

## OMNIMATE Power - series LL LLFS 7.50/12/180V 5.0SN BK BX

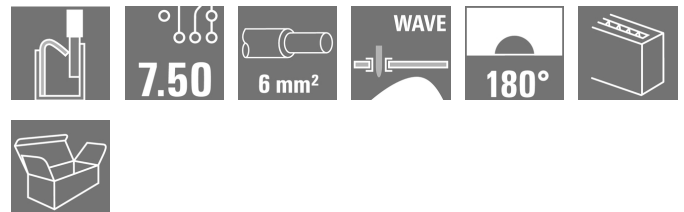
**Weidmüller Interface GmbH & Co. KG**  
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### Product image



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 7.50/12/180V 5.0SN BK BX
Order No.	<a href="#">2491720000</a>
Version	Printed circuit board terminals, 7.50 mm, Number of poles: 12, 180°, Solder pin length (l): 5 mm, tinned, black, PUSH IN without actuator, Clamping range, max.: 6 mm², Box
GTIN (EAN)	4050118607758
Qty.	20 pc(s).
Product data	IEC: 1000 V / 41 A / 0.5 - 6 mm² UL: 600 V / 37 A / AWG 24 - AWG 8
Packaging	Box

Creation date May 2, 2020 10:10:22 AM CEST

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

Width	91.8 mm	Width (inches)	3.614 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	43.23 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	12	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	82.5 mm	L1 in inches	3.248 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.	50 °C	Max. relative humidity during storage	70 %
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	Stripping length	nominal	14 mm
		Recommended wire-end ferrule	<a href="#">H0.5/18 OR</a>
Cross-section for conductor connection	Type	fine-wired	
		nominal	1 mm <sup>2</sup>
wire end ferrule	Stripping length	nominal	15 mm
		Recommended wire-end ferrule	<a href="#">H1.0/18 GE</a>
Cross-section for conductor connection	Type	fine-wired	
		nominal	1.5 mm <sup>2</sup>
wire end ferrule	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	fine-wired	
		nominal	0.75 mm <sup>2</sup>
wire end ferrule	Stripping length	nominal	14 mm
		Recommended wire-end ferrule	<a href="#">H0.75/18 W</a>
Cross-section for conductor connection	Type	fine-wired	
		nominal	2.5 mm <sup>2</sup>
wire end ferrule	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	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	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	fine-wired	
		nominal	10 mm <sup>2</sup>
wire end ferrule	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)		
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**

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**Technical data**

**Notes**

- |       |  |
|-------|--|
| Notes | <ul style="list-style-type: none"> <li>• Additional colours on request</li> <br/> <li>• Rated current related to rated cross-section &amp; min. No. of poles.</li> <br/> <li>• Wire end ferrule without plastic collar to DIN 46228/1</li> <br/> <li>• Wire end ferrule with plastic collar to DIN 46228/4</li> <br/> <li>• P on drawing = pitch</li> <br/> <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> <br/> <li>• The test point can only be used as potential-pickup point.</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.
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**Approvals**

Approvals



**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>

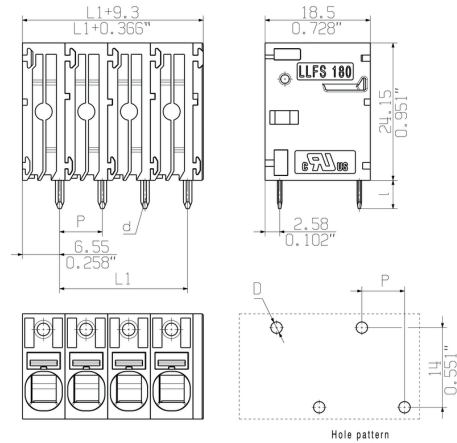
**Data sheet**

**OMNIMATE Power - series LL  
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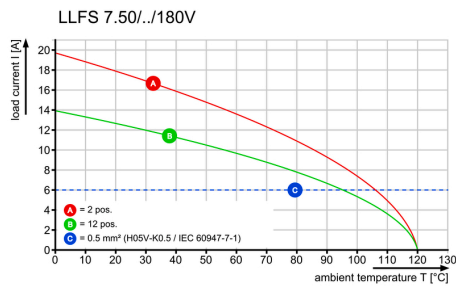
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**Drawings**

