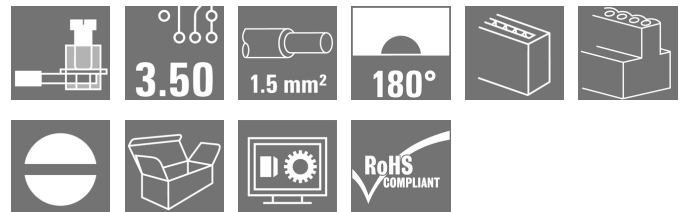


## OMNIMATE Signal - series BL/SL 3.50 BL 3.50/12/180 SN BK BX

**Weidmüller Interface GmbH & Co. KG**  
Klingenbergstraße 26  
D-32758 Detmold  
Germany  
Fon: +49 5231 14-0  
Fax: +49 5231 14-292083  
www.weidmueller.com

### Product image



Similar to illustration

Female connectors with clamping yoke screw system for connecting conductors at 3.50 mm pitch. They provide space for labelling and can be coded.

### General ordering data

|              |   |
|--------------|---|
| Type         | BL 3.50/12/180 SN BK BX   |
| Order No.    | <a href="#">1615730000</a>  |
| Version      | PCB plug-in connector, female plug, 3.50 mm, Number of poles: 12, 180°, Clamping yoke connection, Clamping range, max. : 1.5 mm², Box |
| GTIN (EAN)   | 4008190060817   |
| Qty.         | 42 pc(s).   |
| Product data | IEC: 320 V / 17 A / 0.2 - 1.5 mm²<br>UL: 300 V / 10 A / AWG 28 - AWG 14   |
| Packaging    | Box   |

Creation date September 28, 2020 8:15:13 PM CEST

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**BL 3.50/12/180 SN BK BX**

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

|            |          |                 |            |
|------------|----------|-----------------|------------|
| Width      | 42 mm    | Width (inches)  | 1.654 inch |
| Height     | 13 mm    | Height (inches) | 0.512 inch |
| Depth      | 18.5 mm  | Depth (inches)  | 0.728 inch |
| Net weight | 10.612 g |                 |            |

**System Parameters**

| Product family                               | OMNIMATE Signal - series BL/SL 3.50 | Type of connection                         | Field connection    |
|--|-------------------------------------|--|---------------------|
| Wire connection method                       | Clamping yoke connection            | Pitch in mm (P)                            | 3.5 mm              |
| Pitch in inches (P)                          | 0.138 inch                          | Conductor outlet direction                 | 180°                |
| Number of poles                              | 12                                  | L1 in mm                                   | 38.5 mm             |
| L1 in inches                                 | 1.516 inch                          | 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 | IP 20               |
| Volume resistance                            | ≤ 5mΩ                               | Can be coded                               | Yes                 |
| Stripping length                             | 6 mm                                | Tightening torque, min.                    | 0.2 Nm              |
| Tightening torque, max.                      | 0.25 Nm                             | Clamping screw                             | M 2                 |
| Screwdriver blade                            | 0.4 x 2.5                           | Screwdriver blade standard                 | DIN 5264            |
| Plugging cycles                              | 25                                  | Plugging force/pole, max.                  | 7 N                 |
| Pulling force/pole, max.                     | 5 N                                 |  |                     |

**Material data**

|                                       |                           |                                       |                     |
|---------------------------------------|---------------------------|---------------------------------------|---------------------|
| Insulating material                   | PBT                       | Colour                                | black               |
| Colour chart (similar)                | RAL 9011                  | Insulating material group             | IIIa                |
| Comparative Tracking Index (CTI)      | ≥ 200                     | Insulation strength                   | ≥ 10 <sup>8</sup> Ω |
| UL 94 flammability rating             | V-0                       | GWFI                                  | 960 °C              |
| Contact material                      | Copper alloy              | Contact surface                       | tinned              |
| Layer structure of plug contact       | 4..8 μm Sn hot-dip tinned | Storage temperature, min.             | -40 °C              |
| Storage temperature, max.             | 70 °C                     | Operating temperature, min.           | -50 °C              |
| Operating temperature, max.           | 100 °C                    | Temperature range, installation, min. | -30 °C              |
| Temperature range, installation, max. | 100 °C                    |                                       |                     |

