OMNIMATE Signal - series BL/SL 3.50
SL-SMT 3.50/24/135F 3.2SN BK BX

Weidmüller Interface GmbH & Co. KG
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Product image



Similar to illustration



High-temperature-resistant male header, 3.50 mm pitch.

- **Plugging direction parallel (90°), straight 180° or angled (135°) to PCB**
- **Housing variants: closed side (G), screw flange (F), solder flange (LF) or snap-on solder flange (RF)**
- **Optimised for the SMT process**
- **Pin length 3.2 mm universal for all soldering methods**
- **Pin length 1.5 mm optimised for reflow soldering methods**
- **Packed either in a box (BX) or tape-on-reel (RL)**
- **Male header can be coded**

General ordering data

Type	SL-SMT 3.50/24/135F 3.2SN BK BX
Order No.	1003740000
Version	PCB plug-in connector, male header, Flange, THT/ THR solder connection, 3.50 mm, No. of poles: 24, 135°, Solder pin length (l): 3.2 mm, tinned, black, Box
GTIN (EAN)	4032248700363
Qty.	18 pc(s).
Product data	IEC: 320 V / 15 A UL: 300 V / 10 A
Packaging	Box

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Technical data

Dimensions and weights

Width	91 mm	Width (inches)	3.583 inch
Height	16.2 mm	Height (inches)	0.638 inch
Height of lowest version	13 mm	Depth	13.2 mm
Depth (inches)	0.52 inch	Net weight	8.3 g

System specifications

Product family	OMNIMATE Signal - series BL/SL 3.50	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	135°
No. of poles	24	Number of solder pins per pole	1
Solder pin length (l)	3.2 mm	Tolerance of solder pin position	± 0.20 mm
Solder pin dimensions	d = 1.2 mm, Octagonal	Solder eyelet hole diameter (D)	1.3 mm
Solder eyelet hole diameter tolerance (D)	+ 0,1 mm	Outside diameter of solder pad	2.3 mm
Template aperture diameter	2.1 mm	L1 in mm	80.5 mm
L1 in inches	3.169 inch	Number of rows	1
Pin series quantity	1	Volume resistance	4.50 mΩ
Plugging cycles	25	Plugging force/pole, max.	10 N
Pulling force/pole, max.	8 N		

Material data

Insulating material	LCP GF	Colour	black
Colour chart (similar)	RAL 9011	Insulating material group	IIIa
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	CuSn	Contact surface	tinned
Layer structure of solder connection	2-4 µm Ni / 5-8 µm Sn glossy	Layer structure of plug contact	2-4 µm Ni / 5-8 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)	15 A
Rated current, max. no. of poles (Tu=20°C)	12 A	Rated current, min. no. of poles (Tu=40°C)	13 A
Rated current, max. no. of poles (Tu=40°C)	10 A	Rated voltage for surge voltage class / pollution degree II/2	320 V
Rated voltage for surge voltage class / pollution degree III/2	160 V	Rated voltage for surge voltage class / pollution degree III/3	160 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		

Rated data acc. to CSA

Rated voltage (Use group B / CSA)	300 V	Rated voltage (Use group D / CSA)	300 V
Rated current (Use group B / CSA)	10 A	Rated current (Use group D / CSA)	10 A

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Technical data

Rated data acc. to UL 1059

Institute (UR)		Certificate No. (UR)	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	56 mm
VPE width	70 mm	VPE height	110 mm

Classifications

ETIM 3.0	EC001284	ETIM 4.0	EC002637
ETIM 5.0	EC002637	ETIM 6.0	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	eClass 9.1	27-44-04-02

Notes

Notes	• Gold-plated contact surfaces on request • Rated current related to rated cross-section & min. No. of poles. • Diameter of solder eyelet D = 1.4+0.1mm • Solder eyelet diameter D = 1.5 + 0.1 mm, from 9 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.

