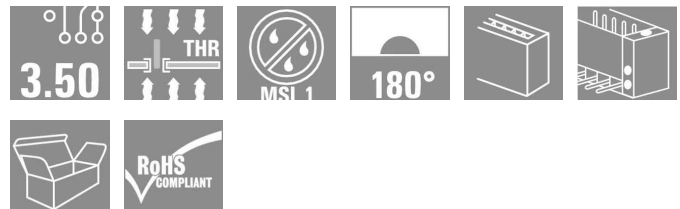


**OMNIMATE Signal - series BL/SL 3.50
SL-SMT 3.50/02/180F 1.5SN BK BX**

Weidmüller Interface GmbH & Co. KG
Klingenbergstraße 16
D-32758 Detmold
Germany
Fon: +49 5231 14-0
Fax: +49 5231 14-292083
www.weidmueller.com



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 3.50/02/180F 1.5SN BK BX
Order No.	1760962001
Version	PCB plug-in connector, male header, Flange, Reflow solder connection, 3.50 mm, No. of poles: 2, 180°, Solder pin length (l): 1.5 mm, tinned, Black, Box
GTIN (EAN)	4032248131532
Qty.	100 pc(s).
Product data	IEC: 320 V / 15 A UL: 300 V / 10 A
Packaging	Box

Creation date August 29, 2013 10:58:05 AM CEST

OMNIMATE Signal - series BL/SL 3.50 SL-SMT 3.50/02/180F 1.5SN BK BX

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Technical data

Dimensions and weights

Net weight 1.32 g

System parameters

Product family	OMNIMATE Signal - series BL/SL 3.50	Mounting onto the PCB	Reflow solder connection
Outgoing elbow	180°	Pitch in mm (P)	3.5 mm
Pitch in inches (P)	0.138 inch	No. of poles	2
Solder pin length (l)	1.5 mm	Pin dimensions	d = 1.2 mm, Octagonal
Can be coded	Yes	Number of solder pins per pole	1
Solder eyelet hole diameter (D)	1.4 mm	Solder eyelet hole diameter tolerance (D)	+ 0.1 mm
L1 in mm	3.5 mm	L1 in inches	0.138 inch
Insulation resistance	10 ³ Ω	Touch-safe protection acc. to DIN VDE 0470	IP 10
Touch-safe protection acc. to DIN VDE 57 106	Safe from back-of-hand touch		

Material data

Insulating material	LCP GF	Colour	Black
Insulating material group	IIIa	UL 94 flammability rating	V-0
CTI	≥ 175	Temperature of glow-wire test	960 °C
Duration of glow-wire test	30 s	Contact material	CuSn
Contact surface	tinned	Max. relative humidity during storage	80 %

DIN IEC rating data

Rated current, min. no. of poles (Tu=20°C)	15 A	Rated current, max. no. of poles (Tu=20°C)	12 A
Rated current, number of poles (Tu=40°C), min	13 A	Rated current, number of poles (Tu=40°C), max.	10 A
Rated voltage for surge voltage class pollution degree III/3	160 V	Rated impulse voltage for surge voltage classcontamination degree III/3	2.5 kV
Rated voltage for surge voltage class pollution degree III/2	160 V	Rated impulse voltage for surge voltage classpollution degree III/2	2.5 kV
Rated voltage for surge voltage class pollution degree II/2	320 V	Rated impulse voltage for surge voltage classpollution degree II/2	2.5 kV
Short-time withstand current resistance	3 x 1s with 100 A		

CSA rating data

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

OMNIMATE Signal - series BL/SL 3.50

SL-SMT 3.50/02/180F 1.5SN BK BX

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Technical data

UL 1059 rating data

Institute (UR)



Rated voltage (use group B)

300 V

Rated current (use group B)

10 A

Rated voltage (use group D)

300 V

Rated current (use group D)

10 A

Classifications

ETIM 3.0

EC001284

UNSPSC

30-21-18-10

eClass 5.1

27-26-07-04

eClass 6.2

27-26-07-04

eClass 7.1

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 = 1.5+0.1mm from 9-pole
- 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.

