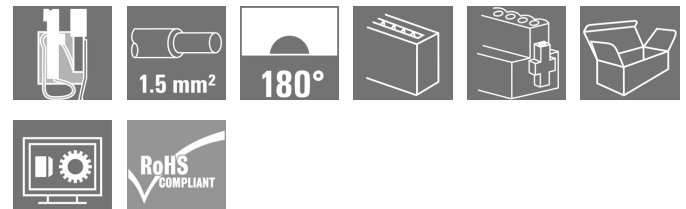


**BL-I/O 3.50/30FP PNP LED SN BK BX****Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

[www.weidmueller.com](http://www.weidmueller.com)**Product image**

Similar to illustration

Female plugs with spring connection (PUSH IN) as a plug-in connection level for decentralised I/O electronic components; used together with male headers in a 3.50-mm pitch.

**General ordering data**

|              |  |
|--------------|--|
| Version      | PCB plug-in connector, female plug, 3.50 mm, Number of poles: 30, 180°, PUSH IN with actuator, Clamping range, max. : 1.5 mm², Box |
| Order No.    | <a href="#">1789100000</a>   |
| Type         | BL-I/O 3.50/30FP PNP LED SN BK BX  |
| GTIN (EAN)   | 4032248208036  |
| 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 May 2, 2024 7:31:27 AM CEST

Catalogue status 20.04.2024 / We reserve the right to make technical changes.

## BL-I/O 3.50/30FP PNP LED SN BK BX

Weidmüller Interface GmbH &amp; Co. KG

Klingenbergstraße 26

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Germany

www.weidmueller.com

## Technical data

## Dimensions and weights

|            |          |                 |            |
|------------|----------|-----------------|------------|
| Height     | 18.4 mm  | Height (inches) | 0.724 inch |
| Width      | 42 mm    | Width (inches)  | 1.654 inch |
| Net weight | 21.006 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                              | 30                                  |                   |                             |
| L1 in mm                                     | 31.5 mm                             |                   |                             |
| L1 in inches                                 | 1.24 "                              |                   |                             |
| Number of rows                               | 1                                   |                   |                             |
| Pin series quantity                          | 1                                   |                   |                             |
| 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 | Insulating material group             | IIIa     |
| Comparative Tracking Index (CTI)      | ≥ 200    | 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    | Temperature range, installation, min. | -30 °C   |
| Temperature range, installation, 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> |

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|  |  |                              |                               |
|--|--|------------------------------|-------------------------------|
| 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, 0.75 mm <sup>2</sup> max. |  |                              |                               |
| w. wire end ferrule, DIN 46228 pt 1, min.                            | 0.2 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; 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 |

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

Institute (CSA)



Certificate No. (CSA)

200039-1202189

|                                   |  |
|-----------------------------------|--|
| Rated voltage (Use group B / CSA) | 50 V   |
| Rated current (Use group B / CSA) | 5 A  |
| Wire cross-section, AWG, min.     | AWG 22   |
| Reference to approval values      | Specifications are maximum values, details - see approval certificate. |

|                                   |        |
|-----------------------------------|--------|
| Rated voltage (Use group D / CSA) | 50 V   |
| Rated current (Use group D / CSA) | 5 A    |
| Wire cross-section, AWG, max.     | AWG 16 |

**Rated data acc. to UL 1059**

Institute (UR)



Certificate No. (UR)

E60693

|                                       |  |
|---------------------------------------|--|
| Rated voltage (Use group B / UL 1059) | 50 V   |
| Rated current (Use group B / UL 1059) | 5 A  |
| Wire cross-section, AWG, min.         | AWG 24   |
| Reference to approval values          | Specifications are maximum values, details - see approval certificate. |

|                                       |        |
|---------------------------------------|--------|
| Rated voltage (Use group D / UL 1059) | 50 V   |
| Rated current (Use group D / UL 1059) | 5 A    |
| Wire cross-section, AWG, max.         | AWG 16 |

**Packing**

|           |        |            |        |
|-----------|--------|------------|--------|
| Packaging | Box    | VPE length | 187 mm |
| VPE width | 109 mm | VPE height | 38 mm  |

