

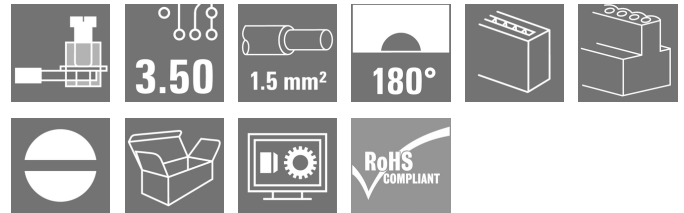
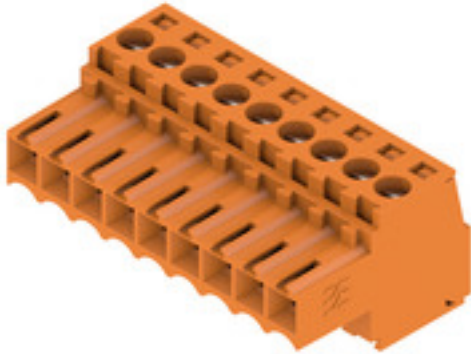
**BL 3.50/09/180 SN OR BX****Weidmüller Interface GmbH & Co. KG**

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: 9, 180°, Clamping yoke connection, Clamping range, max. : 1.5 mm², Box
Order No.	<a href="#">1597430000</a>
Type	BL 3.50/09/180 SN OR BX
GTIN (EAN)	4008190192006
Qty.	54 pc(s).
Product data	IEC: 320 V / 17 A / 0.2 - 1.5 mm² UL: 300 V / 10 A / AWG 28 - AWG 14
Packaging	Box

Creation date June 14, 2024 6:11:56 PM CEST

Catalogue status 01.06.2024 / We reserve the right to make technical changes.

BL 3.50/09/180 SN OR BX

Weidmüller Interface GmbH &amp; Co. KG

Klingenbergstraße 26

D-32758 Detmold

Germany

www.weidmueller.com

## Technical data

### Dimensions and weights

Depth	18.5 mm	Depth (inches)	0.728 inch
Height	13 mm	Height (inches)	0.512 inch
Width	31.5 mm	Width (inches)	1.24 inch
Net weight	7.87 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 "		
Conductor outlet direction	180°		
Number of poles	9		
L1 in mm	28 mm		
L1 in inches	1.102 "		
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	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	<div>min. 0.2 Nm</div> <div>max. 0.25 Nm</div>

### 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	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 <sup>2</sup>
Clamping range, max.	1.5 mm <sup>2</sup>
Wire connection cross section AWG, min.	AWG 28

Creation date June 14, 2024 6:11:56 PM CEST

## BL 3.50/09/180 SN OR BX

Weidmüller Interface GmbH &amp; Co. KG

Klingenbergstraße 26

D-32758 Detmold

Germany

www.weidmueller.com

## Technical data

Wire connection cross section AWG, max.	AWG 14			
Solid, min. H05(07) V-U	0.2 mm²			
Solid, max. H05(07) V-U	1.5 mm²			
Flexible, min. H05(07) V-K	0.2 mm²			
Flexible, max. H05(07) V-K	1.5 mm²			
w. plastic collar ferrule, DIN 46228 pt 4, 0.2 mm² min.				
w. plastic collar ferrule, DIN 46228 pt 4, 1.5 mm² max.				
w. wire end ferrule, DIN 46228 pt 1, min.	0.2 mm²			
w. wire end ferrule, DIN 46228 pt 1, max.	1.5 mm²			
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 mm²	
	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	Type	fine-wired	
		nominal	0.75 mm²	
	wire end ferrule	Stripping length	nominal	8 mm
		Recommended wire-end ferrule	<a href="#">H0.75/12 W</a>	
		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 mm²	
	wire end ferrule	Stripping length	nominal	8 mm
		Recommended wire-end ferrule	<a href="#">H1.0/12 GE</a>	
		Stripping length	nominal	6 mm
		Recommended wire-end ferrule	<a href="#">H1.0/6</a>	
	Cross-section for conductor connection	Type	fine-wired	
		nominal	0.25 mm²	
	wire end ferrule	Stripping length	nominal	8 mm
		Recommended wire-end ferrule	<a href="#">H0.25/10 HBL</a>	
		Stripping length	nominal	5 mm
		Recommended wire-end ferrule	<a href="#">H0.25/5</a>	
Cross-section for conductor connection	Type	fine-wired		
	nominal	0.34 mm²		
wire end ferrule	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.			

