

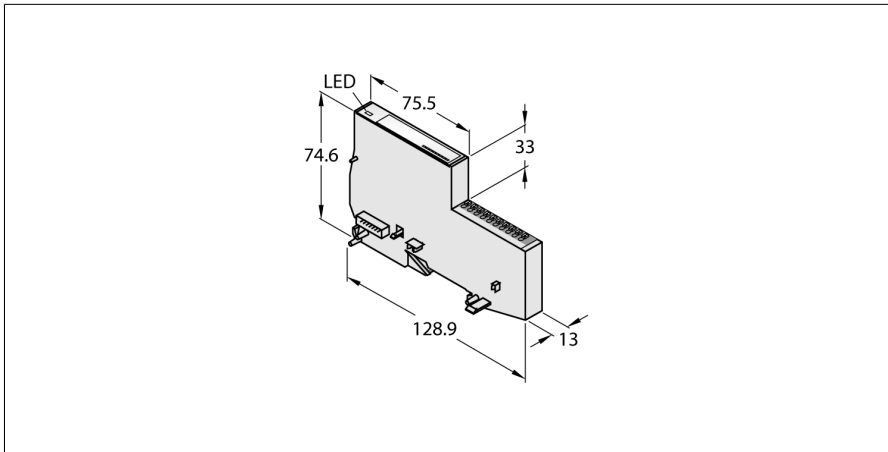
# BL20 Economy Module

## 4 IO-Link Master Channels, 16 Bytes of I/O Data

## 4 Configurable Digital Channels, PNP, Channel Diagnostics, 0.5 A

### A

### BL20-E-4IOL



- Fieldbus-independent
- Electronics and connection technology in one housing
- Connectivity: Push-in terminals
- Protection class IP20
- LEDs indicate status and diagnostic
- Electronics galvanically separated from the field level via optocouplers
- IO-Link master acc. to specification V1.1, 4-channel
- 4 universal digital channels, PNP, channel diagnostics, 0.5 A

#### Functional principle

Electronics and connection technology are integrated in the housing. A base module is not needed. Economy modules and modules with separate electronics and connection technology can be fitted into a station, provided the base modules feature tension spring connections.

The use of gateways makes economy modules completely independent from the higher level fieldbus.


Type	BL20-E-4IOL
ID	6827385
Number of channels	4/4
Rated voltage from the supply terminal	24 VDC
Nominal voltage $V_n$	24 VDC
Admissible range	18...30 VDC
Nominal current from field supply	≤ 80 mA
Nominal current from module bus	≤ 40 mA
Max. field supply current	10 A
Power dissipation, typical	≤ 2 W

Input type	PNP
Low-level signal voltage	< 5 V
High level signal voltage	> 11 V
Low level signal current	< 1.5 mA DI / < 5 mA SIO
High level signal current	2.1 ... 3.7 mA DI / 5 ... 11 mA SIO
Electrical isolation	electronics to the field level
Output connectivity	Push-in

Output type	PNP
Output voltage	24 VDC
Output delay	3 ms
Load type	resistive, inductive, lamp load
Load resistance, resistive	> 48 Ω
Load resistance, inductive	< 1.2 H
Lamp load	< 3 W
Switching frequency, resistive	< 200 Hz
Switching frequency, inductive	< 2 Hz
Switching frequency, lamp load	< 20 Hz
Electrical isolation	electronics to the field level
Input connectivity	Push-in

<b>IO-Link</b>	
IO-Link specification	V 1.1
IO-Link port type	Class A
Frame type	supports all specified frame types
Supported devices	max. 14 byte input / 14 byte output
Transmission rate	4.8 kbps (COM 1) / 38.4 kbps (COM 2) / 230 kbps (COM 3)
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Number of diagnostics bytes	8
Number of parameter bytes	16
Number of input bytes	16
Number of output bytes	16
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Dimensions (W x L x H)	13 x 128.9 x 74.6 mm
Approvals	CE, cULus, GOST
Ambient temperature	0...+55 °C
Storage temperature	-40...+85 °C
Relative humidity	15...95 %, no condensation allowed
Vibration test	Acc. to EN 61131
Shock test	Acc. to IEC 60068-2-27
Drop and topple	acc. to IEC 68-2-31 and free fall to IEC 68-2-32
Electromagnetic compatibility	Acc. to EN 50082-2
Protection class	IP20
MTTF	388 years acc. to SN 29500 (Ed. 99) 20 °C

