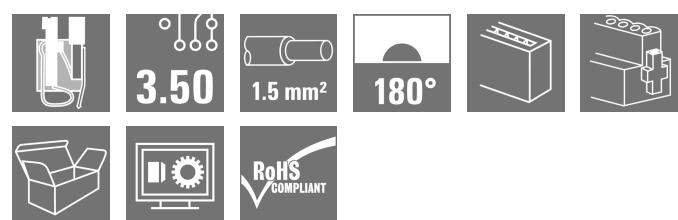


## BL-I/O 3.50/10F NPN LED SN BK BX

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

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



Female plugs with spring connection (PUSH IN) as a plug-in connection level for decentralised I/O electronic components; used together with male headers in a 3.50-mm pitch.

## General ordering data

Version	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 10, 180°, PUSH IN with actuator, Clamping range, max.: 1.5 mm <sup>2</sup> , Box
Order No.	<a href="#">1938010000</a>
Type	BL-I/O 3.50/10F NPN LED SN BK BX
GTIN (EAN)	4032248610228
Qty.	20 items
Product data	IEC: 200 V / 2.2 A / 0.2 - 1.5 mm <sup>2</sup> UL: 50 V / 5 A / AWG 24 - AWG 16
Packaging	Box

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## Technical data

## Approvals

## Approvals



ROHS	Conform
UL File Number Search	<a href="#">UL Website</a>
Certificate No. (UR)	E60693

## Dimensions and weights

Depth	27.6 mm	Depth (inches)	1.0866 inch
Height	10.3 mm	Height (inches)	0.4055 inch
Width	42 mm	Width (inches)	1.6535 inch
Net weight	11.97 g		

## Environmental Product Compliance

RoHS Compliance Status	Compliant with exemption
RoHS Exemption (if applicable/known)	7cl
REACH SVHC	No SVHC above 0.1 wt%

## System Parameters

Product family	OMNIMATE Signal - series BL/SL 3.50		
Type of connection	Field connection		
Wire connection method	PUSH IN with actuator		
Pitch in mm (P)	3.50 mm		
Pitch in inches (P)	0.138 "		
Conductor outlet direction	180°		
Number of poles	10		
L1 in mm	31.50 mm		
L1 in inches	1.240 "		
Number of rows	1		
Pin series quantity	2		
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		
Volume resistance	≤5 mΩ		
Can be coded	Yes		
Stripping length	8 mm		
Screwdriver blade	0.4 x 2.5		
Screwdriver blade standard	DIN 5264		
Plugging cycles	25		
Plugging force/pole, max.	6 N		
Pulling force/pole, max.	6 N		
Tightening torque	Torque type	Screw flange	
	Usage information	Tightening torque	min. 0.15 Nm max. 0.2 Nm

## Material data

Insulating material	PBT	Colour	black
Colour chart (similar)	RAL 9011	Insulating material group	IIIa

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## Technical data

Comparative Tracking Index (CTI)	$\geq 200$	Moisture Level (MSL)	
UL 94 flammability rating	V-0	Contact base material	Cu-alloy
Contact material	Cu-alloy	Contact surface	tinned
Storage temperature, min.	-40 °C	Storage temperature, max.	70 °C
Operating temperature, min.	-50 °C	Operating temperature, max.	75 °C
Temperature range, installation, min.	-30 °C	Temperature range, installation, max.	75 °C

## Conductors suitable for connection

Clamping range, min.	0.2 mm <sup>2</sup>
Clamping range, max.	1.5 mm <sup>2</sup>
Wire connection cross section AWG, min.	AWG 24
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, 0.2 mm <sup>2</sup> min.	
w. plastic collar ferrule, DIN 46228 pt 4, 0.75 mm <sup>2</sup> max.	
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 mm <sup>2</sup>
Plug gauge in accordance with EN 60999 a x b; $\varnothing$	2.4 mm x 1.5 mm; 1.9mm

