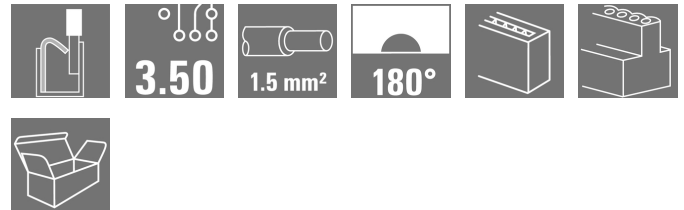


OMNIMATE Signal - series BL/SL 3.50 BLF 3.50/19/180 SN OR BX

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Connect efficiently - in a small space: female header with spring connection (PUSH IN) as a plug-in connection level; used together with male headers in 3.50 mm pitch.

General ordering data

Type	BLF 3.50/19/180 SN OR BX
Order No.	2459220000
Version	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 19, 180°, PUSH IN, Spring connection, Clamping range, max. : 1.5 mm², Box
GTIN (EAN)	4050118474572
Qty.	24 pc(s).
Product data	IEC: 320 V / 17.5 A / 0.14 - 1.5 mm² UL: 300 V / AWG 26 - AWG 16
Packaging	Box

Creation date May 2, 2020 1:42:51 PM CEST

**OMNIMATE Signal - series BL/SL 3.50
BLF 3.50/19/180 SN OR BX**

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Technical data**Dimensions and weights**

Width	66.5 mm	Width (inches)	2.618 inch
Height	9 mm	Height (inches)	0.354 inch
Depth	22.7 mm	Depth (inches)	0.894 inch
Net weight	15.833 g		

System Parameters

Product family	OMNIMATE Signal - series BL/SL 3.50		
Type of connection	Field connection		
Wire connection method	PUSH IN, Spring connection		
Pitch in mm (P)	3.5 mm		
Pitch in inches (P)	0.138 inch		
Conductor outlet direction	180°		
Number of poles	19		
L1 in mm	63 mm		
L1 in inches	2.48 inch		
Number of rows	1		
Pin series quantity	1		
Rated cross-section	1.5 mm ²		
Touch-safe protection acc. to DIN VDE 57 106	Safe from finger touch		
Touch-safe protection acc. to DIN VDE 0470	IP 20		
Volume resistance	≤ 5mΩ		
Can be coded	Yes		
Stripping length	8 mm		
Stripping length tolerance	min.	0 mm	
	max.	1 mm	
Screwdriver blade	0.4 x 2.5		
Screwdriver blade standard	DIN 5264-A		
Plugging cycles	25		
Plugging force/pole, max.	6 N		
Pulling force/pole, max.	6 N		

Material data

Insulating material	PA GF	Colour	orange
Colour of operational elements	black	Material of operational elements	PA 66/6
Colour chart (similar)	RAL 2000	Insulating material group	II
Comparative Tracking Index (CTI)	≥ 400, ≤ 600	Insulation strength	10 ⁶ Ω
UL 94 flammability rating	V-0	GWFI	960 °C
Contact material	Copper alloy	Contact surface	tinned
Storage temperature, min.	-25 °C	Storage temperature, max.	50 °C
Max. relative humidity during storage	70 %	Operating temperature, min.	-50 °C
Operating temperature, max.	120 °C	Temperature range, installation, min.	-30 °C
Temperature range, installation, max.	100 °C		

Conductors suitable for connection

Clamping range, min.	0.14 mm ²
Clamping range, max.	1.5 mm ²
Wire connection cross section AWG, min.	AWG 26
Wire connection cross section AWG, max.	AWG 16