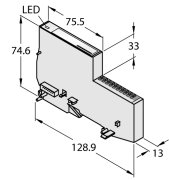
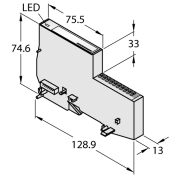
## Terminal assignment

	<p><b>I/O Channels</b></p> <p>Channels 1 to 4 are IO-Link master channels. Channels 5 to 8 are XSG channels (optionally usable as digital inputs or outputs) The terminals 9 and 10 are used for sensor supply.</p>	<p><b>Pin Assignment</b></p> <table border="1"> <tr><td>1</td><td>●</td><td>C/Q (Channel 1)</td></tr> <tr><td>2</td><td>●</td><td>C/Q (Channel 2)</td></tr> <tr><td>3</td><td>●</td><td>C/Q (Channel 3)</td></tr> <tr><td>4</td><td>●</td><td>C/Q (Channel 4)</td></tr> <tr><td>5</td><td>●</td><td>XSG (Channel 5)</td></tr> <tr><td>6</td><td>●</td><td>XSG (Channel 6)</td></tr> <tr><td>7</td><td>●</td><td>XSG (Channel 7)</td></tr> <tr><td>8</td><td>●</td><td>XSG (Channel 8)</td></tr> <tr><td>9</td><td>●</td><td>GND<sub>L</sub></td></tr> <tr><td>10</td><td>●</td><td>+ U<sub>L</sub></td></tr> </table>	1	●	C/Q (Channel 1)	2	●	C/Q (Channel 2)	3	●	C/Q (Channel 3)	4	●	C/Q (Channel 4)	5	●	XSG (Channel 5)	6	●	XSG (Channel 6)	7	●	XSG (Channel 7)	8	●	XSG (Channel 8)	9	●	GND <sub>L</sub>	10	●	+ U <sub>L</sub>
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10	●	+ U <sub>L</sub>																														
	<p><b>Attention:</b></p> <p>The IO-Link devices must be supplied with the same potential as U<sub>L</sub> of the gateway or the BR / PF module (if used).</p>	<p><b>Wiring Diagram</b></p> <p>The diagram illustrates the electrical connections between a BL20-Gateway, an E-4IOL module, and an IO-Link Device. The BL20-Gateway provides power (U<sub>L</sub> IN, max. 10 A) and system ground (GND<sub>sys</sub>) to the E-4IOL. The E-4IOL module has internal connections to the IO-Link Device's power supply (1 24VDC, 2 GND) and signal lines (3 IOL, 4 C/Q IO-Link). The IO-Link Device also receives power (U<sub>L</sub>) and ground (GND<sub>L</sub>) from the E-4IOL. An optional connection is shown for the IO-Link Device's power supply.</p>																														

**LED display**

LED	Color	Status	Meaning
D		OFF	No error message or diagnostics active.
	RED	ON	Failure of module bus communication. Check if more than 2 adjacent electronic modules are pulled. Relevant modules are located between gateway and this module.
	RED	FLASHING (0.5 Hz)	Upcoming module diagnostics
IO-Link channels 1...4		OFF	Status channel x = 0 (OFF)
IO-Link mode	GREEN	FLASHING	IO-Link communication active valid process data
	RED	ON	No IO-Link communication and/or module error, invalid process data
	RED	FLASHING	IO-Link communication active and/or module error, invalid process data
IO-Link channels 1...4		OFF	Status channel x = 0 (OFF)
SIO mode	GREEN	ON	Status channel x = 1 (ON)
XSG channels 5...8		OFF	Status channel x = 0 (OFF)
	GREEN	ON	Status channel x = 1 (ON)
	RED	FLASHING (0.5 Hz)	Short-circuit output channel x

## Accessories

Type code	Ident no.		Dimension drawing
BL20-E-10UL	100001335	BL20 ECO module with 10 connection terminals for wiring 24 VDC potential from the UL field supply	 <p>Technical drawing showing the dimensions of the BL20-E-10UL module. The dimensions are: LED (75.5), 74.6, 33, 128.9, and 13.</p>
BL20-E-10GNDL	100001336	BL20 ECO module with 10 connection terminals for wiring GND potential from the UL field supply	 <p>Technical drawing showing the dimensions of the BL20-E-10GNDL module. The dimensions are: LED (75.5), 74.6, 33, 128.9, and 13.</p>