**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   |

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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 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   |
| 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   |
|   | 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   |

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**Technical data**

|               |                |   |
|---------------|----------------|---|
| Pull-out test | 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  |

**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 |

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[www.weidmueller.com](http://www.weidmueller.com)**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>• 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 shape A for wire-end ferrules with crimping tools PZ 1,5 (order no. 9005990000) or PZ 6/5 (order no. 9011460000) for larger wire cross-sections recommended.</li><li>• 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     |

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[www.weidmueller.com](http://www.weidmueller.com)**Technical data****Downloads**

|   |  |
|---|--|
| Approval/Certificate/Document of Conformity | <a href="#">Konformitätserklärung BL I/O Declaration of the Manufacturer</a>   |
| Engineering Data                            | <a href="#">CAD data – STEP</a>  |
| User Documentation                          | <a href="#">Operating Instruction</a>  |
| Catalogues                                  | <a href="#">Catalogues in PDF-format</a>   |
| Brochures                                   | <a href="#">FL DRIVES EN</a><br><a href="#">MB DEVICE MANUF. EN</a><br><a href="#">FL DRIVES DE</a><br><a href="#">FL BUILDING SAFETY EN</a><br><a href="#">FL APPL LED LIGHTING EN</a><br><a href="#">FL INDUSTR.CONTROLS EN</a><br><a href="#">FL MACHINE SAFETY EN</a><br><a href="#">FL HEATING ELECTR EN</a><br><a href="#">FL APPL INVERTER EN</a><br><a href="#">FL BASE STATION EN</a><br><a href="#">FL ELEVATOR EN</a><br><a href="#">FL POWER SUPPLY EN</a><br><a href="#">FL 72H SAMPLE SER EN</a><br><a href="#">PO OMNIMATE EN</a> |



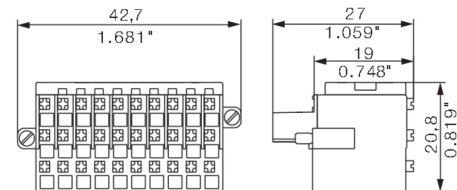
# BL-I/O 3.50/30FP PNP LED SN BK BX

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

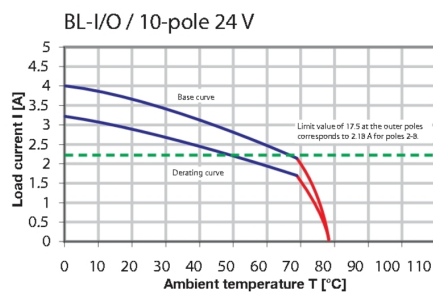
[www.weidmueller.com](http://www.weidmueller.com)