**Conductors suitable for connection**

|   |                      |
|---|----------------------|
| Clamping range, min.  | 0.08 mm <sup>2</sup> |
| Clamping range, max.  | 1.5 mm <sup>2</sup>  |
| Wire connection cross section AWG, min.                             | AWG 28               |
| Wire connection cross section AWG, max.                             | AWG 14               |
| Solid, min. H05(07) V-U   | 0.2 mm <sup>2</sup>  |
| Solid, max. H05(07) V-U   | 1.5 mm <sup>2</sup>  |
| Flexible, min. H05(07) V-K  | 0.2 mm <sup>2</sup>  |
| Flexible, max. H05(07) V-K  | 1.5 mm <sup>2</sup>  |
| w. plastic collar ferrule, DIN 46228 pt 4, 0.2 mm <sup>2</sup> min. |                      |
| w. plastic collar ferrule, DIN 46228 pt 4, 1.5 mm <sup>2</sup> max. |                      |
| w. wire end ferrule, DIN 46228 pt 1, 0.2 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**

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                      | 0.5 mm <sup>2</sup>          |
| wire end ferrule                       | Stripping length                       | nominal                      | 8 mm                         |
|  |  | Recommended wire-end ferrule | <a href="#">H0.5/12 OR</a>   |
|  |  | nominal                      | 6 mm                         |
|  |  | Recommended wire-end ferrule | <a href="#">H0.5/6</a>       |
| Cross-section for conductor connection | Type                                   | fine-wired                   |                              |
|  | nominal                                | 0.75 mm <sup>2</sup>         |                              |
| wire end ferrule                       | Stripping length                       | nominal                      | 8 mm                         |
|  |  | Recommended wire-end ferrule | <a href="#">H0.75/12 W</a>   |
|  |  | nominal                      | 6 mm                         |
|  |  | Recommended wire-end ferrule | <a href="#">H0.75/6</a>      |
| Cross-section for conductor connection | Type                                   | fine-wired                   |                              |
|  | nominal                                | 1 mm <sup>2</sup>            |                              |
| wire end ferrule                       | Stripping length                       | nominal                      | 8 mm                         |
|  |  | Recommended wire-end ferrule | <a href="#">H1.0/12 GE</a>   |
|  |  | nominal                      | 6 mm                         |
|  |  | Recommended wire-end ferrule | <a href="#">H1.0/6</a>       |
| Cross-section for conductor connection | Type                                   | fine-wired                   |                              |
|  | nominal                                | 0.25 mm <sup>2</sup>         |                              |
| wire end ferrule                       | Stripping length                       | nominal                      | 8 mm                         |
|  |  | Recommended wire-end ferrule | <a href="#">H0.25/10 HBL</a> |
|  |  | nominal                      | 5 mm                         |
|  |  | Recommended wire-end ferrule | <a href="#">H0.25/5</a>      |
| Cross-section for conductor connection | Type                                   | fine-wired                   |                              |
|  | nominal                                | 0.34 mm <sup>2</sup>         |                              |
| wire end ferrule                       | Stripping length                       | nominal                      | 8 mm                         |
|  | Recommended wire-end ferrule           | <a href="#">H0.34/10 TK</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.

