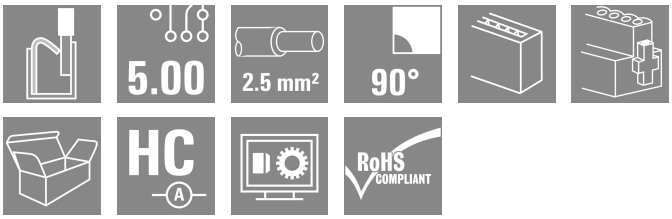
Data sheet

# BLF 5.00HC/17/90F 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: 17, 90°, PUSH IN with actuator, Clamping range, max. : 3.31 mm², Box |
| Order No. | 1980800000 |
| Type | BLF 5.00HC/17/90F SN OR BX |
| GTIN (EAN) | 4032248675944 |
| Qty. | 18 items |
| Product data | IEC: 400 V / 24 A / 0.2 - 2.5 mm²<br>UL: 300 V / 18.5 A / AWG 26 - AWG 12 |
| Packaging | Box |

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## Technical data

### Approvals

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

### Dimensions and weights

| | | | |
|---|---|---|---|
| Depth | 26.2 mm | Depth (inches) | 1.0315 inch |
| Height | 20.8 mm | Height (inches) | 0.8189 inch |
| Width | 94.8 mm | Width (inches) | 3.7323 inch |
| Net weight | 32.05 g | | |

### Environmental Product Compliance

| | | |
|---|---|---|
| RoHS Compliance Status | Compliant without exemption | |
| REACH SVHC | No SVHC above 0.1 wt% | |
| Product Carbon Footprint | Cradle to gate | 1,07 kg CO2 eq. |

### System Parameters

| | | | | |
|---|---|---|---|---|
| Product family | OMNIMATE Signal - series BL/SL 5.00 | | | |
| Type of connection | Field connection | | | |
| Wire connection method | PUSH IN with actuator | | | |
| Pitch in mm (P) | 5.00 mm | | | |
| Pitch in inches (P) | 0.197 " | | | |
| Conductor outlet direction | 90° | | | |
| Number of poles | 17 | | | |
| L1 in mm | 80.00 mm | | | |
| L1 in inches | 3.152 " | | | |
| Number of rows | 1 | | | |
| Pin series quantity | 1 | | | |
| Rated cross-section | 2.5 mm² | | | |
| 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 | | | |
| Tightening torque | Torque type | Screw flange | | |
| | Usage information | Tightening torque | min. | 0.2 Nm |
| | | | max. | 0.25 Nm |

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### Material data

| | | | |
|---|---|---|---|
| Insulating material | PBT | Colour | orange |
| Colour of operational elements | black | Colour chart (similar) | RAL 2000 |
| Insulating material group | IIIa | Comparative Tracking Index (CTI) | ≥ 200 |
| Moisture Level (MSL) | | UL 94 flammability rating | V-0 |
| Contact material | Cu-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. | 0.13 mm² |
| Clamping range, max. | 3.31 mm² |
| Wire connection cross section AWG, min. | AWG 26 |
| Wire connection cross section AWG, max. | AWG 12 |
| Solid, min. H05(07) V-U | 0.2 mm² |
| Solid, max. H05(07) V-U | 2.5 mm² |
| Flexible, min. H05(07) V-K | 0.2 mm² |
| Flexible, max. H05(07) V-K | 2.5 mm² |
| w. plastic collar ferrule, DIN 46228 pt 4, min. | 0.25 mm² |
| w. plastic collar ferrule, DIN 46228 pt 4, max. | 2.5 mm² |
| w. wire end ferrule, DIN 46228 pt 1, min. | 0.25 mm² |
| w. wire end ferrule, DIN 46228 pt 1, max. | 2.5 mm² |
| 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 mm² | |
| | wire end ferrule | Stripping length | nominal | 12 mm |
| | | Recommended wire-end ferrule | H0,5/16 OR | |
| | | Stripping length | nominal | 10 mm |
| | | Recommended wire-end ferrule | H0,5/10 | |
| | Cross-section for conductor connection | Type | fine-wired | |
| | | nominal | 0.75 mm² | |
| | wire end ferrule | Stripping length | nominal | 12 mm |
| | | Recommended wire-end ferrule | H0,75/16 W | |
| | | Stripping length | nominal | 10 mm |
| | | Recommended wire-end ferrule | H0,75/10 | |
| | Cross-section for conductor connection | Type | fine-wired | |
| | | nominal | 1 mm² | |
| | wire end ferrule | Stripping length | nominal | 12 mm |
| | | Recommended wire-end ferrule | H1,0/16D R | |
| | | Stripping length | nominal | 10 mm |
| | | Recommended wire-end ferrule | H1,0/10 | |
| | Cross-section for conductor connection | Type | fine-wired | |
| | | nominal | 1.5 mm² | |

