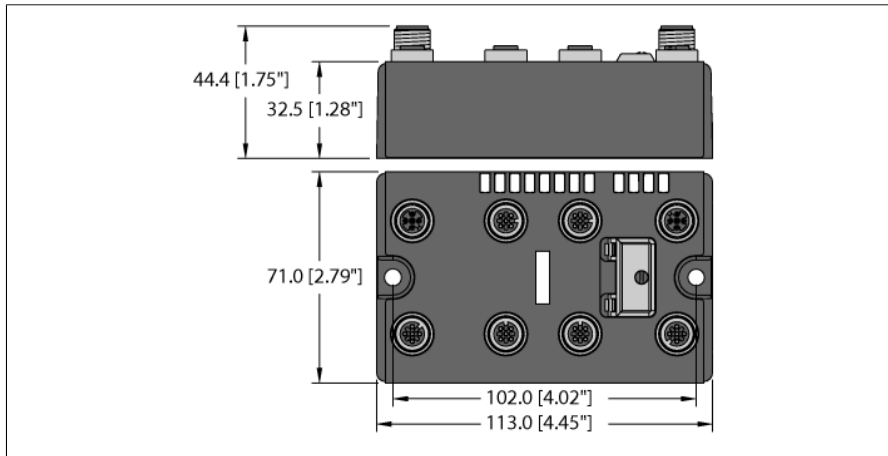


BL compact™ multiprotocol fieldbus station for Industrial Ethernet
4 Analog Inputs for Current or Voltage
BLCEN-4M12VMT-4AI-VI



- 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
- All exposed metal is stainless steel
- LEDs indicating status and diagnostics
- Electronics galvanically separated from the field level via optocouplers
- 4 analog inputs for current or voltage
- 0/4...20 mA or -10/0...+10 VDC (selectable per channel)
- FLC/ARGEE programmable

Type designation	BLCEN-4M12VMT-4AI-VI
Ident-No.	6811486
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	11486
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. 6 register
Input register start address	0 (0x0000 hex)
EtherNet/IP™	
Addressing	acc. to EtherNet/IP™ specification
Device Level Ring (DLR)	supported
Class 1 connections	6
Input Data Size	7 INT
Output Data Size	1 INT
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. 8 BYTE

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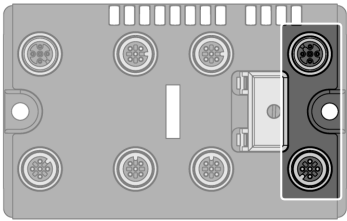
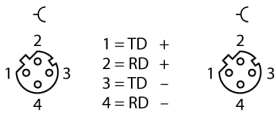
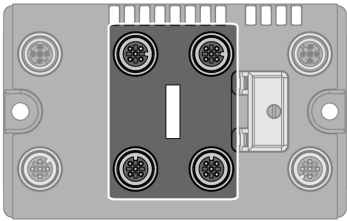
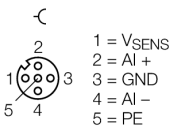
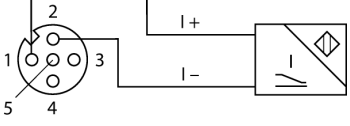
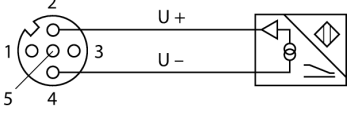
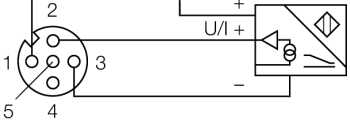
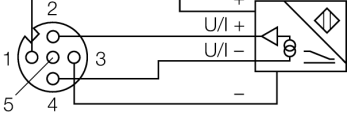
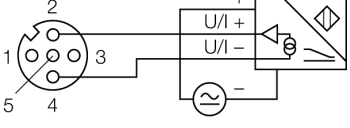
Analog inputs	from 4AI-VI
Operating modes	0/4 ... 20 mA or -10/0 ... 10 VDC
Resolution	16 bit
Repeatability	< 0.05 %
Temperature coefficient	< 300 ppm / °C of full scale

