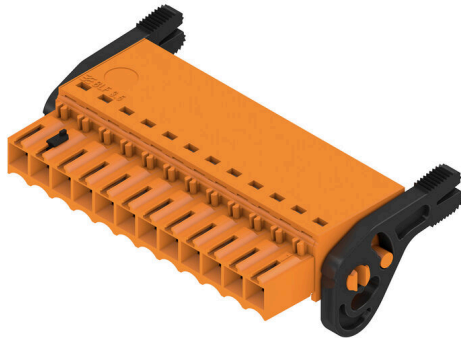


## BLF 3.50/12/180LR SN OR BX SO

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

www.weidmueller.com

### Product image



Connect efficiently - in a small space: female header with spring connection (PUSH IN) as a plug-in connection level; used together with male headers in 3.50 mm pitch.

### General ordering data

|              |   |
|--------------|---|
| Version      | PCB plug-in connector, female plug, 3.50 mm, Number of poles: 12, 180°, PUSH IN with actuator, Clamping range, max. : 1.5 mm <sup>2</sup> , Box |
| Order No.    | <a href="#">2689770000</a>  |
| Type         | BLF 3.50/12/180LR SN OR BX SO   |
| GTIN (EAN)   | 4050118695663   |
| Qty.         | 36 items  |
| Product data | IEC: 320 V / 17.5 A / 0.14 - 1.5 mm <sup>2</sup><br>UL: 300 V / 10 A / AWG 26 - AWG 16  |
| Packaging    | Box   |

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**Technical data**
**Approvals**

|      |         |
|------|---------|
| ROHS | Conform |
|------|---------|

**Dimensions and weights**

|            |          |                 |             |
|------------|----------|-----------------|-------------|
| Depth      | 30.05 mm | Depth (inches)  | 1.1831 inch |
| Height     | 15.08 mm | Height (inches) | 0.5937 inch |
| Width      | 48.9 mm  | Width (inches)  | 1.9252 inch |
| Net weight | 9.25 g   |                 |             |

**Environmental Product Compliance**

|                          |                             |                  |  |
|--------------------------|-----------------------------|------------------|--|
| RoHS Compliance Status   | Compliant without exemption |                  |  |
| REACH SVHC               | No SVHC above 0.1 wt%       |                  |  |
| Product Carbon Footprint | Cradle to gate              | 0,328 kg CO2 eq. |  |

**System Parameters**

|  |                                     |      |  |
|--|-------------------------------------|------|--|
| Product family                               | OMNIMATE Signal - series BL/SL 3.50 |      |  |
| Type of connection                           | Field connection                    |      |  |
| Wire connection method                       | PUSH IN with actuator               |      |  |
| Pitch in mm (P)                              | 3.50 mm                             |      |  |
| Pitch in inches (P)                          | 0.138 "                             |      |  |
| Conductor outlet direction                   | 180°                                |      |  |
| Number of poles                              | 12                                  |      |  |
| L1 in mm                                     | 38.50 mm                            |      |  |
| L1 in inches                                 | 1.516 "                             |      |  |
| Number of rows                               | 1                                   |      |  |
| Pin series quantity                          | 1                                   |      |  |
| 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   | IP20 plugged/ IP10 unplugged        |      |  |
| Protection degree                            | IP20, when fully mounted            |      |  |
| Volume resistance                            | ≤5 mΩ                               |      |  |
| Can be coded                                 | Yes                                 |      |  |
| Stripping length                             | 8 mm                                |      |  |
| Stripping length tolerance                   | min.                                | 0 mm |  |
|  | max.                                | 1 mm |  |
| Screwdriver blade                            | 0.4 x 2.5                           |      |  |
| Screwdriver blade standard                   | DIN 5264-A                          |      |  |
| Plugging cycles                              | 25                                  |      |  |
| Plugging force/pole, max.                    | 6 N                                 |      |  |
| Pulling force/pole, max.                     | 6 N                                 |      |  |

**Material data**

|                                       |          |                                       |              |
|---------------------------------------|----------|---------------------------------------|--------------|
| Insulating material                   | PA GF    | Colour                                | orange       |
| Colour of operational elements        | black    | Colour chart (similar)                | RAL 2000     |
| Insulating material group             | II       | Comparative Tracking Index (CTI)      | ≥ 400, ≤ 600 |
| Moisture Level (MSL)                  |          | UL 94 flammability rating             | V-0          |
| Contact material                      | Cu-alloy | Contact surface                       | 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. | -30 °C   | Temperature range, installation, max. | 100 °C       |