Approvals

Approvals	
ROHS	Conform

Creation date May 27, 2019 2:49:31 PM CEST

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Technical data

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 FL INDUSTR.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
SMT white paper	Download Whitepaper

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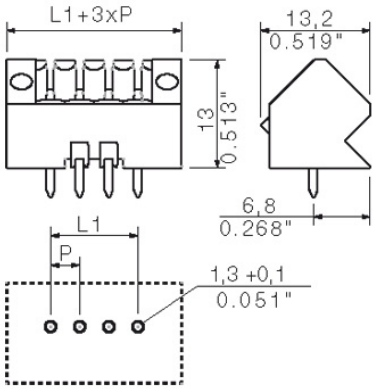
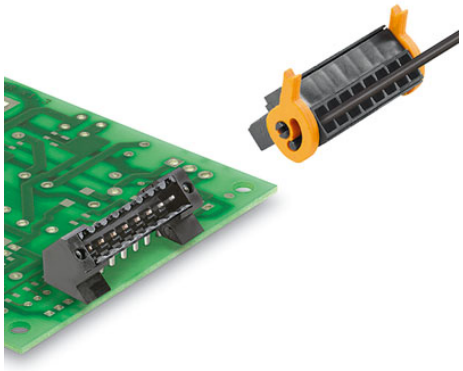
Drawings

Dimensional drawing



Example of use



MASSE OHNE TOLERANZ SIND KEINE PRUEFMASSE
DIMS. WITHOUT TOLERANCE ARE NOT CONTROL DIMS.

DIE DEUTSCHE VERSION IST VERBINDLICH
THE GERMAN VERSION IS BINDING

Technical Data

Rev.

Material data		
Insulation material type		LCP
Insulation material colors		black
Insulation material flammability class	UL94	V-0
Insulation resistance	MOhm	>0.5x10 ^{6}
Contact base material		CuSn
Contact plating (mating end)		see order sheet
Contact plating (solder end)		see order sheet

System characteristic values	together with conterpart	BL 3.5	
Pitch **P**	mm/inch	3.5/0.138	
Number of rows		1	
Dielectric strength (r.m.s withstand voltage)	kV	>2.2	
Mechanical operating cycles	acc.to IEC512	25	
Plug in force (max.)	N/Pole	10	1)
Pull out force (max.)	N/Pole	10	1)
Through resistance (typical)	m Ohm	4.5	
Operating temperatur range	°C	-20..100	2)
Degree of protection acc. to VDE 0106 (plugged/unplugged)		finger safe/back of hands	
Degree of protection acc. to DIN EN 60529(plugged/unplugged)		IP20/IP10	
Solder pin length **L**	mm/inch	3.2/0.126	
PCB hole diameter **D** (wave soldering)	mm/inch	1.3+0.1/0.51+0.004	3)
PCB hole diameter **D** (reflow soldering)	mm/inch	n.a.	4)
Resistance to soldering heat acc. to DIN IEC 60512-6	°C/sec	-	5)
Resistance to soldering heat acc. to EN 61760-1	°C/sec	290/30	6)
Solderability classification acc. to EN 61760-1		class A	
Solder connection type		Reflow	
Solder pin diameter **d** (max.)	mm/inch	1.2/0.047	

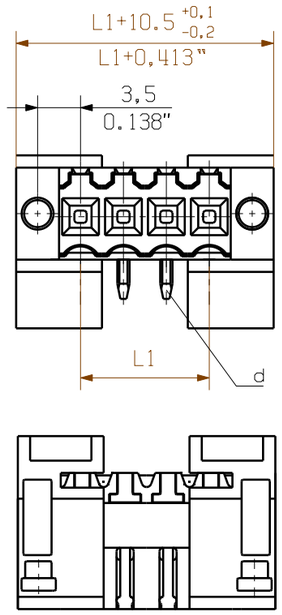
Application notes		
Coding possibility	yes/no	yes (accessory)
Joinable without loss of pitch	yes/no	no
Manual assembly of modules	yes/no	no
Max. number of poles	n	24