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Technical data

Solid, min. H05(07) V-U	0.14 mm ²			
Solid, max. H05(07) V-U	1.5 mm ²			
Flexible, min. H05(07) V-K	0.14 mm ²			
Flexible, max. H05(07) V-K	1.5 mm ²			
w. plastic collar ferrule, DIN 46228 pt 4, min.	0.25 mm ²			
w. plastic collar ferrule, DIN 46228 pt 4, max.	1 mm ²			
w. wire end ferrule, DIN 46228 pt 1, min.	0.25 mm ²			
w. wire end ferrule, DIN 46228 pt 1, max.	1 mm ²			
Plug gauge in accordance with EN 60999 a x b; ø	2.4 mm x 1.5 mm			
Clampable conductor	Cross-section for conductor connection	Type	fine-wired	
		nominal	0.25 mm ²	
	wire end ferrule	Stripping length	nominal	10 mm
		Recommended wire-end ferrule	H0,25/12 HBL	
		Cross-section for conductor connection	Type	fine-wired
	nominal		0.34 mm ²	
	wire end ferrule	Stripping length	nominal	10 mm
		Recommended wire-end ferrule	H0,34/12 TK	
		Cross-section for conductor connection	Type	fine-wired
	nominal		0.5 mm ²	
	wire end ferrule	Stripping length	nominal	10 mm
		Recommended wire-end ferrule	H0,5/14 OR	
		Cross-section for conductor connection	Type	fine-wired
	nominal		0.75 mm ²	
	wire end ferrule	Stripping length	nominal	10 mm
		Recommended wire-end ferrule	H0,75/14T HBL	
		Cross-section for conductor connection	Type	fine-wired
	nominal		1 mm ²	
	wire end ferrule	Stripping length	nominal	10 mm
		Recommended wire-end ferrule	H1,0/14 GE	
		Reference text	The outside diameter of the plastic collar should not be larger than the pitch (P). Length of ferrules is to be chosen depending on the product and the rated voltage.	
	Max. clamping range	1.5 mm ²		

Rated data acc. to IEC

tested acc. to standard	IEC 60664-1, IEC 61984	Rated current, min. number of poles (Tu=20°C)	17.5 A
Rated current, max. number of poles (Tu=20°C)	14.7 A	Rated current, min. number of poles (Tu=40°C)	17.1 A
Rated current, max. number of poles (Tu=40°C)	13.1 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	Short-time withstand current resistance	1 x 1s with 120 A


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

Rated voltage (Use group B / CSA)	300 V	Rated voltage (Use group C / CSA)	50 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	Wire cross-section, AWG, min.	AWG 26
Wire cross-section, AWG, max.	AWG 16		

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 C / UL 1059)	50 V
Rated voltage (Use group D / UL 1059)	300 V	Rated current (Use group D / UL 1059)	10 A
Wire cross-section, AWG, min.	AWG 26	Wire cross-section, AWG, max.	AWG 16
Reference to approval values	Specifications are maximum values, details - see approval certificate.		

Packing

Packaging	Box	VPE length	350 mm
VPE width	135 mm	VPE height	30 mm

Type tests

Visual and dimensional test	Standard	IEC 605 12-1-1:2002-02
	Test	dimensional inspection
	Evaluation	passed
	Standard	IEC 605 12-1-2:2002-02
	Test	weight check
	Evaluation	passed
Test: Durability of markings	Standard	IEC 61984:2001-10 section 6.2
	Test	visual examination
	Evaluation	passed
Test: Misengagement (Non-interchangeability)	Standard	IEC 60068-2-70:1995-12 test Xb
	Test	mark of origin, type identification, pitch, type of material, date clock, approval marking UL, approval marking CSA, durability
	Evaluation	available
	Standard	IEC 605 12-13-5:2006-02
	Test	intentional plugging
	Evaluation	passed
	Test	180° turned without coding elements
	Evaluation	passed
	Test	180° turned with coding elements
	Evaluation	passed
Test	visual examination	
Evaluation	passed	