Max. clamping range 1.5 mm<sup>2</sup>

**Rated data acc. to IEC**


|   |                        |   |                   |
|---|------------------------|---|-------------------|
| tested acc. to standard   | IEC 60664-1, IEC 61984 | Rated current, min. number of poles (Tu=20°C)                         | 17 A              |
| Rated current, max. number of poles (Tu=20°C)                             | 12 A                   | Rated current, min. number of poles (Tu=40°C)                         | 14.5 A            |
| Rated current, max. number of poles (Tu=40°C)                             | 10 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 100 A |

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**Technical data**

**Rated data acc. to CSA**

|                                   |  |   |        |                       |  |
|-----------------------------------|--|---|--------|-----------------------|--|
| Institute (CSA)                   |  |  |        | Certificate No. (CSA) |  |
|                                   |  |   |        | 154685-1318353        |  |
| Rated voltage (Use group B / CSA) | 300 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 28   | Wire cross-section, AWG, max.   | AWG 14 |                       |  |
| Reference to approval values      | Specifications are maximum values, details - see approval certificate. |   |        |                       |  |

**Rated data acc. to UL 1059**

|                                       |  |   |        |                      |  |
|---------------------------------------|--|---|--------|----------------------|--|
| Institute (UR)                        |  |  |        | Certificate No. (UR) |  |
|                                       |  |   |        | E60693               |  |
| Rated voltage (Use group B / UL 1059) | 300 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 28   | Wire cross-section, AWG, max.   | AWG 14 |                      |  |
| Reference to approval values          | Specifications are maximum values, details - see approval certificate. |   |        |                      |  |

**Packing**

|           |       |            |        |
|-----------|-------|------------|--------|
| Packaging | Box   | VPE length | 77 mm  |
| VPE width | 95 mm | VPE height | 140 mm |

**Type tests**

|  |            |  |
|--|------------|--|
| Test: Durability of markings                 | Standard   | DIN EN 61984 section 7.3.2 / 09.02 taking pattern from DIN EN 60068-2-70 / 07.96   |
|  | Test       | mark of origin, type identification, approval marking SEV, approval marking CSA    |
|  | Evaluation | available  |
|  | Test       | durability   |
|  | Evaluation | passed   |
| Test: Misengagement (Non-interchangeability) | Standard   | DIN EN 61984 section 6.3 and 6.9.1 / 09.02, DIN IEC 60512 part 7 section 5 / 05.94 |
|  | Test       | 180° turned with coding elements   |
|  | Evaluation | passed   |

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**Technical data**

|   |   |  |                                     |
|---|---|--|-------------------------------------|
| Test: Clampable cross section                             | Standard                                      | DIN EN 60999-1 section 7 and 9.1 / 12.00, DIN EN 60947-1 section 8.2.4.5.1 / 12.99 |                                     |
|   | Conductor type                                | Type of conductor and conductor cross-section                                      | solid 0.2 mm <sup>2</sup>           |
|   |   | Type of conductor and conductor cross-section                                      | stranded 0.2 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 28/1                            |
|   |   | Type of conductor and conductor cross-section                                      | AWG 28/19                           |
|   |   | 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                                      | DIN EN 60999-1 section 9.4 / 12.00   |                                     |
|   | Requirement                                   | 0.2 kg   |                                     |
|   | Conductor type                                | Type of conductor and conductor cross-section                                      | AWG 28/1                            |
|   |   | Type of conductor and conductor cross-section                                      | AWG 28/19                           |
|   | Evaluation                                    | passed   |                                     |
|   | Requirement                                   | 0.3 kg   |                                     |
|   | Conductor type                                | Type of conductor and conductor cross-section                                      | 2 × AWG 24/1                        |
|   |   | Type of conductor and conductor cross-section                                      | 2 × AWG 24/19 with wire end ferrule |
|   | Evaluation                                    | passed   |                                     |
|   | Requirement                                   | 0.4 kg   |                                     |
| Conductor type  | 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 16/7   |                                     |
| Evaluation  | passed  |  |                                     |