## BL 3.50/09/180 SN OR BX

Weidmüller Interface GmbH &amp; Co. KG

Klingenbergstraße 26

D-32758 Detmold

Germany

www.weidmueller.com

## 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 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)		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)		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 mm
VPE width	136 mm	VPE height	25 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

**BL 3.50/09/180 SN OR BX****Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

www.weidmueller.com

**Technical data**

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
Test: Clampable cross section	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 solid 0.2 mm <sup>2</sup> conductor cross-section
		Type of conductor and stranded 0.2 mm <sup>2</sup> conductor cross-section
		Type of conductor and solid 1.5 mm <sup>2</sup> conductor cross-section
		Type of conductor and stranded 1.5 mm <sup>2</sup> conductor cross-section
		Type of conductor and AWG 28/1 conductor cross-section
		Type of conductor and AWG 28/19 conductor cross-section
		Type of conductor and AWG 16/1 conductor cross-section
		Type of conductor and AWG 16/19 conductor cross-section
	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 AWG 28/1 conductor cross-section
		Type of conductor and AWG 28/19 conductor cross-section
	Evaluation	passed
	Requirement	0.3 kg
	Conductor type	Type of conductor and 2 × AWG 24/1 conductor cross-section
		Type of conductor and 2 × AWG 24/19 with conductor cross-section wire end ferrule
	Evaluation	passed
	Requirement	0.4 kg
	Conductor type	Type of conductor and solid 1.5 mm <sup>2</sup> conductor cross-section
		Type of conductor and stranded 1.5 mm <sup>2</sup> conductor cross-section
		Type of conductor and AWG 16/7 conductor cross-section
	Evaluation	passed

## BL 3.50/09/180 SN OR BX

Weidmüller Interface GmbH &amp; Co. KG

Klingenbergstraße 26

D-32758 Detmold

Germany

www.weidmueller.com

## Technical data

Pull-out test	Standard	DIN EN 60999-1 section 9.5 / 12.00	
	Requirement	≥5 N	
	Conductor type	Type of conductor and AWG 28/1 conductor cross-section	
		Type of conductor and AWG 28/19 conductor cross-section	
	Evaluation	passed	
	Requirement	≥10 N	
	Conductor type	Type of conductor and 2 × AWG 24/1 conductor cross-section	
		Type of conductor and 2 × AWG 24/19 with conductor cross-section wire end ferrule	
	Evaluation	passed	
	Requirement	≥40 N	
	Conductor type	Type of conductor and H05V-U1.5 conductor cross-section	
		Type of conductor and H05V-K1.5 conductor cross-section	
		Type of conductor and AWG 16/7 conductor cross-section	
	Evaluation	passed	

## Classifications

ETIM 6.0	EC002638	ETIM 7.0	EC002638
ETIM 8.0	EC002638	ETIM 9.0	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	ECLASS 13.0	27-46-02-02

## BL 3.50/09/180 SN OR BX

Weidmüller Interface GmbH &amp; Co. KG

Klingenbergstraße 26

D-32758 Detmold

Germany

[www.weidmueller.com](http://www.weidmueller.com)

## Technical data

## 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>• 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</li><li>• Long term storage of the product with average temperature of 50 °C and maximum humidity 70%, 36 months</li></ul>

## Approvals

Approvals



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

**BL 3.50/09/180 SN OR BX**

**Weidmüller Interface GmbH & Co. KG**  
Klingenbergstraße 26  
D-32758 Detmold  
Germany

[www.weidmueller.com](http://www.weidmueller.com)

