

OMNIMATE Signal - series B2C/S2C 3.50 - 2-row S2C-SMT 3.50/22/90LF 1.5SN BK BX

Weidmüller Interface GmbH & Co. KG
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Product image



Similar to illustration

High-temperature-resistant male header

- Finger-safe
- Can be plugged into female plug B2CF 3.50 PUSH IN
- **Plug-in direction is perpendicular or parallel to the circuit board (180° / 90°)**
- Housing variants: closed (G) and with solder flange (LF)
- **Packed either in a box (BX) or on anti-static tape-on-reel (RL)**
- Suitable for reflow and wave soldering applications
- Pin length of either 1.5 mm or 3.2 mm

General ordering data

Type	S2C-SMT 3.50/22/90LF 1.5SN BK BX
Order No.	1289950000
Version	PCB plug-in connector, male header, Solder flange, THT/THR solder connection, 3.50 mm, Number of poles: 22, 90°, Solder pin length (l): 1.5 mm, tinned, black, Box
GTIN (EAN)	4050118083781
Qty.	36 pc(s).
Product data	IEC: 200 V / 13.4 A UL: 150 V / 10 A
Packaging	Box

Creation date May 2, 2020 11:25:19 PM CEST

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Technical data**Dimensions and weights**

Width	42.1 mm	Width (inches)	1.657 inch
Height	12.3 mm	Height (inches)	0.484 inch
Height of lowest version	10.8 mm	Depth	14.2 mm
Depth (inches)	0.559 inch	Net weight	9.333 g

System specifications

Product family	OMNIMATE Signal - series B2C/S2C 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	90°
Number of poles	22	Number of solder pins per pole	1
Solder pin length (l)	1.5 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	35 mm
L1 in inches	1.378 inch	Number of rows	1
Pin series quantity	2	Touch-safe protection acc. to DIN VDE 57 106	touch-safe on connector face, safe to back of hand above the printed circuit board
Touch-safe protection acc. to DIN VDE 0470	IP 20	Can be coded	Yes
Plugging cycles	25	Plugging force/pole, max.	3.5 N
Pulling force/pole, max.	2.5 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 ⁸ 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	1-3 µm Ni / 2-5 µm Sn matt	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.	120 °C	Temperature range, installation, min.	-40 °C
Temperature range, installation, max.	120 °C		


Rated data acc. to IEC

tested acc. to standard	IEC 60664-1, IEC 61984	Rated current, min. number of poles (Tu=20°C)	13.4 A
Rated current, min. number of poles (Tu=40°C)	12 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	80 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	2.5 kV	Short-time withstand current resistance	3 x 1s with 80 A


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

Institute (CSA)		Certificate No. (CSA)	200039-1121690
Rated voltage (Use group B / CSA)	150 V	Rated voltage (Use group C / CSA)	50 V
Rated voltage (Use group D / CSA)	150 V	Rated current (Use group B / CSA)	9.5 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 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.		

Packing

Packaging	Box	VPE length	348 mm
VPE width	135 mm	VPE height	30 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		

Notes

Notes	<ul style="list-style-type: none"> • Gold-plated contact surfaces on request • Rated current related to rated cross-section & min. No. of poles. • Spacing between rows: see hole layout • 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.

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](#)
- [CAT 2 PORTFOLIOGUIDE 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

[EPLAN, WSCAD](#)

Engineering Data

[STEP](#)

White paper surface mount technology

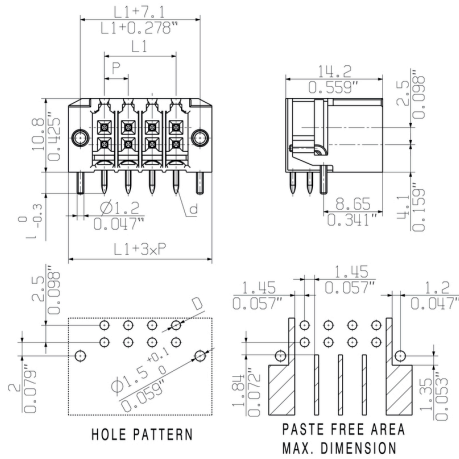
[Download Whitepaper](#)

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Drawings

Dimensional drawing



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Mating connector (fully pluggable)
B2CF 3.50/180LR

