

OMNIMATE Signal - series BL/SL 3.50 SL-SMT 3.50/20/135F 3.2SN BK BX

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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 3.50/20/135F 3.2SN BK BX
Order No.	1003700000
Version	PCB plug-in connector, male header, Flange, THT/THR solder connection, 3.50 mm, Number of poles: 20, 135°, Solder pin length (l): 3.2 mm, tinned, black, Box
GTIN (EAN)	4032248700325
Qty.	24 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	77 mm	Width (inches)	3.031 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	7.3 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°		
Number of poles	20		
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	66.5 mm		
L1 in inches	2.618 inch		
Number of rows	1		
Pin series quantity	1		
Volume resistance	≤ 5mΩ		
Plugging cycles	25		
Plugging force/pole, max.	10 N		
Pulling force/pole, max.	8 N		
Tightening torque	Torque type	PCB, Screw flange	
	Usage information	Tightening torque	min. 0.15 Nm max. 0.2 Nm
		Recommended screw	Part number PTSC KA 2.2X4.5 WN1412

Material data

Insulating material	LCP GF	Colour	black
Colour chart (similar)	RAL 9011	Insulating material group	IIIa
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	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.	50 °C
Max. relative humidity during storage	70 %	Operating temperature, min.	-50 °C
Operating temperature, max.	100 °C	Temperature range, installation, min.	-30 °C
Temperature range, installation, max.	100 °C		

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Technical data**Rated data acc. to IEC**

tested acc. to standard	IEC 60664-1, IEC 61984	Rated current, min. number of poles (Tu=20°C)	15 A
Rated current, max. number of poles (Tu=20°C)	12 A	Rated current, min. number of poles (Tu=40°C)	13 A
Rated current, max. number 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

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	356 mm
VPE width	134 mm	VPE height	25 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	UNSPSC	30-21-18-01

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Technical data

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. • 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

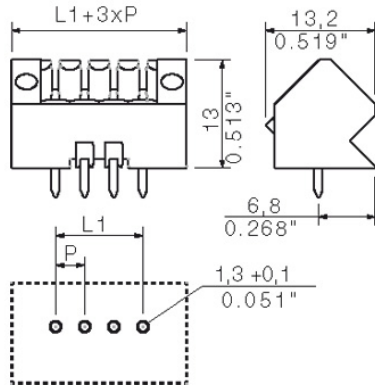
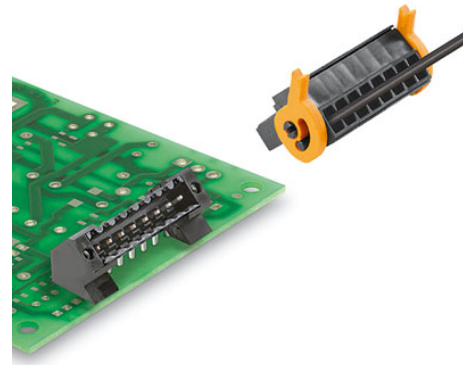
Approvals	
ROHS	Conform

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****Example of use**

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Mating connector (conditionally pluggable)**BL 3.50/180LH**

Female connectors with clamping yoke screw system for connecting conductors at 3.50 mm pitch. They provide space for labelling and can be coded.

General ordering data

Type	BL 3.50/20/180LH SN DKG ...	Version	Product data	Packaging
Order No.	1752900000	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 20,	IEC: 320 V / 17 A / 0.2 - 1.5 mm ²	Box
GTIN (EAN)	4032248007516	180°, Clamping yoke connection, Clamping range, max. : 1.5 mm ² ,	UL: 300 V / 10 A / AWG 28 - AWG 14	
Qty.	20 pc(s).	Box		
Type	BL 3.50/20/180LH SN OR ...	Version	Product data	Packaging
Order No.	1687830000	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 20,	IEC: 320 V / 17 A / 0.2 - 1.5 mm ²	Box
GTIN (EAN)	4008190853389	180°, Clamping yoke connection, Clamping range, max. : 1.5 mm ² ,	UL: 300 V / 10 A / AWG 28 - AWG 14	
Qty.	24 pc(s).	Box		
Type	BL 3.50/20/180LH SN BK ...	Version	Product data	Packaging
Order No.	1688060000	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 20,	IEC: 320 V / 17 A / 0.2 - 1.5 mm ²	Box
GTIN (EAN)	4008190853617	180°, Clamping yoke connection, Clamping range, max. : 1.5 mm ² ,	UL: 300 V / 10 A / AWG 28 - AWG 14	
Qty.	24 pc(s).	Box		

BL 3.50/180F

Female connectors with clamping yoke screw system for connecting conductors at 3.50 mm pitch. They provide space for labelling and can be coded.

