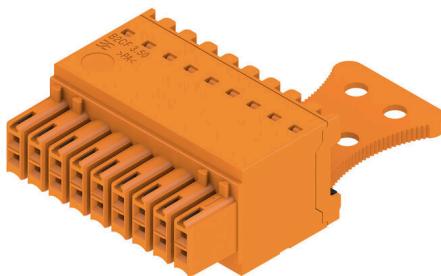


B2CF 3.50/18/180ZE SN OR BX

Weidmüller Interface GmbH & Co. KG
 Klingenbergsstraße 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: 18, 180°, PUSH IN with push button, Clamping range, max.: 1.5 mm ² , Box |
| Order No. | 3021310000 |
| Type | B2CF 3.50/18/180ZE SN OR BX |
| GTIN (EAN) | 4099986937550 |
| Qty. | 54 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 | 17.25 mm | Width (inches) | 0.6791 inch |
| Net weight | 12.65 g | | |

Environmental Product Compliance

| | |
|------------------------|-----------------------------|
| RoHS Compliance Status | Compliant without exemption |
| REACH SVHC | No SVHC above 0.1 wt% |

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 | 18 | L1 in mm | 28.00 mm |
| L1 in inches | 1.102 " | 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 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 |
| 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 |

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Technical data

w. plastic collar ferrule, DIN 46228 pt 4, 0.14 mm²
 min.

w. wire end ferrule, DIN 46228 pt 1, 0.14 mm²
 min.

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.

w. plastic collar ferrule, DIN 46228 pt 4, 1 mm²
 max.

w. wire end ferrule, DIN 46228 pt 1, 1.5 mm²
 max.

Rated data acc. to IEC

tested acc. to standard IEC 60664-1, IEC 61984

Rated current, min. number of poles 13.4 A
 (Tu=20°C)

Rated current, max. number of poles 10 A
 (Tu=20°C)

Rated current, min. number of poles 12 A
 (Tu=40°C)

Rated current, max. number of poles 9 A
 (Tu=40°C)

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

137.00 mm

VPE height

61.00 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

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Technical data

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|-------------------|-----------------------------|-----------------------------|-------------------|-------------------|-------------------------------|-----------------------------|-------------------|-------------------|-----------------------------|-----------------------------|--|-------------------|------------------------------|-----------------------------|--|-------------------|----------|-----------------------------|--|-------------------|-----------|-----------------------------|--|-------------------|----------|-----------------------------|--|-------------------|-----------|-----------------------------|
| 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 | <table border="1"> <tr><td>Type of conductor</td><td>solid 0.14 mm²</td></tr> <tr><td>and conductor cross-section</td><td></td></tr> <tr><td>Type of conductor</td><td>stranded 0.14 mm²</td></tr> <tr><td>and conductor cross-section</td><td></td></tr> <tr><td>Type of conductor</td><td>solid 1.5 mm²</td></tr> <tr><td>and conductor cross-section</td><td></td></tr> <tr><td>Type of conductor</td><td>stranded 1.5 mm²</td></tr> <tr><td>and conductor cross-section</td><td></td></tr> <tr><td>Type of conductor</td><td>AWG 26/1</td></tr> <tr><td>and conductor cross-section</td><td></td></tr> <tr><td>Type of conductor</td><td>AWG 26/19</td></tr> <tr><td>and conductor cross-section</td><td></td></tr> <tr><td>Type of conductor</td><td>AWG 16/1</td></tr> <tr><td>and conductor cross-section</td><td></td></tr> <tr><td>Type of conductor</td><td>AWG 16/19</td></tr> <tr><td>and conductor cross-section</td><td></td></tr> </table> | Type of conductor | solid 0.14 mm ² | and conductor cross-section | | Type of conductor | stranded 0.14 mm ² | and conductor cross-section | | Type of conductor | solid 1.5 mm ² | and conductor cross-section | | Type of conductor | stranded 1.5 mm ² | and conductor cross-section | | Type of conductor | AWG 26/1 | and conductor cross-section | | Type of conductor | AWG 26/19 | and conductor cross-section | | Type of conductor | AWG 16/1 | and conductor cross-section | | Type of conductor | AWG 16/19 | and conductor cross-section |
| Type of conductor | solid 0.14 mm ² | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| and conductor cross-section | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Type of conductor | stranded 0.14 mm ² | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| and conductor cross-section | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Type of conductor | solid 1.5 mm ² | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| and conductor cross-section | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Type of conductor | stranded 1.5 mm ² | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| and conductor cross-section | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Type of conductor | AWG 26/1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| and conductor cross-section | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Type of conductor | AWG 26/19 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| and conductor cross-section | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Type of conductor | AWG 16/1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| and conductor cross-section | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Type of conductor | AWG 16/19 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| and conductor cross-section | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 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 | <table border="1"> <tr><td>Type of conductor</td><td>AWG 26/1</td></tr> <tr><td>and conductor cross-section</td><td></td></tr> <tr><td>Type of conductor</td><td>AWG 26/19</td></tr> <tr><td>and conductor cross-section</td><td></td></tr> </table> | Type of conductor | AWG 26/1 | and conductor cross-section | | Type of conductor | AWG 26/19 | and conductor cross-section | | | | | | | | | | | | | | | | | | | | | | | | |
| Type of conductor | AWG 26/1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| and conductor cross-section | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Type of conductor | AWG 26/19 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| and conductor cross-section | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Evaluation | passed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Requirement | 0.3 kg | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Conductor type | <table border="1"> <tr><td>Type of conductor</td><td>H05V-U0.75</td></tr> <tr><td>and conductor cross-section</td><td></td></tr> <tr><td>Type of conductor</td><td>H05V-K0.75</td></tr> <tr><td>and conductor cross-section</td><td></td></tr> </table> | Type of conductor | H05V-U0.75 | and conductor cross-section | | Type of conductor | H05V-K0.75 | and conductor cross-section | | | | | | | | | | | | | | | | | | | | | | | | | |
| Type of conductor | H05V-U0.75 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| and conductor cross-section | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Type of conductor | H05V-K0.75 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| and conductor cross-section | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Evaluation | passed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Requirement | 0.4 kg | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Conductor type | <table border="1"> <tr><td>Type of conductor</td><td>H07V-U1.5</td></tr> <tr><td>and conductor cross-section</td><td></td></tr> <tr><td>Type of conductor</td><td>H07V-K1.5</td></tr> <tr><td>and conductor cross-section</td><td></td></tr> <tr><td>Type of conductor</td><td>AWG 16/1</td></tr> <tr><td>and conductor cross-section</td><td></td></tr> </table> | Type of conductor | H07V-U1.5 | and conductor cross-section | | Type of conductor | H07V-K1.5 | and conductor cross-section | | Type of conductor | AWG 16/1 | and conductor cross-section | | | | | | | | | | | | | | | | | | | | | |
| Type of conductor | H07V-U1.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| and conductor cross-section | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Type of conductor | H07V-K1.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| and conductor cross-section | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Type of conductor | AWG 16/1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| and conductor cross-section | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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Technical data

