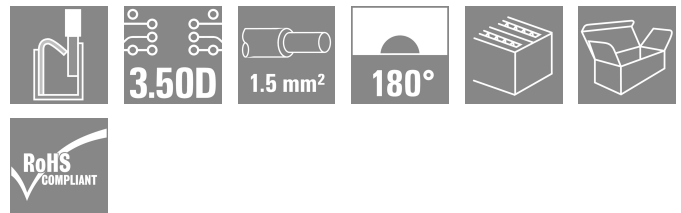


B2CF 3.50/12/180LRZE SN OR BX
Weidmüller Interface GmbH & Co. KG

Klingenbergstraße 26
D-32758 Detmold
Germany

www.weidmueller.com
Product image


The new generation of compact installations:
The established standard for connecting signals is leading the pack. Maximum connection density in the smallest of spaces – the 2-row B2CF is the trend setter when connecting typical sensor cables of up to 1.5 mm² in the field. It bridges the gap between insufficient space and increased functionality.

The result is a connectivity solution for standard industrial cables in 1.75 pitch that is 30% smaller than a similar solution in 2.5 pitch – and which features 100% of the ruggedness found in the 3.5 mm pitch.

Compact and safe:

A reliable wire connection method: No servicing required with PUSH IN

Safe male header: Finger-touch safe

A reliable connection for use under extreme conditions: Release latch

Future-proof: Halogen-free insulation materials

Reliable labelling: Large pin marker

Safe installation: Convenient coding

The main advantages for your application:

Efficiency – the highest density of components on the circuit board.

Suitable for industrial use – minimum size with maximum strength.

Process-optimised – automatic assembly and reflow soldering; rapid connections.

Easy to use – secure attachment and wire connect with no tools required.

Application-oriented: easy labelling and reliable coding despite compact dimensions.

Miniaturisation is more than just greater functional density in a smaller space:

every millimetre of reduced size means less space requirements and also less installation costs for the customer.

General ordering data

Version	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 12, 180°, PUSH IN with push button, Clamping range, max. : 1.5 mm ² , Box
Order No.	2054530000
Type	B2CF 3.50/12/180LRZE SN OR BX
GTIN (EAN)	4050118412352
Qty.	66 items
Product data	IEC: 320 V / 13.4 A / 0.14 - 1.5 mm ² UL: 300 V / 9.5 A / AWG 30 - 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	49.04 mm	Depth (inches)	1.9307 inch
Height	17.25 mm	Height (inches)	0.6791 inch
Width	27.9 mm	Width (inches)	1.0984 inch
Net weight	8.69 g		

Environmental Product Compliance

RoHS Compliance Status Compliant without exemption

REACH SVHC No SVHC above 0.1 wt%

Product Carbon Footprint Cradle to gate 0.304 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	12	L1 in mm	17.50 mm
L1 in inches	0.689 "	Number of rows	1
Pin series quantity	2	Rated cross-section	15 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
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	orange
Colour of operational elements	black	Colour chart (similar)	RAL 2000
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 mm ²
Clamping range, max.	1.5 mm ²
Wire connection cross section AWG, min.	AWG 30
Wire connection cross section AWG, max.	AWG 16

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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, 0.14 mm ² min.				
w. plastic collar ferrule, DIN 46228 pt 4, 1 mm ² max.				
w. wire end ferrule, DIN 46228 pt 1, 0.14 mm ² min.				
w. wire end ferrule, DIN 46228 pt 1, 1.5 mm ² max.				
Clampable conductor	Cross-section for conductor connection	nominal	0.14 mm ²	
	wire end ferrule	Stripping length	nominal 10 mm	
		Recommended wire-end ferrule	H0.14/12 GR SV	
	Cross-section for conductor connection	nominal	0.25 mm ²	
	wire end ferrule	Stripping length	nominal 10 mm	
		Recommended wire-end ferrule	H0.25/12 HBL SV	
	Cross-section for conductor connection	nominal	0.34 mm ²	
	wire end ferrule	Stripping length	nominal 10 mm	
		Recommended wire-end ferrule	H0.34/12 TK SV	
	Cross-section for conductor connection	nominal	0.5 mm ²	
	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 mm ²	
	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 mm ²	
	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.

