

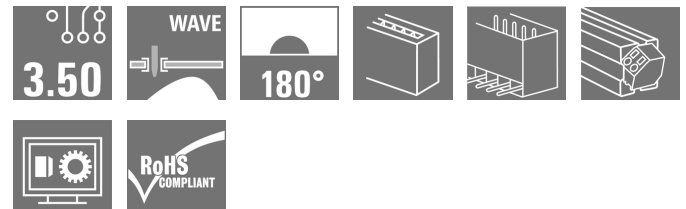
**BLL 3.50/05/180 3.2SN BK TU****Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

www.weidmueller.com

**Product image**

Inverted female header for:

- finger-safety on the PCB
- Board-to-board component connection (with SL/SL-SMT 3.50)
- Wave soldering
- Outlet direction: 180° (standing, vertical to PCB)

**General ordering data**

|              |                                                                                                                                                                 |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Version      | PCB plug-in connector, female header, closed side, THT solder connection, 3.50 mm, Number of poles: 5, 180°, Solder pin length (l): 3.2 mm, tinned, black, Tube |
| Order No.    | <a href="#">1376280000</a>                                                                                                                                      |
| Type         | BLL 3.50/05/180 3.2SN BK TU                                                                                                                                     |
| GTIN (EAN)   | 4050118177633                                                                                                                                                   |
| Qty.         | 30 pc(s).                                                                                                                                                       |
| Product data | IEC: 320 V / 15.1 A<br>UL: 300 V / 9 A                                                                                                                          |
| Packaging    | Tube                                                                                                                                                            |

Creation date January 23, 2022 8:27:48 PM CET

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

|            |          |                 |            |
|------------|----------|-----------------|------------|
| Depth      | 11.85 mm | Depth (inches)  | 0.467 inch |
| Height     | 14.3 mm  | Height (inches) | 0.563 inch |
| Net weight | 1.8 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                              | 5                                   | Number of solder pins per pole             | 1                |
| Solder pin length (l)                        | 3.2 mm                              | Solder pin length tolerance                | +0.2 / -0.2 mm   |
| Solder pin dimensions                        | d = 0.8 mm                          | Solder pin dimensions = d tolerance        | 0 / -0.03 mm     |
| Solder eyelet hole diameter (D)              | 1.3 mm                              | Solder eyelet hole diameter tolerance (D)  | +0,1 mm          |
| L1 in mm                                     | 14 mm                               | L1 in inches                               | 0.551 inch       |
| Number of rows                               | 1                                   | Pin series quantity                        | 1                |
| Touch-safe protection acc. to DIN VDE 57 106 | Safe from finger touch              | Touch-safe protection acc. to DIN VDE 0470 | IP 20            |
| Protection degree                            | IP20                                | Volume resistance                          | ≤5 mΩ            |
| Can be coded                                 | Yes                                 | Plugging force/pole, max.                  | 8 N              |
| Pulling force/pole, max.                     | 7 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  | 4...6 µm Sn glossy | Layer structure of plug contact       | 4...6 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. | -25 °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)                         | 15.1 A            |
| Rated current, max. number of poles (Tu=20°C)                             | 7.7 A                  | Rated current, min. number of poles (Tu=40°C)                         | 13 A              |
| Rated current, max. number of poles (Tu=40°C)                             | 6.6 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)

200039-1121690

Rated voltage (Use group C / CSA) 300 V

Rated current (Use group C / CSA) 9 A

Reference to approval values

Specifications are maximum values, details - see approval certificate.

**Rated data acc. to UL 1059**

Institute (cURus)



Certificate No. (cURus)

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) 9 A

Rated current (Use group D / UL 1059) 9 A

Reference to approval values

Specifications are maximum values, details - see approval certificate.

**Packing**

Packaging

Tube

VPE length

155 mm

VPE width

64 mm

VPE height

38 mm

Surface resistance

 $R_s = 10^9 - 10^{12} \Omega$ **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.

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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="#">CAD data – 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> |

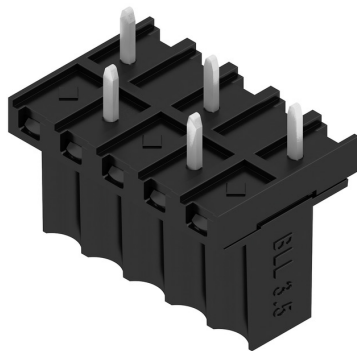
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# Drawings

## Product image



## Dimensional drawing



## Product benefits



Connection made easy  
Safe board-to-board connection

ALLGEMEINGUELTIGE KUNDENZEICHNUNG, AKTUELLER STAND NUR AUF ANFRAGE  
GENERAL CUSTOMER DRAWING, TOPICAL VERSION ONLY IF REQUIRED



DETAIL A  
X 5/1



M 1/1



P=3.50 RASTER  
PITCH  
D=Ø1.3 +0.1  
d=0.5x0.8

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 with VDE 0110. The current-carrying capacity and pitch tolerance is to be determined according to DIN IEC 326 part 3 very fine.

