

## SL 3.50/12/180G 4.5SN BK BX

**Weidmüller Interface GmbH & Co. KG**

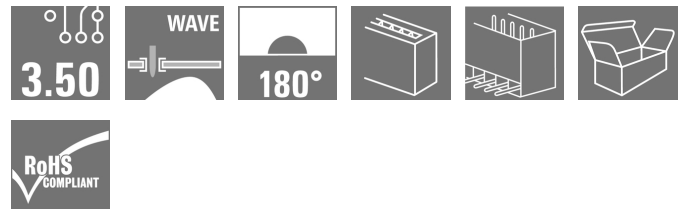
Klingenbergstraße 26

D-32758 Detmold

Germany

www.weidmueller.com

### Product image



Pin headers for wave soldering in 3.50 mm pitch

- Plugging direction is parallel (90°), straight 180° or angled (135°) to the PCB
- Housing variant: screw flange (F)
- Packed in a cardboard box (BX)
- Pin header can be coded

### General ordering data

|              |   |
|--------------|---|
| Version      | PCB plug-in connector, male header, closed side, THT solder connection, 3.50 mm, Number of poles: 12, 180°, Solder pin length (l): 4.5 mm, tinned, black, Box |
| Order No.    | <a href="#">1616100000</a>  |
| Type         | SL 3.50/12/180G 4.5SN BK BX   |
| GTIN (EAN)   | 4008190067489   |
| Qty.         | 50 pc(s).   |
| Product data | IEC: 320 V / 17 A<br>UL: 300 V / 10 A   |
| Packaging    | Box   |

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## Technical data

## Dimensions and weights

|                          |            |                 |            |
|--------------------------|------------|-----------------|------------|
| Depth                    | 7.5 mm     | Depth (inches)  | 0.295 inch |
| Height                   | 15.6 mm    | Height (inches) | 0.614 inch |
| Height of lowest version | 11.1 mm    | Width           | 43.4 mm    |
| Width (inches)           | 1.709 inch | Net weight      | 3.58 g     |

## System specifications

|  |                                     |  |                  |
|--|-------------------------------------|--|------------------|
| Product family                               | OMNIMATE Signal - series BL/SL 3.50 | Type of connection                         | Board connection |
| Mounting onto the PCB                        | THT solder connection               | Pitch in mm (P)                            | 3.5 mm           |
| Pitch in inches (P)                          | 0.138 inch                          | Outgoing elbow                             | 180°             |
| Number of poles                              | 12                                  | Number of solder pins per pole             | 1                |
| Solder pin length (l)                        | 4.5 mm                              | Solder pin length tolerance                | +0.1 / -0.3 mm   |
| Solder pin dimensions                        | d = 1.2 mm, Octagonal               | Solder pin dimensions = d tolerance        | 0 / -0,03 mm     |
| Solder eyelet hole diameter (D)              | 1.4 mm                              | Solder eyelet hole diameter tolerance (D)+ | 0,1 mm           |
| L1 in mm                                     | 38.5 mm                             | L1 in inches                               | 1.516 inch       |
| Number of rows                               | 1                                   | Pin series quantity                        | 1                |
| Touch-safe protection acc. to DIN VDE 57 106 | Safe from back-of-hand touch        | Touch-safe protection acc. to DIN VDE 0470 | IP 10            |
| Volume resistance                            | ≤5 mΩ                               | Can be coded                               | Yes              |
| Plugging force/pole, max.                    | 10 N                                | Pulling force/pole, max.                   | 10 N             |

## 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 material                      | CuSn               | Contact surface                       | tinned                    |
| Layer structure of solder connection  | 5...7 μm Sn glossy | Layer structure of plug contact       | 5...7 undefined Sn glossy |
| 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                    |

## 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)

12400-313

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

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

Reference to approval values

Specifications are maximum values, details - see approval certificate.

## Packing

|           |       |            |        |
|-----------|-------|------------|--------|
| Packaging | Box   | VPE length | 70 mm  |
| VPE width | 84 mm | VPE height | 104 mm |

## Classifications

|             |             |             |             |
|-------------|-------------|-------------|-------------|
| ETIM 6.0    | EC002637    | ETIM 7.0    | EC002637    |
| ETIM 8.0    | EC002637    | ECLASS 9.0  | 27-44-04-02 |
| ECLASS 9.1  | 27-44-04-02 | ECLASS 10.0 | 27-44-04-02 |
| ECLASS 11.0 | 27-46-02-01 |             |             |

## 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

- Additional colours on request
- Gold-plated contact surfaces on request
- Rated current related to rated cross-section & min. No. of poles.
- P on drawing = pitch
- Rated data refer only to the component itself. Clearance and creepage distances to other components are to be designed in accordance with the relevant application standards.
- Long term storage of the product with average temperature of 50 °C and average humidity 70%, 36 months

**Data sheet****SL 3.50/12/180G 4.5SN BK BX****Weidmüller Interface GmbH & Co. KG**  
Klingenbergstraße 26  
D-32758 Detmold  
Germany

www.weidmueller.com

**Technical data****Approvals**

Approvals



|                       |         |
|-----------------------|---------|
| ROHS                  | Conform |
| UL File Number Search | E60693  |

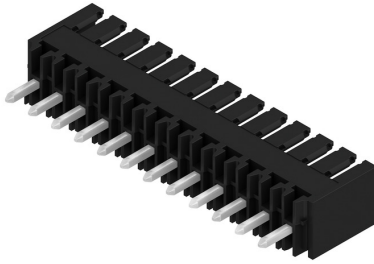
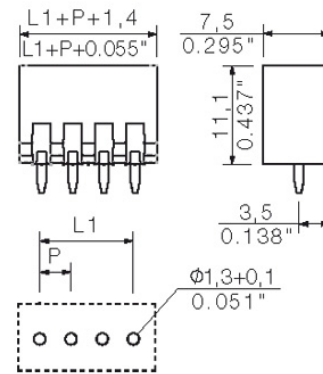
**Downloads**

|                  |  |
|------------------|--|
| Engineering Data | <a href="#">CAD data – STEP</a>                              |
| Catalogues       | <a href="#">Catalogues in PDF-format</a>                     |
| Brochures        | <a href="#">FL DRIVES EN</a><br><a href="#">FL DRIVES DE</a> |

