

## BCZ 3.81/18/180F SN BK BX

Weidmüller Interface GmbH & Co. KG

Klingenbergstraße 26

D-32758 Detmold

Germany

www.weidmueller.com

### Product image



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

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

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

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

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

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

### General ordering data

Version	PCB plug-in connector, female plug, 3.81 mm, Number of poles: 18, 180°, Clamping yoke connection, Clamping range, max. : 1.5 mm², Box
Order No.	<a href="#">1941370000</a>
Type	BCZ 3.81/18/180F SN BK BX
GTIN (EAN)	4032248655557
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	16.1 mm	Depth (inches)	0.6339 inch
Height	11.1 mm	Height (inches)	0.437 inch
Width	79 mm	Width (inches)	3.1102 inch
Net weight	15.18 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 18

L1 in mm 64.77 mm

L1 in inches 2.550 "

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
Torque type		Screw flange	
Usage information	Tightening torque	min.	0.15 Nm

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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	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		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.

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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

Institute (CSA)	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)	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	179.00 mm
VPE width	99.00 mm	VPE height	70.00 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 / 11.06
	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
	Evaluation	passed

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**Technical data**

	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	
Pull-out test	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		

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	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
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		

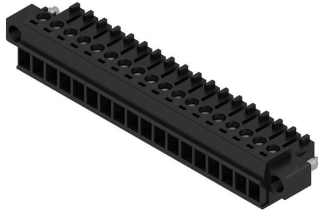
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Drawings

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



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## Counterpart

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### SC 3.81/90G



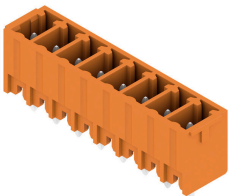
The SC pin header has a parallel (recumbent) plugging direction in relation to the PCB. It is available in closed (G) and screw flange (F) versions.

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 3.81/18/90G 3.2SN BK...	Version
Order No.	<a href="#">1942420000</a>	PCB plug-in connector, male header, closed side, THT solder
GTIN (EAN)	4032248655175	connection, 3.81 mm, Number of poles: 18, 90°, Solder pin length (l):
Qty.	24 ST	3.2 mm, tinned, black, Box
Type	SC 3.81/18/90G 3.2SN OR...	Version
Order No.	<a href="#">1942230000</a>	PCB plug-in connector, male header, closed side, THT solder
GTIN (EAN)	4032248655366	connection, 3.81 mm, Number of poles: 18, 90°, Solder pin length (l):
Qty.	24 ST	3.2 mm, tinned, orange, 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 3.81/18/180G 3.2SN O...	Version
Order No.	<a href="#">1943000000</a>	PCB plug-in connector, male header, closed side, THT solder
GTIN (EAN)	4032248654598	connection, 3.81 mm, Number of poles: 18, 180°, Solder pin length
Qty.	24 ST	(l): 3.2 mm, tinned, orange, Box
Type	SC 3.81/18/180G 3.2SN G...	Version
Order No.	<a href="#">1943070000</a>	PCB plug-in connector, male header, closed side, THT solder
GTIN (EAN)	4032248654529	connection, 3.81 mm, Number of poles: 18, 180°, Solder pin length
Qty.	50 ST	(l): 3.2 mm, tinned, Pale green, Box
Type	SC 3.81/18/180G 3.2SN B...	Version
Order No.	<a href="#">1943150000</a>	PCB plug-in connector, male header, closed side, THT solder
GTIN (EAN)	4032248654444	connection, 3.81 mm, Number of poles: 18, 180°, Solder pin length
Qty.	24 ST	(l): 3.2 mm, tinned, black, Box

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## Counterpart

### SC 3.81/90F



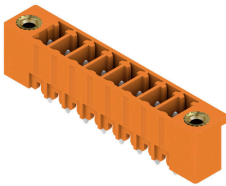
The SC pin header has a parallel (recumbent) plugging direction in relation to the PCB. It is available in closed (G) and screw flange (F) versions.

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 3.81/18/90F 3.2SN OR...	Version
Order No.	<a href="#">1942610000</a>	PCB plug-in connector, male header, Flange, THT solder connection,
GTIN (EAN)	4032248654987	3.81 mm, Number of poles: 18, 90°, Solder pin length (l): 3.2 mm,
Qty.	18 ST	tinned, orange, Box

### SC 3.81/180F



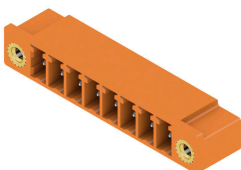
The SC pin header has a perpendicular (standing) plugging direction in relation to the PCB. It is available in closed (G) and screw flange (F) versions.

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 3.81/18/180F 3.2SN G...	Version
Order No.	<a href="#">1943440000</a>	PCB plug-in connector, male header, Flange, THT solder connection,
GTIN (EAN)	4032248654154	3.81 mm, Number of poles: 18, 180°, Solder pin length (l): 3.2 mm,
Qty.	50 ST	tinned, Pale green, Box
Type	SC 3.81/18/180F 3.2SN B...	Version
Order No.	<a href="#">1943530000</a>	PCB plug-in connector, male header, Flange, THT solder connection,
GTIN (EAN)	4032248654062	3.81 mm, Number of poles: 18, 180°, Solder pin length (l): 3.2 mm,
Qty.	18 ST	tinned, black, Box

### SC 3.81/90F



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.

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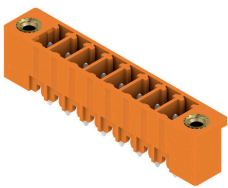
## Counterpart

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### General ordering data

Type	SC 3.81/18/90F 3.2SN BK...	Version
Order No.	<a href="#">1942810000</a>	PCB plug-in connector, male header, Flange, THT solder connection,
GTIN (EAN)	4032248654789	3.81 mm, Number of poles: 18, 90°, Solder pin length (l): 3.2 mm,
Qty.	18 ST	tinned, black, Box

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### General ordering data

Type	SC 3.81/18/180F 3.2SN O...	Version
Order No.	<a href="#">1943340000</a>	PCB plug-in connector, male header, Flange, THT solder connection,
GTIN (EAN)	4032248654253	3.81 mm, Number of poles: 18, 180°, Solder pin length (l): 3.2 mm,
Qty.	24 ST	tinned, orange, Box