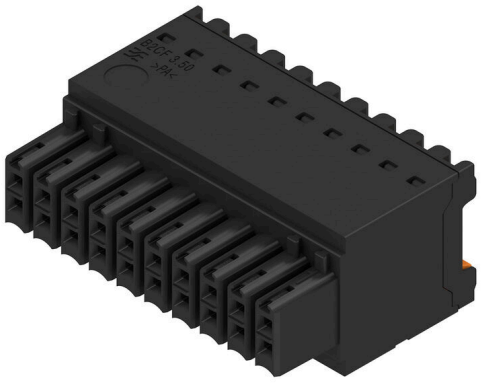
Data sheet

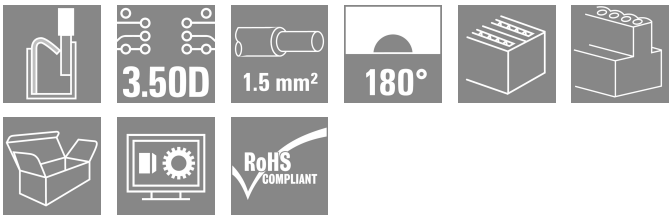
B2CF 3.50/20/180 SN BK BX

Weidmüller Interface GmbH & Co. KG
Klingenbergstraße 26
D-32758 Detmold
Germany

www.weidmueller.com

Product image





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

Version	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 20, 180°, PUSH IN with push button, Clamping range, max. : 1.5 mm², Box
Order No.	1277550000
Type	B2CF 3.50/20/180 SN BK BX
GTIN (EAN)	4050118067415
Qty.	48 items
Product data	IEC: 320 V / 13.4 A / 0.14 - 1.5 mm² UL: 300 V / 9.5 A / AWG 30 - AWG 16
Packaging	Box

Data sheet

B2CF 3.50/20/180 SN BK BX

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Technical data

Approvals

Approvals	
ROHS	Conform
UL File Number Search	UL Website
Certificate No. (cURus)	E60693

Dimensions and weights

Depth	25.25 mm	Depth (inches)	0.9941 inch
Height	15.2 mm	Height (inches)	0.5984 inch
Width	35 mm	Width (inches)	1.378 inch
Net weight	13.14 g		

Environmental Product Compliance

RoHS Compliance Status	Compliant without exemption	
REACH SVHC	No SVHC above 0.1 wt%	
Product Carbon Footprint	Cradle to gate	0.303 kg CO2eq.

System Parameters

Product family	OMNIMATE Signal - series B2C/S2C 3.50 - 2-row	Type of connection	Field connection
Wire connection method	PUSH IN with push button	Pitch in mm (P)	3.50 mm
Pitch in inches (P)	0.138 "	Conductor outlet direction	180°
Number of poles	20	L1 in mm	31.50 mm
L1 in inches	1.240 "	Number of rows	1
Pin series quantity	2	Rated cross-section	15 mm²
Touch-safe protection acc. to DIN VDE 57 106	Safe from finger touch	Touch-safe protection acc. to DIN VDE 0470	IP20 plugged
Protection degree	IP20, when fully mounted	Can be coded	Yes
Stripping length	10 mm	Screwdriver blade	0.4 x 2.5
Screwdriver blade standard	DIN 5264	Plugging cycles	25
Plugging force/pole, max.	3.5 N	Pulling force/pole, max.	3.5 N

Material data

Insulating material	PA 66 GF 30	Colour	black
Colour of operational elements	orange	Colour chart (similar)	RAL 9011
Insulating material group	II	Comparative Tracking Index (CTI)	≥ 600
Insulation resistance	≥ 108 Ω	Moisture Level (MSL)	
UL 94 flammability rating	V-0	Contact material	Copper alloy
Contact surface	tinned	Layer structure of plug contact	2...5 µm Sn hot-dip 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.	-40 °C	Temperature range, installation, max.	120 °C