Vibration test	according to IEC 61131-2
Extended vibration resistance - 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

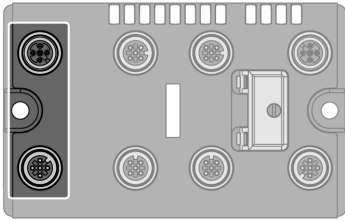
Dimensions (W x L x H)	71 x 113 x 32.5mm
Operating temperature	-40...+70 °C
Storage temperature	-40...+85 °C
Relative humidity	15 to 95% (non-condensing)
Protection class	IP67 IP69K
MTTF	122 years acc. to SN 29500 (Ed. 99) 20 °C
Housing material	Glass-filled nylon, 316L stainless steel connectors
Housing color	Black
Window material	Lexan
Material screw	303 stainless steel
Material label	Polyester with polycarbonate overlay
Ground label material	304 Stainless Steel
Weight	390 ± 20 g
Mounting	2 × 5.4 mm diameter holes, 1.7 Nm torque

BL compact™ multiprotocol fieldbus station for Industrial Ethernet
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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-code)</p> 
	<p>Analog Inputs 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</p>	<p>Pin Assignment</p>  <p>2-wire Technology (Current)</p>  <p>2-wire Technology (Voltage)</p>  <p>3-wire Technology</p>  <p>4-wire Technology</p>  <p>4-wire Technology (External Power)</p> 

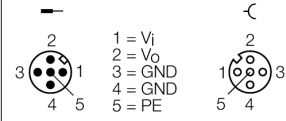
BL compact™ multiprotocol fieldbus station for Industrial Ethernet
4 Analog Inputs for Current or Voltage
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Auxiliary Power

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

Pin Assignment



BL compact™ multiprotocol fieldbus station for Industrial Ethernet
4 Analog Inputs for Current or Voltage
BLCEN-4M12VMT-4AI-VI**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
AI channel 0...3		OFF	Not active
	GREEN	ON	Active
	GREEN	FLASHING (0.5 Hz)	Underflow in measuring range
	GREEN	FLASHING (4 Hz)	Overflow in measuring range

* D LED also indicates gateway diagnostics

BL compact™ multiprotocol fieldbus station for Industrial Ethernet
4 Analog Inputs for Current or Voltage
BLCEN-4M12VMT-4AI-VI

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							
Diagnostics	8	Module number reporting diagnostic data							
	9	Replace Station	-	Diagnostics Active	-	-	-	-	-
Slot 1 (ref. Byte 8)	10	-	-	-	-	-	-	Open Circuit AI 1 ₀	Range Error AI 1 ₀
	11	-	-	-	-	-	-	Open Circuit AI 1 ₁	Range Error AI 1 ₁
	12	-	-	-	-	-	-	Open Circuit AI 1 ₂	Range Error AI 1 ₂
	13	-	-	-	-	-	-	Open Circuit AI 1 ₃	Range Error AI 1 ₃

Legend:

AI	Analog Input	MR	Measurement Value Range Error
CFG	Configuration Error	OC	Open Circuit
COM	Communication Failure	S1	Slot 1
DIA	Diagnostics Active	VI low	VI Voltage
FCE	Force Mode Active	VO low	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
Inputs (RO)	0x0000	AI 1 ₀															
	0x0001	AI 1 ₁															
	0x0002	AI 1 ₂															
	0x0003	AI 1 ₃															
Status (RO)	0x0004	-	FCE	-	-	CFG	COM	VI low	-	VO low	-	-	-	-	-	-	DIA
Diag. (RO)	0x0005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S1 DIA
I/O Diag. (RO)	0xA000	-	-	-	-	-	-	OCAI 1 ₁	MRAI 1 ₁	-	-	-	-	-	-	OCAI 1 ₀	MRAI 1 ₀
	0xA001	-	-	-	-	-	-	OCAI 1 ₃	MRAI 1 ₃	-	-	-	-	-	-	OCAI 1 ₂	MRAI 1 ₂

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								