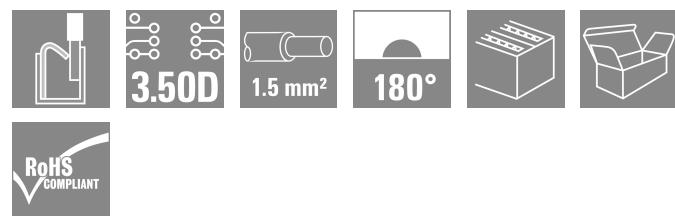


**B2CF 3.50/24/180LRZE SN OR BX**

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

[www.weidmueller.com](http://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 mm<sup>2</sup> 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: 24, 180°, PUSH IN with push button, Clamping range, max.: 1.5 mm <sup>2</sup> , Box
Order No.	<a href="#">2054620000</a>
Type	B2CF 3.50/24/180LRZE SN OR BX
GTIN (EAN)	4050118412390
Qty.	36 items
Product data	IEC: 320 V / 13.4 A / 0.14 - 1.5 mm <sup>2</sup> 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	<a href="#">UL Website</a>
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	48.9 mm	Width (inches)	1.9252 inch
Net weight	16.63 g		

**Environmental Product Compliance**

RoHS Compliance Status	Compliant without exemption
REACH SVHC	No SVHC above 0.1 wt%
Product Carbon Footprint	Cradle to gate 0.528 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	24	L1 in mm	38.50 mm
L1 in inches	1.516 "	Number of rows	1
Pin series quantity	2	Rated cross-section	15 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
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 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 <sup>2</sup>
Clamping range, max.	1.5 mm <sup>2</sup>
Wire connection cross section AWG, min.	AWG 30
Wire connection cross section AWG, max.	AWG 16

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## Technical data

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, 0.14 mm <sup>2</sup> min.	
w. plastic collar ferrule, DIN 46228 pt 4, 1 mm <sup>2</sup> max.	
w. wire end ferrule, DIN 46228 pt 1, min.	0.14 mm <sup>2</sup>
w. wire end ferrule, DIN 46228 pt 1, max.	1.5 mm <sup>2</sup>

Clampable conductor	Cross-section for conductor connection	nominal	0.14 mm <sup>2</sup>
	wire end ferrule	Stripping length	nominal 10 mm
		Recommended wire-end ferrule	<a href="#">H0,14/12 GR SV</a>
	Cross-section for conductor connection	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 SV</a>
	Cross-section for conductor connection	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 SV</a>
	Cross-section for conductor connection	nominal	0.5 mm <sup>2</sup>
	wire end ferrule	Stripping length	nominal 12 mm
		Recommended wire-end ferrule	<a href="#">H0,5/16 OR SV</a>
		Stripping length	nominal 10 mm
		Recommended wire-end ferrule	<a href="#">H0,5/10</a>
	Cross-section for conductor connection	nominal	0.75 mm <sup>2</sup>
	wire end ferrule	Stripping length	nominal 12 mm
		Recommended wire-end ferrule	<a href="#">H0,75/16 W SV</a>
		Stripping length	nominal 10 mm
		Recommended wire-end ferrule	<a href="#">H0,75/10</a>
	Cross-section for conductor connection	nominal	1
	wire end ferrule	Stripping length	nominal 12 mm
		Recommended wire-end ferrule	<a href="#">H1,0/16 GE SV</a>
		Stripping length	nominal 10 mm
		Recommended wire-end ferrule	<a href="#">H1,0/10</a>
	Cross-section for conductor connection	nominal	1.5 mm <sup>2</sup>
	wire end ferrule	Stripping length	nominal 10 mm
		Recommended wire-end ferrule	<a href="#">H1,5/10</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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## 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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## Technical data

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	338.00 mm
VPE width	130.00 mm	VPE height	54.00 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
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 solid 0.14 mm <sup>2</sup> and conductor cross-section
		Type of conductor stranded 0.14 mm <sup>2</sup> and conductor cross-section