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Technical data

Test: Clampable cross section	Standard	IEC 60999-1:1999-11 section 9.1, IEC 60947-1:2011-03 section 8.2.4.5.1	
	Conductor type	Type of conductor and conductor cross-section	solid 0.14 mm ²
		Type of conductor and conductor cross-section	stranded 0.14 mm ²
		Type of conductor and conductor cross-section	solid 1.5 mm ²
		Type of conductor and conductor cross-section	stranded 1.5 mm ²
		Type of conductor and conductor cross-section	AWG 26/1
		Type of conductor and conductor cross-section	AWG 26/19
		Type of conductor and conductor cross-section	AWG 16/1
		Type of conductor and conductor cross-section	AWG 16/19
Evaluation	passed		
Test for damage to and accidental loosening of conductors	Standard	IEC 60999-1:1999-11 section 9.4 bzw. section 8.10	
	Requirement	0.3 kg	
	Conductor type	Type of conductor and conductor cross-section	H05V-U0.5
		Type of conductor and conductor cross-section	H05V-K0.5
	Evaluation	passed	
	Requirement	0.4 kg	
	Conductor type	Type of conductor and conductor cross-section	H07V-U1.5
		Type of conductor and conductor cross-section	H07V-K1.5
		Type of conductor and conductor cross-section	AWG 16/1
		Type of conductor and conductor cross-section	AWG 16/19
	Evaluation	passed	
	Requirement	0.2 kg	
	Conductor type	Type of conductor and conductor cross-section	AWG 26/1
		Type of conductor and conductor cross-section	AWG 26/19
	Evaluation	passed	

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Technical data

Pull-out test	Standard	IEC 60999-1:1999-11 section 9.5		
	Requirement	≥20 N		
	Conductor type	Type of conductor and conductor cross-section	H05V-U0.5	
		Type of conductor and conductor cross-section	H05V-K0.5	
	Evaluation	passed		
	Requirement	≥40 N		
	Conductor type	Type of conductor and conductor cross-section	H07V-U1.5	
		Type of conductor and conductor cross-section	H07V-K1.5	
		Type of conductor and conductor cross-section	AWG 16/1	
		Type of conductor and conductor cross-section	AWG 16/19	
	Evaluation	passed		
	Requirement	≥10 N		
	Conductor type	Type of conductor and conductor cross-section	AWG 26/1	
		Type of conductor and conductor cross-section	AWG 26/19	
	Evaluation	passed		

Classifications

ETIM 6.0	EC002638	ETIM 7.0	EC002638
eClass 9.0	27-44-03-09	eClass 9.1	27-44-03-09
eClass 10.0	27-44-03-09		

Notes

Notes	<ul style="list-style-type: none"> • Additional colours on request • Gold-plated contact surfaces on request • Rated current related to rated cross-section & min. No. of poles. • Wire end ferrule without plastic collar to DIN 46228/1 • Wire end ferrule with plastic collar to DIN 46228/4 • 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. • The test point can only be used as potential-pickup point.
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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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Creation date May 2, 2020 1:42:51 PM CEST

Data sheet**OMNIMATE Signal - series BL/SL 3.50
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Technical data**Approvals**

Approvals

**Downloads**

Engineering Data

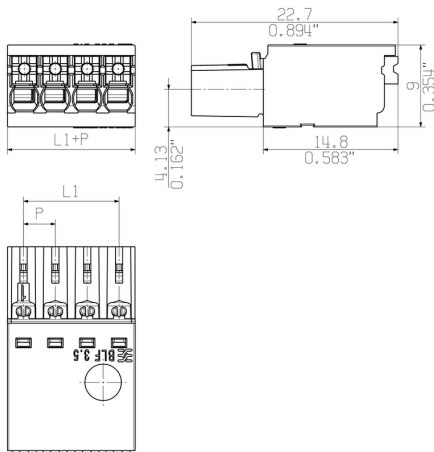
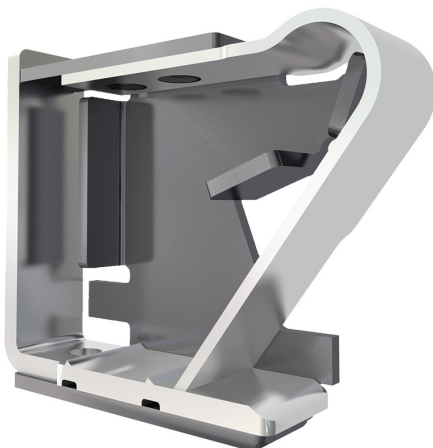
[STEP](#)

White paper PUSH IN wire connection

[Download Whitepaper](#)

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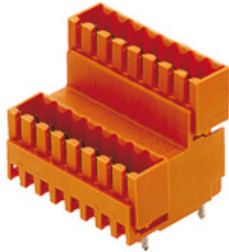
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Drawings**Product benefits**

