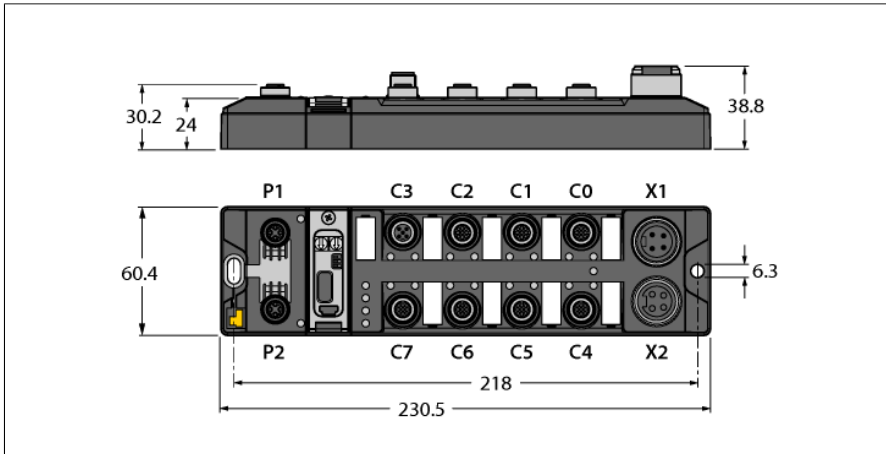


Compact PLC in IP67

CODESYS V3 - with WebVisu License

TBEN-L4-PLC-11



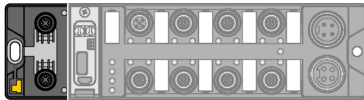
| | |
|--------------------------------|---|
| Type | TBEN-L4-PLC-11 |
| ID | 100000273 |
| Supply | |
| Supply voltage | 24 VDC |
| Admissible range | 18...30 VDC Total current max. 9 A per voltage group Total current V1 + V2 max. 11 A |
| Voltage supply connection | 4-pin male 7/8" connector X1 |
| Operating current | < 280 mA |
| Sensor/actuator supply | Supply ports C0-C3 from V1 short-circuit proof, C0 + C1: 2 A per port, C2 + C3: 4 A for both ports |
| Sensor/actuator supply | Short-circuit proof supply of ports C4-C7 from V2, 2 A per port |
| Electrical isolation | galvanic isolation of the voltage groups V1 and V2, voltages up to 500 VAC |
| Power dissipation, typical | ≤ 5 W |
| Controller | |
| Processor | ARM Cortex A8, 32 Bit, 800 MHz |
| Program memory and data memory | 20 MB |
| Remanent memory | 64 kB |
| Add-on memory | 1 x USB host port |
| Real time clock | yes |
| Operating system | Linux |
| PLC data | |
| Programming | CODESYS V3 |
| Released for CODESYS version | V 3.5.14.2 |
| Programming languages | IEC 61131-3 (IL, LD, FBD, SFC, ST) |
| Application tasks | 10 |
| Number of POU's | 1024 |
| Programming interface | Ethernet, USB |
| Cycle time | < 1 ms for 1000 AWL commands (without I/O cycle) |
| Input data | 8 kByte |
| Output data | 8 kByte |

- CODESYS PLC Runtime
- CODESYS WebVisu License
- CODESYS OPC-UA Server
- IoT gateway for Turck Cloud
- PROFINET Controller/Device
- EtherNet/IP Scanner/Device
- Modbus TCP Master/Slave
- Modbus RTU Master/Slave
- CANopen Manager/Device
- SAE J1939 manager
- Serial RS232/RS485 interfaces
- Ethernet 2 × M12, 4-pin, D-coded
- Switched or Dual-MAC-Mode
- 10 Mbps/100 Mbps
- Glass fiber reinforced housing
- Shock and vibration tested
- Fully potted module electronics
- Protection classes IP65, IP67, IP69K
- ATEX Zone 2/22
- Eight universal digital I/O channels
- Sensor supply max. 2 A per port
- Input diagnostics per port
- Max. 2 A per output
- Output diagnostics per channel