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## Technical data

|   |                |   |                                     |  |
|---|----------------|---|-------------------------------------|--|
| Pull-out test                                 | Standard       | DIN EN 60999-1 section 9.5 / 12.00            |                                     |  |
|   | Requirement    | ≥5 N  |                                     |  |
|   | Conductor type | Type of conductor and conductor cross-section | AWG 28/1                            |  |
|   |                | Type of conductor and conductor cross-section | AWG 28/19                           |  |
|   | Evaluation     | passed  |                                     |  |
|   | Requirement    | ≥10 N   |                                     |  |
|   | Conductor type | Type of conductor and conductor cross-section | 2 × AWG 24/1                        |  |
|   |                | Type of conductor and conductor cross-section | 2 × AWG 24/19 with wire end ferrule |  |
|   | Evaluation     | passed  |                                     |  |
|   | Requirement    | ≥40 N   |                                     |  |
|   | Conductor type | Type of conductor and conductor cross-section | H05V-U1.5                           |  |
|   |                | Type of conductor and conductor cross-section | H05V-K1.5                           |  |
| Type of conductor and conductor cross-section |                | AWG 16/7                                      |                                     |  |
| 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 | UNSPSC     | 30-21-18-10 |

### Notes

|       |   |
|-------|---|
| 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>• Max. outer diameter of the conductor: 2.9 mm</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>• Long term storage of the product with average temperature of 50 °C and average humidity 70%, 36 months</li> </ul> |
|-------|---|

|                |  |
|----------------|--|
| 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. |
|----------------|--|

**Data sheet**

**OMNIMATE Signal - series BL/SL 3.50  
BL 3.50/12/180 SN BK BX**

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**Technical data**

**Approvals**

Approvals



ROHS

Conform

**Downloads**

Approval/Certificate/Document of  
Conformity

[Declaration of the Manufacturer](#)

Brochure/Catalogue

- [FL DRIVES EN](#)
- [MB DEVICE MANUF. EN](#)
- [FL DRIVES DE](#)
- [CAT 2 PORTFOLIOGUIDE EN](#)
- [FL BUILDING SAFETY EN](#)
- [FL APPL LED LIGHTING EN](#)
- [FLIndustr.CONTROLS EN](#)
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- [FL APPL INVERTER EN](#)
- [FL\\_BASE\\_STATION\\_EN](#)
- [FL ELEVATOR EN](#)
- [FL POWER SUPPLY EN](#)
- [FL 72H SAMPLE SER EN](#)
- [PO OMNIMATE EN](#)

Engineering Data

[EPLAN\\_WSCAD](#)

Engineering Data

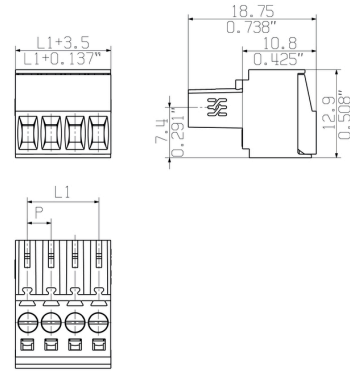
[STEP](#)

**OMNIMATE Signal - series BL/SL 3.50**  
**BL 3.50/12/180 SN BK BX**

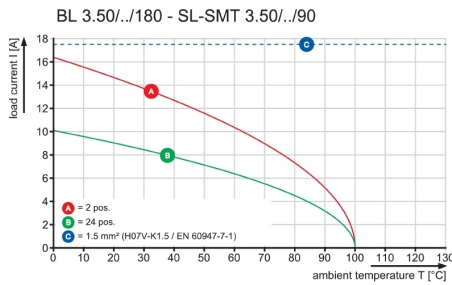
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Drawings

