

**BL 3.50/04/180LR SN OR BX****Weidmüller Interfaces GmbH & Co. KG**

Postfach 3030

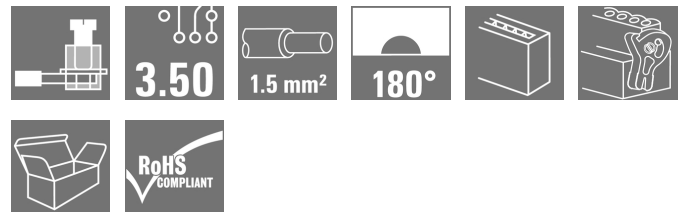
32760 Detmold

Tel. +49 5231 14-0

Fax. +49 5231 14-2083

info@weidmueller.com

www.weidmueller.com

**Product image**

Similar to illustration

Female connectors with clamping yoke screw system for connecting conductors at 3.50 mm pitch. They provide space for labelling and can be coded.

**General ordering data**

|              |                                                                                                                                      |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Version      | PCB plug-in connector, female plug, 3.50 mm, Number of poles: 4, 180°, Clamping yoke connection, Clamping range, max. : 1.5 mm², Box |
| Order No.    | <a href="#">1531010000</a>                                                                                                           |
| Type         | BL 3.50/04/180LR SN OR BX                                                                                                            |
| GTIN (EAN)   | 4050118335958                                                                                                                        |
| Qty.         | 84 pc(s).                                                                                                                            |
| Product data | IEC: 320 V / 17 A / 0.2 - 1.5 mm²<br>UL: 300 V / 10 A / AWG 28 - AWG 14                                                              |
| Packaging    | Box                                                                                                                                  |

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## Technical data

## Dimensions and weights

|            |         |                 |            |
|------------|---------|-----------------|------------|
| Depth      | 29.5 mm | Depth (inches)  | 1.161 inch |
| Height     | 14.9 mm | Height (inches) | 0.587 inch |
| Width      | 20.5 mm | Width (inches)  | 0.807 inch |
| Net weight | 4.452 g |                 |            |

## System Parameters

|                                              |                                     |                   |                             |
|----------------------------------------------|-------------------------------------|-------------------|-----------------------------|
| Product family                               | OMNIMATE Signal - series BL/SL 3.50 |                   |                             |
| Type of connection                           | Field connection                    |                   |                             |
| Wire connection method                       | Clamping yoke connection            |                   |                             |
| Pitch in mm (P)                              | 3.5 mm                              |                   |                             |
| Pitch in inches (P)                          | 0.138 inch                          |                   |                             |
| Conductor outlet direction                   | 180°                                |                   |                             |
| Number of poles                              | 4                                   |                   |                             |
| L1 in mm                                     | 10.5 mm                             |                   |                             |
| L1 in inches                                 | 0.413 inch                          |                   |                             |
| Number of rows                               | 1                                   |                   |                             |
| Pin series quantity                          | 1                                   |                   |                             |
| Rated cross-section                          | 1.5 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   | IP 20                               |                   |                             |
| Volume resistance                            | ≤5 mΩ                               |                   |                             |
| Can be coded                                 | Yes                                 |                   |                             |
| Stripping length                             | 6 mm                                |                   |                             |
| Clamping screw                               | M 2                                 |                   |                             |
| Screwdriver blade                            | 0.4 x 2.5                           |                   |                             |
| Screwdriver blade standard                   | DIN 5264                            |                   |                             |
| Plugging cycles                              | 25                                  |                   |                             |
| Plugging force/pole, max.                    | 7 N                                 |                   |                             |
| Pulling force/pole, max.                     | 5 N                                 |                   |                             |
| Tightening torque                            | Torque type                         | Wire connection   |                             |
|                                              | Usage information                   | Tightening torque | min. 0.2 Nm<br>max. 0.25 Nm |

## 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 plug contact       | 4...8 µm Sn hot-dip tinned | 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                     |                                       |        |

