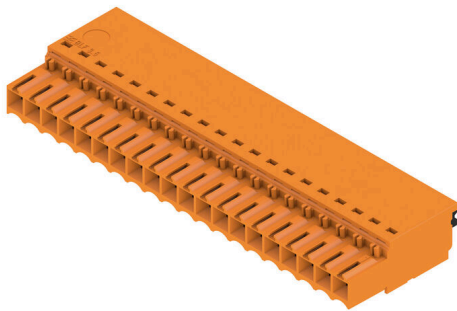


BLF 3.50/20/180 SN OR BX

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 Klingenbergstraße 26
 D-32758 Detmold
 Germany

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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: 20, 180°, PUSH IN with actuator, Clamping range, max. : 1.5 mm², Box
Order No.	2459230000
Type	BLF 3.50/20/180 SN OR BX
GTIN (EAN)	4050118474589
Qty.	24 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

BLF 3.50/20/180 SN OR BX

Weidmüller Interface GmbH & Co. KG
Klingenbergstraße 26
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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	70 mm	Width (inches)	2.7559 inch
Net weight	13.68 g		

Environmental Product Compliance

RoHS Compliance Status	Compliant without exemption		
REACH SVHC	No SVHC above 0.1 wt%		
Product Carbon Footprint	Cradle to gate	0,442 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	20		
L1 in mm	66.50 mm		
L1 in inches	2.618 "		
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	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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Technical data

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 ²
Clamping range, max.	1.5 mm ²
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 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.	0.28 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.

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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	349.00 mm
VPE width	136.00 mm	VPE height	30.00 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	<table border="1"> <tr> <td>Type of conductor and conductor cross-section</td> <td>solid 0.14 mm²</td> </tr> <tr> <td>Type of conductor and conductor cross-section</td> <td>stranded 0.14 mm²</td> </tr> <tr> <td>Type of conductor and conductor cross-section</td> <td>solid 1.5 mm²</td> </tr> <tr> <td>Type of conductor and conductor cross-section</td> <td>stranded 1.5 mm²</td> </tr> <tr> <td>Type of conductor and conductor cross-section</td> <td>AWG 26/1</td> </tr> <tr> <td>Type of conductor and conductor cross-section</td> <td>AWG 26/19</td> </tr> <tr> <td>Type of conductor and conductor cross-section</td> <td>AWG 16/1</td> </tr> <tr> <td>Type of conductor and conductor cross-section</td> <td>AWG 16/19</td> </tr> </table>	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
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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	<table border="1"> <tr> <td>Type of conductor and conductor cross-section</td> <td>H05V-U0.5</td> </tr> <tr> <td>Type of conductor and conductor cross-section</td> <td>H05V-K0.5</td> </tr> </table>	Type of conductor and conductor cross-section	H05V-U0.5	Type of conductor and conductor cross-section	H05V-K0.5												
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	<table border="1"> <tr> <td>Type of conductor and conductor cross-section</td> <td>H07V-U1.5</td> </tr> <tr> <td>Type of conductor and conductor cross-section</td> <td>H07V-K1.5</td> </tr> <tr> <td>Type of conductor and conductor cross-section</td> <td>AWG 16/1</td> </tr> <tr> <td>Type of conductor and conductor cross-section</td> <td>AWG 16/19</td> </tr> </table>	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								
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	<table border="1"> <tr> <td>Type of conductor and conductor cross-section</td> <td>AWG 26/1</td> </tr> <tr> <td>Type of conductor and conductor cross-section</td> <td>AWG 26/19</td> </tr> </table>	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 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		

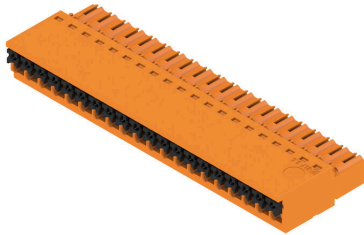
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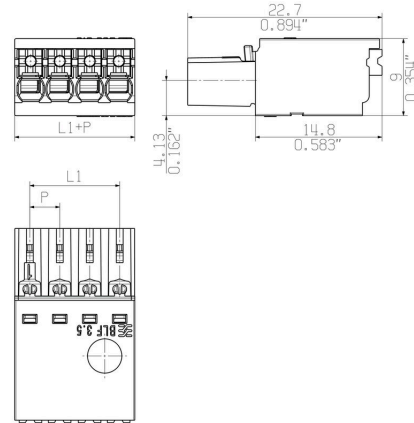
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Drawings

