

OMNIMATE Signal - series BL/SL 5.00
SL-SMT 5.00HC/02/180 1.5SN BK RL
Weidmüller Interface GmbH & Co. KG

Klingenbergstraße 16

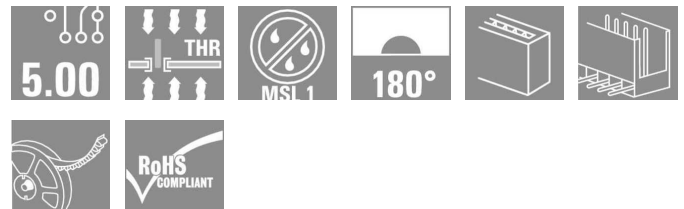
D-32758 Detmold

Germany

Fon: +49 5231 1429-0

Fax: +49 5231 14292083

www.weidmueller.com



High-temperature-resistant, straight, open pin header.
 Packed in box or tape. On tape and with 1.5 mm solder pin, optimised for automatic assembly. 3.2 mm solder pin suitable for reflow and wave soldering. The pin headers provide space for labelling and can be coded. HC = High Current.

General ordering data

Type	SL-SMT 5.00HC/02/180 1.5SN BK RL
Order No.	1797800000
Version	PCB plug-in connector, male header, open side, THT/THR solder connection, 5.00 mm, No. of poles: 2, 180°, Solder pin length (l): 1.5 mm, tinned, Black, Tape (Ø 330 mm); Rs = 10 ⁹ - 10 ¹² Ω
GTIN (EAN)	4032248239801
Qty.	250 pc(s).
Product data	IEC: 400 V / 27.5 A UL: 300 V / 18.5 A
Packaging	Tape (Ø 330 mm); Rs = 10 ⁹ - 10 ¹² Ω

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Technical data

Dimensions and weights

Net weight	2.66 g
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System specifications

Product family	OMNIMATE Signal - series BL/SL 5.00	Mounting onto the PCB	THT/THR solder connection
Pitch in mm (P)	5 mm	Pitch in inches (P)	0.197 inch
Outgoing elbow	180°	No. of poles	2
Number of solder pins per pole	1	Solder pin length (l)	1.5 mm
Solder pin length tolerance	+0.1 / -0.3 mm	Tolerance of solder pin position	± 0.1 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
L1 in mm	5 mm	L1 in inches	0.197 inch
Number of rows	1	Pin series quantity	1
Can be coded	Yes	Plugging cycles	25
Packaging	Tape (Ø 330 mm); Rs = 10 ⁹ - 10 ¹² Ω		

Material data

Insulating material	LCP GF	Colour	Black
Colour chart (similar)	RAL 9011	Insulating material group	IIIa
CTI	≥ 175	Insulation resistance	≥ 10 ⁸ Ω
Moisture Level (MSL)	1	UL 94 flammability rating	V-0
Contact material	CuSn	Contact surface	tinned
Layer structure of solder connection	1-3 µm Ni / 2-4 µm Sn matt	Layer structure of plug contact	1-3 µm Ni / 2-4 µm Sn matt
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 (Ta = 20°C)	27.5 A
Rated current, max. no. of poles (Ta = 20°C)	19 A	Rated current, min. no. of poles (Ta = 40°C)	24 A
Rated current, max. no. of poles (Ta = 40°C)	16.5 A	Rated voltage for surge voltage class / pollution degree II/2	400 V
Rated voltage for surge voltage class / pollution degree III/2	320 V	Rated voltage for surge voltage class / pollution degree III/3	250 V
Rated impulse voltage for surge voltage class/ pollution degree II/2	4 kV	Rated impulse voltage for surge voltage class/ pollution degree III/2	4 kV
Rated impulse voltage for surge voltage class/ contamination degree III/3	4 kV		


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Technical data

Rated data acc. to CSA

Institute (CSA)		Certificate No. (CSA)	
		200039-1176845	
Rated voltage (Use group B)	300 V	Rated voltage (use group D)	300 V
Rated current (use group B)	15 A	Rated current (use group D)	15 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)	300 V	Rated voltage (use group D)	300 V
Rated current (use group B)	18.5 A	Rated current (use group D)	10 A
Reference to approval values	Specifications are maximum values, details - see approval certificate.		

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
IPC conformity	• 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.
	The products are developed, manufactured and delivered according to the internationally recognised IPC-A-610 standard, category "permissible". More extensive demands on the products can be evaluated on request.

