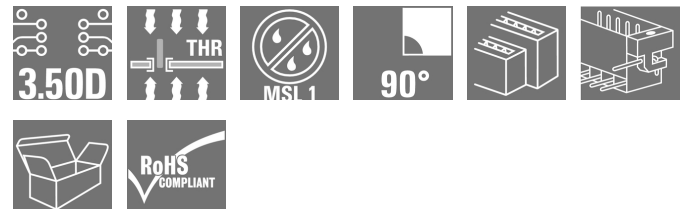


**OMNIMATE Signal - series B2L/S2L 3.50 - 2-row  
S2LD-THR 3.50/12/90LF 3.2SN BK BX**

**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

**The new benchmark for component density: the virtual 0.875mm pitch - for 1mm<sup>2</sup> I/O connections**

The only 4-row double level male connectors for standard IP20 sensor interfaces with 3.5 pitch

The S2L in a double pack - a standard has surpassed itself:

- Each 3.5mm wide, 4 I/O contacts for 1mm<sup>2</sup> connection cross-section
- Force-fit enclosure geometry guarantees maximum stability
- Solder flange eliminates the need for a screw fastening

Less is more - basic advantages for your applications:

- 75% space savings on the circuit board
- Solder flange reduces process costs
- Less mechanical load on the soldering points
- More space for displays in the front panel, for example

A "small" contribution to greater competitiveness: additional features in the same installation space or a more compact device with the same range of functions.

**General ordering data**

Delivery status	Discontinued
Available until	2014-05-20
Type	S2LD-THR 3.50/12/90LF 3.2SN BK BX
Order No.	<a href="#">1028390000</a>
Version	PCB plug-in connector, male header, Solder flange, THT/THR solder connection, 3.50 mm, No. of poles: 12, Solder pin length (l): 3.2 mm, tinned, Black, Box
GTIN (EAN)	4032248756896
Qty.	50 pc(s).
Product data	IEC: 200 V / 10 A UL: 150 V / 7 A
Packaging	Box

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

Width	17.5 mm	Width (inches)	0.689 inch
Height	35 mm	Height (inches)	1.378 inch
Net weight	8.54 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	No. of poles	12
Number of solder pins per pole	1	Solder pin length (l)	3.2 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	7 mm	L1 in inches	0.689 inch
Number of rows	2	Pin series quantity	4
Touch-safe protection acc. to DIN VDE 57 106	Safe from finger touch, plugged	Touch-safe protection acc. to DIN VDE 0470	IP20 plugged/ IP10 unplugged
Can be coded	Yes	Plugging cycles	25
Plugging force/pole, max.	3 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	200 V
Rated voltage for surge voltage class / pollution degree III/2	160 V	Rated voltage for surge voltage class / pollution degree III/3	100 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	1.5 kV		

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**Technical data**
**Rated data acc. to CSA**

Institute (CSA)



Certificate No. (CSA)

200039-1488444

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 (cURus)



Certificate No. (cURus)

E60693

Rated voltage (Use group B / UL 1059) 150 V

Rated current (Use group B / UL 1059) 7 A

Reference to approval values

Specifications are  
maximum values, details -  
see approval certificate.

**Packaging**

Packaging Box

VPE length 75 mm

VPE width 95 mm

VPE height 135 mm

**Classifications**

ETIM 4.0 EC002637

ETIM 5.0 EC002637

UNSPSC 30-21-18-01

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

**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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## Technical data

### Approvals

Approvals



ROHS

Conform

### Downloads

Approval/Certificate/Document of  
Conformity

[Declaration of the Manufacturer](#)

SMT white paper

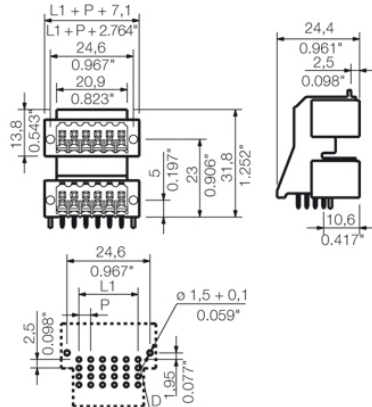
[Download Whitepaper](#)

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# Drawings

## Dimensional drawing



## 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.

We reserve the right to make technical changes.

## 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°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.