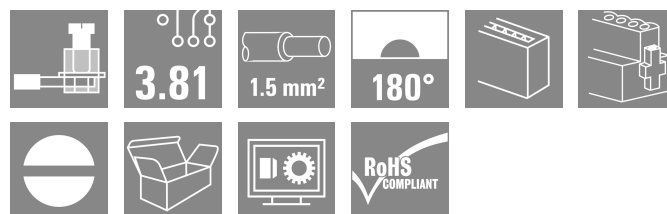


BCZ 3.81/20/180F SN BK BX**Weidmüller Interface GmbH & Co. KG**

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: 20, 180°, Clamping yoke connection, Clamping range, max. : 1.5 mm², Box
Order No.	1941390000
Type	BCZ 3.81/20/180F SN BK BX
GTIN (EAN)	4032248655533
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

BCZ 3.81/20/180F SN BK BX

Weidmüller Interface GmbH & Co. KG

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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	86.62 mm	Width (inches)	3.4102 inch
Net weight	16.58 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 20

L1 in mm 72.39 mm

L1 in inches 2.850 "

Number of rows 1

Pin series quantity 1

Rated cross-section 1 mm²

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

BCZ 3.81/20/180F SN BK BX

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Technical data

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 ²	
Clamping range, max.		1.5 mm ²	
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 ²	
Solid, max. H05(07) V-U		1.5 mm ²	
Flexible, min. H05(07) V-K		0.2 mm ²	
Flexible, max. H05(07) V-K		1.5 mm ²	
w. plastic collar ferrule, DIN 46228 pt 4, 0.2 mm ² min.			
w. plastic collar ferrule, DIN 46228 pt 4, 1.5 mm ² max.			
w. wire end ferrule, DIN 46228 pt 1, min.		0.2 mm ²	
w. wire end ferrule, DIN 46228 pt 1, max.		1.5 mm ²	
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 ²
	wire end ferrule	Stripping length	nominal 6 mm
		Recommended wire-end ferrule	H0,5/6
	Cross-section for conductor connection	Type	fine-wired
		nominal	0.75 mm ²
	wire end ferrule	Stripping length	nominal 6 mm
		Recommended wire-end ferrule	H0,75/6
	Cross-section for conductor connection	Type	fine-wired
		nominal	1 mm ²
	wire end ferrule	Stripping length	nominal 6 mm
		Recommended wire-end ferrule	H1,0/6
	Cross-section for conductor connection	Type	fine-wired
		nominal	1.5 mm ²
	wire end ferrule	Stripping length	nominal 7 mm
		Recommended wire-end ferrule	H1,5/7
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	75.00 mm
VPE width	90.00 mm	VPE height	145.00 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

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Technical data

Test for damage to and accidental loosening of conductors	Conductor type	Type of conductor and conductor cross-section	solid 0.08 mm ²
		Type of conductor and conductor cross-section	stranded 0.08 mm ²
		Type of conductor and conductor cross-section	solid 1.5 mm ²
		Type of conductor and conductor cross-section	stranded 1.5 mm ²
		Type of conductor and conductor cross-section	AWG 28/1
		Type of conductor and conductor cross-section	AWG 28/19
		Type of conductor and conductor cross-section	AWG 16/1
		Type of conductor and conductor cross-section	AWG 16/19
	Evaluation	passed	
	Standard	DIN EN 60999-1 section 9.4 / 12.00	
	Requirement	0.2 kg	
	Conductor type	Type of conductor and conductor cross-section	stranded 0.25 mm ²
		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	
Pull-out test	Conductor type	Type of conductor and conductor cross-section	solid 0.5 mm ²
		Evaluation	passed
	Requirement	0.4 kg	
	Conductor type	Type of conductor and conductor cross-section	solid 1.5 mm ²
		Type of conductor and conductor cross-section	stranded 1.5 mm ²
		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 ²
		Type of conductor and conductor cross-section	AWG 28/1

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Technical data

	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

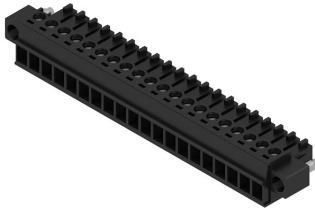
IPC conformity	Conformity: The products are developed, manufactured and delivered according international recognized standards and norms and comply with the assured properties in the data sheet resp. fulfill decorative properties in accordance with IPC-A-610 "Class 2". Further claims on the products 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

