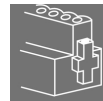
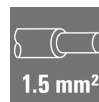


**BL-I/O 3.50/10F CJC AU BK BX****Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

[www.weidmueller.com](http://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: 10, 180°, PUSH IN with actuator, Clamping range, max. : 1.5 mm², Box |
| Order No.    | <a href="#">2471390000</a>   |
| Type         | BL-I/O 3.50/10F CJC AU BK BX   |
| GTIN (EAN)   | 4050118585599  |
| Qty.         | 20 pc(s).  |
| Product data | IEC: 200 V / 2.2 A / 0.2 - 1.5 mm²<br>UL: 50 V / 5 A / AWG 24 - AWG 16   |
| Packaging    | Box  |

Creation date June 4, 2024 9:07:16 AM CEST

Catalogue status 01.06.2024 / We reserve the right to make technical changes.

**BL-I/O 3.50/10F CJC AU BK BX****Weidmüller Interface GmbH & Co. KG**

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

|            |          |                 |            |
|------------|----------|-----------------|------------|
| Height     | 10.3 mm  | Height (inches) | 0.406 inch |
| Width      | 42 mm    | Width (inches)  | 1.654 inch |
| Net weight | 11.548 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                              | 10                                  |                   |                             |
| L1 in mm                                     | 31.5 mm                             |                   |                             |
| L1 in inches                                 | 1.24 "                              |                   |                             |
| Pin series quantity                          | 2                                   |                   |                             |
| Rated cross-section                          | 1 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        |                   |                             |
| Volume resistance                            | ≤5 mΩ                               |                   |                             |
| Can be coded                                 | Yes                                 |                   |                             |
| Stripping length                             | 8 mm                                |                   |                             |
| Screwdriver blade                            | 0.4 x 2.5                           |                   |                             |
| Screwdriver blade standard                   | DIN 5264                            |                   |                             |
| Plugging cycles                              | 25                                  |                   |                             |
| Plugging force/pole, max.                    | 6 N                                 |                   |                             |
| Pulling force/pole, max.                     | 6 N                                 |                   |                             |
| Tightening torque                            | Torque type                         | Screw flange      |                             |
|  | Usage information                   | Tightening torque | min. 0.15 Nm<br>max. 0.2 Nm |

**Material data**

|                             |          |                             |          |
|-----------------------------|----------|-----------------------------|----------|
| Insulating material         | PBT      | Colour                      | black    |
| Colour chart (similar)      | RAL 9011 | UL 94 flammability rating   | V-0      |
| Contact base material       | Cu-alloy | 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. | 75 °C    |                             |          |

**Conductors suitable for connection**

|   |                     |
|---|---------------------|
| Clamping range, min.                    | 0.2 mm <sup>2</sup> |
| Clamping range, max.                    | 1.5 mm <sup>2</sup> |
| Wire connection cross section AWG, min. | AWG 24              |
| Wire connection cross section AWG, max. | AWG 16              |
| 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> |

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## BL-I/O 3.50/10F CJC AU BK BX

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## Technical data

w. plastic collar ferrule, DIN 46228 pt 4, 0.2 mm<sup>2</sup> min.w. plastic collar ferrule, DIN 46228 pt 4, 0.75 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 mm<sup>2</sup> max.

Plug gauge in accordance with EN 60999 a x b; ø 2.4 mm x 1.5 mm; 1.9mm


|                     |  |                              |                               |
|---------------------|--|------------------------------|-------------------------------|
| Clampable conductor | Cross-section for conductor connection | Type                         | fine-wired                    |
|                     |  | nominal                      | 0.25 mm <sup>2</sup>          |
|                     | 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 mm <sup>2</sup>          |
|                     | 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 mm <sup>2</sup>           |
|                     | 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 mm <sup>2</sup>          |
|                     | wire end ferrule                       | Stripping length             | nominal 10 mm                 |
|                     |  | Recommended wire-end ferrule | <a href="#">H0.75/14T HBL</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)                         | 2.2 A             |
| Rated current, max. number of poles (Tu=20°C)                             | 2 A                    | Rated current, min. number of poles (Tu=40°C)                         | 2.2 A             |
| Rated current, max. number of poles (Tu=40°C)                             | 2 A                    | Rated voltage for surge voltage class / pollution degree II/2         | 200 V             |
| Rated voltage for surge voltage class / pollution degree III/2            | 160 V                  | Rated voltage for surge voltage class / pollution degree III/3        | 50 V              |
| Rated impulse voltage for surge voltage class/ pollution degree II/2      | 2,500 V                | 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 | 0.8 kV                 | Short-time withstand current resistance                               | 3 x 1s with 120 A |

