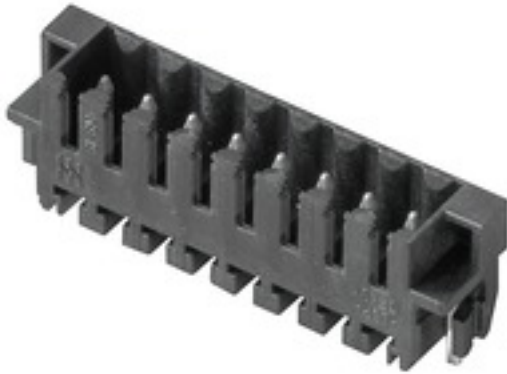


OMNIMATE Signal - series BL/SL 3.50 SL-SMT 3.50/12/180RF 1.5SN BK BX

Weidmüller Interface GmbH & Co. KG
Klingenbergstraße 26
D-32758 Detmold
Germany
Fon: +49 5231 14-0
Fax: +49 5231 14-292083
www.weidmueller.com

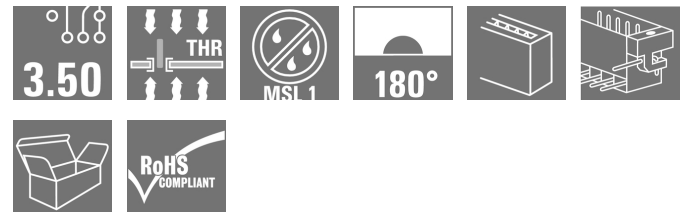
Product image



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 3.50/12/180RF 1.5SN BK BX
Order No.	1291410000
Version	PCB plug-in connector, male header, Clip-on flange, THT/THR solder connection, 3.50 mm, Number of poles: 12, 180°, Solder pin length (l): 1.5 mm, tinned, black, Box
GTIN (EAN)	4050118085334
Qty.	50 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 3.50/12/180RF 1.5SN BK BX**

Weidmüller Interface GmbH & Co. KG
Klingenbergstraße 26
D-32758 Detmold
Germany
Fon: +49 5231 14-0
Fax: +49 5231 14-292083
www.weidmueller.com

Technical data**Dimensions and weights**

Width	48.85 mm	Width (inches)	1.923 inch
Height	12.6 mm	Height (inches)	0.496 inch
Height of lowest version	11.1 mm	Depth	7.4 mm
Depth (inches)	0.291 inch	Net weight	3.196 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°
Number of poles	12	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	± 0.15 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	38.5 mm
L1 in inches	1.516 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	≤ 5mΩ
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	Illa
Comparative Tracking Index (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	Storage temperature, min.	-25 °C
Storage temperature, max.	50 °C	Max. relative humidity during storage	70 %
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. number of poles (Tu=20°C)	15 A
Rated current, max. number of poles (Tu=20°C)	12 A	Rated current, min. number of poles (Tu=40°C)	13 A
Rated current, max. number 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		

OMNIMATE Signal - series BL/SL 3.50 SL-SMT 3.50/12/180RF 1.5SN BK BX

Weidmüller Interface GmbH & Co. KG
Klingenbergstraße 26
D-32758 Detmold
Germany
Fon: +49 5231 14-0
Fax: +49 5231 14-292083
www.weidmueller.com

Technical data

Rated data acc. to CSA

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

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	0 m
VPE width	0 m	VPE height	0 m

Classifications

ETIM 6.0	EC002637	ETIM 7.0	EC002637
eClass 9.0	27-44-04-02	eClass 9.1	27-44-04-02
eClass 10.0	27-44-04-02		

Notes

Notes	<ul style="list-style-type: none"> • 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.
----------------	--

Approvals

Approvals	
-----------	---

ROHS	Conform
------	---------

Data sheet**OMNIMATE Signal - series BL/SL 3.50
SL-SMT 3.50/12/180RF 1.5SN BK BX**

Weidmüller Interface GmbH & Co. KG
Klingenbergstraße 26
D-32758 Detmold
Germany
Fon: +49 5231 14-0
Fax: +49 5231 14-292083
www.weidmueller.com

Technical data**Downloads**

Approval/Certificate/Document of Conformity	Declaration of the Manufacturer
Brochure/Catalogue	FL DRIVES EN MB SMT EN FL DRIVES DE MB DEVICE MANUF. 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	STEP
White paper surface mount technology	Download Whitepaper

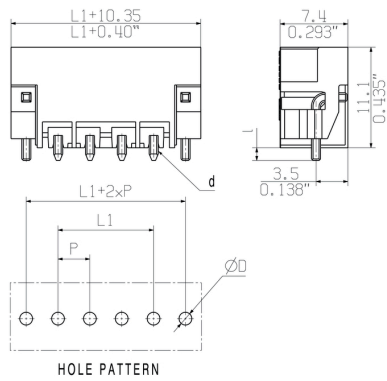
Data sheet

**OMNIMATE Signal - series BL/SL 3.50
SL-SMT 3.50/12/180RF 1.5SN BK BX**

Weidmüller Interface GmbH & Co. KG
 Klingenbergstraße 26
 D-32758 Detmold
 Germany
 Fon: +49 5231 14-0
 Fax: +49 5231 14-292083
 www.weidmueller.com

