

**OMNIMATE Signal - series BC/SC 3.81**  
**SC-SMT 3.81/12/90LF 3.2SN BK BX**

**Weidmüller Interface GmbH & Co. KG**  
 Klingenbergstraße 16  
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 Germany  
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 www.weidmueller.com



High-temperature-resistant pin header (SC-SMT 90LF) in 3.81-mm pitch (0.15 inch)

- Plugging direction parallel to PCB (recumbent)
- With solder flange (LF).
- Packed either in box (BX) or on anti-static roll (tape-on-reel, RL)
- Pin length of either 1.5 mm or 3.2 mm

Weidmüller's 3.81-mm-pitch (0.15 inch) plug-in connectors are compatible with the layouts of standard connectors and offer space for labelling.

**General ordering data**

Type	SC-SMT 3.81/12/90LF 3.2SN BK BX
Order No.	<a href="#">1863820000</a>
Version	PCB plug-in connector, male header, Solder flange, THT/THR solder connection, 3.81 mm, No. of poles: 12, 90°, Solder pin length (l): 3.2 mm, tinned, Black, Box
GTIN (EAN)	4032248429059
Qty.	50 pc(s).
Product data	IEC: 320 V / 17.5 A UL: 300 V / 10 A
Packaging	Box

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

Net weight	3.72 g
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**System specifications**

Product family		Type of connection	
OMNIMATE Signal - series BC/SC 3.81		Board connection	
Mounting onto the PCB		Pitch in mm (P)	
THT/THR solder connection		3.81 mm	
Pitch in inches (P)		Outgoing elbow	
0.15 inch		90°	
No. of poles		Number of solder pins per pole	
12		1	
Solder pin length (l)		Solder pin length tolerance	
3.2 mm		0 / -0,02 mm	
Tolerance of solder pin position		Solder pin dimensions	
± 0.15 mm		d = 1.0 mm, Octagonal	
Solder pin dimensions = d tolerance		Solder eyelet hole diameter (D)	
0 / -0,04 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		41.91 mm	
L1 in inches		Number of rows	
1.65 inch		1	
Pin series quantity		Touch-safe protection acc. to DIN VDE 57 106	
1		Safe from finger touch	
Touch-safe protection acc. to DIN VDE 0470		Volume resistance	
IP 20		6.00 mΩ	
Can be coded		Plugging cycles	
Yes		25	
Packaging			
Box			

**Material data**

Insulating material		Colour	
LCP GF		Black	
Colour chart (similar)		Insulating material group	
RAL 9011		IIIa	
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	
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		-25 °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		17.5 A	
Rated current, max. no. of poles (Ta = 20°C)		Rated current, min. no. of poles (Ta = 40°C)	
13.9 A		17 A	
Rated current, max. no. of poles (Ta = 40°C)		Rated voltage for surge voltage class / pollution degree II/2	
12.4 A		320 V	
Rated voltage for surge voltage class / pollution degree III/2		Rated voltage for surge voltage class / pollution degree III/3	
160 V		160 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 76 A	

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**Technical data**

**Rated data acc. to CSA**

Institute (CSA)		Certificate No. (CSA)	200039-1121690
Rated voltage (Use group B)	300 V	Rated current (use group B)	8 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)	300 V	Rated voltage (use group D)	300 V
Rated current (use group B)	10 A	Rated current (use group D)	10 A
Reference to approval values	Specifications are maximum values, details - see approval certificate.		

**Classifications**

ETIM 3.0	EC001284	ETIM 4.0	EC002637
ETIM 5.0	EC002637	ETIM 6.0	EC002637
UNSPSC	30-21-18-10	eClass 5.1	27-26-07-04
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>Rated current related to rated cross-section &amp; min. No. of poles.</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> <li>P on drawing = pitch</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**

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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>
SMT white paper	<a href="#">Download Whitepaper</a>

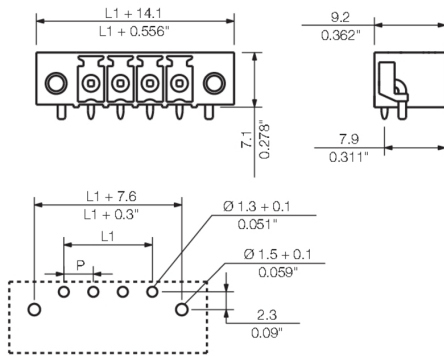
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**Drawings**