## Rated data acc. to CSA

|                                   |   |                                   |                |
|-----------------------------------|---|-----------------------------------|----------------|
| Institute (CSA)                   |  | Certificate No. (CSA)             | 200039-1202189 |
| Rated voltage (Use group B / CSA) | 50 V  | Rated voltage (Use group D / CSA) | 50 V           |
| Rated current (Use group B / CSA) | 5 A   | Rated current (Use group D / CSA) | 5 A            |
| Wire cross-section, AWG, min.     | AWG 22  | Wire cross-section, AWG, max.     | AWG 16         |
| Reference to approval values      | Specifications are maximum values, details - see approval certificate.              |                                   |                |

Creation date June 4, 2024 9:07:16 AM CEST

**BL-I/O 3.50/10F CJC AU BK BX****Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

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

Institute (UR)



Certificate No. (UR)

E60693

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

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

Rated current (Use group B / UL 1059) 5 A

Rated current (Use group D / UL 1059) 5 A

Wire cross-section, AWG, min. AWG 24

Wire cross-section, AWG, max. AWG 16

Reference to approval values  
Specifications are maximum values, details - see approval certificate.**Packing**

|           |       |            |        |
|-----------|-------|------------|--------|
| Packaging | Box   | VPE length | 168 mm |
| VPE width | 96 mm | VPE height | 43 mm  |

**Resistance parameters**

|                                  |         |                                  |           |
|----------------------------------|---------|----------------------------------|-----------|
| R <sub>25</sub>                  | 10 kΩ   | Temperature coefficient (+25 °C) | -4.4 %/°C |
| Thermistor beta, β (0 to +50 °C) | 3,892 K | Power loss                       | 2 mW / °C |

**Type tests**

|                               |                |  |  |
|-------------------------------|----------------|--|--|
| Test: Durability of markings  | Standard       | draft DIN VDE 0627 section 6.2.2 / 09.91   |  |
|                               | Test           | mark of origin, type identification, pitch, type of material                       |  |
|                               | Evaluation     | available  |  |
|                               | Test           | durability   |  |
|                               | Evaluation     | passed   |  |
| 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 solid 0.2 mm <sup>2</sup> conductor cross-section            |  |
|                               |                | Type of conductor and stranded 0.2 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 24/1 conductor cross-section                             |  |
|                               |                | Type of conductor and AWG 24/19 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   |  |

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**Technical data**

|   |                |   |
|---|----------------|---|
| Test for damage to and accidental loosening of conductors | Standard       | DIN EN 60999 section 8.4 / 04.94  |
|   | Requirement    | 0.2 kg  |
|   | Conductor type | Type of conductor and stranded 0.05 mm <sup>2</sup> conductor cross-section |
|   | Evaluation     | passed  |
|   | Requirement    | 0.3 kg  |
|   | Conductor type | Type of conductor and solid 0.5 mm <sup>2</sup> conductor cross-section     |
|   |                | Type of conductor and AWG 24/1 conductor cross-section                      |
|   |                | Type of conductor and AWG 24/19 conductor cross-section                     |
|   | Evaluation     | passed  |
|   | Requirement    | 0.4 kg  |
| Pull-out test   | Conductor type | 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 16/1 conductor cross-section                      |
|   |                | Type of conductor and AWG 16/19 conductor cross-section                     |
|   | Evaluation     | passed  |
|   | Standard       | DIN EN 60999 section 8.5 / 04.94  |
|   | Requirement    | ≥10 N   |
|   | Conductor type | Type of conductor and AWG 24/1 conductor cross-section                      |
|   |                | Type of conductor and AWG 24/19 conductor cross-section                     |
|   | Evaluation     | passed  |
|   | Requirement    | ≥30 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 H05V-U1.5 conductor cross-section                     |
|   |                | Type of conductor and H05V-K1.5 conductor cross-section                     |
|   | Evaluation     | passed  |
|   |                |   |
|   | Evaluation     | passed  |

