

## BCZ 3.81/19/180ZE SN OR BX

Weidmüller Interface GmbH & Co. KG

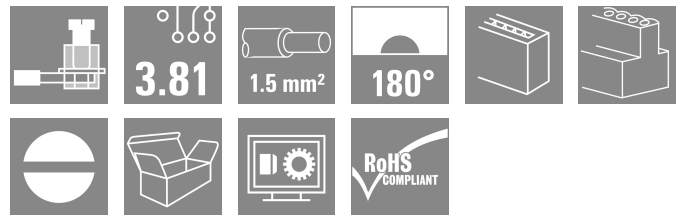
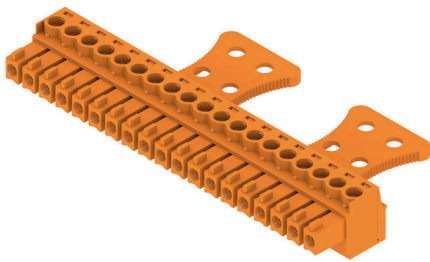
Klingenbergstraße 26

D-32758 Detmold

Germany

www.weidmueller.com

### Product image



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

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

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

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

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

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

### General ordering data

Version	PCB plug-in connector, female plug, 3.81 mm, Number of poles: 19, 180°, Clamping yoke connection, Clamping range, max. : 1.5 mm², Box
Order No.	<a href="#">1236440000</a>
Type	BCZ 3.81/19/180ZE SN OR BX
GTIN (EAN)	4050118021721
Qty.	50 items
Product data	IEC: 320 V / 17.5 A / 0.2 - 1.5 mm² UL: 300 V / 10 A / AWG 28 - AWG 16
Packaging	Box

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## Technical data

## Approvals

Approvals



ROHS Conform

UL File Number Search [UL Website](#)

Certificate No. (cURus) E60693

## Dimensions and weights

Depth	39.8 mm	Depth (inches)	1.5669 inch
Height	12.5 mm	Height (inches)	0.4921 inch
Width	72.48 mm	Width (inches)	2.8535 inch
Net weight	21.76 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, min.	0.2 mm <sup>2</sup>
w. plastic collar ferrule, DIN 46228 pt 4, max.	1.5 mm <sup>2</sup>
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	wire end ferrule	Stripping length	nominal 6 mm
		Recommended wire-end ferrule	<a href="#">H0,5/6</a>
		Type	fine-wired
Cross-section for conductor connection	wire end ferrule	nominal	0.75 mm <sup>2</sup>
		Stripping length	nominal 6 mm
wire end ferrule	wire end ferrule	Recommended wire-end ferrule	<a href="#">H0,75/6</a>
		Type	fine-wired
		nominal	1 mm <sup>2</sup>
Cross-section for conductor connection	wire end ferrule	Stripping length	nominal 6 mm
		Recommended wire-end ferrule	<a href="#">H1,0/6</a>
wire end ferrule	wire end ferrule	Type	fine-wired
		nominal	1.5 mm <sup>2</sup>
		Stripping length	nominal 7 mm
Cross-section for conductor connection	wire end ferrule	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	165.00 mm
VPE width	118.00 mm	VPE height	46.00 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
Test: Misengagement (Non-interchangeability)	Evaluation	passed
	Standard	DIN EN 61984 section 6.3 and 6.9.1 / 09.02, DIN EN 60512-13-5 / 1.06
	Test	180° turned without coding elements
	Evaluation	passed
Test: Clampable cross section	Test	visual examination
	Evaluation	passed
	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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		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	
Test for damage to and accidental loosening of conductors	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		
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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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-6 10 "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		

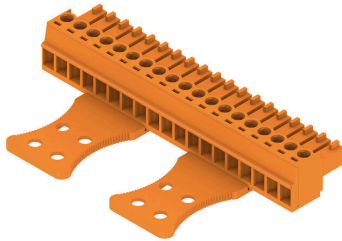
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Drawings

Product image



Dimensional drawing



Graph

BCZ 3.81/./180 - SCZ 3.81/./180



Graph

BCZ 3.81/./180 - SC-SMT 3.81/./135



Graph

BCZ 3.81/./180 - SCDV 3.81/./90



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## Counterpart

### SC 3.81/90G



The SC pin header has a parallel (recumbent) plugging direction in relation to the PCB. It is available in closed (G) and screw flange (F) versions.

Weidmüller's 3.81-mm-pitch (0.15 inch) plug-in connectors are compatible with the layouts of standard connectors. They support a flood-light display and offer space for labelling and coding.

