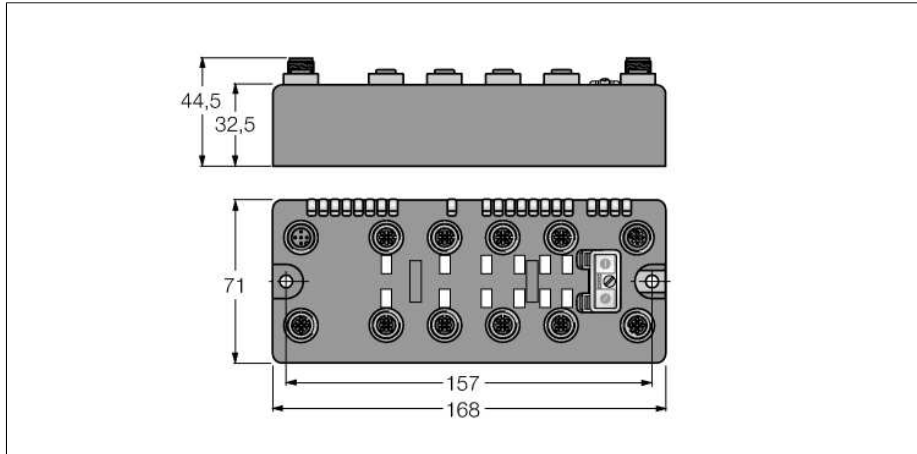


BL compact fieldbus station for EtherNet/IP™ or Modbus TCP™ 4 Analog Inputs for Current or Voltage and 8 Configurable Digital PNP Channels

BLCEN-8M12LT-4AI-VI-8XSG-P



- Compact fieldbus I/O module in IP69K
- EtherNet/IP™ slave
- ModBus TCP™ slave
- Integrated Ethernet switch
- 10 Mbps / 100 Mbps supported
- 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
- 4 analog inputs for current or voltage
- 0/4...20 mA or -10/0...+10 VDC (selectable per channel)

Type code	BLCEN-8M12LT-4AI-VI-8XSG-P
Ident no.	6811469
Nominal system voltage	24 VDC
System power supply	via auxiliary power
Voltage supply connection	2 x M12, 5-pole
Admissible range Vi	18...30VDC
Nominal current Vi	237 mA
Max. current Vi	2 A
Admissible range Vo	18...30VDC
Nominal current Vo	100 mA
Max. current Vo	4 A
Fieldbus transmission rate	10/100 Mbps
Adjustment transmission rate	auto detection
Fieldbus addressing range	1...92 0 (192.168.1.254) 93 (BootP) 94 (DHCP) 95 (PGM) 96 (PGM-DHCP) 97...99 (Vendor Specific)
Fieldbus addressing	2 decimally coded rotary switches
Fieldbus connection technology	2 x M12 4-pole, D-coded
Protocol detection	automatic
Web server	Integrated
Service interface	Ethernet
Vendor ID	30
Product type	12
Product code	11469
Modbus TCP	
Addressing	Static IP, BOOTP, DHCP
Supported function codes	FC1, FC2, FC3, FC4, FC5, FC6, FC15, FC16, FC23
Simultaneous CIP connections	6
EtherNet/IP™	
Addressing	acc. to EtherNet/IP™ specification
Device Level Ring (DLR)	supported
Simultaneous CIP connections	6
Input Assembly Instance	103
Input Data Size	8 INT
Output Assembly Instance	104
Configuration Assembly Instance	106
Configuration Size	0
Comm Format	Data - INT

BL compact fieldbus station for EtherNet/IP™ or Modbus TCP™
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BLCEN-8M12LT-4AI-VI-8XSG-P**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. 10 BYTE
Output Data Size	max. 2 BYTE

digital inputs

Input type	from 8XSG
Input type	PNP
Type of input diagnostics	group diagnostics
Sensor supply (V_{SENS})	24 VDC
Low level signal voltage	4.5 V
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
Sensor supply (V_{SENS})	24 VDC
Output current per channel	0.5 A
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
Short-circuit protection	yes

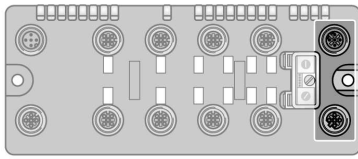
Analog inputs

Input type	from 4AI-VI
Input type	0/4 ... 20 mA or -10/0 ... 10 VDC
Type of input diagnostics	channel diagnostics
Sensor supply	24 VDC
Input resistance	Current: < 0.125 K Ω , Voltage: < 98.5 K Ω
Maximum limiting frequency analog	< 20 Hz
Basic fault limit at 23 °C	< 0.3 %
Repeatability	< 0.05 %
Temperature coefficient	< 300 ppm/°C of full scale
Resolution	16 bit
Measuring principle	Sigma Delta
Measured-value displayed	16 bit signed integer 12 bit full range left justified