## Conductors suitable for connection

|                                         |                      |
|-----------------------------------------|----------------------|
| Clamping range, min.                    | 0.08 mm <sup>2</sup> |
| Clamping range, max.                    | 1.5 mm <sup>2</sup>  |
| Wire connection cross section AWG, min. | AWG 28               |
| Wire connection cross section AWG, max. | AWG 14               |

Creation date September 16, 2022 7:11:38 AM CEST

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## Technical data

|                                                                     |                                                                                                                                                                        |                                                           |
|---------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|
| Solid, min. H05(07) V-U                                             | 0.2 mm <sup>2</sup>                                                                                                                                                    |                                                           |
| Solid, max. H05(07) V-U                                             | 1.5 mm <sup>2</sup>                                                                                                                                                    |                                                           |
| 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, 1.5 mm <sup>2</sup> max. |                                                                                                                                                                        |                                                           |
| w. wire end ferrule, DIN 46228 pt 1, 0.2 mm <sup>2</sup> min.       |                                                                                                                                                                        |                                                           |
| w. wire end ferrule, DIN 46228 pt 1, 1.5 mm <sup>2</sup> max.       |                                                                                                                                                                        |                                                           |
| Plug gauge in accordance with EN 60999 a x b; ø                     | 2.4 mm x 1.5 mm                                                                                                                                                        |                                                           |
| Clampable conductor                                                 | Cross-section for conductor connection                                                                                                                                 | Type fine-wired                                           |
|                                                                     |                                                                                                                                                                        | nominal 0.5 mm <sup>2</sup>                               |
|                                                                     | wire end ferrule                                                                                                                                                       | Stripping length nominal 8 mm                             |
|                                                                     |                                                                                                                                                                        | Recommended wire-end ferrule <a href="#">H0.5/12 OR</a>   |
|                                                                     |                                                                                                                                                                        | Stripping length nominal 6 mm                             |
|                                                                     |                                                                                                                                                                        | Recommended wire-end ferrule <a href="#">H0.5/6</a>       |
|                                                                     | Cross-section for conductor connection                                                                                                                                 | Type fine-wired                                           |
|                                                                     |                                                                                                                                                                        | nominal 0.75 mm <sup>2</sup>                              |
|                                                                     | wire end ferrule                                                                                                                                                       | Stripping length nominal 8 mm                             |
|                                                                     |                                                                                                                                                                        | Recommended wire-end ferrule <a href="#">H0.75/12 W</a>   |
|                                                                     |                                                                                                                                                                        | Stripping length nominal 6 mm                             |
|                                                                     |                                                                                                                                                                        | Recommended wire-end ferrule <a href="#">H0.75/6</a>      |
|                                                                     | Cross-section for conductor connection                                                                                                                                 | Type fine-wired                                           |
|                                                                     |                                                                                                                                                                        | nominal 1 mm <sup>2</sup>                                 |
|                                                                     | wire end ferrule                                                                                                                                                       | Stripping length nominal 8 mm                             |
|                                                                     |                                                                                                                                                                        | Recommended wire-end ferrule <a href="#">H1.0/12 GE</a>   |
|                                                                     |                                                                                                                                                                        | Stripping length nominal 6 mm                             |
|                                                                     |                                                                                                                                                                        | Recommended wire-end ferrule <a href="#">H1.0/6</a>       |
|                                                                     | Cross-section for conductor connection                                                                                                                                 | Type fine-wired                                           |
|                                                                     |                                                                                                                                                                        | nominal 0.25 mm <sup>2</sup>                              |
|                                                                     | wire end ferrule                                                                                                                                                       | Stripping length nominal 8 mm                             |
|                                                                     |                                                                                                                                                                        | Recommended wire-end ferrule <a href="#">H0.25/10 HBL</a> |
|                                                                     |                                                                                                                                                                        | Stripping length nominal 5 mm                             |
|                                                                     |                                                                                                                                                                        | Recommended wire-end ferrule <a href="#">H0.25/5</a>      |
|                                                                     | Cross-section for conductor connection                                                                                                                                 | Type fine-wired                                           |
|                                                                     |                                                                                                                                                                        | nominal 0.34 mm <sup>2</sup>                              |
|                                                                     | wire end ferrule                                                                                                                                                       | Stripping length nominal 8 mm                             |
|                                                                     |                                                                                                                                                                        | Recommended wire-end ferrule <a href="#">H0.34/10 TK</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. |                                                           |