## BL-I/O 3.50/10F CJC AU BK BX

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## Technical data

## Classifications

|             |             |             |             |
|-------------|-------------|-------------|-------------|
| ETIM 6.0    | EC002638    | ETIM 7.0    | EC002638    |
| ETIM 8.0    | EC002638    | ETIM 9.0    | 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 |

## 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>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>P on drawing = pitch</li> <li>Crimp form A for wire end ferrules with PZ 6/5 crimping tool are recommended for the largest cable sizes.</li> <li>Total load-carrying capacity of the potential bridges when feeding with 1.5 mm<sup>2</sup> is max. 17.5 A (so the capacity is 2.18 A for poles 2 through 9)</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>Conductor &lt; 0.2 mm<sup>2</sup> tinned</li> <li>Max. outer diameter of the conductor: 2.9 mm</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



|                       |            |
|-----------------------|------------|
| ROHS                  | Conform    |
| UL File Number Search | UL Website |
| Certificate No. (UR)  | E60693     |

## Downloads

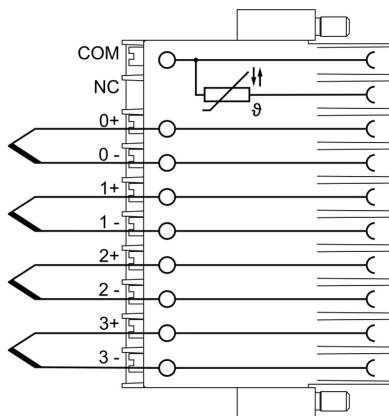
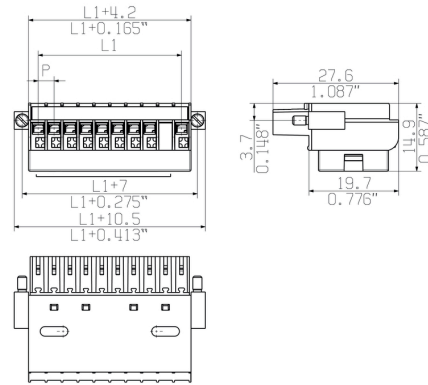
|   |  |
|---|--|
| Approval/Certificate/Document of Conformity | <a href="#">Konformitätserklärung BL I/O</a> |
| Engineering Data                            | <a href="#">CAD data – STEP</a>              |
| Catalogues                                  | <a href="#">Catalogues in PDF-format</a>     |

## BL-I/O 3.50/10F CJC AU BK BX

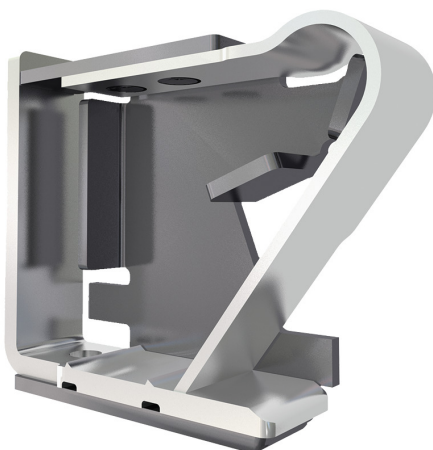
**Weidmüller Interface GmbH & Co. KG**  
Klingenbergstraße 26  
D-32758 Detmold  
Germany

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

## Drawings

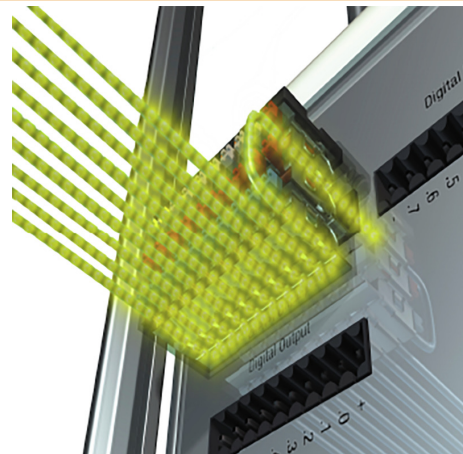


### Product benefits



Solid PUSH IN contact  
Safe and durable

### Product benefits



Multiplies the potential  
Low wiring costs

**BL-I/O 3.50/10F CJC AU BK BX****Weidmüller Interface GmbH & Co. KG**

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[www.weidmueller.com](http://www.weidmueller.com)**Accessories****Slotted screwdriver**

