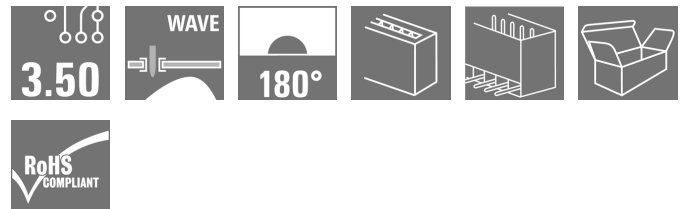
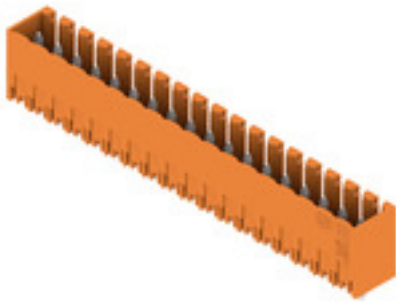


## OMNIMATE Signal - series BL/SL 3.50 SL 3.50/18/180G 3.2SN OR BX

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



Pin headers for wave soldering in 3.50 mm pitch

- Plugging direction is parallel (90°), straight 180° or angled (135°) to the PCB
- Housing variant: screw flange (F)
- Packed in a cardboard box (BX)
- Pin header can be coded

### General ordering data

Type	SL 3.50/18/180G 3.2SN OR BX
Order No.	<a href="#">1621800000</a>
Version	PCB plug-in connector, male header, closed side, THT solder connection, 3.50 mm, Number of poles: 18, 180°, Solder pin length (l): 3.2 mm, tinned, orange, Box
GTIN (EAN)	4008190180676
Qty.	20 pc(s).
Product data	IEC: 320 V / 17 A UL: 300 V / 10 A
Packaging	Box

Creation date May 3, 2020 8:39:21 PM CEST

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

Width	64.4 mm	Width (inches)	2.535 inch
Height	14.3 mm	Height (inches)	0.563 inch
Height of lowest version	11.1 mm	Depth	7.5 mm
Depth (inches)	0.295 inch	Net weight	5.2 g

**System specifications**

Product family	OMNIMATE Signal - series BL/SL 3.50	Type of connection	Board connection
Mounting onto the PCB	THT solder connection	Pitch in mm (P)	3.5 mm
Pitch in inches (P)	0.138 inch	Outgoing elbow	180°
Number of poles	18	Number of solder pins per pole	1
Solder pin length (l)	3.2 mm	Solder pin length tolerance	+0.1 / -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	L1 in mm	59.5 mm
L1 in inches	2.343 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.	10 N	Pulling force/pole, max.	10 N

**Material data**

Insulating material	PBT	Colour	orange
Colour chart (similar)	RAL 2000	Insulating material group	IIIa
Comparative Tracking Index (CTI)	≥ 200	Insulation strength	≥ 10 <sup>8</sup> Ω
UL 94 flammability rating	V-0	GWFI	960 °C
Contact material	CuSn	Contact surface	tinned
Layer structure of solder connection	5-7 μm Sn glossy	Layer structure of plug contact	5-7 undefined Sn glossy
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)	17 A
Rated current, max. number of poles (Tu=20°C)	12 A	Rated current, min. number of poles (Tu=40°C)	14.5 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	Short-time withstand current resistance	3 x 1s with 100 A

**OMNIMATE Signal - series BL/SL 3.50  
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**Technical data**

**Rated data acc. to CSA**

Institute (CSA)				Certificate No. (CSA)	
				154685-1318353	
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	41 mm
VPE width	72 mm	VPE height	91 mm

**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	UNSPSC	30-21-18-10

**Notes**

Notes	<ul style="list-style-type: none"> <li>• Additional colours on request</li> <li>• Gold-plated contact surfaces on request</li> <li>• Rated current related to rated cross-section &amp; min. No. of poles.</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> </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.