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## Technical data

Test for damage to and accidental loosening of conductors	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
	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
Pull-out test	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
	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	<ul style="list-style-type: none"> <li>Additional variants on request</li> <li>Gold-plated contact surfaces on request</li> <li>Rated current related to rated cross-section &amp; min. No. of poles.</li> <li>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.</li> <li>P on drawing = pitch</li> <li>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.</li> <li>Max. outer diameter of the conductor 2.6 mm</li> <li>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</li> <li>Long term storage of the product with average temperature of 50 °C and maximum humidity 70%, 36 months</li> </ul>

**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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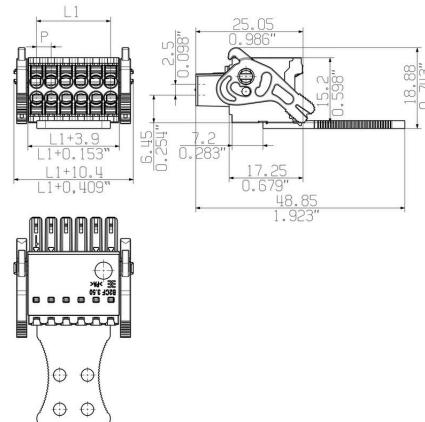
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## Drawings

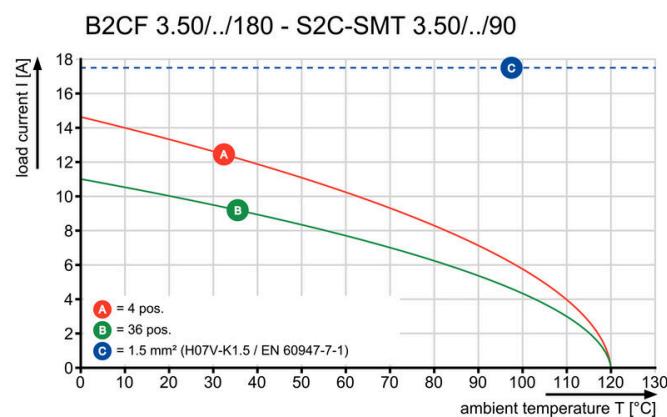
### Product image



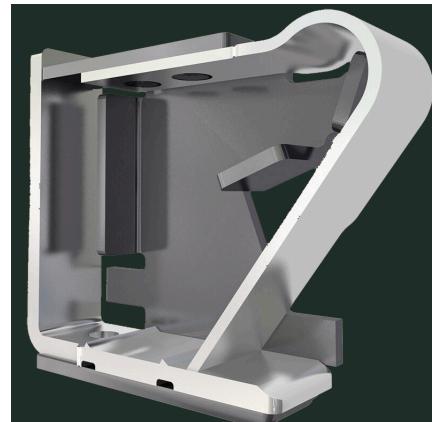
### Dimensional drawing



### Graph



### Product benefits



Solid PUSH IN contactSafe and durable

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## Drawings

### Product benefits



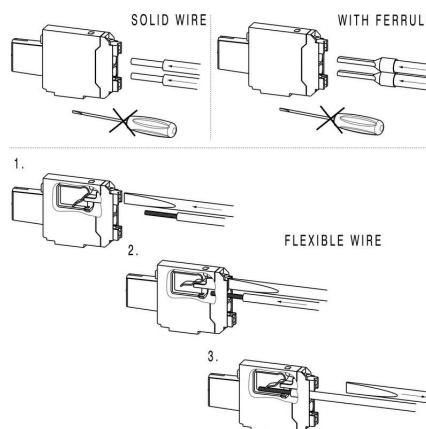
Large connection cross-section  
Up to 1.5 mm<sup>2</sup> possible with ease

### 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.	<a href="#">1849740000</a>	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.	<a href="#">1849730000</a>	PCB plug-in connector, Accessories, Coding element, orange, Number	
GTIN (EAN)	4032248378197	of poles: 1	
Qty.	100 ST		