VDE insulated slot-head screwdriver, SDI DIN 7437, ISO 2380/2, drive output acc. to DIN 5264, ISO 2380/1. SoftFinish grip

**General ordering data**

|            |                            |  |
|------------|----------------------------|--|
| Type       | SDIS 0.4X2.5X75            | Version  |
| Order No.  | <a href="#">2749790000</a> | Screwdriver, Blade width (B): 2.5 mm, Blade length: 75 mm, Blade |
| GTIN (EAN) | 4050118896534              | thickness (A): 0.4 mm  |
| Qty.       | 1 pc(s).                   |  |

**Slotted screwdriver**

Slotted screwdriver with rounded blade SD DIN 5265, ISO 2380/2, output to DIN 5264, ISO 2380/1. ChromTop tip, SoftFinish grip

**General ordering data**

|            |                            |  |
|------------|----------------------------|--|
| Type       | SDS 0.4X2.5X75             | Version  |
| Order No.  | <a href="#">2749320000</a> | Screwdriver, Blade width (B): 2.5 mm, Blade length: 75 mm, Blade |
| GTIN (EAN) | 4050118895544              | thickness (A): 0.4 mm  |
| Qty.       | 1 pc(s).                   |  |



## BL-I/O 3.50/10F CJC AU BK BX

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## Accessories

### Coding elements



#### Only connects what is supposed to be connected: the right connection at the right place.

Coding elements and locking devices clearly assign connecting elements during the manufacturing process and operation

The coding elements and locking devices are inserted prior to assembly or during the cable assembly phase. The Weidmüller alternative: configure online using the variant configurator to precode prior to delivery.

Incorrect assembly on the circuit board and incorrect plugging of connecting elements is no longer possible. The advantage: no troubleshooting during manufacture and no operational errors by the user.

#### General ordering data

| Type       | BL SL 3.5 KO SW            | Version  | Product data | Packaging |
|------------|----------------------------|--|--------------|-----------|
| Order No.  | <a href="#">1610100000</a> | PCB plug-in connector, Accessories, Coding element, black, Number of poles: 1  |              |           |
| GTIN (EAN) | 4008190187637              |  |              |           |
| Qty.       | 100 pc(s).                 |  |              |           |
| Type       | BL SL 3.5 KO OR            | Version  | Product data | Packaging |
| Order No.  | <a href="#">1693430000</a> | PCB plug-in connector, Accessories, Coding element, orange, Number of poles: 1 |              |           |
| GTIN (EAN) | 4008190867447              |  |              |           |
| Qty.       | 100 pc(s).                 |  |              |           |

### Crimping tools



#### Crimping tools for wire end ferrules, with and without plastic collars

- Ratchet guarantees precise crimping
- Release option in the event of incorrect operation

#### General ordering data

| Type       | PZ 6/5                     | Version  |
|------------|----------------------------|--|
| Order No.  | <a href="#">9011460000</a> | Pressing tool, Crimping tool for wire-end ferrules, 0.25mm², 6mm², Trapezoidal indentation crimp |
| GTIN (EAN) | 4008190165352              |  |
| Qty.       | 1 pc(s).                   |  |
| Type       | PZ 1.5                     | Version  |
| Order No.  | <a href="#">9005990000</a> | Pressing tool, Crimping tool for wire-end ferrules, 0.14mm², 1.5mm², Trapezoidal crimp           |
| GTIN (EAN) | 4008190085964              |  |
| Qty.       | 1 pc(s).                   |  |

### BL-I/O 3.50/10F CJC AU BK BX

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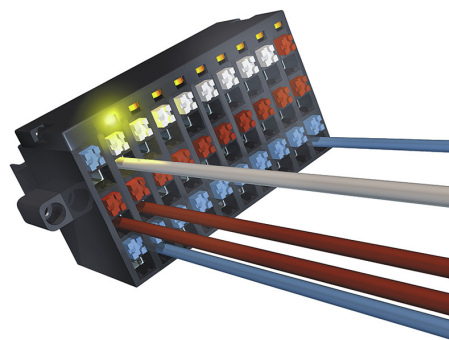
## Drawings