| | | |
|---------------|---|---|
| Pull-out test | 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 |
| | Evaluation | passed |
| | Requirement | ≥20 N |
| | Conductor type | Type of conductor and conductor cross-section |
| | | H05V-U0.75 |
| | | Type of conductor and conductor cross-section |
| | 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 |
| | 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"> 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 | | |

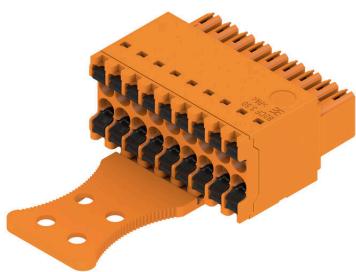
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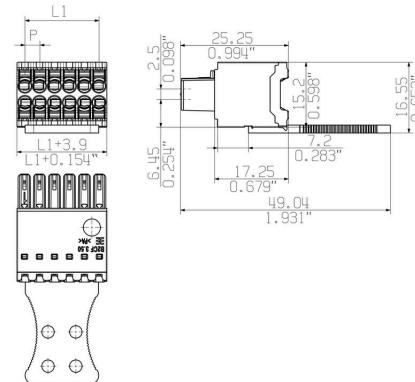
www.weidmueller.com

Drawings

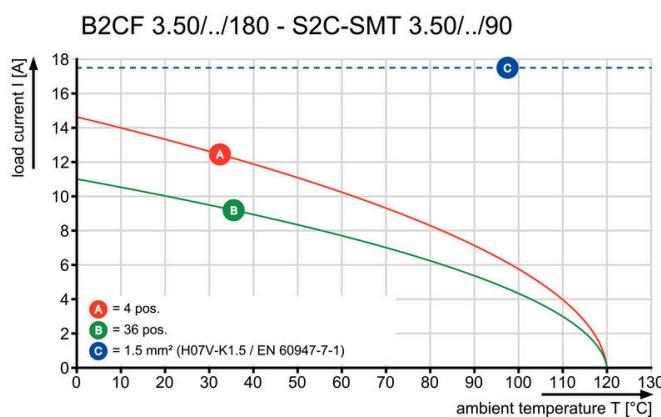
Product image



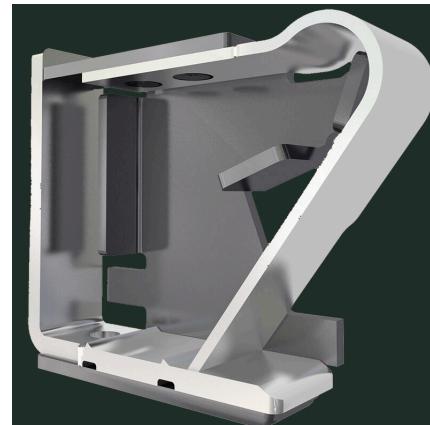
Dimensional drawing



Graph



Product benefits



Solid PUSH IN contactSafe and durable

B2CF 3.50/18/180ZE SN OR BX

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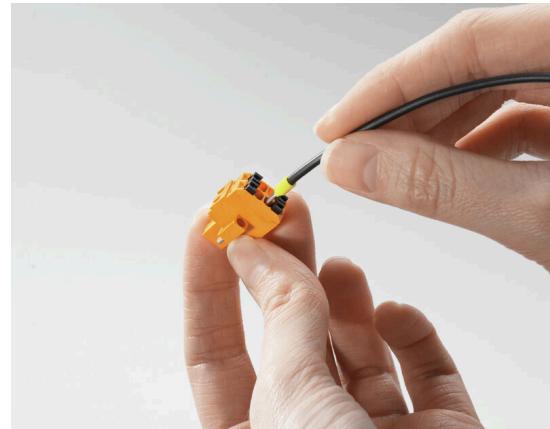
Drawings

Product benefits



Large connection cross-section
Up to 1.5 mm² possible with ease

Product benefits



Fast PUSH IN connection
Tool-free and touch-safe

Example of use