Approvals

Approvals



ROHS

Conform

Downloads

CAD Library (P-CAD Format - ASCII)

[SL-SMT.zip](#)

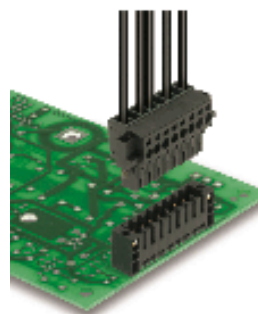
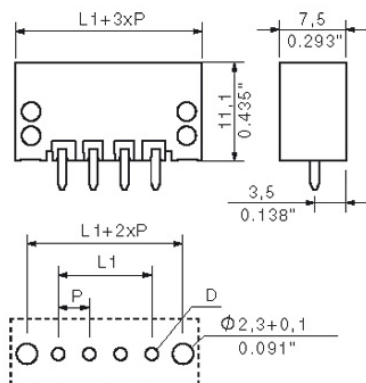
CAD Library (P-CAD Format - Standard)

[SL-SMT.zip](#)[3-D model](#)

OMNIMATE Signal - series BL/SL 3.50
SL-SMT 3.50/02/180F 1.5SN BK BX

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Drawings



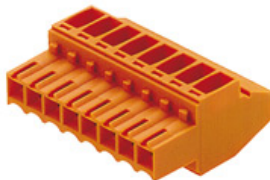
OMNIMATE Signal - series BL/SL 3.50

SL-SMT 3.50/02/180F 1.5SN BK BX

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Mating connector (conditionally pluggable)

BL 3.50/90



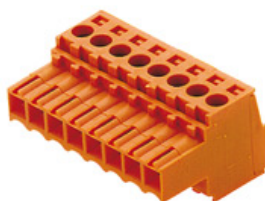
Female connectors with clamping yoke screw system for connecting conductors at 3.50 mm pitch. They include space for labelling and can be coded.

- 0.20 - 1.5 mm² (IEC) / 28 - 14 AWG (UL)
- 250 V (IEC) / 300 V (UL)
- 17 A (IEC) / 10 A (UL)

General ordering data

Type	Order No.	Version	GTIN (EAN)	Qty.	Product data	Packaging
BL 3.50/02/90 SN BK BX	1638780000	PCB plug-in connector, female plug, 3.50 mm, No. of poles: 2, 90°, Clamping yoke connection, Clamping range, rated connection, max.: 1.5 mm ² , Box	4008190276324	100 pc(s).	IEC: 320 V / 12 A / 0.2 - 1.5 mm ² UL: 300 V / 8 A / AWG 28 - AWG 14	Box
BL 3.50/02/90 SN OR BX	1638550000	PCB plug-in connector, female plug, 3.50 mm, No. of poles: 2, 90°, Clamping yoke connection, Clamping range, rated connection, max.: 1.5 mm ² , Box	4008190276102	100 pc(s).	IEC: 320 V / 12 A / 0.2 - 1.5 mm ² UL: 300 V / 8 A / AWG 28 - AWG 14	Box

BL 3.50/180



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

- 0.20 - 1.5 mm² (IEC) / 28 - 14 AWG (UL)
- 250 V (IEC) / 300 V (UL)
- 17 A (IEC) / 10 A (UL)

General ordering data

Type	Order No.	Version	GTIN (EAN)	Qty.	Product data	Packaging
BL 3.50/02/180 SN BK BX	1615670000	PCB plug-in connector, female plug, 3.50 mm, No. of poles: 2, 180°, Clamping yoke connection, Clamping range, rated connection, max.: 1.5 mm ² , Box	4008190058890	100 pc(s).	IEC: 320 V / 17 A / 0.2 - 1.5 mm ² UL: 300 V / 10 A / AWG 28 - AWG 14	Box
BL 3.50/02/180 SN OR BX	1597360000	PCB plug-in connector, female plug, 3.50 mm, No. of poles: 2, 180°, Clamping yoke connection, Clamping	4008190435868	100 pc(s).	IEC: 320 V / 17 A / 0.2 - 1.5 mm ² UL: 300 V / 10 A / AWG 28 - AWG 14	Box

OMNIMATE Signal - series BL/SL 3.50 SL-SMT 3.50/02/180F 1.5SN BK BX

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Mating connector (conditionally pluggable)

range, rated connection,
max.: 1.5 mm², Box

BL 3.50/270



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

- 0.20 - 1.5 mm² (IEC) / 28 - 14 AWG (UL)
- 250 V (IEC) / 300 V (UL)
- 17 A (IEC) / 10 A (UL)

