

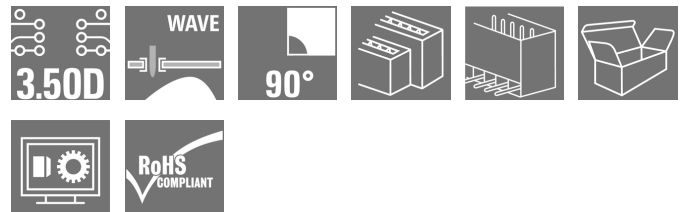
**S2L 3.50/12/90G 3.5SN BK BX****Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

www.weidmueller.com

**Product image**

Similar to illustration

Angled, two-tier pin header available as closed-sided or with flange (open-sided pin headers on request). Pin headers with 3.5mm pins are designed for wave soldering and are packaged in a box. They can be screwed on to the PCB. The pin headers provide space for labelling and 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, 90°, Solder pin length (l): 3.5 mm, tinned, black, Box |
| Order No.    | <a href="#">1728020000</a>                                                                                                                                   |
| Type         | S2L 3.50/12/90G 3.5SN BK BX                                                                                                                                  |
| GTIN (EAN)   | 4032248039517                                                                                                                                                |
| Qty.         | 78 pc(s).                                                                                                                                                    |
| Product data | IEC: 250 V / 10 A<br>UL: 150 V / 10 A                                                                                                                        |
| Packaging    | Box                                                                                                                                                          |

Creation date October 30, 2021 12:14:50 PM CEST

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

|                          |            |                 |            |
|--------------------------|------------|-----------------|------------|
| Depth                    | 14.2 mm    | Depth (inches)  | 0.559 inch |
| Height                   | 14 mm      | Height (inches) | 0.551 inch |
| Height of lowest version | 10.5 mm    | Width           | 22.4 mm    |
| Width (inches)           | 0.882 inch | Net weight      | 3.48 g     |

**System specifications**

|                                              |                                               |                                                   |                       |
|----------------------------------------------|-----------------------------------------------|---------------------------------------------------|-----------------------|
| Product family                               | OMNIMATE Signal - series B2L/S2L 3.50 - 2-row | 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                                    | 90°                   |
| Number of poles                              | 12                                            | Number of solder pins per pole                    | 1                     |
| Solder pin length (l)                        | 3.5 mm                                        | Solder pin dimensions                             | d = 1.0 mm, Octagonal |
| Solder eyelet hole diameter (D)              | 1.3 mm                                        | Solder eyelet hole diameter tolerance (D)+ 0,1 mm |                       |
| L1 in mm                                     | 17.5 mm                                       | L1 in inches                                      | 0.689 inch            |
| Number of rows                               | 1                                             | Pin series quantity                               | 2                     |
| 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                 |
| Can be coded                                 | Yes                                           | Plugging force/pole, max.                         | 5 N                   |
| Pulling force/pole, max.                     | 4 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                      | Copper alloy                     | Contact surface                       | tinned |
| Layer structure of solder connection  | 2...3 µm Ni / 5...7 µm 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)                         | 10 A             |
| Rated current, max. number of poles (Tu=20°C)                             | 10 A                   | Rated current, min. number of poles (Tu=40°C)                         | 9 A              |
| Rated current, max. number of poles (Tu=40°C)                             | 8.5 A                  | Rated voltage for surge voltage class / pollution degree II/2         | 250 V            |
| Rated voltage for surge voltage class / pollution degree III/2            | 125 V                  | Rated voltage for surge voltage class / pollution degree III/3        | 80 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 77 A |

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

Institute (CSA)



Certificate No. (CSA)

200039-1488444

Rated voltage (Use group B / CSA) 150 V

Rated current (Use group B / CSA) 5 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) 150 V

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

Rated current (Use group B / UL 1059) 10 A

Rated current (Use group C / UL 1059) 10 A

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

**Packing**

|           |        |            |        |
|-----------|--------|------------|--------|
| Packaging | Box    | VPE length | 352 mm |
| VPE width | 138 mm | VPE height | 25 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
  - Spacing between rows: see hole layout
  - 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

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

Approvals



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

**Downloads**

|                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Approval/Certificate/Document of Conformity | <a href="#">Declaration of the Manufacturer</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Engineering Data                            | <a href="#">STEP</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Engineering Data                            | <a href="#">EPLAN, WSCAD</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><br><a href="#">PO OMNIMATE EN</a> |