| System data | |
|--------------------------------|---|
| Transmission rate Ethernet | 10/100 Mbps |
| Connection technology Ethernet | 2 x M12, 4-pin, D-coded |
| Web server | default: 192.168.1.254 |
| Service interface | Ethernet via P1 or P2, Mini USB port |
| Serial interface | |
| Signal type | RS232 or RS485 |
| Number of channels | 2 |
| Operating mode RS232 | |
| Signal low level | -18 to -3 VDC |
| Signal high level | 3 to 18 VDC |
| Transmission signals | T×D, R×D |
| Transmission rate | 9600 to 230400 bps |
| Transmission type | Full duplex |
| Cable length | 15 m at 19200 Bd (max. line capacitance < 2000 pF) |
| Operating mode RS485 | |
| Transmission signals | TX/RX+, TX/RX- |
| Transmission rate | 9600 to 230400 bps |
| Transmission type | 2-wire half duplex |
| Terminating resistor | Internal or external |
| Biasing | Internal or external |
| Line impedance | 120 Ω |
| Digital inputs | |
| Number of channels | 8 |
| Connectivity inputs | M12, 5-pin |
| Input type | PNP |
| Type of input diagnostics | Channel diagnostics |
| Switching threshold | EN 61131-2 Typ 3, PNP |
| Low level signal voltage | < 5 V |
| High level signal voltage | > 11 V |
| Low level signal current | < 1.5 mA |
| High level signal current | > 2 mA |
| Sensor supply | 2 A, short-circuit proof, from V2 |
| Electrical isolation | Galvanically isolated to the fieldbus Voltage proof up 500 VDC |
| Digital outputs | |
| Number of channels | 8 |
| Connectivity outputs | M12, 5-pin |
| Output type | PNP |
| Type of output diagnostics | Channel diagnostics |
| Output voltage | 24 VDC from V2 |
| Output current per channel | 2.0 A, short-circuit proof, max. 4.0 A per port |
| Simultaneity factor | 0.56 |
| Load type | EN 60947-5-1: DC-13 |
| Short-circuit protection | yes |
| Actuator power supply | 2 A, short-circuit proof, from V2 |
| Electrical isolation | Galvanically isolated to the fieldbus Voltage proof up 500 VDC |

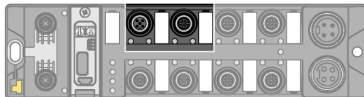
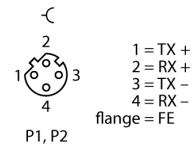
| Standard/Directive conformity | |
|-------------------------------|---|
| Vibration test | Acc. to EN 60068-2-6 Acceleration up to 20 g |
| Shock test | acc. to EN 60068-2-27 |
| Drop and topple | acc. to EN 60068-2-31/IEC 60068-2-32 |
| Electromagnetic compatibility | Acc. to EN 61131-2 |
| Approvals and certificates | CE, FCC, FM Class I, Zone 2, UV-resistant in accordance with DIN EN ISO 4892-2A (2013) |
| UL Certificate | cULus LISTED 21 W2, Encl.type 1 IND.CONT.EQ. |
| Note on ATEX/IECEx | The Quick Start Guide with information on use in Ex Zones 2 and 22 must be observed. |

| General Information | |
|-------------------------|--|
| Dimensions (W x L x H) | 60.4 x 230.4 x 39 mm |
| Ambient temperature | -40...+70 °C |
| Storage temperature | -40...+85 °C |
| Altitude | Max. 5000 m |
| Protection class | IP65 IP67 IP69K |
| MTTF | 80 years acc. to SN 29500 (Ed. 99) 20 °C |
| Housing material | PA6-GF30 |
| Housing color | Black |
| Male connector material | Nickel-plated brass |
| Window material | Lexan |
| Material screw | 303 stainless steel |
| Material label | Polycarbonate |
| Halogen-free | yes |
| Mounting | 2 mounting holes □ 6.3 mm |



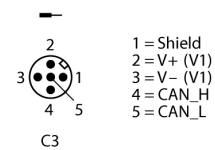
Ethernet Ports
 Ethernet cordset (example):
 RSSD RSSD 441-2M
 Ident. no. U-02482

M12 × 1 Ethernet

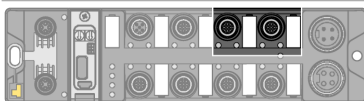
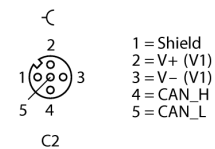


CAN Interfaces
 CAN cable (example):
 RSC-RKC5701-2M (ID 6604833)
 CAN terminating resistor (examples):
 Female connector: RKE 57-TR2 (ID U2251-5)
 Male connector: RSE 57-TR2 (ID U2251-1)

CAN IN

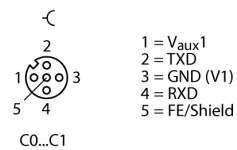


CAN OUT

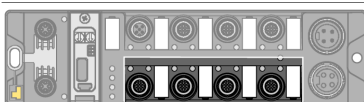
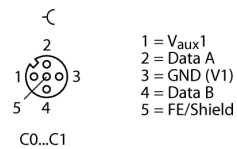


