

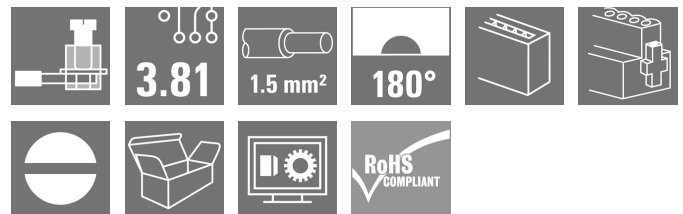
BCZ 3.81/18/180F SN OR BX**Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

www.weidmueller.com

Product image

Female socket connectors with clamping-yoke screw system for connecting wires.

Three wire-outlet directions are available and provide flexible connection-level design options:

- 180° wire parallel to plugging direction
- 90° wire perpendicular and above plugging direction
- 270° wire perpendicular and below plugging direction

There are three housing shapes, covering many different requirements, to choose from:

- Standard housing without flange
- Flange with screw (F)
- Flange featuring Weidmüller's patented release latch (LR) for lock-and-release latching with no strain and no tools needed.

Weidmüller's 3.81-mm-pitch (0.15 inch) plug-in connectors are compatible with the layouts of customary connectors and offer space for labelling and coding.

General ordering data

| | |
|--------------|--|
| Version | PCB plug-in connector, female plug, 3.81 mm, Number of poles: 18, 180°, Clamping yoke connection, Clamping range, max.: 1.5 mm², Box |
| Order No. | 1941170000 |
| Type | BCZ 3.81/18/180F SN OR BX |
| GTIN (EAN) | 4032248655694 |
| Qty. | 50 pc(s). |
| Product data | IEC: 320 V / 17.5 A / 0.2 - 1.5 mm² UL: 300 V / 10 A / AWG 28 - AWG 16 |
| Packaging | Box |

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Technical data

Dimensions and weights

| | | | |
|------------|---------|-----------------|------------|
| Depth | 16.1 mm | Depth (inches) | 0.634 inch |
| Height | 11.1 mm | Height (inches) | 0.437 inch |
| Width | 79 mm | Width (inches) | 3.11 inch |
| Net weight | 15.04 g | | |

System Parameters

| | | | |
|--|-------------------------------------|-------------------|--------------|
| Product family | OMNIMATE Signal - series BC/SC 3.81 | | |
| Type of connection | Field connection | | |
| Wire connection method | Clamping yoke connection | | |
| Pitch in mm (P) | 3.81 mm | | |
| Pitch in inches (P) | 0.15 " | | |
| Conductor outlet direction | 180° | | |
| Number of poles | 18 | | |
| L1 in mm | 64.77 mm | | |
| L1 in inches | 2.55 " | | |
| Number of rows | 1 | | |
| Pin series quantity | 1 | | |
| Rated cross-section | 1 mm ² | | |
| Touch-safe protection acc. to DIN VDE 57 106 | Safe from finger 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 | 7 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 |
| | | | max. 0.25 Nm |
| | Torque type | Screw flange | |
| | Usage information | Tightening torque | min. 0.15 Nm |
| | | | max. 0.2 Nm |

Material data

| | | | |
|---------------------------------------|-------------------------------|---------------------------------------|--------|
| Insulating material | PA 66 GF 30 | Colour | orange |
| Colour chart (similar) | RAL 2000 | Insulating material group | II |
| Comparative Tracking Index (CTI) | ≥ 550 | UL 94 flammability rating | V-0 |
| Contact material | Cu-alloy | Contact surface | tinned |
| Layer structure of plug contact | 0.5...1.5 µm Cu / 2...5 µm Sn | Storage temperature, min. | -40 °C |
| Storage temperature, max. | 70 °C | Operating temperature, min. | -50 °C |
| Operating temperature, max. | 120 °C | Temperature range, installation, min. | -25 °C |
| Temperature range, installation, max. | 120 °C | | |

Conductors suitable for connection

| | |
|----------------------|----------------------|
| Clamping range, min. | 0.08 mm ² |
|----------------------|----------------------|