Clampable conductor	Cross-section for conductor connection	Type	fine-wired
	nominal	0.25 mm <sup>2</sup>	
	wire end ferrule	Stripping length	nominal 10 mm
		Recommended wire-end ferrule	<a href="#">H0,25/12 HBL</a>
	Cross-section for conductor connection	Type	fine-wired
	nominal	0.34 mm <sup>2</sup>	
	wire end ferrule	Stripping length	nominal 10 mm
		Recommended wire-end ferrule	<a href="#">H0,34/12 TK</a>
	Cross-section for conductor connection	Type	fine-wired
	nominal	0.5 mm <sup>2</sup>	
	wire end ferrule	Stripping length	nominal 10 mm
		Recommended wire-end ferrule	<a href="#">H0,5/14 OR</a>
	Cross-section for conductor connection	Type	fine-wired
	nominal	0.75 mm <sup>2</sup>	
	wire end ferrule	Stripping length	nominal 10 mm
		Recommended wire-end ferrule	<a href="#">H0,75/14T HBL</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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## Rated data acc. to IEC

tested acc. to standard	IEC 60664-1, IEC 61984	Rated current, min. number of poles (Tu=20°C)	2.2 A
Rated current, max. number of poles (Tu=20°C)	2 A	Rated current, min. number of poles (Tu=40°C)	2.2 A

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## Technical data

Rated current, max. number of poles (Tu=40°C)	2 A	Rated voltage for surge voltage class / pollution degree II/2	200 V
Rated voltage for surge voltage class / pollution degree III/2	160 V	Rated voltage for surge voltage class / pollution degree III/3	50 V
Rated impulse voltage for surge voltage class/ pollution degree II/2	2500 V	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	0.8 kV	Short-time withstand current resistance	3 x 1s with 120 A

## Rated data acc. to CSA

Institute (CSA)	CSA	Certificate No. (CSA)	200039-1202189
Rated voltage (Use group B / CSA)	50 V	Rated voltage (Use group D / CSA)	50 V
Rated current (Use group B / CSA)	5 A	Rated current (Use group D / CSA)	5 A
Wire cross-section, AWG, min.	AWG 22	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 (UR)	UR	Certificate No. (UR)	E60693
Rated voltage (Use group B / UL 1059)	50 V	Rated voltage (Use group D / UL 1059)	50 V
Rated current (Use group B / UL 1059)	5 A	Rated current (Use group D / UL 1059)	5 A
Wire cross-section, AWG, min.	AWG 24	Wire cross-section, AWG, max.	AWG 16
Reference to approval values	Specifications are maximum values, details - see approval certificate.		

## Packing

Packaging	Box	VPE length	165.00 mm
VPE width	97.00 mm	VPE height	43.00 mm

## Type tests

Test: Durability of markings	Standard	draft DIN VDE 0627 section 6.2.2 / 09.91
	Test	mark of origin, type identification, pitch, type of material
	Evaluation	available
	Test	durability
	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 solid 0.2 mm <sup>2</sup> and conductor cross-section
		Type of conductor stranded 0.2 mm <sup>2</sup> and conductor cross-section
		Type of conductor solid 1.5 mm <sup>2</sup> and conductor cross-section
		Type of conductor stranded 1.5 mm <sup>2</sup> and conductor cross-section
		Type of conductor AWG 24/1 and conductor cross-section

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## Technical data

Test for damage to and accidental loosening of conductors	Evaluation	Type of conductor and conductor cross-section	AWG 24/19
		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 section 8.4 / 04.94	
	Requirement	0.2 kg	
	Conductor type	Type of conductor and conductor cross-section	stranded 0.05 mm <sup>2</sup>
	Evaluation	passed	
	Requirement	0.3 kg	
	Conductor type	Type of conductor and conductor cross-section	solid 0.5 mm <sup>2</sup>
Pull-out test	Evaluation	Type of conductor and conductor cross-section	AWG 24/1
		Type of conductor and conductor cross-section	AWG 24/19
		Type of conductor and conductor cross-section	AWG 24/19
	Evaluation	passed	
	Standard	DIN EN 60999 section 8.5 / 04.94	
	Requirement	≥10 N	
	Conductor type	Type of conductor and conductor cross-section	AWG 24/1
	Evaluation	passed	
	Requirement	≥30 N	
	Conductor type	Type of conductor and conductor cross-section	H05V-U0.5
	Evaluation	Type of conductor and conductor cross-section	H05V-K0.5
		passed	
		Requirement	≥40 N
	Conductor type	Type of conductor and conductor cross-section	H05V-U1.5