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## Technical data

## Rated data acc. to IEC

tested acc. to standard

IEC 60664-1, IEC 61984

Rated current, max. number of poles  
(Tu=20°C)

12 A

Rated current, max. number of poles  
(Tu=40°C)

10 A

Rated voltage for surge voltage class /  
pollution degree III/2

160 V

Rated impulse voltage for surge voltage  
class/ pollution degree II/2

2.5 kV

Rated impulse voltage for surge voltage  
class/ contamination degree III/3

2.5 kV

Rated current, min. number of poles  
(Tu=20°C)

17 A

Rated current, min. number of poles  
(Tu=40°C)

14.5 A

Rated voltage for surge voltage class /  
pollution degree II/2

320 V

Rated voltage for surge voltage class /  
pollution degree III/3

160 V

Rated impulse voltage for surge voltage  
class/ pollution degree III/2

2.5 kV

Short-time withstand current resistance

3 x 1s with 100 A

## Rated data acc. to CSA

Rated voltage (Use group B / CSA)

300 V

Rated current (Use group B / CSA)

10 A

Wire cross-section, AWG, min.

AWG 28

Rated voltage (Use group D / CSA)

300 V

Rated current (Use group D / CSA)

10 A

Wire cross-section, AWG, max.

AWG 14

## Packing

Packaging

Box

VPE length

338 mm

VPE width

130 mm

VPE height

33 mm

## Type tests

Test: Durability of markings

Standard

DIN EN 61984 section 7.3.2 / 09.02 taking  
pattern from DIN EN 60068-2-70 / 07.96

Test

mark of origin, type identification, approval  
marking SEV, approval marking CSA

Evaluation

available

Test

durability

Evaluation

passed

Test: Misengagement (Non-  
interchangeability)

Standard

DIN EN 61984 section 6.3 and 6.9.1 / 09.02,  
DIN IEC 60512 part 7 section 5 / 05.94

Test

180° turned with coding elements

Evaluation

passed

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DIN EN 60999-1 section 7 and 9.1 / 12.00, DIN EN 60947-1 section 2.4.5 / 12.99

info@weidmueller.com  
www.weidmueller.com

## Technical data

|                                                           |                |                                                                                |                                     |
|-----------------------------------------------------------|----------------|--------------------------------------------------------------------------------|-------------------------------------|
| Test: Clampable cross section                             | Standard       | DIN EN 60999-1 section 7 and 9.1 / 12.00, DIN EN 60947-1 section 2.4.5 / 12.99 |                                     |
|                                                           | Conductor type | Type of conductor and conductor cross-section                                  | solid 0.2 mm <sup>2</sup>           |
|                                                           |                | Type of conductor and conductor cross-section                                  | stranded 0.2 mm <sup>2</sup>        |
|                                                           |                | Type of conductor and conductor cross-section                                  | solid 1.5 mm <sup>2</sup>           |
|                                                           |                | Type of conductor and conductor cross-section                                  | stranded 1.5 mm <sup>2</sup>        |
|                                                           |                | Type of conductor and conductor cross-section                                  | AWG 28/1                            |
|                                                           |                | Type of conductor and conductor cross-section                                  | AWG 28/19                           |
|                                                           |                | Type of conductor and conductor cross-section                                  | AWG 16/1                            |
|                                                           |                | Type of conductor and conductor cross-section                                  | AWG 16/19                           |
|                                                           | Evaluation     | passed                                                                         |                                     |
| Test for damage to and accidental loosening of conductors | Standard       | DIN EN 60999-1 section 9.4 / 12.00                                             |                                     |
|                                                           | Requirement    | 0.2 kg                                                                         |                                     |
|                                                           | Conductor type | Type of conductor and conductor cross-section                                  | AWG 28/1                            |
|                                                           |                | Type of conductor and conductor cross-section                                  | AWG 28/19                           |
|                                                           | Evaluation     | passed                                                                         |                                     |
|                                                           | Requirement    | 0.3 kg                                                                         |                                     |
|                                                           | Conductor type | Type of conductor and conductor cross-section                                  | 2 × AWG 24/1                        |
|                                                           |                | Type of conductor and conductor cross-section                                  | 2 × AWG 24/19 with wire end ferrule |
|                                                           | Evaluation     | passed                                                                         |                                     |
|                                                           | Requirement    | 0.4 kg                                                                         |                                     |
|                                                           | Conductor type | Type of conductor and conductor cross-section                                  | solid 1.5 mm <sup>2</sup>           |
|                                                           |                | Type of conductor and conductor cross-section                                  | stranded 1.5 mm <sup>2</sup>        |
|                                                           |                | Type of conductor and conductor cross-section                                  | AWG 16/7                            |
|                                                           | Evaluation     | passed                                                                         |                                     |