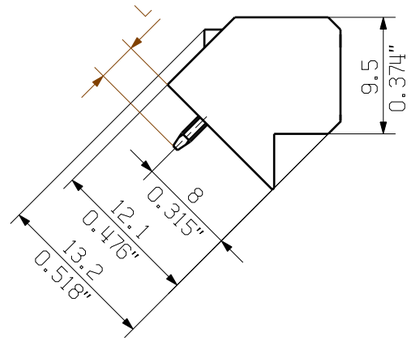
IEC 664-1 / VDE0110 (4.97) rated data				
Rated cross section acc. to EN 60999	mm^2	n.a.		7)
Rated current @ 20°C ambient (together with)	A	16.8 (BL3.5)		7)
Rated current @ 40°C ambient (together with)	A	14.4 (BL3.5)		7)
Overvoltage category / Pollution degree		**III/3**	**III/2**	**II/2**
Rated voltage	V	160	160	250
Rated impulse voltage	kV	2.5	2.5	2.5

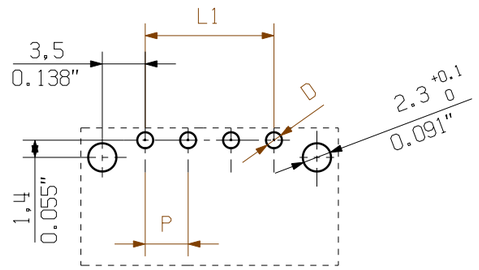
UL 1059 rated data — File No.: E60693		B	C	D
Rated voltage	V	300	-	300
Rated current	A	10	-	10
AWG wire range (field wiring / factory wiring)		n.a.		

CSA C22.2 rated data — File No.: LR12400		B	C	D
Rated voltage		300	-	300
Rated current		10	-	10
AWG wire range (field wiring / factory wiring)		n.a.		

Packaging	cardbox
Downloads	www.weidmueller.de..







LAYOUT FINISHED HOLES

n	L1 [mm]	L1 [Inch]
24	80,50	3,169
23	77,00	3,031
22	73,50	2,894
21	70,00	2,756
20	66,50	2,618
19	63,00	2,480
18	59,50	2,343
17	56,00	2,205
16	52,50	2,067
15	49,00	1,929
14	45,50	1,791
13	42,00	1,654
12	38,50	1,516
11	35,00	1,378
10	31,50	1,240
9	28,00	1,102
8	24,50	0,965
7	21,00	0,827
6	17,50	0,689
5	14,00	0,551
4	10,50	0,413
3	7,00	0,276
2	3,50	0,138

STIFTLAENGE L	TOLERANZ
3,2	0,1
	-0,3

1) Without locking latches
2) Sum of ambient temperature and temperature rise
3) Recommendation for manual assembly
4) Recommendation for automatic assembly
5) Recommendation for wave soldering
6) Recommendation for reflow soldering
7) Referred to rated cross section and minimum pole number

n.a. = not applicable

Subject to technical changes

For the mounting of PCBs, it should be noted that the rated data given in the catalogue relates only to the connection elements. The neccessary 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 occuring of electrical, mechanical, thermic and corrosive stress will be satisfied.

SHOWN: SL3.5/4/135F

RoHS COMPLIANT

METRIC TOLERANCES:
X. = ±0.3
X.X = ±0.1
X.XX = ±0.05

39056/5
07.07.08 HELIS_MA 01
MODIFICATION

CAT.NO.: .

Weidmüller

C 42538 01
DRAWING NO. ISSUE NO.
SHEET 02 OF 03 SHEETS

	DATE	NAME
DRAWN	04.07.2008	HELIS_MA
RESPONSIBLE		HERTEL_S
CHECKED	07.07.2008	HECKERT_M
APPROVED		HECKERT_M

SCALE: 2/1
SUPERSEDES: .

