

**OMNIMATE Signal - series B2C/S2C 3.50 - 2-row  
S2C-SMT 3.50/22/180G 3.5SN BK BX**

**Weidmüller Interface GmbH & Co. KG**  
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Germany  
Fon: +49 5231 1429-0  
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www.weidmueller.com


**High-temperature-resistant pin header.**

- touch-safe
- can be plugged into B2CF 3.50 PUSH IN female plug
- Plug-in direction is perpendicular or parallel to the circuit board (180° / 90°)
- Housing variants: closed (G) and with solder flange (LF)
- Box packaging (BX) or, anti-static, tape-on-reel (RL)
- Suitable for reflow and wave soldering applications
- Pin length of either 1.5 mm or 3.5 mm

**General ordering data**

Type	S2C-SMT 3.50/22/180G 3.5SN BK BX
Order No.	<a href="#">1290130000</a>
Version	PCB plug-in connector, male header, closed side, THT/THR solder connection, 3.50 mm, No. of poles: 22, 180°, Solder pin length (l): 3.5 mm, tinned, Black, Box
GTIN (EAN)	4050118082692
Qty.	42 pc(s).
Product data	IEC: 200 V / 13.4 A UL: 150 V / 10 A
Packaging	Box

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

Net weight	7.45 g
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**System specifications**

Product family		Type of connection	
OMNIMATE Signal - series B2C/S2C 3.50 - 2-row		Board connection	
Mounting onto the PCB		Pitch in mm (P)	
THT/THR solder connection		3.5 mm	
Pitch in inches (P)		Outgoing elbow	
0.138 inch		180°	
No. of poles		Number of solder pins per pole	
22		1	
Solder pin length (l)		Solder pin length tolerance	
3.5 mm		0 / -0.3 mm	
Tolerance of solder pin position		Solder pin dimensions	
± 0.20 mm		d = 1.0 mm, Octagonal	
Solder pin dimensions = d tolerance		Solder eyelet hole diameter (D)	
+0,01 / -0,03 mm		1.3 mm	
Solder eyelet hole diameter tolerance (D)+ 0,1 mm		Outside diameter of solder pad	
		2.1 mm	
Template aperture diameter		L1 in mm	
1.9 mm		35 mm	
L1 in inches		Number of rows	
1.378 inch		1	
Pin series quantity		Touch-safe protection acc. to DIN VDE 57 106	
2		Safe from finger touch	
Touch-safe protection acc. to DIN VDE 0470		Can be coded	
IP 20		Yes	
Plugging cycles		push-in force/pole	
25		5 N	
Withdrawal force per pole		Packaging	
5 N		Box	

**Material data**

Insulating material		Colour	
LCP GF		Black	
Colour chart (similar)		Insulating material group	
RAL 9011		IIIb	
CTI		Insulation resistance	
≥ 175		≥ 10 <sup>8</sup> Ω	
Moisture Level (MSL)		UL 94 flammability rating	
1		V-0	
Contact material		Contact surface	
Copper alloy		tinned	
Layer structure of solder connection		Layer structure of plug contact	
2-5 μm Sn / 1-3 μm Ni		2-5 μm Sn / 1-3 μm Ni	
Storage temperature, min.		Storage temperature, max.	
-25 °C		55 °C	
Max. relative humidity during storage		Operating temperature, min.	
80 %		-50 °C	
Operating temperature, max.		Temperature range, installation, min.	
120 °C		-40 °C	
Temperature range, installation, max.			
120 °C			

**Rated data acc. to IEC**

tested acc. to standard		Rated current, min. no. of poles (Ta = 20°C)	
IEC 60664-1, IEC 61984		13.4 A	
Rated current, min. no. of poles (Ta = 40°C)		Rated voltage for surge voltage class / pollution degree II/2	
12 A		200 V	
Rated voltage for surge voltage class / pollution degree III/2		Rated voltage for surge voltage class / pollution degree III/3	
160 V		80 V	
Rated impulse voltage for surge voltage class/ pollution degree II/2		Rated impulse voltage for surge voltage class/ pollution degree III/2	
2.5 kV		2.5 kV	
Rated impulse voltage for surge voltage class/ contamination degree III/3		Short-time withstand current resistance	
2.5 kV		3 x 1s with 80 A	


**Data sheet**

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**Technical data**

**Rated data acc. to CSA**

Institute (CSA)		Certificate No. (CSA)	
		200039-1121690	
Rated voltage (Use group B)	150 V	Rated voltage (Use group C)	50 V
Rated voltage (use group D)	150 V	Rated current (use group B)	9.5 A
Rated current (use group C)	9.5 A	Rated current (use group D)	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)	150 V	Rated voltage (use group C)	50 V
Rated current (use group B)	10 A	Rated current (use group C)	10 A
Reference to approval values	Specifications are maximum values, details - see approval certificate.		

**Classifications**

ETIM 4.0	EC002637	ETIM 5.0	EC002637
ETIM 6.0	EC002637	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>• Gold-plated contact surfaces on request</li> <li>• Rated current related to rated cross-section &amp; min. No. of poles.</li> <li>• Spacing between rows: see hole layout</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	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

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**Technical data****Downloads**

Approval/Certificate/Document of Conformity	<a href="#">Declaration of the Manufacturer</a>
Brochure/Catalogue	<a href="#">FL DRIVES EN</a> <a href="#">MB SMT EN</a> <a href="#">FL DRIVES DE</a> <a href="#">MB DEVICE MANUF. EN</a> <a href="#">CAT 2 PORTFOLIOGUIDE EN</a> <a href="#">FL BUILDING SAFETY EN</a> <a href="#">FL APPL LED LIGHTING EN</a> <a href="#">FLIndustr.CONTROLS EN</a> <a href="#">FL MACHINE SAFETY EN</a> <a href="#">FL HEATING ELECTR EN</a> <a href="#">FL APPL INVERTER EN</a> <a href="#">FL_BASE_STATION_EN</a> <a href="#">FL ELEVATOR EN</a> <a href="#">FL POWER SUPPLY EN</a> <a href="#">FL 72H SAMPLE SER EN</a> <a href="#">PO OMNIMATE EN</a>
Engineering Data	<a href="#">EPLAN, WSCAD</a>
SMT white paper	<a href="#">Download Whitepaper</a>

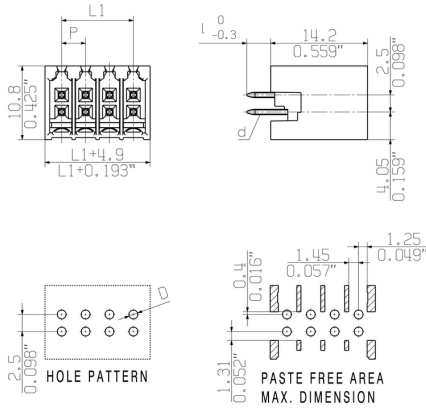
**Data sheet**

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**Drawings**

**Dimensional drawing**



## 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.

## 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.