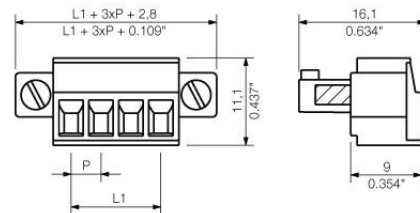
ETIM 8.0	EC002638	ETIM 9.0	EC002638
ETIM 10.0	EC002638	ECLASS 14.0	27-46-02-02
ECLASS 15.0	27-46-02-02		

Drawings

Product image

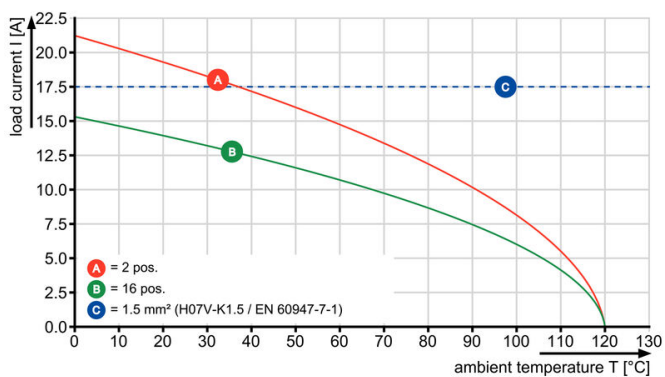


Dimensional drawing



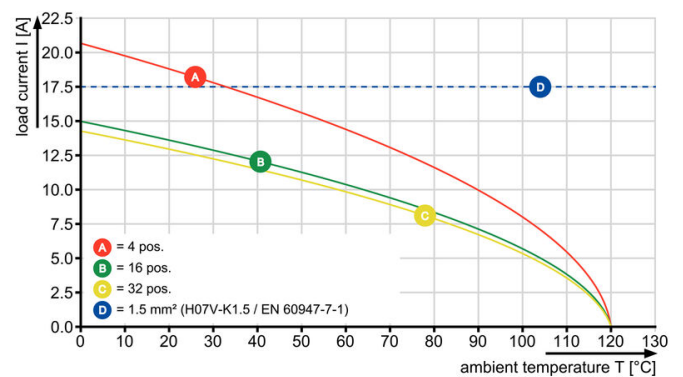
Graph

BCZ 3.81/./180 - SC-SMT 3.81/./90



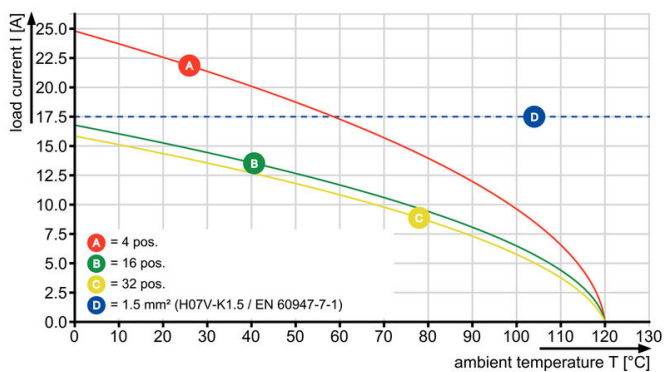
Graph

BCZ 3.81/./180 - SCD-THR 3.81/./90



Graph

BCZ 3.81/./180 - SCDV-THR 3.81/./180



BCZ 3.81/20/180F SN BK BX

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 Klingenbergstraße 26
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Counterpart

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SC 3.81/90G



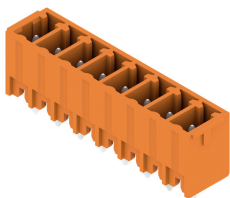
The SC pin header has a parallel (recumbent) plugging direction in relation to the PCB. It is available in closed (G) and screw flange (F) versions.

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 3.81/20/90G 3.2SN BK...	Version
Order No.	1942440000	PCB plug-in connector, male header, closed side, THT solder
GTIN (EAN)	4032248655151	connection, 3.81 mm, Number of poles: 20, 90°, Solder pin length (l):
Qty.	18 ST	3.2 mm, tinned, black, Box
Type	SC 3.81/20/90G 3.2SN OR...	Version
Order No.	1942250000	PCB plug-in connector, male header, closed side, THT solder
GTIN (EAN)	4032248655342	connection, 3.81 mm, Number of poles: 20, 90°, Solder pin length (l):
Qty.	18 ST	3.2 mm, tinned, orange, Box
Type	SC 3.81/20/90G 3.2SN GN...	Version
Order No.	1943340000	PCB plug-in connector, male header, closed side, THT solder
GTIN (EAN)	4032248655250	connection, 3.81 mm, Number of poles: 20, 90°, Solder pin length (l):
Qty.	50 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 3.81/20/180G 3.2SN G...	Version
Order No.	1943090000	PCB plug-in connector, male header, closed side, THT solder
GTIN (EAN)	4032248654505	connection, 3.81 mm, Number of poles: 20, 180°, Solder pin length
Qty.	50 ST	(l): 3.2 mm, tinned, Pale green, Box
Type	SC 3.81/20/180G 3.2SN B...	Version
Order No.	1943170000	PCB plug-in connector, male header, closed side, THT solder
GTIN (EAN)	4032248654420	connection, 3.81 mm, Number of poles: 20, 180°, Solder pin length
Qty.	18 ST	(l): 3.2 mm, tinned, black, Box
Type	SC 3.81/20/180G 3.2SN O...	Version
Order No.	1943020000	PCB plug-in connector, male header, closed side, THT solder
GTIN (EAN)	4032248654574	connection, 3.81 mm, Number of poles: 20, 180°, Solder pin length
Qty.	18 ST	(l): 3.2 mm, tinned, orange, Box