Creation date August 28, 2024 11:42:44 PM CEST

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| | | | | | |
|---|--|------------------|------------------------------|-------------------------|------|
| Clamping range, max. | 1.5 mm ² | | | | |
| Wire connection cross section AWG, min. | AWG 28 | | | | |
| Wire connection cross section AWG, max. | AWG 16 | | | | |
| Solid, min. H05(07) V-U | 0.2 mm ² | | | | |
| Solid, max. H05(07) V-U | 1.5 mm ² | | | | |
| Flexible, min. H05(07) V-K | 0.2 mm ² | | | | |
| Flexible, max. H05(07) V-K | 1.5 mm ² | | | | |
| w. plastic collar ferrule, DIN 46228 pt 4, 0.2 mm ² min. | | | | | |
| w. plastic collar ferrule, DIN 46228 pt 4, 1.5 mm ² max. | | | | | |
| w. wire end ferrule, DIN 46228 pt 1, min. | 0.2 mm ² | | | | |
| w. wire end ferrule, DIN 46228 pt 1, max. | 1.5 mm ² | | | | |
| 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 ² | | |
| | | wire end ferrule | Stripping length | nominal | 6 mm |
| | | | Recommended wire-end ferrule | H0.5/6 | |
| | Cross-section for conductor connection | Type | fine-wired | | |
| | | nominal | 0.75 mm ² | | |
| | | wire end ferrule | Stripping length | nominal | 6 mm |
| | | | Recommended wire-end ferrule | H0.75/6 | |
| | Cross-section for conductor connection | Type | fine-wired | | |
| | | nominal | 1 mm ² | | |
| | | wire end ferrule | Stripping length | nominal | 6 mm |
| | | | Recommended wire-end ferrule | H1.0/6 | |
| | Cross-section for conductor connection | Type | fine-wired | | |
| | | nominal | 1.5 mm ² | | |
| | | wire end ferrule | Stripping length | nominal | 7 mm |
| | | | Recommended wire-end ferrule | H1.5/7 | |
| 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) | 17.5 A |
| Rated current, max. number of poles (Tu=20°C) | 17.5 A | Rated current, min. number of poles (Tu=40°C) | 17 A |
| Rated current, max. number of poles (Tu=40°C) | 15.2 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 76 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 voltage (Use group C / CSA) 50 V

Rated current (Use group B / CSA) 8 A

Rated current (Use group C / CSA) 8 A

Wire cross-section, AWG, min. AWG 28

Wire cross-section, AWG, max. AWG 16

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) 10 A

Rated current (Use group D / UL 1059) 10 A

Wire cross-section, AWG, min. AWG 28

Wire cross-section, AWG, max. AWG 16

Reference to approval values Specifications are maximum values, details - see approval certificate.

Packing

Packaging Box

VPE length 70 mm

VPE width 950 mm

VPE height 180 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, rated voltage, rated cross-section, pitch, type of material, approval marking UL, 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 EN 60512-13-5 / 11.06

Test

180° turned without coding elements

Evaluation

passed

Test

visual examination

Evaluation

passed

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Technical data

| | | | |
|---|----------------|--|--|
| Test: Clampable cross section | Standard | DIN EN 60999-1 section 7 and 9.1 / 12.00, DIN EN 60947-1 section 8.2.4.5.1 / 12.02 | |
| | Conductor type | Type of conductor and solid 0.08 mm ² conductor cross-section | |
| | | Type of conductor and stranded 0.08 mm ² conductor cross-section | |
| | | Type of conductor and solid 1.5 mm ² conductor cross-section | |
| | | Type of conductor and stranded 1.5 mm ² conductor cross-section | |
| | | Type of conductor and AWG 28/1 conductor cross-section | |
| | | Type of conductor and AWG 28/19 conductor cross-section | |
| | | Type of conductor and AWG 16/1 conductor cross-section | |
| | | Type of conductor and AWG 16/19 conductor cross-section | |
| | 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 stranded 0.25 mm ² conductor cross-section | |
| | | Type of conductor and AWG 28/1 conductor cross-section | |
| | | Type of conductor and AWG 28/19 conductor cross-section | |
| | Evaluation | passed | |
| | Requirement | 0.3 kg | |
| | Conductor type | Type of conductor and solid 0.5 mm ² conductor cross-section | |
| | | | |
| | Evaluation | passed | |
| | Requirement | 0.4 kg | |
| | Conductor type | Type of conductor and solid 1.5 mm ² conductor cross-section | |
| | | Type of conductor and stranded 1.5 mm ² conductor cross-section | |
| | | Type of conductor and AWG 16/1 conductor cross-section | |
| | | Type of conductor and AWG 16/19 conductor cross-section | |
| | Evaluation | passed | |

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Technical data

| | | |
|---------------|----------------|---|
| Pull-out test | Standard | DIN EN 60999-1 section 9.5 / 12.00 |
| | Requirement | ≥10 N |
| | Conductor type | Type of conductor and stranded 0.25 mm ² conductor cross-section |
| | | Type of conductor and AWG 28/1 conductor cross-section |
| | | Type of conductor and AWG 28/19 conductor cross-section |
| | Evaluation | passed |
| | Requirement | ≥20 N |
| | Conductor type | Type of conductor and H05V-U0.5 conductor cross-section |
| | | |
| | | |
| | Evaluation | passed |
| | Requirement | ≥40 N |
| | Conductor type | Type of conductor and H07V-U1.5 conductor cross-section |
| | | Type of conductor and H07V-K1.5 conductor cross-section |
| | | Type of conductor and AWG 16/1 conductor cross-section |
| | | Type of conductor and AWG 16/19 conductor cross-section |
| | Evaluation | passed |