Two-row female plug with PUSH IN spring connection

- Simply insert the prepared wire - and you're done
- Intuitive to use because
- the wire-entry area and handling area are clearly separated
- Integrated push-buttons for opening the terminal point
- High component density because of low heights
- Optional: locking and releasing require no tools when using Weidmüller's release latch (LR) or release lever (LH)

General ordering data

Type	B2CF 3.50/22/ 180LR SN B ...	Version	Product data	Packaging
Order No.	1278320000	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 22,	IEC: 320 V / 13.4 A / 0.14 - 1.5 mm ²	Box
GTIN (EAN)	4050118068610	180°, PUSH IN, Spring connection, Clamping range, max.: 1.5 mm ² ,	UL: 300 V / 9.5 A / AWG 26 - AWG	
Qty.	42 pc(s).	Box	16	
Type	B2CF 3.50/22/ 180LR SN O ...	Version	Product data	Packaging
Order No.	1278130000	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 22,	IEC: 320 V / 13.4 A / 0.14 - 1.5 mm ²	Box
GTIN (EAN)	4050118068542	180°, PUSH IN, Spring connection, Clamping range, max.: 1.5 mm ² ,	UL: 300 V / 9.5 A / AWG 26 - AWG	
Qty.	42 pc(s).	Box	16	

B2CF 3.50/180LH

Two-row female plug with PUSH IN spring connection

- Simply insert the prepared wire - and you're done
- Intuitive to use because
- the wire-entry area and handling area are clearly separated
- Integrated push-buttons for opening the terminal point
- High component density because of low heights
- Optional: locking and releasing require no tools when using Weidmüller's release latch (LR) or release lever (LH)

General ordering data

Type	B2CF 3.50/22/ 180LH SN B ...	Version	Product data	Packaging
Order No.	1375810000	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 22,	IEC: 320 V / 13.4 A / 0.14 - 1.5 mm ²	Box
GTIN (EAN)	4050118176865	180°, PUSH IN, Spring connection, Clamping range, max.: 1.5 mm ² ,	UL: 300 V / 9.5 A / AWG 26 - AWG	
Qty.	42 pc(s).	Box	16	
Type	B2CF 3.50/22/ 180LH SN O ...	Version	Product data	Packaging
Order No.	1375990000	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 22,	IEC: 320 V / 13.4 A / 0.14 - 1.5 mm ²	Box
GTIN (EAN)	4050118176896	180°, PUSH IN, Spring connection, Clamping range, max.: 1.5 mm ² ,	UL: 300 V / 9.5 A / AWG 26 - AWG	
Qty.	42 pc(s).	Box	16	

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Mating connector (fully pluggable)
B2CF 3.50/180F

Two-row female plug with PUSH IN spring connection

- Simply insert the prepared wire - and you're done
- Intuitive to use because
- the wire-entry area and handling area are clearly separated
- Integrated push-buttons for opening the terminal point
- High component density because of low heights
- Optional: locking and releasing require no tools when using Weidmüller's release latch (LR) or release lever (LH)

General ordering data

Type	B2CF 3.50/22/180F SN BK ...	Version	Product data	Packaging
Order No.	1277950000	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 22,	IEC: 320 V / 13.4 A / 0.14 - 1.5 mm ²	Box
GTIN (EAN)	4050118068092	180°, PUSH IN, Spring connection, Clamping range, max. : 1.5 mm ² ,	UL: 300 V / 9.5 A / AWG 26 - AWG	
Qty.	36 pc(s).	Box	16	
Type	B2CF 3.50/22/180F SN OR ...	Version	Product data	Packaging
Order No.	1277770000	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 22,	IEC: 320 V / 13.4 A / 0.14 - 1.5 mm ²	Box
GTIN (EAN)	4050118068696	180°, PUSH IN, Spring connection, Clamping range, max. : 1.5 mm ² ,	UL: 300 V / 9.5 A / AWG 26 - AWG	
Qty.	36 pc(s).	Box	16	

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Accessories

LED Light guides



Effective: the link between LED and front panel.

Floodlight indicators allow users to monitor the switching states without requiring a special design: optical plastic directs the light from standard LEDs around a bend into the connectors or through the front plate.

The fibre-optic elements are simply clipped behind the relevant 90° bend male connectors (90° outlet direction). Versions with different incoming light beam heights achieve maximum light efficiency for LEDs with different designs or heights.

