

## BLF 5.00HC/09/90LR SN OR BX

Weidmüller Interface GmbH & Co. KG

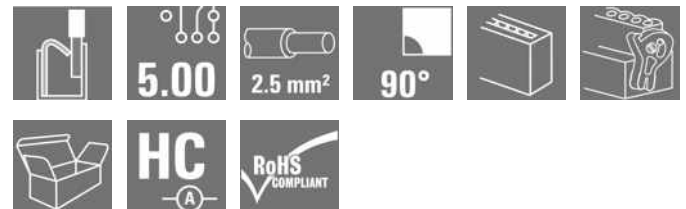
Klingenbergstraße 26

D-32758 Detmold

Germany

www.weidmueller.com

### Product image



Just as reliable as the millionfold proven original and featuring innovative details:

The BLF 5.00HC PUSH IN version of the BLZ 5.00HC female connector features a new connection system and a more compact design. Weidmüller's innovative PUSH IN spring connection system stands for the future of easy and tool-free wire connection. HC = High Current. In terms of versatility, the BLF 5.00HC offers just as much as the older versions:

- 3 tested-and-proven wire outlet directions provide the usual flexibility for application-specific design
- 4 flange variations and the patented release latch allow the locking concept to be based on the requirements of the user

### General ordering data

|              |  |
|--------------|--|
| Version      | PCB plug-in connector, female plug, 5.00 mm, Number of poles: 9, 90°, PUSH IN with actuator, Tension-clamp connection, Clamping range, max. : 3.31 mm <sup>2</sup> , Box |
| Order No.    | <a href="#">1980940000</a>   |
| Type         | BLF 5.00HC/09/90LR SN OR BX  |
| GTIN (EAN)   | 4032248676057  |
| Qty.         | 30 pc(s).  |
| Product data | IEC: 400 V / 24 A / 0.2 - 2.5 mm <sup>2</sup><br>UL: 300 V / 18.5 A / AWG 26 - AWG 12  |
| Packaging    | Box  |

Creation date May 3, 2023 1:47:55 PM CEST

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

|            |         |                 |            |
|------------|---------|-----------------|------------|
| Depth      | 29.6 mm | Depth (inches)  | 1.165 inch |
| Height     | 20.8 mm | Height (inches) | 0.819 inch |
| Width      | 54.8 mm | Width (inches)  | 2.157 inch |
| Net weight | 17.14 g |                 |            |

**Temperatures**

|                             |        |                             |        |
|-----------------------------|--------|-----------------------------|--------|
| Operating temperature, min. | -50 °C | Operating temperature, max. | 100 °C |
|-----------------------------|--------|-----------------------------|--------|

**System Parameters**

|  |   |  |                              |
|--|---|--|------------------------------|
| Product family                               | OMNIMATE Signal - series BL/SL 5.00             | Type of connection                         | Field connection             |
| Wire connection method                       | PUSH IN with actuator, Tension-clamp connection | Pitch in mm (P)                            | 5 mm                         |
| Pitch in inches (P)                          | 0.197 inch                                      | Conductor outlet direction                 | 90°                          |
| Number of poles                              | 9   | L1 in mm                                   | 40 mm                        |
| L1 in inches                                 | 1.576 inch                                      | Number of rows                             | 1                            |
| Pin series quantity                          | 1   | Rated cross-section                        | 2.5 mm <sup>2</sup>          |
| Touch-safe protection acc. to DIN VDE 57 106 | Safe from back-of-hand touch                    | Touch-safe protection acc. to DIN VDE 0470 | IP20 plugged/ IP10 unplugged |
| Protection degree                            | IP20  | Volume resistance                          | ≤5 mΩ                        |
| Can be coded                                 | Yes   | Stripping length                           | 10 mm                        |
| Screwdriver blade                            | 0.6 x 3.5                                       | Screwdriver blade standard                 | DIN 5264                     |
| Plugging cycles                              | 25  | Plugging force/pole, max.                  | 7 N                          |
| Pulling force/pole, max.                     | 5.5 N   |  |                              |