Conductors suitable for connection

Clamping range, min.	0.14 mm²
Clamping range, max.	1.5 mm²
Wire connection cross section AWG, min.	AWG 30

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Technical data

Wire connection cross section AWG, max.	AWG 16			
Solid, min. H05(07) V-U	0.14 mm²			
Solid, max. H05(07) V-U	1.5 mm²			
Flexible, min. H05(07) V-K	0.14 mm²			
Flexible, max. H05(07) V-K	1.5 mm²			
w. plastic collar ferrule, DIN 46228 pt 4, min.	0.14 mm²			
w. plastic collar ferrule, DIN 46228 pt 4, max.	1 mm²			
w. wire end ferrule, DIN 46228 pt 1, min.	0.14 mm²			
w. wire end ferrule, DIN 46228 pt 1, max.	1.5 mm²			
Clampable conductor	Cross-section for conductor connection	Type	fine-wired	
		nominal	0.14 mm²	
	wire end ferrule	Stripping length	nominal	10 mm
		Recommended wire-end ferrule	H0,14/12 GR SV	
	Cross-section for conductor connection	Type	fine-wired	
		nominal	0.25 mm²	
	wire end ferrule	Stripping length	nominal	10 mm
		Recommended wire-end ferrule	H0,25/12 HBL SV	
	Cross-section for conductor connection	Type	fine-wired	
		nominal	0.34 mm²	
	wire end ferrule	Stripping length	nominal	10 mm
		Recommended wire-end ferrule	H0,34/12 TK SV	
	Cross-section for conductor connection	Type	fine-wired	
		nominal	0.5 mm²	
	wire end ferrule	Stripping length	nominal	12 mm
		Recommended wire-end ferrule	H0,5/16 OR SV	
		Stripping length	nominal	10 mm
		Recommended wire-end ferrule	H0,5/10	
	Cross-section for conductor connection	nominal	0.75 mm²	
	wire end ferrule	Stripping length	nominal	12 mm
		Recommended wire-end ferrule	H0,75/16 W SV	
		Stripping length	nominal	10 mm
		Recommended wire-end ferrule	H0,75/10	
	Cross-section for conductor connection	nominal	1	
	wire end ferrule	Stripping length	nominal	12 mm
		Recommended wire-end ferrule	H1,0/16 GE SV	
		Stripping length	nominal	10 mm
		Recommended wire-end ferrule	H1,0/10	
	Cross-section for conductor connection	nominal	1.5 mm²	
	wire end ferrule	Stripping length	nominal	10 mm
		Recommended wire-end ferrule	H1,5/10	
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)	13.4 A
Rated current, max. number of poles (Tu=20°C)	10 A	Rated current, min. number of poles (Tu=40°C)	12 A
Rated current, max. number of poles (Tu=40°C)	9 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	3 x 1s with 80 A

Rated data acc. to CSA

Institute (CSA)	CSA	Certificate No. (CSA)	200039-1121690
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)	9.5 A
Rated current (Use group C / CSA)	9.5 A	Rated current (Use group D / CSA)	9.5 A
Wire cross-section, AWG, min.	AWG 30	Wire cross-section, AWG, max.	AWG 16
Reference to approval values	Specifications are maximum values, details - see approval certificate.		

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)	9.5 A
Rated current (Use group C / UL 1059)	9.5 A	Rated current (Use group D / UL 1059)	9.5 A
Wire cross-section, AWG, min.	AWG 30	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	139.00 mm	VPE height	31.00 mm