The advantages compared to conventional solutions:

- No additional LED circuit board required behind the front panel
- No "long-legged" LEDs with separate mounting required
- Bent fibre-optic cable line for maximum light efficiency
- Uncomplicated front plate bore holes due to circular shape of outgoing light beam
- Easy to maintain correct clearance and creepage distance
- Can be partitioned for smaller pole numbers

The result: simplified manufacturing process, reduced costs and simplified design

General ordering data

Type	S2L/S2C 3.5 FLA 20/10 S ...	Version	Product data	Packaging
Order No.	1814590000	PCB plug-in connector, Accessories, Flood-light display, Transparent,		Box
GTIN (EAN)	4032248302826	Number of poles: 10		
Qty.	50 pc(s).			
Type	S2L/S2C 3.5 FLA 20/10	Version	Product data	Packaging
Order No.	1699580000	PCB plug-in connector, Accessories, Flood-light display, Transparent,		Box
GTIN (EAN)	4008190891350	Number of poles: 10		
Qty.	100 pc(s).			

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Accessories

Coding elements



**Only connects what is supposed to be connected:
the right connection at the right place.**

Coding elements and locking devices clearly assign connecting elements during the manufacturing process and operation

The coding elements and locking devices are inserted prior to assembly or during the cable assembly phase. The Weidmüller alternative: configure online using the variant configurator to precode prior to delivery.

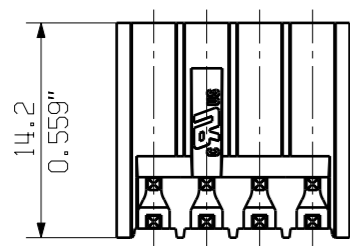
Incorrect assembly on the circuit board and incorrect plugging of connecting elements is no longer possible. The advantage: no troubleshooting during manufacture and no operational errors by the user.

General ordering data

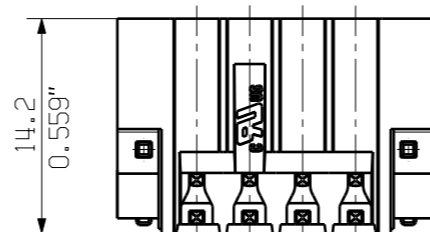
Type	B2L/S2L 3.50 KO OR BX	Version	Product data	Packaging
Order No.	1849730000		PCB plug-in connector, Accessories, Coding element, orange, Number	Box
GTIN (EAN)	4032248378197		of poles: 1	
Qty.	100 pc(s).			
Type	B2L/S2L 3.50 KO BK BX	Version	Product data	Packaging
Order No.	1849740000		PCB plug-in connector, Accessories, Coding element, black, Number	Box
GTIN (EAN)	4032248378203		of poles: 1	
Qty.	100 pc(s).			