General ordering data

Type	Order No.	Version	GTIN (EAN)	Qty.	Product data	Packaging
BL 3.50/02/270 SN BK BX	1639700000	PCB plug-in connector, female plug, 3.50 mm, No. of poles: 2, 270°, Clamping yoke connection, Clamping range, rated connection, max.: 1.5 mm ² , Box	4008190277253	100 pc(s).	IEC: 320 V / 12 A / 0.2 - 1.5 mm ² UL: 300 V / 8 A / AWG 28 - AWG 14	Box
BL 3.50/02/270 SN OR BX	1639470000	PCB plug-in connector, female plug, 3.50 mm, No. of poles: 2, 270°, Clamping yoke connection, Clamping range, rated connection, max.: 1.5 mm ² , Box	4008190277024	100 pc(s).	IEC: 320 V / 12 A / 0.2 - 1.5 mm ² UL: 300 V / 8 A / AWG 28 - AWG 14	Box

BLIDCB 3.5



Female connectors for fast wiring with IDC system for connecting conductors at 3.50 mm pitch. They include space for labelling and can be coded.

- 0.35 - 0.5 mm² (IEC) / 22 - 20 AWG (UL)
- 250 V (IEC) / 300 V (UL)
- 6 A (IEC) / 7 A (UL)

General ordering data

Type	Order No.	Version	GTIN (EAN)	Qty.	Product data	Packaging
BLIDCB 3.50/02/- SN OR BX	1751380000	PCB plug-in connector, female plug, 3.50 mm, No. of poles: 2, 90°/270°, IDC terminal, Clamping range, rated connection, max.: 0.5 mm ² , Box	4032248174201	10 pc(s).	IEC: 250 V / 6 A / 0.35 - 0.5 mm ² UL: 300 V / 7 A / AWG 22 - AWG 20	Box
BLIDCB 3.50/02/- SN BK BX	1770670000	PCB plug-in connector, female plug, 3.50 mm, No. of poles: 2, 90°/270°, IDC	4032248174454	10 pc(s).	IEC: 250 V / 6 A / 0.35 - 0.5 mm ² UL: 300 V / 7 A / AWG 22 - AWG 20	Box

Creation date August 29, 2013 10:58:06 AM CEST

OMNIMATE Signal - series BL/SL 3.50
SL-SMT 3.50/02/180F 1.5SN BK BX

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Mating connector (conditionally pluggable)

terminal, Clamping range,
rated connection, max.: 0.5
mm², Box

OMNIMATE Signal - series BL/SL 3.50 SL-SMT 3.50/02/180F 1.5SN BK BX

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Mating connector (fully pluggable)

BL 3.50/180F



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

- 0.20 - 1.5 mm² (IEC) / 28 - 14 AWG (UL)
- 250 V (IEC) / 300 V (UL)
- 17 A (IEC) / 10 A (UL)

General ordering data

Type	Order No.	Version	GTIN (EAN)	Qty.	Product data	Packaging
BL 3.50/02/180F SN BK BX	1615780000	PCB plug-in connector, female plug, 3.50 mm, No. of poles: 2, 180°, Clamping yoke connection, Clamping range, rated connection, max.: 1.5 mm ² , Box	4008190061272	100 pc(s).	IEC: 320 V / 17 A / 0.2 - 1.5 mm ² UL: 300 V / 10 A / AWG 28 - AWG 14	Box
BL 3.50/02/180F SN OR BX	1606640000	PCB plug-in connector, female plug, 3.50 mm, No. of poles: 2, 180°, Clamping yoke connection, Clamping range, rated connection, max.: 1.5 mm ² , Box	4008190187088	100 pc(s).	IEC: 320 V / 17 A / 0.2 - 1.5 mm ² UL: 300 V / 10 A / AWG 28 - AWG 14	Box

BLIDCB 3.5F



Female connectors for fast wiring with IDC system for connecting conductors at 3.50 mm pitch. They include space for labelling and can be coded.