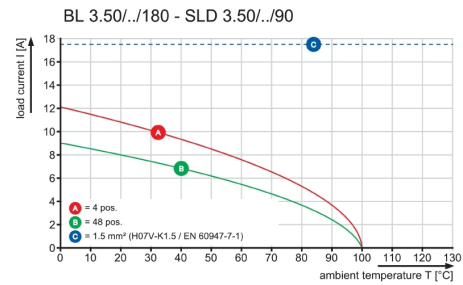
Dimensional drawing



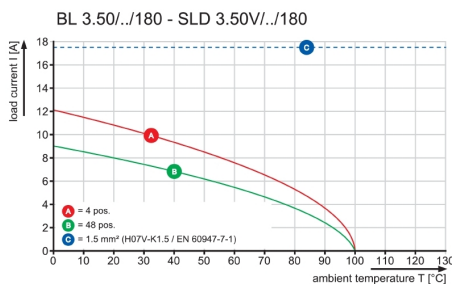
Graph



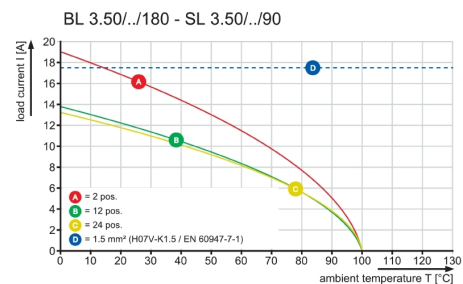
Graph



Graph

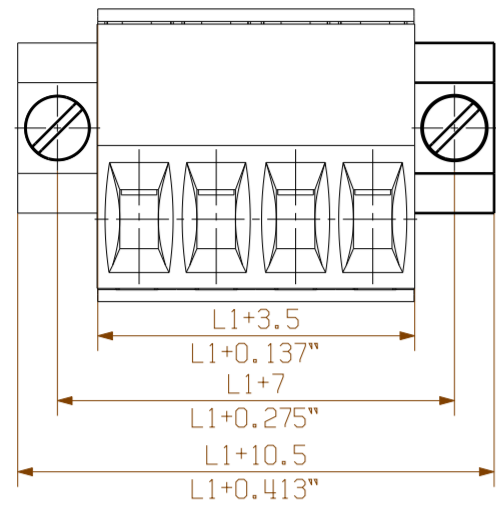


Graph





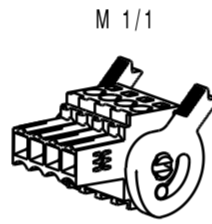
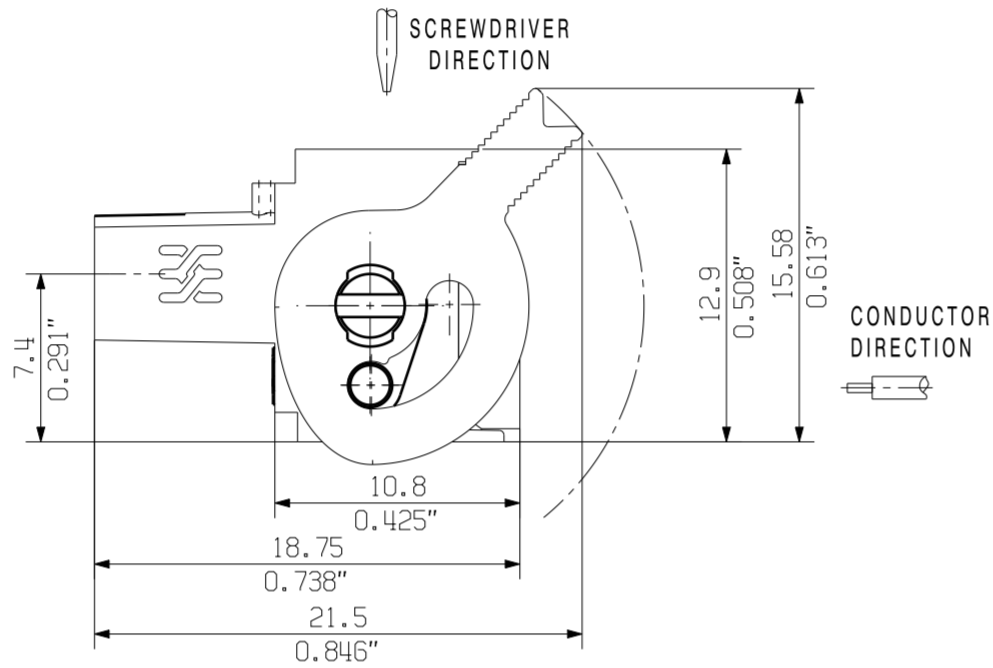
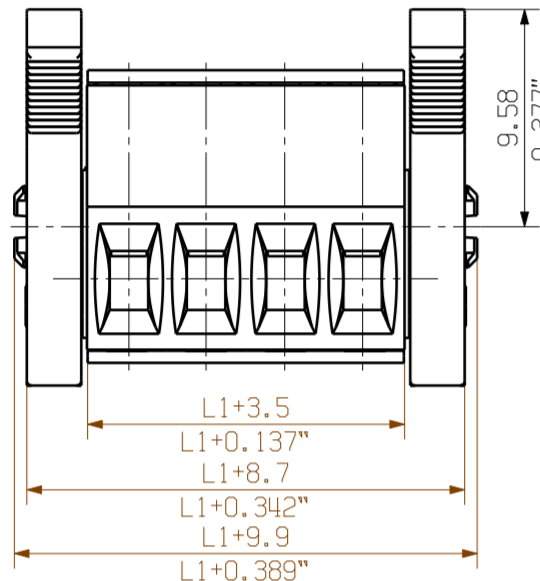
BL 3.50/04/180F



