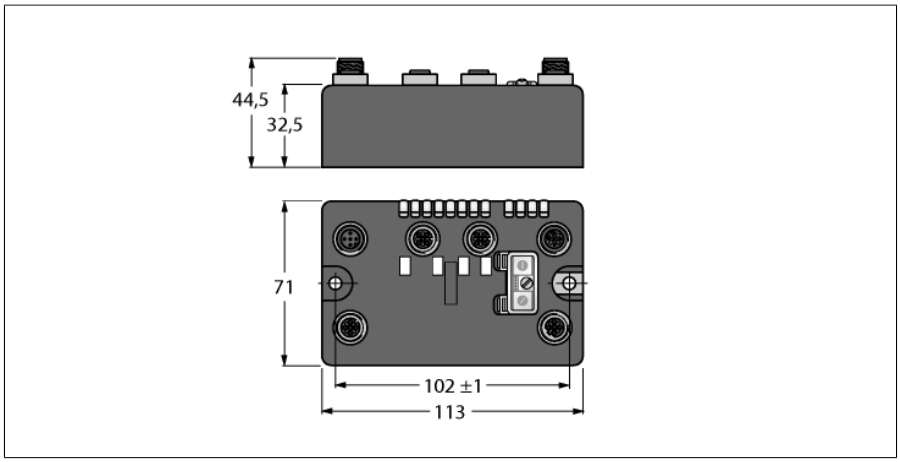
BL compact Multiprotocol Station for Industrial Ethernet Interface for Connection of 2 BL ident® Read/Write Heads (HF/UHF)
BLCEN-2M12MT-2RFID-S



Type	BLCEN-2M12MT-2RFID-S
ID	6811450
Nominal system voltage	24 VDC
System power supply	Via auxiliary power
Voltage supply connection	2 x M12, 5-pin
Admissible range Vi	18…30 VDC
Nominal current Vi	150 mA
Max. current Vi	1 A
Fieldbus transmission rate	10/100 Mbps
Adjustment transmission rate	Automatic detection
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 dec. Rotary coding switches
Fieldbus connection technology	2 × M12
	4-pin, D-coded
Protocol detection	automatic
Web server	Integrated
Service interface	Ethernet
Vendor ID	48
Product type	12
Product code	11450

- On-Machine™ compact fieldbus I/O blocks
- EtherNet/IP™, Modbus® TCP or PROFINET slave
- Integrated Ethernet switch
- 10 Mbps/100 Mbps supported
- Two 4-pin, D-coded M12 connectors for fieldbus connection
- 2 rotary coding switches for node-address
- IP 69K
- M12 I/O ports
- LEDs indicating status and diagnostics
- Electronics galvanically isolated from the field level via optocouplers
- Simple RFID interface
- Connection of 2 BL ident read/write heads
- Max. cable length 50 m

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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. 14 register
Input register start address	0 (0x0000 hex)
Output Data Size	max. 12 register
Output register start address	2048 (0x0800 hex)

Ethernet/IP	
Addressing	acc. to EtherNet/IP specification
Device Level Ring (DLR)	supported
Class 1 connections (CIP)	6
Input Assembly Instance	103
Input Data Size	15 INT
Output Assembly Instance	104
Output Data Size	12 INT
Configuration Assembly Instance	106
Configuration Size	0
Comm Format	Data - 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. 24 BYTE
Output Data Size	max. 24 BYTE

Technology	
Signal type	Simple RFID interface
Number of channels	2
Sensor supply	0.5 A per channel, short-circuit proof
Simultaneity factor	1
Transmission rate	115.2 kbps
Cable length	50 m
Electrical isolation	Electronics and field level isolated via optocouplers

Dimensions	113 x 71 x 32.5 mm
Mounting	2 × 5.4 mm diameter holes, 1.7 Nm torque
Weight	360 ± 20 g
Housing material	Glass fiber reinforced nylon, nickel-plated connector
Housing color	Black
Material screw	Nickel-plated brass
Material label	Polyester with polycarbonate overlay
Ground label material	Nickel-plated brass
Protection class	IP67 IP69K
Ambient temperature	-40…+70 °C
Storage temperature	-40…+85 °C
Relative humidity	15…95 %, non-condensing
Vibration test	Acc. to IEC 61131-2
- up to 20 g (at 10 up to 150 Hz)	For mounting on base plate or machinery
Shock test	acc. to IEC 61131-2
Electromagnetic compatibility	Acc. to IEC 61131-2
MTTF	148 years
MTTF note	acc. to SN 29500 (Ed. 99) 20 °C
Approvals and certificates	CE, cULus, Class I Div.2

