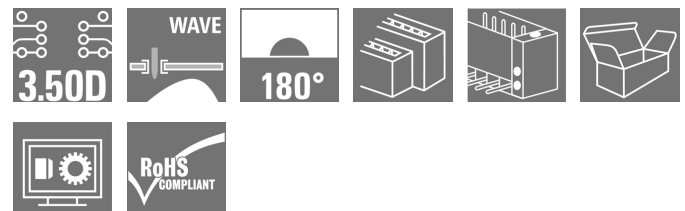
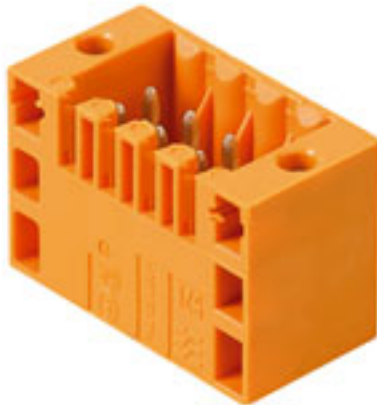


# OMNIMATE Signal - series B2L/S2L 3.50 - 2-row S2L 3.50/32/180F 3.5SN BK BX

**Weidmüller Interface GmbH & Co. KG**  
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Germany  
Fon: +49 5231 14-0  
Fax: +49 5231 14-292083  
[www.weidmueller.com](http://www.weidmueller.com)

## Product image



Similar to illustration

Straight, double-row pin header available in closed-sided or flange version (open-sided pin headers on request). The male headers with a pin length of 3.5mm are designed for wave soldering and are packed in a box. They can be screwed on to the PCB. The male headers provide space for labelling and can be coded.

## General ordering data

Type	S2L 3.50/32/180F 3.5SN BK BX
Order No.	<a href="#">1729720000</a>
Version	PCB plug-in connector, male header, Flange, THT solder connection, 3.50 mm, No. of poles: 32, 180°, Solder pin length (l): 3.5 mm, tinned, black, Box
GTIN (EAN)	4032248041121
Qty.	24 pc(s).
Product data	IEC: 250 V / 10 A UL: 150 V / 10 A
Packaging	Box

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S2L 3.50/32/180F 3.5SN BK BX**

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

Width	63 mm	Width (inches)	2.48 inch
Height	17.7 mm	Height (inches)	0.697 inch
Height of lowest version	14.2 mm	Depth	10.5 mm
Depth (inches)	0.413 inch	Net weight	9.5 g

**System specifications**

Product family	OMNIMATE Signal - series B2L/S2L 3.50 - 2-row	Type of connection	Board connection
Mounting onto the PCB	THT solder connection	Pitch in mm (P)	3.5 mm
Pitch in inches (P)	0.138 inch	Outgoing elbow	180°
No. of poles	32	Number of solder pins per pole	1
Solder pin length (l)	3.5 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		L1 in mm	52.5 mm
L1 in inches	2.067 inch	Number of rows	1
Pin series quantity	2	Touch-safe protection acc. to DIN VDE 57 106	Safe from back-of-hand touch
Touch-safe protection acc. to DIN VDE 0470	IP 10	Can be coded	Yes
Plugging cycles	25	Plugging force/pole, max.	5 N
Pulling force/pole, max.	4 N		

**Material data**

Insulating material	PBT	Colour	black
Colour chart (similar)	RAL 9011	Insulating material group	IIIa
CTI	≥ 200	Insulation strength	≥ 10 <sup>8</sup> Ω
UL 94 flammability rating	V-0	GWFI	960 °C
Contact material	Copper alloy	Contact surface	tinned
Layer structure of solder connection	2-3 µm Ni / 5-7 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)	10 A
Rated current, max. no. of poles (Tu=20°C)	10 A	Rated current, min. no. of poles (Tu=40°C)	9 A
Rated current, max. no. of poles (Tu=40°C)	8.5 A	Rated voltage for surge voltage class / pollution degree II/2	250 V
Rated voltage for surge voltage class / pollution degree III/2	125 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 77 A


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

Institute (CSA)		Certificate No. (CSA)	200039-1488444
Rated voltage (Use group B / CSA)	150 V	Rated current (Use group B / CSA)	5 A
Reference to approval values	Specifications are maximum values, details - see approval certificate.		