Solid PUSH IN contact
Safe and durable

**OMNIMATE Signal - series BL/SL 3.50
BLF 3.50/19/180 SN OR BX**

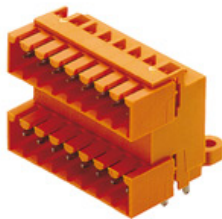
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Mating connector (fully pluggable)
SLD 3.50V/180G


Double-level, staggered pin header for wave soldering at 3.50 mm pitch. They are available in closed and flanged versions. The male connectors provide space for labelling and can be coded.

General ordering data

Type	SLD 3.50V/38/180G 3.2SN ...	Version	Product data	Packaging
Order No.	1891270000	PCB plug-in connector, male header, closed side, THT solder	IEC: 200 V / 10.5 A	Box
GTIN (EAN)	4032248500819	connection, 3.50 mm, Number of poles: 38, 180°, Solder pin length	UL: 300 V / 8 A	
Qty.	10 pc(s).	(l): 3.2 mm, tinned, orange, Box		

SLD 3.50/90G


Two-tier pin header for wave soldering in 3.50 mm pitch. The connector is available in open, closed and flange versions. The male connectors provide space for labelling and can be coded. Packed in a cardboard box.

General ordering data

Type	SLD 3.50/38/90G 3.2SN O ...	Version	Product data	Packaging
Order No.	1633750000	PCB plug-in connector, male header, closed side, THT solder	IEC: 200 V / 10.5 A	Box
GTIN (EAN)	4008190258207	connection, 3.50 mm, Number of poles: 38, 90°, Solder pin length (l):	UL: 300 V / 8 A	
Qty.	10 pc(s).	3.2 mm, tinned, orange, Box		

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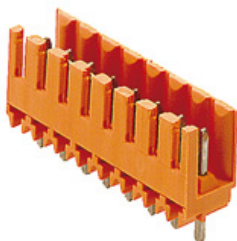
Mating connector (fully pluggable)
SL-SMT 3.5/180G Box


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 3.50/19/180G 1.5 ...	Version	Product data	Packaging
Order No.	1753152001	PCB plug-in connector, male header, closed side, THT/THR solder connection, 3.50 mm, Number of poles: 19, 180°, Solder pin length (l): 1.5 mm, tinned, black, Box	IEC: 320 V / 15 A UL: 300 V / 10 A	Box
GTIN (EAN)	4032248131051			
Qty.	20 pc(s).			
Type	SL-SMT 3.50/19/180G 3.2 ...	Version	Product data	Packaging
Order No.	1842480000	PCB plug-in connector, male header, closed side, THT/THR solder connection, 3.50 mm, Number of poles: 19, 180°, Solder pin length (l): 3.2 mm, tinned, black, Box	IEC: 320 V / 15 A UL: 300 V / 10 A	Box
GTIN (EAN)	4032248353835			
Qty.	20 pc(s).			

SL 3.50/180


Pin headers for wave soldering in 3.50 mm pitch

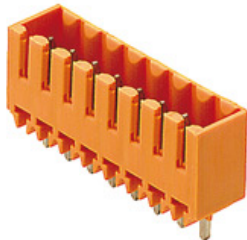
- **Plugging direction is parallel (90°), straight 180° or angled (135°) to the PCB**
- **Housing variant: screw flange (F)**
- **Packed in a cardboard box (BX)**
- **Pin header can be coded**

General ordering data

Type	SL 3.50/19/180 3.2SN OR ...	Version	Product data	Packaging
Order No.	1621420000	PCB plug-in connector, male header, open side, THT solder connection, 3.50 mm, Number of poles: 19, 180°, Solder pin length (l): 3.2 mm, tinned, orange, Box	IEC: 320 V / 17 A UL: 300 V / 10 A	Box
GTIN (EAN)	4008190172459			
Qty.	20 pc(s).			

