

BCL-SMT 3.81/10/180 1.5SN BK BX

Weidmüller Interface GmbH & Co. KG
 Klingenbergstraße 26
 D-32758 Detmold
 Germany

www.weidmueller.com

Product image



The inverted BCL-SMT socket block for the PCB offers three significant advantages:

- The BCL-SMT offers touch-safe security on the PCB which makes it ideal for live, current-carrying outputs.
- The BCL-SMT widens the range of applications with board-to-board connections between component assemblies.
- The BCL-SMT is reflow-compatible and can be seamlessly integrated into the automatic assembly and soldering process.

Two outlet directions give you a choice of position and thus more design flexibility.

- 180° standing
- 90° recumbent

Two housing variants are available for the BCL-SMT:

- Without flange
- With inverted solder flange ("LFI", with nut)
 - Fastened to PCB without additional screw
 - Fastened with screw to the SCZ FI

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

General ordering data

Version	PCB plug-in connector, female header, closed side, THT/THR solder connection, 3.81 mm, Number of poles: 10, 180°, Solder pin length (l): 1.5 mm, tinned, black, Box
Order No.	1976610000
Type	BCL-SMT 3.81/10/180 1.5SN BK BX
GTIN (EAN)	4032248679065
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	4.26 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		180°
Number of poles		Number of solder pins per pole	
	10		2
Solder pin length (l)		Solder pin length tolerance	
	1.5 mm		0 / -0,02 mm
Solder pin dimensions		Solder pin dimensions = d tolerance	
	d = 0.8 mm		+0,05 / -0,05 mm
Solder eyelet hole diameter (D)		Solder eyelet hole diameter tolerance (D)	
	1.2 mm		+ 0,1 mm
Outside diameter of solder pad		Template aperture diameter	
	1.9 mm		1.6 mm
L1 in mm		L1 in inches	
	34.29 mm		1.35 inch
Number of rows		Pin series quantity	
	1		1
Touch-safe protection acc. to DIN VDE 57 106		Touch-safe protection acc. to DIN VDE 0470	
	Safe from finger touch		IP 20
Volume resistance		Can be coded	
	≤5 mΩ		Yes
Plugging force/pole, max.		Pulling force/pole, max.	
	9.5 N		6 N

Material data

Insulating material		Colour	
	LCP GF		black
Colour chart (similar)		Insulating material group	
	RAL 9011		IIla
Comparative Tracking Index (CTI)		Moisture Level (MSL)	
	≥ 175		1
UL 94 flammability rating		Contact material	
	V-0		Copper alloy
Contact surface		Layer structure of solder connection	
	tinned		1...3 µm Ni / 2...4 µm Sn matt
Layer structure of plug contact		Storage temperature, min.	
	1...3 µm Ni / 2...4 µm Sn matt		-40 °C
Storage temperature, max.		Operating temperature, min.	
	70 °C		-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. number of poles (Tu=20°C)	
	IEC 60664-1, IEC 61984		17.5 A
Rated current, max. number of poles (Tu=20°C)		Rated current, min. number of poles (Tu=40°C)	
	15.4 A		17.5 A
Rated current, max. number of poles (Tu=40°C)		Rated voltage for surge voltage class / pollution degree II/2	
	13.8 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

Rated data acc. to CSA

Rated voltage (Use group B / CSA)		Rated voltage (Use group C / CSA)	
	300 V		50 V
Rated current (Use group B / CSA)		Rated current (Use group C / CSA)	
	11 A		11 A

Creation date March 26, 2021 6:04:44 PM CET

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Technical data**Rated data acc. to UL 1059**

Institute (cURus)



Certificate No. (cURus)

E60693

Rated voltage (Use group B / UL 1059) 300 V

Rated voltage (Use group D / UL 1059) 300 V

Rated current (Use group B / UL 1059) 10 A

Rated current (Use group D / UL 1059) 10 A

Reference to approval values

Specifications are maximum values, details - see approval certificate.

Packing

Packaging	Box	VPE length	25 mm
VPE width	120 mm	VPE height	205 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	ECLASS 11.0	27-46-02-01

Important note

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.