Classifications

| | | | |
|-------------|-------------|-------------|-------------|
| ETIM 6.0 | EC002638 | ETIM 7.0 | EC002638 |
| ETIM 8.0 | EC002638 | ETIM 9.0 | 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 | ECLASS 13.0 | 27-46-02-02 |
| ECLASS 14.0 | 27-46-02-02 | | |

Environmental Product Compliance

| | |
|--------------------------------------|--------------------------------------|
| REACH SVHC | Lead 7439-92-1 |
| SCIP | ea9dd4b8-c51f-409c-885a-41700372be61 |
| RoHS Compliance Status | Compliant with exemption |
| RoHS Exemption (if applicable/known) | 6c |

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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"> • Additional variants on request • Rated current related to rated cross-section & min. No. of poles. • 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. • 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 • Long term storage of the product with average temperature of 50 °C and maximum humidity 70%, 36 months |

Approvals

Approvals



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

Downloads

| | |
|---|--|
| Approval/Certificate/Document of Conformity | CB Certificate CB Testreport Declaration of the Manufacturer |
| Engineering Data | CAD data – STEP |
| Catalogues | Catalogues in PDF-format |
| Brochures | FL DRIVES EN MB DEVICE MANUF. EN FL DRIVES DE FL BUILDING SAFETY EN FL APPL LED LIGHTING EN FL INDUSTR.CONTROLS EN 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 PO OMNIMATE EN |

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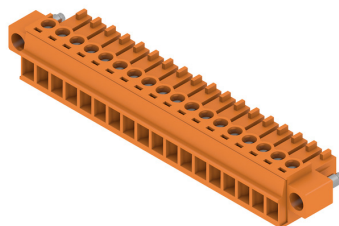
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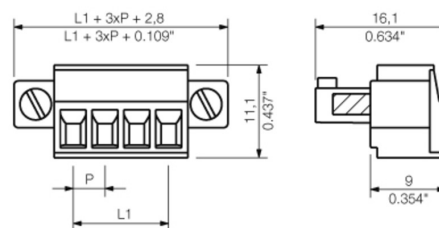
www.weidmueller.com

Drawings

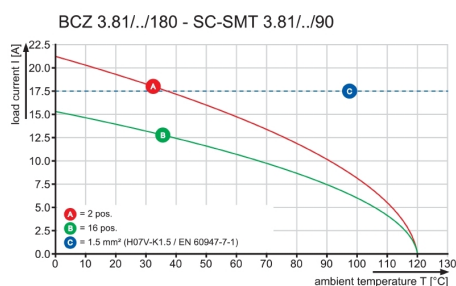
Product image



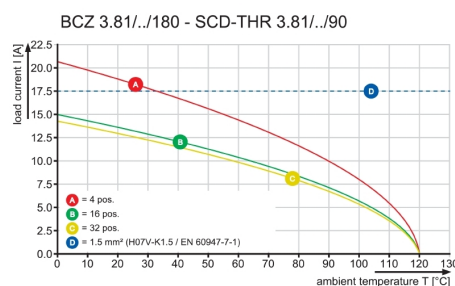
Dimensional drawing



Graph



Graph



Graph



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Dimensions without tolerances are no check dimensions

The English version is binding

10

BCZ 3.81/.../180 ...



BCZ 3.81/.../180LR ...



BCZ 3.81/.../180F ...



KUNDENZEICHNUNG
CUSTOMER DRAWING

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.

GENERAL TOLERANCE:
DIN ISO 2768-m



Max. nos.

98178/5
16.10.17 MA_J

01

Modification

Weidmüller



C 40383

10

Drawing no. Issue no.
Sheet 01 of 06 sheets



Date Name

Drawn 21.02.2006 GU_D

Responsible MA_J

Checked 16.10.2017 ZHOU_N

Approved XU_S

Scale: 2/1

Supersedes: .

BCZ 3.81/.../180 SN ...
BUCHSENLEISTE
SOCKET BLOCK

Product file: BCZ 3.81

7070

| | | |
|----|---------|-----------|
| 20 | 72.39 | 2.850 |
| 19 | 68.58 | 2.700 |
| 18 | 64.77 | 2.550 |
| 17 | 60.96 | 2.400 |
| 16 | 57.15 | 2.250 |
| 15 | 53.34 | 2.100 |
| 14 | 49.53 | 1.950 |
| 13 | 45.72 | 1.800 |
| 12 | 41.91 | 1.650 |
| 11 | 38.10 | 1.500 |
| 10 | 34.29 | 1.350 |
| 9 | 30.48 | 1.200 |
| 8 | 26.67 | 1.050 |
| 7 | 22.86 | 0.900 |
| 6 | 19.05 | 0.750 |
| 5 | 15.24 | 0.600 |
| 4 | 11.43 | 0.450 |
| 3 | 7.62 | 0.300 |
| 2 | 3.81 | 0.150 |
| N | L1 [mm] | L1 [inch] |

Cat.no.: .