Serial Interfaces
 Serial cordset, PVC (example):
 RK 4.5T-2-RS 4.5T/S2501
 Ident. no. U3-01243

Pin Assignment in RS232 Operating Mode

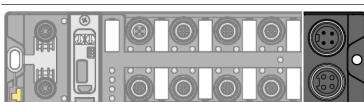
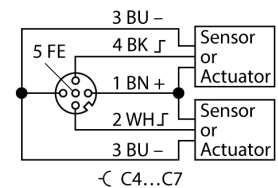


Pin Assignment in RS485 Operating Mode



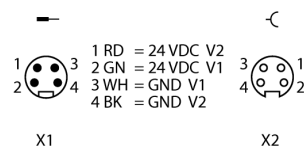
Digital Inputs and Outputs
 Actuator and sensor cordset, PVC (example):
 RK 4.4T-2-RS 4.4T
 Ident. no. U2445
 Splitter for two single-channel actuators or sensors (example):
 VBRS 4.4-2RK 4T-1/1
 Ident. no. U0117-06

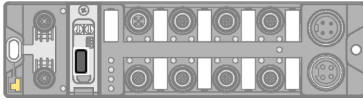
M12 × 1 I/O Port



Power Supply
 Power supply cordset (example):
 RSM RKM 40-2M
 Ident. no. U2280-0

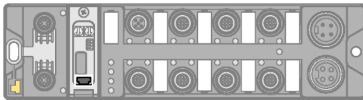
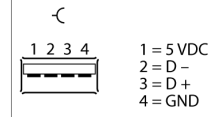
7/8" Power Supply





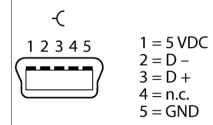
USB Host Interface
For use with USB sticks

USB 2.0 A Jack



USB Device Interface
For use as a programming interface (alternative to Ethernet)

USB 2.0 mini-B Jack



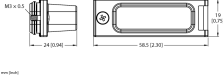
Module Status LED

| LED | Color | Status | Description |
|-----------|-------------|--|--|
| ETH1/ETH2 | Green | ON | Ethernet link (100 Mbps) |
| | | Flashing | Ethernet communication (100 Mbps) |
| | Yellow | ON | Ethernet link (10 Mbps) |
| | | Flashing | Ethernet communication (10 Mbps) |
| | | OFF | No Ethernet link |
| BUS | Green | ON | Active connection to the first configured master |
| | | Flashing | Ready |
| | Red | ON | IP-address conflict or Restore Mode or Modbus timeout |
| | | Flashing | Blink/Wink command active |
| | green / red | alternating | Autonegotiation and/or waiting for DHCP/Boot-P addressing |
| | OFF | V1 power off or below defined tolerance (18 V) | |
| ERR | Green | ON | Diagnostics disabled |
| | Red | ON | Diagnostics enabled |
| | | OFF | V1 power off or below defined tolerance (18 V) |
| RUN | Green | ON | SPS status running |
| | Red | ON | SPS status stop |
| | | Flashing | No PLC program loaded |
| | | Flashes 2x 1Hz | Factory Reset executed |
| | | OFF | V1 power off or below defined tolerance (18 V) |
| APPL | green / red | ON/OFF/Flashing | This LED is controlled user-defined from the CODESYS program |
| | White | Flashing | Blink/Wink command active |
| PWR | Green | ON | V ₁ and V ₂ power on |
| | Red | ON | V ₂ power off or below defined tolerance of 18 V |
| | | OFF | V ₁ power off or below defined tolerance of 18 V |

LED Status I/O

| LED | Color | Status | Description |
|--------------|-------------|-----------------|--|
| LED 0 | Green | ON | COM 0: TX data transmission |
| | | OFF | COM 0: no TX data transmission |
| LED 1 | Green | ON | COM 0: RX data transmission |
| | | OFF | COM 0: no RX data transmission |
| LED 2 | Green | ON | COM 1: TX data transmission |
| | | OFF | COM 1: no TX data transmission |
| LED 3 | Green | ON | COM 1: RX data transmission |
| | | OFF | COM 1: no RX data transmission |
| LED 4 ... 7 | green / red | ON/OFF/Flashing | This LED is controlled user-defined from the CODESYS program |
| LED 8 ... 15 | Green | ON | Input or output active |
| | | Red | ON |
| | | Flashing | Power overload at the corresponding port. Both port LEDs are flashing. |
| | | OFF | Input or output inactive |

Accessories

| Type code | Ident-No. | | Dimension drawing |
|------------------------------------|-----------|------------------------------------|---|
| TBXX-L-SER- VICE-WINDOW-02-5pcs | 100028429 | High PA6 service window for TBxx-L |  |