Notes

- 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.
- Long term storage of the product with average temperature of 50 °C and average humidity 70%, 36 months

Approvals

Approvals



ROHS	Conform
UL File Number Search	E60693

Downloads

Approval/Certificate/Document of Conformity	Declaration of the Manufacturer
Engineering Data	STEP
Engineering Data	EPLAN, WSCAD

Creation date March 26, 2021 6:04:44 PM CET

Catalogue status 12.03.2021 / We reserve the right to make technical changes.

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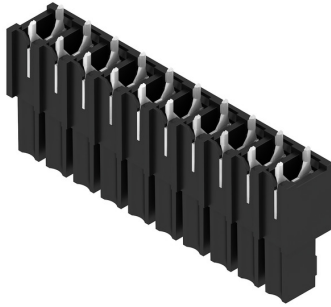
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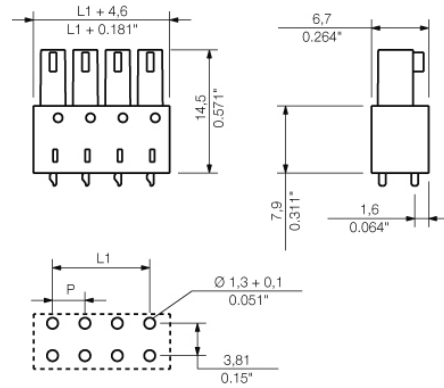
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Drawings

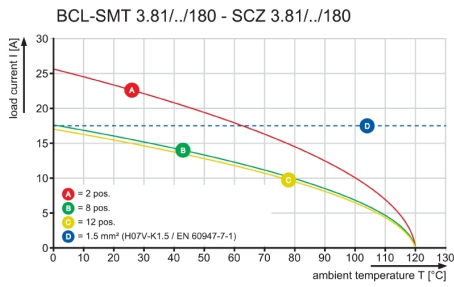
Product image



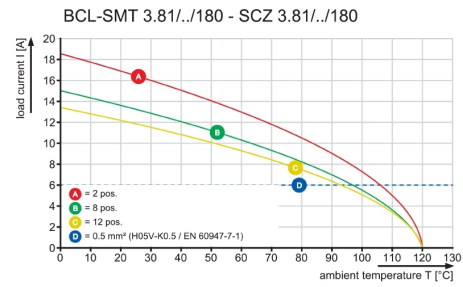
Dimensional drawing



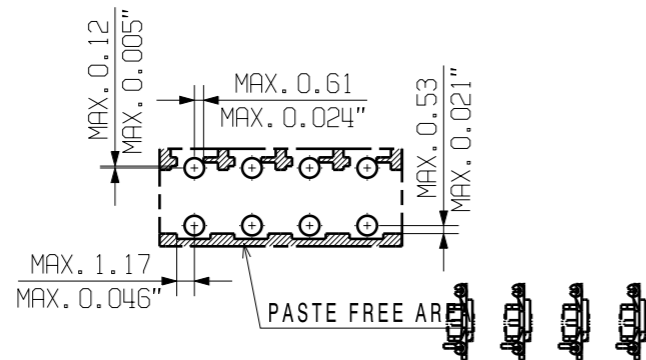
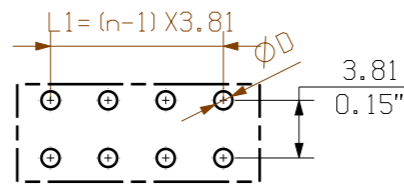
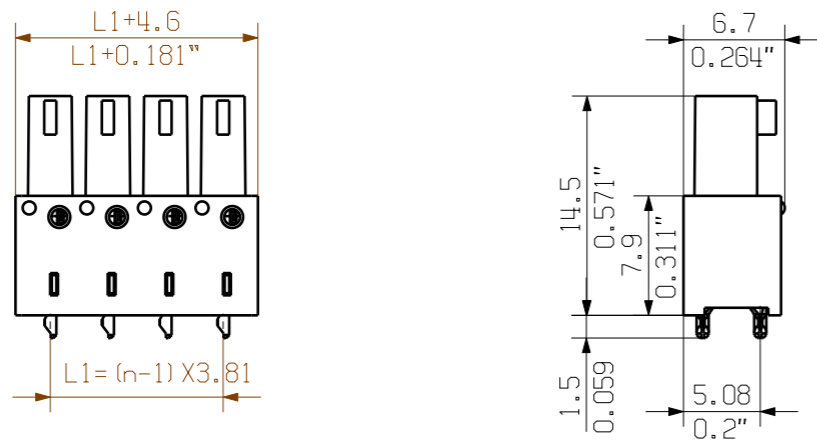
Graph