Weidmüller 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.

SHOWN : BLL 3.50/04/180

HOLE PATTERN

|    |                  |            |              |               |   |   |   |   |   |   |   |   |   |    |    |    |
|----|------------------|------------|--------------|---------------|---|---|---|---|---|---|---|---|---|----|----|----|
| 12 | 38.5             | 1.516      | 1            | X             | 0 | X | 0 | X | 0 | X | 0 | X | 0 | X  | 0  |    |
|    |                  |            | 2            | 0             | X | 0 | X | 0 | X | 0 | X | 0 | X | 0  | X  |    |
| 11 | 35.0             | 1.378      | 1            | X             | 0 | X | 0 | X | 0 | X | 0 | X | 0 | X  |    |    |
|    |                  |            | 2            | 0             | X | 0 | X | 0 | X | 0 | X | 0 | X | 0  |    |    |
| 10 | 31.5             | 1.240      | 1            | X             | 0 | X | 0 | X | 0 | X | 0 | X | 0 |    |    |    |
|    |                  |            | 2            | 0             | X | 0 | X | 0 | X | 0 | X | 0 | X |    |    |    |
| 9  | 28.0             | 1.102      | 1            | X             | 0 | X | 0 | X | 0 | X | 0 | X |   |    |    |    |
|    |                  |            | 2            | 0             | X | 0 | X | 0 | X | 0 | X | 0 |   |    |    |    |
| 8  | 24.5             | 0.965      | 1            | X             | 0 | X | 0 | X | 0 | X | 0 |   |   |    |    |    |
|    |                  |            | 2            | 0             | X | 0 | X | 0 | X | 0 | X |   |   |    |    |    |
| 7  | 21.0             | 0.827      | 1            | X             | 0 | X | 0 | X | 0 | X |   |   |   |    |    |    |
|    |                  |            | 2            | 0             | X | 0 | X | 0 | X | 0 |   |   |   |    |    |    |
| 6  | 17.5             | 0.689      | 1            | X             | 0 | X | 0 | X | 0 |   |   |   |   |    |    |    |
|    |                  |            | 2            | 0             | X | 0 | X | 0 | X |   |   |   |   |    |    |    |
| 5  | 14.0             | 0.551      | 1            | X             | 0 | X | 0 | X |   |   |   |   |   |    |    |    |
|    |                  |            | 2            | 0             | X | 0 | X | 0 |   |   |   |   |   |    |    |    |
| 4  | 10.5             | 0.413      | 1            | X             | 0 | X | 0 |   |   |   |   |   |   |    |    |    |
|    |                  |            | 2            | 0             | X | 0 | X |   |   |   |   |   |   |    |    |    |
| 3  | 7.0              | 0.276      | 1            | X             | 0 | X |   |   |   |   |   |   |   |    |    |    |
|    |                  |            | 2            | 0             | X | 0 |   |   |   |   |   |   |   |    |    |    |
| 2  | 3.5              | 0.138      | 1            | X             | 0 |   |   |   |   |   |   |   |   |    |    |    |
|    |                  |            | 2            | 0             | X |   |   |   |   |   |   |   |   |    |    |    |
| n  | POLZAHL<br>POLES | L1<br>[mm] | L1<br>[inch] | REIHE/<br>ROW | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |

GENERAL TOLERANCE:  
DIN ISO 2768-m



80439/5  
17.02.15 HELIS\_MA 01

MODIFICATION



DATE NAME  
DRAWN 22.04.2005 FROEHLKING\_M

RESPONSIBLE LANG\_T

CHECKED 17.02.2015 HELIS\_MA

APPROVED LANG\_T

SCALE: 2/1

SUPERSEDES: .

**Weidmüller**

**BLL 3.50/.../180...**  
BUCHSENLEISTE  
FEMALE HEADER

PRODUCT FILE: BLL 3.50

CAT.NO.: .

**C 33133 14**

DRAWING NO. ISSUE NO.  
SHEET 01 OF 01 SHEETS

7369

## 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.

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