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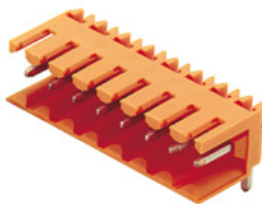
Mating connector (fully pluggable)
SL 3.50/180G


Pin headers for wave soldering in 3.50 mm pitch

- Plugging direction is parallel (90°), straight 180° or angled (135°) to the PCB
- Housing variant: screw flange (F)
- Packed in a cardboard box (BX)
- Pin header can be coded

General ordering data

Type	SL 3.50/19/180G 3.2SN O ...	Version	Product data	Packaging
Order No.	1621810000	PCB plug-in connector, male header, closed side, THT solder	IEC: 320 V / 17 A	Box
GTIN (EAN)	4008190181048	connection, 3.50 mm, Number of poles: 19, 180°, Solder pin length	UL: 300 V / 10 A	
Qty.	20 pc(s).	(I): 3.2 mm, tinned, orange, Box		

SL 3.50/90


Pin headers for wave soldering in 3.50 mm pitch

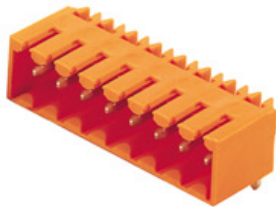
- Plugging direction is parallel (90°), straight 180° or angled (135°) to the PCB
- Housing variant: screw flange (F)
- Packed in a cardboard box (BX)
- Pin header can be coded

General ordering data

Type	SL 3.50/19/90 3.2SN OR ...	Version	Product data	Packaging
Order No.	1619010000	PCB plug-in connector, male header, open side, THT solder	IEC: 320 V / 17 A	Box
GTIN (EAN)	4008190132231	connection, 3.50 mm, Number of poles: 19, 90°, Solder pin length (I):	UL: 300 V / 10 A	
Qty.	20 pc(s).	3.2 mm, tinned, orange, Box		

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Mating connector (fully pluggable)
SL 3.50/90G


Pin headers for wave soldering in 3.50 mm pitch

- Plugging direction is parallel (90°), straight 180° or angled (135°) to the PCB
- Housing variant: screw flange (F)
- Packed in a cardboard box (BX)
- Pin header can be coded

General ordering data

Type	SL 3.50/19/90G 3.2SN OR ...	Version	Product data	Packaging
Order No.	1619400000	PCB plug-in connector, male header, closed side, THT solder	IEC: / 17 A	Box
GTIN (EAN)	4008190138981	connection, 3.50 mm, Number of poles: 19, 90°, Solder pin length (l):	UL: 300 V / 10 A	
Qty.	20 pc(s).	3.2 mm, tinned, orange, Box		

SLD 3.50V/90G


Double-level, staggered pin header for wave soldering at 3.50 mm pitch. They are available in closed and flanged versions. The male connectors provide space for labelling and can be coded.

General ordering data

Type	SLD 3.50V/38/90G 3.2SN ...	Version	Product data	Packaging
Order No.	1890660000	PCB plug-in connector, male header, closed side, THT solder	IEC: 200 V / 10.5 A	Box
GTIN (EAN)	4032248499687	connection, 3.50 mm, Number of poles: 38, 90°, Solder pin length (l):	UL: 300 V / 8 A	
Qty.	10 pc(s).	3.2 mm, tinned, orange, Box		

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Mating connector (fully pluggable)
SL-SMT 3.5/90G Box


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 3.50/19/90G 1.5S ...	Version	Product data	Packaging
Order No.	1761712001	PCB plug-in connector, male header, closed side, THT/THR solder connection, 3.50 mm, Number of poles: 19, 90°, Solder pin length (l): 1.5 mm, tinned, black, Box	IEC: 320 V / 15 A UL: 300 V / 10 A	Box
GTIN (EAN)	4032248132300			
Qty.	20 pc(s).			
Type	SL-SMT 3.50/19/90G 3.2S ...	Version	Product data	Packaging
Order No.	1841800000	PCB plug-in connector, male header, closed side, THT/THR solder connection, 3.50 mm, Number of poles: 19, 90°, Solder pin length (l): 3.2 mm, tinned, black, Box	IEC: 320 V / 15 A UL: 300 V / 10 A	Box
GTIN (EAN)	4032248353156			
Qty.	20 pc(s).			