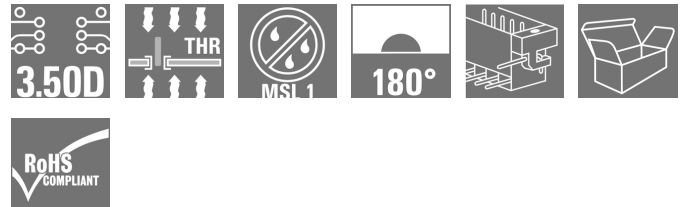


## Data sheet

### OMNIMATE Signal - series B2L/S2L 3.50 - 2-row S2L-SMT 3.50/16/180LF 3.5SN BK BX

**Weidmüller Interface GmbH & Co. KG**  
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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 3.50/16/180LF 3.5SN BK BX
Order No.	<a href="#">1795250000</a>
Version	PCB plug-in connector, male header, Solder flange, THT/THR solder connection, 3.50 mm, Number of poles: 16, 180°, Solder pin length (l): 3.5 mm, tinned, black, Box
GTIN (EAN)	4032248232765
Qty.	48 pc(s).
Product data	IEC: 160 V / 10 A UL: 150 V / 10 A
Packaging	Box

Creation date 21 April 2020 16:48:43 CEST

## Data sheet

### OMNIMATE Signal - series B2L/S2L 3.50 - 2-row S2L-SMT 3.50/16/180LF 3.5SN BK BX

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## Technical data

### Dimensions and weights

Width	35 mm	Width (inches)	1.378 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	5.62 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°
Number of poles	16	Number of solder pins per pole	1
Solder pin length (l)	3.5 mm	Tolerance of solder pin position	± 0.1 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	24.5 mm
L1 in inches	0.965 inch	Number of rows	2
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
Comparative Tracking Index (CTI)	≥ 175	Insulation strength	≥ 10 <sup>8</sup> Ω
Moisture Level (MSL)	1	UL 94 flammability rating	V-0
GWIT	930 °C	GWFI	960 °C
Contact material	Copper alloy	Contact surface	tinned
Layer structure of solder connection	2-3 μm Ni / 5-7 μm Sn	Layer structure of plug contact	2-5 μm Sn / 1-3 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)	10 A
Rated current, max. number of poles (Tu=20°C)	10 A	Rated current, min. number of poles (Tu=40°C)	9 A
Rated current, max. number 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

Creation date 21 April 2020 16:48:43 CEST

Catalogue status 17.04.2020 / We reserve the right to make technical changes.

## Data sheet

### OMNIMATE Signal - series B2L/S2L 3.50 - 2-row S2L-SMT 3.50/16/180LF 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 D / CSA)	150 V
Rated current (Use group C / CSA)	9.5 A

Rated voltage (Use group C / CSA)	50 V
Rated current (Use group B / CSA)	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 current (Use group B / UL 1059)	10 A

Rated voltage (Use group C / UL 1059)	50 V
Rated current (Use group C / UL 1059)	10 A

Reference to approval values

Specifications are maximum values, details - see approval certificate.

### Packing

Packaging	Box	VPE length	82 mm
VPE width	88 mm	VPE height	104 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

- Additional colours on request
- Gold-plated contact surfaces on request
- Spacing between rows: see hole layout
- Rated current related to rated cross-section & min. No. of 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.

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## 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

[S2L-SMT.zip](#)  
[STEP](#)

Product Change Notification

[Change of housing geometry S2L-SMT - EN](#)  
[Change of housing geometry S2L-SMT - DE](#)

White paper surface mount technology

[Download Whitepaper](#)