SL SMT 3.5/../135F
STIFTLEISTE
PIN HEADER

PRODUCT FILE: SL-SMT 3.5 7312

WEITERGABE SOWIE VERVIELFAELTIGUNG DIESES DOKUMENTS, VERWERTUNG UND MITTEILUNG SEINES INHALTS SIND VERBOTEN, SOWEIT NICHT AUSDRUECKLICH GESTATTET.
ZUWIDERHANDLUNGEN VERPFLICHTEN ZU SCHADENERSATZ. ALLE RECHTE FUER DEN FALL DER PATENT-, GEBRAUCHSMUSTER- ODER GESCHMACKSMUSTEREINTRAGUNG VORBEHALTEN.
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Wave Solder Profile

Recommended wave solderding profiles

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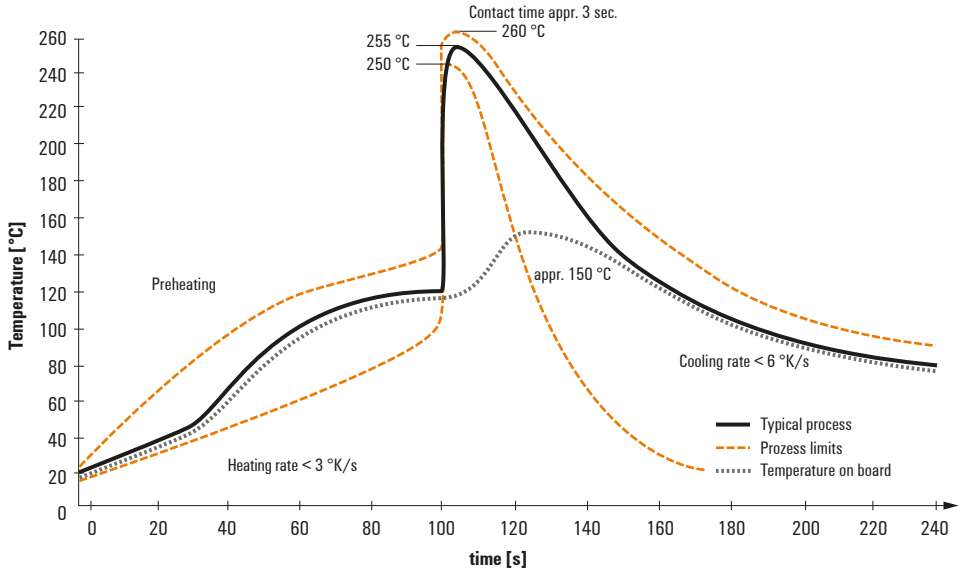
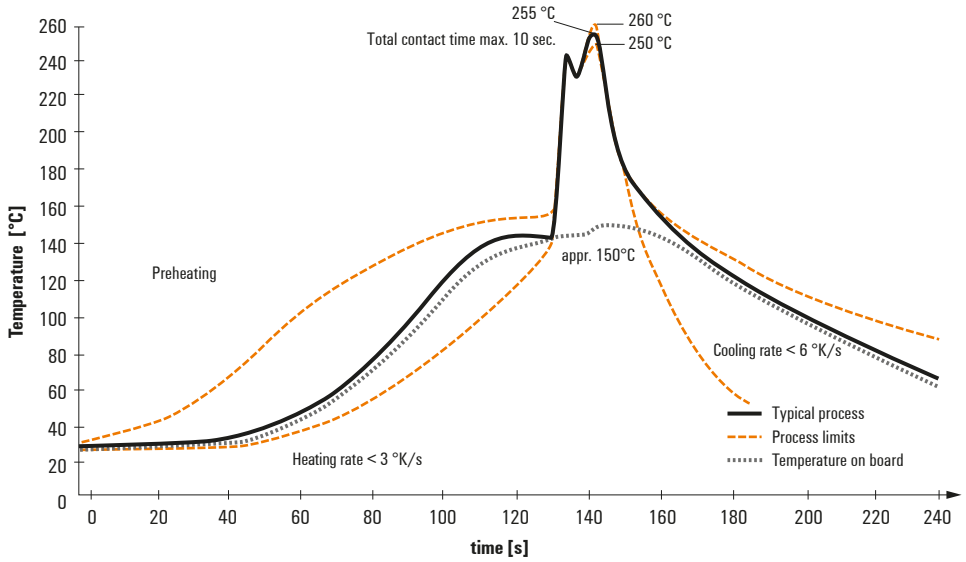
Single Wave:



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.

