

## BLF 3.50/16/180 SN OR BX

Weidmüller Interface GmbH & Co. KG

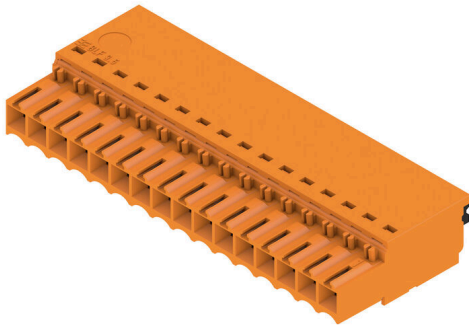
Klingenbergstraße 26

D-32758 Detmold

Germany

www.weidmueller.com

### Product image



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

Version	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 16, 180°, PUSH IN with actuator, Clamping range, max. : 1.5 mm², Box
Order No.	<a href="#">2459190000</a>
Type	BLF 3.50/16/180 SN OR BX
GTIN (EAN)	4050118474541
Qty.	30 items
Product data	IEC: 320 V / 17.5 A / 0.14 - 1.5 mm² UL: 300 V / 10 A / AWG 26 - AWG 16
Packaging	Box

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## Technical data

## Approvals

Approvals



ROHS Conform  
UL File Number Search [UL Website](#)  
Certificate No. (cURus) E60693

## Dimensions and weights

Depth	22.7 mm	Depth (inches)	0.8937 inch
Height	9 mm	Height (inches)	0.3543 inch
Width	56 mm	Width (inches)	2.2047 inch
Net weight	10.97 g		

## Environmental Product Compliance

RoHS Compliance Status	Compliant without exemption		
REACH SVHC	No SVHC above 0.1 wt%		
Product Carbon Footprint	Cradle to gate	0,37 kg CO2 eq.	

## System Parameters

Product family	OMNIMATE Signal - series BL/SL 3.50		
Type of connection	Field connection		
Wire connection method	PUSH IN with actuator		
Pitch in mm (P)	3.50 mm		
Pitch in inches (P)	0.138 "		
Conductor outlet direction	180°		
Number of poles	16		
L1 in mm	52.50 mm		
L1 in inches	2.067 "		
Number of rows	1		
Pin series quantity	1		
Rated cross-section	1.5 mm <sup>2</sup>		
Touch-safe protection acc. to DIN VDE 57 106	Safe from finger touch		
Touch-safe protection acc. to DIN VDE 0470	IP20 plugged/ IP10 unplugged		
Protection degree	IP20, when fully mounted		
Volume resistance	≤5 mΩ		
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	Colour chart (similar)	RAL 2000

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Insulating material group	II	Comparative Tracking Index (CTI)	≥ 400, ≤ 600
Moisture Level (MSL)		UL 94 flammability rating	V-0
Contact material	Cu-alloy	Contact surface	tinned
Storage temperature, min.	-40 °C	Storage temperature, max.	70 °C
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 <sup>2</sup>
Clamping range, max.	1.5 mm <sup>2</sup>
Wire connection cross section AWG, min.	AWG 26
Wire connection cross section AWG, max.	AWG 16
Solid, min. H05(07) V-U	0.14 mm <sup>2</sup>
Solid, max. H05(07) V-U	1.5 mm <sup>2</sup>
Flexible, min. H05(07) V-K	0.14 mm <sup>2</sup>
Flexible, max. H05(07) V-K	1.5 mm <sup>2</sup>
w. plastic collar ferrule, DIN 46228 pt 4, min.	0.28 mm <sup>2</sup>
w. plastic collar ferrule, DIN 46228 pt 4, max.	1 mm <sup>2</sup>
w. wire end ferrule, DIN 46228 pt 1, min.	0.25 mm <sup>2</sup>
w. wire end ferrule, DIN 46228 pt 1, max.	1 mm <sup>2</sup>
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 <sup>2</sup>
wire end ferrule		Stripping length	nominal 10 mm
		Recommended wire-end ferrule	<a href="#">H0.25/12 HBL</a>
Cross-section for conductor connection		Type	fine-wired
		nominal	0.34 mm <sup>2</sup>
wire end ferrule		Stripping length	nominal 10 mm
		Recommended wire-end ferrule	<a href="#">H0.34/12 TK</a>
Cross-section for conductor connection		Type	fine-wired
		nominal	0.5 mm <sup>2</sup>
wire end ferrule		Stripping length	nominal 10 mm
		Recommended wire-end ferrule	<a href="#">H0.5/14 OR</a>
Cross-section for conductor connection		Type	fine-wired
		nominal	0.75 mm <sup>2</sup>
wire end ferrule		Stripping length	nominal 10 mm
		Recommended wire-end ferrule	<a href="#">H0.75/14T HBL</a>
Cross-section for conductor connection		Type	fine-wired
		nominal	1 mm <sup>2</sup>
wire end ferrule		Stripping length	nominal 10 mm
		Recommended wire-end ferrule	<a href="#">H1.0/14 GE</a>

