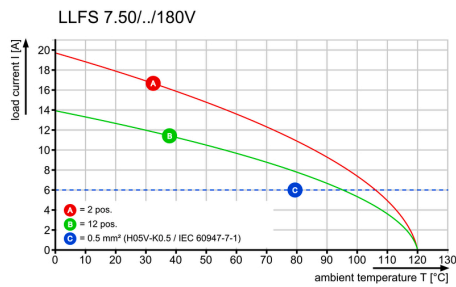
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**Drawings**

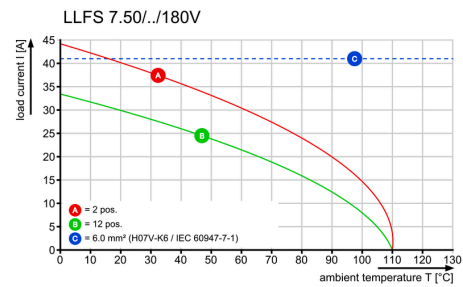
**Dimensional drawing**



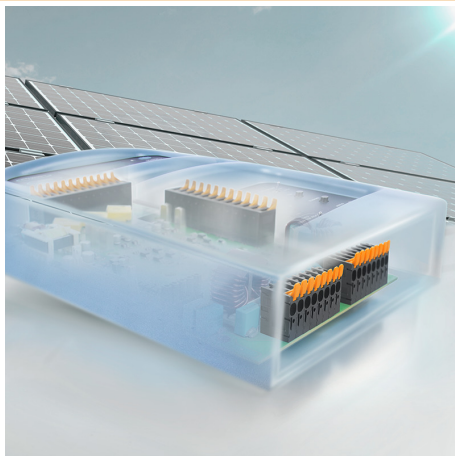
**Derating curve**



**Derating curve**

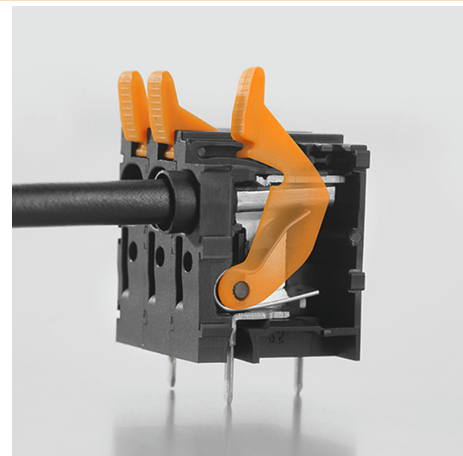


**Product benefits**



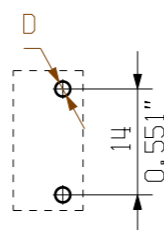
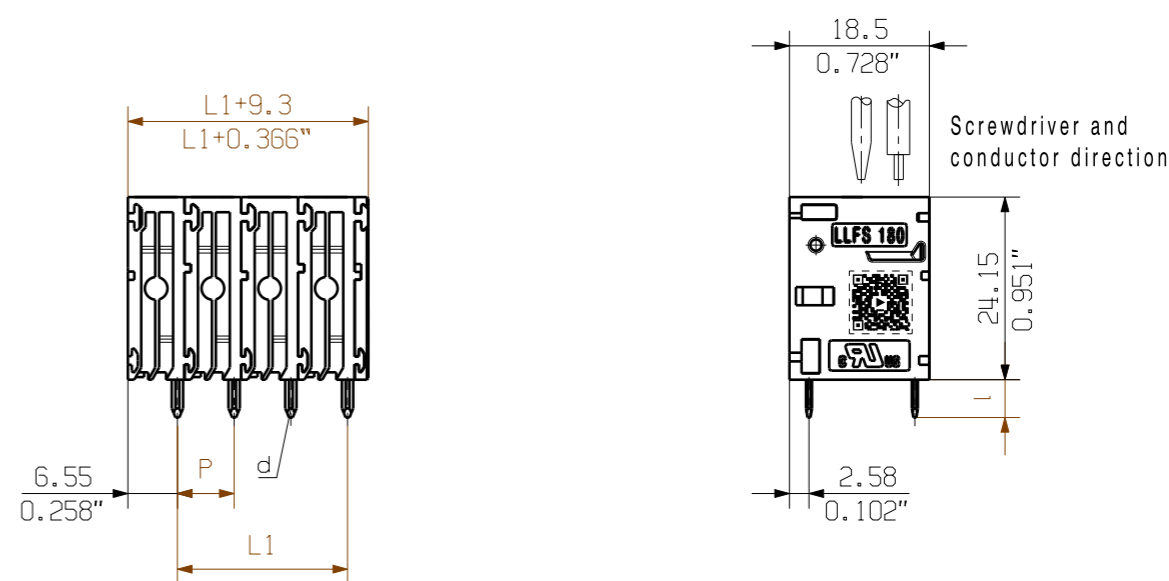
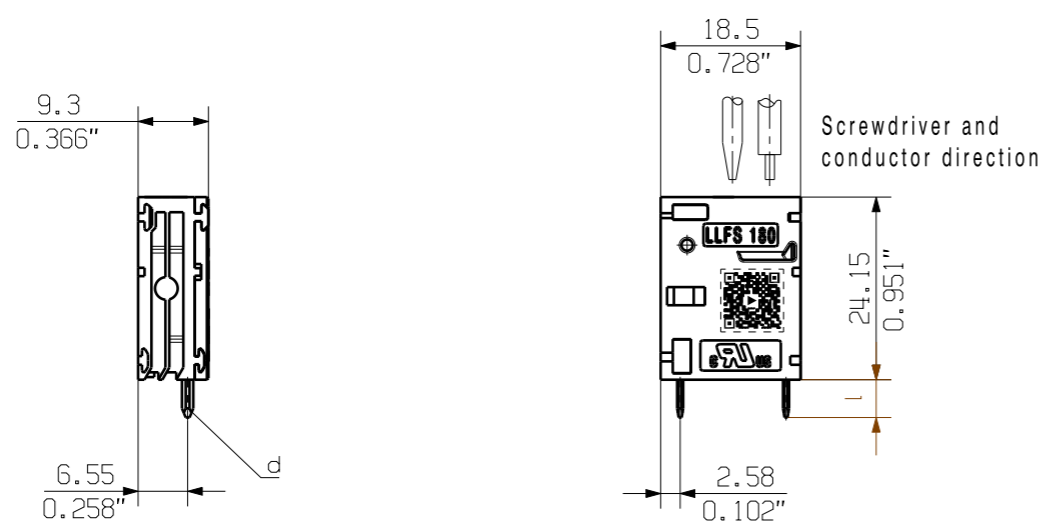
Power up to UL 600 V  
Offset solder pins

**Product benefits**

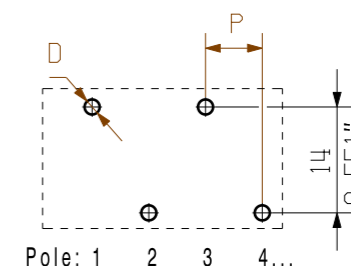
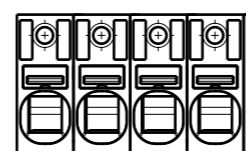


Tool-free wiring  
Top contact security

General customer drawing, topical version only if required



Hole pattern



Hole pattern

Pole: 1 2 3 4...

Pole: 1 2 3 4...

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.

General tolerance:  
DIN ISO 2768-mK

P = 7.50  
0.295" (Pitch)  
D = Ø2 +0.1  
0.079"  
d = 1.5x0.8  
0.059"x0.031"  
l = 5.0 +0.2 -0.6  
0.197"

12	82.50	3.248
11	75.00	2.953
10	67.50	2.657
9	60.00	2.362
8	52.50	2.067
7	45.00	1.772
6	37.50	1.476
5	30.00	1.181
4	22.50	0.886
3	15.00	0.591
2	7.50	0.295
n Poles	L1 [mm]	L1 [inch]

	EC00000693	01	Prim PLM Part No.: 337396		Prim ERP Part No.: 2491640000	
	First Issue Date	Max. nos.				
22.09.2016	Modification					
		Date	Name	<b>LLFS 7.50/.../180 ...</b> LEITERPLATTENKLEMME PCB TERMINAL		
Scale: 1/1		28.04.2019	Xiang, Keqin			
Size: A3		29.04.2019	Xu, Shary			
Drawings Assembly		Approved		Product file: 7416 LLF 7.50		

64139  
Drawing no. Issue no.  
Sheet 01 of 01 sheets

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## 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.