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DIN EN 60999-1 section 9.5 / 12.00

≥5 N info@weidmueller.com

Type of conductor and conductor cross-section AWG 28/1

Type of conductor and conductor cross-section AWG 28/19

passed

≥10 N

Type of conductor and conductor cross-section 2 × AWG 24/1

Type of conductor and conductor cross-section 2 × AWG 24/19 with wire end ferrule

passed

≥40 N

Type of conductor and conductor cross-section H05V-U1.5

Type of conductor and conductor cross-section H05V-K1.5

Type of conductor and conductor cross-section AWG 16/7

passed

## Pull-out test

Standard

Requirement

Conductor type

Evaluation

Requirement

Conductor type

Evaluation

Requirement

Conductor type

Evaluation

## Classifications

|             |             |             |             |
|-------------|-------------|-------------|-------------|
| ETIM 6.0    | EC002638    | ETIM 7.0    | EC002638    |
| ETIM 8.0    | 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 |

## 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 variants on request
- Gold-plated contact surfaces on request
- Rated current related to rated cross-section & min. No. of poles.
- Max. outer diameter of the conductor: 2.9 mm
- Wire end ferrule without plastic collar to DIN 46228/1
- Wire end ferrule with plastic collar to DIN 46228/4
- 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

Creation date September 16, 2022 7:11:38 AM CEST

Catalogue status 09.09.2022 / We reserve the right to make technical changes.

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## Technical data

## Approvals

Approvals



|                       |            |
|-----------------------|------------|
| ROHS                  | Conform    |
| UL File Number Search | UL Website |
| Certificate No. (UR)  | E60693     |

## Downloads

Approval/Certificate/Document of Conformity

[Declaration of the Manufacturer](#)

Engineering Data

[CAD data – STEP](#)

Product Change Notification

[PCN\\_2017\\_088\\_PL30X\\_BL\\_35\\_Lock\\_Release\\_lever\\_EN](#)  
[PCN\\_2017\\_088\\_PL30X\\_PCN\\_BL\\_35\\_Loeseriegel\\_DE](#)  
[Change of Material LR 3.50 - DE](#)  
[Change of Material LR 3.50 - EN](#)

Catalogues

[Catalogues in PDF-format](#)

Brochures

[FL DRIVES EN](#)  
[MB DEVICE MANUF. EN](#)  
[FL DRIVES DE](#)  
[FL BUILDING SAFETY EN](#)  
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[FL MACHINE SAFETY EN](#)  
[FL HEATING ELECTR EN](#)  
[FL APPL INVERTER EN](#)  
[FL\\_BASE\\_STATION\\_EN](#)  
[FL ELEVATOR EN](#)  
[FL POWER SUPPLY EN](#)  
[FL 72H SAMPLE SER EN](#)  
[PO OMNIMATE EN](#)