**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                      | CuSn                       | 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.                            | 0.13 mm <sup>2</sup> |
| Clamping range, max.                            | 3.31 mm <sup>2</sup> |
| Wire connection cross section AWG, min.         | AWG 26               |
| Wire connection cross section AWG, max.         | AWG 12               |
| Solid, min. H05(07) V-U                         | 0.2 mm <sup>2</sup>  |
| Solid, max. H05(07) V-U                         | 2.5 mm <sup>2</sup>  |
| Flexible, min. H05(07) V-K                      | 0.2 mm <sup>2</sup>  |
| Flexible, max. H05(07) V-K                      | 2.5 mm <sup>2</sup>  |
| w. plastic collar ferrule, DIN 46228 pt 4, min. | 0.25 mm <sup>2</sup> |
| w. plastic collar ferrule, DIN 46228 pt 4, max. | 2.5 mm <sup>2</sup>  |
| w. wire end ferrule, DIN 46228 pt 1, min.       | 0.25 mm <sup>2</sup> |

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## Technical data

w. wire end ferrule, DIN 46228 pt 1, max. 2.5 mm<sup>2</sup>

Plug gauge in accordance with EN 60999 a x b; ø 2.8 mm x 2.0 mm

| Clampable conductor                    | Cross-section for conductor connection | Type                         | fine-wired                 |
|--|--|------------------------------|----------------------------|
|  |  | nominal                      | 0.5 mm <sup>2</sup>        |
| wire end ferrule                       | wire end ferrule                       | Stripping length             | nominal 12 mm              |
|  |  | Recommended wire-end ferrule | <a href="#">H0.5/16 OR</a> |
|  |  | Stripping length             | nominal 10 mm              |
|  |  | Recommended wire-end ferrule | <a href="#">H0.5/10</a>    |
| Cross-section for conductor connection | wire end ferrule                       | Type                         | fine-wired                 |
|  |  | nominal                      | 0.75 mm <sup>2</sup>       |
| wire end ferrule                       | wire end ferrule                       | Stripping length             | nominal 12 mm              |
|  |  | Recommended wire-end ferrule | <a href="#">H0.75/16 W</a> |
|  |  | Stripping length             | nominal 10 mm              |
|  |  | Recommended wire-end ferrule | <a href="#">H0.75/10</a>   |
| Cross-section for conductor connection | wire end ferrule                       | Type                         | fine-wired                 |
|  |  | nominal                      | 1 mm <sup>2</sup>          |
| wire end ferrule                       | wire end ferrule                       | Stripping length             | nominal 12 mm              |
|  |  | Recommended wire-end ferrule | <a href="#">H1.0/16D R</a> |
|  |  | Stripping length             | nominal 10 mm              |
|  |  | Recommended wire-end ferrule | <a href="#">H1.0/10</a>    |
| Cross-section for conductor connection | wire end ferrule                       | Type                         | fine-wired                 |
|  |  | nominal                      | 1.5 mm <sup>2</sup>        |
| wire end ferrule                       | wire end ferrule                       | Stripping length             | nominal 10 mm              |
|  |  | Recommended wire-end ferrule | <a href="#">H1.5/10</a>    |
|  |  | Stripping length             | nominal 12 mm              |
|  |  | Recommended wire-end ferrule | <a href="#">H1.5/16 R</a>  |
| Cross-section for conductor connection | wire end ferrule                       | Type                         | fine-wired                 |
|  |  | nominal                      | 2.5 mm <sup>2</sup>        |
| wire end ferrule                       | wire end ferrule                       | Stripping length             | nominal 10 mm              |
|  |  | Recommended wire-end ferrule | <a href="#">H2.5/10</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.