- 0.35 - 0.5 mm² (IEC) / 22 - 20 AWG (UL)
- 250 V (IEC) / 300 V (UL)
- 6 A (IEC) / 7 A (UL)

General ordering data

Type	Order No.	Version	GTIN (EAN)	Qty.	Product data	Packaging
BLIDCB 3.50/02/-F SN BK BX	1770740000	PCB plug-in connector, female plug, 3.50 mm, No. of poles: 2, 90°/270°, IDC terminal, Clamping range, rated connection, max.: 0.5 mm ² , Box	4032248174522	10 pc(s).	IEC: 250 V / 6 A / 0.35 - 0.5 mm ² UL: 300 V / 7 A / AWG 22 - AWG 20	Box
BLIDCB 3.50/02/-F SN OR BX	1751450000	PCB plug-in connector, female plug, 3.50 mm, No. of poles: 2, 90°/270°, IDC terminal, Clamping range,	4032248174386	10 pc(s).	IEC: 250 V / 6 A / 0.35 - 0.5 mm ² UL: 300 V / 7 A / AWG 22 - AWG 20	Box

OMNIMATE Signal - series BL/SL 3.50 SL-SMT 3.50/02/180F 1.5SN BK BX

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Mating connector (fully pluggable)

rated connection, max.: 0.5
mm², Box

BL 3.50/270F



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

- 0.20 - 1.5 mm² (IEC) / 28 - 14 AWG (UL)
- 250 V (IEC) / 300 V (UL)
- 17 A (IEC) / 10 A (UL)

General ordering data

Type	Order No.	Version	GTIN (EAN)	Qty.	Product data	Packaging
BL 3.50/02/270F SN OR BX	1639930000	PCB plug-in connector, female plug, 3.50 mm, No. of poles: 2, 270°, Clamping yoke connection, Clamping range, rated connection, max.: 1.5 mm ² , Box	4008190277482	100 pc(s).	IEC: 320 V / 12 A / 0.2 - 1.5 mm ² UL: 300 V / 8 A / AWG 28 - AWG 14	Box
BL 3.50/02/270F SN BK BX	1640160000	PCB plug-in connector, female plug, 3.50 mm, No. of poles: 2, 270°, Clamping yoke connection, Clamping range, rated connection, max.: 1.5 mm ² , Box	4008190277727	100 pc(s).	IEC: 320 V / 12 A / 0.2 - 1.5 mm ² UL: 300 V / 8 A / AWG 28 - AWG 14	Box

BL 3.50/180LH



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

- 0.20 - 1.5 mm² (IEC) / 28 - 14 AWG (UL)
- 250 V (IEC) / 300 V (UL)
- 17 A (IEC) / 10 A (UL)

General ordering data

Type	Order No.	Version	GTIN (EAN)	Qty.	Product data	Packaging
BL 3.50/02/180LH SN BK BX	1687880000	PCB plug-in connector, female plug, 3.50 mm, No. of poles: 2, 180°, Clamping yoke connection, Clamping range, rated connection, max.: 1.5 mm ² , Box	4008190853433	100 pc(s).	IEC: 320 V / 17 A / 0.2 - 1.5 mm ² UL: 300 V / 10 A / AWG 28 - AWG 14	Box
BL 3.50/02/180LH SN OR BX	1687650000	PCB plug-in connector, female plug, 3.50 mm, No. of poles: 2, 180°, Clamping	4008190853204	100 pc(s).	IEC: 320 V / 17 A / 0.2 - 1.5 mm ² UL: 300 V / 10 A / AWG 28 - AWG 14	Box

Creation date August 29, 2013 10:58:06 AM CEST

OMNIMATE Signal - series BL/SL 3.50 SL-SMT 3.50/02/180F 1.5SN BK BX

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Mating connector (fully pluggable)

yoke connection, Clamping
range, rated connection,
max.: 1.5 mm², Box

BL 3.50/90F



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

- 0.20 - 1.5 mm² (IEC) / 28 - 14 AWG (UL)
- 250 V (IEC) / 300 V (UL)
- 17 A (IEC) / 10 A (UL)