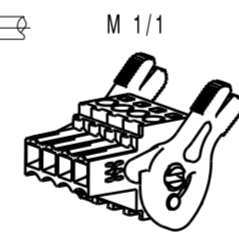
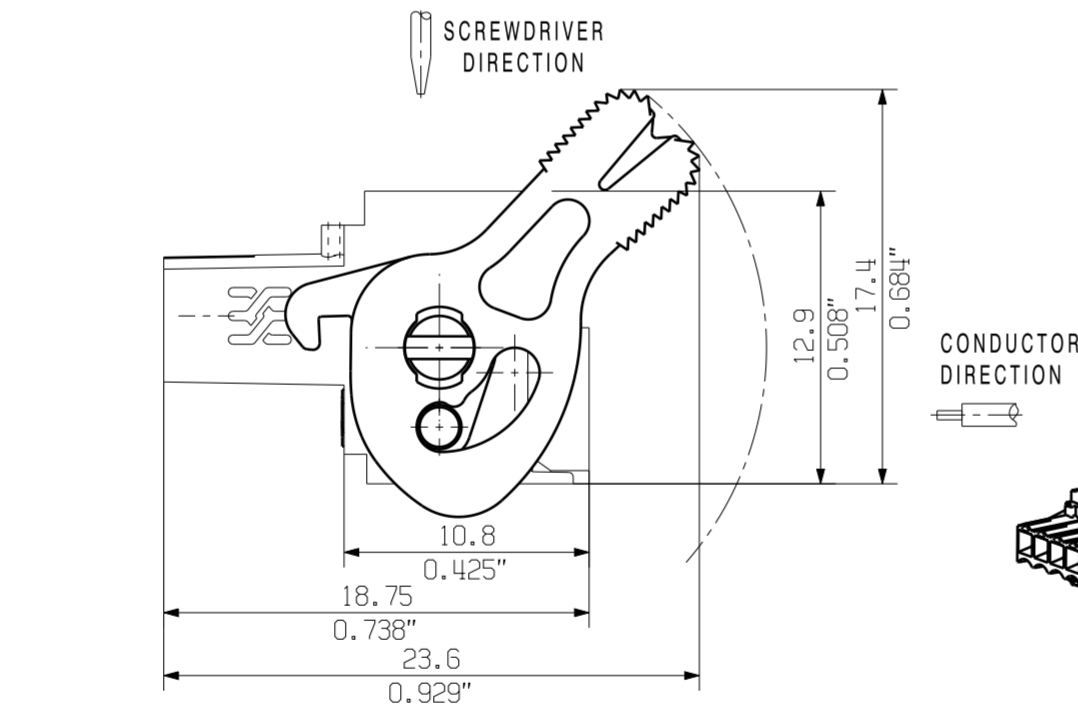
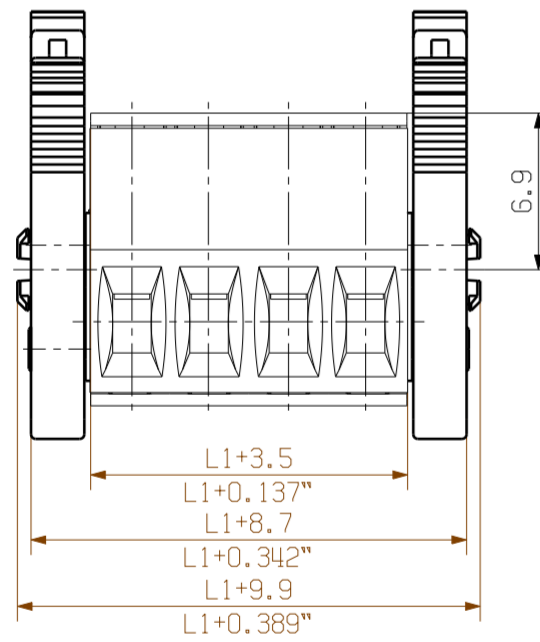
BL 3.50/04/180



