

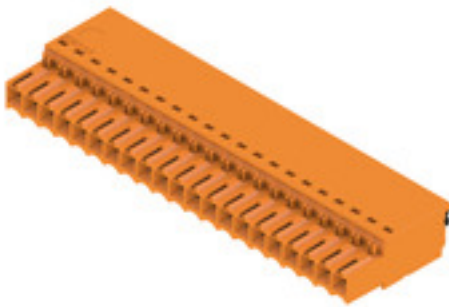
**BLF 3.50/21/180 SN OR BX****Weidmüller Interface GmbH & Co. KG**

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: 21, 180°, PUSH IN with actuator, Clamping range, max.: 1.5 mm², Box |
| Order No.    | <a href="#">2459240000</a>                                                                                                        |
| Type         | BLF 3.50/21/180 SN OR BX                                                                                                          |
| GTIN (EAN)   | 4050118474596                                                                                                                     |
| Qty.         | 24 pc(s).                                                                                                                         |
| Product data | IEC: 320 V / 17.5 A / 0.14 - 1.5 mm²<br>UL: 300 V / 10 A / AWG 26 - AWG 16                                                        |
| Packaging    | Box                                                                                                                               |

Creation date May 11, 2025 9:12:29 PM CEST

Catalogue status 26.04.2025 / We reserve the right to make technical changes.

## BLF 3.50/21/180 SN OR BX

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## Technical data

## Dimensions and weights

|            |          |                 |            |
|------------|----------|-----------------|------------|
| Depth      | 22.7 mm  | Depth (inches)  | 0.894 inch |
| Height     | 9 mm     | Height (inches) | 0.354 inch |
| Width      | 73.5 mm  | Width (inches)  | 2.894 inch |
| Net weight | 17.167 g |                 |            |

## 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)                              | 3.5 mm                              |      |  |
| Pitch in inches (P)                          | 0.138 "                             |      |  |
| Conductor outlet direction                   | 180°                                |      |  |
| Number of poles                              | 21                                  |      |  |
| L1 in mm                                     | 70 mm                               |      |  |
| L1 in inches                                 | 2.756 "                             |      |  |
| Number of rows                               | 1                                   |      |  |
| Pin series quantity                          | 1                                   |      |  |
| Rated cross-section                          | 1.5 mm²                             |      |  |
| 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 chart (similar)                | RAL 2000     | Insulating material group             | II     |
| Comparative Tracking Index (CTI)      | ≥ 400, ≤ 600 | 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 |

