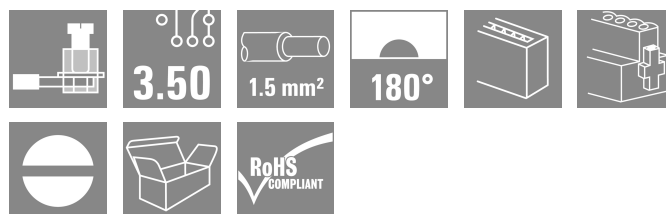
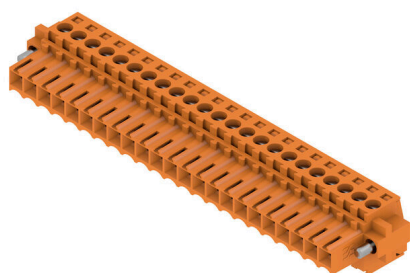


BL 3.50/23/180F SN OR BX**Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

www.weidmueller.com**Product image**

Female connectors with clamping yoke screw system for connecting conductors at 3.50 mm pitch. They provide space for labelling and can be coded.

General ordering data

Version	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 23, 180°, Clamping yoke connection, Clamping range, max. : 1.5 mm², Box
Order No.	1620820000
Type	BL 3.50/23/180F SN OR BX
GTIN (EAN)	4008190164201
Qty.	18 items
Product data	IEC: 320 V / 17 A / 0.2 - 1.5 mm² UL: 300 V / 10 A / AWG 28 - AWG 14
Packaging	Box

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Technical data

Approvals

Approvals



ROHS	Conform
UL File Number Search	UL Website
Certificate No. (UR)	E60693

Dimensions and weights

Depth	18.5 mm	Depth (inches)	0.7283 inch
Height	13 mm	Height (inches)	0.5118 inch
Width	87.5 mm	Width (inches)	3.4449 inch
Net weight	22.1 g		

Environmental Product Compliance

RoHS Compliance Status			Compliant without exemption		
REACH SVHC			No SVHC above 0.1 wt%		
Product Carbon Footprint		Cradle to gate	0.402 kg CO2 eq.		

System Parameters

Product family	OMNIMATE Signal - series BL/SL 3.50				
Type of connection	Field connection				
Wire connection method	Clamping yoke connection				
Pitch in mm (P)	3.50 mm				
Pitch in inches (P)	0.138 "				
Conductor outlet direction	180°				
Number of poles	23				
L1 in mm	77.00 mm				
L1 in inches	3.031 "				
Number of rows	1				
Pin series quantity	1				
Rated cross-section	1.5 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, when fully mounted				
Volume resistance	≤5 mΩ				
Can be coded	Yes				
Stripping length	6 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
				max.	0.2 Nm

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Material data

Insulating material	PBT	Colour	orange
Colour chart (similar)	RAL 2000	Insulating material group	IIIa
Comparative Tracking Index (CTI)	≥ 200	Moisture Level (MSL)	
UL 94 flammability rating	V-0	Contact material	Cu-alloy
Contact surface	tinned	Layer structure of plug contact	4...8 µm Sn hot-dip tinned
Storage temperature, min.	-40 °C	Storage temperature, max.	70 °C
Operating temperature, min.	-50 °C	Operating temperature, max.	100 °C
Temperature range, installation, min.	-30 °C	Temperature range, installation, max.	100 °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 14
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	8 mm
		Recommended wire-end ferrule	H0.5/12 OR	
		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	8 mm
		Recommended wire-end ferrule	H0.75/12 W	
		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	8 mm
		Recommended wire-end ferrule	H1.0/12 GE	
		Stripping length	nominal	6 mm
		Recommended wire-end ferrule	H1.0/6	
Cross-section for conductor connection		Type	fine-wired	
		nominal	0.25 mm ²	
wire end ferrule		Stripping length	nominal	8 mm

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		Recommended wire-end ferrule	H0,25/10 HBL	
		Stripping length	nominal	5 mm
		Recommended wire-end ferrule	H0,25/5	
	Cross-section for conductor connection	Type	fine-wired	
		nominal	0.34 mm²	
	wire end ferrule	Stripping length	nominal	8 mm
		Recommended wire-end ferrule	H0,34/10 TK	
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 A
Rated current, max. number of poles (Tu=20°C)	12 A	Rated current, min. number of poles (Tu=40°C)	14.5 A
Rated current, max. number of poles (Tu=40°C)	10 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 100 A

Rated data acc. to CSA

Institute (CSA)	CSA	Certificate No. (CSA)	154685-1318353
Rated voltage (Use group B / CSA)	300 V	Rated voltage (Use group D / CSA)	300 V
Rated current (Use group B / CSA)	10 A	Rated current (Use group D / CSA)	10 A
Wire cross-section, AWG, min.	AWG 28	Wire cross-section, AWG, max.	AWG 14
Reference to approval values	Specifications are maximum values, details - see approval certificate.		

Rated data acc. to UL 1059

Institute (UR)	UR	Certificate No. (UR)	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 14
Reference to approval values	Specifications are maximum values, details - see approval certificate.		