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| | | | | |
|---|---|---|---|---|
| | wire end ferrule | Stripping length | nominal | 10 mm |
| | | Recommended wire-end ferrule | H1,5/10 | |
| | | Stripping length | nominal | 12 mm |
| | | Recommended wire-end ferrule | H1,5/16 R | |
| | Cross-section for conductor connection | Type | fine-wired | |
| | | nominal | 2.5 mm² | |
| | wire end ferrule | Stripping length | nominal | 10 mm |
| | | Recommended wire-end ferrule | H2,5/10 | |
| 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 | IEC 60664-1, IEC 61984 | Rated current, min. number of poles (Tu=20°C) | 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 |

### Rated data acc. to CSA

| | | | |
|---|---|---|---|
| Institute (CSA) | CSA | Certificate No. (CSA) | 200039-1121690 |
| Rated voltage (Use group B / CSA) | 300 V | Rated voltage (Use group D / CSA) | 300 V |
| Rated current (Use group B / CSA) | 10 A | Rated current (Use group D / CSA) | 10 A |
| Wire cross-section, AWG, min. | AWG 12 | 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) | 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) | 18.5 A | Rated current (Use group D / UL 1059) | 10 A |
| Wire cross-section, AWG, min. | AWG 26 | Wire cross-section, AWG, max. | AWG 12 |
| Reference to approval values | Specifications are maximum values, details - see approval certificate. | | |

### Packing

| | | | |
|---|---|---|---|
| Packaging | Box | VPE length | 338.00 mm |
| VPE width | 130.00 mm | VPE height | 27.00 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 |

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## Technical data

| | | | |
|---|---|---|---|
| | 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 | |
| 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 mm² |
| | | Type of conductor and conductor cross-section | stranded 0.2 mm² |
| | | Type of conductor and conductor cross-section | solid 2.5 mm² |
| | | Type of conductor and conductor cross-section | stranded 2.5 mm² |
| | | 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 |

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| | | | |
|---|---|---|---|
| | | Type of conductor and conductor cross-section | AWG 14/19 |
| | Evaluation | passed | |
| 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 | |

### 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<br>• Gold-plated contact surfaces on request<br>• Rated current related to rated cross-section & min. No. of poles.<br>• Wire end ferrule without plastic collar to DIN 46228/1<br>• Wire end ferrule with plastic collar to DIN 46228/4<br>• P on drawing = pitch<br>• Crimping shape "A" for wire end ferrules with PZ 6/5 crimping tool recommended.<br>• The test point can only be used as potential-pickup point.<br>• In accordance with IEC 61984, OMNIMATE-connectors are connectors without breaking capacity (COC). During designated use, connectors are not allowed to be engaged or disengaged when live or under load<br>• Long term storage of the product with average temperature of 50 °C and maximum humidity 70%, 36 months |

### Classifications

| | | | |
|---|---|---|---|
| ETIM 8.0 | EC002638 | ETIM 9.0 | EC002638 |
| ETIM 10.0 | EC002638 | ECLASS 14.0 | 27-46-02-02 |
| ECLASS 15.0 | 27-46-02-02 | | |

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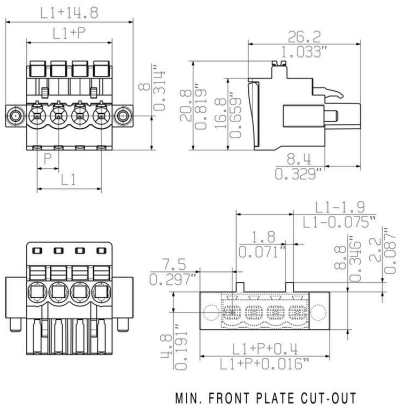
## Drawings

### Product image

### Dimensional drawing

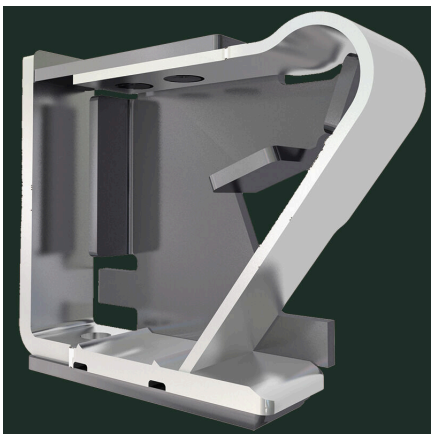



Uncompromising functionalityHigh vibration resistance

### Product benefits

Uncompromising functionalityHigh vibration resistance

### Product benefits



Solid PUSH IN contactSafe and durable

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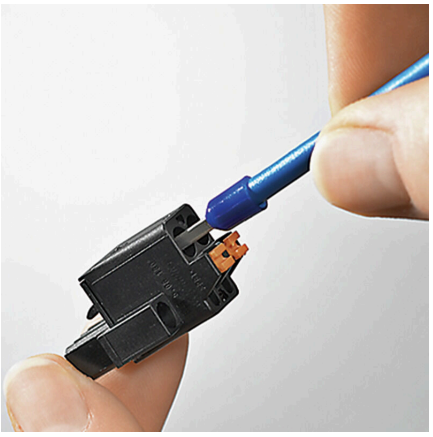
# Drawings