## Drawings

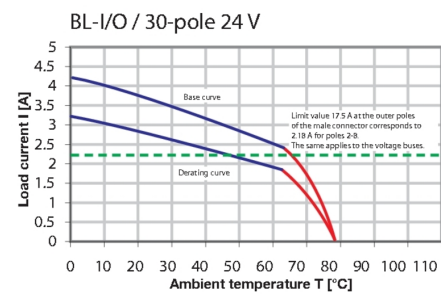
### Dimensional drawing



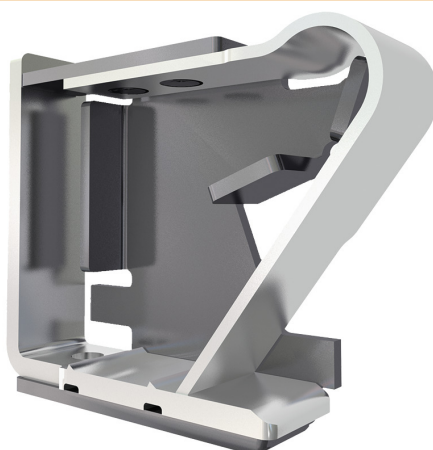
### Graph



### Wiring diagram

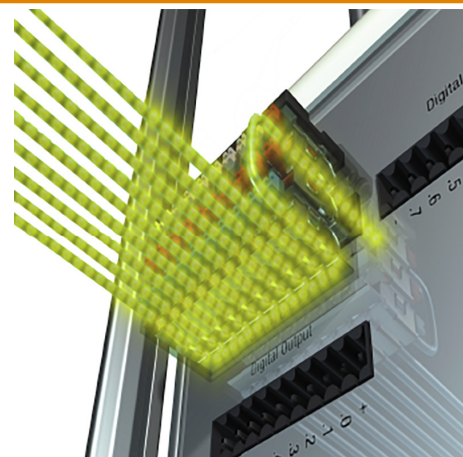


### Product benefits



Solid PUSH IN contact  
 Safe and durable

### Product benefits



Multiplies the potential  
 Low wiring costs

**BL-I/O 3.50/30FP PNP LED SN BK BX**

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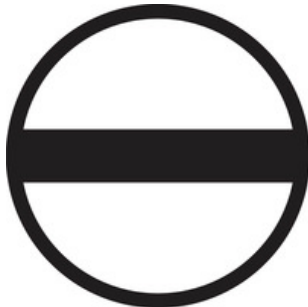
[www.weidmueller.com](http://www.weidmueller.com)

**Accessories****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, 0.25mm <sup>2</sup> , 6mm <sup>2</sup> ,   |
| GTIN (EAN) | 4008190165352              | Trapezoidal indentation crimp  |
| Qty.       | 1 pc(s).                   |  |
| Type       | PZ 1.5                     | Version  |
| Order No.  | <a href="#">9005990000</a> | Pressing tool, Crimping tool for wire-end ferrules, 0.14mm <sup>2</sup> , 1.5mm <sup>2</sup> , |
| GTIN (EAN) | 4008190085964              | Trapezoidal crimp  |
| Qty.       | 1 pc(s).                   |  |

**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="#">9008370000</a> | Screwdriver, Screwdriver |
| GTIN (EAN) | 4032248056330              |                          |
| Qty.       | 1 pc(s).                   |                          |

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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  |              | Box       |
| GTIN (EAN) | 4008190187637              | of poles: 1  |              |           |
| 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 |              | Box       |
| GTIN (EAN) | 4008190867447              | of poles: 1  |              |           |
| Qty.       | 100 pc(s).                 |  |              |           |

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## Accessories

## Additional accessories

**No task is too small when creating the perfect solution.** br />

Connections form just one part of the overall process. Small details are often the key to the perfect solution in applications where potentials are tested, grouped or even isolated.

A system is not a system without small but useful details:

- Test plugs - ensure reliable pick-up from diagnostic sockets
- Cross-connectors - ensure a stable electrical distribution contact directly at the connection
- Compartment partition elements - divide a large number of male connectors into several separate socket connector channels
- Locks and clips - optional vibration-resistant clip-on connection or mounting for male and female connectors

In tandem with the manufacturing process and application - more accessories = smaller workload

## General ordering data

| Type       | BL-I/O JUMPER SET          | Version  | Product data | Packaging |
|------------|----------------------------|--|--------------|-----------|
| Order No.  | <a href="#">1858970000</a> | PCB plug-in connector, Accessories, Cross-connector, red / blue, |              | Box       |
| GTIN (EAN) | 4032248410590              | Number of poles: 2   |              |           |
| 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="#">9009030000</a> | Screwdriver, Screwdriver |
| GTIN (EAN) | 4032248266944              |                          |
| Qty.       | 1 pc(s).                   |                          |

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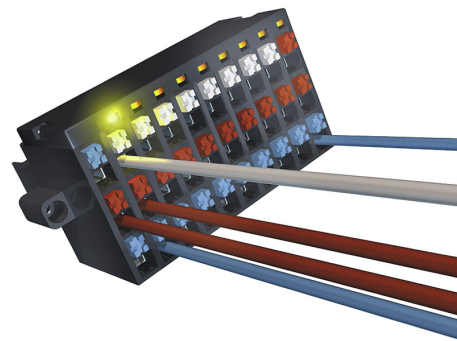
## Drawings

### Product benefits



PUSH IN - fast and secure  
Invented by Weidmüller

### Product benefits



Integrated electronics  
For more space on the circuit board