**Dimensional drawing**



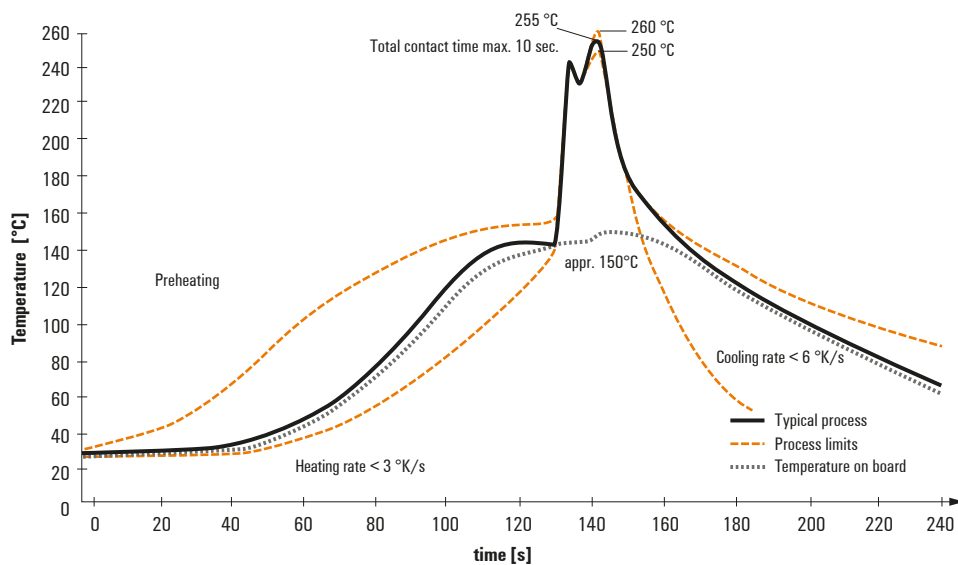
## Recommended wave soldering profiles

**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.

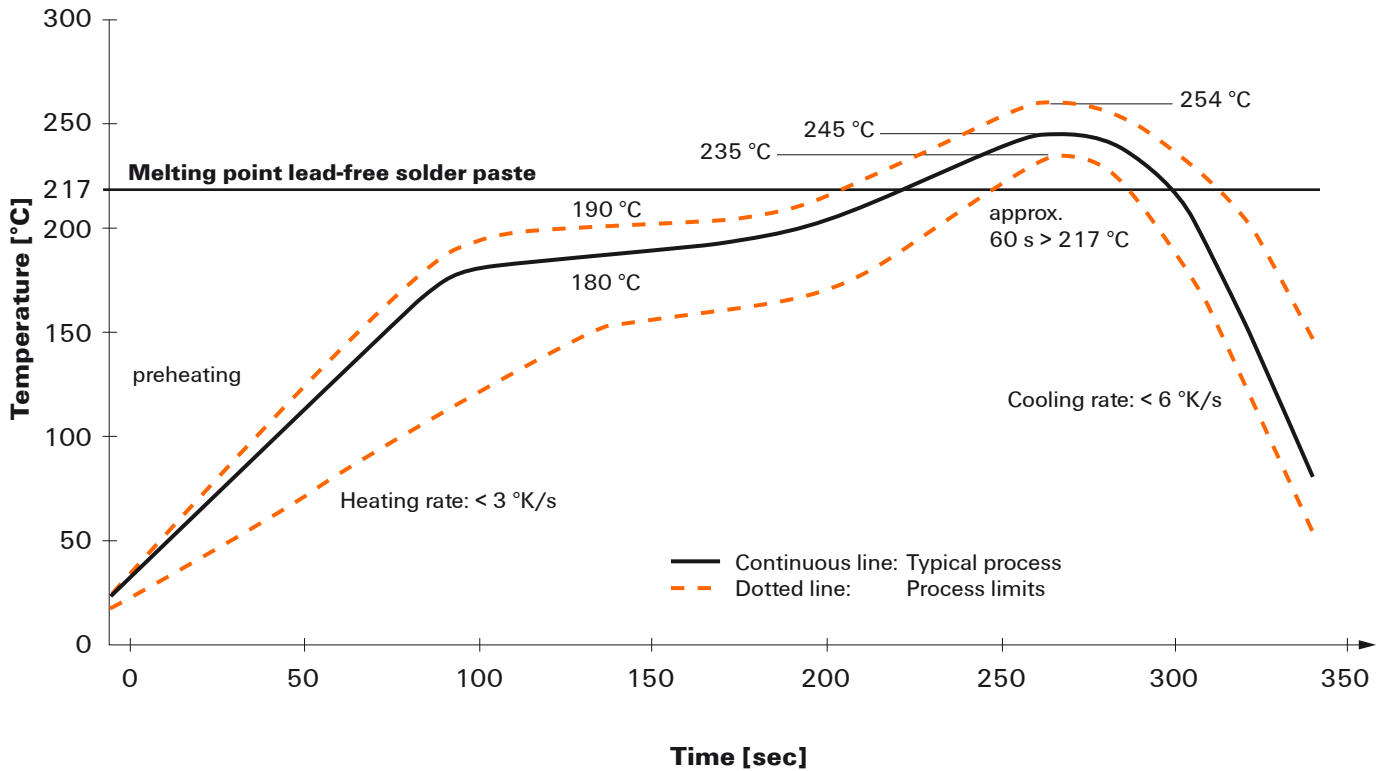
When choosing a suitable profile for your application, the following factors also need to be considered:

- 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.

## 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.

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