**Rated data acc. to UL 1059**

Institute (UR)		Certificate No. (UR)	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	30 mm
VPE width	135 mm	VPE height	350 mm

**Classifications**

ETIM 4.0	EC002637	ETIM 5.0	EC002637
ETIM 6.0	EC002637	UNSPSC	30-21-18-10
eClass 5.1	27-26-07-01	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	<ul style="list-style-type: none"> <li>• Additional colours on request</li> <li>• Gold-plated contact surfaces on request</li> <li>• Spacing between rows: see hole layout</li> <li>• Rated current related to rated cross-section &amp; min. No. of poles.</li> <li>• P on drawing = pitch</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>• For additional mechanical support for male connectors with screw flange (...F), we recommend an additional cable gland with fastening screws (sheet metal screw ISO 1481-ST 2.2x4.5 C or ISO 7049-ST 2.2x4.5 C - see Accessories). Cable gland only permitted before soldering.</li> </ul>
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.

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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 DEVICE MANUF. EN](#)  
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[CAT 2 PORTFOLIOGUIDE EN](#)  
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[FL ELEVATOR EN](#)  
[FL POWER SUPPLY EN](#)  
[FL 72H SAMPLE SER EN](#)  
[PO OMNIMATE EN](#)

Engineering Data

[EPLAN, WSCAD](#)

Engineering Data

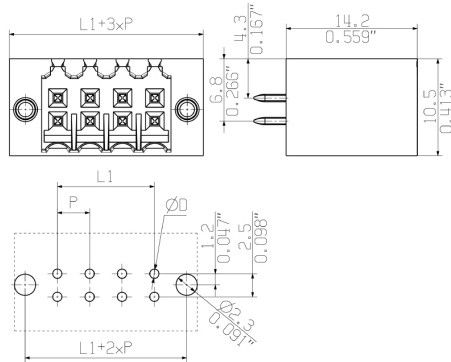
[S2L-SMT.zip](#)  
[STEP](#)

## OMNIMATE Signal - series B2L/S2L 3.50 - 2-row S2L 3.50/32/180F 3.5SN BK BX

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# Drawings

## Dimensional drawing



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## Mating connector (conditionally pluggable)

### B2L 3.50



#### Component density redefined: the future standard for signal connection

A maximum number of connections requiring minimum space - the double-row B2L sets the bar for field connections of typical sensor cables up to 1 mm<sup>2</sup> very high and closes the gap between "less space" and "more functions".

The result is a connection solution for standard industrial cables in 1.75 pitch - 30% smaller than equivalent solutions in 2.5 pitch, and with the 140% robustness of the 3.5 pitch

Dimensions: double the connection density with a 3.5mm pitch size

Connection system: tried and tested maintenance-free Weidmüller tension clamp connection

The basic application advantages:

Efficient: maximum component density on the PCB

Suitable for industrial use - minimum dimensions, maximum robustness

Process-optimised - automatic assembly and reflow soldering, fast connection

User-friendly - patented release lever for the easy release of larger numbers of poles

Application-oriented: easy labelling and reliable coding despite compact dimensions

Miniaturisation is more than just a larger number of functions within a smaller space:

Each reduction in size decreases space requirements and so reduces overall system costs for the end customer.

Thus, Weidmüller fulfils a growing demand in the engineering and industrial automation sectors.