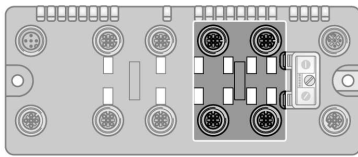
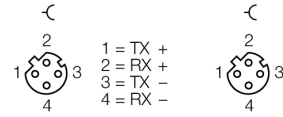
Dimensions

Dimensions	1680x 710x 325 mm
Operating temperature	-40...+70 °C
Storage temperature	-40...+85 °C
Relative humidity	15 to 95% (non-condensing)
Vibration test	according to IEC 61131-2
Extended vibration resistance	
- up to 20 g (at 10 to 150 Hz)	For mounting on base plate or machinery
Shock test	according to IEC 61131-2
Electro-magnetic compatibility	according to IEC 61131-2
Protection class	IP69K
Housing material	Glass-filled nylon, nickel plated brass connectors
Housing color	Black
Window material	Lexan
Screw material	Nickel plated brass
Label material	Polyester with Polycarbonate overlay
Ground tab material	Nickel plated brass
Weight	620 \pm 20 g
Approvals and certificates	CE, cULus

BL compact fieldbus station for EtherNet/IP™ or Modbus TCP™ 4 Analog Inputs for Current or Voltage and 8 Configurable Digital PNP Channels BLCEN-8M12LT-4AI-VI-8XSG-P

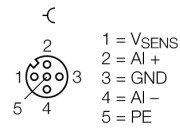


Fieldbus cable (example): RSSD RSSD 441-2M ident-no. U-02482
or RSSD-RSSD-441-2M/S2174 ident-no. 6914218

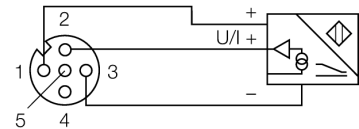
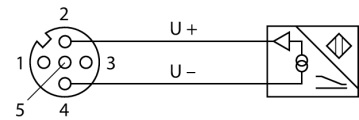
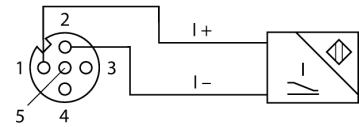


Extension cable (example): RK 4.5T-2-RS 4.5T/S653 ident-no. U2187-09 or RKC4.5T-2-RSC4.5T/TEL ident-no. 6625212

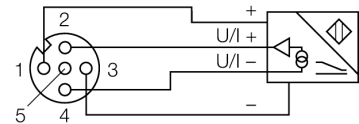
Pin assignment



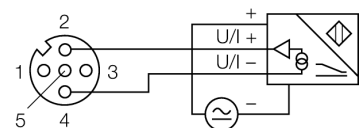
2-wire connection technology (current)



4-wire connection technology

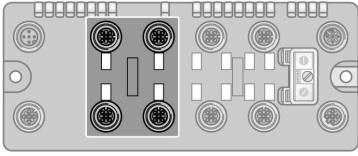


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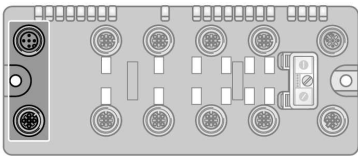
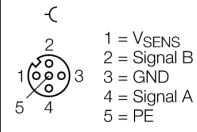
**BL compact fieldbus station for EtherNet/IP™ or Modbus TCP™
4 Analog Inputs for Current or Voltage and 8 Configurable Digital PNP
Channels**

BLCEN-8M12LT-4AI-VI-8XSG-P



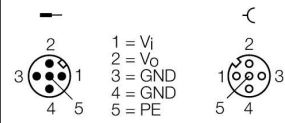
Extension cable (example): RK 4.4T-2-RS 4.4T ident-no. U2445 or
RKC4.4T-2-RSC4.4T/TEL ident-no. 6625208

Pin assignment



Extension cable (example): RKC 4.4T-2-RSC 4.4T ident-no.
U5264 or RKC4.4T-2-RSC4.4T/TEL ident-no. 6625208

Pin assignment



**BL compact fieldbus station for EtherNet/IP™ or Modbus TCP™
4 Analog Inputs for Current or Voltage and 8 Configurable Digital PNP
Channels
BLCEN-8M12LT-4AI-VI-8XSG-P****Status: Station LED**