### Rated data acc. to IEC

| tested acc. to standard   |                        | Rated current, min. number of poles (Tu=20°C)                         |                   |
|---|------------------------|---|-------------------|
|   | IEC 60664-1, IEC 61984 |   | 24 A              |
| Rated current, max. number of poles (Tu=20°C)                             | 19 A                   | Rated current, min. number of poles (Tu=40°C)                         | 21 A              |
| Rated current, max. number of poles (Tu=40°C)                             | 16.5 A                 | Rated voltage for surge voltage class / pollution degree II/2         | 400 V             |
| Rated voltage for surge voltage class / pollution degree III/2            | 320 V                  | Rated voltage for surge voltage class / pollution degree III/3        | 250 V             |
| Rated impulse voltage for surge voltage class/ pollution degree II/2      | 4 kV                   | Rated impulse voltage for surge voltage class/ pollution degree III/2 | 4 kV              |
| Rated impulse voltage for surge voltage class/ contamination degree III/3 | 4 kV                   | Short-time withstand current resistance                               | 3 x 1s with 120 A |

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

Institute (CSA)



Certificate No. (CSA)

200039-1121690

|                                   |        |
|-----------------------------------|--------|
| Rated voltage (Use group B / CSA) | 300 V  |
| Rated current (Use group B / CSA) | 10 A   |
| Wire cross-section, AWG, min.     | AWG 12 |

|                                   |        |
|-----------------------------------|--------|
| Rated voltage (Use group D / CSA) | 300 V  |
| Rated current (Use group D / CSA) | 10 A   |
| Wire cross-section, AWG, max.     | AWG 26 |

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 current (Use group B / UL 1059) | 18.5 A |
| Wire cross-section, AWG, min.         | AWG 26 |

|                                       |        |
|---------------------------------------|--------|
| Rated voltage (Use group D / UL 1059) | 300 V  |
| Rated current (Use group D / UL 1059) | 10 A   |
| Wire cross-section, AWG, max.         | AWG 12 |

Reference to approval values

Specifications are maximum values, details - see approval certificate.

**Packing**

|           |        |            |        |
|-----------|--------|------------|--------|
| Packaging | Box    | VPE length | 351 mm |
| VPE width | 136 mm | VPE height | 38 mm  |

**Type tests**

|  |            |  |
|--|------------|--|
| Test: Durability of markings                 | Standard   | IEC 61984 section 6.2 and 7.3.2 / 10.08 taking pattern from IEC 60068-2-70 / 12.95 |
|  | Test       | mark of origin, type identification, pitch, type of material, date clock           |
|  | Evaluation | available  |
|  | Test       | durability   |
|  | Evaluation | passed   |
| Test: Misengagement (Non-interchangeability) | Standard   | IEC 61984 section 6.3 and 6.9.1 / 10.08, IEC 60512-13-5 / 02.06                    |
|  | Test       | 180° turned with coding elements   |
|  | Evaluation | passed   |
|  | Test       | visual examination   |
|  | Evaluation | passed   |

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**Technical data**

|   |                |  |                              |
|---|----------------|--|------------------------------|
| Test: Clampable cross section                             | Standard       | IEC 60999-1 section 7 and 9.1 / 11.99, IEC 60947-1 section 8.2.4.5.1 / 06.07 |                              |
|   | 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 2.5 mm <sup>2</sup>    |
|   |                | Type of conductor and conductor cross-section                                | stranded 2.5 mm <sup>2</sup> |
|   |                | Type of conductor and conductor cross-section                                | AWG 26/1                     |
|   |                | Type of conductor and conductor cross-section                                | AWG 26/19                    |
|   |                | Type of conductor and conductor cross-section                                | AWG 14/1                     |
|   |                | Type of conductor and conductor cross-section                                | AWG 14/19                    |
| Evaluation  | passed         |  |                              |
| Test for damage to and accidental loosening of conductors | Standard       | IEC 60999-1 section 9.4 / 11.99  |                              |
|   | Requirement    | 0.2 kg   |                              |
|   | Conductor type | Type of conductor and conductor cross-section                                | AWG 26/1                     |
|   |                | Type of conductor and conductor cross-section                                | AWG 26/19                    |
|   | Evaluation     | passed   |                              |
|   | Requirement    | 0.3 kg   |                              |
|   | Conductor type | Type of conductor and conductor cross-section                                | H05V-U0.5                    |
|   |                | Type of conductor and conductor cross-section                                | H05V-K0.5                    |
|   | Evaluation     | passed   |                              |
|   | Requirement    | 0.7 kg   |                              |
|   | Conductor type | Type of conductor and conductor cross-section                                | H07V-U2.5                    |
|   |                | Type of conductor and conductor cross-section                                | H07V-K2.5                    |
|   |                | Type of conductor and conductor cross-section                                | AWG 14/1                     |
|   |                | Type of conductor and conductor cross-section                                | AWG 14/19                    |
| Evaluation  | passed         |  |                              |