BCZ 3.81/20/180F SN BK BX

Weidmüller Interface GmbH & Co. KG

Klingenbergstraße 26

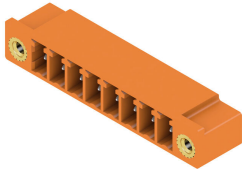
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Counterpart

SC 3.81/90F



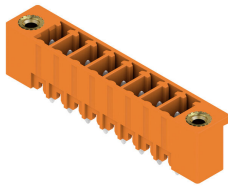
The SC pin header has a parallel (recumbent) plugging direction in relation to the PCB. It is available in closed (G) and screw flange (F) versions.

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 3.81/20/90F 3.2SN OR...	Version
Order No.	1942630000	PCB plug-in connector, male header, Flange, THT solder connection,
GTIN (EAN)	4032248654963	3.81 mm, Number of poles: 20, 90°, Solder pin length (l): 3.2 mm,
Qty.	18 ST	tinned, orange, Box

SC 3.81/180F



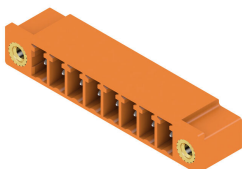
The SC pin header has a perpendicular (standing) plugging direction in relation to the PCB. It is available in closed (G) and screw flange (F) versions.

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 3.81/20/180F 3.2SN B...	Version
Order No.	1943550000	PCB plug-in connector, male header, Flange, THT solder connection,
GTIN (EAN)	4032248654048	3.81 mm, Number of poles: 20, 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.

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 3.81/20/90F 3.2SN GN...	Version
Order No.	1942730000	PCB plug-in connector, male header, Flange, THT solder connection,
GTIN (EAN)	4032248654864	3.81 mm, Number of poles: 20, 90°, Solder pin length (l): 3.2 mm,
Qty.	50 ST	tinned, Pale green, Box

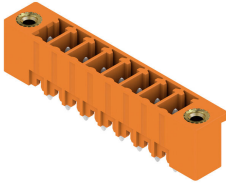
BCZ 3.81/20/180F SN BK BX

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 Klingenbergstraße 26
 D-32758 Detmold
 Germany

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Counterpart

SC 3.81/180F

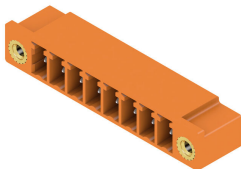


The SC pin header has a perpendicular (standing) plugging direction in relation to the PCB. It is available in closed (G) and screw flange (F) versions. Weidmüller's 3.81-mm-pitch (0.15 inch) plug-in connectors are compatible with the layouts of standard connectors and offer space for labelling and coding.

General ordering data

Type	SC 3.81/20/180F 3.2SN G...	Version
Order No.	1943460000	PCB plug-in connector, male header, Flange, THT solder connection,
GTIN (EAN)	4032248654130	3.81 mm, Number of poles: 20, 180°, Solder pin length (l): 3.2 mm,
Qty.	50 ST	tinned, Pale green, Box
Type	SC 3.81/20/180F 3.2SN O...	Version
Order No.	1943360000	PCB plug-in connector, male header, Flange, THT solder connection,
GTIN (EAN)	4032248654239	3.81 mm, Number of poles: 20, 180°, Solder pin length (l): 3.2 mm,
Qty.	18 ST	tinned, orange, 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. 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 3.81/20/90F 3.2SN BK...	Version
Order No.	1942830000	PCB plug-in connector, male header, Flange, THT solder connection,
GTIN (EAN)	4032248654765	3.81 mm, Number of poles: 20, 90°, Solder pin length (l): 3.2 mm,
Qty.	18 ST	tinned, black, Box