## 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>  |

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|                                                          |                                                                                                                                                                        |                              |                               |
|----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-------------------------------|
| Flexible, min. H05(07) V-K                               | 0.14 mm²                                                                                                                                                               |                              |                               |
| Flexible, max. H05(07) V-K                               | 1.5 mm²                                                                                                                                                                |                              |                               |
| w. plastic collar ferrule, DIN 46228 pt 4, 0.28 mm² min. |                                                                                                                                                                        |                              |                               |
| w. plastic collar ferrule, DIN 46228 pt 4, 1 mm² max.    |                                                                                                                                                                        |                              |                               |
| w. wire end ferrule, DIN 46228 pt 1, min.                | 0.25 mm²                                                                                                                                                               |                              |                               |
| w. wire end ferrule, DIN 46228 pt 1, max.                | 1 mm²                                                                                                                                                                  |                              |                               |
| 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 mm²                      |
|                                                          | wire end ferrule                                                                                                                                                       | Stripping length             | nominal 10 mm                 |
|                                                          |                                                                                                                                                                        | Recommended wire-end ferrule | <a href="#">H0.25/12 HBL</a>  |
|                                                          | Cross-section for conductor connection                                                                                                                                 | Type                         | fine-wired                    |
|                                                          |                                                                                                                                                                        | nominal                      | 0.34 mm²                      |
|                                                          | wire end ferrule                                                                                                                                                       | Stripping length             | nominal 10 mm                 |
|                                                          |                                                                                                                                                                        | Recommended wire-end ferrule | <a href="#">H0.34/12 TK</a>   |
|                                                          | Cross-section for conductor connection                                                                                                                                 | Type                         | fine-wired                    |
|                                                          |                                                                                                                                                                        | nominal                      | 0.5 mm²                       |
|                                                          | wire end ferrule                                                                                                                                                       | Stripping length             | nominal 10 mm                 |
|                                                          |                                                                                                                                                                        | Recommended wire-end ferrule | <a href="#">H0.5/14 OR</a>    |
|                                                          | Cross-section for conductor connection                                                                                                                                 | Type                         | fine-wired                    |
|                                                          |                                                                                                                                                                        | nominal                      | 0.75 mm²                      |
|                                                          | wire end ferrule                                                                                                                                                       | Stripping length             | nominal 10 mm                 |
|                                                          |                                                                                                                                                                        | Recommended wire-end ferrule | <a href="#">H0.75/14T HBL</a> |
|                                                          | Cross-section for conductor connection                                                                                                                                 | Type                         | fine-wired                    |
|                                                          |                                                                                                                                                                        | nominal                      | 1 mm²                         |
|                                                          | wire end ferrule                                                                                                                                                       | Stripping length             | nominal 10 mm                 |
|                                                          |                                                                                                                                                                        | Recommended wire-end ferrule | <a href="#">H1.0/14 GE</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)                         | 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             |
| 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                               | 1 x 1s with 120 A |

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**Technical data****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) | 10 A   |
| Rated current (Use group D / CSA) | 10 A   | Wire cross-section, AWG, min.     | AWG 16 |
| Wire cross-section, AWG, max.     | AWG 26 |                                   |        |

**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) | 10 A                                                                   |
| Rated current (Use group D / UL 1059) | 10 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 | 350 mm |
| VPE width | 140 mm | VPE height | 30 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                                                                                                              |
| Test: Durability of markings                 | Evaluation | passed                                                                                                                          |
|                                              | 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, durability |
| Test: Misengagement (Non-interchangeability) | Evaluation | available                                                                                                                       |
|                                              | Standard   | IEC 605 12-13-5:2006-02                                                                                                         |
|                                              | Test       | intentional plugging                                                                                                            |
|                                              | Evaluation | passed                                                                                                                          |
|                                              | 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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|                                                           |                |                                                                             |  |
|-----------------------------------------------------------|----------------|-----------------------------------------------------------------------------|--|
| 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 solid 0.14 mm <sup>2</sup> conductor cross-section    |  |
|                                                           |                | Type of conductor and stranded 0.14 mm <sup>2</sup> conductor cross-section |  |
|                                                           |                | Type of conductor and solid 1.5 mm <sup>2</sup> conductor cross-section     |  |
|                                                           |                | Type of conductor and stranded 1.5 mm <sup>2</sup> conductor cross-section  |  |
|                                                           |                | Type of conductor and AWG 26/1 conductor cross-section                      |  |
|                                                           |                | Type of conductor and AWG 26/19 conductor cross-section                     |  |
|                                                           |                | Type of conductor and AWG 16/1 conductor cross-section                      |  |
|                                                           |                | Type of conductor and AWG 16/19 conductor cross-section                     |  |
|                                                           | 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    | 0.3 kg                                                                      |  |
|                                                           | Conductor type | Type of conductor and H05V-U0.5 conductor cross-section                     |  |
|                                                           |                | Type of conductor and H05V-K0.5 conductor cross-section                     |  |
|                                                           | Evaluation     | passed                                                                      |  |
|                                                           | Requirement    | 0.4 kg                                                                      |  |
|                                                           | Conductor type | Type of conductor and H07V-U1.5 conductor cross-section                     |  |
|                                                           |                | Type of conductor and H07V-K1.5 conductor cross-section                     |  |
|                                                           |                | Type of conductor and AWG 16/1 conductor cross-section                      |  |
|                                                           |                | Type of conductor and AWG 16/19 conductor cross-section                     |  |
|                                                           | Evaluation     | passed                                                                      |  |
|                                                           | Requirement    | 0.2 kg                                                                      |  |
|                                                           | Conductor type | Type of conductor and AWG 26/1 conductor cross-section                      |  |
|                                                           |                | Type of conductor and AWG 26/19 conductor cross-section                     |  |
|                                                           | Evaluation     | passed                                                                      |  |

