

# SCZ 3.81/06/180FI SN OR BX

**Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

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

## Product image



The inverted SCZ pin plug with clamping-yoke screw connection is designed for straight wire connections in 3.81-mm pitch. It can be used in two ways:

- for wire-to-wire connections together with the BCZ
- as a mating plug for the touch-safe BCL socket block on the PCB.

The SCZ is available in four different versions:

- Without flange ("G", closed)
- With standard flange ("F", with socket nut)
- With inverted flange ("FI", with screw)
- and with Weidmüller's patented release latch for a tool-free, no-strain disconnect

The SCZ provides space for labelling and can be coded.

## General ordering data

|              |                                                                                                                                   |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Version      | PCB plug-in connector, male plug, 3.81 mm, Number of poles: 6, 180°, Clamping yoke connection, Clamping range, max.: 1.5 mm², Box |
| Order No.    | <a href="#">1970340000</a>                                                                                                        |
| Type         | SCZ 3.81/06/180FI SN OR BX                                                                                                        |
| GTIN (EAN)   | 4032248679720                                                                                                                     |
| 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                                                                                                                               |

Creation date September 17, 2022 8:17:21 PM CEST

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## Technical data

## Dimensions and weights

|            |         |                 |            |
|------------|---------|-----------------|------------|
| Depth      | 18.4 mm | Depth (inches)  | 0.724 inch |
| Height     | 11.1 mm | Height (inches) | 0.437 inch |
| Net weight | 6.3 g   |                 |            |

## Environmental Product Compliance

|            |                |      |                                      |
|------------|----------------|------|--------------------------------------|
| REACH SVHC | Lead 7439-92-1 | SCIP | cec56c8c-fe86-40ec-b01a-e8e288a878ac |
|------------|----------------|------|--------------------------------------|

## 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                   | 180°                                |                   |                             |
| Number of poles                              | 6                                   |                   |                             |
| L1 in mm                                     | 19.05 mm                            |                   |                             |
| L1 in inches                                 | 0.75 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.                    | 8 N                                 |                   |                             |
| Pulling force/pole, max.                     | 5 N                                 |                   |                             |
| Tightening torque                            | Torque type                         | Wire connection   |                             |
|                                              | Usage information                   | Tightening torque | min. 0.2 Nm<br>max. 0.25 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                      | Copper alloy | Contact surface                       | tinned |
| Layer structure of plug contact       | 4...8 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>  |

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|                                                                     |                                                                                                                                                                        |                              |                         |      |
|---------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-------------------------|------|
| 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 ; 2.4 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)                             | 17.1 A                 | Rated current, min. number of poles (Tu=40°C)                         | 17.5 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) 11 A

Rated current (Use group C / CSA) 11 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 179 mm

VPE width 117 mm

VPE height 24 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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|                                                           |                |                                                                                    |                               |
|-----------------------------------------------------------|----------------|------------------------------------------------------------------------------------|-------------------------------|
| 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    |
| ETIM 8.0    | EC002638    | ECLASS 9.0  | 27-44-03-09 |
| ECLASS 9.1  | 27-44-03-09 | ECLASS 10.0 | 27-44-03-09 |
| ECLASS 11.0 | 27-46-02-02 | ECLASS 12.0 | 27-46-02-02 |

## Important note

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IPC conformity | Conformity: The products are developed, manufactured and delivered according international recognized standards and norms and comply with the assured properties in the data sheet resp. fulfill decorative properties in accordance with IPC-A-610 "Class 2". Further claims on the products can be evaluated on request.                                                                                                                                                                                                                                        |
| Notes          | <ul style="list-style-type: none"> <li>Additional variants on request</li> <li>Rated current related to rated cross-section &amp; min. No. of poles.</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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[www.weidmueller.com](http://www.weidmueller.com)**Technical data****Approvals**

Approvals



ROHS Conform

UL File Number Search UL Website

Certificate No. (cURus) E60693

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[FL DRIVES DE](#)  
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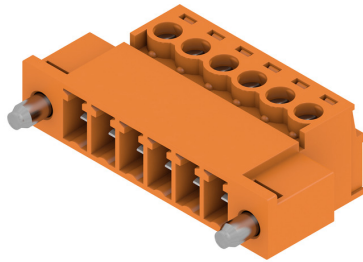
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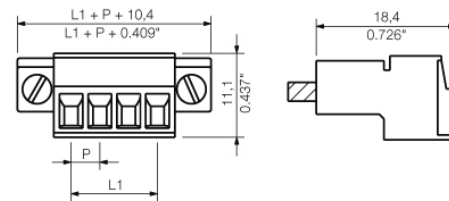
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## Drawings

### Product image



### Dimensional drawing



### Graph



### Graph



### Graph



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SCZ 3.81/.../180G ...



SCZ 3.81/.../180FI ...



SCZ 3.81/.../180F ...



SCZ 3.81/.../180LR ...



### KUNDENZEICHNUNG CUSTOMER DRAWING

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

Weidmüller PCB components are tested to the DIN EN 61984 standard, and are valid for its field of application.  
Provided that the components are used to the intended purpose, all requirements with respect to the occurring of electrical, mechanical, thermic and corrosive stress will be satisfied.

|                |  |                          |            |                                                                                               |                |  |
|----------------|--|--------------------------|------------|-----------------------------------------------------------------------------------------------|----------------|--|
|                |  | 55304/5<br>03.06.11 GE_G |            | 00                                                                                            | CAT.NO.: . . . |  |
| MODIFICATION   |  | <b>Weidmüller</b>        |            | 2 40408 05                                                                                    |                |  |
| DRAWN          |  | DATE                     | NAME       | DRAWING NO. SHEET . . . OF . . . SHEETS                                                       |                |  |
| RESPONSIBLE    |  | 09.10.2008               | SHI_S      |                                                                                               |                |  |
| SUPERSEDES:    |  | CHECKED                  | 03.06.2011 | ISSUE NO.                                                                                     |                |  |
| SUPERSEDED BY: |  | APPROVED                 | XU_S       | Richter_G                                                                                     |                |  |
| SCALE: 2/1     |  |                          |            | SCZ 3.81/.../180...<br>ZUGBUEGELANSCHLUSS STIFTELEISTE<br>CLAMPING YOKE CONNECTION PIN HEADER |                |  |
|                |  |                          |            | PRODUCT FILE: SCZ 3.81 7078                                                                   |                |  |