**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.

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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)	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

### 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 16
Wire cross-section, AWG, max.	AWG 26		

### Rated data acc. to UL 1059

Institute (cURus)	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 B / UL 1059)	10 A
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	348.00 mm
VPE width	136.00 mm	VPE height	31.00 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: Misengagement (Non-interchangeability)	Test	intentional plugging
	Evaluation	passed
	Test	180° turned without coding elements
	Evaluation	passed
	Test	180° turned with coding elements

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**Technical data**

	Evaluation	passed
	Test	visual examination
	Evaluation	passed
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 <sup>2</sup>
		Type of conductor and conductor cross-section stranded 0.14 mm <sup>2</sup>
		Type of conductor and conductor cross-section solid 1.5 mm <sup>2</sup>
		Type of conductor and conductor cross-section stranded 1.5 mm <sup>2</sup>
		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
Pull-out test	Standard	IEC 60999-1:1999-11 section 9.5

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**Technical data**

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	

**Important note**

**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.

- Notes**
- Additional variants 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.
  - In accordance with IEC 61984, OMNIMATE-connectors are connectors without breaking capacity (COC). During designated use, connectors are not allowed to be engaged or disengaged when live or under load
  - Long term storage of the product with average temperature of 50 °C and maximum humidity 70%, 36 months

**Classifications**

ETIM 8.0	EC002638	ETIM 9.0	EC002638
ETIM 10.0	EC002638	ECLASS 14.0	27-46-02-02
ECLASS 15.0	27-46-02-02		

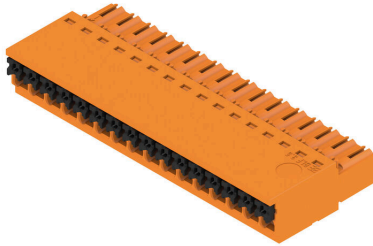
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**Drawings**

**Product image**



**Dimensional drawing**



**Derating curve**



**Derating curve**



**Product benefits**



Solid PUSH IN contactSafe and durable

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## Counterpart

## 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 3.50/16/180 3.2SN OR...	Version
Order No.	<a href="#">1604910000</a>	PCB plug-in connector, male header, open side, THT solder
GTIN (EAN)	4008190034023	connection, 3.50 mm, Number of poles: 16, 180°, Solder pin length
Qty.	50 ST	(l): 3.2 mm, tinned, orange, Box

## 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 3.50/16/180G 3.2SN O...	Version
Order No.	<a href="#">1604610000</a>	PCB plug-in connector, male header, closed side, THT solder
GTIN (EAN)	4008190112615	connection, 3.50 mm, Number of poles: 16, 180°, Solder pin length
Qty.	50 ST	(l): 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 3.50/16/90 3.2SN OR ...	Version
Order No.	<a href="#">1597350000</a>	PCB plug-in connector, male header, open side, THT solder
GTIN (EAN)	4008190105594	connection, 3.50 mm, Number of poles: 16, 90°, Solder pin length (l):
Qty.	50 ST	3.2 mm, tinned, orange, Box

## BLF 3.50/16/180 SN OR BX

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## Counterpart

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## SL 3.50/90G



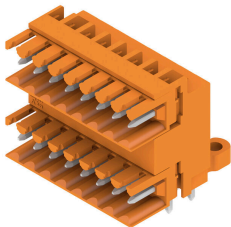
Pin headers for wave soldering in 3.50 mm pitch