### Product benefits



PUSH IN - fast and secure  
Invented by Weidmüller

### Product benefits



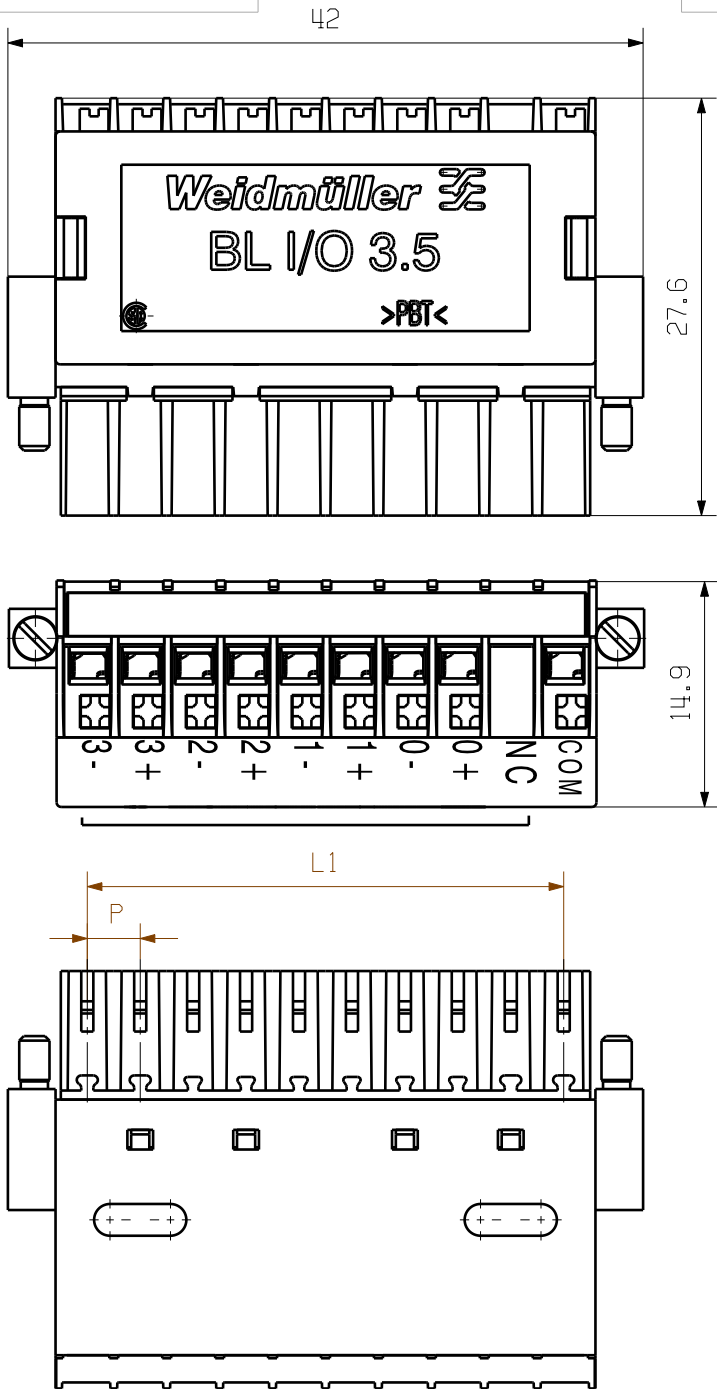
Integrated electronics  
For more space on the circuit board

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Dimensions without tolerances are no check dimensions

The English version is binding



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.

Weidmueller 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, thermic and corrosive stress will be satisfied.

P = 3.50 Raster Pitch

L1 = 31.5

General tolerance:  
DIN ISO 2768-mK



92897/5  
22.03.17 HELIS\_MA 00

Modification

**Weidmüller**

4 63899 01

Drawing no. Issue no.  
Sheet 01 of 01 sheets



|             | Date       | Name     |
|-------------|------------|----------|
| Drawn       | 15.08.2016 | AMANN_A  |
| Responsible |            | AMANN_A  |
| Checked     | 29.03.2017 | HELIS_MA |
| Approved    |            | LANG_T   |

**BL I/O 3.50/10F CJC**  
BUCHSENSTECKER  
FEMALE PLUG

Scale: 2:1

Supersedes: .

Product file: BL-I/O 3.50

7366