Approvals

Approvals	
	
ROHS	Conform

Creation date July 26, 2017 4:48:53 AM CEST

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Technical data

Downloads

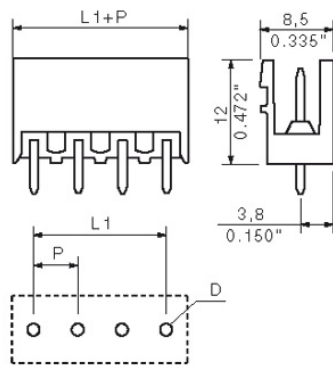
Approval/Certificate/Document of Conformity	Declaration of the Manufacturer
Brochure/Catalogue	FL DRIVES EN FL DRIVES DE
SMT white paper	Download Whitepaper

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Drawings

Dimensional drawing



Example of use



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Mating connector (fully pluggable)

BLZP 5.00HC/270 SN



Female plugs with clamping-yoke connection for connecting wires with a right-angle (90° or 270°) outlet direction. The female connectors provide space for labelling and can be coded. Fastened by means of a flange or release latch. They also provide an integrated plus/minus screw, protection against faulty insertion of the wire, and they are delivered with open clamping yokes. HC = High Current.

General ordering data

Delivery status Available until	Type	Order No.	Version	GTIN (EAN)	Qty.
Discontinued 2016-04-08T00:00:00+02:00	BLZP 5.00HC/02/270 SN BK BX	1959100000	PCB plug-in connector, female plug, 5.00 mm, No. of poles: 2, 90°, Clamping yoke connection, Clamping range, rated connection, max.: 4 mm ² , Box	4032248638031	180 pc(s).
BLZP 5.00HC/02/270 SN OR BX	PCB plug-in connector, female plug, 5.00 mm, No. of poles: 2, 90°, Clamping yoke connection, Clamping range, rated connection, max.: 4 mm ² , Box	4032248637706	180 pc(s).	IEC: 400 V / 23 A / 0.2 - 4 mm ² UL: 300 V / 20 A / AWG 26 - AWG 12	Box

BLZP 5.00HC/90 SN



Female plugs with clamping-yoke connection for connecting wires with a right-angle (90° or 270°) outlet direction. The female connectors provide space for labelling and can be coded. Fastened by means of a flange or release latch. They also provide an integrated plus/minus screw, protection against faulty insertion of the wire, and they are delivered with open clamping yokes. HC = High Current.

General ordering data

Type	Order No.	Version	GTIN (EAN)	Qty.	Product data	Packaging
BLZP 5.00HC/02/90 SN BK BX	1958650000	PCB plug-in connector, female plug, 5.00 mm, No. of poles: 2, 90°, Clamping yoke connection, Clamping range, rated connection, max.: 4 mm ² , Box	4032248637386	180 pc(s).	IEC: 400 V / 23 A / 0.2 - 4 mm ² UL: 300 V / 20 A / AWG 26 - AWG 12	Box
BLZP 5.00HC/02/90 SN OR BX	1958300000	PCB plug-in connector, female plug, 5.00 mm, No. of poles: 2, 90°, Clamping	4032248637164	180 pc(s).	IEC: 400 V / 23 A / 0.2 - 4 mm ² UL: 300 V / 20 A / AWG 26 - AWG 12	Box

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 Germany
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 Fax: +49 5231 14292083
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Mating connector (fully pluggable)

yoke connection, Clamping
 range, rated connection,
 max.: 4 mm², Box

BLF 5.00HC/180 SN



Just as reliable as the millionfold proven original and featuring innovative details:
 The BLF 5.00HC PUSH IN version of the BLZ 5.00HC female connector features a new connection system and a more compact design. Weidmüller's innovative PUSH IN spring connection system stands for the future of easy and tool-free wire connection. HC = High Current.
 In terms of versatility, the BLF 5.00HC offers just as much as the older versions:

- 3 tested-and-proven wire outlet directions provide the usual flexibility for application-specific design
- 4 flange variations and the patented release latch allow the locking concept to be based on the requirements of the user

General ordering data

Type	Order No.	Version	GTIN (EAN)	Qty.	Product data	Packaging
BLF	1017670000	PCB plug-in connector, female plug, 5.00 mm, No. of poles: 2, 180°, PUSH IN, Clamping range, rated connection, max.: 3.31 mm ² , Box	4032248728848	180 pc(s).	IEC: 400 V / 23 A / 0.2 - 2.5 mm ² UL: 300 V / 18.5 A / AWG 26 - AWG 12	Box
5.00HC/02/180						
SN BK BX						
BLF	1017860000	PCB plug-in connector, female plug, 5.00 mm, No. of poles: 2, 180°, PUSH IN, Clamping range, rated connection, max.: 3.31 mm ² , Box	4032248728671	180 pc(s).	IEC: 400 V / 23 A / 0.2 - 2.5 mm ² UL: 300 V / 18.5 A / AWG 26 - AWG 12	Box
5.00HC/02/180						
SN OR BX						

BLZP 5.00HC/180 SN



Female plug with clamping-yoke screw system for connecting wires with straight (180°) outlet direction. The female connectors provide space for labelling and can be coded. Fastened by means of a flange or release latch. The also provide an integrated plus/minus screw, protection against faulty insertion of the wire, and they are delivered with open clamping yokes. HC = High Current.