Type tests

Test: Durability of markings	Standard	IEC 61984 section 6.2 and 7.3.2 / 10.11 taking pattern from IEC 60068-2-70 / 12.95
	Test	mark of origin, type identification, pitch, type of material, date clock, approval marking UL, approval marking cULus
	Evaluation	available
	Test	durability
	Evaluation	passed
Test: Misengagement (Non-interchangeability)	Standard	IEC 61984 section 6.3 and 6.9.1 / 10.11, IEC 60512-13-5 / 02.06
	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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Test: Clampable cross section	Standard	IEC 60999-1 section 7 and 9.1 / 11.99, IEC 60947-1 section 8.2.4.5.1 / 03.11	
	Conductor type	Type of conductor and conductor cross-section	solid 0.14 mm²
		Type of conductor and conductor cross-section	stranded 0.14 mm²
		Type of conductor and conductor cross-section	solid 1.5 mm²
		Type of conductor and conductor cross-section	stranded 1.5 mm²
		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 section 9.4 / 11.99	
	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	
	Requirement	0.3 kg	
	Conductor type	Type of conductor and conductor cross-section	H05V-U0.75
		Type of conductor and conductor cross-section	H05V-K0.75
	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	
Pull-out test	Standard	IEC 60999-1 section 9.5 / 11.99	
	Requirement	≥10 N	
	Conductor type	Type of conductor and conductor cross-section	AWG 26/1

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Technical data

	Type of conductor and conductor cross-section	AWG 26/19
Evaluation	passed	
Requirement	≥20 N	
Conductor type	Type of conductor and conductor cross-section	H05V-U0.75
	Type of conductor and conductor cross-section	H05V-K0.75
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	

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. • Crimp shape A for wire-end ferrules with crimping tools PZ 1,5 (order no. 9005990000) or PZ 6/5 (order no. 9011460000) for larger wire cross-sections recommended. • 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. • Max. outer diameter of the conductor 2.6 mm • 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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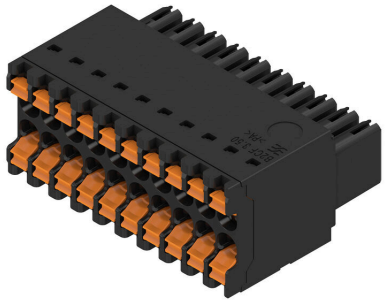
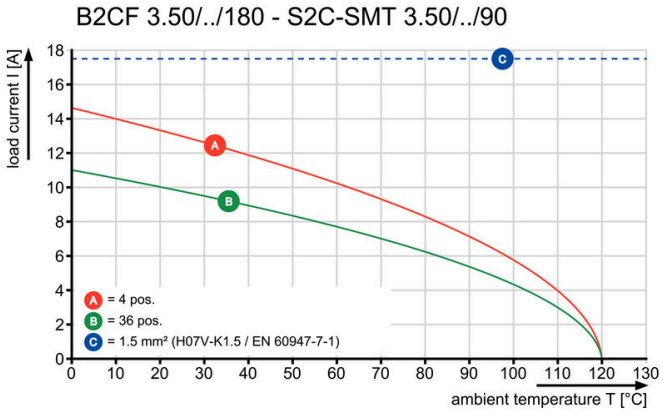
Drawings