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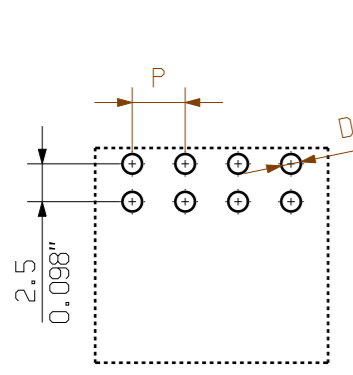
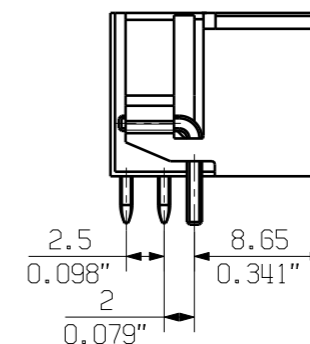
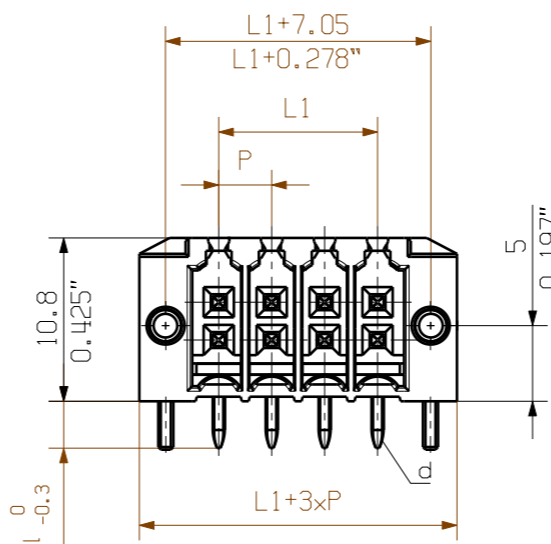
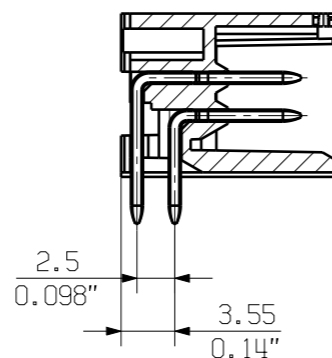
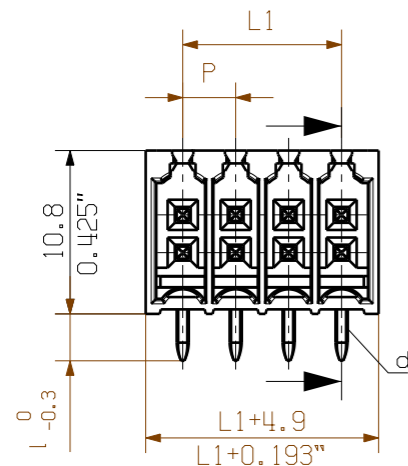
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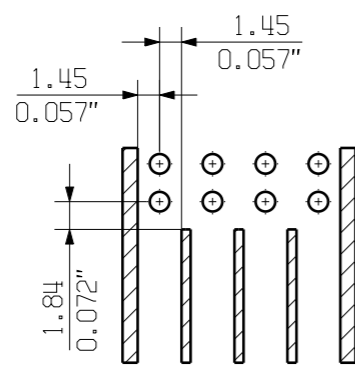
SHOWN: S2C-SMT 3.50/08/90G 3.2



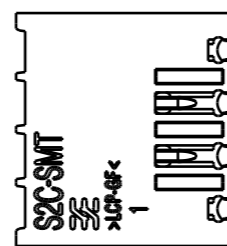
SHOWN: S2C-SMT 3.50/08/90LF 3.2



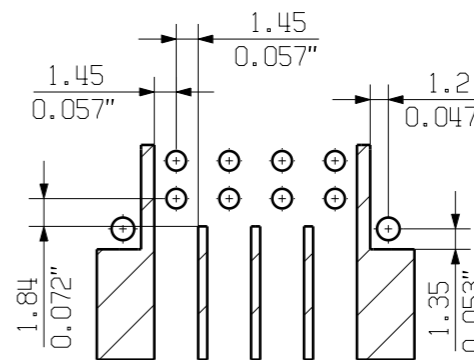
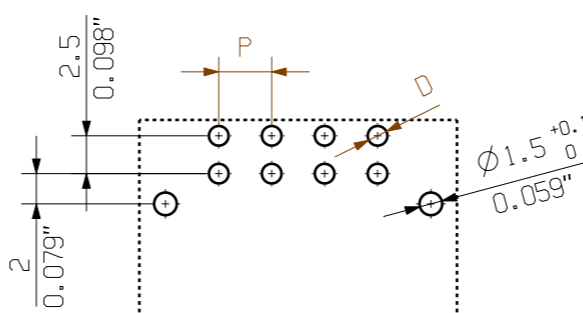
HOLE PATTERN



PASTE FREE AREA
MAX. DIMENSION



HOLE PATTERN



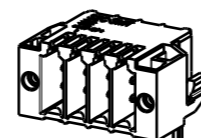
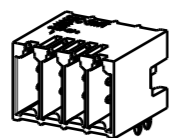
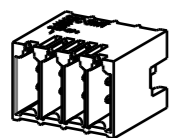
PASTE FREE AREA
MAX. DIMENSION

M 1/1
S2C-SMT 3.50/08/90G 1.5

M 1/1
S2C-SMT 3.50/08/90G 3.2

M 1/1
S2C-SMT 3.50/08/90LF 1.5

M 1/1
S2C-SMT 3.50/08/90LF 3.2



P = 3.50 RASTER PITCH

D* = Ø1.3 +0.1 / 0.051"

d = 0.8x0.8 / 0.031"x0.031"