General ordering data

Type	BL 3.50/20/180F SN GY BX	Version	Product data	Packaging
Order No.	1621100000	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 20,	IEC: 320 V / 17 A / 0.2 - 1.5 mm ²	Box
GTIN (EAN)	4008190168735	180°, Clamping yoke connection, Clamping range, max. : 1.5 mm ² ,	UL: 300 V / 10 A / AWG 28 - AWG 14	
Qty.	20 pc(s).	Box		
Type	BL 3.50/20/180F SN OR BX	Version	Product data	Packaging
Order No.	1620790000	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 20,	IEC: 320 V / 17 A / 0.2 - 1.5 mm ²	Box
GTIN (EAN)	4008190163730	180°, Clamping yoke connection, Clamping range, max. : 1.5 mm ² ,	UL: 300 V / 10 A / AWG 28 - AWG 14	
Qty.	24 pc(s).	Box		
Type	BL 3.50/20/180F SN DKG ...	Version	Product data	Packaging
Order No.	1621310000	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 20,	IEC: 320 V / 17 A / 0.2 - 1.5 mm ²	Box
GTIN (EAN)	4008190171155	180°, Clamping yoke connection, Clamping range, max. : 1.5 mm ² ,	UL: 300 V / 10 A / AWG 28 - AWG 14	
Qty.	20 pc(s).	Box		

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Mating connector (conditionally pluggable)

Type	BL 3.50/20/180F SN BK BX	Version	Product data	Packaging
Order No.	1620870000	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 20,	IEC: 320 V / 17 A / 0.2 - 1.5 mm ²	Box
GTIN (EAN)	4008190164775	180°, Clamping yoke connection, Clamping range, max. : 1.5 mm ² ,	UL: 300 V / 10 A / AWG 28 - AWG 14	
Qty.	24 pc(s).	Box		
Type	BL 3.50/20/180F SN OR B ...	Version	Product data	Packaging
Order No.	1740771001	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 20,	IEC: 320 V / 17 A / 0.2 - 1.5 mm ²	Box
GTIN (EAN)	4008190961817	180°, Clamping yoke connection, Clamping range, max. : 1.5 mm ² ,	UL: 300 V / 10 A / AWG 28 - AWG 14	
Qty.	20 pc(s).	Box		

BL 3.50/90F

Female connectors with clamping yoke screw system for connecting conductors at 3.50 mm pitch. They provide space for labelling and can be coded.

General ordering data

Type	BL 3.50/20/90F SN OR BX	Version	Product data	Packaging
Order No.	1639190000	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 20,	IEC: 320 V / 12 A / 0.2 - 1.5 mm ²	Box
GTIN (EAN)	4008190276737	90°, Clamping yoke connection, Clamping range, max. : 1.5 mm ² , Box	UL: 300 V / 8 A / AWG 28 - AWG 14	
Qty.	24 pc(s).			
Type	BL 3.50/20/90F SN BK BX	Version	Product data	Packaging
Order No.	1639420000	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 20,	IEC: 320 V / 12 A / 0.2 - 1.5 mm ²	Box
GTIN (EAN)	4008190276966	90°, Clamping yoke connection, Clamping range, max. : 1.5 mm ² , Box	UL: 300 V / 8 A / AWG 28 - AWG 14	
Qty.	24 pc(s).			

BL 3.50/270F

Female connectors with clamping yoke screw system for connecting conductors at 3.50 mm pitch. They provide space for labelling and can be coded.

General ordering data

Type	BL 3.50/20/270F SN OR BX	Version	Product data	Packaging
Order No.	1640110000	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 20,	IEC: 320 V / 12 A / 0.2 - 1.5 mm ²	Box
GTIN (EAN)	4008190277666	270°, Clamping yoke connection, Clamping range, max. : 1.5 mm ² ,	UL: 300 V / 8 A / AWG 28 - AWG 14	
Qty.	24 pc(s).	Box		

Data sheet

OMNIMATE Signal - series BL/SL 3.50 SL-SMT 3.50/20/135F 3.2SN BK BX

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Mating connector (conditionally pluggable)

Type	BL 3.50/20/270F SN BK BX	Version	Product data	Packaging
Order No.	1640340000	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 20,	IEC: 320 V / 12 A / 0.2 - 1.5 mm ²	Box
GTIN (EAN)	4008190277925	270°, Clamping yoke connection, Clamping range, max.: 1.5 mm ² ,	UL: 300 V / 8 A / AWG 28 - AWG 14	
Qty.	20 pc(s).	Box		

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Mating connector (fully pluggable)
BL 3.50/90


Female connectors with clamping yoke screw system for connecting conductors at 3.50 mm pitch. They provide space for labelling and can be coded.