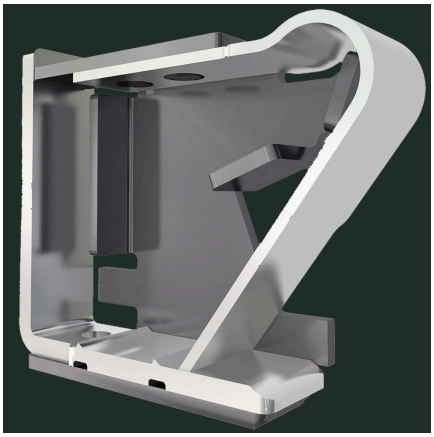
Product image



Graph



Product benefits



Solid PUSH IN contactSafe and durable

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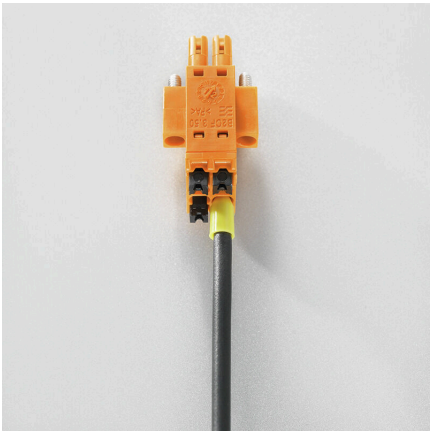
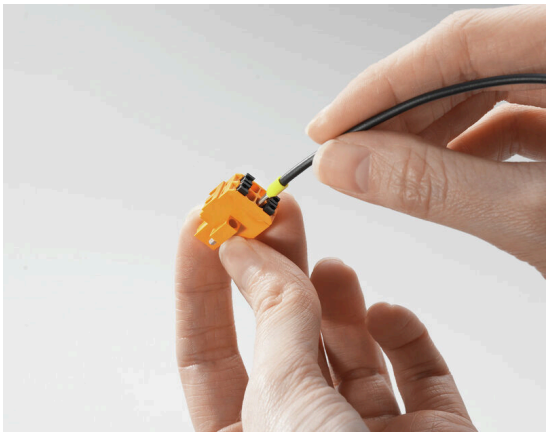
Drawings

Product benefits



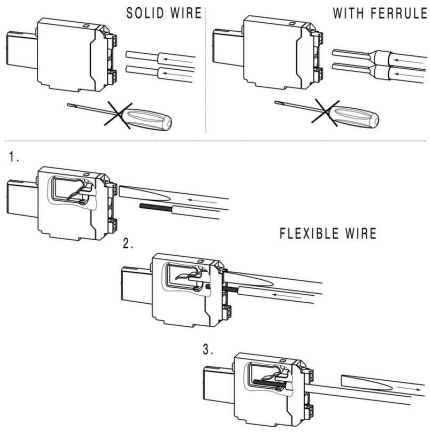
Large connection cross-sectionUp to 1.5 mm possible with ease

Product benefits



Fast PUSH IN connectionTool-free and touch-safe

Example of use



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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	B2L/S2L 3.50 KO BK BX	Version
Order No.	1849740000	PCB plug-in connector, Accessories, Coding element, black, Number
GTIN (EAN)	4032248378203	of poles: 1
Qty.	100 ST	
Type	B2L/S2L 3.50 KO OR BX	Version
Order No.	1849730000	PCB plug-in connector, Accessories, Coding element, orange, Number
GTIN (EAN)	4032248378197	of poles: 1
Qty.	100 ST	

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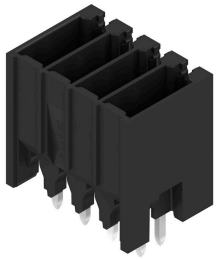
Counterpart

S2C-SMT 3.50/180G Box

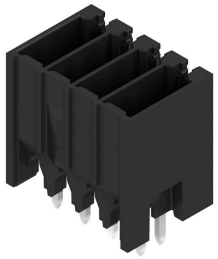


High-temperature-resistant pin header.
- touch-safe
- can be plugged into B2CF 3.50 PUSH IN female plug
- Plug-in direction is perpendicular or parallel to the circuit board (180° / 90°)
- Housing variants: closed (G) and with solder flange (LF)
- Box packaging (BX) or, anti-static, tape-on-reel (RL)
- Suitable for reflow and wave soldering applications
- Pin length of either 1.5 mm or 3.5 mm

General ordering data

Type	S2C-SMT 3.50/20/180G 1....	Version
Order No.	1290490000	PCB plug-in connector, male header, closed side, THT/THR solder
GTIN (EAN)	4050118083439	connection, 3.50 mm, Number of poles: 20, 180°, Solder pin length
Qty.	48 ST	(l): 1.5 mm, tinned, black, Box
Type	S2C-SMT 3.50/20/180G 3....	Version
Order No.	1290120000	PCB plug-in connector, male header, closed side, THT/THR solder
GTIN (EAN)	4050118083262	connection, 3.50 mm, Number of poles: 20, 180°, Solder pin length
Qty.	48 ST	(l): 3.5 mm, tinned, black, Box