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## Technical data

	Type of conductor and conductor cross-section	H05V-K1.5
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	<ul style="list-style-type: none"> <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>P on drawing = pitch</li> <li>Crimp form A for wire end ferrules with PZ 6/5 crimping tool are recommended for the largest cable sizes.</li> <li>Total load-carrying capacity of the potential bridges when feeding with 1.5 mm<sup>2</sup> is max. 17.5 A (so the capacity is 2.18 A for poles 2 through 9)</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>Conductor &lt; 0.2 mm<sup>2</sup> tinned</li> <li>Max. outer diameter of the conductor: 2.9 mm</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>

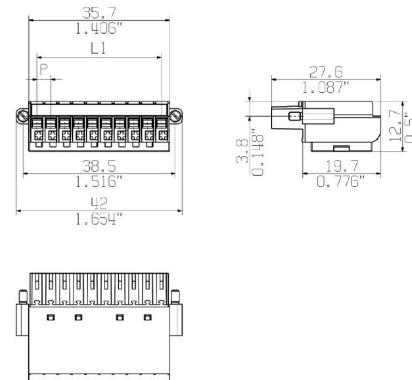
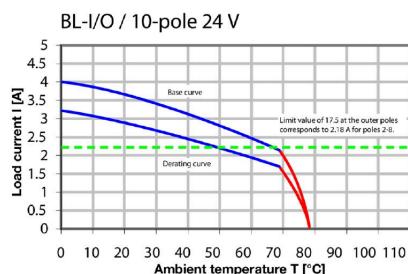
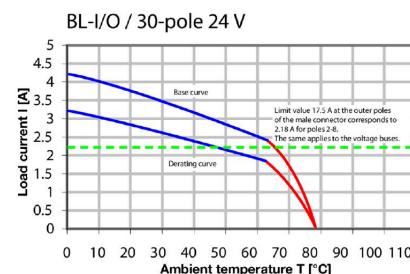
## Classifications

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		

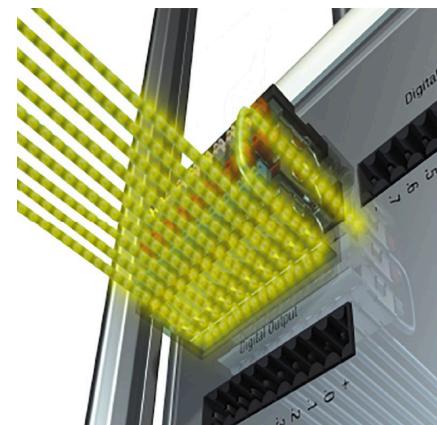
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**Drawings****Dimensional drawing****Graph****Graph****Product benefits**

Solid PUSH IN contactSafe and durable

**Product benefits**

Multiples the potentialLow wiring costs

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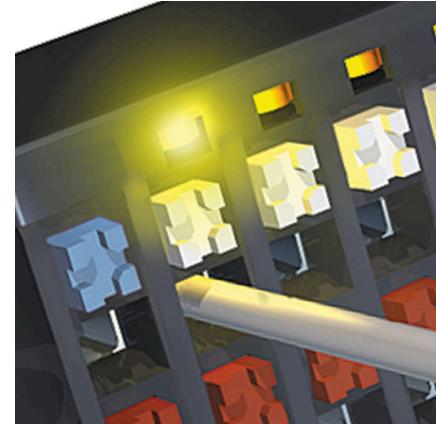
## Drawings

### Product benefits



PUSH IN - fast and secureInvented by Weidmüller

### Product benefits



Integrated electronicsFor more space on the circuit board