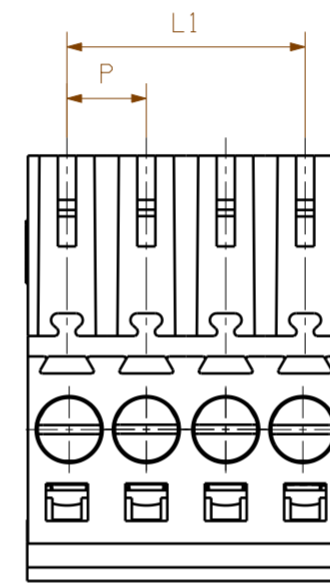
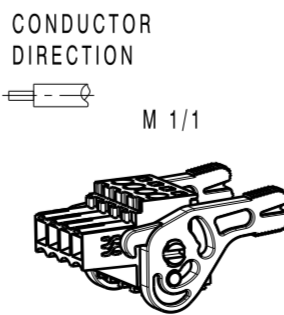
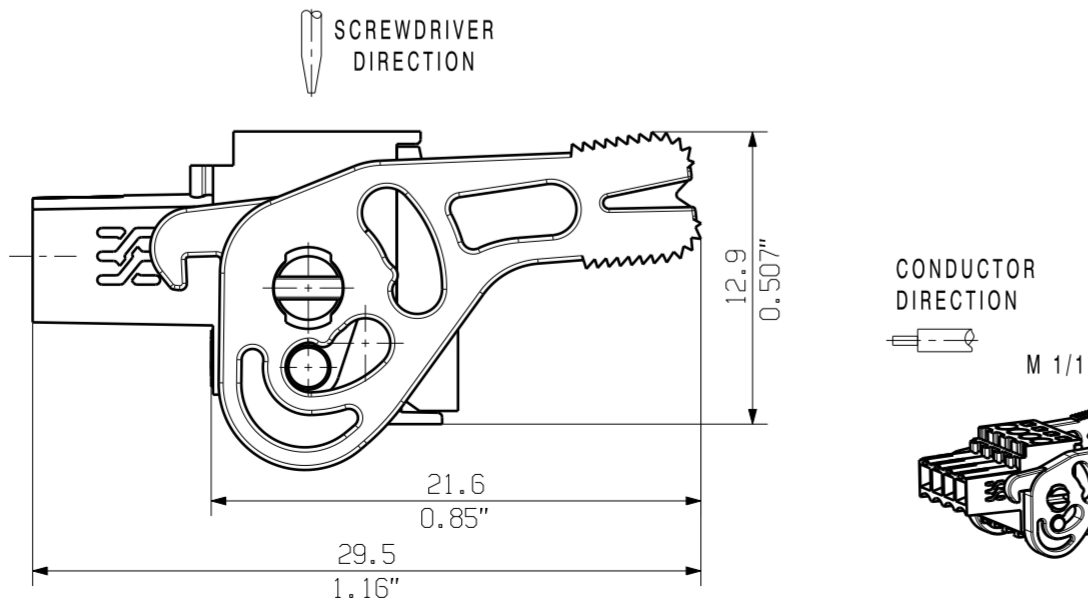
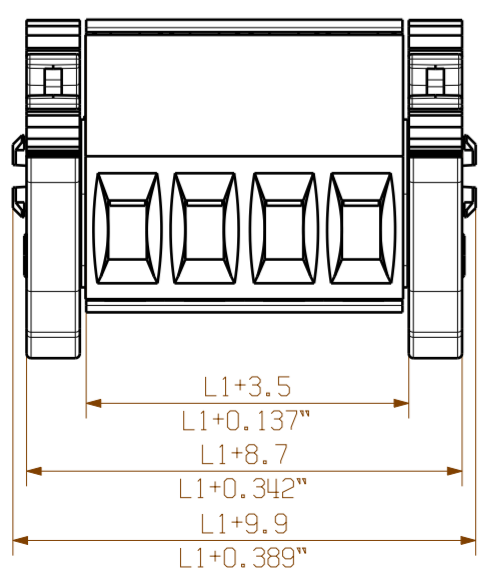
BL 3.50/04/180LH