**Data sheet****OMNIMATE Signal - series BL/SL 3.50  
SL 3.50/18/180G 3.2SN OR BX**

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**Technical data****Approvals**

Approvals



ROHS

Conform

**Downloads**Approval/Certificate/Document of  
Conformity[Declaration of the Manufacturer](#)

Brochure/Catalogue

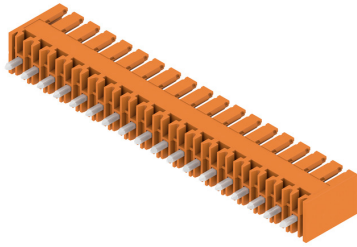
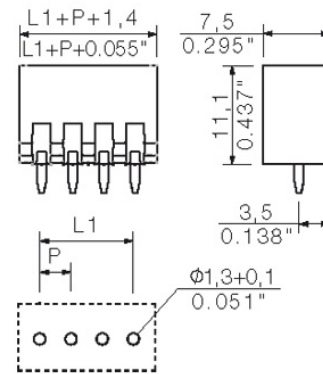
[FL DRIVES EN](#)  
[MB DEVICE MANUF. EN](#)  
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[FL ELEVATOR EN](#)  
[FL POWER SUPPLY EN](#)  
[FL 72H SAMPLE SER EN](#)  
[PO OMNIMATE EN](#)

Engineering Data

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

**Data sheet****OMNIMATE Signal - series BL/SL 3.50  
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**Drawings****Product image****Dimensional drawing**

**OMNIMATE Signal - series BL/SL 3.50  
SL 3.50/18/180G 3.2SN OR BX**

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**Mating connector (conditionally pluggable)**
**BL 3.50/180LH**


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 3.50/18/180LH SN OR ...	Version	Product data	Packaging
Order No.	<a href="#">1687810000</a>	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 18,	IEC: 320 V / 17 A / 0.2 - 1.5 mm <sup>2</sup>	Box
GTIN (EAN)	4008190853365	180°, Clamping yoke connection, Clamping range, max. : 1.5 mm <sup>2</sup> ,	UL: 300 V / 10 A / AWG 28 - AWG 14	
Qty.	24 pc(s).	Box		
Type	BL 3.50/18/180LH SN DKG ...	Version	Product data	Packaging
Order No.	<a href="#">1752880000</a>	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 18,	IEC: 320 V / 17 A / 0.2 - 1.5 mm <sup>2</sup>	Box
GTIN (EAN)	4032248007493	180°, Clamping yoke connection, Clamping range, max. : 1.5 mm <sup>2</sup> ,	UL: 300 V / 10 A / AWG 28 - AWG 14	
Qty.	20 pc(s).	Box		
Type	BL 3.50/18/180LH SN BK ...	Version	Product data	Packaging
Order No.	<a href="#">1688040000</a>	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 18,	IEC: 320 V / 17 A / 0.2 - 1.5 mm <sup>2</sup>	Box
GTIN (EAN)	4008190853594	180°, Clamping yoke connection, Clamping range, max. : 1.5 mm <sup>2</sup> ,	UL: 300 V / 10 A / AWG 28 - AWG 14	
Qty.	24 pc(s).	Box		

**BL 3.50/180F**


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 3.50/18/180F SN DKG ...	Version	Product data	Packaging
Order No.	<a href="#">1621290000</a>	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 18,	IEC: 320 V / 17 A / 0.2 - 1.5 mm <sup>2</sup>	Box
GTIN (EAN)	4008190170912	180°, Clamping yoke connection, Clamping range, max. : 1.5 mm <sup>2</sup> ,	UL: 300 V / 10 A / AWG 28 - AWG 14	
Qty.	20 pc(s).	Box		
Type	BL 3.50/18/180F SN OR BX	Version	Product data	Packaging
Order No.	<a href="#">1620770000</a>	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 18,	IEC: 320 V / 17 A / 0.2 - 1.5 mm <sup>2</sup>	Box
GTIN (EAN)	4008190163075	180°, Clamping yoke connection, Clamping range, max. : 1.5 mm <sup>2</sup> ,	UL: 300 V / 10 A / AWG 28 - AWG 14	
Qty.	24 pc(s).	Box		
Type	BL 3.50/18/180F SN BK BX	Version	Product data	Packaging
Order No.	<a href="#">1620850000</a>	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 18,	IEC: 320 V / 17 A / 0.2 - 1.5 mm <sup>2</sup>	Box
GTIN (EAN)	4008190164621	180°, Clamping yoke connection, Clamping range, max. : 1.5 mm <sup>2</sup> ,	UL: 300 V / 10 A / AWG 28 - AWG 14	
Qty.	24 pc(s).	Box		