## Technical data

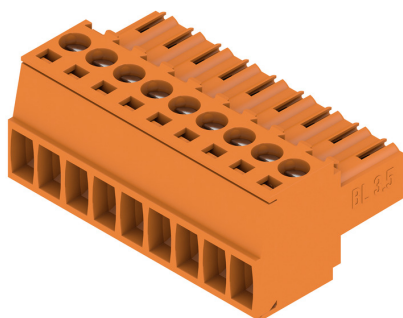
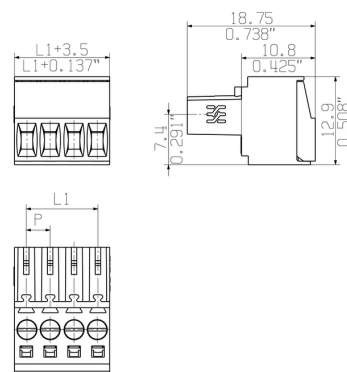
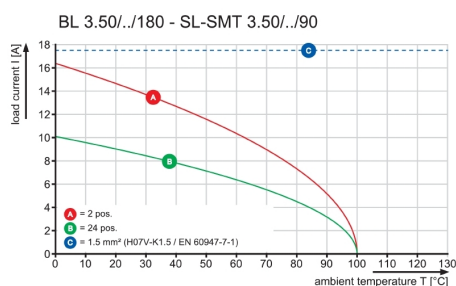
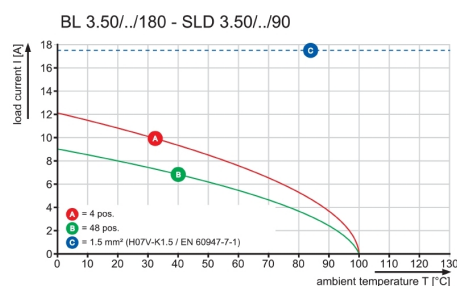
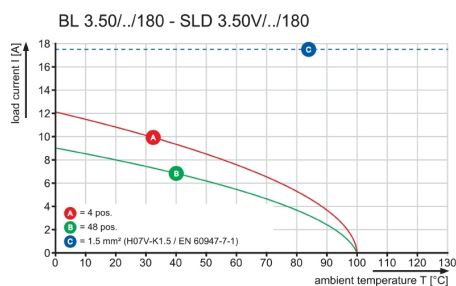
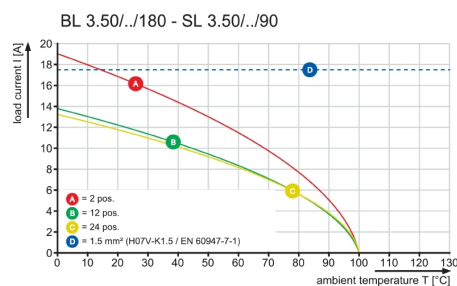
### Downloads

Approval/Certificate/Document of Conformity	<a href="#">Declaration of the Manufacturer</a>
Engineering Data	<a href="#">CAD data – STEP</a>
Engineering Data	<a href="#">Zuken E3.S</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> <a href="#">FL APPL LED LIGHTING EN</a> <a href="#">FL INDUSTR.CONTROLS EN</a> <a href="#">FL MACHINE SAFETY EN</a> <a href="#">FL HEATING ELECTR EN</a> <a href="#">FL APPL INVERTER EN</a> <a href="#">FL BASE STATION EN</a> <a href="#">FL ELEVATOR EN</a> <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>

**BL 3.50/09/180 SN OR BX**

**Weidmüller Interface GmbH & Co. KG**  
 Klingenbergstraße 26  
 D-32758 Detmold  
 Germany

www.weidmueller.com

**Drawings**
**Product image**

**Dimensional drawing**

**Graph**

**Graph**

**Graph**

**Graph**


## BL 3.50/09/180 SN OR BX

Weidmüller Interface GmbH &amp; Co. KG

Klingenbergstraße 26

D-32758 Detmold

Germany

www.weidmueller.com

## Accessories

## Coding elements

**Only connects what is supposed to be connected: the right connection at the right place.**

Coding elements and locking devices clearly assign connecting elements during the manufacturing process and operation

The coding elements and locking devices are inserted prior to assembly or during the cable assembly phase. The Weidmüller alternative: configure online using the variant configurator to precode prior to delivery.