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**Technical data**

**Conductors suitable for connection**

|   |                      |
|---|----------------------|
| Clamping range, min.                            | 0.14 mm <sup>2</sup> |
| Clamping range, max.                            | 1.5 mm <sup>2</sup>  |
| Wire connection cross section AWG, min.         | AWG 26               |
| Wire connection cross section AWG, max.         | AWG 16               |
| 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, min. | 0.28 mm <sup>2</sup> |
| w. plastic collar ferrule, DIN 46228 pt 4, max. | 1 mm <sup>2</sup>    |
| w. wire end ferrule, DIN 46228 pt 1, min.       | 0.25 mm <sup>2</sup> |
| w. wire end ferrule, DIN 46228 pt 1, max.       | 1 mm <sup>2</sup>    |
| Plug gauge in accordance with EN 60999 a x b; ø | 2.4 mm x 1.5 mm      |

|  |  |  |                      |
|--|--|--|----------------------|
| Clampable conductor                    | Cross-section for conductor connection | Type   | fine-wired           |
|  |  | nominal  | 0.25 mm <sup>2</sup> |
|  |  | Stripping length   | nominal 10 mm        |
| wire end ferrule                       | Recommended wire-end ferrule           | <a href="#">H0.25/12 HBL</a>                               |                      |
|  |  | Type   | fine-wired           |
|  |  | nominal  | 0.34 mm <sup>2</sup> |
| Cross-section for conductor connection | wire end ferrule                       | Stripping length   | nominal 10 mm        |
|  |  | Recommended wire-end ferrule <a href="#">H0.34/12 TK</a>   |                      |
|  |  | Type   | fine-wired           |
| Cross-section for conductor connection | wire end ferrule                       | nominal  | 0.5 mm <sup>2</sup>  |
|  |  | Stripping length   | nominal 10 mm        |
|  |  | Recommended wire-end ferrule <a href="#">H0.5/14 OR</a>    |                      |
| Cross-section for conductor connection | wire end ferrule                       | Type   | fine-wired           |
|  |  | nominal  | 0.75 mm <sup>2</sup> |
|  |  | Stripping length   | nominal 10 mm        |
| Cross-section for conductor connection | wire end ferrule                       | Recommended wire-end ferrule <a href="#">H0.75/14T HBL</a> |                      |
|  |  | Type   | fine-wired           |
|  |  | nominal  | 1 mm <sup>2</sup>    |
| Cross-section for conductor connection | wire end ferrule                       | Stripping length   | nominal 10 mm        |
|  |  | Recommended wire-end ferrule <a href="#">H1.0/14 GE</a>    |                      |
|  |  | Type   | fine-wired           |

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)                  | 17.5 A |
| Rated current, max. number of poles (Tu=20°C)                  | 14.7 A                 | Rated current, min. number of poles (Tu=40°C)                  | 17.1 A |
| Rated current, max. number of poles (Tu=40°C)                  | 13.1 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  |

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## Technical data

Rated impulse voltage for surge voltage class/ pollution degree II/2 2.5 kV

Rated impulse voltage for surge voltage class/ contamination degree III/3 2.5 kV

Rated impulse voltage for surge voltage class/ pollution degree III/2 2.5 kV

Short-time withstand current resistance 1 x 1s with 120 A

### Rated data acc. to CSA

Rated voltage (Use group B / CSA) 300 V

Rated voltage (Use group D / CSA) 300 V

Rated current (Use group D / CSA) 10 A

Wire cross-section, AWG, max. AWG 26

Rated voltage (Use group C / CSA) 50 V

Rated current (Use group B / CSA) 10 A

Wire cross-section, AWG, min. AWG 16

### Rated data acc. to UL 1059

Rated voltage (Use group B / UL 1059) 300 V

Rated voltage (Use group D / UL 1059) 300 V

Rated current (Use group D / UL 1059) 10 A

Wire cross-section, AWG, max. AWG 16

Rated voltage (Use group C / UL 1059) 50 V

Rated current (Use group B / UL 1059) 10 A

Wire cross-section, AWG, min. AWG 26

### Packing

Packaging Box VPE length 350.00 mm

VPE width 137.00 mm VPE height 41.00 mm

### Type tests

Visual and dimensional test

Standard IEC 605 12-1-1:2002-02

Test dimensional inspection

Evaluation passed

Standard IEC 605 12-1-2:2002-02

Test weight check

Evaluation passed

Standard IEC 61984:2001-10 section 6.2

Test visual examination

Evaluation passed

Test: Durability of markings

Standard IEC 60068-2-70:1995-12 test Xb

Test mark of origin, type identification, pitch, type of material, date clock, approval marking UL, approval marking CSA

Evaluation available

Test durability

Evaluation passed

Test: Misengagement (Non-interchangeability)

Standard IEC 605 12-13-5:2006-02

Test 180° turned with coding elements

Evaluation passed

Test 180° turned without coding elements

Evaluation passed

Test visual examination

Evaluation passed

Test: Clampable cross section

Standard IEC 60999-1:1999-11 section 9.1, IEC 60947-1:2011-03 section 8.2.4.5.1

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>

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**Technical data**

|   |   |   |                              |  |
|---|---|---|------------------------------|--|
|   |   | 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 60999-1:1999-11 section 9.4 bzw. section 8.10 |                              |  |
|   | 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-U0.5                    |  |
|   |   | Type of conductor and conductor cross-section     | H05V-K0.5                    |  |
|   | 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  |   |                              |  |
| Pull-out test   | Standard                                      | IEC 60999-1:1999-11 section 9.5                   |                              |  |
|   | 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-U0.5                    |  |

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**Technical data**

|                |   |           |
|----------------|---|-----------|
|                | Type of conductor and conductor cross-section | H05V-K0.5 |
| 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-6 10 "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.
  - Wire end ferrule without plastic collar to DIN 46228/1
  - Wire end ferrule with plastic collar to DIN 46228/4
  - 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.
  - 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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Drawings

Product image



Dimensional drawing



Derating curve



Derating curve



Product benefits



Solid PUSH IN contactSafe and durable