### Product benefits



Cost-effective wiringQuick and intuitive operation

### Product benefits

Wide clamping rangeTool-free wire connection

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## Accessories

### Coding elements

Only connects what is supposed to be connected: the right connection at the right place.
Coding elements and locking devices clearly assign connecting elements during the manufacturing process and operation
The coding elements and locking devices are inserted prior to assembly or during the cable assembly phase.
The Weidmüller alternative: configure online using the variant configurator to precode prior to delivery.
Incorrect assembly on the circuit board and incorrect plugging of connecting elements is no longer possible.
The advantage: no troubleshooting during manufacture and no operational errors by the user.

### General ordering data

| | | |
|---|---|---|
| Type | BLZ/SL KO BK BX | Version |
| Order No. | 1545710000 | PCB plug-in connector, Accessories, Coding element, black, Number |
| GTIN (EAN) | 4008190087142 | of poles: 1 |
| Qty. | 50 ST | |
| Type | BLZ/SL KO OR BX | Version |
| Order No. | 1573010000 | PCB plug-in connector, Accessories, Coding element, orange, Number |
| GTIN (EAN) | 4008190048396 | of poles: 1 |
| Qty. | 100 ST | |

### Slotted screwdriver

Slotted screwdriver with rounded blade SD DIN 5265, ISO 2380/2, output to DIN 5264, ISO 2380/1.
ChromTop tip, SoftFinish grip

### General ordering data

| | | |
|---|---|---|
| Type | SDS 0.6X3.5X100 | Version |
| Order No. | 2749340000 | Screwdriver, Blade width (B): 3.5 mm, Blade length: 100 mm, Blade |
| GTIN (EAN) | 4050118895568 | thickness (A): 0.6 mm |
| Qty. | 1 ST | |
| Type | SDS 0.6X3.5X200 | Version |
| Order No. | 9010110000 | Screwdriver, Screwdriver |
| GTIN (EAN) | 4032248300754 | |
| Qty. | 1 ST | |
| Type | SDIS 0.6X3.5X100 | Version |
| Order No. | 2749810000 | Screwdriver, Blade width (B): 3.5 mm, Blade length: 100 mm, Blade |
| GTIN (EAN) | 4050118897012 | thickness (A): 0.6 mm |
| Qty. | 1 ST | |

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## Counterpart

### SL-SMT 5.00HC/180LF Box

High-temperature-resistant pin header, packed in box or tape. On tape, with 1.5 mm solder pin, optimised for automatic assembly. 3.2 mm solder pin suitable for reflow and wave soldering. The pin headers provide space for labelling and can be coded. HC = High Current.

#### General ordering data

| | | |
|---|---|---|
| Type | SL-SMT 5.00HC/17/180LF ... | Version |
| Order No. | 1841540000 | PCB plug-in connector, male header, Solder flange, THT/THR solder |
| GTIN (EAN) | 4032248352449 | connection, 5.00 mm, Number of poles: 17, 180°, Solder pin length |
| Qty. | 18 ST | (l): 3.2 mm, tinned, black, Box |

### SL-SMT 5.00HC/90LF Box

High-temperature-resistant pin header, packed in box or tape. On tape, with 1.5 mm solder pin, optimised for automatic assembly. 3.2 mm solder pin suitable for reflow and wave soldering. The pin headers provide space for labelling and can be coded. HC = High Current.

#### General ordering data

| | | |
|---|---|---|
| Type | SL-SMT 5.00HC/17/90LF 3... | Version |
| Order No. | 1840500000 | PCB plug-in connector, male header, Solder flange, THT/THR solder |
| GTIN (EAN) | 4032248351343 | connection, 5.00 mm, Number of poles: 17, 90°, Solder pin length (l): |
| Qty. | 18 ST | 3.2 mm, tinned, black, Box |

### SLDV-THR 5.00/180F

High-temperature resistant, double level, laterally offset, male connector with flange or solder flange. 1.5 mm solder pin is suitable for reflow soldering. 3.2 mm solder pin suitable for reflow and wave soldering. The pin headers provide space for labelling and can be coded.

#### General ordering data

| | | |
|---|---|---|
| Type | SLDV-THR 5.00/34/180F 3... | Version |
| Order No. | 1881420000 | PCB plug-in connector, male header, Flange, THT/THR solder |
| GTIN (EAN) | 4032248482757 | connection, 5.00 mm, Number of poles: 34, 180°, Solder pin length |
| Qty. | 10 ST | (l): 3.2 mm, tinned, black, Box |