#### General ordering data

Type	Order No.	Version	GTIN (EAN)	Qty.	Product data	Packaging
B2L 3.50/32/180 SN BK BX	<a href="#">1747980000</a>	PCB plug-in connector, female plug, 3.50 mm, No. of poles: 32, 180°, Tension-clamp connection, Clamping range, max.: 1 mm <sup>2</sup> , Box	4032248198658	30 pc(s).	IEC: 200 V / 10.3 A / 0.2 - 1 mm <sup>2</sup> UL: 300 V / 10 A / AWG 28 - AWG 16	Box
B2L 3.50/32/180 SN OR BX	<a href="#">1747900000</a>	PCB plug-in connector, female plug, 3.50 mm, No. of poles: 32, 180°, Tension-clamp connection, Clamping range, max.: 1 mm <sup>2</sup> , Box	4032248145027	30 pc(s).	IEC: 200 V / 10.3 A / 0.2 - 1 mm <sup>2</sup> UL: 300 V / 10 A / AWG 28 - AWG 16	Box

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**Mating connector (conditionally pluggable)**
**B2L 3.50LH**


Female connectors with tension clamp connection system enable quick and simple wiring. These female header can be mounted side by side and therefore have a high connection density. The release lever simplifies the separation of the connection in confined spaces. The socket blocks provide space for labelling and can be coded.

**General ordering data**

Type	Order No.	Version	GTIN (EAN)	Qty.	Product data	Packaging
B2L 3.50/32/180LH SN BK BX	<a href="#">1748620000</a>	PCB plug-in connector, female plug, 3.50 mm, No. of poles: 32, 180°, Tension-clamp connection, Clamping range, max. : 1 mm², Box	4032248198719	24 pc(s).	IEC: 250 V / 10.3 A / 0.2 - 1 mm² UL: 300 V / 10 A / AWG 28 - AWG 16	Box
B2L 3.50/32/180LH SN OR BX	<a href="#">1748460000</a>	PCB plug-in connector, female plug, 3.50 mm, No. of poles: 32, 180°, Tension-clamp connection, Clamping range, max. : 1 mm², Box	4032248188611	24 pc(s).	IEC: 250 V / 10.3 A / 0.2 - 1 mm² UL: 300 V / 10 A / AWG 28 - AWG 16	Box

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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	Order No.	Version	GTIN (EAN)	Qty.	Product data	Packaging
B2CF 3.50/32/180F SN BK BX	<a href="#">1278010000</a>	PCB plug-in connector, female plug, 3.50 mm, No. of poles: 32, 180°, PUSH IN, Tension-clamp connection, Clamping range, max. : 1.5 mm², Box	4050118068719	24 pc(s).	IEC: 320 V / 13.4 A / 0.14 - 1.5 mm² UL: 300 V / 9.5 A / AWG 26 - AWG 16	Box
B2CF 3.50/32/180F SN OR BX	<a href="#">1277830000</a>	PCB plug-in connector, female plug, 3.50 mm, No. of poles: 32, 180°, PUSH IN, Tension-clamp connection, Clamping range, max. : 1.5 mm², Box	4050118068115	24 pc(s).	IEC: 320 V / 13.4 A / 0.14 - 1.5 mm² UL: 300 V / 9.5 A / AWG 26 - AWG 16	Box

### B2CF 3.50/180LH



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#### General ordering data

Delivery status Available until	Type	Order No.	Version	GTIN (EAN)	Qty.
Discontinued 2016-09-01T00:00:00+02:00	B2CF 3.50/32/180LH SN BK BX SO	<a href="#">1319450000</a>	PCB plug-in connector, female plug, 3.50 mm, No. of poles: 32, 180°, PUSH IN, Tension-clamp	4050118125320	30 pc(s).

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S2L 3.50/32/180F 3.5SN BK BX**

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**Mating connector (fully pluggable)**

connection,  
Clamping range,  
max. : 1.5 mm<sup>2</sup>,  
Box

B2CF 3.50/32/180LH SN OR BX	<a href="#">1376030000</a> PCB plug-in connector, female plug, 3.50 mm, No. of poles: 32, 180°, PUSH IN, Tension-clamp connection, Clamping range, max. : 1.5 mm <sup>2</sup> , Box	4050118177022 30 pc(s).	IEC: 320 V / 13.4 A / 0.14 - 1.5 mm <sup>2</sup> Box UL: 300 V / 9.5 A / AWG 26 - AWG 16
B2CF 3.50/32/180LH SN BK BX	<a href="#">1375850000</a> PCB plug-in connector, female plug, 3.50 mm, No. of poles: 32, 180°, PUSH IN, Tension-clamp connection, Clamping range, max. : 1.5 mm <sup>2</sup> , Box	4050118176698 30 pc(s).	IEC: 320 V / 13.4 A / 0.14 - 1.5 mm <sup>2</sup> Box UL: 300 V / 9.5 A / AWG 26 - AWG 16

