

## B2CF 3.50/36/180LRZE SN OR BX

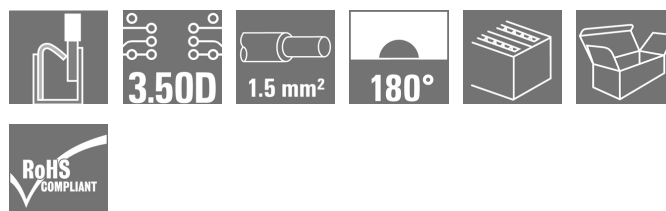
**Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

[www.weidmueller.com](http://www.weidmueller.com)



### 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: 36, 180°, PUSH IN, Spring connection, Clamping range, max.: 1.5 mm <sup>2</sup> , Box |
| Order No.    | <a href="#">2054710000</a>                                                                                                                          |
| Type         | B2CF 3.50/36/180LRZE SN OR BX                                                                                                                       |
| GTIN (EAN)   | 4050118412628                                                                                                                                       |
| Qty.         | 24 pc(s).                                                                                                                                           |
| Product data | IEC: 320 V / 13.4 A / 0.14 - 1.5 mm <sup>2</sup><br>UL: 300 V / 9.5 A / AWG 26 - AWG 16                                                             |
| Packaging    | Box                                                                                                                                                 |

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**Technical data****Dimensions and weights**

|            |          |                |            |
|------------|----------|----------------|------------|
| Depth      | 29.9 mm  | Depth (inches) | 1.177 inch |
| Net weight | 24.532 g |                |            |

**System Parameters**

|                                              |                                               |                                            |                     |
|----------------------------------------------|-----------------------------------------------|--------------------------------------------|---------------------|
| Product family                               | OMNIMATE Signal - series B2C/S2C 3.50 - 2-row | Type of connection                         | Field connection    |
| Wire connection method                       | PUSH IN, Spring connection                    | Pitch in mm (P)                            | 3.5 mm              |
| Pitch in inches (P)                          | 0.138 inch                                    | Conductor outlet direction                 | 180°                |
| Number of poles                              | 36                                            | Number of rows                             | 1                   |
| Pin series quantity                          | 2                                             | Rated cross-section                        | 1.5 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 | IP 20               |
| Can be coded                                 | Yes                                           | Stripping length                           | 10 mm               |
| Plugging force/pole, max.                    | 5 N                                           | Pulling force/pole, max.                   | 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 strength                   | ≥ 10 <sup>8</sup> Ω |
| UL 94 flammability rating             | V-0                        | Contact material                      | Copper alloy        |
| 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>  |
| 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, 0.14 mm <sup>2</sup> min.       |                      |
| w. wire end ferrule, DIN 46228 pt 1, 1.5 mm <sup>2</sup> max.        |                      |

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**Technical data**

|                     |                                        |                              |                            |       |
|---------------------|----------------------------------------|------------------------------|----------------------------|-------|
| Clampable conductor | Cross-section for conductor connection | Type                         | fine-wired                 |       |
|                     |                                        | 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</a> |       |
|                     |                                        | Stripping length             | nominal                    | 10 mm |
|                     |                                        | Recommended wire-end ferrule | <a href="#">H0.5/10</a>    |       |
|                     | Cross-section for conductor connection | Type                         | fine-wired                 |       |
|                     |                                        | 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</a> |       |
|                     |                                        | Stripping length             | nominal                    | 10 mm |
|                     |                                        | Recommended wire-end ferrule | <a href="#">H0.75/10</a>   |       |
|                     | Cross-section for conductor connection | Type                         | fine-wired                 |       |
|                     |                                        | nominal                      | 1 mm <sup>2</sup>          |       |
|                     | wire end ferrule                       | Stripping length             | nominal                    | 12 mm |
|                     |                                        | Recommended wire-end ferrule | <a href="#">H1.0/16D R</a> |       |
|                     |                                        | Stripping length             | nominal                    | 10 mm |
|                     |                                        | Recommended wire-end ferrule | <a href="#">H1.0/10</a>    |       |
|                     | Cross-section for conductor connection | Type                         | fine-wired                 |       |
|                     |                                        | 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.

**Rated data acc. to IEC**

|                                                                       |                  |                                                                           |        |
|-----------------------------------------------------------------------|------------------|---------------------------------------------------------------------------|--------|
| 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 26 | Wire cross-section, AWG, max.     | AWG 16 |

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**Technical data****Rated data acc. to UL 1059**

Institute (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 26

Wire cross-section, AWG, max. AWG 16

Reference to approval values

Specifications are maximum values, details - see approval certificate.