Incorrect assembly on the circuit board and incorrect plugging of connecting elements is no longer possible. The advantage: no troubleshooting during manufacture and no operational errors by the user.

## General ordering data

Type	BL SL 3.5 KO OR	Version	Product data	Packaging
Order No.	<a href="#">1693430000</a>	PCB plug-in connector, Accessories, Coding element, orange, Number		Box
GTIN (EAN)	4008190867447	of poles: 1		
Qty.	100 pc(s).			
Type	BL SL 3.5 KO SW	Version	Product data	Packaging
Order No.	<a href="#">1610100000</a>	PCB plug-in connector, Accessories, Coding element, black, Number		Box
GTIN (EAN)	4008190187637	of poles: 1		
Qty.	100 pc(s).			

## Strain reliefs

**For frequent load changes: the "trailer coupling" for plug-in connectors.**

The strain relief can do more than just relieve the strain on conductors:

Simply clip onto the plug and

- bundle conductors
- guide cables
- use as a connection and disconnection aid

No damage to the connecting points, clear, tidy wiring and easy to handle.

User advantages: permanent heavy-duty connections for harsh industrial environments and convenient operation ensure improved system availability.

## General ordering data

Type	BL 3.50 ZE03 OR BX	Version	Product data	Packaging
Order No.	<a href="#">1629680000</a>	PCB plug-in connector, Accessories, Strain relief, orange, Number of		Box
GTIN (EAN)	4008190202569	poles: 3		
Qty.	50 pc(s).			
Type	BL 3.50 ZE03 BK BX	Version	Product data	Packaging
Order No.	<a href="#">1627820000</a>	PCB plug-in connector, Accessories, Strain relief, black, Number of		Box
GTIN (EAN)	4008190202552	poles: 3		
Qty.	50 pc(s).			

## BL 3.50/09/180 SN OR BX

Weidmüller Interface GmbH &amp; Co. KG

Klingenbergstraße 26

D-32758 Detmold

Germany

www.weidmueller.com

## Accessories

Type	BL 3.50 ZE08 OR BX	Version	Product data	Packaging
Order No.	<a href="#">1629690000</a>	PCB plug-in connector, Accessories, Strain relief, orange, Number of poles: 8		Box
GTIN (EAN)	4008190202583			
Qty.	50 pc(s).			

Type	BL 3.50 ZE08 BK BX	Version	Product data	Packaging
Order No.	<a href="#">1627830000</a>	PCB plug-in connector, Accessories, Strain relief, black, Number of poles: 8		Box
GTIN (EAN)	4008190202576			
Qty.	50 pc(s).			

## Cover hoods

**Effective protection, optimised ergonomics and closed design:**

From the strain relief on the connected conductors and the visual/contact protection and the disconnection aid: the optional retrofit hoods perform mechanical, visual and haptic functions.

The two half shells clip together securely, enclose the plug completely and offer the following functions:

- Cable ties or integrated cable clips provide strain relief.
- Marked with dekafix labels or adhesive strips
- Mounting side by side without losing poles or displacing the pitch
- Compatible: suitable for plugs with or without a flange or mounting bracket
- Flexible: 1-3 cable outlets leading in different directions available depending on the size

Weidmüller hoods offer added stability, better identification, complete compatibility and versatility. The result: maximum reliability and user-friendliness in any application.


## General ordering data

Type	BL 3.50 AH09 BK BX	Version	Product data	Packaging
Order No.	<a href="#">1745640000</a>	PCB plug-in connector, Accessories, Hood, black, Number of poles: 9		Box
GTIN (EAN)	4008190985202			
Qty.	10 pc(s).			