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**Mating connector (fully pluggable)**
**B2L 3.50F**

**Component density redefined: the future standard for signal connection**

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Dimensions: double the connection density with a 3.5mm pitch size

Connection system: tried and tested maintenance-free Weidmüller tension clamp connection

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Suitable for industrial use - minimum dimensions, maximum robustness

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User-friendly - patented release lever for the easy release of larger numbers of poles

Application-oriented: easy labelling and reliable coding despite compact dimensions

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Thus, Weidmüller fulfils a growing demand in the engineering and industrial automation sectors.

**General ordering data**

Type	Order No.	Version	GTIN (EAN)	Qty.	Product data	Packaging
B2L 3.50/32/180F SN OR BX	<a href="#">1748140000</a>	PCB plug-in connector, female plug, 3.50 mm, No. of poles: 32, 180°, Tension-clamp connection, Clamping range, max.: 1 mm <sup>2</sup> , Box	4032248194216	24 pc(s).	IEC: 250 V / 10.3 A / 0.2 - 1 mm <sup>2</sup> UL: 300 V / 10 A / AWG 28 - AWG 16	Box
B2L 3.50/32/180F SN BK BX	<a href="#">1748300000</a>	PCB plug-in connector, female plug, 3.50 mm, No. of poles: 32, 180°, Tension-clamp connection, Clamping range, max.: 1 mm <sup>2</sup> , Box	4032248198689	24 pc(s).	IEC: 250 V / 10.3 A / 0.2 - 1 mm <sup>2</sup> UL: 300 V / 10 A / AWG 28 - AWG 16	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	Order No.	Version	GTIN (EAN)	Qty.	Product data	Packaging
B2L/S2L 3.50 KO OR BX	<a href="#">1849730000</a>	PCB plug-in connector, Accessories, Coding element, orange, No. of poles: 1	4032248378197	100 pc(s).		Box
B2L/S2L 3.50 KO BK BX	<a href="#">1849740000</a>	PCB plug-in connector, Accessories, Coding element, black, No. of poles: 1	4032248378203	100 pc(s).		Box

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**Accessories****Additional accessories****No task is too small when creating the perfect solution.** br />

Connections form just one part of the overall process. Small details are often the key to the perfect solution in applications where potentials are tested, grouped or even isolated.