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**Technical data**

|               |                |   |           |  |
|---------------|----------------|---|-----------|--|
| Pull-out test | Standard       | IEC 60999-1 section 9.5 / 11.99               |           |  |
|               | Requirement    | ≥10 N   |           |  |
|               | Conductor type | Type of conductor and conductor cross-section | AWG 26/1  |  |
|               |                | Type of conductor and conductor cross-section | AWG 26/19 |  |
|               | Evaluation     | passed  |           |  |
|               | Requirement    | ≥20 N   |           |  |
|               | Conductor type | Type of conductor and conductor cross-section | H05V-U0.5 |  |
|               |                | Type of conductor and conductor cross-section | H05V-K0.5 |  |
|               | Evaluation     | passed  |           |  |
|               | Requirement    | ≥50 N   |           |  |
|               | Conductor type | Type of conductor and conductor cross-section | H07V-U2.5 |  |
|               |                | Type of conductor and conductor cross-section | H07V-K2.5 |  |
|               |                | Type of conductor and conductor cross-section | AWG 14/1  |  |
|               |                | Type of conductor and conductor cross-section | AWG 14/19 |  |
|               | Evaluation     | passed  |           |  |

**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 |

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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 variants on request</li> <li>• Gold-plated contact surfaces on request</li> <li>• Rated current related to rated cross-section &amp; min. No. of poles.</li> <li>• Wire end ferrule without plastic collar to DIN 46228/1</li> <li>• Wire end ferrule with plastic collar to DIN 46228/4</li> <li>• P on drawing = pitch</li> <li>• Crimping shape "A" for wire end ferrules with PZ 6/5 crimping tool recommended.</li> <li>• The test point can only be used as potential-pickup point.</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   | UL Website |
| Certificate No. (cURus) | E60693     |

**Downloads**

|   |   |
|---|---|
| Approval/Certificate/Document of Conformity | <a href="#">Declaration of the Manufacturer</a>   |
| Engineering Data                            | <a href="#">CAD data – STEP</a>   |
| Catalogues                                  | <a href="#">Catalogues in PDF-format</a>  |
| Brochures                                   | <a href="#">FL DRIVES EN</a><br><a href="#">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="#">FLIndustr.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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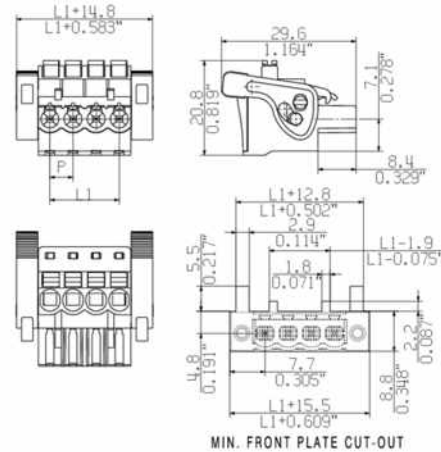
www.weidmueller.com