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|---------------|----------------|---------------------------------------------------------|
| Pull-out test | Standard       | IEC 60999-1:1999-11 section 9.5                         |
|               | Requirement    | ≥20 N                                                   |
|               | Conductor type | Type of conductor and H05V-U0.5 conductor cross-section |
|               |                | Type of conductor and H05V-K0.5 conductor cross-section |
|               | Evaluation     | passed                                                  |
|               | Requirement    | ≥40 N                                                   |
|               | Conductor type | Type of conductor and H07V-U1.5 conductor cross-section |
|               |                | Type of conductor and H07V-K1.5 conductor cross-section |
|               |                | Type of conductor and AWG 16/1 conductor cross-section  |
|               |                | Type of conductor and AWG 16/19 conductor cross-section |
|               | Evaluation     | passed                                                  |
|               | Requirement    | ≥10 N                                                   |
|               | Conductor type | Type of conductor and AWG 26/1 conductor cross-section  |
|               |                | Type of conductor and AWG 26/19 conductor cross-section |
|               | Evaluation     | passed                                                  |

**Classifications**

|             |             |             |             |
|-------------|-------------|-------------|-------------|
| ETIM 6.0    | EC002638    | ETIM 7.0    | EC002638    |
| ETIM 8.0    | EC002638    | ETIM 9.0    | EC002638    |
| ETIM 10.0   | 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 | ECLASS 12.0 | 27-46-02-02 |
| ECLASS 13.0 | 27-46-02-02 | ECLASS 14.0 | 27-46-02-02 |
| ECLASS 15.0 | 27-46-02-02 |             |             |

**Environmental Product Compliance**

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

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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 variants 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>• Wire end ferrule without plastic collar to DIN 46228/1</li> <li>• Wire end ferrule with plastic collar to DIN 46228/4</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>• The test point can only be used as potential-pickup point.</li> <li>• 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</li> <li>• Long term storage of the product with average temperature of 50 °C and maximum humidity 70%, 36 months</li> </ul> |

## Approvals

Approvals



|                         |                                                                                                                                                                             |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Approvals MAMID         | <a href="https://mdcop.weidmueller.com/mediadelivery/rendition/900_319230/-T1z1mm-S800/">https://mdcop.weidmueller.com/mediadelivery/rendition/900_319230/-T1z1mm-S800/</a> |
| ROHS                    | Conform                                                                                                                                                                     |
| UL File Number Search   | UL Website                                                                                                                                                                  |
| Certificate No. (cURus) | E60693                                                                                                                                                                      |

## Downloads

|                             |                                                                                                                 |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------|
| Engineering Data            | <a href="#">CAD data – STEP</a>                                                                                 |
| Product Change Notification | <a href="#">Technische Änderung / Redesign BLF 3.50</a><br><a href="#">Technical Change / Redesign BLF 3.50</a> |
| Catalogues                  | <a href="#">Catalogues in PDF-format</a>                                                                        |

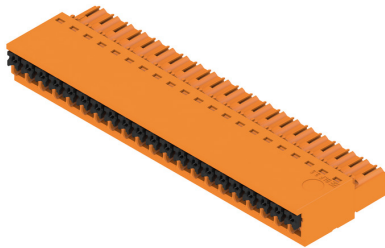
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## Drawings

### Product image



### Dimensional drawing



### Derating curve



### Derating curve



### Product benefits



Solid PUSH IN contact  
Safe and durable