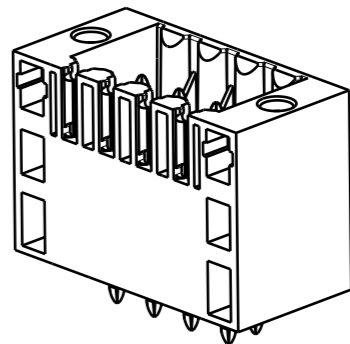
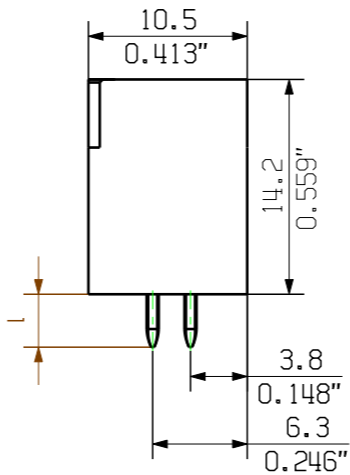
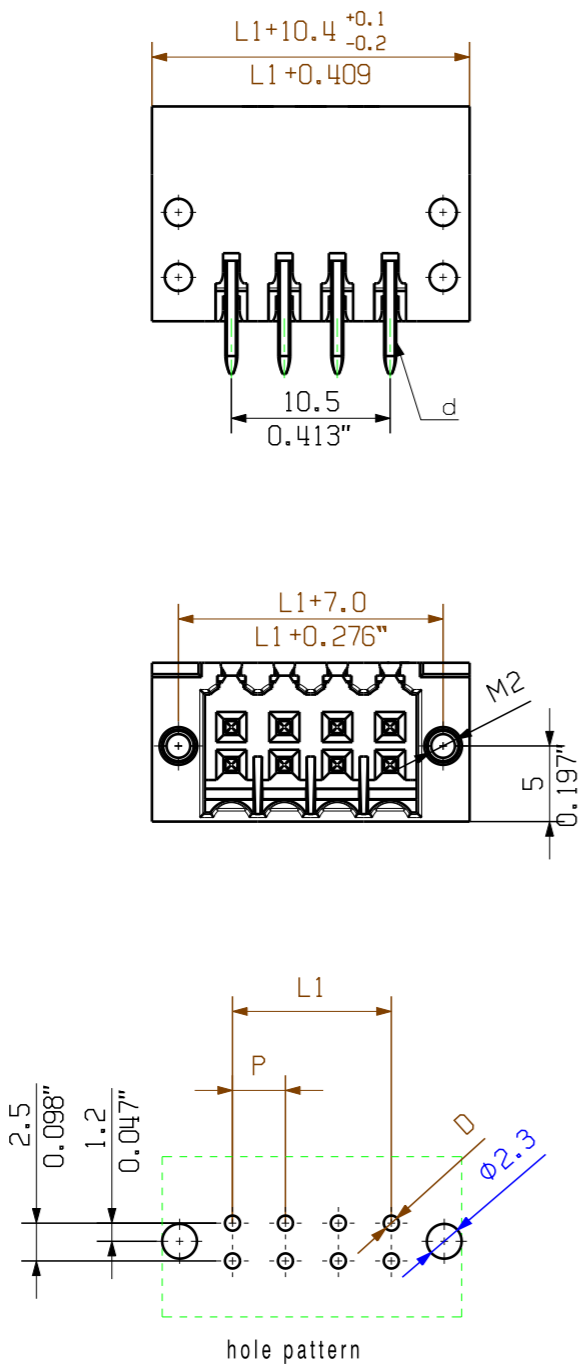
A system is not a system without small but useful details:

- Test plugs - ensure reliable pick-up from diagnostic sockets
- Cross-connectors - ensure a stable electrical distribution contact directly at the connection
- Compartment partition elements - divide a large number of male connectors into several separate socket connector channels
- Locks and clips - optional vibration-resistant clip-on connection or mounting for male and female connectors

In tandem with the manufacturing process and application - more accessories = smaller workload

**General ordering data**

Type	Order No.	Version	GTIN (EAN)	Qty.	Product data
PTSC KA 2.2X4.5 WN1412	<a href="#">1610740000</a>	PCB plug-in connector, Accessories, Mounting screw, No. of poles: 1	4008190039523	100 pc(s).	



optional fixing screw  
order no.: 161074 0000

P = 3.50 Raster Pitch  
D =  $\emptyset 1,3^{+0.1}$   
 $\emptyset 0.051^{+0.1}$   
d = 1mm oktogonal  
0.039" octogonal

shown S2L 3.50/././180F

pin length l	tolerance
3,5	0,2 -0,2
2,6	0,2 -0,2

n	Polzahl/ no of poles	L1	Toleranz/ tolerance L1
46	77.0		
44	73.5		
42	70.0		
40	66.5		
38	63.0		+/-0.2
36	59.5		
34	56.0		
32	52.5		
30	49.0		
28	45.5		
26	42.0		+/-0.15
24	38.5		
22	35.0		
20	31.5		
18	28.0		+/-0.1
16	24.5		
14	21.0		
12	17.5		
10	14.0		
8	10.5		
6	7.0		
4	3.5		

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.

Weidmueller 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.

