

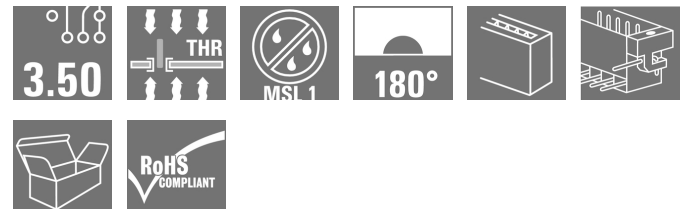
OMNIMATE Signal - series BL/SL 3.50 SL-SMT 3.50/16/180LF 1.5SN BK BX

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

Product image



Similar to illustration



High-temperature-resistant male header, 3.50 mm pitch.

- **Plugging direction parallel (90°), straight 180° or angled (135°) to PCB**
- **Housing variants: closed side (G), screw flange (F), solder flange (LF) or snap-on solder flange (RF)**
- **Optimised for the SMT process**
- **Pin length 3.2 mm universal for all soldering methods**
- **Pin length 1.5 mm optimised for reflow soldering methods**
- **Packed either in a box (BX) or tape-on-reel (RL)**
- **Male header can be coded**

General ordering data

Type	SL-SMT 3.50/16/180LF 1.5SN BK BX
Order No.	1804840000
Version	PCB plug-in connector, male header, Solder flange, THT/THR solder connection, 3.50 mm, No. of poles: 16, 180°, Solder pin length (l): 1.5 mm, tinned, black, Box
GTIN (EAN)	4032248268610
Qty.	24 pc(s).
Product data	IEC: 320 V / 15 A UL: 300 V / 10 A
Packaging	Box

OMNIMATE Signal - series BL/SL 3.50

SL-SMT 3.50/16/180LF 1.5SN BK BX

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

Technical data

Dimensions and weights

Width	63 mm	Width (inches)	2.48 inch
Height	12.6 mm	Height (inches)	0.496 inch
Height of lowest version	11.1 mm	Depth	7.5 mm
Depth (inches)	0.295 inch	Net weight	5.8 g

System specifications

Product family	OMNIMATE Signal - series BL/SL 3.50	Type of connection	Board connection
Mounting onto the PCB	THT/THR solder connection	Pitch in mm (P)	3.5 mm
Pitch in inches (P)	0.138 inch	Outgoing elbow	180°
No. of poles	16	Number of solder pins per pole	1
Solder pin length (l)	1.5 mm	Solder pin length tolerance	0 / -0.3 mm
Tolerance of solder pin position	± 0.20 mm	Solder pin dimensions	d = 1.2 mm, Octagonal
Solder pin dimensions = d tolerance	0 / -0.03 mm	Solder eyelet hole diameter (D)	1.4 mm
Solder eyelet hole diameter tolerance (D)+ 0,1 mm		Outside diameter of solder pad	2.3 mm
Template aperture diameter	2.1 mm	L1 in mm	52.5 mm
L1 in inches	2.067 inch	Number of rows	1
Pin series quantity	1	Touch-safe protection acc. to DIN VDE 57 106	Safe from back-of-hand touch
Touch-safe protection acc. to DIN VDE 0470	IP 10	Volume resistance	4.50 mΩ
Can be coded	Yes	Plugging cycles	25
Plugging force/pole, max.	6 N	Pulling force/pole, max.	6 N

Material data

Insulating material	LCP GF	Colour	black
Colour chart (similar)	RAL 9011	Insulating material group	IIla
CTI	≥ 175	Insulation strength	≥ 10 ⁸ Ω
Moisture Level (MSL)	1	UL 94 flammability rating	V-0
GWIT	930 °C	GWFI	960 °C
Contact material	CuSn	Contact surface	tinned
Layer structure of solder connection	2-3 µm Ni / 5-7 µm Sn	Layer structure of plug contact	2-3 µm Ni / 5-7 µm Sn
Storage temperature, min.	-25 °C	Storage temperature, max.	55 °C
Max. relative humidity during storage	80 %	Operating temperature, min.	-50 °C
Operating temperature, max.	100 °C	Temperature range, installation, min.	-30 °C
Temperature range, installation, max.	100 °C		

Rated data acc. to IEC

tested acc. to standard	IEC 60664-1, IEC 61984	Rated current, min. no. of poles (Tu=20°C)	15 A
Rated current, max. no. of poles (Tu=20°C)	12 A	Rated current, min. no. of poles (Tu=40°C)	13 A
Rated current, max. no. of poles (Tu=40°C)	10 A	Rated voltage for surge voltage class / pollution degree II/2	320 V
Rated voltage for surge voltage class / pollution degree III/2	160 V	Rated voltage for surge voltage class / pollution degree III/3	160 V
Rated impulse voltage for surge voltage class/ pollution degree II/2	2.5 kV	Rated impulse voltage for surge voltage class/ pollution degree III/2	2.5 kV
Rated impulse voltage for surge voltage class/ contamination degree III/3	2.5 kV	Short-time withstand current resistance	3 x 1s with 100 A

