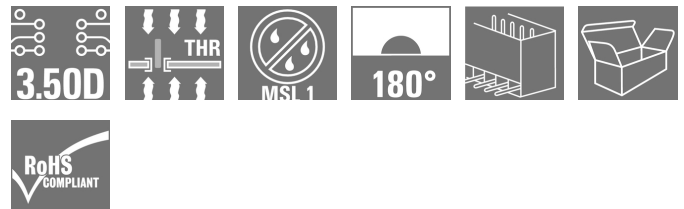


**OMNIMATE Signal - series B2L/S2L 3.50 - 2-row  
S2L-SMT 3.50/14/180G 3.5SN BK BX**

**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, double-row pin header for all common soldering methods. Optimised for automatic assembly. Packed in box or tape. Solder pin 3.2 mm long, suitable for reflow and wave soldering. The male connectors provide space for labelling and can be coded.

**General ordering data**

Type	S2L-SMT 3.50/14/180G 3.5SN BK BX
Order No.	<a href="#">1794570000</a>
Version	PCB plug-in connector, male header, closed side, THT/THR solder connection, 3.50 mm, No. of poles: 14, 180°, Solder pin length (l): 3.5 mm, tinned, Black, Box
GTIN (EAN)	4032248231751
Qty.	72 pc(s).
Product data	IEC: 160 V / 10 A UL: 150 V / 10 A
Packaging	Box

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

Width	25.9 mm	Width (inches)	1.02 inch
Height	14.3 mm	Height (inches)	0.563 inch
Height of lowest version	14.2 mm	Depth	10.8 mm
Depth (inches)	0.425 inch	Net weight	4.06 g

**System specifications**

Product family	OMNIMATE Signal - series B2L/S2L 3.50 - 2-row	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	14	Number of solder pins per pole	1
Solder pin length (l)	3.5 mm	Tolerance of solder pin position	± 0.20 mm
Solder pin dimensions	d = 1.0 mm, Octagonal	Solder eyelet hole diameter (D)	1.3 mm
Solder eyelet hole diameter tolerance (D)+	0,1 mm	Outside diameter of solder pad	2.1 mm
Template aperture diameter	1.9 mm	L1 in mm	21 mm
L1 in inches	0.827 inch	Number of rows	1
Pin series quantity	2	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	Can be coded	Yes
Plugging cycles	25	Plugging force/pole, max.	3 N
Pulling force/pole, max.	6 N		

**Material data**

Insulating material	LCP GF	Colour	Black
Colour chart (similar)	RAL 9011	Insulating material group	IIIb
CTI	≥ 175	Insulation resistance	≥ 10 <sup>8</sup> Ω
Moisture Level (MSL)	1	UL 94 flammability rating	V-0
Contact material	Copper alloy	Contact surface	tinned
Layer structure of solder connection	2-3 μm Ni / 5-7 μm Sn glossy	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)	10 A
Rated current, max. no. of poles (Tu=20°C)	10 A	Rated current, min. no. of poles (Tu=40°C)	9 A
Rated current, max. no. of poles (Tu=40°C)	8.5 A	Rated voltage for surge voltage class / pollution degree II/2	160 V
Rated voltage for surge voltage class / pollution degree III/2	125 V	Rated voltage for surge voltage class / pollution degree III/3	50 V
Rated impulse voltage for surge voltage class/ pollution degree II/2	1.5 kV	Rated impulse voltage for surge voltage class/ pollution degree III/2	1.5 kV
Rated impulse voltage for surge voltage class/ contamination degree III/3	2.5 kV	Short-time withstand current resistance	3 x 1s with 77 A

## OMNIMATE Signal - series B2L/S2L 3.50 - 2-row S2L-SMT 3.50/14/180G 3.5SN BK BX


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## Technical data

### Rated data acc. to CSA

Institute (CSA)		Certificate No. (CSA)	200039-1176845
Rated voltage (Use group B / CSA)	50 V	Rated voltage (Use group C / CSA)	50 V
Rated voltage (Use group D / CSA)	150 V	Rated current (Use group B / CSA)	5 A
Rated current (Use group C / CSA)	9.5 A	Rated current (Use group D / CSA)	9.5 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)	150 V	Rated voltage (Use group C / UL 1059)	50 V
Rated current (Use group B / UL 1059)	10 A	Rated current (Use group C / UL 1059)	10 A
Reference to approval values	Specifications are maximum values, details - see approval certificate.		

### Packaging

Packaging	Box	VPE length	30 mm
VPE width	135 mm	VPE height	350 mm

### Classifications

ETIM 4.0	EC002637	ETIM 5.0	EC002637
ETIM 6.0	EC002637	UNSPSC	30-21-18-10
eClass 5.1	27-26-07-01	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	<ul style="list-style-type: none"> <li>• Additional colours on request</li> <li>• Gold-plated contact surfaces on request</li> <li>• Spacing between rows: see hole layout</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**

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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 SMT EN](#)
- [FL DRIVES DE](#)
- [MB DEVICE MANUF. EN](#)
- [FL BUILDING SAFETY EN](#)
- [FL APPL LED LIGHTING EN](#)
- [FLIndustr.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](#)

