

B2CF 3.50/24/180ZE SN OR BX

Weidmüller Interface GmbH & Co. KG

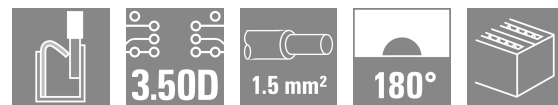
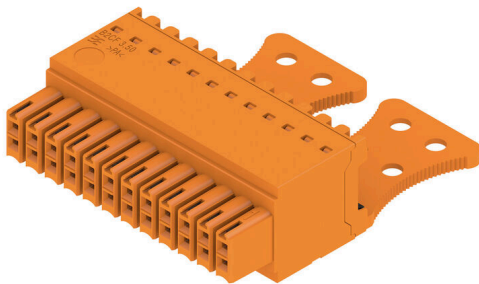
Klingenbergstraße 26

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: 24, 180°, PUSH IN with push button, Clamping range, max. : 1.5 mm ² , Box |
| Order No. | 3021350000 |
| Type | B2CF 3.50/24/180ZE SN OR BX |
| GTIN (EAN) | 409998693758 1 |
| Qty. | 42 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 | 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% |

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 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 |
| 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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| | |
|--|--|
| w. plastic collar ferrule, DIN 46228 pt 4, 0.14 mm ² min. | |
| w. wire end ferrule, DIN 46228 pt 1, 0.14 mm ² 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 mm ² max. | |
| w. wire end ferrule, DIN 46228 pt 1, 1.5 mm ² max. | |

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

| | | | |
|-----------------------------------|--------|-----------------------------------|--------|
| 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 | 348.00 mm |
| VPE width | 134.00 mm | VPE height | 57.00 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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| 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 | | |
| Test: Clampable cross section | 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 | |
| | | 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 | | | |
| 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 | | |

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|---------------|----------------|---|------------|--|
| | | Type of conductor and conductor cross-section | AWG 16/19 | |
| Pull-out test | 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 | |
| | | 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 | | |

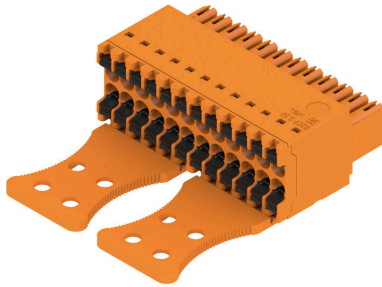
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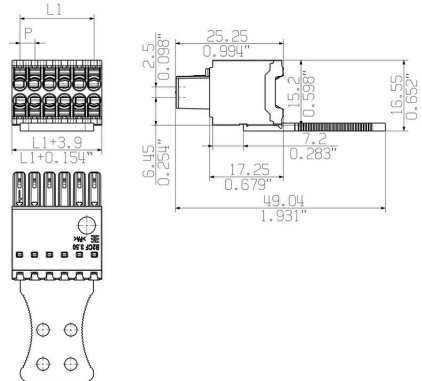
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Drawings

Product image



Dimensional drawing



Graph



Product benefits



Solid PUSH IN contactSafe 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

