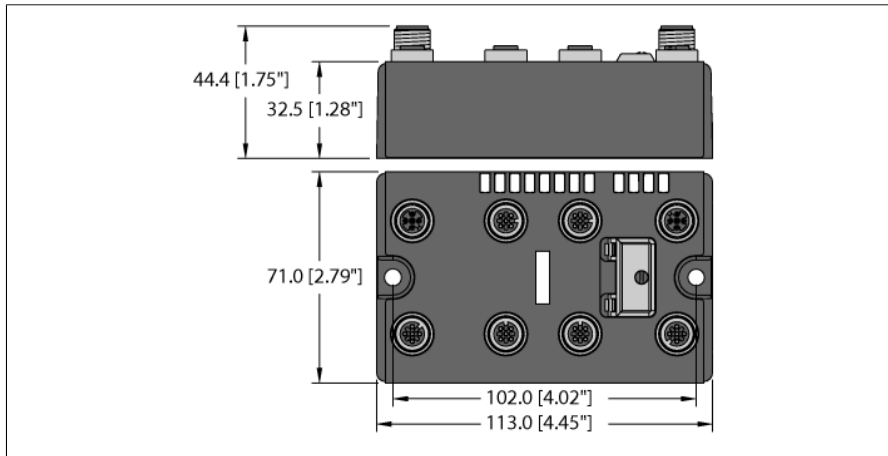


BL compact™ multiprotocol fieldbus station for Industrial Ethernet
8 Configurable Digital PNP Channels
BLCEN-4M12MT-8XSG-P



- 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 Configurable digital PNP channels, 24 VDC
- Max. 0.5A per channel
- Selection of filtering times (Input delay)
- Invertible inputs
- FLC/ARGEED programmable

Type designation	BLCEN-4M12MT-8XSG-P
Ident-No.	6811452
Electrical isolation	The 8XSG I/O cards have a common reference potential for operating and load voltage due to their freely selectable digital channels. Subsequently, all voltage sources (VI / VO / V+) present on this device must be concurrently connected to suitable power supplies.
Fieldbus transmission rate	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	11452
Field Logic Controller (FLC)	
Supported from firmware version	3.3.2.0
Released from ARGEE version	2.0.17.0
Modbus TCP	
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. 3 register
Input register start address	0 (0x0000 hex)
Output Data Size	max. 1 register
Output register start address	2048 (0x0800 hex)
EtherNet/IP™	
Addressing	acc. to EtherNet/IP™ specification
Device Level Ring (DLR)	supported
Class 1 connections	6
Input Data Size	3 INT
Output Data Size	1 INT

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PROFINET

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
Input Data Size	max. 2 BYTE
Output Data Size	max. 2 BYTE

Digital inputs

Input type	from 8XSG
Input type	PNP
Type of input diagnostics	Group diagnostics
Low level signal voltage	< 4.5 VDC
High level signal voltage	7 ... 30 VDC
Low level signal current	< 1.5 mA
High level signal current	2.1 ... 3.7 mA
Input delay	(configurable) 0.25 or 2.5 ms

Digital outputs

Output type	from 8XSG
Output type	PNP
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

Vibration test

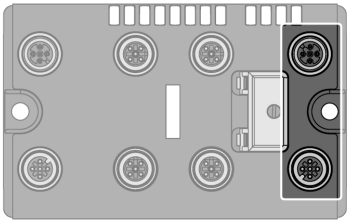
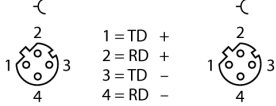
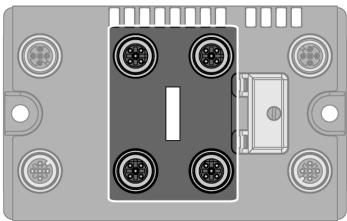
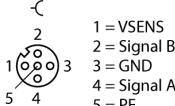
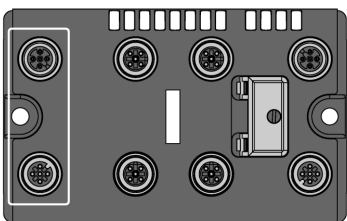
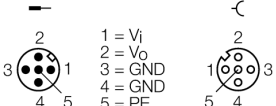
Extended vibration resistance	according to IEC 61131-2
- up to 20 g (at 10 up to 150 Hz)	For mounting on base plate or machinery
Shock test	according to IEC 61131-2
Electromagnetic compatibility	according to IEC 61131-2
Approvals and certificates	CE, cULus, Class I Div.2

