

## S2L 3.50/22/180F 3.5SN OR BX

**Weidmüller Interface GmbH & Co. KG**

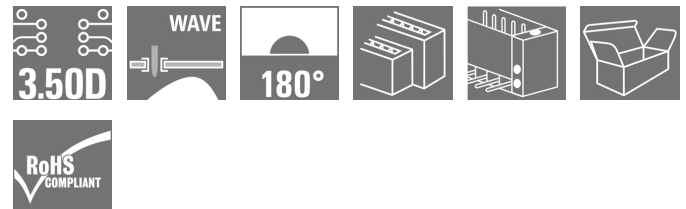
Klingenbergstraße 26

D-32758 Detmold

Germany

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

### Product image



Similar to illustration

Straight, double-row pin header available in closed-sided or flange version (open-sided pin headers on request). The male headers with a pin length of 3.5mm are designed for wave soldering and are packed in a box. They can be screwed on to the PCB. The male headers provide space for labelling and can be coded.

### General ordering data

|              |                                                                                                                                                           |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Version      | PCB plug-in connector, male header, Flange, THT solder connection, 3.50 mm, Number of poles: 22, 180°, Solder pin length (l): 3.5 mm, tinned, orange, Box |
| Order No.    | <a href="#">1729510000</a>                                                                                                                                |
| Type         | S2L 3.50/22/180F 3.5SN OR BX                                                                                                                              |
| GTIN (EAN)   | 4032248040919                                                                                                                                             |
| Qty.         | 36 pc(s).                                                                                                                                                 |
| Product data | IEC: 250 V / 10 A<br>UL: 150 V / 10 A                                                                                                                     |
| Packaging    | Box                                                                                                                                                       |

Creation date March 25, 2021 1:02:33 AM CET

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

|                          |         |                 |            |
|--------------------------|---------|-----------------|------------|
| Depth                    | 10.5 mm | Depth (inches)  | 0.413 inch |
| Height                   | 17.7 mm | Height (inches) | 0.697 inch |
| Height of lowest version | 14.2 mm | Net weight      | 3.97 g     |
| Width                    | 45.5 mm | Width (inches)  | 1.791 inch |

**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                               | 180°                                          |                     |                                                    |
| Number of poles                              | 22                                            |                     |                                                    |
| 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                                     | 35 mm                                         |                     |                                                    |
| L1 in inches                                 | 1.378 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                                           |                     |                                                    |
| Tightening torque                            | Torque type                                   | Mounting screw, PCB |                                                    |
|                                              | Usage information                             | Tightening torque   | min. 0.1 Nm<br>max. 0.15 Nm                        |
|                                              |                                               | Recommended screw   | Part number <a href="#">PTSC KA 2.2X4.5 WN1412</a> |

**Material data**

|                                       |                                  |                                       |        |
|---------------------------------------|----------------------------------|---------------------------------------|--------|
| Insulating material                   | PBT                              | Colour                                | orange |
| Colour chart (similar)                | RAL 2000                         | 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                           |                                       |        |

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**Technical data****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 |

**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 | 55 mm  |
| VPE width | 70 mm | VPE height | 108 mm |

**Classifications**

|             |             |             |             |
|-------------|-------------|-------------|-------------|
| ETIM 6.0    | EC002637    | ETIM 7.0    | 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 |

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**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>• Additional colours on request</li> <li>• Gold-plated contact surfaces on request</li> <li>• Spacing between rows: see hole layout</li> <li>• Rated current related to rated cross-section &amp; min. No. of poles.</li> <li>• Diameter of solder eyelet <math>D = 1.3 \pm 0.1</math> mm</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>• For additional mechanical support for male connectors with screw flange (...F), we recommend an additional cable gland with fastening screws (sheet metal screw ISO 1481-ST 2.2x4.5 C or ISO 7049-ST 2.2x4.5 C – see Accessories). Cable gland only permitted before soldering.</li> <li>• Long term storage of the product with average temperature of 50 °C and average humidity 70%, 36 months</li> </ul> |

**Approvals**

Approvals



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

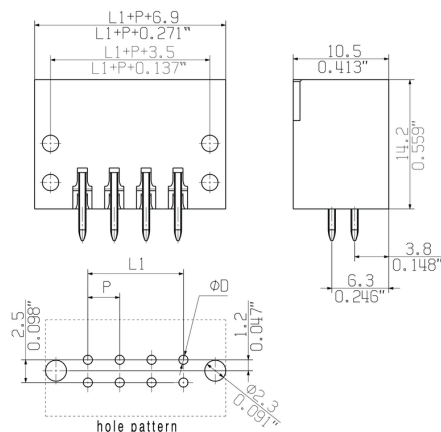
**Downloads**

|                                             |                                                 |
|---------------------------------------------|-------------------------------------------------|
| Approval/Certificate/Document of Conformity | <a href="#">Declaration of the Manufacturer</a> |
| Engineering Data                            | <a href="#">STEP</a>                            |

