

## BL 3.50/12/90 SN OR BX

Weidmüller Interfaces GmbH & Co. KG

Postfach 3030

32760 Detmold

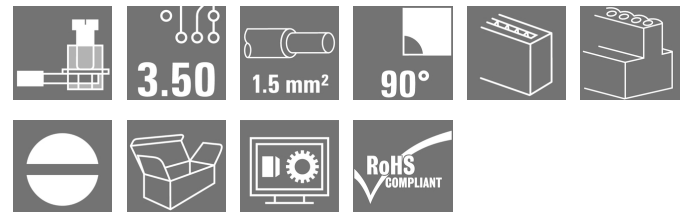
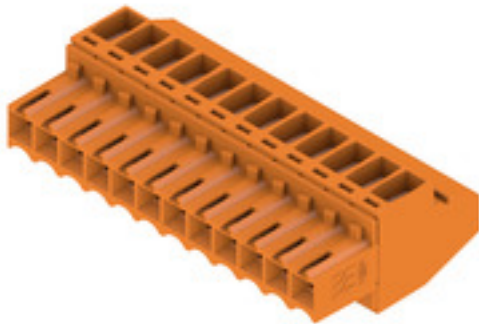
Tel. +49 5231 14-0

Fax. +49 5231 14-2083

info@weidmueller.com

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: 12, 90°, Clamping yoke connection, Clamping range, max. : 1.5 mm², Box
Order No.	<a href="#">1638650000</a>
Type	BL 3.50/12/90 SN OR BX
GTIN (EAN)	4008190276195
Qty.	42 pc(s).
Product data	IEC: 320 V / 12 A / 0.2 - 1.5 mm² UL: 300 V / 8 A / AWG 28 - AWG 14
Packaging	Box

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## Technical data

## Dimensions and weights

Depth	22.45 mm	Depth (inches)	0.884 inch
Height	12 mm	Height (inches)	0.472 inch
Width	42 mm	Width (inches)	1.654 inch
Net weight	11.94 g		

## 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)	3.5 mm		
Pitch in inches (P)	0.138 inch		
Conductor outlet direction	90°		
Number of poles	12		
L1 in mm	38.5 mm		
L1 in inches	1.516 inch		
Number of rows	1		
Pin series quantity	1		
Rated cross-section	1.5 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	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

## Material data

Insulating material	PBT	Colour	orange
Colour chart (similar)	RAL 2000	Insulating material group	IIIa
Comparative Tracking Index (CTI)	≥ 200	UL 94 flammability rating	V-0
Contact material	Copper 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 <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 14

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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, 0.2 mm <sup>2</sup> min.	
w. wire end ferrule, DIN 46228 pt 1, 1.5 mm <sup>2</sup> max.	
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 8 mm
		Recommended wire-end ferrule	<a href="#">H0.5/12 OR</a>
		Stripping length	nominal 6 mm
		Recommended wire-end ferrule	<a href="#">H0.5/6</a>
Cross-section for conductor connection	wire end ferrule	Type	fine-wired
		nominal	0.75 mm <sup>2</sup>
		Stripping length	nominal 8 mm
		Recommended wire-end ferrule	<a href="#">H0.75/12 W</a>
Cross-section for conductor connection	wire end ferrule	Type	fine-wired
		nominal	1 mm <sup>2</sup>
		Stripping length	nominal 8 mm
		Recommended wire-end ferrule	<a href="#">H1.0/12 GE</a>
Cross-section for conductor connection	wire end ferrule	Type	fine-wired
		nominal	0.25 mm <sup>2</sup>
		Stripping length	nominal 8 mm
		Recommended wire-end ferrule	<a href="#">H0.25/10 HBL</a>
Cross-section for conductor connection	wire end ferrule	Type	fine-wired
		nominal	0.34 mm <sup>2</sup>
		Stripping length	nominal 8 mm
		Recommended wire-end ferrule	<a href="#">H0.34/10 TK</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)	12 A
Rated current, max. number of poles (Tu=20°C)	10 A	Rated current, min. number of poles (Tu=40°C)	10 A
Rated current, max. number of poles (Tu=40°C)	8 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)		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.		

