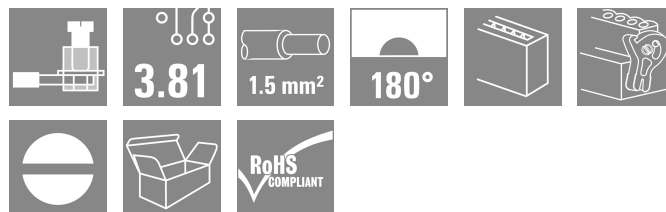


**BCZ 3.81/19/180LR SN OR BX**
**Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

[www.weidmueller.com](http://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: 19, 180°, Clamping yoke connection, Clamping range, max. : 1.5 mm², Box |
| Order No.    | <a href="#">2442470000</a>                                                                                                            |
| Type         | BCZ 3.81/19/180LR SN OR BX                                                                                                            |
| GTIN (EAN)   | 4050118543421                                                                                                                         |
| Qty.         | 50 items                                                                                                                              |
| Product data | IEC: 320 V / 17.5 A / 0.2 - 1.5 mm²<br>UL: 300 V / 10 A / AWG 28 - AWG 16                                                             |
| 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      | 28.45 mm | Depth (inches)  | 1.1201 inch |
| Height     | 16.48 mm | Height (inches) | 0.6488 inch |
| Width      | 82.98 mm | Width (inches)  | 3.2669 inch |
| Net weight | 17.59 g  |                 |             |

## Environmental Product Compliance

RoHS Compliance Status Compliant with exemption

RoHS Exemption (if applicable/known) 6c

REACH SVHC Lead 7439-92-1

SCIP ea9dd4b8-c51f-409c-885a-41700372be61

## 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) 0.150 "

Conductor outlet direction 180°

Number of poles 19

L1 in mm 68.58 mm

L1 in inches 2.700 "

Number of rows 1

Pin series quantity 1

Rated cross-section 1 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 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 |

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## Technical data

## Material data

|                                       |             |                                       |                               |
|---------------------------------------|-------------|---------------------------------------|-------------------------------|
| Insulating material                   | PA 66 GF 30 | Colour                                | orange                        |
| Colour chart (similar)                | RAL 2000    | Insulating material group             | II                            |
| Comparative Tracking Index (CTI)      | ≥ 550       | Moisture Level (MSL)                  |                               |
| 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 <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 16                                 |                                        |                         |                      |      |
| 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, min.                           | 0.2 mm <sup>2</sup>                    |                                        |                         |                      |      |
| w. wire end ferrule, DIN 46228 pt 1, max.                           | 1.5 mm <sup>2</sup>                    |                                        |                         |                      |      |
| 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>     |                      |      |
|                                                                     |                                        | Stripping length                       | nominal                 | 6 mm                 |      |
|                                                                     | wire end ferrule                       | 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              | 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              | 6 mm |
|                                                                     |                                        | Recommended wire-end ferrule           | <a href="#">H1.0/6</a>  |                      |      |
|                                                                     |                                        | Cross-section for conductor connection | Type                    | fine-wired           |      |
|                                                                     | nominal                                |                                        | 1.5 mm <sup>2</sup>     |                      |      |
|                                                                     | wire end ferrule                       |                                        | Stripping length        | nominal              | 7 mm |
|                                                                     |                                        | Recommended wire-end ferrule           | <a href="#">H1.5/7</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, 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 |

## Rated data acc. to CSA

|                                   |        |                                   |        |
|-----------------------------------|--------|-----------------------------------|--------|
| 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 |

## 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) | 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 | 290.00 mm |
| VPE width | 88.00 mm | VPE height | 79.00 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                                                                                                                                      |                               |
| 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 conductor cross-section                                                                                               | solid 0.08 mm <sup>2</sup>    |
|                                              |                | Type of conductor and conductor cross-section                                                                                               | stranded 0.08 mm <sup>2</sup> |

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|                                                           |                |                                               |                               |
|-----------------------------------------------------------|----------------|-----------------------------------------------|-------------------------------|
| Test for damage to and accidental loosening of conductors |                | 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                                        |                               |
|                                                           | Standard       | DIN EN 60999-1 section 9.4 / 12.00            |                               |
|                                                           | Requirement    | 0.2 kg                                        |                               |
|                                                           | Conductor type | Type of conductor and conductor cross-section | stranded 0.25 mm <sup>2</sup> |
|                                                           |                | Type of conductor and conductor cross-section | AWG 28/1                      |
|                                                           |                | Type of conductor and conductor cross-section | AWG 28/19                     |
| Pull-out test                                             | Evaluation     | passed                                        |                               |
|                                                           | Requirement    | 0.3 kg                                        |                               |
|                                                           | Conductor type | Type of conductor and conductor cross-section | solid 0.5 mm <sup>2</sup>     |
|                                                           |                |                                               |                               |
|                                                           | 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 16/1                      |
|                                                           |                | Type of conductor and conductor cross-section | AWG 16/19                     |
|                                                           | Evaluation     | passed                                        |                               |
|                                                           | Standard       | DIN EN 60999-1 section 9.5 / 12.00            |                               |
|                                                           | Requirement    | ≥10 N                                         |                               |
|                                                           | Conductor type | Type of conductor and conductor cross-section | stranded 0.25 mm <sup>2</sup> |
|                                                           |                | Type of conductor and conductor cross-section | AWG 28/1                      |
|                                                           |                | Type of conductor and conductor cross-section | AWG 28/19                     |
|                                                           | Evaluation     | passed                                        |                               |
|                                                           | Requirement    | ≥20 N                                         |                               |