Technical drawing of a 4-bay furnace. The drawing shows a cross-section of the furnace with four bays. Dimensions are indicated below the drawing:

- L1+3.5
- L1+0.137"
- L1+7
- L1+0.275"
- L1+10.5
- L1+0.413"

M 1/1



Technical drawing of a screwdriver bit. The drawing shows the bit's profile with the following dimensions:

- Overall length: 18.75
- Overall width: 0.738"
- Top section height: 7.4
- Top section width: 0.291"
- Bottom section width: 10.8
- Bottom section width: 0.425"
- Bottom section height: 12.9
- Bottom section width: 0.508"

Orientation labels:

- SCREWDRIVER DIRECTION (indicated by an arrow pointing up)
- CONDUCTOR DIRECTION (indicated by an arrow pointing right)

[illegible]

M 1/1




SCREWDRIVER  
DIRECTION

CONDUCTOR  
DIRECTION

M 1/1

Dimensions:  
 Total width: 29.5 (1.16")  
 Width of main body: 21.6 (0.85")  
 Height of main body: 12.9 (0.507")  
 Width of base: 29.5 (1.16")

M 1/1



Technical drawing of a mechanical part, likely a bracket or support, showing dimensions in inches and millimeters. The drawing includes a top view and a side view.

**Top View Dimensions:**

- Overall width:  $L1 + 10.8$  (inches) /  $L1 + 0.425$  (mm)
- Distance from left edge to first vertical step: 3.4 (inches) / 0.134 (mm)
- Distance from second vertical step to right edge: 2.6 (inches) / 0.102 (mm)
- Distance from left edge to center of the main body: 5.4 (inches) / 0.212 (mm)
- Distance from center of the main body to right edge: 14.5 (inches) / 0.569 (mm)

**Side View Dimensions:**

- Overall height: 9.6 (inches) / 0.376 (mm)
- Height of the main body: 7.9 (inches) / 0.309 (mm)
- Height of the top flange: 4.1 (inches) / 0.163 (mm)
- Height of the bottom flange: 3 (inches) / 0.118 (mm)

**Other Features:**

- The main body is a rectangular block with a central square hole.
- The top flange has a central square hole.
- The bottom flange has a central square hole.
- The drawing includes a label "support area for release lever" pointing to the bottom flange.




P = 3.50 RASTER  
PITCH

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 0110. The current-carrying capacity and pitch tolerance is to be determined according to DIN IEC 326 part 3 very fine.

Weidmüller connectors are tested to the DIN VDE 0627 standard, and are valid for its field of application. Provided that the connectors are used to the intended purpose, all requirements with respect to the occurring of electrical, mechanical, thermic and corrosive stress will be satisfied.

24	80.5	3.169
23	77.0	3.032
22	73.5	2.894
21	70.0	2.756
20	66.5	2.618
19	63.0	2.480
18	59.5	2.343
17	56.0	2.205
16	52.5	2.067
15	49.0	1.929
14	45.5	1.791
13	42.0	1.654
12	38.5	1.516
11	35.0	1.378
10	31.5	1.240
9	28.0	1.102
8	24.5	0.965
7	21.0	0.827
6	17.5	0.689
5	14.0	0.551
4	10.5	0.413
3	7.0	0.276
2	3.5	0.138
n <sub>POLEZ</sub>	L1 [mm]	L1 [inch]

ALLGEMEINGÜLTIGE KUNDENZEICHNUNG, AKTUELLER STAND NUR AUF ANFRAGE  
GENERAL CUSTOMER DRAWING, TOPICAL VERSION ONLY IF REQUIRED

<b>GENERAL TOLERANCE:</b> <b>DIN ISO 2768-m</b>		Cat.no.: ..	
		103300/5 17.05.18 HELIS_MA    01	<b>Weidmüller</b> 
Modification		Drawing no.    Issue n. Sheet    00    of    00    sheets	
		Date    Name Drawn    02.09.2008    HELIS_MA Responsible    AMANN_A	<b>BL 3.50/.. /180</b> BUCHSENSTECKER FEMALE PLUG <i>im Pruefung / Verification</i>
Scale: 5/1		Checked	
Supersedes: .		Approved    LANG_T    Product file: BL 3.50    738	