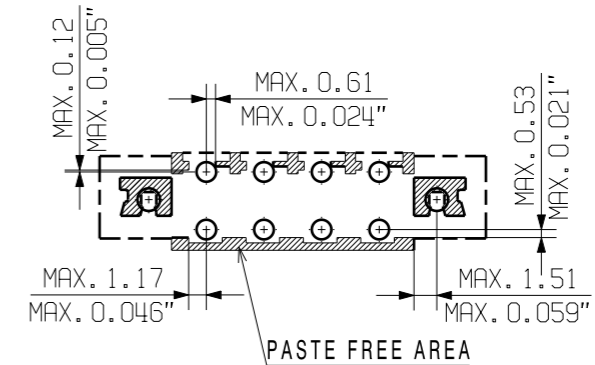
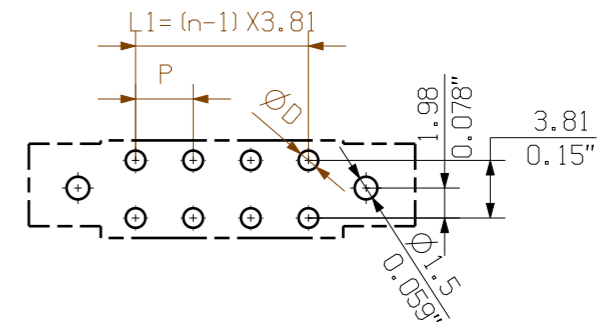
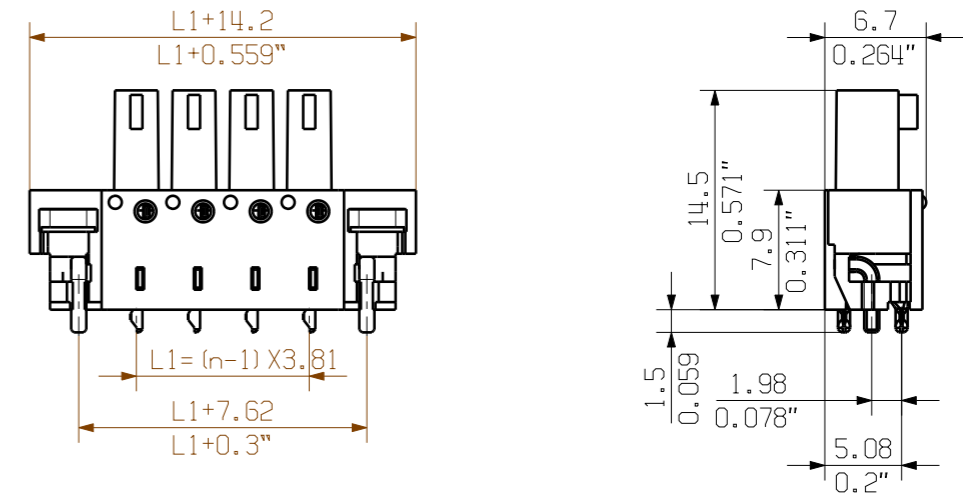
Graph



BCL-SMT 3.81/.../180 1.5...



BCL-SMT 3.81/.../180LFI 1.5...



NOTE:

n=NO OF POLES
 P=PITCH

KUNDENZEICHNUNG
 CUSTOMER DRAWING

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.

12	41.91	1.650
11	38.10	1.500
10	34.29	1.350
9	30.48	1.200
8	26.67	1.050
7	22.86	0.900
6	19.05	0.750
5	15.24	0.600
4	11.43	0.450
3	7.62	0.300
2	3.81	0.150
n	L1 [mm]	L1 [inch]

		CAT.NO.: .	
62605/5 28.08.12 SHI_S 00		Weidmüller	
MODIFICATION		C 40405 04	
		DRAWING NO. ISSUE NO.	
	DATE	NAME	
SCALE: 2/1	19.02.2008	SHI_S	
SUPERSEDES: -	29.08.2012	ZHOU_N	
SUPERSEDED BY: .		XU_S	
		BCL-SMT 3.81/.../180...1.5...	
		LOETANSCHLUSS BUCHSENLEISTE	
		SOLDER CONNECTION SOCKET CONNECTOR	
		PRODUCT FILE: BCL-SMT 3.81 7084	