**Drawings**

**Product image**

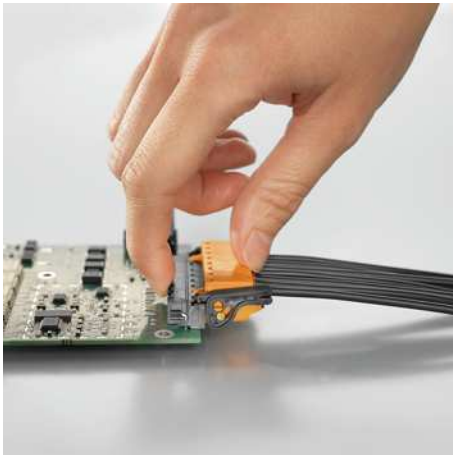


**Dimensional drawing**



Self-locking  
 Immediately on plugging in

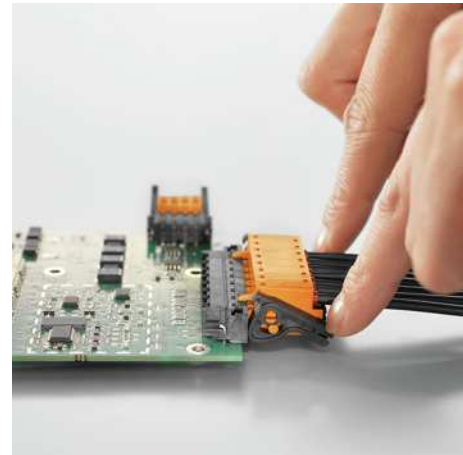
**Product benefits**



Self-locking  
 Immediately on plugging in

**Product benefits**

**Product benefits**



Uncompromising functionality  
 High vibration resistance

**Product benefits**



Uncompromising functionality  
 High vibration resistance



Solid PUSH IN contact  
 Safe and durable

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

**Drawings**

**Product benefits**



Cost-effective wiring  
Quick and intuitive operation

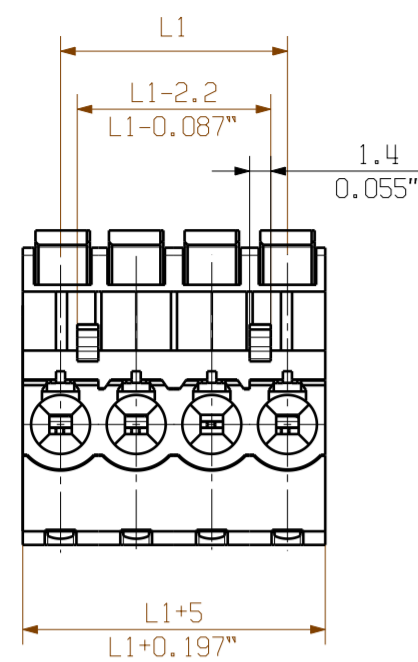
**Product benefits**



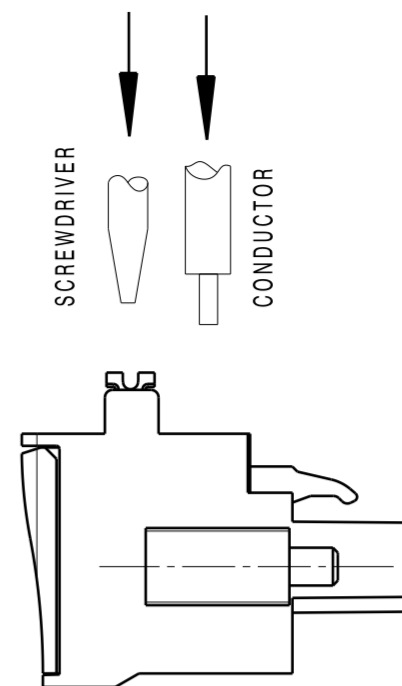
Wide clamping range  
Tool-free wire connection

MASSE OHNE TOLERANZ SIND KEINE PRUEFMASSE  
 DIMS. WITHOUT TOLERANCE ARE NOT CONTROL DIMS.