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**Mating connector (conditionally pluggable)**

Type	BL 3.50/18/180F SN GY BX	Version	Product data	Packaging
Order No.	<a href="#">1621080000</a>	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 18,	IEC: 320 V / 17 A / 0.2 - 1.5 mm <sup>2</sup>	Box
GTIN (EAN)	4008190168247	180°, Clamping yoke connection, Clamping range, max. : 1.5 mm <sup>2</sup> ,	UL: 300 V / 10 A / AWG 28 - AWG 14	
Qty.	20 pc(s).	Box		

**BL 3.50/90F**


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 3.50/18/90F SN OR BX	Version	Product data	Packaging
Order No.	<a href="#">1639170000</a>	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 18,	IEC: 320 V / 12 A / 0.2 - 1.5 mm <sup>2</sup>	Box
GTIN (EAN)	4008190276713	90°, Clamping yoke connection, Clamping range, max. : 1.5 mm <sup>2</sup> ,	UL: 300 V / 8 A / AWG 28 - AWG 14	
Qty.	24 pc(s).	Box		
Type	BL 3.50/18/90F SN BK BX	Version	Product data	Packaging
Order No.	<a href="#">1639400000</a>	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 18,	IEC: 320 V / 12 A / 0.2 - 1.5 mm <sup>2</sup>	Box
GTIN (EAN)	4008190276942	90°, Clamping yoke connection, Clamping range, max. : 1.5 mm <sup>2</sup> ,	UL: 300 V / 8 A / AWG 28 - AWG 14	
Qty.	24 pc(s).	Box		

**BL 3.50/270F**


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 3.50/18/270F SN BK BX	Version	Product data	Packaging
Order No.	<a href="#">1640320000</a>	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 18,	IEC: 320 V / 12 A / 0.2 - 1.5 mm <sup>2</sup>	Box
GTIN (EAN)	4008190277901	270°, Clamping yoke connection, Clamping range, max. : 1.5 mm <sup>2</sup> ,	UL: 300 V / 8 A / AWG 28 - AWG 14	
Qty.	24 pc(s).	Box		
Type	BL 3.50/18/270F SN OR BX	Version	Product data	Packaging
Order No.	<a href="#">1640090000</a>	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 18,	IEC: 320 V / 12 A / 0.2 - 1.5 mm <sup>2</sup>	Box
GTIN (EAN)	4008190277642	270°, Clamping yoke connection, Clamping range, max. : 1.5 mm <sup>2</sup> ,	UL: 300 V / 8 A / AWG 28 - AWG 14	
Qty.	24 pc(s).	Box		

**OMNIMATE Signal - series BL/SL 3.50  
SL 3.50/18/180G 3.2SN OR BX**

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**Mating connector (fully pluggable)**
**BL 3.50/90**


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 3.50/18/90 SN OR BX	Version	Product data	Packaging
Order No.	<a href="#">1638710000</a>	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 18,	IEC: 320 V / 12 A / 0.2 - 1.5 mm <sup>2</sup>	Box
GTIN (EAN)	4008190276263	90°, Clamping yoke connection, Clamping range, max. : 1.5 mm <sup>2</sup> , Box	UL: 300 V / 8 A / AWG 28 - AWG 14	
Qty.	24 pc(s).			
Type	BL 3.50/18/90 SN BK BX	Version	Product data	Packaging
Order No.	<a href="#">1638940000</a>	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 18,	IEC: 320 V / 12 A / 0.2 - 1.5 mm <sup>2</sup>	Box
GTIN (EAN)	4008190276485	90°, Clamping yoke connection, Clamping range, max. : 1.5 mm <sup>2</sup> , Box	UL: 300 V / 8 A / AWG 28 - AWG 14	
Qty.	24 pc(s).			