**Packing**

Packaging	Box	VPE length	350 mm
VPE width	136 mm	VPE height	31 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
	Test	durability
	Evaluation	passed
Test: Misengagement (Non-interchangeability)	Standard	DIN EN 61984 section 6.3 and 6.9.1 / 09.02, DIN IEC 60512 part 7 section 5 / 05.94
	Test	180° turned with coding elements
	Evaluation	passed

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Test: Clampable cross section	Standard	DIN EN 60999-1 section 7 and 9.1 / 12.00, DIN EN 60947-2 section 2.4.5 / 12.99 info@weidmuller.com	
	Conductor type	Type of conductor and conductor cross-section	solid 0.2 mm <sup>2</sup>
		Type of conductor and conductor cross-section	stranded 0.2 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	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 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 16/7	
Evaluation	passed		

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## Technical data

Pull-out test	Standard	DIN EN 60999-1 section 9.5 / 12.00		
	Requirement	≥5 N info@weidmueller.com		
	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		

## 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>• Gold-plated contact surfaces on request</li> <li>• Rated current related to rated cross-section &amp; min. No. of poles.</li> <li>• Max. outer diameter of the conductor: 2.9 mm</li> <li>• Wire end ferrule without plastic collar to DIN 46228/1</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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Catalogue status 09.09.2022 / We reserve the right to make technical changes.

**Data sheet**

**BL 3.50/12/90 SN OR BX**

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**Technical data**

**Approvals**

Approvals



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

**Downloads**

Approval/Certificate/Document of Conformity	<a href="#">Declaration of the Manufacturer</a>
Engineering Data	<a href="#">CAD data – STEP</a>
Engineering Data	<a href="#">EPLAN, WSCAD</a>
Catalogues	<a href="#">Catalogues in PDF-format</a>
Brochures	<a href="#">FL DRIVES EN</a>
	<a href="#">MB DEVICE MANUF. EN</a>
	<a href="#">FL DRIVES DE</a>
	<a href="#">FL BUILDING SAFETY EN</a>
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<a href="#">FL POWER SUPPLY EN</a>	
<a href="#">FL 72H SAMPLE SER EN</a>	
<a href="#">PO OMNIMATE EN</a>	
<a href="#">PO OMNIMATE EN</a>	

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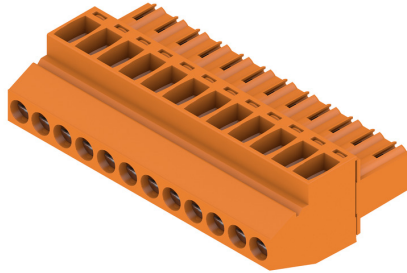
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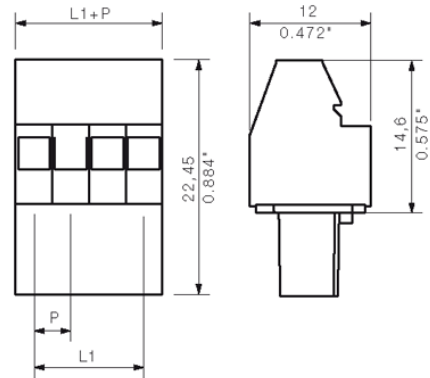
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**Drawings**

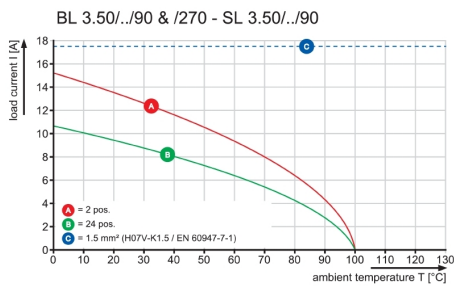
**Product image**



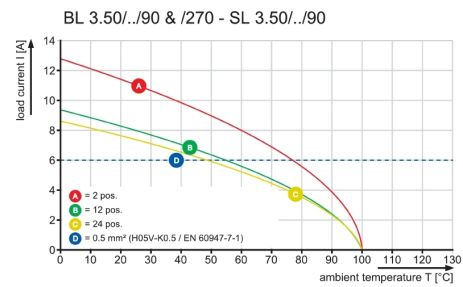
**Dimensional drawing** [info@weidmueller.com](mailto:info@weidmueller.com)



**Graph**



**Graph**





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For the mounting of PCBs, it should be noted that the rated data given in the catalogue relates only to the connection elements. The necessary creepage and clearance paths must be observed in connection with the respective applicant in accordance to VDE 0113. The current-carrying capacity and pitch tolerance must be determined according to DIN IEC 326 part 1.

Weidmüller connectors are tested to the DIN VDE 0113 standard, and are valid for its field of application. Provided that the components are used to their intended purpose, all requirements with respect to the occurrence of electrical, mechanical, thermal and corrosive stress will be satisfied.

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[PVP03-3,50](#) [PVP04-3,50](#) [PVS02-5,00](#) [1-1986160-3](#) [1377680000](#) [1531000000](#) [1546228-5](#) [ELFP03110](#) [ELFP10210](#) [ELVP03100](#) [1700101](#)  
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