## BL 3.50/04/180LR SN OR BX

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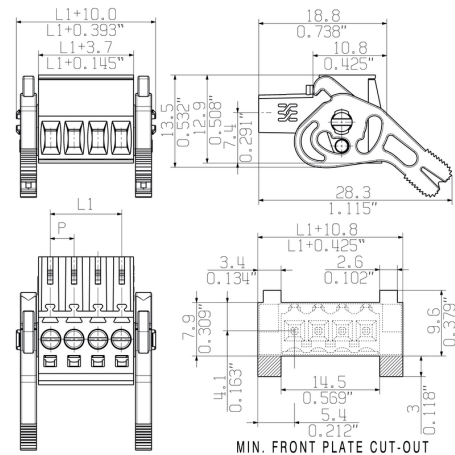
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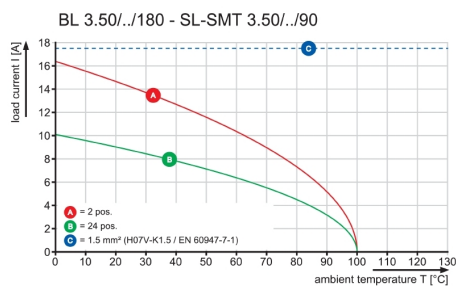
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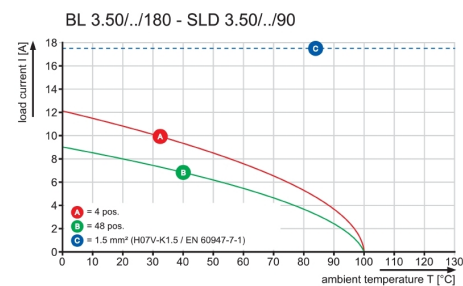
## Drawings

Dimensional drawing [info@weidmueller.com](mailto:info@weidmueller.com)