LED	Color	Status	Description
IOs		OFF	No power supply
	RED	ON	Insufficient power supply
	RED	FLASHING (1Hz)	Deviating station configuration
	RED	FLASHING (4 Hz)	No module bus communication
	GREEN	ON	Station OK
	GREEN	FLASHING	Force mode active
MNS		OFF	No connection
	GREEN	ON	Fieldbus communication active
	GREEN	FLASHING (1Hz)	Fieldbus communication disabled, device status OK
	RED	ON	Double MAC-ID
	RED	FLASHING	Fieldbus communication timeout
IO	GREEN	ON	I/O slots OK
	GREEN	FLASHING (1Hz)	At least one I/O slot in idle state
	RED	ON	At least one faulty I/O slot
	RED	FLASHING	At least one I/O slot in faulty state

Status: I/O LED, slot 1

LED	Color	Status	Description
D1 *		OFF	Diagnostic disabled
	RED	ON	Station / module bus communication failure
	RED	FLASHING (0.5Hz)	Group diagnostic
AI channels 1 ₀ ...1 ₃		OFF	Channel inactive
	GREEN	ON	Channel active
	GREEN	FLASHING (0.5 Hz)	Measuring range undershoot
	GREEN	FLASHING (4 Hz)	Measuring range overshoot

* D1 LED also indicates gateway diagnostic

I/O LED Status Slot 2

LED	Colour	Status	Description
D2 *		OFF	No diagnostics active
	RED	ON	Station error/ module bus communication failure
	RED	FLASHING (0.5Hz)	Any diagnostics active
XSG channels 2 ₀ ...2 ₇		OFF	Channel status x = "0" (OFF), no diagnostics active
	GREEN	ON	Channel status x = "1" (ON)
	RED	ON	Short-circuit at output

* D2 LED also reports gateway diagnostics

BL compact fieldbus station for EtherNet/IP™ or Modbus TCP™
4 Analog Inputs for Current or Voltage and 8 Configurable Digital PNP Channels
BLCEN-8M12LT-4AI-VI-8XSG-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
AI 1 ₀	0	AI 1 ₀ LSB							
	1	AI 1 ₀ MSB							
AI 1 ₁	2	AI 1 ₁ LSB							
	3	AI 1 ₁ MSB							
AI 1 ₂	4	AI 1 ₂ LSB							
	5	AI 1 ₂ MSB							
AI 1 ₃	6	AI 1 ₃ LSB							
	7	AI 1 ₃ MSB							
	8	DI 2 ₇	DI 2 ₆	DI 2 ₅	DI 2 ₄	DI 2 ₃	DI 2 ₂	DI 2 ₁	DI 2 ₀
	9	-	-	-	-	-	-	-	-
Diagnostics	10	Module number reporting diagnostic data							
	11	Replace Station	-	Diagnostics Active	-	-	-	-	-
Slot 1 (ref. Byte 10)	12	-	-	-	-	-	-	Open Circuit AI 1 ₀	Range Error AI 1 ₀
	13	-	-	-	-	-	-	Open Circuit AI 1 ₁	Range Error AI 1 ₁
	14	-	-	-	-	-	-	Open Circuit AI 1 ₂	Range Error AI 1 ₂
	15	-	-	-	-	-	-	Open Circuit AI 1 ₃	Range Error AI 1 ₃
OUTPUT	BYTE	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
	0	DO 2 ₇	DO 2 ₆	DO 2 ₅	DO 2 ₄	DO 2 ₃	DO 2 ₂	DO 2 ₁	DO 2 ₀
	1	-	-	-	-	-	-	-	-

Modbus TCP Register Mapping

PROFINET® Process Data

	BYTE	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Inputs	0	AI 1 ₀ LSB							
	1	AI 1 ₀ MSB							
	2	AI 1 ₁ LSB							
	3	AI 1 ₁ MSB							
	4	AI 1 ₂ LSB							
	5	AI 1 ₂ MSB							
	6	AI 1 ₃ LSB							
	7	AI 1 ₃ MSB							
		8	DI 2 ₇	DI 2 ₆	DI 2 ₅	DI 2 ₄	DI 2 ₃	DI 2 ₂	DI 2 ₁
	9	-	-	-	-	-	-	-	-
Outputs	0	DO 2 ₇	DO 2 ₆	DO 2 ₅	DO 2 ₄	DO 2 ₃	DO 2 ₂	DO 2 ₁	DO 2 ₀
	1	-	-	-	-	-	-	-	-