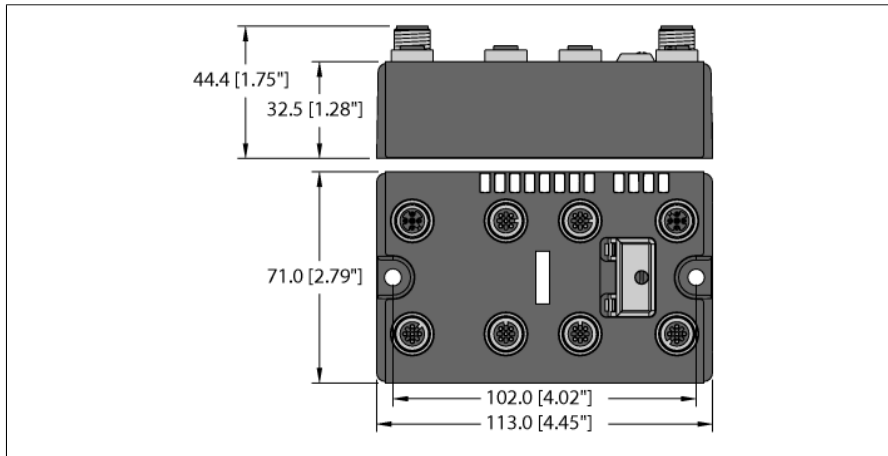


BL compact™ Fieldbus Station for EtherCAT™
4 IO-Link Channels
BLCEC-4M12MT-4IOL



- On-machine Compact fieldbus I/O block
- EtherCAT™ slave
- Integrated Ethernet Switch
- Two 4-pole M12, D-coded, connectors for fieldbus connection
- Auto and Fixed addressing
- IP67, IP69K
- M12 I/O connectors
- LEDs indicating status and diagnostics
- Electronics galvanically separated from the field level via optocouplers

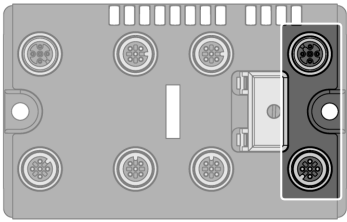
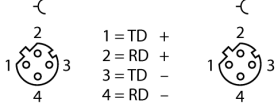
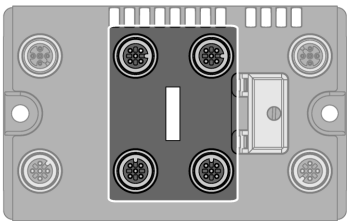
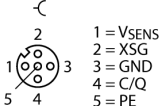
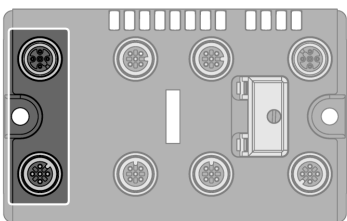
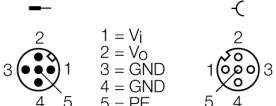
Type designation	BLCEC-4M12MT-4IOL
Ident-No.	6811635
Nominal current Vi	40 mA
Nominal current Vo	80 mA
Fieldbus transmission rate	100 Mbps
Fieldbus address range	0x00 (automatic assignment) 0x01...0xFF (fixed assignment)
Fieldbus addressing	2 hexadecimally coded rotary switches
Fieldbus connection technology	2 × M12 4-pole, D-coded
Service interface	Ethernet
Digital inputs	from 4IOL
Input type	PNP
Low level signal voltage	< 5 V
High level signal voltage	> 11 V
Low level signal current	< 1.5 mA DI / < 5 mA SIO
High level signal current	2.1 ... 3.7 mA DI / 5 ... 11 mA SIO
Digital outputs	from 4IOL
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
Technology	
Signal type	IO-Link
Electrical isolation	isolation of electronics and field level via optocouplers

BL compact™ Fieldbus Station for EtherCAT™
4 IO-Link Channels
BLCEC-4M12MT-4IOL

Dimensions	113 x 71 x 32.5 mm
Mounting	2 × 5.4 mm diameter holes, 1.7 Nm torque
Weight	390 ± 20 g
Housing material	Glass-filled nylon, nickel plated brass connectors
Housing color	Black
Window material	Lexan
Material screw	Nickel-plated brass
Material label	Polyester with polycarbonate overlay
Ground label material	Nickel plated brass
Protection class	IP67 IP69K
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 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
MTTF	110 years
MTTF note	acc. to SN 29500 (Ed. 99) 20 °C
Approvals and certificates	CE, cULus

BL compact™ Fieldbus Station for EtherCAT™
4 IO-Link Channels
BLCEC-4M12MT-4IOL

Pinning and wiring diagram

	<p>EtherCAT® 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>I/O Channels 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>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> 

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
LNK/ACT		OFF	Port Closed, No Link, No Activity
	GREEN	ON	Port Open, Link Established, No Activity
	GREEN	FLICKERING	Port Open, Link Established, Activity Present
RUN		OFF	Device is in state INIT
	GREEN	BLINKING	Device is in state PRE-OPERATIONAL
	GREEN	SINGLE FLASH	Device is in state SAFE-OPERATIONAL
	GREEN	ON	Device is in state OPERATIONAL
	GREEN	FLICKERING	Device is in state BOOTSTRAP
ERR	RED	ON	Application controller not responding
	RED	DOUBLE FLASH	Sync Manager Watchdog timeout
	RED	SINGLE FLASH	State changes from Op to SafeOpError (synchronization error)
	RED	BLINKING	State change not possible (invalid register/object settings/hardware config.)
	RED	OFF	No EtherCAT comm errors

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
IO-Link Mode channels 1 ₀ ...1 ₃		OFF	Channel Status x = "0" (OFF), no diagnostics active
	GREEN	Flashing	IO-Link communication, Process data valid
	RED	ON	No IO-Link communication
		Flashing	Process Data Invalid
DI Mode 1 ₀ ...1 ₃		OFF	Channel Status x = "0" (OFF)
	GREEN	ON	Channel Status x = "1" (ON)
XSG 1 ₀ ...1 ₇		OFF	Channel Status x = "0" (OFF)
	GREEN	ON	Channel Status x = "1" (ON)

* D LED also indicates gateway diagnostics

BL compact™ Fieldbus Station for EtherCAT™
4 IO-Link Channels
BLCEC-4M12MT-4IOL**I/O Data Map**

INPUT	BYTE	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Digital	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	OCDO 1 ₇	OCDO 1 ₆	OCDO 1 ₅	OCDO 1 ₄	OCDO 1 ₃	OCDO 1 ₂	OCDO 1 ₁	OCDO 1 ₀
IOL Data	2...15	IO-Link Read Data (depends on parameter settings)							
OUTPUT	BYTE	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Digital	0	-	-	-	-	DO 1 ₃	DO 1 ₂	DO 1 ₁	DO 1 ₀
	1	-	-	-	-	-	-	-	-
IOL Data	2...15	IO-Link Write Data (depends on parameter settings)							