Drawings

Dimensional drawing



**OMNIMATE Signal - series BL/SL 3.50
SL-SMT 3.50/12/180RF 1.5SN BK BX**

Weidmüller Interface GmbH & Co. KG
Klingenbergstraße 26
D-32758 Detmold
Germany
Fon: +49 5231 14-0
Fax: +49 5231 14-292083
www.weidmueller.com

Mating connector (fully pluggable)
BLZF 3.5/180LR


Female connectors with tension clamp system for connecting cables in 3.50 pitch. They provide space for labelling and can be coded.

General ordering data

Type	BLZF 3.50/12/180LR SN O ...	Version	Product data	Packaging
Order No.	1531340000	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 12,	IEC: 320 V / 14.5 A / 0.2 - 1.5 mm ²	Box
GTIN (EAN)	4050118336498	180°, Tension-clamp connection, Clamping range, max.: 1.5 mm ² ,	UL: 300 V / 10 A / AWG 26 - AWG 14	
Qty.	50 pc(s).	Box		
Type	BLZF 3.50/12/180LR SN O ...	Version	Product data	Packaging
Order No.	1134550000	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 12,	IEC: 320 V / 14.5 A / 0.2 - 1.5 mm ²	Box
GTIN (EAN)	4032248914708	180°, Tension-clamp connection, Clamping range, max.: 1.5 mm ² ,	UL: 300 V / 10 A / AWG 26 - AWG 14	
Qty.	50 pc(s).	Box		

BLF 3.50/180LH


Connect efficiently - in a small space: female header with spring connection (PUSH IN) as a plug-in connection level; used together with male headers in 3.50 mm pitch.

General ordering data

Type	BLF 3.50/12/180LH SN OR ...	Version	Product data	Packaging
Order No.	2460050000	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 12,	IEC: 320 V / 17.5 A / 0.14 - 1.5 mm ²	Box
GTIN (EAN)	4050118475463	180°, PUSH IN, Spring connection, Clamping range, max.: 1.5 mm ² ,	UL: 300 V / AWG 26 - AWG 16	
Qty.	36 pc(s).	Box		
Type	BLF 3.50/12/180LH SN BK ...	Version	Product data	Packaging
Order No.	2538110000	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 12,	IEC: 320 V / 17.5 A / 0.14 - 1.5 mm ²	Box
GTIN (EAN)	4050118549836	180°, PUSH IN, Spring connection, Clamping range, max.: 1.5 mm ² ,	UL: 300 V / AWG 26 - AWG 16	
Qty.	36 pc(s).	Box		

**OMNIMATE Signal - series BL/SL 3.50
SL-SMT 3.50/12/180RF 1.5SN BK BX**

Weidmüller Interface GmbH & Co. KG
Klingenbergstraße 26
D-32758 Detmold
Germany
Fon: +49 5231 14-0
Fax: +49 5231 14-292083
www.weidmueller.com

Mating connector (fully pluggable)
BLF 3.50/180LR


Connect efficiently - in a small space: female header with spring connection (PUSH IN) as a plug-in connection level; used together with male headers in 3.50 mm pitch.

General ordering data

Type	BLF 3.50/12/180LR SN OR ...	Version	Product data	Packaging
Order No.	2459780000	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 12,	IEC: 320 V / 17.5 A / 0.14 - 1.5 mm ²	Box
GTIN (EAN)	4050118475197	180°, PUSH IN, Spring connection, Clamping range, max. : 1.5 mm ² ,	UL: 300 V / AWG 26 - AWG 16	
Qty.	36 pc(s).	Box		
Type	BLF 3.50/12/180LR SN BK ...	Version	Product data	Packaging
Order No.	2459940000	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 12,	IEC: 320 V / 17.5 A / 0.14 - 1.5 mm ²	Box
GTIN (EAN)	4050118475357	180°, PUSH IN, Spring connection, Clamping range, max. : 1.5 mm ² ,	UL: 300 V / AWG 26 - AWG 16	
Qty.	36 pc(s).	Box		

