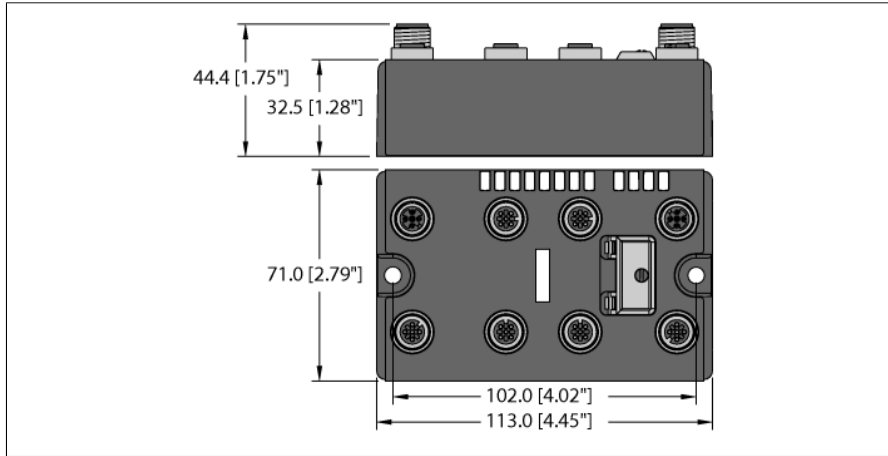


**BL compact™ multiprotocol fieldbus station for Industrial Ethernet**  
**8 Digital PNP Outputs**  
**BLCEN-4M12MT-8DO-0.5A-P**



- On-machine Compact fieldbus I/O block
- EtherNet/IP™, Modbus® TCP, or PROFINET slave
- Integrated Ethernet Switch
- 10 Mbps / 100 Mbps supported
- Two 4-pole M12, D-coded, connectors for fieldbus connection
- 2 rotary switches for node address
- IP67, IP69K
- M12 I/O connectors
- LEDs indicating status and diagnostics
- Electronics galvanically separated from the field level via optocouplers
- 8 digital PNP outputs, 24 VDC
- Max. 0.5A per output
- FLC/ARGEE programmable

<b>Type designation</b>	BLCEN-4M12MT-8DO-0.5A-P
Ident-No.	6811470

<b>Fieldbus transmission rate</b>	10/100 Mbps
Adjustment transmission rate	Automatic detection
Fieldbus connection technology	2 × M12, 4-pole, D-coded
Fieldbus address range	1...92
	0 (192.168.1.254)
	93 (BootP)
	94 (DHCP)
	95 (PGM)
	96 (PGM-DHCP) *Recommended for PROFINET
	97...98 (manufacturer specific)
Fieldbus addressing	2 decimally coded rotary switches
Protocol detection	automatic
Web server	Integrated
Service interface	Ethernet
Vendor ID	48
Product type	12
Product code	11470

<b>Field Logic Controller (FLC)</b>	
Supported from firmware version	3.3.2.0
Released from ARGEE version	2.0.17.0

<b>Modbus TCP</b>	
Addressing	Static IP, BOOTP, DHCP
Supported function codes	FC1, FC2, FC3, FC4, FC5, FC6, FC15, FC16, FC23
Number of TCP connections	6
Input Data Size	max. 2 register
Input register start address	0 (0x0000 hex)
Output Data Size	max. 1 register
Output register start address	2048 (0x0800 hex)

<b>EtherNet/IP™</b>	
Addressing	acc. to EtherNet/IP™ specification
Device Level Ring (DLR)	supported
Class 1 connections	6
Input Data Size	2 INT
Output Data Size	1 INT

<b>PROFINET</b>	
Addressing	DCP
Conformance class	B (RT)
MinCycleTime	1 ms
Diagnostics	acc. to PROFINET alarm handling
Topology detection	supported
Automatic addressing	supported
Media Redundancy Protocol (MRP)	supported
Output Data Size	max. 2 BYTE