OMNIMATE Signal - series BL/SL 3.50

SL-SMT 3.50/16/180LF 1.5SN BK BX

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

Technical data

Rated data acc. to CSA

Institute (CSA)		Certificate No. (CSA)	200039-1176845
Rated voltage (Use group B / CSA)	300 V	Rated voltage (Use group D / CSA)	300 V
Rated current (Use group B / CSA)	10 A	Rated current (Use group D / CSA)	10 A
Reference to approval values	Specifications are maximum values, details - see approval certificate.		

Rated data acc. to UL 1059

Institute (UR)		Certificate No. (UR)	E60693
Rated voltage (Use group B / UL 1059)	300 V	Rated voltage (Use group D / UL 1059)	300 V
Rated current (Use group B / UL 1059)	10 A	Rated current (Use group D / UL 1059)	10 A
Reference to approval values	Specifications are maximum values, details - see approval certificate.		

Packing

Packaging	Box	VPE length	75 mm
VPE width	80 mm	VPE height	100 mm

Classifications

ETIM 3.0	EC001284	ETIM 4.0	EC002637
ETIM 5.0	EC002637	ETIM 6.0	EC002637
UNSPSC	30-21-18-10	eClass 5.1	27-26-07-04
eClass 6.2	27-26-07-04	eClass 7.1	27-44-04-02
eClass 8.1	27-44-04-02	eClass 9.0	27-44-04-02
eClass 9.1	27-44-04-02		

Notes

Notes	• Gold-plated contact surfaces on request • Rated current related to rated cross-section & min. No. of poles. • Diameter of solder eyelet D = 1.4+0.1mm • Solder eyelet diameter D = 1.5 + 0.1 mm, from 9 poles • 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.
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.

**OMNIMATE Signal - series BL/SL 3.50
SL-SMT 3.50/16/180LF 1.5SN BK BX**

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

Technical data**Approvals**

Approvals



ROHS

Conform

DownloadsApproval/Certificate/Document of
Conformity[Declaration of the Manufacturer](#)

Brochure/Catalogue

[FL DRIVES EN](#)
[MB SMT EN](#)
[FL DRIVES DE](#)
[MB DEVICE MANUF. EN](#)
[CAT 2 PORTFOLIOGUIDE EN](#)
[FL BUILDING SAFETY EN](#)
[FL APPL LED LIGHTING EN](#)
[FL INDUSTR.CONTROLS EN](#)
[FL MACHINE SAFETY EN](#)
[FL HEATING ELECTR EN](#)
[FL APPL INVERTER EN](#)
[FL_BASE_STATION_EN](#)
[FL ELEVATOR EN](#)
[FL POWER SUPPLY EN](#)
[FL 72H SAMPLE SER EN](#)
[PO OMNIMATE EN](#)

Engineering Data

[SL-SMT.zip](#)
[STEP](#)

SMT white paper

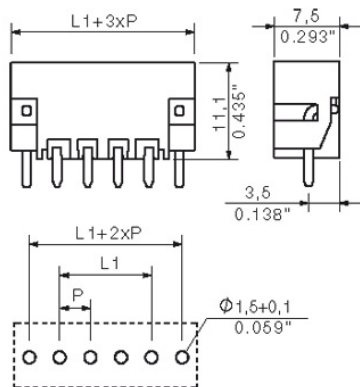
[Download Whitepaper](#)