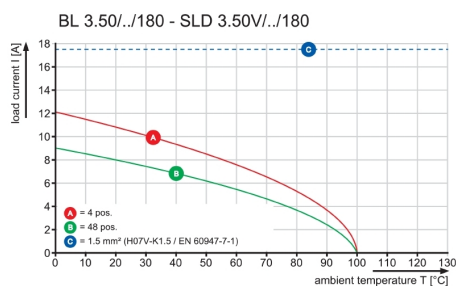
## Graph



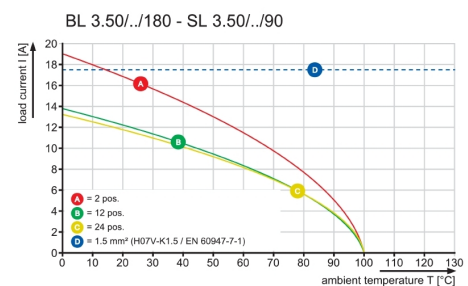
## Graph



## Graph



## Graph



BL 3.50/04/180F



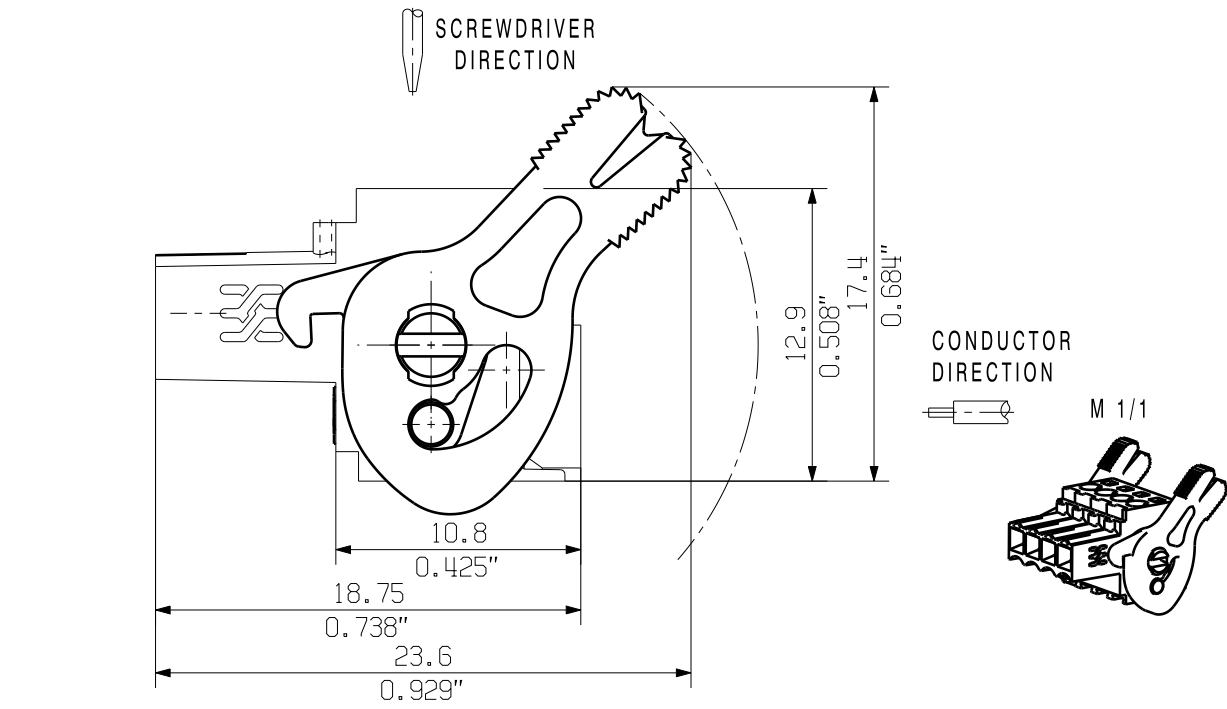
BL 3.50/04/180



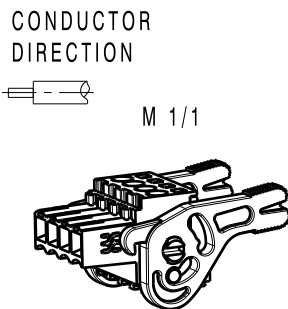
BL 3.50/04/180LH



BL 3.50/04/180LR



BL 3.50/04/180LR REDESIGN



P= 3.50 RASTER PITCH

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.

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.

|    |                  |                            |
|----|------------------|----------------------------|
| 24 | 80.5             | 3.169                      |
| 23 | 77.0             | 3.032                      |
| 22 | 73.5             | 2.894                      |
| 21 | 70.0             | 2.756                      |
| 20 | 66.5             | 2.618                      |
| 19 | 63.0             | 2.480                      |
| 18 | 59.5             | 2.343                      |
| 17 | 56.0             | 2.205                      |
| 16 | 52.5             | 2.067                      |
| 15 | 49.0             | 1.929                      |
| 14 | 45.5             | 1.791                      |
| 13 | 42.0             | 1.654                      |
| 12 | 38.5             | 1.516                      |
| 11 | 35.0             | 1.378                      |
| 10 | 31.5             | 1.240                      |
| 9  | 28.0             | 1.102                      |
| 8  | 24.5             | 0.965                      |
| 7  | 21.0             | 0.827                      |
| 6  | 17.5             | 0.689                      |
| 5  | 14.0             | 0.551                      |
| 4  | 10.5             | 0.413                      |
| 3  | 7.0              | 0.276                      |
| 2  | 3.5              | 0.138                      |
| n  | POLZAHL<br>POLES | L1<br>[mm]<br>L1<br>[inch] |

GENERAL TOLERANCE:  
DIN ISO 2768-m

103300/5  
17.05.18 HELIS\_MA 01

Modification

Drawn 02.09.2008 HELIS\_MA

Responsible AMANN\_A

Checked

Approved LANG\_T

Cat.no.: .

**Weidmüller**

3 19675 **36**

Sheet 00 of 00 sheets

BL 3.50/././180

BUCHSENSTECKER  
FEMALE PLUG

Product file: BL 3.50

Scale: 5/1

Supersedes: .

Issue no. 36

Issue no. 36

Product file: BL 3.50

7382

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

Prüfung /  
Verification