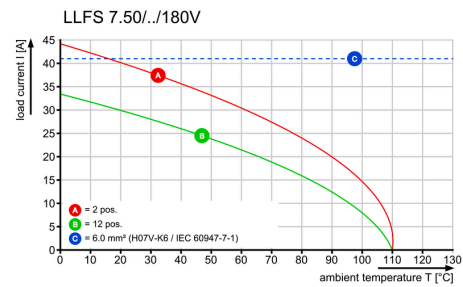
**Dimensional drawing**



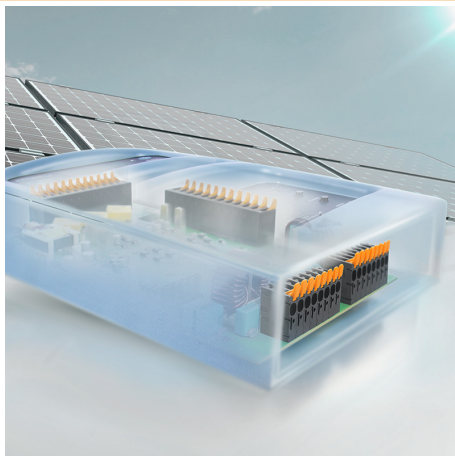
**Derating curve**



**Derating curve**

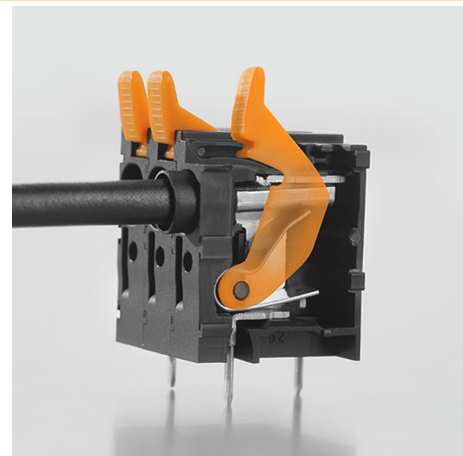


**Product benefits**



Power up to UL 600 V  
 Offset solder pins

**Product benefits**



Tool-free wiring  
 Top contact security

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# Accessories

### 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 0.5X3.0X80	Version	
Order No.	<a href="#">9008320000</a>	Screwdriver, Blade width (B): 3 mm, Blade length: 80 mm, Blade thickness (A): 0.5 mm	
GTIN (EAN)	4032248056262		
Qty.	1 pc(s).		

### Additional accessories



### No task is too small when creating the perfect solution.

Connections form just one part of the overall process. Small details are often the key to the perfect solution in applications where potentials are tested, grouped or even isolated.

A system is not a system without small but essential details:

- Test plugs ensure reliable pick-up from diagnostic sockets

In tandem with the manufacturing process and application.

### General ordering data

Type	PS 2.0 MC	Version	Product data	Packaging
Order No.	<a href="#">0310000000</a>	PCB plug-in connector, Accessories, Test plug, red, Number of poles: 1		Box
GTIN (EAN)	4008190000059			
Qty.	20 pc(s).			

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**Accessories**

**Tools**



- Stripping tools with automatic self-adjustment
- For flexible and solid conductors
- Ideally suitable for mechanical and plant engineering, railway and rail traffic, wind energy, robot technology, explosion protection as well as marine, offshore and ship building sectors
- Stripping length adjustable via end stop
- Automatic opening of clamping jaws after stripping
- No fanning-out of individual conductors
- Adjustable to diverse insulation thicknesses
- Double-insulated cables in two process steps without special adjustment
- No play in self-adjusting cutting unit
- Long service life
- Optimised ergonomic design

**General ordering data**

Type	STRIPAX	Version
Order No.	<a href="#">9005000000</a>	Tools, Stripping and cutting tool, Flexible and solid conductors with
GTIN (EAN)	4008190072506	PVC insulation, 10mm², 25mm
Qty.	1 pc(s).	