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 3.50/20/180 3.2SN OR...	Version
Order No.	1621430000	PCB plug-in connector, male header, open side, THT solder
GTIN (EAN)	4008190172510	connection, 3.50 mm, Number of poles: 20, 180°, Solder pin length
Qty.	20 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 3.50/20/180G 3.2SN O...	Version
Order No.	1621820000	PCB plug-in connector, male header, closed side, THT solder
GTIN (EAN)	4008190181116	connection, 3.50 mm, Number of poles: 20, 180°, Solder pin length
Qty.	20 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 3.50/20/90 3.2SN OR ...	Version
Order No.	1619020000	PCB plug-in connector, male header, open side, THT solder
GTIN (EAN)	4008190132262	connection, 3.50 mm, Number of poles: 20, 90°, Solder pin length (l):
Qty.	20 ST	3.2 mm, tinned, orange, Box

BLF 3.50/20/180 SN OR BX

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Counterpart

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SL 3.50/90G



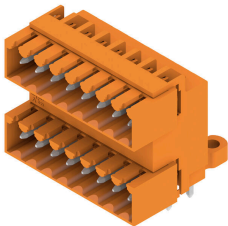
Pin headers for wave soldering in 3.50 mm pitch

- 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 3.50/20/90G 3.2SN OR...	Version
Order No.	1619410000	PCB plug-in connector, male header, closed side, THT solder
GTIN (EAN)	4008190139605	connection, 3.50 mm, Number of poles: 20, 90°, Solder pin length (l):
Qty.	20 ST	3.2 mm, tinned, orange, Box

SLD 3.50/90G

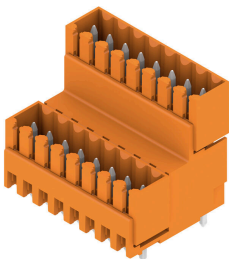


Two-tier pin header for wave soldering in 3.50 mm pitch. The connector is available in open, closed and flange versions. The male connectors provide space for labelling and can be coded. Packed in a cardboard box.

General ordering data

Type	SLD 3.50/40/90G 3.2SN O...	Version
Order No.	1633760000	PCB plug-in connector, male header, closed side, THT solder
GTIN (EAN)	4008190258214	connection, 3.50 mm, Number of poles: 40, 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/40/180G 3.2SN...	Version
Order No.	1641200000	PCB plug-in connector, male header, closed side, THT solder
GTIN (EAN)	4008190279608	connection, 3.50 mm, Number of poles: 40, 180°, Solder pin length
Qty.	10 ST	(l): 3.2 mm, tinned, orange, Box

BLF 3.50/20/180 SN OR BX

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Counterpart

SLD 3.50V/90G

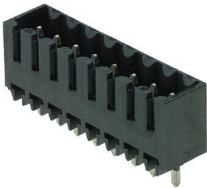


Double-level, staggered pin header for wave soldering at 3.50 mm pitch. They are available in closed and flanged versions. The male connectors provide space for labelling and can be coded.

General ordering data

Type	SLD 3.50V/40/90G 3.2SN ...	Version
Order No.	1642330000	PCB plug-in connector, male header, closed side, THT solder
GTIN (EAN)	4008190280857	connection, 3.50 mm, Number of poles: 40, 90°, Solder pin length (l):
Qty.	10 ST	3.2 mm, tinned, orange, Box

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 3.50/20/180G 3.2...	Version
Order No.	1842490000	PCB plug-in connector, male header, closed side, THT/THR solder
GTIN (EAN)	4032248353842	connection, 3.50 mm, Number of poles: 20, 180°, Solder pin length
Qty.	20 ST	(l): 3.2 mm, tinned, black, Box

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

BLF 3.50/20/180 SN OR BX

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Counterpart

General ordering data

Type	SL-SMT 3.50/20/90G 3.2S...	Version
Order No.	1841810000	PCB plug-in connector, male header, closed side, THT/THR solder
GTIN (EAN)	4032248353163	connection, 3.50 mm, Number of poles: 20, 90°, Solder pin length (l):
Qty.	20 ST	3.2 mm, tinned, black, Box