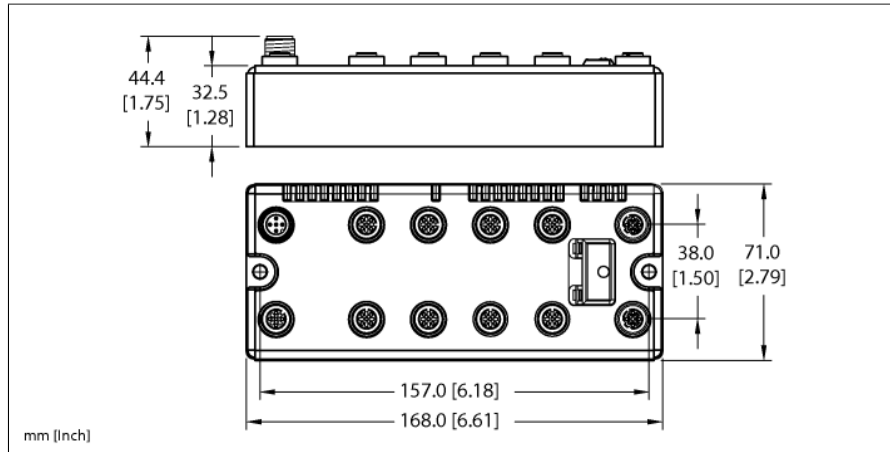


BL compact™ multiprotocol fieldbus station for Industrial Ethernet

16 Digital PNP Inputs

BLCEN-8M12LT-8DI-P-8DI-P



| | |
|--------------------------------|--|
| ID | 6811506 |
| Nominal system voltage | 24 VDC |
| System power supply | Via auxiliary power |
| Voltage supply connection | 2 x M12, 5-pin |
| Admissible range Vi | 11...30 VDC |
| Nominal current Vi | 205 mA |
| Max. current Vi | 2 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 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 | 48 |
| Product type | 12 |
| Product code | 11506 |
| 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) |

- 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 digital PNP inputs, 24 VDC

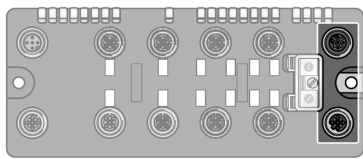
| Ethernet/IP | |
|---------------------------------|-----------------------------------|
| Addressing | acc. to EtherNet/IP specification |
| Device Level Ring (DLR) | supported |
| Class 1 connections (CIP) | 6 |
| Input Assembly Instance | 103 |
| Input Data Size | 1 INT |
| Output Assembly Instance | 104 |
| Output Data Size | 1 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. 2 BYTE |

| Digital inputs | |
|-------------------------------------|-------------------|
| Input type | PNP |
| Type of input diagnostics | Group diagnostics |
| Sensor supply (V_{SENS}) | 24 VDC |
| 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 | 0.25 ms |

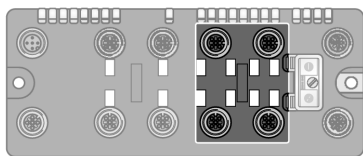
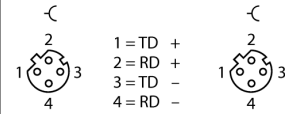
| | |
|-----------------------------------|--|
| Dimensions | 168 x 71 x 32.5 mm |
| Mounting | 2 × 5.4 mm diameter holes, 1.7 Nm torque |
| Weight | 620 ± 20 g |
| Housing material | Glass-filled nylon, nickel plated brass connectors |
| Housing color | Black |
| Material screw | Nickel-plated brass |
| 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 to 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 | according to IEC 61131-2 |
| Electromagnetic compatibility | Acc. to IEC 61131-2 |
| Approvals and certificates | CE, cULus |

Pinning and wiring diagram



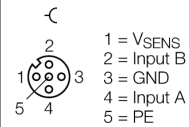
Fieldbus cable (IP67 example): RSSD RSSD 441-2M ID number U-02482 or RSSD-RSSD-441-2M/S2174 ID number 6914218

Pin Assignment (M12, D-code)

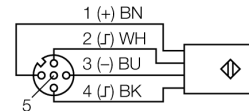


Extension cable (example): RK 4.4T-2-RS 4.4T ident-no. U2445 or RKC4.4T-2-RSC4.4T/TEL ident-no. 6625208

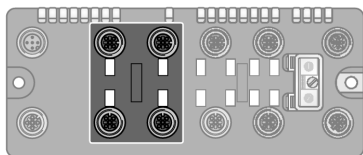
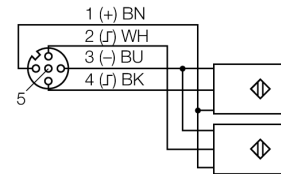
Pin Assignment



Wiring Diagram for Dual Input Sensor

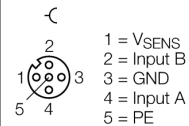


Wiring Diagram for 2 Sensors

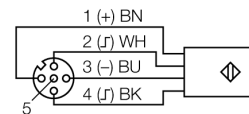


Extension cable (example): RK 4.4T-2-RS 4.4T ident-no. U2445 or RKC4.4T-2-RSC4.4T/TEL ident-no. 6625208

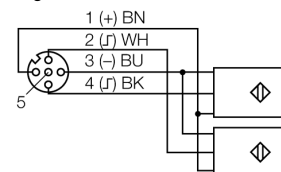
Pin Assignment

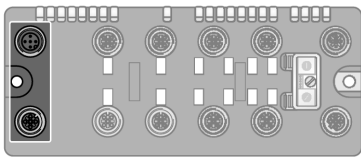


Wiring Diagram for Dual Input Sensor



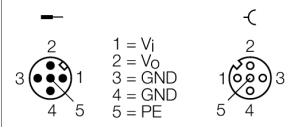
Wiring Diagram for 2 Sensors





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



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 |

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 | DI 2 ₇ | DI 2 ₆ | DI 2 ₅ | DI 2 ₄ | DI 2 ₃ | DI 2 ₂ | DI 2 ₁ | DI 2 ₀ |

* The scheduled diagnostic information changes every 125 ms between Slot 1 and Slot 2, if both slots send active diagnostics.

Legend:

| | | | |
|-----|-------------------------------|----|-----------------------------|
| AI | Analog Input | OC | Open Circuit |
| CFG | Configuration Error | S1 | Slot 1 |
| COM | Communication Failure | S2 | Slot 2 |
| DIA | Diagnostics Active | SC | Short Circuit / Overcurrent |
| FCE | Force Mode Active | VI | VI Voltage |
| MR | Measurement Value Range Error | VO | 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 | DI 2 ₇ | DI 2 ₆ | DI 2 ₅ | DI 2 ₄ | DI 2 ₃ | DI 2 ₂ | DI 2 ₁ | DI 2 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 |
| Status (RO) | 0x0001 | - | FCE | - | - | CFG | COM | VI low | - | VO low | - | - | - | - | - | - | DIA |
| Diag. (RO) | 0x0002 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | S2 DIA | S1 DIA |

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 | DI 2 ₇ | DI 2 ₆ | DI 2 ₅ | DI 2 ₄ | DI 2 ₃ | DI 2 ₂ | DI 2 ₁ | DI 2 ₀ |