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**Technical data**

|                |                                               |           |
|----------------|-----------------------------------------------|-----------|
| Conductor type | Type of conductor and conductor cross-section | H05V-U0.5 |
| Evaluation     | passed                                        |           |
| Requirement    | ≥40 N                                         |           |
| Conductor type | Type of conductor and conductor cross-section | H07V-U1.5 |
|                | Type of conductor and conductor cross-section | H07V-K1.5 |
|                | Type of conductor and conductor cross-section | AWG 16/1  |
|                | Type of conductor and conductor cross-section | AWG 16/19 |
| 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
- 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

**Classifications**

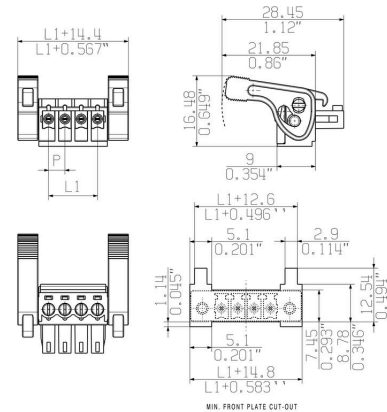
|             |             |             |             |
|-------------|-------------|-------------|-------------|
| ETIM 8.0    | EC002638    | ETIM 9.0    | EC002638    |
| ETIM 10.0   | EC002638    | ECLASS 14.0 | 27-46-02-02 |
| ECLASS 15.0 | 27-46-02-02 |             |             |

## Drawings

### Product image

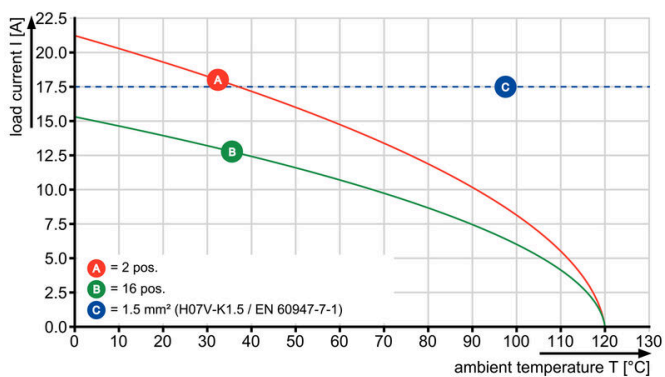


### Dimensional drawing



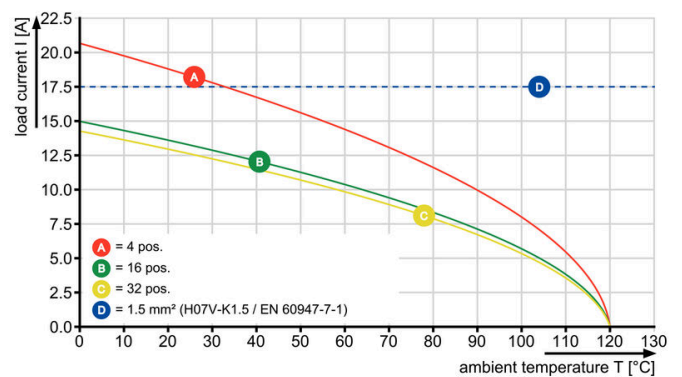
### Graph

BCZ 3.81/180 - SC-SMT 3.81/90



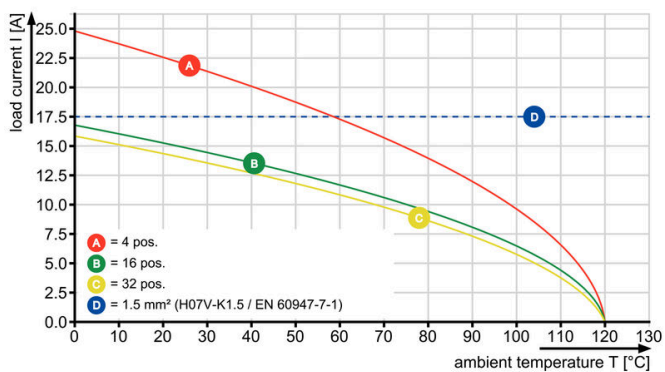
### Graph

BCZ 3.81/180 - SCD-THR 3.81/90

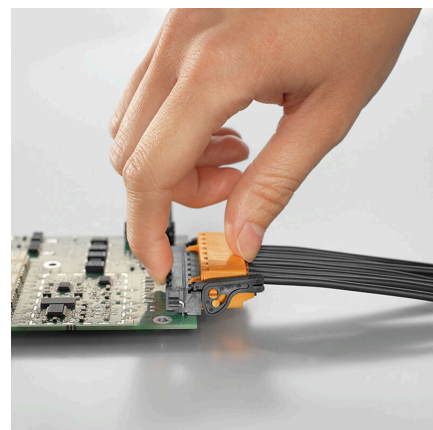


### Graph

BCZ 3.81/180 - SCDV-THR 3.81/180



### Product benefits



### Product benefits