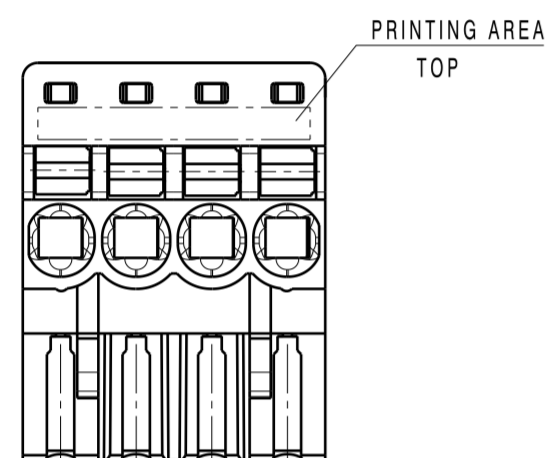
DIE DEUTSCHE VERSION IST VERBINDLICH  
 THE GERMAN VERSION IS BINDING



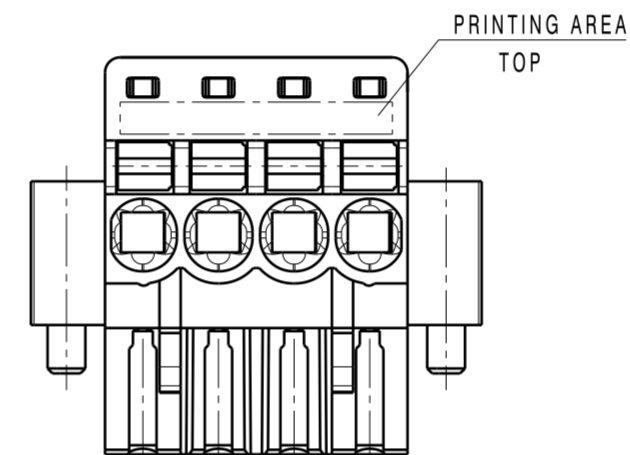
SHOWN: BLF 5.00HC/04/90G SN ...



SHOWN: BLF 5.00HC/04/90F SN ...



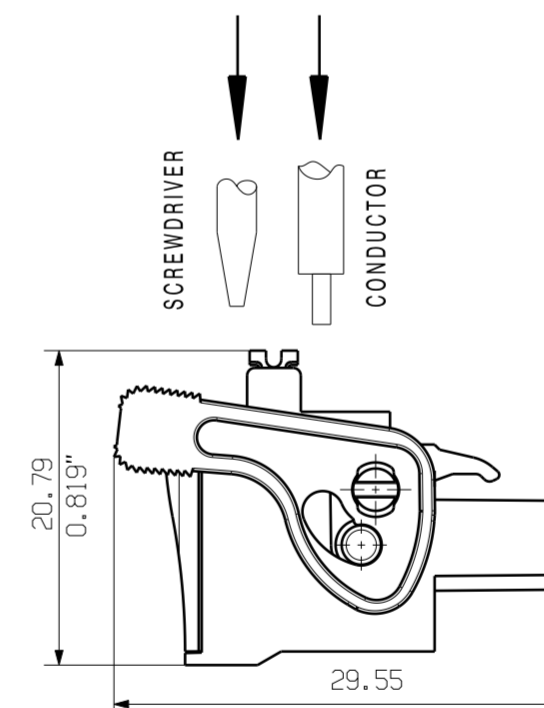
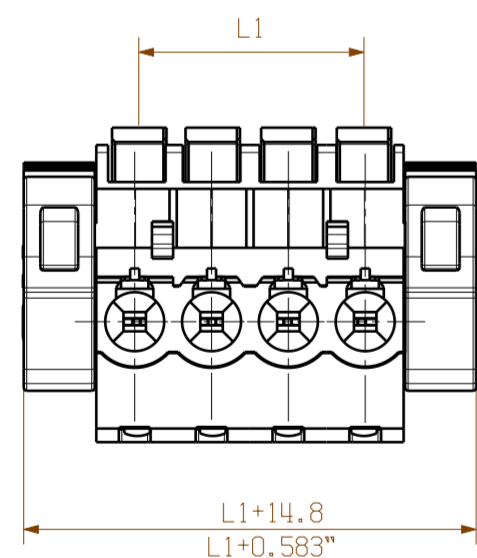
M 1:1



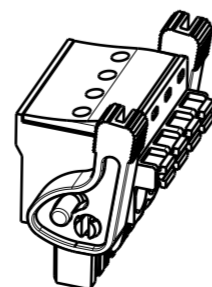
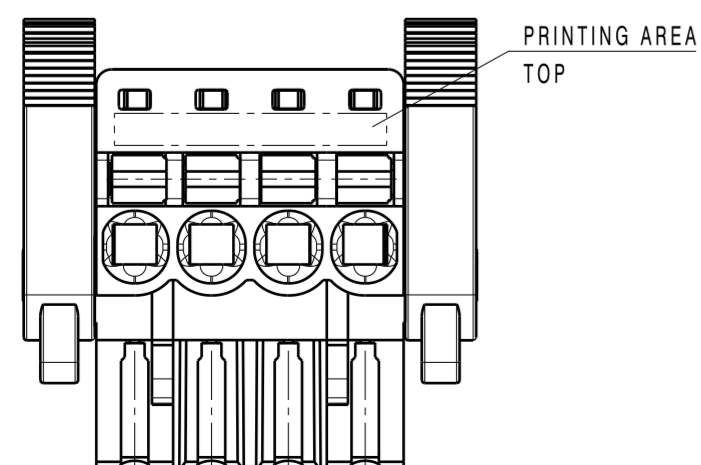
M 1:1