General tolerance: DIN ISO 2768-mK		98746/5 29.11.17 HELIS_MA 01		Cat.no.: .	
		Modification		<b>Weidmüller</b>	
		Drawn	28.11.2008	HELIS_MA	<b>S2L 3.50/././...</b> STIFTLEISTE MALE HEADER
		Responsible		AMANN_A	
Scale: 5/1		Checked	04.12.2017	HELIS_MA	
Supersedes: .		Approved		LANG_T	Product file: S2L 3.50

Sheet 06 of 06 sheets

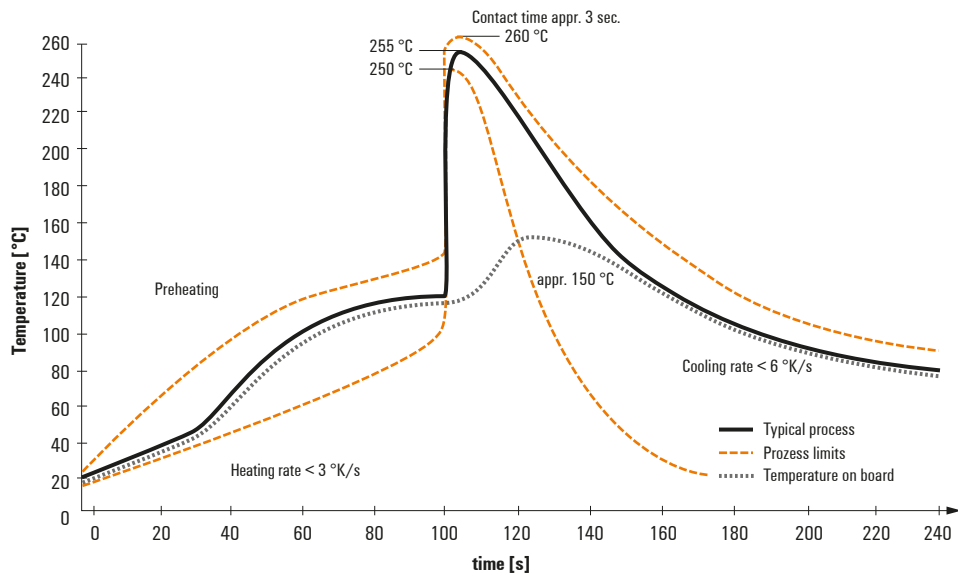
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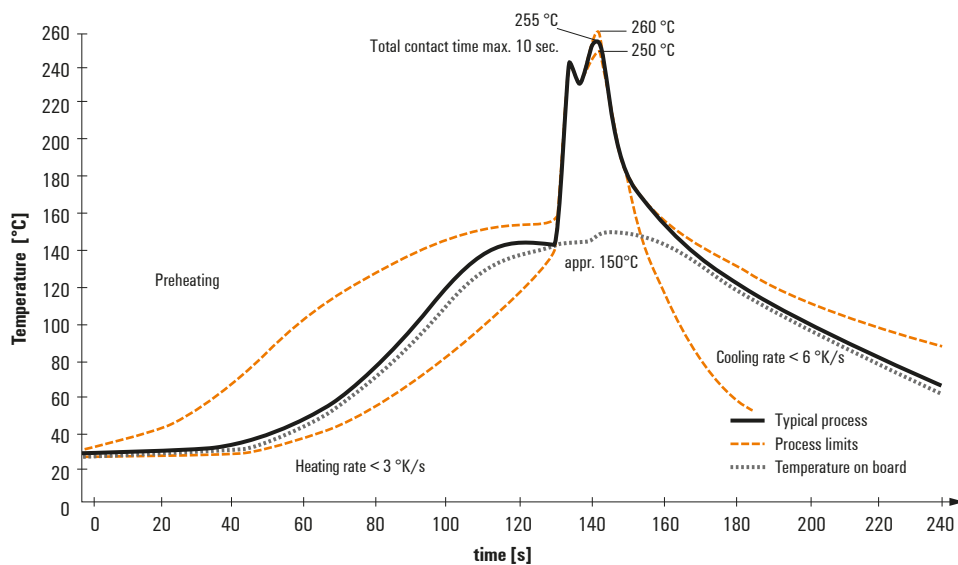
## Recommended wave soldering profiles

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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.

We reserve the right to make technical changes.