#### General ordering data

Type	SC 3.81/02/90G 3.2SN OR...	Version
Order No.	<a href="#">1942020000</a>	PCB plug-in connector, male header, closed side, THT solder
GTIN (EAN)	4032248655526	connection, 3.81 mm, Number of poles: 2, 90°, Solder pin length (l):
Qty.	198 ST	3.2 mm, tinned, orange, Box

### SC-SMT 3.81/180G Tape



High-temperature-resistant pin header (SC-SMT 180G) in 3.81-mm pitch (0.15 inch)

- Plugging direction is perpendicular to PCB (standing)
  - Closed (G) .
  - Packed either in box (BX) or on anti-static roll (tape-on-reel, RL)
  - Pin length of either 1.5 mm or 3.2 mm
- Weidmüller's 3.81-mm-pitch (0.15 inch) plug-in connectors are compatible with the layouts of standard connectors and offer space for labelling and coding.

#### General ordering data

Type	SC-SMT 3.81/02/180G 1.5...	Version
Order No.	<a href="#">1864050000</a>	PCB plug-in connector, male header, closed side, THT/THR solder
GTIN (EAN)	4032248429172	connection, 3.81 mm, Number of poles: 2, 180°, Solder pin length (l):
Qty.	300 ST	1.5 mm, tinned, black, Tape

### SC-SMT 3.81/180G Box



High-temperature-resistant pin header (SC-SMT 180G) in 3.81-mm pitch (0.15 inch)

- Plugging direction is perpendicular to PCB (standing)
  - Closed (G) .
  - Packed either in box (BX) or on anti-static roll (tape-on-reel, RL)
  - Pin length of either 1.5 mm or 3.2 mm
- Weidmüller's 3.81-mm-pitch (0.15 inch) plug-in connectors are compatible with the layouts of standard connectors and offer space for labelling and coding.

#### General ordering data

Type	SC-SMT 3.81/02/180G 1.5...	Version
Order No.	<a href="#">1863720000</a>	PCB plug-in connector, male header, closed side, THT/THR solder
GTIN (EAN)	4032248428793	connection, 3.81 mm, Number of poles: 2, 180°, Solder pin length (l):
Qty.	50 ST	1.5 mm, tinned, black, Box

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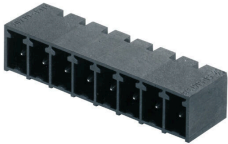
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## Counterpart

## SC-SMT 3.81/90G Box



High-temperature-resistant pin header (SC-SMT 90G) in 3.81-mm pitch (0.15 inch)

- Plugging direction parallel to PCB (recumbent)
- Closed (G)
- Packed either in box (BX) or on anti-static roll (tape-on-reel, RL)

• Pin length of either 1.5 mm or 3.2 mm  
Weidmüller's 3.81-mm-pitch (0.15 inch) plug-in connectors are compatible with the layouts of standard connectors and offer space for labelling and coding.

## General ordering data

Type	SC-SMT 3.81/02/90G 3.2S...	Version
Order No.	<a href="#">1862460000</a>	PCB plug-in connector, male header, closed side, THT/THR solder
GTIN (EAN)	4032248427611	connection, 3.81 mm, Number of poles: 2, 90°, Solder pin length (l):
Qty.	50 ST	3.2 mm, tinned, black, Box

## SC-SMT 3.81/180G Box



High-temperature-resistant pin header (SC-SMT 180G) in 3.81-mm pitch (0.15 inch)

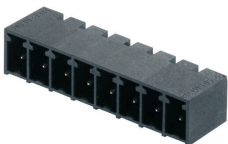
- Plugging direction is perpendicular to PCB (standing)
- Closed (G)
- Packed either in box (BX) or on anti-static roll (tape-on-reel, RL)

• Pin length of either 1.5 mm or 3.2 mm  
Weidmüller's 3.81-mm-pitch (0.15 inch) plug-in connectors are compatible with the layouts of standard connectors and offer space for labelling and coding.