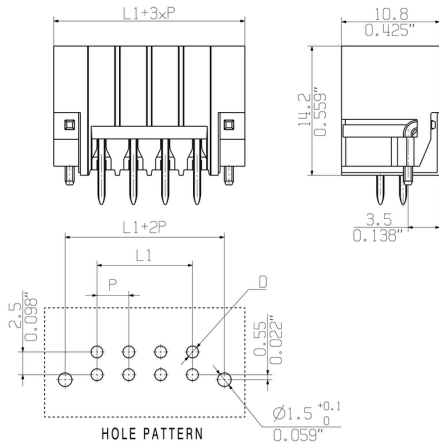
## Data sheet

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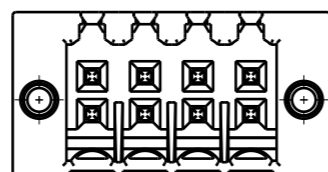
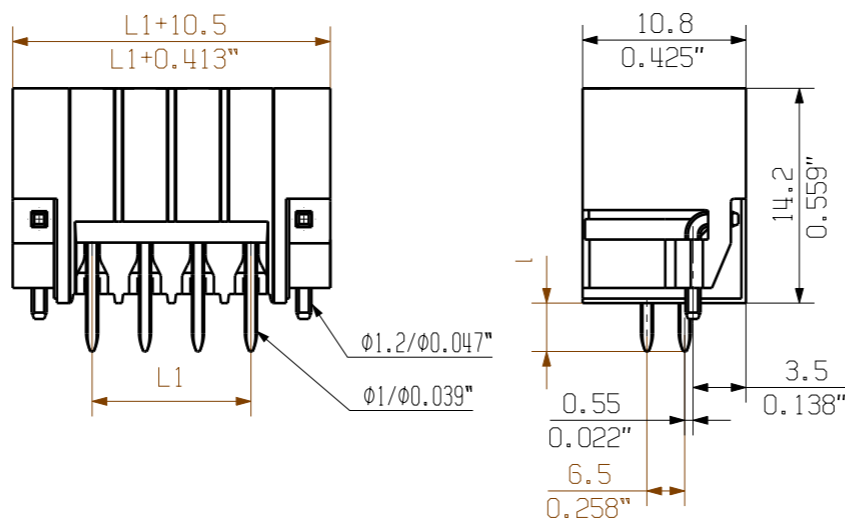
## Drawings

### Dimensional drawing

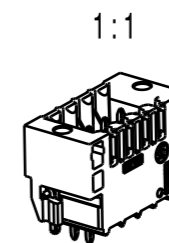
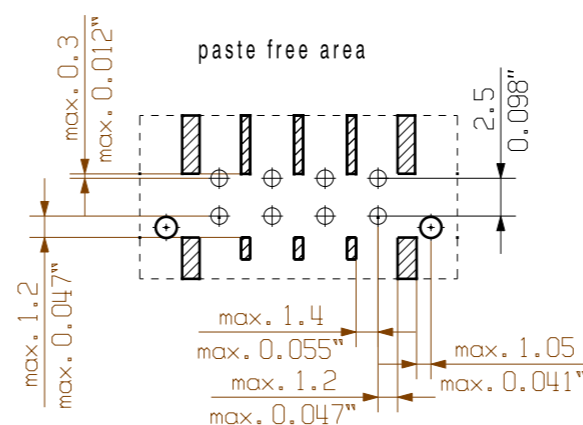
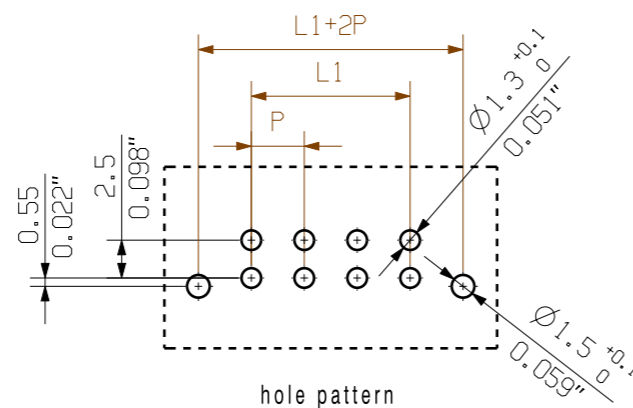
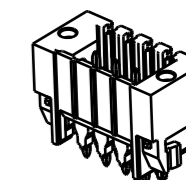


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shown: S2L-SMT/3.50/08/180LF  
1:1



P = 3.50 Raster Pitch  
D = Ø1,3<sup>+0.1</sup> / Ø0.051<sup>+0.1</sup>  
d = 1mm oktogonal / 0.039" octogonal  
SHOWN S2L-SMT 3.50/8/180 LF

pin length l	tolerance
1.5	0,0
3.2	-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	
n Poles	L1 [mm]	L1 [inch]	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 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.