* from n (no of poles) 26

D = 1.4mm +0.1

S2C-SMT 3.50...180LF 3.5	3.5	0.126
S2C-SMT 3.50...180LF 1.5	1.5	0.059
S2C-SMT 3.50...180G 3.5	3.2	0.126
S2C-SMT 3.50...180G 1.5	1.5	0.059
TYP PART NAME	[mm]	[inch]

For the mounting of PCBs, it should be noted that the rated data relates only to the PCB components alone. The necessary creepage and clearance paths must be observed in connection with the respective applicant in accordance to IEC 664 / VDE 0110. The current-carrying capacity and pitch tolerance is to be determined according to DIN IEC 326 part 3 very fine.

Weidmüller PCB components are tested to the DIN EN 61984 standard, and are valid for its field of application. Provided that the components are used to the intended purpose, all requirements with respect to the occurring of electrical, mechanical, thermic and corrosive stress will be satisfied.

n	POLZAHL POLES	L1 [mm]	L1 [inch]	TOLERANZ TOLERANCE
36	59.5	2.343		±0.2
34	56.0	2.205		
32	52.5	2.067		
30	49.0	1.929		
28	45.5	1.791		±0.15
26	42.0	1.654		
24	38.5	1.516		
22	35.0	1.378		
20	31.5	1.240		±0.1
18	28.0	1.102		
16	24.5	0.965		
16	24.5	0.965		
14	21.0	0.827		±0.1
12	17.5	0.689		
10	14.0	0.551		
8	10.5	0.413		
6	7.00	0.276		±0.1
4	3.50	0.138		

allgemeinguetliche Kundenzeichnung, aktueller Stand nur auf Anfrage
general customer drawing, topical version only if required

GENERAL TOLERANCE: DIN ISO 2768-m

99681/4 22.03.18 AMANN_A 01

Max. nos.

Modification

Date Name

Drawn 15.07.2011 FRIELING_L

Responsible AMANN_A

Checked 04.04.2018 HELIS_MA

Approved LANG_T

Scale: 2/1

Supersedes: .

Cat.no.: .

Weidmüller

3 50160 06

Drawing no. Issue no.

Sheet 02 of 04 sheets

S2C-SMT 3.50/.../...

STIFTLISTE MALE HEADER

Product file: B2CF/S2C 7400

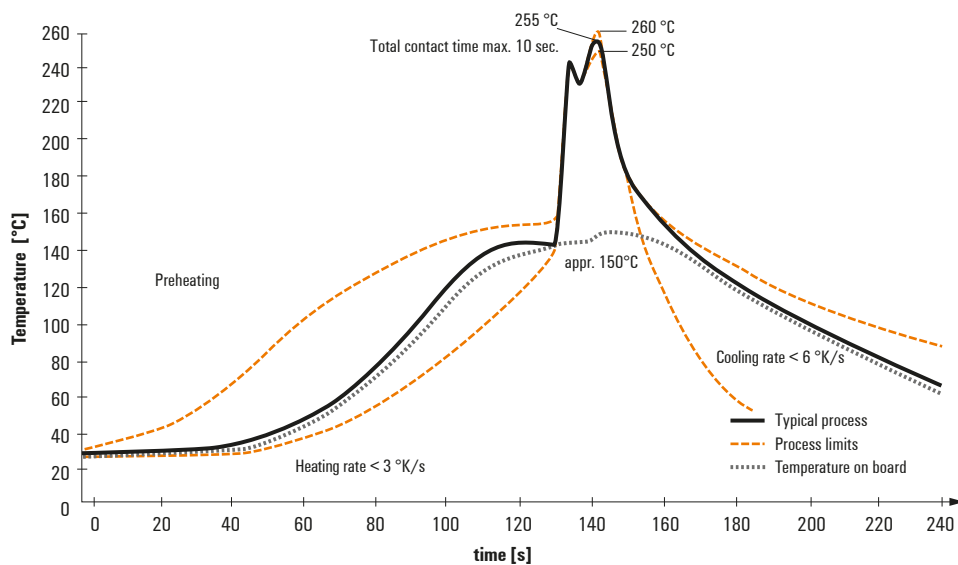
Recommended wave soldering profiles

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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 $\leq +3K/s$. 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 $\geq -6K/s$ solder is cured. Board and components cool down while avoiding cold cracks.