BL 3.50/04/180LR



BL 3.50/04/180LR REDESIGN



MIN. FRONT PLATE CUT-OUT

P = 3.50 RASTER PITCH

For the mounting of PCBs, it should be noted that the rated data given in the catalogue relates only to the connection elements. The necessary creepage and clearance paths must be observed in connection with the respective applicant in accordance to VDE 0110. The current-carrying capacity and pitch tolerance is to be determined according to DIN IEC 326 part 3 very fine.

Weidmüller connectors are tested to the DIN VDE 0627 standard, and are valid for its field of application. Provided that the connectors are used to the intended purpose, all requirements with respect to the occurring of electrical, mechanical, thermal and corrosive stress will be satisfied.

|    |               |                   |
|----|---------------|-------------------|
| 24 | 80.5          | 3.169             |
| 23 | 77.0          | 3.032             |
| 22 | 73.5          | 2.894             |
| 21 | 70.0          | 2.756             |
| 20 | 66.5          | 2.618             |
| 19 | 63.0          | 2.480             |
| 18 | 59.5          | 2.343             |
| 17 | 56.0          | 2.205             |
| 16 | 52.5          | 2.067             |
| 15 | 49.0          | 1.929             |
| 14 | 45.5          | 1.791             |
| 13 | 42.0          | 1.654             |
| 12 | 38.5          | 1.516             |
| 11 | 35.0          | 1.378             |
| 10 | 31.5          | 1.240             |
| 9  | 28.0          | 1.102             |
| 8  | 24.5          | 0.965             |
| 7  | 21.0          | 0.827             |
| 6  | 17.5          | 0.689             |
| 5  | 14.0          | 0.551             |
| 4  | 10.5          | 0.413             |
| 3  | 7.0           | 0.276             |
| 2  | 3.5           | 0.138             |
| n  | POLZAHL POLES | L1 [mm] L1 [inch] |

GENERAL TOLERANCE: DIN ISO 2768-m

103300/5  
17.05.18 HELIS\_MA 01

RoHS COMPLIANT

Modification

Date Name

Drawn 02.09.2008 HELIS\_MA

Responsible AMANN\_A

Checked

Approved LANG\_T

Cat.no.: 3 19675 36

Issue no. 00 of 00 sheets

Product file: BL 3.50

7382

BL 3.50/././180 BUCHSENSTECKER FEMALE PLUG

Prüfung / Verification

ALLGEMEINGÜELTIGE KUNDENZEICHNUNG, AKTUELLER STAND NUR AUF ANFRAGE  
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