General ordering data

Type	BL 3.50/20/90 SN BK BX	Version	Product data	Packaging
Order No.	1638960000	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 20,	IEC: 320 V / 12 A / 0.2 - 1.5 mm ²	Box
GTIN (EAN)	4008190276508	90°, Clamping yoke connection, Clamping range, max. : 1.5 mm ² , Box	UL: 300 V / 8 A / AWG 28 - AWG 14	
Qty.	24 pc(s).			
Type	BL 3.50/20/90 SN OR BX	Version	Product data	Packaging
Order No.	1638730000	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 20,	IEC: 320 V / 12 A / 0.2 - 1.5 mm ²	Box
GTIN (EAN)	4008190276270	90°, Clamping yoke connection, Clamping range, max. : 1.5 mm ² , Box	UL: 300 V / 8 A / AWG 28 - AWG 14	
Qty.	24 pc(s).			

BL 3.50/270


Female connectors with clamping yoke screw system for connecting conductors at 3.50 mm pitch. They provide space for labelling and can be coded.

General ordering data

Type	BL 3.50/20/270 SN OR BX	Version	Product data	Packaging
Order No.	1639650000	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 20,	IEC: 320 V / 12 A / 0.2 - 1.5 mm ²	Box
GTIN (EAN)	4008190277208	270°, Clamping yoke connection, Clamping range, max. : 1.5 mm ² ,	UL: 300 V / 8 A / AWG 28 - AWG 14	
Qty.	24 pc(s).	Box		
Type	BL 3.50/20/270 SN BK BX	Version	Product data	Packaging
Order No.	1639880000	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 20,	IEC: 320 V / 12 A / 0.2 - 1.5 mm ²	Box
GTIN (EAN)	4008190277437	270°, Clamping yoke connection, Clamping range, max. : 1.5 mm ² ,	UL: 300 V / 8 A / AWG 28 - AWG 14	
Qty.	24 pc(s).	Box		

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Mating connector (fully pluggable)
BL 3.50/180


Female connectors with clamping yoke screw system for connecting conductors at 3.50 mm pitch. They provide space for labelling and can be coded.

General ordering data

Type	BL 3.50/20/180 SN OR BX ...	Version	Product data	Packaging
Order No.	1740701001	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 20,	IEC: 320 V / 17 A / 0.2 - 1.5 mm ²	Box
GTIN (EAN)	4008190961671	180°, Clamping yoke connection, Clamping range, max. : 1.5 mm ² ,	UL: 300 V / 10 A / AWG 28 - AWG 14	
Qty.	24 pc(s).	Box		
Type	BL 3.50/20/180 SN OR BX	Version	Product data	Packaging
Order No.	1620320000	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 20,	IEC: 320 V / 17 A / 0.2 - 1.5 mm ²	Box
GTIN (EAN)	4008190154455	180°, Clamping yoke connection, Clamping range, max. : 1.5 mm ² ,	UL: 300 V / 10 A / AWG 28 - AWG 14	
Qty.	24 pc(s).	Box		
Type	BL 3.50/20/180 SN DKGN ...	Version	Product data	Packaging
Order No.	1620710000	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 20,	IEC: 320 V / 17 A / 0.2 - 1.5 mm ²	Box
GTIN (EAN)	4008190160685	180°, Clamping yoke connection, Clamping range, max. : 1.5 mm ² ,	UL: 300 V / 10 A / AWG 28 - AWG 14	
Qty.	24 pc(s).	Box		
Type	BL 3.50/20/180 SN BK BX	Version	Product data	Packaging
Order No.	1620400000	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 20,	IEC: 320 V / 17 A / 0.2 - 1.5 mm ²	Box
GTIN (EAN)	4008190155841	180°, Clamping yoke connection, Clamping range, max. : 1.5 mm ² ,	UL: 300 V / 10 A / AWG 28 - AWG 14	
Qty.	24 pc(s).	Box		
Type	BL 3.50/20/180 SN GY BX	Version	Product data	Packaging
Order No.	1620630000	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 20,	IEC: 320 V / 17 A / 0.2 - 1.5 mm ²	Box
GTIN (EAN)	4008190159955	180°, Clamping yoke connection, Clamping range, max. : 1.5 mm ² ,	UL: 300 V / 10 A / AWG 28 - AWG 14	
Qty.	20 pc(s).	Box		