**BL 3.50/270**


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 3.50/18/270 SN BK BX	Version	Product data	Packaging
Order No.	<a href="#">1639860000</a>	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 18,	IEC: 320 V / 12 A / 0.2 - 1.5 mm <sup>2</sup>	Box
GTIN (EAN)	4008190277413	270°, Clamping yoke connection, Clamping range, max. : 1.5 mm <sup>2</sup> ,	UL: 300 V / 8 A / AWG 28 - AWG 14	
Qty.	20 pc(s).	Box		
Type	BL 3.50/18/270 SN OR BX	Version	Product data	Packaging
Order No.	<a href="#">1639630000</a>	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 18,	IEC: 320 V / 12 A / 0.2 - 1.5 mm <sup>2</sup>	Box
GTIN (EAN)	4008190277185	270°, Clamping yoke connection, Clamping range, max. : 1.5 mm <sup>2</sup> ,	UL: 300 V / 8 A / AWG 28 - AWG 14	
Qty.	24 pc(s).	Box		



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**Mating connector (fully pluggable)**
**BL 3.50/180**


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 3.50/18/180 SN GY BX	Version	Product data	Packaging
Order No.	<a href="#">1620610000</a>	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 18,	IEC: 320 V / 17 A / 0.2 - 1.5 mm <sup>2</sup>	Box
GTIN (EAN)	4008190159795	180°, Clamping yoke connection, Clamping range, max. : 1.5 mm <sup>2</sup> ,	UL: 300 V / 10 A / AWG 28 - AWG 14	
Qty.	20 pc(s).	Box		
Type	BL 3.50/18/180 SN OR BX	Version	Product data	Packaging
Order No.	<a href="#">1620300000</a>	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 18,	IEC: 320 V / 17 A / 0.2 - 1.5 mm <sup>2</sup>	Box
GTIN (EAN)	4008190154172	180°, Clamping yoke connection, Clamping range, max. : 1.5 mm <sup>2</sup> ,	UL: 300 V / 10 A / AWG 28 - AWG 14	
Qty.	24 pc(s).	Box		
Type	BL 3.50/18/180 SN DKGN ...	Version	Product data	Packaging
Order No.	<a href="#">1620690000</a>	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 18,	IEC: 320 V / 17 A / 0.2 - 1.5 mm <sup>2</sup>	Box
GTIN (EAN)	4008190160630	180°, Clamping yoke connection, Clamping range, max. : 1.5 mm <sup>2</sup> ,	UL: 300 V / 10 A / AWG 28 - AWG 14	
Qty.	24 pc(s).	Box		
Type	BL 3.50/18/180 SN BK BX	Version	Product data	Packaging
Order No.	<a href="#">1620380000</a>	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 18,	IEC: 320 V / 17 A / 0.2 - 1.5 mm <sup>2</sup>	Box
GTIN (EAN)	4008190155766	180°, Clamping yoke connection, Clamping range, max. : 1.5 mm <sup>2</sup> ,	UL: 300 V / 10 A / AWG 28 - AWG 14	
Qty.	24 pc(s).	Box		

**BLF 3.50/180**


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 3.50/18/180 SN OR BX	Version	Product data	Packaging
Order No.	<a href="#">2459210000</a>	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 18,	IEC: 320 V / 17.5 A / 0.14 - 1.5 mm <sup>2</sup>	Box
GTIN (EAN)	4050118474565	180°, PUSH IN, Spring connection, Clamping range, max. : 1.5 mm <sup>2</sup> ,	UL: 300 V / AWG 26 - AWG 16	
Qty.	24 pc(s).	Box		

## OMNIMATE Signal - series BL/SL 3.50 SL 3.50/18/180G 3.2SN OR BX

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# Accessories

## 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	BL SL 3.5 KO OR	Version	Product data	Packaging
Order No.	<a href="#">1693430000</a>	PCB plug-in connector, Accessories, Coding element, orange, Number		Box
GTIN (EAN)	4008190867447	of poles: 1		
Qty.	100 pc(s).			
Type	BL SL 3.5 KO SW	Version	Product data	Packaging
Order No.	<a href="#">1610100000</a>	PCB plug-in connector, Accessories, Coding element, black, Number		Box
GTIN (EAN)	4008190187637	of poles: 1		
Qty.	100 pc(s).			