We reserve the right to make technical changes.

Reflow Solder Profile

Recommended reflow soldering profile

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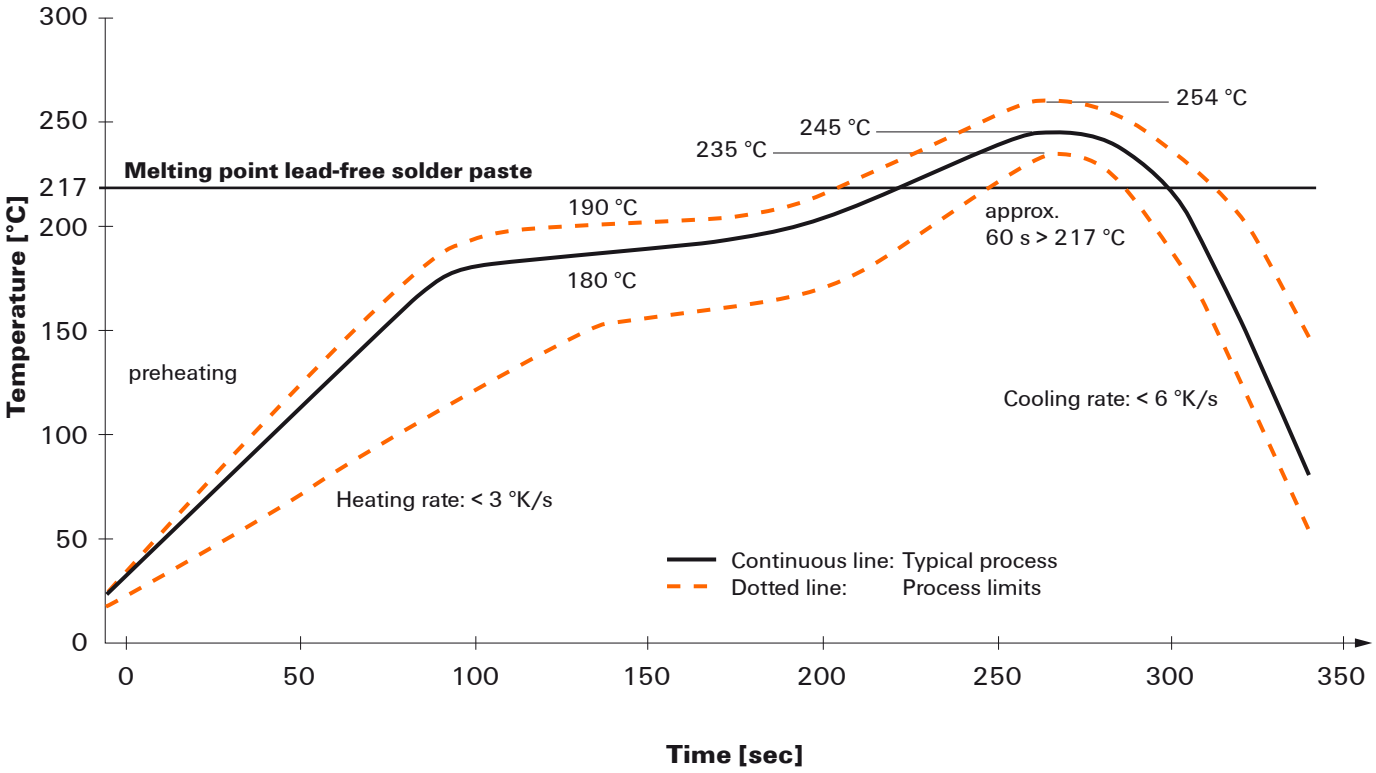

Reflow soldering profile

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 ≤ +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 ≥ -6K/s solder is cured. Board and components cool down while avoiding cold cracks.

We reserve the right to make technical changes.