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**Digital outputs**

Output type	PNP
Type of output diagnostics	Channel diagnostics
Output voltage	24 VDC
Output current per channel	0.5 A
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
Short-circuit protection	yes

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**Vibration test**

Extended vibration resistance	according to IEC 61131-2
- up to 20 g (at 10 up to 150 Hz)	For mounting on base plate or machinery
Shock test	according to IEC 61131-2
Electromagnetic compatibility	according to IEC 61131-2
Approvals and certificates	CE, cULus

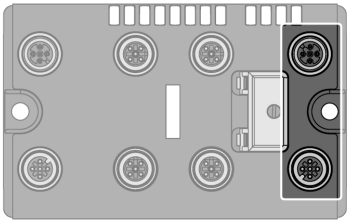
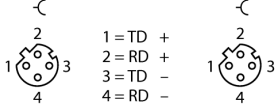
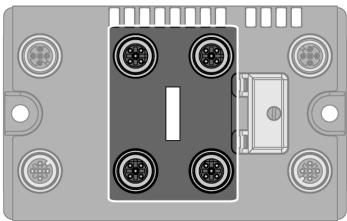
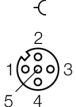
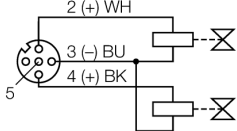
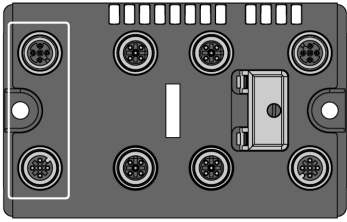
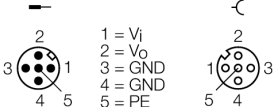
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**Dimensions (W x L x H)**

Operating temperature	71 x 113 x 32.5mm
Storage temperature	-40...+70 °C
Relative humidity	-40...+85 °C
Protection class	15 to 95% (non-condensing)
MTTF	IP67
Housing material	IP69K
Housing color	147 years acc. to SN 29500 (Ed. 99) 20 °C
Window material	Glass-filled nylon, nickel plated brass connectors
Material screw	Black
Material label	Lexan
Ground label material	Nickel-plated brass
Weight	Polyester with polycarbonate overlay
Mounting	Nickel plated brass
	390 ± 20 g
	2 × 5.4 mm diameter holes, 1.7 Nm torque

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**Pinning and wiring diagram**

	<p><b>Ethernet</b> Fieldbus cable (IP67 example): RSSD RSSD 441-2M ID number U-02482 or RSSD-RSSD-441-2M/S2174 ID number 6914218</p>	<p>Pin Assignment (M12, D-code)</p>  <p>1 = TD + 2 = RD + 3 = TD - 4 = RD -</p>
	<p><b>Digital Outputs</b> Extension cable (example): RK 4.4T-2-RS 4.4T ident-no. U2445 or RKC4.4T-2-RSC4.4T/TEL ident-no. 6625208</p>	<p>Pin Assignment</p>  <p>1 = V<sub>SENS</sub> 2 = Output B 3 = GND 4 = Output A 5 = PE</p> <p>Wiring Diagram</p> 
	<p><b>Auxiliary Power</b> Extension cable (example): RKC 4.4T-2-RSC 4.4T ident-no. U5264 or RKC4.4T-2-RSC4.4T/TEL ident-no. 6625208</p>	<p>Pin Assignment</p>  <p>1 = V<sub>I</sub> 2 = V<sub>O</sub> 3 = GND 4 = GND 5 = PE</p>

**BL compact™ multiprotocol fieldbus station for Industrial Ethernet**  
**8 Digital PNP Outputs**  
**BLCEN-4M12MT-8DO-0.5A-P****Station LED status**