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

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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

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

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	353.00 mm
VPE width	135.00 mm	VPE height	64.00 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: Clampable cross section	Test	visual examination	
	Evaluation	passed	
	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 mm ²
		Type of conductor and conductor cross-section	stranded 0.14 mm ²

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Test for damage to and accidental loosening of conductors			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	
	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	
Pull-out test	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	
	Standard		IEC 60999-1 section 9.5 / 11.99	
	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	
	Requirement		≥20 N	
	Conductor type	Type of conductor and conductor cross-section	H05V-U0.75	

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Technical data

	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		

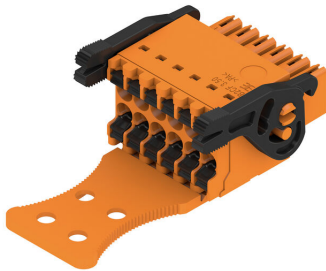
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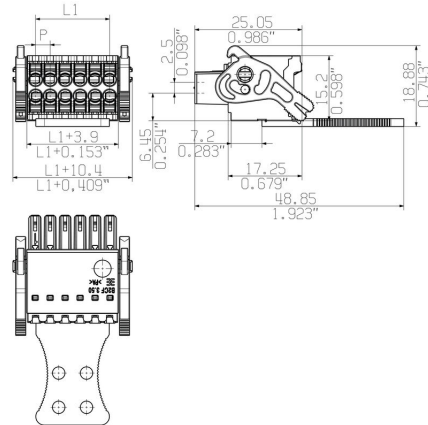
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Drawings

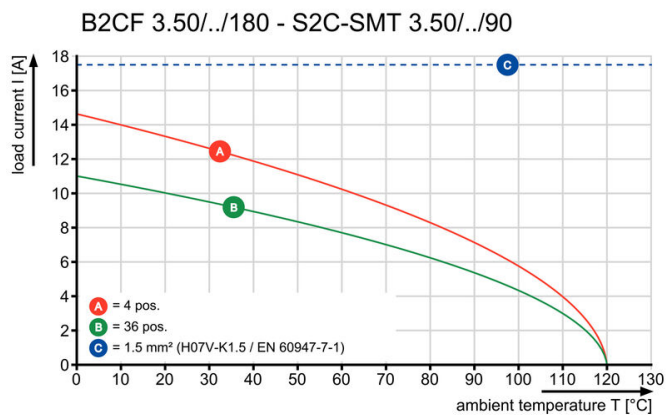
Product image



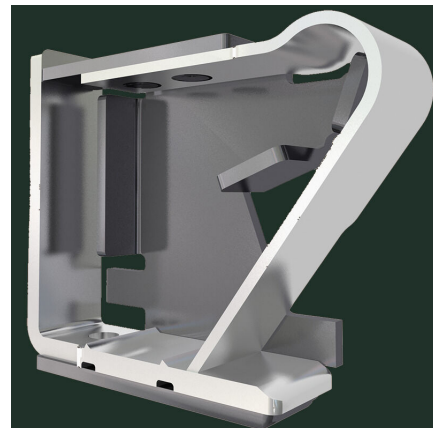
Dimensional drawing



Graph



Product benefits



Solid PUSH IN contact Safe and durable

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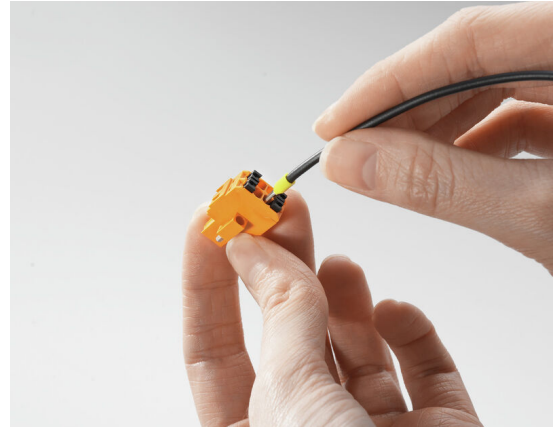
Drawings

Product benefits



Large connection cross-section
Up to 1.5 mm possible with ease

Product benefits



Fast PUSH IN connection
Tool-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	