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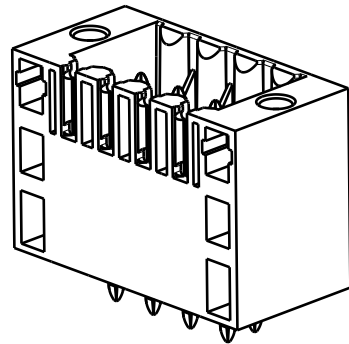
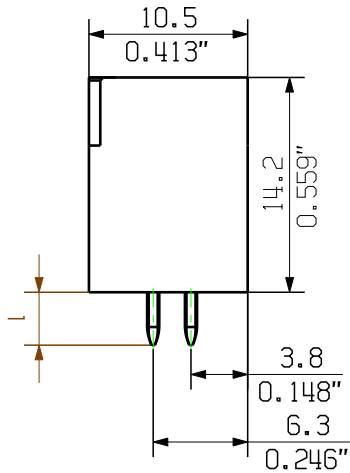
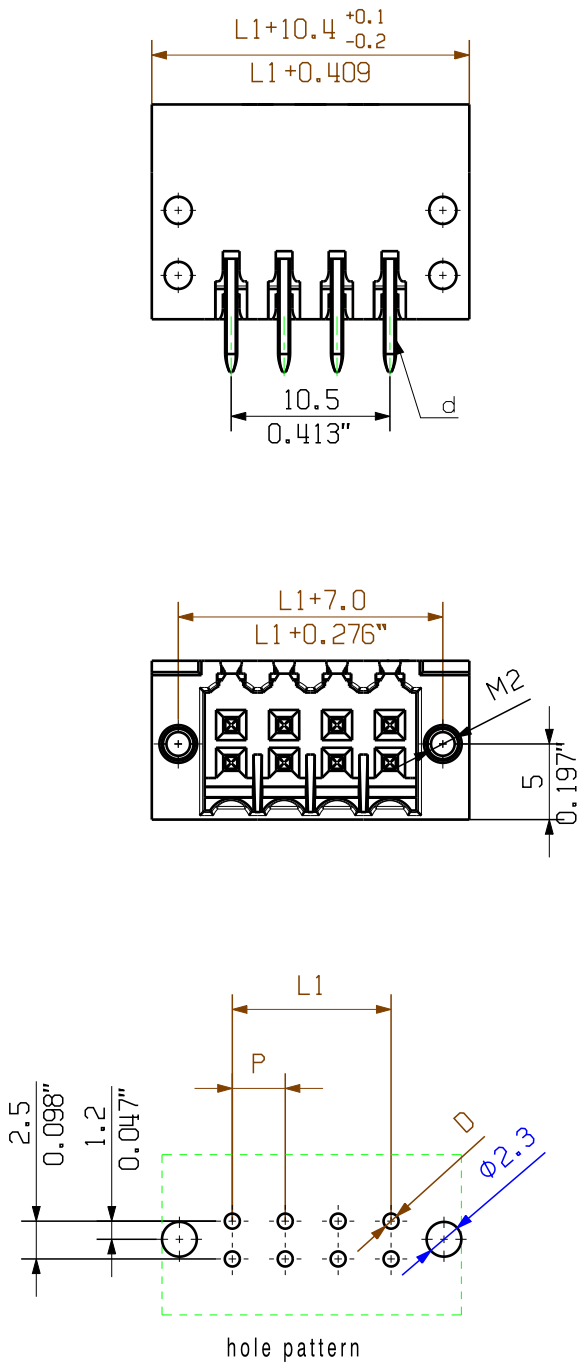
**Drawings****Dimensional drawing**

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Dimensions without tolerances are no check dimensions

The English version is binding



optional fixing screw  
order no.: 161074 0000

P = 3.50 Raster Pitch  
D = Ø1,3 (+0.1/-0.1) Ø0.051" (+0.1/-0.1)  
d = 1mm oktogonal 0.039" octogonal

shown S2L 3.50/././180F

| 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 | +/-0.15                      |
| 34                        | 56.0 |                              |
| 32                        | 52.5 |                              |
| 30                        | 49.0 |                              |
| 28                        | 45.5 |                              |
| 26                        | 42.0 | +/-0.1                       |
| 24                        | 38.5 |                              |
| 22                        | 35.0 |                              |
| 20                        | 31.5 |                              |
| 18                        | 28.0 |                              |
| 16                        | 24.5 | +/-0.1                       |
| 14                        | 21.0 |                              |
| 12                        | 17.5 |                              |
| 10                        | 14.0 |                              |
| 8                         | 10.5 |                              |
| 6                         | 7.0  | +/-0.1                       |
| 4                         | 3.5  |                              |
| n Polzahl/<br>no of poles | L1   | Toleranz/<br>tolerance<br>L1 |

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

Drawn

28.11.2008

HELIS\_MA

Responsible

AMANN\_A

Checked

04.12.2017

HELIS\_MA

Approved

LANG\_T

S2L 3.50/././...

STIFTLEISTE

MALE HEADER

Product file: S2L 3.50

7110

Cat.no.: .

3 25607

18

Drawing no.

Sheet 06 of 06 sheets

Issue no.

## Recommended wave soldering profiles

**Weidmüller Interface GmbH & Co. KG**  
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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.