## General ordering data

Type	SC-SMT 3.81/02/180G 3.2...	Version
Order No.	<a href="#">1862920000</a>	PCB plug-in connector, male header, closed side, THT/THR solder
GTIN (EAN)	4032248428113	connection, 3.81 mm, Number of poles: 2, 180°, Solder pin length (l):
Qty.	50 ST	3.2 mm, tinned, black, Box

## SC-SMT 3.81/90G Box



High-temperature-resistant pin header (SC-SMT 90G) in 3.81-mm pitch (0.15 inch)

- Plugging direction parallel to PCB (recumbent)
- Closed (G)
- Packed either in box (BX) or on anti-static roll (tape-on-reel, RL)

• Pin length of either 1.5 mm or 3.2 mm  
Weidmüller's 3.81-mm-pitch (0.15 inch) plug-in connectors are compatible with the layouts of standard connectors and offer space for labelling and coding.

## General ordering data

Type	SC-SMT 3.81/02/90G 1.5S...	Version
Order No.	<a href="#">1862960000</a>	PCB plug-in connector, male header, closed side, THT/THR solder
GTIN (EAN)	4032248428069	connection, 3.81 mm, Number of poles: 2, 90°, Solder pin length (l):
Qty.	50 ST	1.5 mm, tinned, black, Box

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## Counterpart

### SC 3.81/180G

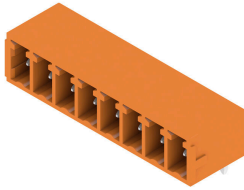


The SC pin header has a perpendicular (standing) plugging direction in relation to the PCB. It is available in closed (G) and screw flange (F) versions. Weidmüller's 3.81-mm-pitch (0.15 inch) plug-in connectors are compatible with the layouts of standard connectors and offer space for labelling and coding.

#### General ordering data

Type	SC 3.81/02/180G 3.2SN B...	Version
Order No.	<a href="#">1793520000</a>	PCB plug-in connector, male header, closed side, THT solder
GTIN (EAN)	4032248230433	connection, 3.81 mm, Number of poles: 2, 180°, Solder pin length (l):
Qty.	50 ST	3.2 mm, tinned, black, Box

### SC 3.81/90G



The SC pin header has a parallel (recumbent) plugging direction in relation to the PCB. It is available in closed (G) and screw flange (F) versions. Weidmüller's 3.81-mm-pitch (0.15 inch) plug-in connectors are compatible with the layouts of standard connectors. They support a flood-light display and offer space for labelling and coding.

#### General ordering data

Type	SC 3.81/02/90G 3.2SN BK...	Version
Order No.	<a href="#">1793130000</a>	PCB plug-in connector, male header, closed side, THT solder
GTIN (EAN)	4032248227624	connection, 3.81 mm, Number of poles: 2, 90°, Solder pin length (l):
Qty.	198 ST	3.2 mm, tinned, black, Box

### SC 3.81/180G



The SC pin header has a perpendicular (standing) plugging direction in relation to the PCB. It is available in closed (G) and screw flange (F) versions. Weidmüller's 3.81-mm-pitch (0.15 inch) plug-in connectors are compatible with the layouts of standard connectors and offer space for labelling and coding.

#### General ordering data

Type	SC 3.81/02/180G 3.2SN G...	Version
Order No.	<a href="#">1793610000</a>	PCB plug-in connector, male header, closed side, THT solder
GTIN (EAN)	4032248230730	connection, 3.81 mm, Number of poles: 2, 180°, Solder pin length (l):
Qty.	198 ST	3.2 mm, tinned, Pale green, Box

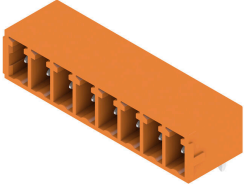
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## Counterpart

### SC 3.81/90G



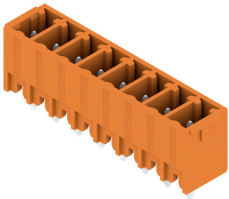
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#### General ordering data

Type	SC 3.81/02/90G 3.2SN GN...	Version
Order No.	<a href="#">1793240000</a>	PCB plug-in connector, male header, closed side, THT solder
GTIN (EAN)	4032248227716	connection, 3.81 mm, Number of poles: 2, 90°, Solder pin length (l):
Qty.	198 ST	3.2 mm, tinned, Pale green, Box

### SC 3.81/180G



The SC pin header has a perpendicular (standing) plugging direction in relation to the PCB. It is available in closed (G) and screw flange (F) versions.

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

#### General ordering data

Type	SC 3.81/02/180G 3.2SN O...	Version
Order No.	<a href="#">1942840000</a>	PCB plug-in connector, male header, closed side, THT solder
GTIN (EAN)	4032248654758	connection, 3.81 mm, Number of poles: 2, 180°, Solder pin length (l):
Qty.	198 ST	3.2 mm, tinned, orange, Box