General ordering data

Type	Order No.	Version	GTIN (EAN)	Qty.	Product data	Packaging
BLZP	1954490000	PCB plug-in connector, female plug, 5.00 mm, No. of poles: 2, 180°, Clamping	4032248633203	180 pc(s).	IEC: 400 V / 23 A / 0.2 - 4 mm ² UL: 300 V / 20 A / AWG 26 - AWG 12	Box
5.00HC/02/180						
SN OR BX						

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Mating connector (fully pluggable)

		yoke connection, Clamping range, rated connection, max.: 4 mm ² , Box		
BLZP	1955570000	PCB plug-in connector, female plug, 5.00 mm, No. of poles: 2, 180°, Clamping yoke connection, Clamping range, rated connection, max.: 4 mm ² , Box	4032248634064 180 pc(s).	IEC: 400 V / 23 A / 0.2 - 4 mm ² UL: 300 V / 20 A / AWG 26 - AWG 12
5.00HC/02/180				
SN BK BX				

BLF 5.00HC/90 SN



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In terms of versatility, the BLF 5.00HC offers just as much as the older versions:

- 3 tested-and-proven wire outlet directions provide the usual flexibility for application-specific design
- 4 flange variations and the patented release latch allow the locking concept to be based on the requirements of the user

General ordering data

Type	Order No.	Version	GTIN (EAN)	Qty.	Product data	Packaging
BLF	1980170000	PCB plug-in connector, female plug, 5.00 mm, No. of poles: 2, 90°, PUSH IN, Clamping range, rated connection, max.: 3.31 mm ² , Box	4032248675258 180 pc(s).		IEC: 400 V / 24 A / 0.2 - 2.5 mm ² UL: 300 V / 18.5 A / AWG 26 - AWG 12	Box
5.00HC/02/90						
SN OR BX						
BLF	1979270000	PCB plug-in connector, female plug, 5.00 mm, No. of poles: 2, 90°, PUSH IN, Clamping range, rated connection, max.: 3.31 mm ² , Box	4032248674442 180 pc(s).		IEC: 400 V / 24 A / 0.2 - 2.5 mm ² UL: 300 V / 18.5 A / AWG 26 - AWG 12	Box
5.00HC/02/90						
SN BK BX						

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Accessories

Additional accessories



No task is too small when creating the perfect solution. br />

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 useful details:

- Test plugs - ensure reliable pick-up from diagnostic sockets
- Cross-connectors - ensure a stable electrical distribution contact directly at the connection
- Compartment partition elements - divide a large number of male connectors into several separate socket connector channels
- Locks and clips - optional vibration-resistant clip-on connection or mounting for male and female connectors

In tandem with the manufacturing process and application - more accessories = smaller workload

General ordering data

Type	Order No.	Version	GTIN (EAN)	Qty.	Product data	Packaging
SL AT OR	1598300000	PCB plug-in connector, Accessories, Partition element, Orange, No. of poles: 1	4008190189266	100 pc(s).		Box
SL AT SW	1770240000	PCB plug-in connector, Accessories, Partition element, Black, No. of poles: 1	4032248117710	100 pc(s).		Box

Coding elements



Only connects what is supposed to be connected: the right connection at the right place.

Coding elements and locking devices clearly assign connecting elements during the manufacturing process and operation

The coding elements and locking devices are inserted prior to assembly or during the cable assembly phase. The Weidmüller alternative: configure online using the variant configurator to precode prior to delivery. Incorrect assembly on the circuit board and incorrect plugging of connecting elements is no longer possible. The advantage: no troubleshooting during manufacture and no operational errors by the user.

General ordering data

Type	Order No.	Version	GTIN (EAN)	Qty.	Product data	Packaging
BLZ/SL KO BK BX	1545710000	PCB plug-in connector, Accessories, Coding	4008190087142	50 pc(s).		Box

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Accessories

	element, Black, No. of poles: 1		
BLZ/SL KO OR 1573010000 BX	PCB plug-in connector, Accessories, Coding element, Orange, No. of poles: 1	4008190048396 100 pc(s).	Box

Recommended wave soldering profiles

Weidmüller Interface GmbH & Co. KG
Klingenbergstraße 16
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Germany
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Fax: +49 5231 14-292083
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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.

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.

