

# BCZ 3.81/05/270F SN BK BX

**Weidmüller Interface GmbH & Co. KG**

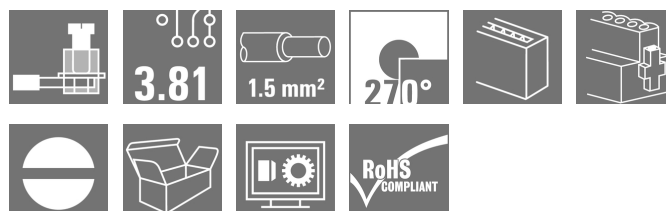
Klingenbergstraße 26

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: 5, 270°, Clamping yoke connection, Clamping range, max.: 1.5 mm², Box |
| Order No.    | <a href="#">1799120000</a>                                                                                                          |
| Type         | BCZ 3.81/05/270F SN BK BX                                                                                                           |
| GTIN (EAN)   | 4032248244010                                                                                                                       |
| Qty.         | 50 pc(s).                                                                                                                           |
| 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

## Dimensions and weights

|                |           |                 |            |
|----------------|-----------|-----------------|------------|
| Depth          | 19.1 mm   | Depth (inches)  | 0.752 inch |
| Height         | 10.5 mm   | Height (inches) | 0.413 inch |
| Net weight     | 6.1 g     | Width           | 29.47 mm   |
| Width (inches) | 1.16 inch |                 |            |

## Environmental Product Compliance

|            |                |
|------------|----------------|
| REACH SVHC | Lead 7439-92-1 |
|------------|----------------|

## 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 inch                           |  |                   |
| Conductor outlet direction                   | 270°                                |  |                   |
| Number of poles                              | 5                                   |  |                   |
| L1 in mm                                     | 15.24 mm                            |  |                   |
| L1 in inches                                 | 0.6 inch                            |  |                   |
| 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   | IP 20                               |  |                   |
| 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      |
| Tightening torque                            | 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                                | black                         |
| Colour chart (similar)                | RAL 9011    | Insulating material group             | II                            |
| Comparative Tracking Index (CTI)      | ≥ 550       | Insulation strength                   | ≥ 10 <sup>8</sup> Ω           |
| UL 94 flammability rating             | V-0         | Contact material                      | Copper 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                        |

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## 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>     |      |
|                     | wire end ferrule                       | 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                 | 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.

## 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)                             | 15.9 A                 | Rated current, min. number of poles (Tu=40°C)                         | 17.5 A           |
| Rated current, max. number of poles (Tu=40°C)                             | 14.1 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 |

Creation date March 25, 2021 11:11:38 AM CET

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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

40 mm

VPE width

75 mm

VPE height

140 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 conductor cross-section                                      | solid 0.08 mm <sup>2</sup>    |
|                                                           |                | Type of conductor and conductor cross-section                                      | stranded 0.08 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                                      | 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    | 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                                                                             |                               |

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|               |                |                                               |                               |
|---------------|----------------|-----------------------------------------------|-------------------------------|
| Pull-out test | 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                                         |                               |
|               | Conductor type | Type of conductor and conductor cross-section | H05V-U0.5                     |
|               |                | passed                                        |                               |
|               |                | ≥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                                        |                               |

## Classifications

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

## 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 colours 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>• 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.</li> <li>• Long term storage of the product with average temperature of 50 °C and average humidity 70%, 36 months</li> </ul> |

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## Technical data

### Approvals

Approvals



|                       |         |
|-----------------------|---------|
| ROHS                  | Conform |
| UL File Number Search | E60693  |

### Downloads

|                                             |                                                 |
|---------------------------------------------|-------------------------------------------------|
| Approval/Certificate/Document of Conformity | <a href="#">Declaration of the Manufacturer</a> |
| Engineering Data                            | <a href="#">STEP</a>                            |
| Engineering Data                            | <a href="#">EPLAN, WSCAD</a>                    |

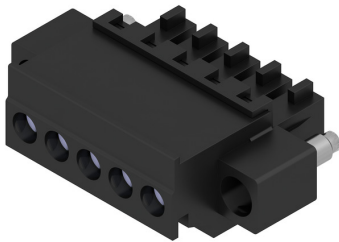
## BCZ 3.81/05/270F SN BK BX

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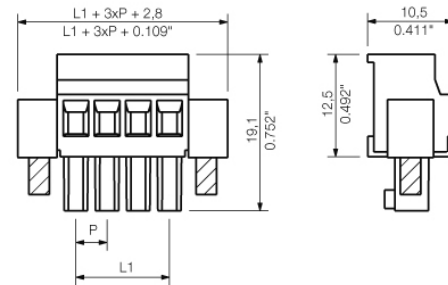
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## Drawings

### Product image



### Dimensional drawing



### Graph



### Graph



### Graph



### Graph



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BCZ 3.81/.../270 ...



BCZ 3.81/.../270F ...



NOTE:  
n=NO OF POLES  
P=PITCH

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 with 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.

|    |         |           |
|----|---------|-----------|
| 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.: .                                                                                              |  |
| 62605/5<br>17.08.12 SHI_S 01 |  | <b>Weidmüller</b>  |  |
| MODIFICATION                 |  | C 40382 04                                                                                              |  |
| DRAWN 06.04.2006 GU_D        |  | DRAWING NO. ISSUE NO.                                                                                   |  |
| RESPONSIBLE XU_S             |  | <b>BCZ 3.81/.../270 ...</b><br>BUCHSENLEISTE<br>SOCKET BLOCK                                            |  |
| CHECKED 27.08.2012 ZHOU_N    |  |                                                                                                         |  |
| APPROVED XU_S                |  |                                                                                                         |  |
| SCALE: 2/1                   |  | PRODUCT FILE: BCZ 3.81 7070                                                                             |  |
| SUPERSEDES: .                |  |                                                                                                         |  |
| SUPERSEDED BY: .             |  |                                                                                                         |  |