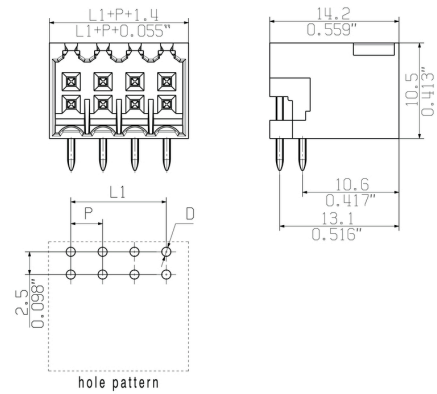
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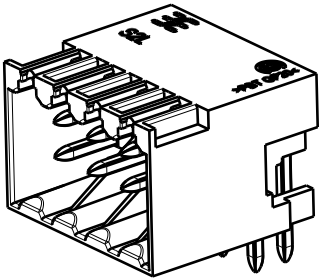
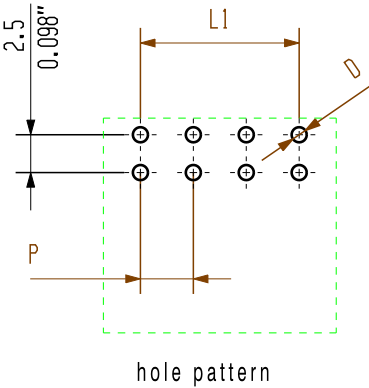
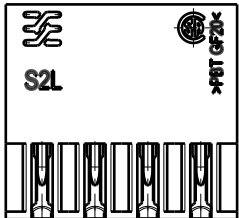
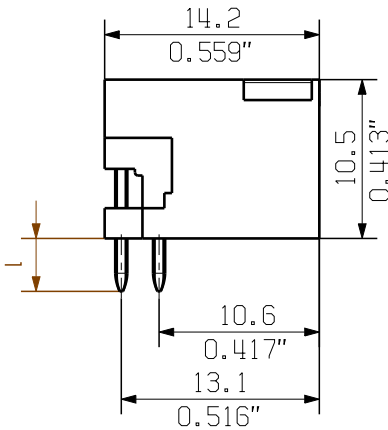
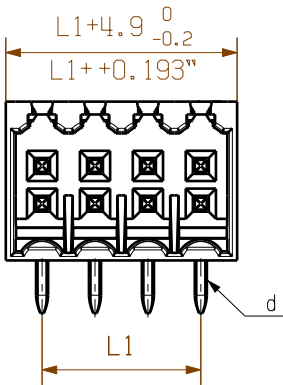
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# Drawings

## Dimensional drawing





P = 3.50 Raster Pitch  
D = Ø1, 3 +0.1  
Ø0.051" +0.1  
d = 1mm oktagon  
0.039" oktagon

| pin length<br>l | tolerance   |
|-----------------|-------------|
| 3,5             | 0,2<br>-0,2 |
| 2,6             | 0,2<br>-0,2 |

|                           |      |                              |
|---------------------------|------|------------------------------|
| 46                        | 77.0 | +/-0.2                       |
| 44                        | 73.5 |                              |
| 42                        | 70.0 |                              |
| 40                        | 66.5 |                              |
| 38                        | 63.0 |                              |
| 36                        | 59.5 |                              |
| 34                        | 56.0 |                              |
| 32                        | 52.5 | +/-0.15                      |
| 30                        | 49.0 |                              |
| 28                        | 45.5 |                              |
| 26                        | 42.0 |                              |
| 24                        | 38.5 | +/-0.1                       |
| 22                        | 35.0 |                              |
| 20                        | 31.5 |                              |
| 18                        | 28.0 |                              |
| 16                        | 24.5 |                              |
| 14                        | 21.0 |                              |
| 12                        | 17.5 |                              |
| 10                        | 14.0 |                              |
| 8                         | 10.5 |                              |
| 6                         | 7.0  |                              |
| 4                         | 3.5  |                              |
| n Polzahl/<br>no of poles | L1   | Toleranz/<br>tolerance<br>L1 |

shown: S2L 3.50/08/90G

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.

General tolerance:  
DIN ISO 2768-mK

98746/5  
29.11.17 HELIS\_MA  
.

01

Modification

3 25607 18

Drawing no. Issue no.

Sheet 02 of 06 sheets

Drawn 28.11.2008 HELIS\_MA

Responsible AMANN\_A

Checked 04.12.2017 HELIS\_MA

Approved LANG\_T

Scale: 5/1

Supersedes: .

S2L 3.50/.../...  
STIFTLISTE  
MALE HEADER

Product file: S2L 3.50

Cat.no.: .

7110

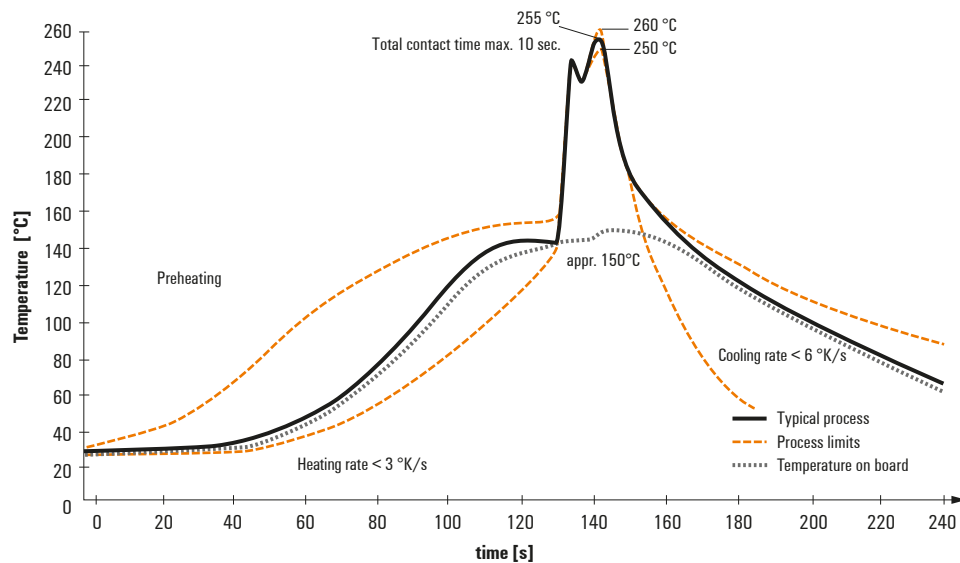
## Recommended wave soldering profiles

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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.

We reserve the right to make technical changes.