S2C-SMT 3.50/180G Tape



High-temperature-resistant pin header.
- touch-safe
- can be plugged into B2CF 3.50 PUSH IN female plug
- Plug-in direction is perpendicular or parallel to the circuit board (180° / 90°)
- Housing variants: closed (G) and with solder flange (LF)
- Box packaging (BX) or, anti-static, tape-on-reel (RL)
- Suitable for reflow and wave soldering applications
- Pin length of either 1.5 mm or 3.5 mm

General ordering data

Type	S2C-SMT 3.50/20/180G 1....	Version
Order No.	1359020000	PCB plug-in connector, male header, closed side, THT/THR solder
GTIN (EAN)	4050118161762	connection, 3.50 mm, Number of poles: 20, 180°, Solder pin length
Qty.	175 ST	(l): 1.5 mm, tinned, black, Tape
Type	S2C-SMT 3.50/20/180G 3....	Version
Order No.	1358830000	PCB plug-in connector, male header, closed side, THT/THR solder
GTIN (EAN)	4050118161786	connection, 3.50 mm, Number of poles: 20, 180°, Solder pin length
Qty.	175 ST	(l): 3.5 mm, tinned, black, Tape

B2CF 3.50/20/180 SN BK BX

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Counterpart

S2C-SMT 3.50/90G Box

High-temperature-resistant male header
- Finger-safe
- Can be plugged into female plug B2CF 3.50 PUSH IN
- Plug-in direction is perpendicular or parallel to the circuit board (180° / 90°)
- Housing variants: closed (G) and with solder flange (LF)
- Packed either in a box (BX) or on anti-static tape-on-reel (RL)
- Suitable for reflow and wave soldering
- applications
- Pin length of either 1.5 mm or 3.2 mm

General ordering data

Type	S2C-SMT 3.50/20/90G 1.5...	Version
Order No.	1289730000	PCB plug-in connector, male header, closed side, THT/THR solder
GTIN (EAN)	4050118082524	connection, 3.50 mm, Number of poles: 20, 90°, Solder pin length (l):
Qty.	48 ST	1.5 mm, tinned, black, Box
Type	S2C-SMT 3.50/20/90G 3.2...	Version
Order No.	1289340000	PCB plug-in connector, male header, closed side, THT/THR solder
GTIN (EAN)	4050118081640	connection, 3.50 mm, Number of poles: 20, 90°, Solder pin length (l):
Qty.	48 ST	3.2 mm, tinned, black, Box

S2C-SMT 3.50/90G Tape

High-temperature-resistant male header
- Finger-safe
- Can be plugged into female plug B2CF 3.50 PUSH IN
- Plug-in direction is perpendicular or parallel to the circuit board (180° / 90°)
- Housing variants: closed (G) and with solder flange (LF)
- Packed either in a box (BX) or on anti-static tape-on-reel (RL)
- Suitable for reflow and wave soldering
- applications
- Pin length of either 1.5 mm or 3.2 mm

General ordering data

Type	S2C-SMT 3.50/20/90G 1.5...	Version
Order No.	1359670000	PCB plug-in connector, male header, closed side, THT/THR solder
GTIN (EAN)	4050118162936	connection, 3.50 mm, Number of poles: 20, 90°, Solder pin length (l):
Qty.	235 ST	1.5 mm, tinned, black, Tape
Type	S2C-SMT 3.50/20/90G 3.2...	Version
Order No.	1359550000	PCB plug-in connector, male header, closed side, THT/THR solder
GTIN (EAN)	4050118162820	connection, 3.50 mm, Number of poles: 20, 90°, Solder pin length (l):
Qty.	235 ST	3.2 mm, tinned, black, Tape