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**Drawings****Product image****Dimensional drawing**

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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).                 |  |              |           |

## 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/SL 3.50 VR BK BX        | Version  | Product data |
|------------|----------------------------|--|--------------|
| Order No.  | <a href="#">1669300000</a> | PCB plug-in connector, Accessories, Latches, black, Number of poles: |              |
| GTIN (EAN) | 4008190428471              | 1  |              |
| Qty.       | 100 pc(s).                 |  |              |

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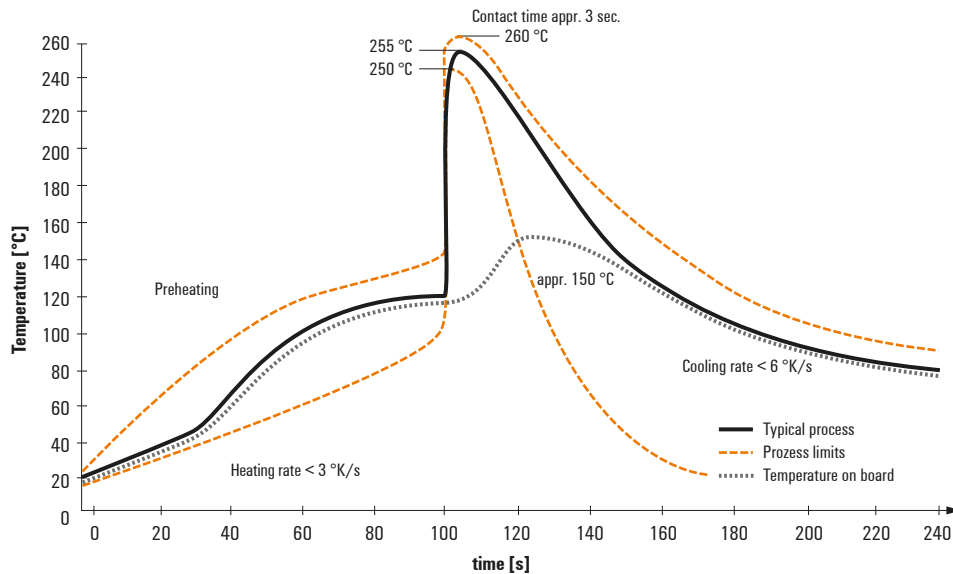
**Accessories**

| Type       | BL/SL 3.50 VR OR BX        | Version   | Product data |
|------------|----------------------------|---|--------------|
| Order No.  | <a href="#">1669310000</a> | PCB plug-in connector, Accessories, Latches, orange, Number of poles: |              |
| GTIN (EAN) | 4008190428488              | 1   |              |
| Qty.       | 100 pc(s).                 |   |              |

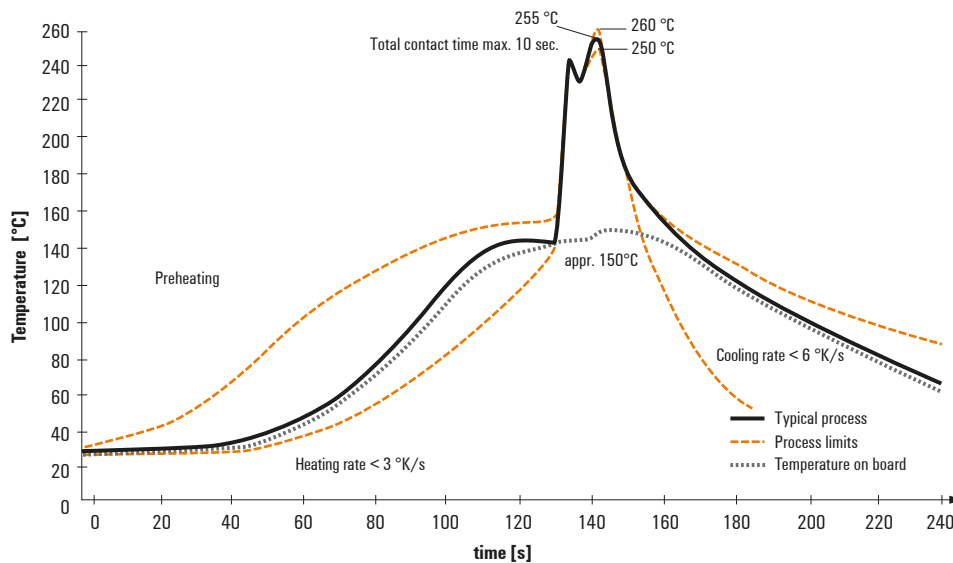
## Recommended wave soldering profiles

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### Single Wave:



### Double Wave:



### Wave soldering profiles

Wired connection elements should be processed in accordance with the DIN EN 61760-1 standard. We have included two recommendations for practical wave soldering profiles, with which Weidmüller PCB terminals and connectors are qualified.

When choosing a suitable profile for your application, the following factors also need to be considered:

- PCB thickness
- Proportion of Cu in the layers
- Single/double-sided assembly
- Product range
- Heating and cooling rates

The single and double wave profiles each indicate the recommended operating range, including the maximum soldering temperature of 260°C. In practice, the maximum soldering temperature is quite often well below the above maximum profile.



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