<b>General tolerance:</b> DIN ISO 2768-mK		99684/4 02.03.18 HELIS_MA 00		Cat.no.: .	
		Modification		<b>Weidmüller</b>	
		Date	Name	<b>3 32319 35</b> Drawing no. Issue no.	
Scale: 2/1		Drawn	10.06.2008	HELIS_MA	Sheet 03 of 04 sheets
Supersedes: .		Responsible		AMANN_A	
		Checked	19.03.2018	HELIS_MA	
		Approved		LANG_T	
				<b>S2L-SMT 3.50/.../180...</b> STIFTLISTE PIN HEADER	
				Product file: S2L-SMT 3.50 7272	

## Wave Solder Profile

### Recommended wave soldering profiles

**Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 16

D-32758 Detmold

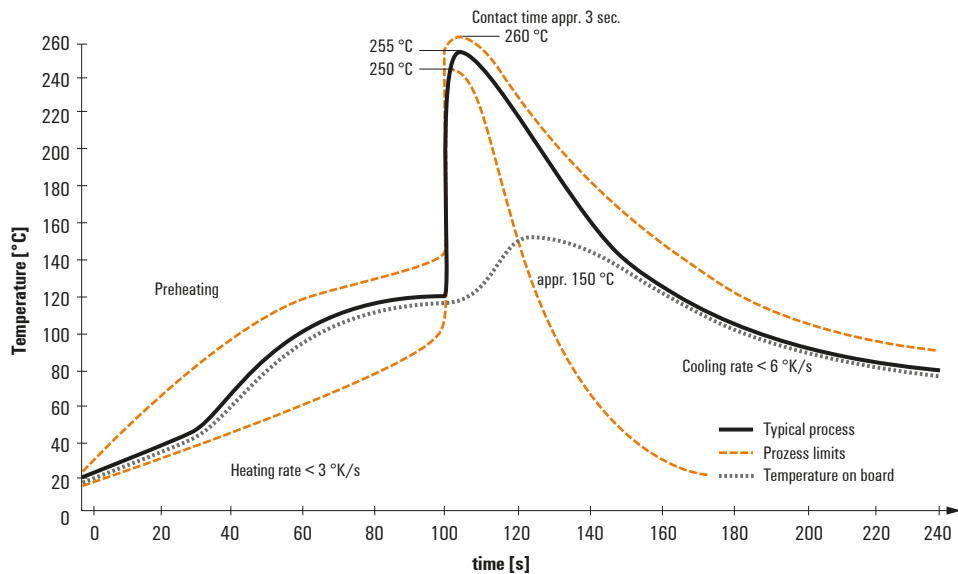
Germany

Fon: +49 5231 14-0

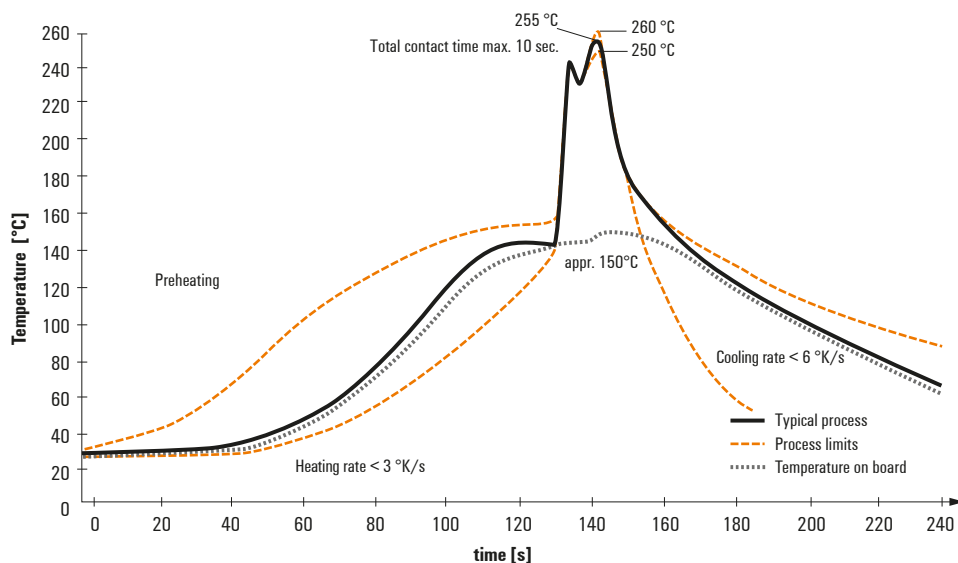
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#### Single Wave:



#### 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.

## Reflow Solder Profile

### Recommended reflow soldering profile

**Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 16

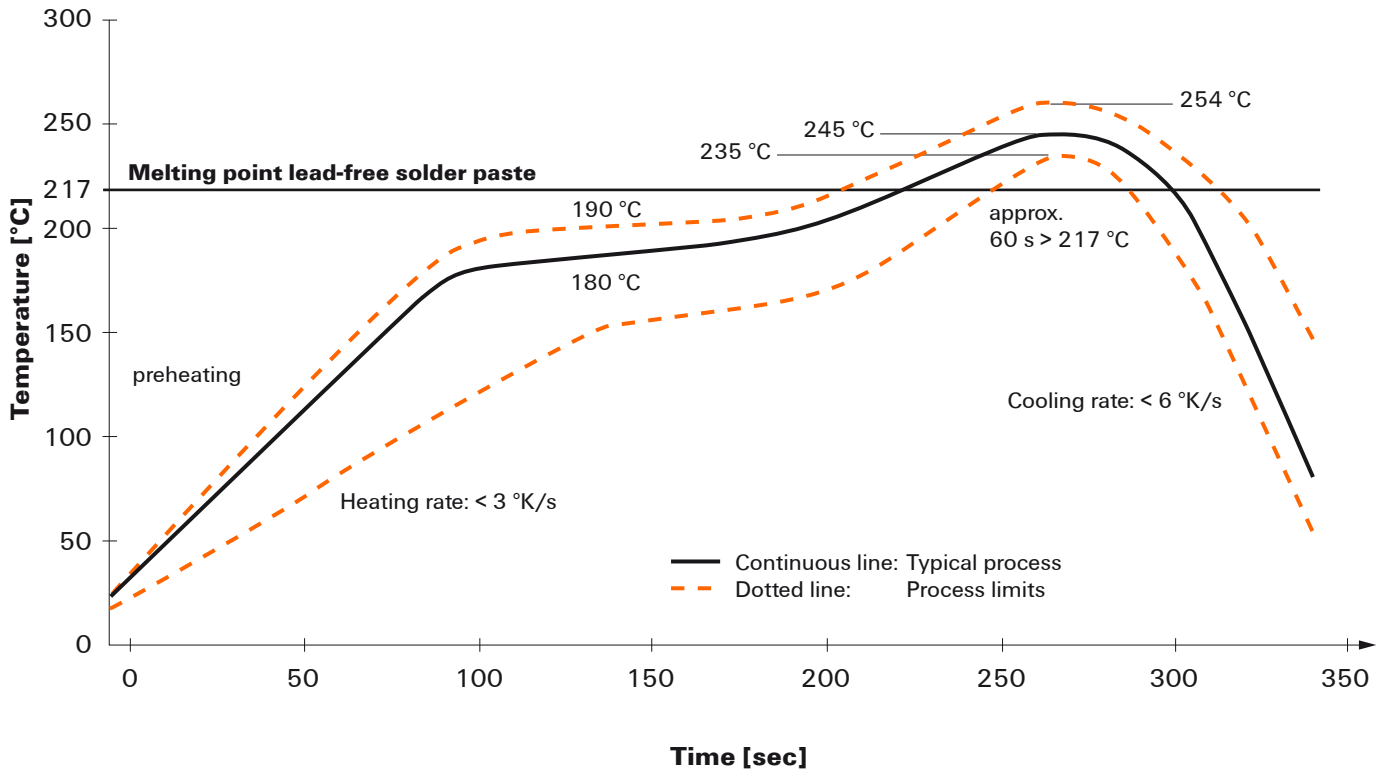
D-32758 Detmold

Germany

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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°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.

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