BL 3.50/180LR

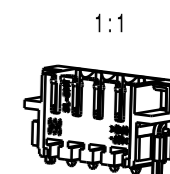
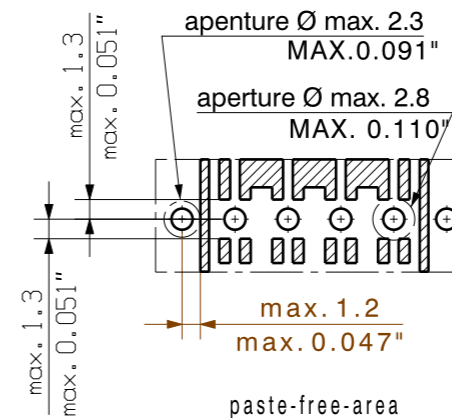
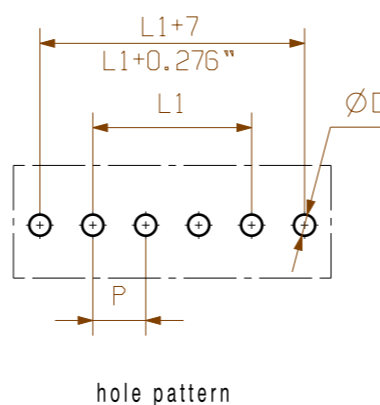
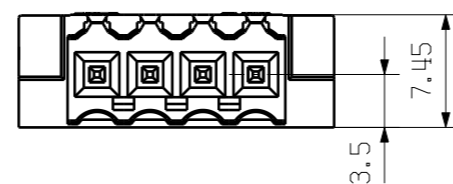
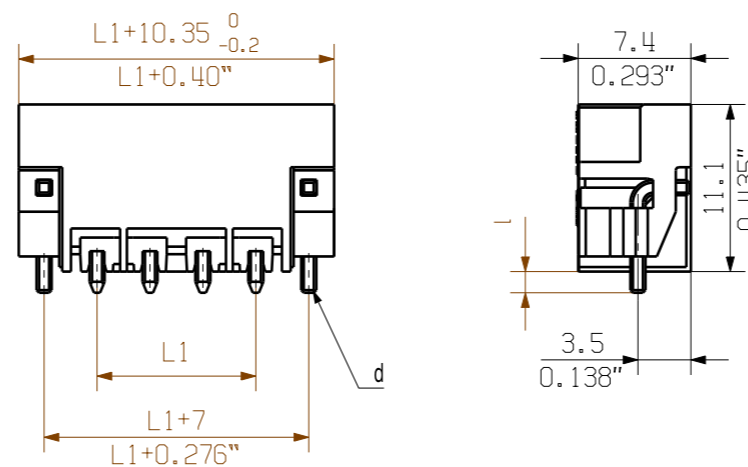

Female connectors with clamping yoke screw system for connecting conductors at 3.50 mm pitch. They provide space for labelling and can be coded.

General ordering data

Type	BL 3.50/12/180LR SN OR ...	Version	Product data	Packaging
Order No.	1134400000	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 12,	IEC: 320 V / 17 A / 0.2 - 1.5 mm ²	Box
GTIN (EAN)	4032248914470	180°, Clamping yoke connection, Clamping range, max. : 1.5 mm ² ,	UL: 300 V / 10 A / AWG 28 - AWG 14	
Qty.	36 pc(s).	Box		
Type	BL 3.50/12/180LR SN OR ...	Version	Product data	Packaging
Order No.	1531100000	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 12,	IEC: 320 V / 17 A / 0.2 - 1.5 mm ²	Box
GTIN (EAN)	4050118336207	180°, Clamping yoke connection, Clamping range, max. : 1.5 mm ² ,	UL: 300 V / 10 A / AWG 28 - AWG 14	
Qty.	36 pc(s).	Box		

The reproduction, distribution and utilization of this document as well as the communication of its contents to others without explicit authorization is prohibited. Offenders will be held liable for the payment of damages. Weidmüller exclusively reserves the right to file for patents, utility models or designs.

© Weidmüller Interface GmbH & Co. KG



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	
18	59,50	2,343	
17	56,00	2,205	
16	52,50	2,067	+/- 0.15
15	49,00	1,929	
14	45,50	1,791	
13	42,00	1,654	
12	38,50	1,516	+/- 0.1
11	35,00	1,378	
10	31,50	1,240	
9	28,00	1,102	
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	
3	7,00	0,276	
2	3,50	0,138	
n	L1 [mm]	L1 [Inch]	tolerance

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

shown: SL-SMT 3.50/04/180RF

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		99546/5 08.12.17 HELIS_MA 00		Cat.no.: .									
		Modification											
		<table border="1"> <tr><th>Date</th><th>Name</th></tr> <tr><td>Drawn</td><td>28.11.2007 HELIS_MA</td></tr> <tr><td>Responsible</td><td>AMANN_A</td></tr> <tr><td>Checked</td><td>05.01.2018 HERTEL_S</td></tr> <tr><td>Approved</td><td>LANG_T</td></tr> </table>		Date	Name	Drawn	28.11.2007 HELIS_MA	Responsible	AMANN_A	Checked	05.01.2018 HERTEL_S	Approved	LANG_T
Date	Name												
Drawn	28.11.2007 HELIS_MA												
Responsible	AMANN_A												
Checked	05.01.2018 HERTEL_S												
Approved	LANG_T												
Scale: 2:1		Supersedes: .		SL-SMT 3.50/.../180... STIFTLISTE MALE HEADER									
		Product file: SL-SMT 3.50		7312									

Recommended wave soldering profiles

Weidmüller Interface GmbH & Co. KG
 Klängenbergstraße 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.

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.