Packing

Packaging	Box	VPE length	351.00 mm
VPE width	135.00 mm	VPE height	26.00 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, approval marking SEV, approval marking CSA
	Evaluation	available

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	Test	durability		
	Evaluation	passed		
Test: Misengagement (Non-interchangeability)	Standard	DIN EN 6 1984 section 6.3 and 6.9.1 / 09.02, DIN IEC 605 12 part 7 section 5 / 05.94		
	Test	180° turned with coding elements		
Test: Clampable cross section	Evaluation	passed		
	Standard	DIN EN 60999-1 section 7 and 9.1 / 12.00, DIN EN 60947-1 section 8.2.4.5.1 / 12.99		
	Conductor type	Type of conductor and conductor cross-section	solid 0.2 mm²	
		Type of conductor and conductor cross-section	stranded 0.2 mm²	
		Type of conductor and conductor cross-section	solid 1.5 mm²	
		Type of conductor and conductor cross-section	stranded 1.5 mm²	
		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	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	2 × AWG 24/1	
		Type of conductor and conductor cross-section	2 × AWG 24/19 with wire end ferrule	
Evaluation		passed		
Requirement		0.4 kg		
Conductor type		Type of conductor and conductor cross-section	solid 1.5 mm²	
		Type of conductor and conductor cross-section	stranded 1.5 mm²	
		Type of conductor and conductor cross-section	AWG 16/7	
Evaluation	passed			
Pull-out test	Standard	DIN EN 60999-1 section 9.5 / 12.00		
	Requirement	≥5 N		

Technical data

Conductor type	Type of conductor and conductor cross-section	AWG 28/1
	Type of conductor and conductor cross-section	AWG 28/19
Evaluation	passed	
Requirement	≥10 N	
Conductor type	Type of conductor and conductor cross-section	2 × AWG 24/1
	Type of conductor and conductor cross-section	2 × AWG 24/19 with wire end ferrule
Evaluation	passed	
Requirement	≥40 N	
Conductor type	Type of conductor and conductor cross-section	H05V-U1.5
	Type of conductor and conductor cross-section	H05V-K1.5
	Type of conductor and conductor cross-section	AWG 16/7
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
- Gold-plated contact surfaces on request
- Rated current related to rated cross-section & min. No. of poles.
- Max. outer diameter of the conductor: 2.9 mm
- 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

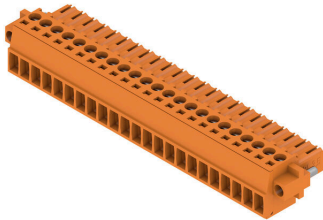
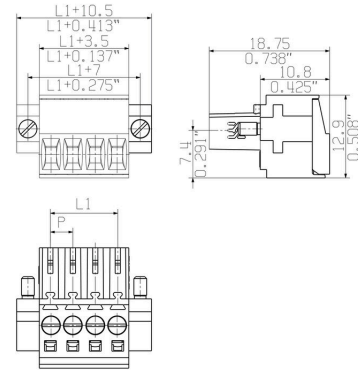
ETIM 8.0	EC002638	ETIM 9.0	EC002638
ETIM 10.0	EC002638	ECLASS 14.0	27-46-02-02
ECLASS 15.0	27-46-02-02		

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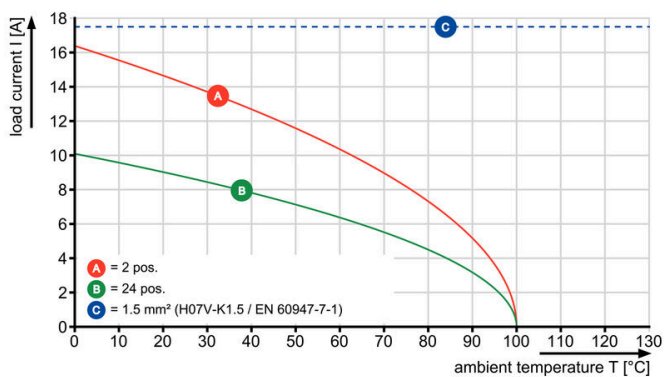
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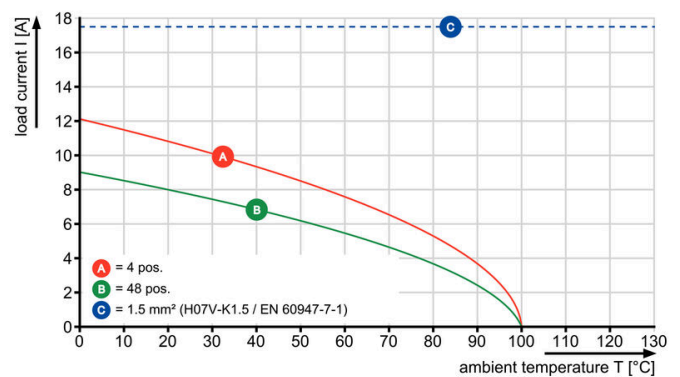
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Drawings
Product image

Dimensional drawing

Graph

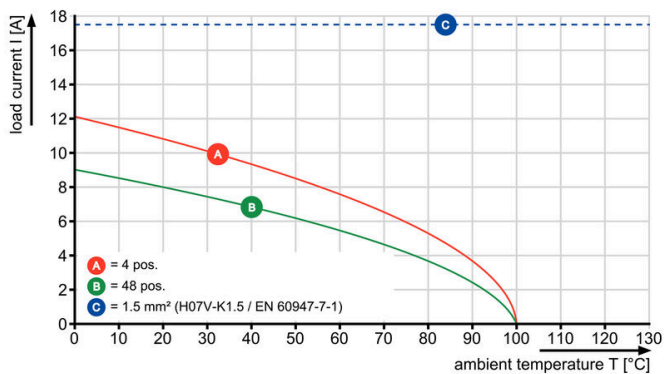
BL 3.50/./180 - SL-SMT 3.50/./90


Graph

BL 3.50/./180 - SLD 3.50/./90


Graph

BL 3.50/./180 - SLD 3.50V/./180


Graph

BL 3.50/./180 - SL 3.50/./90