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	134 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>Ethernet 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-coded)</p>  <p>1 = TD + 2 = RD + 3 = TD - 4 = RD -</p>
	<p>Digital Inputs and Outputs 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 = VSNS 2 = Signal B 3 = GND 4 = Signal A 5 = PE</p>
	<p>Auxiliary Power 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 = Vi 2 = Vo 3 = GND 4 = GND 5 = PE</p>

BL compact™ multiprotocol fieldbus station for Industrial Ethernet
8 Configurable Digital PNP Channels
BLCEN-4M12MT-8XSG-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
XSG channels 0...7		OFF	Channel status x = "0" (OFF), no diagnostics active
	GREEN	ON	Channel status x = "1" (ON)
	RED	ON	Short-circuit at output

* D LED also indicates gateway diagnostics

BL compact™ multiprotocol fieldbus station for Industrial Ethernet
8 Configurable Digital PNP Channels
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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
	0	DI 1 ₇	DI 1 ₆	DI 1 ₅	DI 1 ₄	DI 1 ₃	DI 1 ₂	DI 1 ₁	DI 1 ₀
	1	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-
	5	-	-	-	-	-	-	-	-
OUTPUT	BYTE	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
	0	DO 1 ₇	DO 1 ₆	DO 1 ₅	DO 1 ₄	DO 1 ₃	DO 1 ₂	DO 1 ₁	DO 1 ₀
	1	-	-	-	-	-	-	-	-

Legend:

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

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
Inputs (RO)	0x0000	-	-	-	-	-	-	-	-	DI 1 ₇	DI 1 ₆	DI 1 ₅	DI 1 ₄	DI 1 ₃	DI 1 ₂	DI 1 ₁	DI 1 ₀
Status (RO)	0x0001	-	FCE	-	-	CFG	COM	VI low	-	VO low	-	-	-	-	-	-	DIA
Diag. (RO)	0x0002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S1 DIA
Outputs (RW)	0x0800	-	-	-	-	-	-	-	-	DO 1 ₇	DO 1 ₆	DO 1 ₅	DO 1 ₄	DO 1 ₃	DO 1 ₂	DO 1 ₁	DO 1 ₀
I/O Diag. (RO)	0xA000	SCDO 1 ₇	SCDO 1 ₆	SCDO 1 ₅	SCDO 1 ₄	SCDO 1 ₃	SCDO 1 ₂	SCDO 1 ₁	SCDO 1 ₀	SCDI 1 ₇	SCDI 1 ₆	SCDI 1 ₅	SCDI 1 ₄	SCDI 1 ₃	SCDI 1 ₂	SCDI 1 ₁	SCDI 1 ₀

PROFINET® Process Data

	BYTE	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Inputs	0	DI 1 ₇	DI 1 ₆	DI 1 ₅	DI 1 ₄	DI 1 ₃	DI 1 ₂	DI 1 ₁	DI 1 ₀
	1	-	-	-	-	-	-	-	-
Outputs	0	DO 1 ₇	DO 1 ₆	DO 1 ₅	DO 1 ₄	DO 1 ₃	DO 1 ₂	DO 1 ₁	DO 1 ₀
	1	-	-	-	-	-	-	-	-

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Accessories

Type code	Ident-No.	Description	
LOCK-EURO-C	A0885	Locking guard for straight eurofast™ C-body connectors (RKC, RKCV, RSC, RSCV) in a Class I, Division 2 installations	
LOCK-EURO-C (10/BAG)	A0886	Locking guard for straight eurofast™ C-body connectors (RKC, RKCV, RSC, RSCV) in a Class I, Division 2 installations	