General ordering data

Type	Order No.	Version	GTIN (EAN)	Qty.	Product data	Packaging
BL 3.50/02/90F SN OR BX	1639010000	PCB plug-in connector, female plug, 3.50 mm, No. of poles: 2, 90°, Clamping yoke connection, Clamping range, rated connection, max.: 1.5 mm ² , Box	4008190276553	100 pc(s).	IEC: 320 V / 12 A / 0.2 - 1.5 mm ² UL: 300 V / 8 A / AWG 28 - AWG 14	Box
BL 3.50/02/90F SN BK BX	1639240000	PCB plug-in connector, female plug, 3.50 mm, No. of poles: 2, 90°, Clamping yoke connection, Clamping range, rated connection, max.: 1.5 mm ² , Box	4008190276782	100 pc(s).	IEC: 320 V / 12 A / 0.2 - 1.5 mm ² UL: 300 V / 8 A / AWG 28 - AWG 14	Box

Recommended reflow soldering profile

Weidmüller Interface GmbH & Co. KG

Klingenbergstraße 16

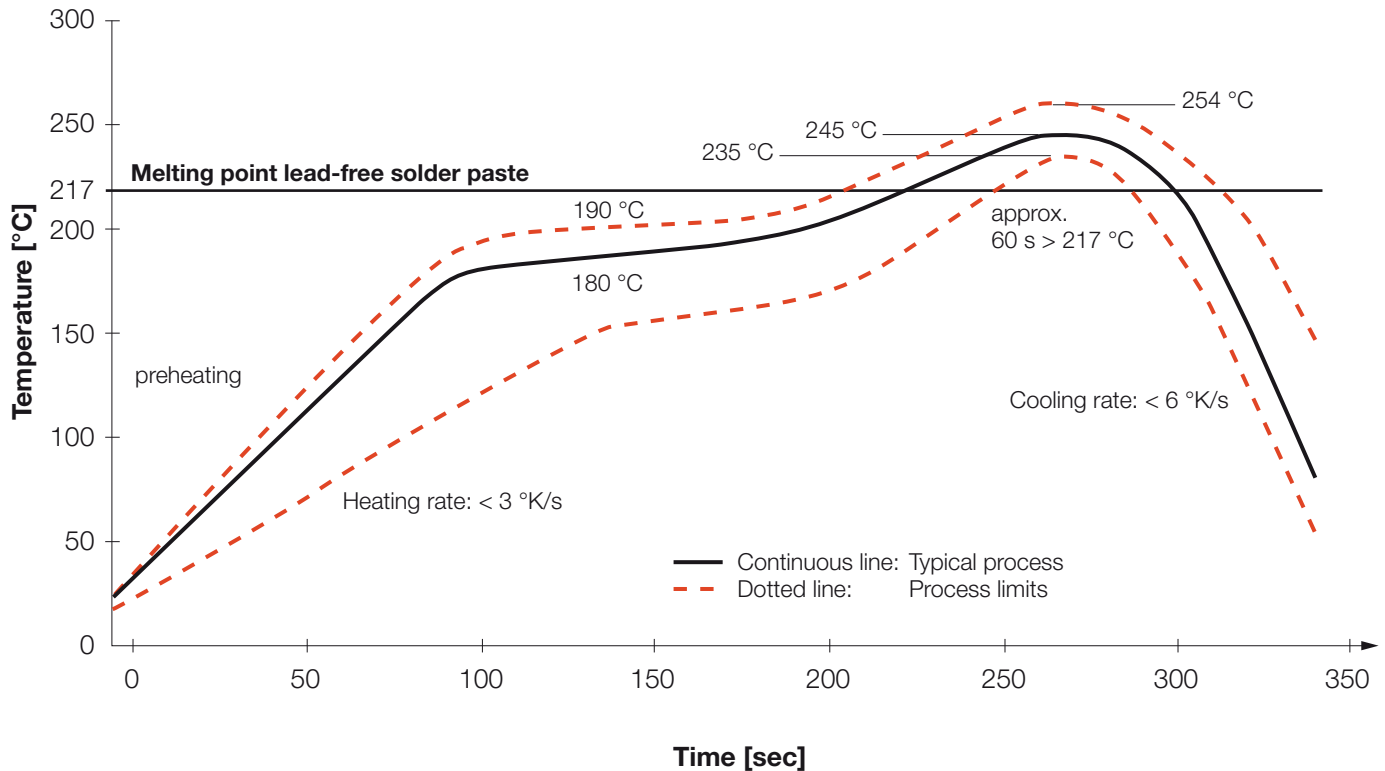
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Reflow soldering profile

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.

