

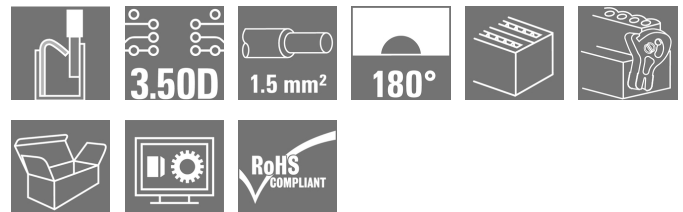
**B2CF 3.50/20/180LR SN BK BX****Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

www.weidmueller.com

**Product image****Two-row female plug with PUSH IN spring connection**

- Simply insert the prepared wire - and you're done
- Intuitive to use because
- the wire-entry area and handling area are clearly separated
- Integrated push-buttons for opening the terminal point
- High component density because of low heights
- Optional: locking and releasing require no tools when using Weidmüller's release latch (LR) or release lever (LH)

**General ordering data**

|              |                                                                                                                                        |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------|
| Version      | PCB plug-in connector, female plug, 3.50 mm, Number of poles: 20, 180°, PUSH IN, Spring connection, Clamping range, max.: 1.5 mm², Box |
| Order No.    | <a href="#">1278310000</a>                                                                                                             |
| Type         | B2CF 3.50/20/180LR SN BK BX                                                                                                            |
| GTIN (EAN)   | 4050118068771                                                                                                                          |
| Qty.         | 42 pc(s).                                                                                                                              |
| Product data | IEC: 320 V / 13.4 A / 0.14 - 1.5 mm²<br>UL: 300 V / 9.5 A / AWG 26 - AWG 16                                                            |
| Packaging    | Box                                                                                                                                    |

Creation date March 23, 2021 1:40:43 PM CET

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

|                |           |                 |            |
|----------------|-----------|-----------------|------------|
| Depth          | 29.9 mm   | Depth (inches)  | 1.177 inch |
| Height         | 17.25 mm  | Height (inches) | 0.679 inch |
| Net weight     | 13.9 g    | Width           | 41.9 mm    |
| Width (inches) | 1.65 inch |                 |            |

**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                              | 20                                            | L1 in mm                                   | 31.5 mm             |
| L1 in inches                                 | 1.24 inch                                     | 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               |
| Screwdriver blade                            | 0.4 x 2.5                                     | Screwdriver blade standard                 | DIN 5264            |
| Plugging cycles                              | 25                                            | Plugging force/pole, max.                  | 5 N                 |
| Pulling force/pole, max.                     | 5 N                                           |                                            |                     |

**Material data**

|                                       |             |                                       |                     |
|---------------------------------------|-------------|---------------------------------------|---------------------|
| Insulating material                   | PA 66 GF 30 | Colour                                | black               |
| Colour chart (similar)                | RAL 9011    | 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        |
| Contact surface                       | tinned      | Layer structure of plug contact       | 2...5 µm Au         |
| 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                    | 14 mm |
|                     |                                        | Recommended wire-end ferrule | <a href="#">H0.75/18 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                    | 15 mm |
|                     |                                        | Recommended wire-end ferrule | <a href="#">H1.0/18D 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**

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

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**Technical data****Rated data acc. to CSA**

Institute (CSA)



Certificate No. (CSA)

200039-1121690

|                                   |                                                                        |
|-----------------------------------|------------------------------------------------------------------------|
| Rated voltage (Use group B / CSA) | 300 V                                                                  |
| Rated voltage (Use group D / CSA) | 300 V                                                                  |
| Rated current (Use group C / CSA) | 9.5 A                                                                  |
| Wire cross-section, AWG, min.     | AWG 26                                                                 |
| Reference to approval values      | Specifications are maximum values, details - see approval certificate. |

|                                   |        |
|-----------------------------------|--------|
| Rated voltage (Use group C / CSA) | 50 V   |
| Rated current (Use group B / CSA) | 9.5 A  |
| Rated current (Use group D / CSA) | 9.5 A  |
| Wire cross-section, AWG, max.     | AWG 16 |