**Packing**

|           |     |            |   |
|-----------|-----|------------|---|
| Packaging | Box | VPE length | 0 |
| VPE width | 0   | VPE height | 0 |

**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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**Technical data**

|                                                           |                |                                                                              |                               |
|-----------------------------------------------------------|----------------|------------------------------------------------------------------------------|-------------------------------|
| 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 mm <sup>2</sup>    |
|                                                           |                | Type of conductor and conductor cross-section                                | stranded 0.14 mm <sup>2</sup> |
|                                                           |                | 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                                                                       |                               |
| 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                                                                       |                               |

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|---------------|----------------|-----------------------------------------------|------------|
| 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   |
|               |                | 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                                        |            |

**Classifications**

|             |             |             |             |
|-------------|-------------|-------------|-------------|
| ETIM 6.0    | EC002638    | ETIM 7.0    | EC002638    |
| ECLASS 9.0  | 27-44-03-09 | ECLASS 9.1  | 27-44-03-09 |
| ECLASS 10.0 | 27-44-03-09 | ECLASS 11.0 | 27-46-02-02 |

**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>Long term storage of the product with average temperature of 50 °C and average humidity 70%, 36 months</li> </ul>                                                                                                                                                                   |

**Approvals**

Approvals



|                       |         |
|-----------------------|---------|
| ROHS                  | Conform |
| UL File Number Search | E60693  |

**Downloads**

|                             |                                                                                                    |
|-----------------------------|----------------------------------------------------------------------------------------------------|
| Engineering Data            | <a href="#">STEP</a>                                                                               |
| Product Change Notification | <a href="#">Change of Material LR 3.50 - DE</a><br><a href="#">Change of Material LR 3.50 - EN</a> |

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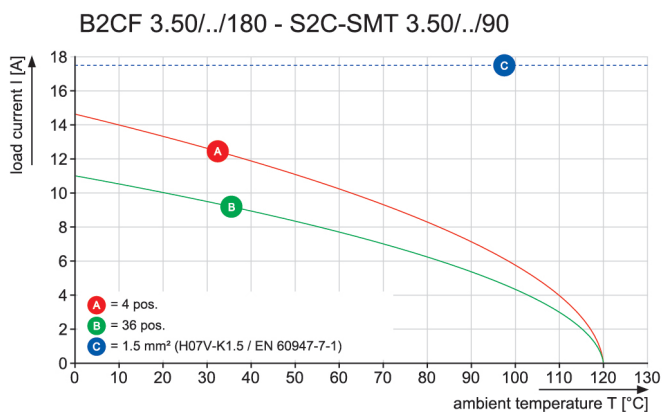
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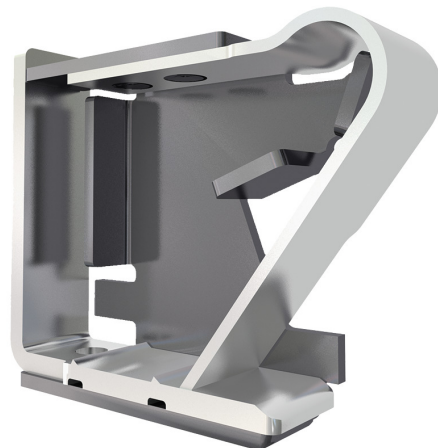
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# Drawings

## Graph

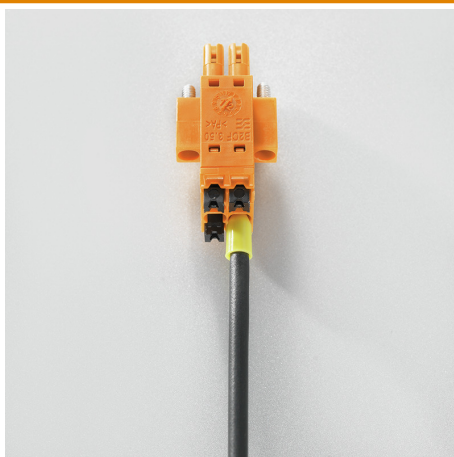


## Product benefits



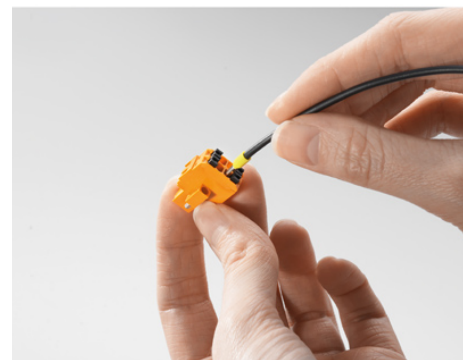
Solid PUSH IN contact  
Safe and durable

## 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

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# Drawings

## Product benefits



Clear marking  
Unique designation

## Example of use