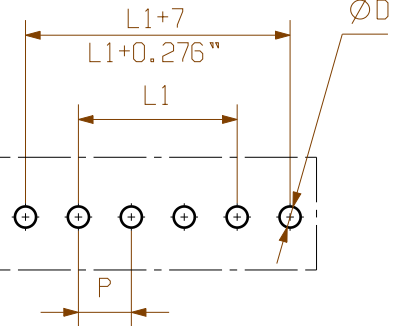
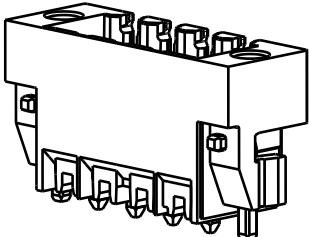
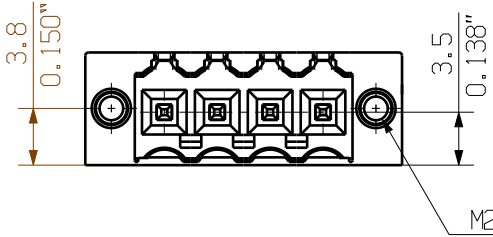
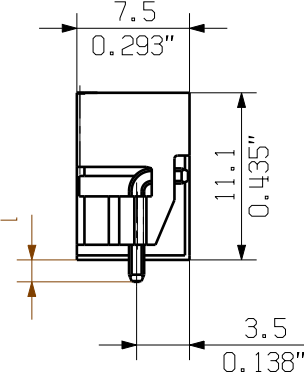
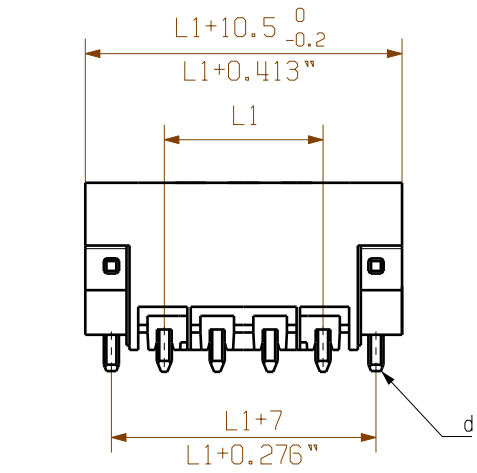
OMNIMATE Signal - series BL/SL 3.50 SL-SMT 3.50/16/180LF 1.5SN BK BX

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

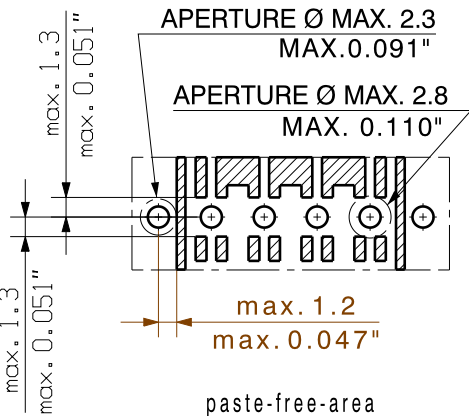
Drawings

Dimensional drawing





layout finish holes



paste-free-area

pin length l	tolerance
1,5	0,0
	-0,3
2,6	0,0
	-0,3
3,2	0,0
	-0,3
4,5	0,0
	-0,3

24	80,50	3,169	+/- 0.2
23	77,00	3,031	
22	73,50	2,894	
21	70,00	2,756	
20	66,50	2,618	
19	63,00	2,480	+/- 0.15
18	59,50	2,343	
17	56,00	2,205	
16	52,50	2,067	
15	49,00	1,929	
14	45,50	1,791	+/- 0.1
13	42,00	1,654	
12	38,50	1,516	
11	35,00	1,378	
10	31,50	1,240	
9	28,00	1,102	+/- 0.1
8	24,50	0,965	
7	21,00	0,827	
6	17,50	0,689	
5	14,00	0,551	
4	10,50	0,413	+/- 0.1
3	7,00	0,276	
2	3,50	0,138	
n	L1 [mm]	L1 [Inch]	tolerance

shown: SL-SMT 3.50/04/180LF

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 to 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.

GENERAL TOLERANCE:
DIN ISO 2768-mK

Scale: 2:1

Supersedes: .

99546/5
08.12.17 HELIS_MA
00

Modification

Date	28.11.2007	Name	HELIS_MA
Drawn			AMANN_A
Responsible			HERTEL_S
Checked	05.01.2018		
Approved		LANG_T	

Weidmüller

SL-SMT 3.50/.../180...

STIFTLEISTE
MALE HEADER

Product file: SL-SMT 3.50

7312

Cat.no.: .

3 34146

11

Drawing no.

Issue no.

Sheet 03

of 05

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

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.

Recommended reflow soldering profile

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



Reflow soldering profile

The perfect soldering profile for SMT Surface Mount Technology is one the most exiting question in SMT production. But there are more than one correct answer: The diagram of temperature-on-time is related to processing features of solder paste and to maximum load of components.

We have to consider the following parameters:

- Time for pre heating
- Maximum temperature
- Time above melting point
- Time for cooling
- Maximum heating rate
- Maximum cooling rate

We recommend a typical solder profile with associated process limits. With preheating components and board are prepared smoothly for the solder phase. Heating rate is typically $\leq +3\text{K/s}$. In parallel the solder paste is 'activated'. The time above melting point of 217°C the paste gets liquid and components and boards begin to connect. The maximum temperature of 245°C to 254°C should stay between 10 and 40 seconds. In the cooling phase at $\geq -6\text{K/s}$ solder is cured. Board and components cool down while avoiding cold cracks.