SMT white paper

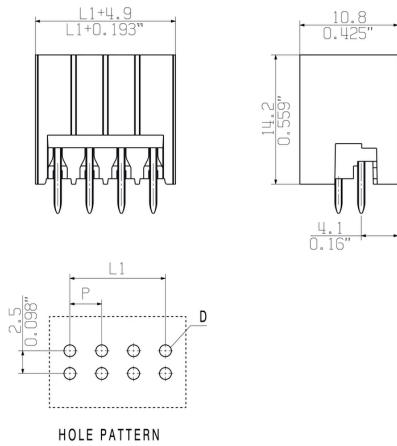
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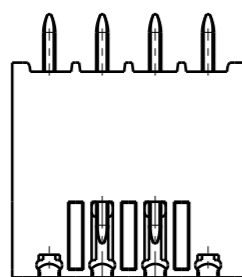
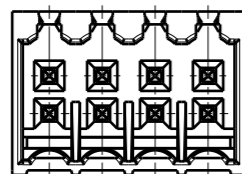
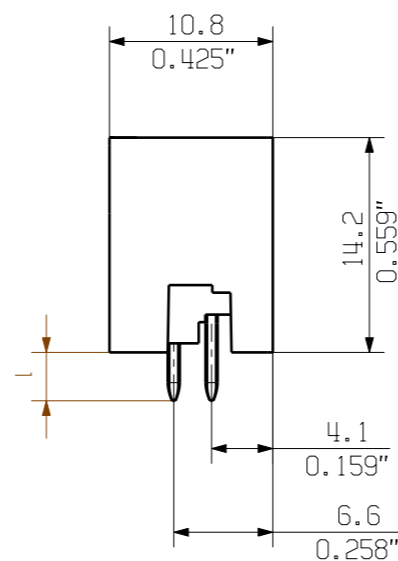
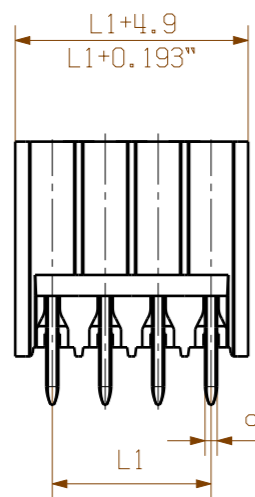
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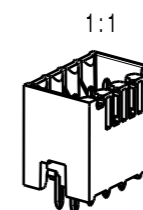
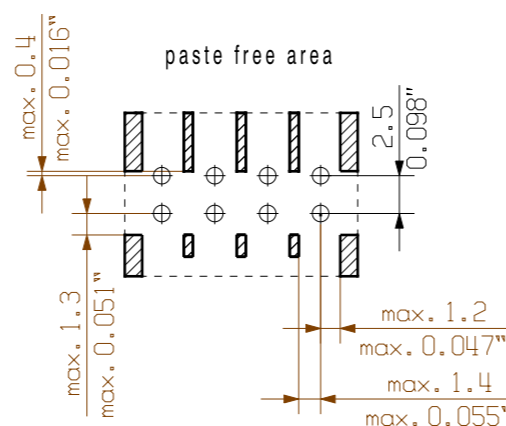
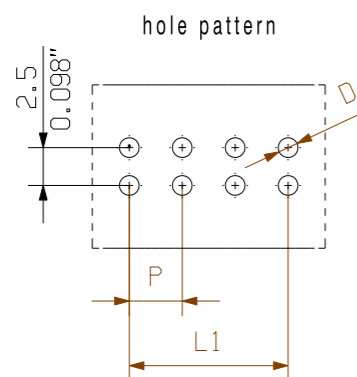
**Drawings**

**Dimensional drawing**





coding not possible at end poles



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

36	59.50	2.343	±0.2
34	56.00	2.205	
32	52.50	2.067	
30	49.00	1.929	
28	45.50	1.791	±0.15
26	42.00	1.654	
24	38.50	1.516	
22	35.00	1.378	
20	31.50	1.240	±0.1
18	28.00	1.102	
16	24.50	0.965	
14	21.00	0.827	
12	17.50	0.689	±0.1
10	14.00	0.551	
8	10.50	0.413	
6	7.00	0.276	
4	3.50	0.138	±0.1
n Poles	L1 [mm]	L1 [inch]	

P = 3.50 Raster Pitch

D = Ø1,3<sup>+0.1</sup>  
Ø0.051<sup>+0.1</sup>

d = 1mm oktagon  
0.039" octogonal

SHOWN: S2L-SMT 3.50/08/180 G

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.

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.

<b>General tolerance:</b> DIN ISO 2768-mK 	99684/4	00	Cat.no.: .	
	02.03.18 HELIS_MA		<b>3 32319</b> <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">35</span>	
Modification	Date	Name	Drawing no. Issue no. Sheet 02 of 04 sheets	
	10.06.2008	HELIS_MA	<b>S2L-SMT 3.50/.../180...</b> STIFTLISTE PIN HEADER	
Drawn	19.03.2018	AMANN_A		
Responsible		HELIS_MA		
Scale: 2/1	Checked	LANG_T	Product file: S2L-SMT 3.50	
Supersedes: .	Approved		7272	

## Recommended wave soldering profiles

**Weidmüller Interface GmbH & Co. KG**  
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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.

## Recommended reflow soldering profile

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### 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  $217^\circ\text{C}$  the paste gets liquid and components and boards begin to connect. The maximum temperature of  $245^\circ\text{C}$  to  $254^\circ\text{C}$  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.