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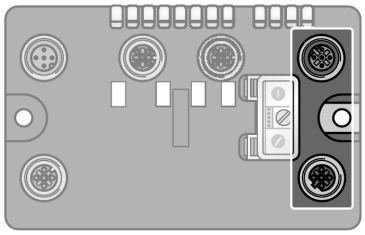
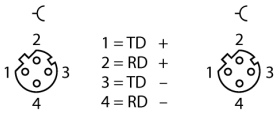
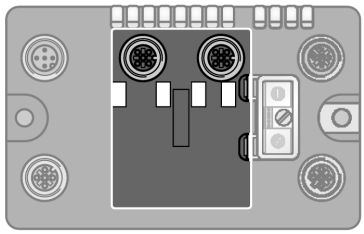
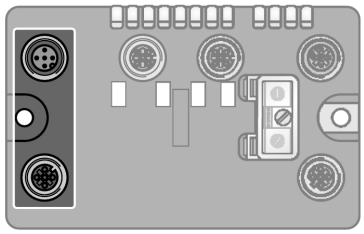
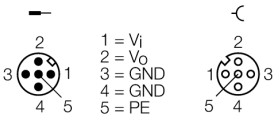
	**Ethernet** Fieldbus cable (IP67 example): RSSD RSSD 441-2M ID number U-02482 or RSSD-RSSD-441-2M/S2174 ID number 6914218	Pin assignment (M12, D-coded) 
	**RFID Channels** Extension cable (example): RK 4.5T-2-RS 4.5T/S2501 ident-no. U3-01243 or RK4.5T-2-RS4.5T/S2500 ident-no. 6699200	…/S2500 Connectors  …/S2501 Connectors 
	**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 

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Status: Station LED

LED	Color	Status	Description
IOs		OFF	Power off
	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
BUS		OFF	Power Off
	GREEN	ON	Connected to Master
	GREEN	FLASHING	Ready
	RED	ON	Error
	RED	FLASHING	WINK
	YELLOW	ON	DHCP/BOOTP Search
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

LED	Color	Status	Description
D *		OFF	Diagnostic disabled
	RED	ON	Station / module bus communication failure
	RED	FLASHING (0.5Hz)	Summarized diagnostic
RW0 / RW1		OFF	No tag, diagnostic disabled
	GREEN	ON	Tag available
	GREEN	FLASHING (2 Hz)	Data exchange with tag enabled
	RED	ON	Read/write head fault
	RED	FLASHING (2 Hz)	Short-circuit in the supply line of read/write head

* D LED also indicates gateway diagnostic

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Process Data Mapping of the Single Protocols

EtherNet/IP™ I/O and Diagnostic Data Mapping

INPUT	BYTE	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
RFID 1_0	0	Done	Busy	Fehler	Trans. Conn.	Trans. On	TP	TFR	-
	1	Error Cat. (Category Code)							
	2	Error Desc. (Description Code)							
	3	-	-	-	-	-	-	-	-
	4…11	Read Data (8 Byte)							
RFID 1_1	12	Done	Busy	Fehler	Trans. Conn.	Trans. On	TP	TFR	-
	13	Error Cat. (Category Code)							
	14	Error Desc. (Description Code)							
	15	-	-	-	-	-	-	-	-
	16…23	Read Data (8 Byte)							
Diagnose	24	Modulnummer meldet Diagnose Daten							
	25	Austauschstation	-	Diagnose aktiv	-	-	-	-	-
Steckplatz 1 (ref. Byte 24)	26	-	-	-	-	-	RFID 1_0 Trans. PS Off	-	-
	27	-	-	-	-	RFID 1_0 Trans. PS Error	-	-	RFID 1_0 Trans. Hardware-Fehler
	28	-	-	-	-	-	RFID 1_1 Trans. PS Off	-	-
	29	-	-	-	-	RFID 1_1 Trans. PS Error	-	-	RFID 1_1 Trans. Hardware-Fehler
OUTPUT	**BYTE**	**Bit 7**	**Bit 6**	**Bit 5**	**Bit 4**	**Bit 3**	**Bit 2**	**Bit 1**	**Bit 0**
RFID 1_0	0	Transceiver	Next	TAG ID	lesen	Write	TAG Info	Trans. Info.	Reset
	1	-	-	-	-	-	Byte Count 2	Byte Count 1	Byte Count 0
	2	Address High Byte (MSB)							
	3	Address Low Byte (LSB)							
	4…11	Write Data (8 Byte)							
RFID 1_1	12	Transceiver	Next	TAG ID	lesen	Write	TAG Info	Trans. Info.	Reset
	13	-	-	-	-	-	Byte Count 2	Byte Count 1	Byte Count 0
	14	Address High Byte (MSB)							
	15	Address Low Byte (LSB)							
	16…23	Write Data (8 Byte)							

Legend:

Done	Channel ready to receive command	Tag_ID	Switch on to read UID (HF)
Busy	Channel is processing command	Read	Read data
Error	An error has occurred in the channel	Write	Write data
Trans_Conn	Read/write head connected	Tag_Info	Switch on to read information about tag in field
Trans_On	Read/write head switched on	Trans_Info	Switch on to read information about transceiver
TP	Tag available	Reset	Reset commands currently being executed or in the queue
TFR	Data carrier fully read	ByteCount	3 bits represent the number of bytes to be read or written
Error_Cat Error_Desc	Error category and description	Domain	2 bits represent the memory domain (UHF) used
Read Data Bytes	Data read from data carrier	Address	Start the address in the domain for reading/writing
Transceiver	Switches the read/write head on and off	Write Data Byte	Write data to carrier
Next	Start the address in the domain for reading/writing		

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
Eingänge (RO)	0x0000	Error Cat. (Category Code)								Done	Busy	Fehler	Trans. Conn.	Trans. On	TP	TFR	-
	0x0001	-	-	-	-	-	-	-	-	Error Desc. (Description Code)							
	0x0002 … 0x0005	Read Data (4 Words)															

	0x0006	Error Cat. (Category Code)								Done	Busy	Fehler	Trans. Conn.	Trans. On	TP	TFR	-	
	0x0007	-	-	-	-	-	-	-	-	Error Desc. (Description Code)								
	0x0008 … 0x000B	Read Data (4 Words)																
Status (RO)	0x000C	-	FCE	-	-	CFG	COM	VI low	-	VO low	-	-	-	-	-	-	DIA	
Diag. (RO)	0x000D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S1 DIA	
Ausgänge (RW)	0x0800	-	-	-	-	-	Byte CNT 2	Byte CNT 1	Byte CNT 0	Trans.	Next	TAG ID	lesen	Write	TAG In-fo	Trans. Info.	Reset	
	0x0801	Address																
	0x0802 … 0x0805	Write Data (4 Words)																
	0x0806	-	-	-	-	-	Byte CNT 2	Byte CNT 1	Byte CNT 0	Trans.	Next	TAG ID	lesen	Write	TAG In-fo	Trans. Info.	Reset	
	0x0807	Address																
	0x0808 … 0x080B	Write Data (4 Words)																
I/O Diag (RO)	0xA000	-	-	-	-	PS RFID 1_0	-	-	HW RFID 1_0	-	-	-	-	-	SCO RFID 1_0	-	-	
	0xA001	-	-	-	-	PS RFID 1_1	-	-	HW RFID 1_1	-	-	-	-	-	SCO RFID 1_1	-	-	

PROFINET® Process Data

	BYTE	**Bit 7**	**Bit 6**	**Bit 5**	**Bit 4**	**Bit 3**	**Bit 2**	**Bit 1**	**Bit 0**
Eingänge	0	RFID 1_0 Done	RFID 1_0 Busy	RFID 1_0 Fehler	RFID 1_0 Trans. Conn.	RFID 1_0 Trans. On	RFID 1_0 TP	RFID 1_0 TFR	-
	1	RFID 1_0 Error Cat. (Category Code)							
	2	RFID 1_0 Error Desc. (Description Code)							
	3	-	-	-	-	-	-	-	-
	4…11	RFID 1_0 Read Data (8 Byte)							
	12	RFID 1_1 Done	RFID 1_1 Busy	RFID 1_1 Fehler	RFID 1_1 Trans. Conn.	RFID 1_1 Trans. On	RFID 1_1 TP	RFID 1_1 TFR	-
	13	RFID 1_1 Error Cat. (Category Code)							
	14	RFID 1_1 Error Desc. (Description Code)							
	15	-	-	-	-	-	-	-	-
	16…23	RFID 1_1 Read Data (8 Byte)							
Ausgänge	0	RFID 1_0 Transceiver	RFID 1_0 Next	RFID 1_0 TAG ID	RFID 1_0 lesen	RFID 1_0 Write	RFID 1_0 TAG Info	RFID 1_0 Trans. Info.	RFID 1_0 Reset
	1	-	-	-	-	-	RFID 1_0 Byte Count 2	RFID 1_0 Byte Count 1	RFID 1_0 Byte Count 0
	2	RFID 1_0 Address High Byte (MSB)							
	3	RFID 1_0 Address Low Byte (LSB)							
	4…11	RFID 1_0 Write Data (8 Byte)							
	12	RFID 1_1 Transceiver	RFID 1_1 Next	RFID 1_1 TAG ID	RFID 1_1 lesen	RFID 1_1 Write	RFID 1_1 TAG Info	RFID 1_1 Trans. Info.	RFID 1_1 Reset
	13	-	-	-	-	-	RFID 1_1 Byte Count 2	RFID 1_1 Byte Count 1	RFID 1_1 Byte Count 0
	14	RFID 1_1 Address High Byte (MSB)							
	15	RFID 1_1 Address Low Byte (LSB)							
	16…23	RFID 1_1 Write Data (8 Byte)							

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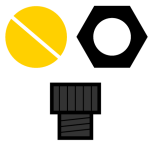
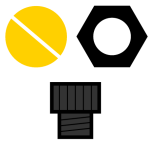
Accessories

Type code	Ident no.		Dimension drawing
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	

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