LED	Color	Status	Description
IOs		OFF	No power
	RED	ON	Low power or station error
	RED	FLASHING (1 Hz)	I/O module configuration error
	RED	FLASHING (4 Hz)	No I/O module bus communication
	GREEN	ON	Station ok
	GREEN	FLASHING	Force mode active
BUS		OFF	Power Off
	GREEN	ON	Connected to Master
	GREEN	FLASHING	Ready
	GREEN	FLASHING 3x (1Hz)	ARGEE Running
	RED	ON	Error
	RED	FLASHING	WINK
	YELLOW	ON	DHCP/BOOTP Search
LNK/ACT		OFF	No Link
	GREEN	ON	Link
	GREEN	FLASHING	Traffic
	YELLOW	ON	100 Mbit Linked

**I/O LED status**

LED	Color	Status	Description
D *		OFF	No diagnostics active
	RED	ON	Station error/ module bus communication failure
	RED	FLASHING (0.5Hz)	Diagnostics active
DO channel		OFF	Status of channel x = „0“ (OFF), no diagnostics active
0...7	GREEN	ON	Status of channel x = „1“ (ON)
	RED	ON	Short circuit / overload on channel x

\* D LED also indicates gateway diagnostics

**BL compact™ multiprotocol fieldbus station for Industrial Ethernet**  
**8 Digital PNP Outputs**  
**BLCEN-4M12MT-8DO-0.5A-P**

**Process Data Mapping of Each Protocol**

**EtherNet/IP™ I/O & Diagnostics Data Mapping**

INPUT	BYTE	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Diagnostics	0	Module number reporting diagnostic data							
	1	Replace Station	-	Diagnostics Active	-	-	-	-	-
Slot 1 (ref. Byte 0)	2	Over Current DO 1 <sub>7</sub>	Over Current DO 1 <sub>6</sub>	Over Current DO 1 <sub>5</sub>	Over Current DO 1 <sub>4</sub>	Over Current DO 1 <sub>3</sub>	Over Current DO 1 <sub>2</sub>	Over Current DO 1 <sub>1</sub>	Over Current DO 1 <sub>0</sub>
	3	-	-	-	-	-	-	-	-
OUTPUT	BYTE	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
	0	DO 1 <sub>7</sub>	DO 1 <sub>6</sub>	DO 1 <sub>5</sub>	DO 1 <sub>4</sub>	DO 1 <sub>3</sub>	DO 1 <sub>2</sub>	DO 1 <sub>1</sub>	DO 1 <sub>0</sub>
	1	-	-	-	-	-	-	-	-

Legend:

CFG	Configuration Error	FCE	Force Mode Active
COM	Communication Failure	SC	Short Circuit / Overcurrent
DIA	Diagnostics Active	VI	VI Voltage
DO	Digital Output	VO	VO Voltage

**Modbus® TCP Register Mapping**

	REG	Bit 15	Bit 14	Bit 13	Bit 12	Bit 11	Bit 10	Bit 9	Bit 8	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Status (RO)	0x0000	-	FCE	-	-	CFG	COM	VI low	-	VO low	-	-	-	-	-	-	DIA
Diag. (RO)	0x0001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S1 DIA
Outputs (RW)	0x0800	-	-	-	-	-	-	-	-	DO 1 <sub>7</sub>	DO 1 <sub>6</sub>	DO 1 <sub>5</sub>	DO 1 <sub>4</sub>	DO 1 <sub>3</sub>	DO 1 <sub>2</sub>	DO 1 <sub>1</sub>	DO 1 <sub>0</sub>
I/O Diag. (RO)	0xA000	-	-	-	-	-	-	-	-	SCDO 1 <sub>7</sub>	SCDO 1 <sub>6</sub>	SCDO 1 <sub>5</sub>	SCDO 1 <sub>4</sub>	SCDO 1 <sub>3</sub>	SCDO 1 <sub>2</sub>	SCDO 1 <sub>1</sub>	SCDO 1 <sub>0</sub>

**PROFINET® Process Data**

	BYTE	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Outputs	0	DO 1 <sub>7</sub>	DO 1 <sub>6</sub>	DO 1 <sub>5</sub>	DO 1 <sub>4</sub>	DO 1 <sub>3</sub>	DO 1 <sub>2</sub>	DO 1 <sub>1</sub>	DO 1 <sub>0</sub>
	1	-	-	-	-	-	-	-	-