**Slotted screwdriver**

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

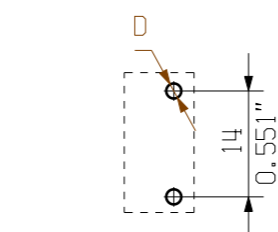
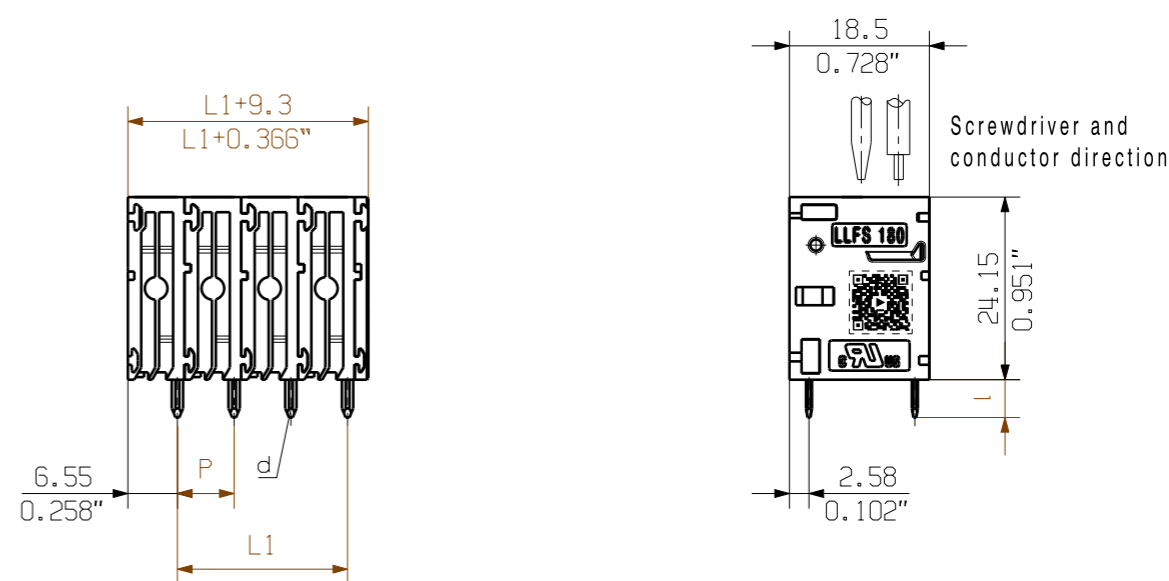
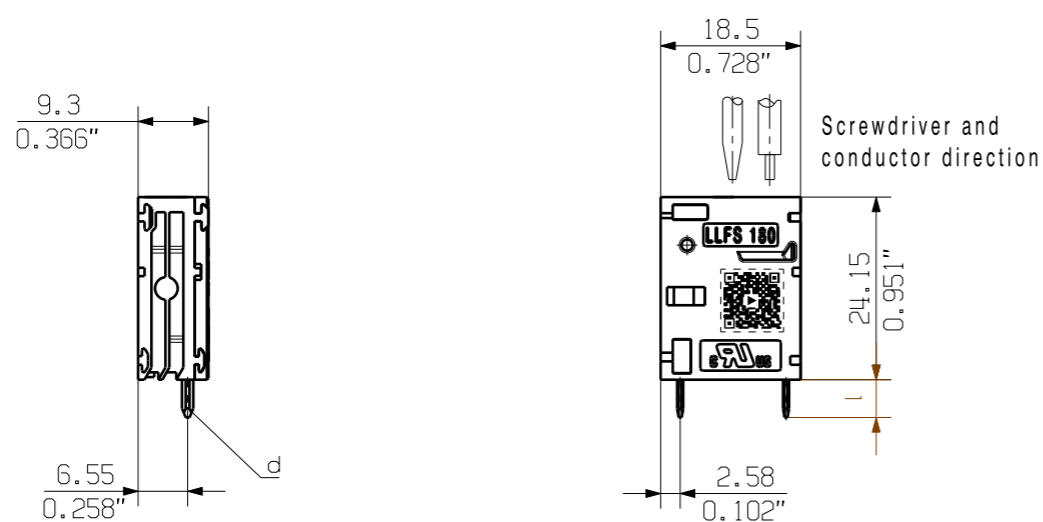


**General ordering data**

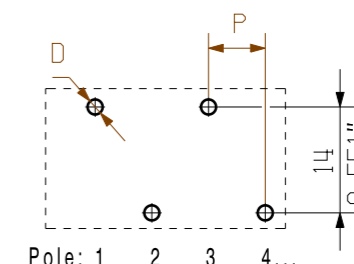
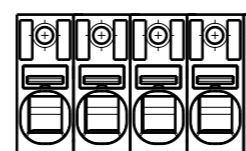
Type	SDIS 0.5X3.0X100	Version
Order No.	<a href="#">9008380000</a>	Screwdriver, Blade width (B): 3 mm, Blade length: 100 mm, Blade
GTIN (EAN)	4032248056347	thickness (A): 0.5 mm
Qty.	1 pc(s).	



General customer drawing, topical version only if required



Hole pattern



Pole: 1 2 3 4...

Hole pattern

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]

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"

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

	EC00000693	01	Prim PLM Part No.: 337396		Prim ERP Part No.: 2491640000	
	First Issue Date	Max. nos.				
22.09.2016	Modification	<b>64139</b>				
	Drawn	Date	Name	LLFS 7.50/.../180 ... LEITERPLATTENKLEMME PCB TERMINAL		
	Responsible	28.04.2019	Xiang, Keqin			
	Approved	29.04.2019	Xu, Shary			
Scale: 1/1	Size: A3	Drawings Assembly		Product file: 7416 LLF 7.50		

## 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.