WEITERGABE SOWIE VERVIELFÄLTIGUNG DIESES DOKUMENTS, VERWERTUNG UND MITTEILUNG SEINES INHALTS SIND VERBOTEN, SOWEIT NICHT AUSDRUECKLICH GESTATET.
 ZUWIDERHANDLUNGEN VERPFLICHTEN ZU SCHADENSERSATZ. ALLE RECHTE FUER DEN FALL DER PATENT-, GEBRAUCHSMUSTER- ODER GESCHMACKSMUSTERREINTRAGUNG VORBEHALTEN.
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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.

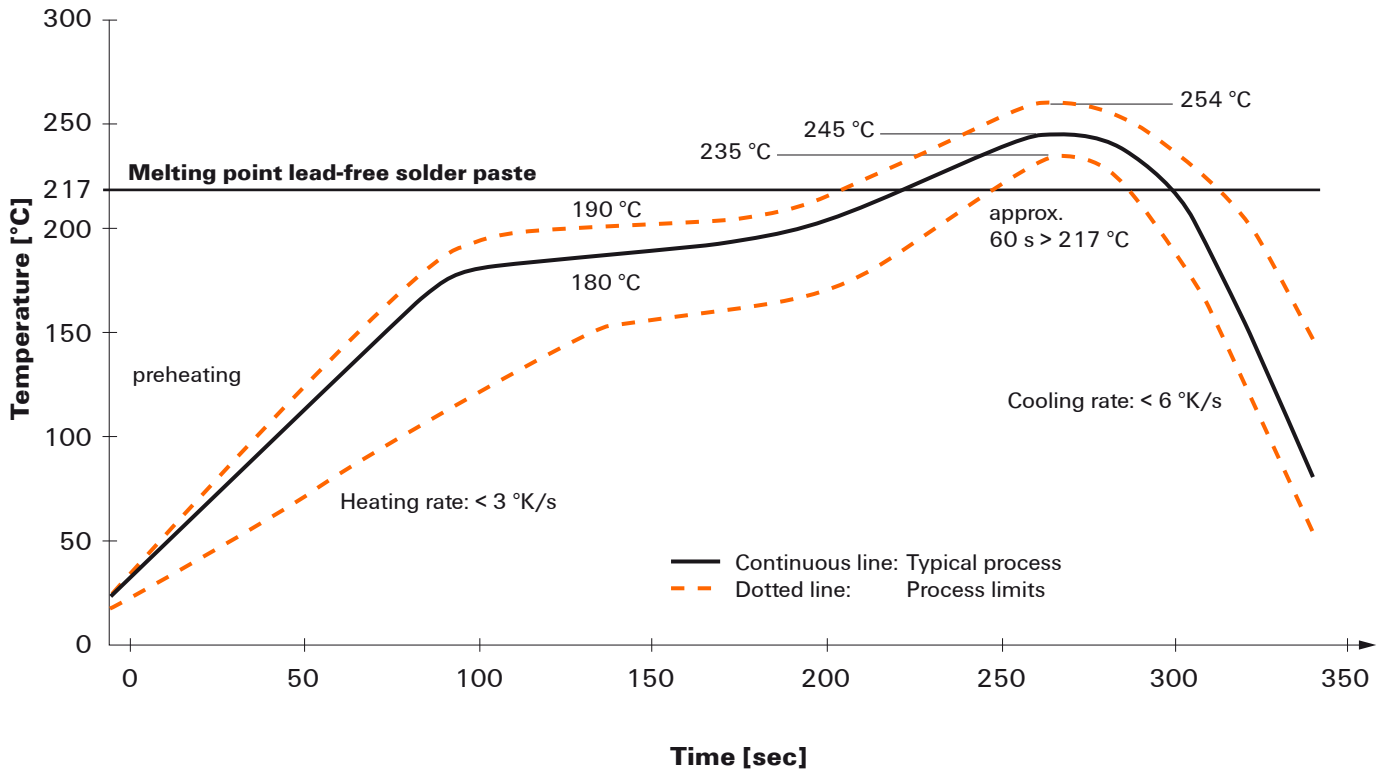
When choosing a suitable profile for your application, the following factors also need to be considered:

- 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.