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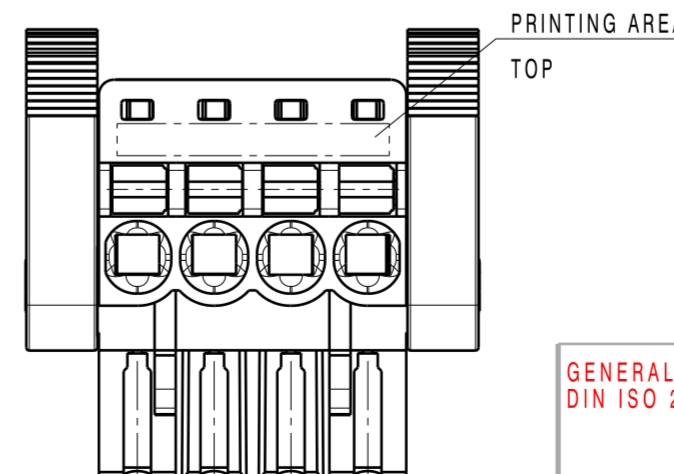
SHOWN: BLF 5.00HC/.../90LR SN ...



SHOWN: BLF 5.00HC/04/90LH SN ...

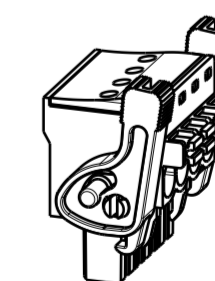


1:1



For the mounting of PCBs, it should be noted that the rated data relates only to the PCB components alone.  
 The necessary creepage and clearance paths must be observed in connection with the respective applicant in accordance to IEC 664 / VDE 0110.  
 The current-carrying capacity and pitch tolerance is to be determined according to DIN IEC 326 part 3 very fine.

Weidmüller PCB components are tested to the DIN EN 61984 standard, and are valid for its field of application. Provided that the components are used to the intended purpose, all requirements with respect to the occurring of electrical, mechanical, thermic and corrosive stress will be satisfied.  
 P = 5.08 RASTER/PITCH  
 n = POLZAHL/NO OF POLES



M 1:1

|    |        |          |
|----|--------|----------|
| 20 | 95     | 3.743    |
| 19 | 90     | 3.546    |
| 18 | 85     | 3.349    |
| 17 | 80     | 3.152    |
| 16 | 75     | 2.955    |
| 15 | 70     | 2.758    |
| 14 | 65     | 2.561    |
| 13 | 60     | 2.364    |
| 12 | 55     | 2.167    |
| 11 | 50     | 1.970    |
| 10 | 45     | 1.773    |
| 9  | 40     | 1.576    |
| 8  | 35     | 1.379    |
| 7  | 30     | 1.182    |
| 6  | 25     | 0.985    |
| 5  | 20     | 0.788    |
| 4  | 15     | 0.591    |
| 3  | 10     | 0.394    |
| 2  | 5      | 0.197    |
| n  | L1[mm] | L1[Inch] |

GENERAL TOLERANCE:  
 DIN ISO 2768-m



89270/5  
 03.12.15 HELIS\_MA 01

MODIFICATION

|             | DATE       | NAME     |
|-------------|------------|----------|
| DRAWN       | 29.11.2007 | HUANG_PA |
| RESPONSIBLE |            | HERTEL_S |
| CHECKED     | 18.12.2015 | HELIS_MA |
| APPROVED    |            | LANG_T   |



CAT.NO.:  
**C 44231 07**  
 DRAWING NO. SHEET 01 OF 01 SHEETS

**BLF 5.00HC/.../90...**  
 BUCHSENLEISTE  
 SOCKET BLOCK

PRODUCT FILE: BLF 5.00 7379