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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	BL SL 3.5 KO OR	Version	Product data	Packaging
Order No.	1693430000	PCB plug-in connector, Accessories, Coding element, orange, Number		Box
GTIN (EAN)	4008190867447	of poles: 1		
Qty.	100 pc(s).			
Type	BL SL 3.5 KO SW	Version	Product data	Packaging
Order No.	1610100000	PCB plug-in connector, Accessories, Coding element, black, Number		Box
GTIN (EAN)	4008190187637	of poles: 1		
Qty.	100 pc(s).			

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
Insulation resistance	MOhm
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.
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

Rated voltage V	B	C	D
Rated current A	300	-	300
AWG wire range (field wiring / factory wiring)	10	-	10
	n.a.		

CSA C22.2 rated data

File No.: LR12400

Rated voltage V	B	C	D
Rated current A	300	-	300
AWG wire range (field wiring / factory wiring)	10	-	10
	n.a.		

Packaging

cardbox

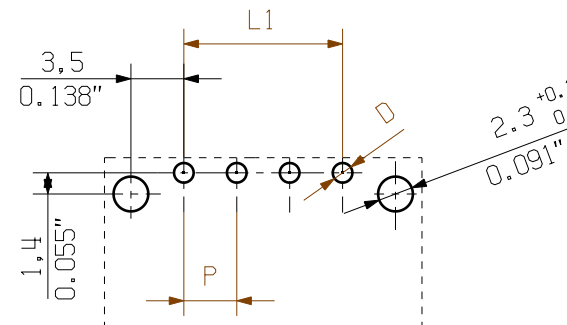
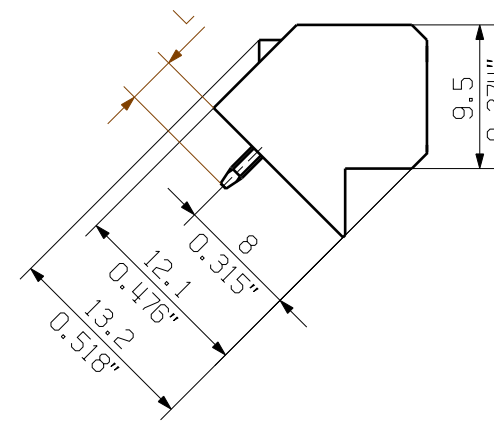
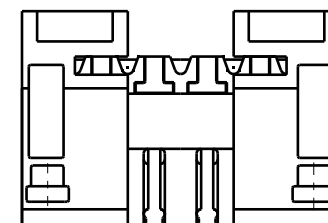
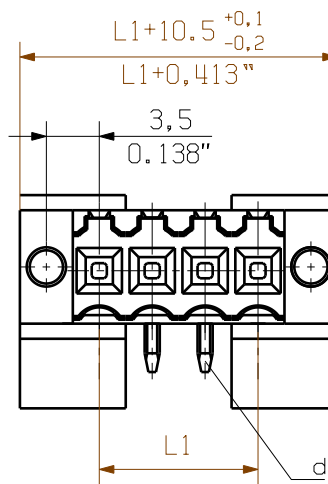
Downloads

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- 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



LAYOUT FINISHED HOLES

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
n	L1 [mm]	L1 [Inch]

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

SHOWN: SL3.5/4/135F

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.

	METRIC TOLERANCES: X. = ±0.3 X.X = ±0.1 X.XX = ±0.05	39056/5 07.07.08 HELIS_MA 01	CAT.NO.:
		C 42538 01 DRAWING NO. ISSUE NO. SHEET 02 OF 03 SHEETS	SL SMT 3.5/././135F STIFTLAENGE PIN HEADER
	MODIFICATION	DATE NAME DRAWN 04.07.2008 HELIS_MA RESPONSIBLE HERTEL_S CHECKED 07.07.2008 HECKERT_M APPROVED HECKERT_M	PRODUCT FILE: SL-SMT 3.5 7312
SCALE: 2/1 SUPERSEDES:			

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Recommended wave soldering profiles

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 Klingenbergstraße 16
 D-32758 Detmold
 Germany
 Fon: +49 5231 14-0
 Fax: +49 5231 14-292083
 www.weidmueller.com

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

Weidmüller Interface GmbH & Co. KG
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 D-32758 Detmold
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 Fax: +49 5231 14-292083
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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.