- 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 3.50/16/90G 3.2SN BK...	Version
Order No.	<a href="#">1790320000</a>	PCB plug-in connector, male header, closed side, THT solder
GTIN (EAN)	4032248214785	connection, 3.50 mm, Number of poles: 16, 90°, Solder pin length (l):
Qty.	50 ST	3.2 mm, tinned, black, Box
Type	SL 3.50/16/90G 3.2SN OR...	Version
Order No.	<a href="#">1605210000</a>	PCB plug-in connector, male header, closed side, THT solder
GTIN (EAN)	4008190129255	connection, 3.50 mm, Number of poles: 16, 90°, Solder pin length (l):
Qty.	50 ST	3.2 mm, tinned, orange, Box

## SLD 3.50/90

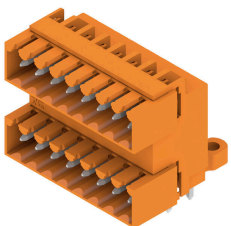


Two-tier pin header for wave soldering in 3.50 mm pitch. The connector is available in open, closed and flange versions. The male connectors provide space for labelling and can be coded. Packed in a cardboard box.

## General ordering data

Type	SLD 3.50/32/90 3.2SN OR...	Version
Order No.	<a href="#">1633490000</a>	PCB plug-in connector, male header, open side, THT solder
GTIN (EAN)	4008190257941	connection, 3.50 mm, Number of poles: 32, 90°, Solder pin length (l):
Qty.	10 ST	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.

## BLF 3.50/16/180 SN OR BX

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## Counterpart

### General ordering data

Type	SLD 3.50/32/90G 3.2SN O...	Version
Order No.	<a href="#">1633720000</a>	PCB plug-in connector, male header, closed side, THT solder
GTIN (EAN)	4008190258177	connection, 3.50 mm, Number of poles: 32, 90°, Solder pin length (l):
Qty.	10 ST	3.2 mm, tinned, orange, Box

### 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/32/180G 3.2SN...	Version
Order No.	<a href="#">1641180000</a>	PCB plug-in connector, male header, closed side, THT solder
GTIN (EAN)	4008190279585	connection, 3.50 mm, Number of poles: 32, 180°, Solder pin length
Qty.	10 ST	(l): 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/32/90G 3.2SN ...	Version
Order No.	<a href="#">1642310000</a>	PCB plug-in connector, male header, closed side, THT solder
GTIN (EAN)	4008190280833	connection, 3.50 mm, Number of poles: 32, 90°, Solder pin length (l):
Qty.	10 ST	3.2 mm, tinned, orange, Box

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## Counterpart

## 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 3.50/16/180G 1.5...	Version
Order No.	<a href="#">1753122001</a>	PCB plug-in connector, male header, closed side, THT/THR solder connection, 3.50 mm, Number of poles: 16, 180°, Solder pin length (l): 1.5 mm, tinned, black, Box
GTIN (EAN)	4032248131020	
Qty.	50 ST	
Type	SL-SMT 3.50/16/180G 3.2...	Version
Order No.	<a href="#">1842450000</a>	PCB plug-in connector, male header, closed side, THT/THR solder connection, 3.50 mm, Number of poles: 16, 180°, Solder pin length (l): 3.2 mm, tinned, black, Box
GTIN (EAN)	4032248353804	
Qty.	50 ST	

## SL-SMT 3.5/180G Tape



- 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 3.50/16/180G 3.2...	Version
Order No.	<a href="#">1928270000</a>	PCB plug-in connector, male header, closed side, THT/THR solder connection, 3.50 mm, Number of poles: 16, 180°, Solder pin length (l): 3.2 mm, tinned, black, Tape
GTIN (EAN)	4032248577477	
Qty.	230 ST	

## BLF 3.50/16/180 SN OR BX

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## Counterpart

### 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 3.50/16/90G 1.5S...	Version
Order No.	<a href="#">1761682001</a>	PCB plug-in connector, male header, closed side, THT/THR solder
GTIN (EAN)	4032248132270	connection, 3.50 mm, Number of poles: 16, 90°, Solder pin length (l):
Qty.	50 ST	1.5 mm, tinned, black, Box
Type	SL-SMT 3.50/16/90G 3.2S...	Version
Order No.	<a href="#">1841770000</a>	PCB plug-in connector, male header, closed side, THT/THR solder
GTIN (EAN)	4032248353125	connection, 3.50 mm, Number of poles: 16, 90°, Solder pin length (l):
Qty.	50 ST	3.2 mm, tinned, black, Box