**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 D / UL 1059) | 300 V                                                                  |
| Rated current (Use group C / UL 1059) | 9.5 A                                                                  |
| Wire cross-section, AWG, min.         | AWG 26                                                                 |
| Reference to approval values          | Specifications are maximum values, details - see approval certificate. |

|                                       |        |
|---------------------------------------|--------|
| Rated voltage (Use group C / UL 1059) | 50 V   |
| Rated current (Use group B / UL 1059) | 9.5 A  |
| Rated current (Use group D / UL 1059) | 9.5 A  |
| Wire cross-section, AWG, max.         | AWG 16 |

**Packing**

|           |        |            |        |
|-----------|--------|------------|--------|
| Packaging | Box    | VPE length | 35 mm  |
| VPE width | 135 mm | VPE height | 350 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                                                                                                                |

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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 |

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**Technical data****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 colours 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> </ul> <p>Wire-end ferrule w/plastic collar DIN 46228/4 or Weidmüller colour code</p> <ul style="list-style-type: none"> <li>• 1.00mm<sup>2</sup> [H1.0/18D] mtl. ferrule leng. 12mm, stripping leng. 15mm</li> <li>• 0.75mm<sup>2</sup> [H0.75/18D] mtl. ferrule leng. 12mm, stripping leng. 14mm</li> <li>• 0.50mm<sup>2</sup> [H0.5/16D] mtl. ferrule leng. 10mm, stripping leng. 12mm</li> <li>• 0.34mm<sup>2</sup> [H0.34/12] mtl. ferrule leng. 8mm, stripping leng. 10mm</li> <li>• 0.25mm<sup>2</sup> [H0.25/12] mtl. ferrule leng. 8mm, stripping leng. 10mm</li> <li>• 0.14mm<sup>2</sup> [H0.14/12] mtl. ferrule leng. 8mm, stripping leng. 10mm</li> </ul> <p>Wire-end ferrule w/o plastic collar acc. to DIN 46228/1</p> <ul style="list-style-type: none"> <li>• 1.50mm<sup>2</sup> [H1.5/10] mtl. ferrule leng. 10mm, stripping leng. 10mm</li> </ul> <p>• Long term storage of the product with average temperature of 50 °C and average humidity 70%, 36 months</p> |

**Approvals**

Approvals



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

**Downloads**

|                                             |                                                                                                    |
|---------------------------------------------|----------------------------------------------------------------------------------------------------|
| Approval/Certificate/Document of Conformity | <a href="#">Declaration of the Manufacturer</a>                                                    |
| Engineering Data                            | <a href="#">STEP</a>                                                                               |
| Engineering Data                            | <a href="#">EPLAN, WSCAD</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> |
| User Documentation                          | <a href="#">Operating instruction</a>                                                              |

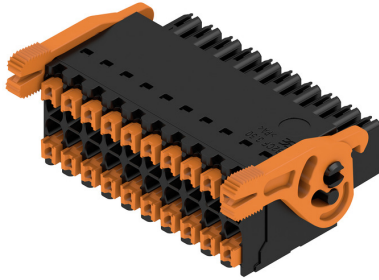
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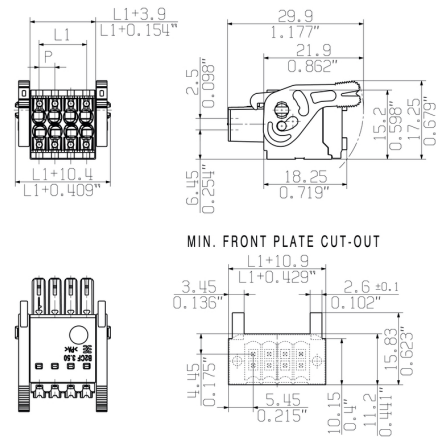
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# Drawings

## Product image



## Dimensional drawing



## Graph



## Product benefits



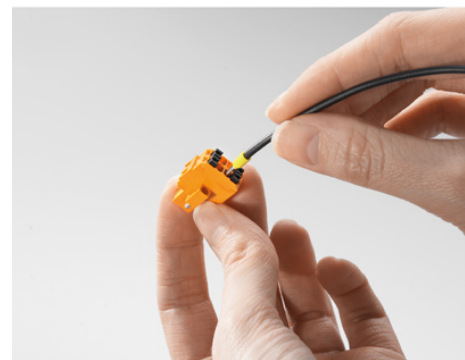
Solid PUSH IN contact  
Safe and durable

## 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