## 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	BL/SL 3.50 VR OR BX	Version	Product data
Order No.	<a href="#">1669310000</a>	PCB plug-in connector, Accessories, Latches, orange, Number of poles:	
GTIN (EAN)	4008190428488	1	
Qty.	100 pc(s).		

**Data sheet**

**OMNIMATE Signal - series BL/SL 3.50  
SL 3.50/18/180G 3.2SN OR BX**

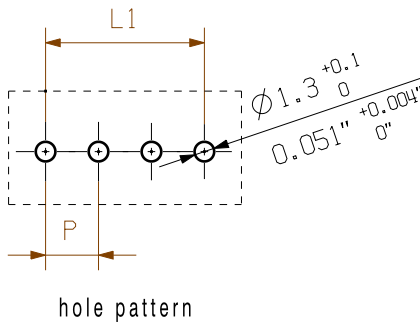
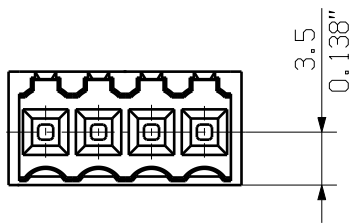
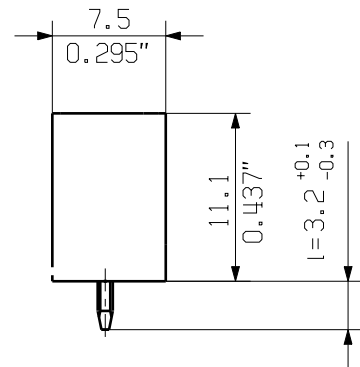
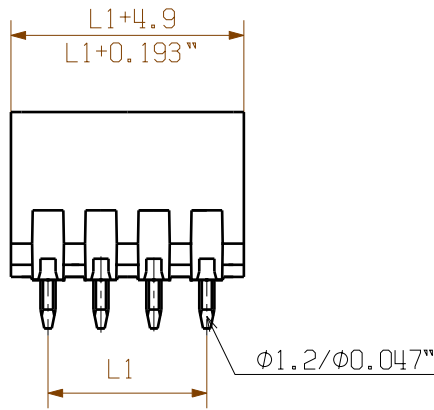
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**Accessories**

Type	BL/SL 3.50 VR BK BX	Version	Product data
Order No.	<a href="#">1669300000</a>	PCB plug-in connector, Accessories, Latches, black, Number of poles:	
GTIN (EAN)	4008190428471	1	
Qty.	100 pc(s).		

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24	80.5	3.171	±0.2	
23	77.0	3.033		
22	73.5	2.895		
21	70.0	2.757		
20	66.5	2.619		
19	63.0	2.481		
18	59.5	2.343		
17	56.0	2.205		
16	52.5	2.067	±0.15	
15	49.0	1.929		
14	45.5	1.791		
13	42.0	1.654		
12	38.5	1.516	±0.1	
11	35.0	1.378		
10	31.5	1.240		
9	28.0	1.102		
8	24.5	0.965		
7	21.0	0.827		
6	17.5	0.689		
5	14.0	0.551		
4	10.5	0.413		
3	7.00	0.276		
2	3.50	0.138		
n	no of poles	L1 [mm]	L1 [inch]	Toleranz/ tolerance

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 with VDE 0110. The current-carrying capacity and pitch tolerance is to be determined according to DIN IEC 326 part 3 very fine.

Weidmueller 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.

P = Raster / pitch  
shown: SL 3.50/04/180G

General tolerance:  
DIN ISO 2768-mK



90310/5  
30.09.16 HELIS\_MA 00

Modification

**Weidmüller**

Cat.no.: . . . . .  
**4 19672 28**

Drawing no. Issue no.  
Sheet 02 of 03 sheets



	Date	Name
Drawn	04.09.2008	HELIS_MA
Responsible		AMANN_A
Checked	18.10.2016	HELIS_MA
Approved		LANG_T

**SL 3.50/.. /180...**  
STIFTLISTE  
MALE HEADER

Scale: 5:1

Supersedes: .

Product file: SL 3.50

7296

## 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.