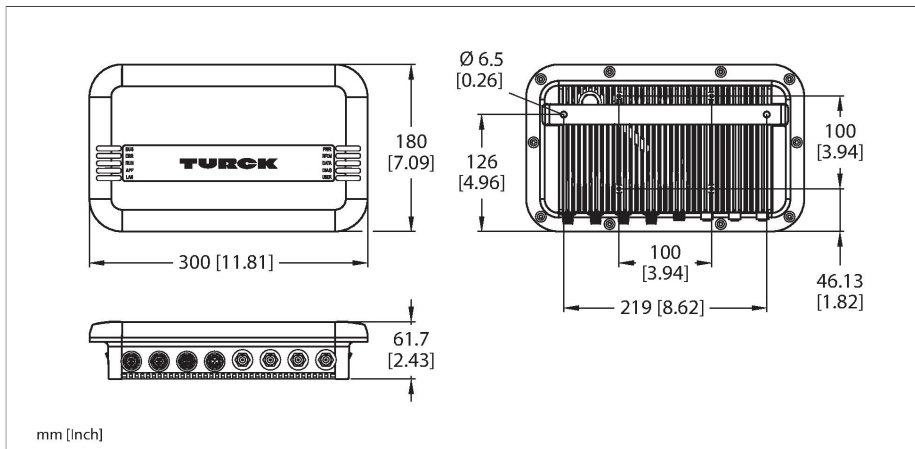


# TN-UHF-Q180L300-NA-OPC-UA

## UHF Reader



### Technical data

|                                            |                                                   |
|--------------------------------------------|---------------------------------------------------|
| Type                                       | TN-UHF-Q180L300-NA-OPC-UA                         |
| ID                                         | 100000937                                         |
| Approvals                                  | UL<br>FCC<br>IC<br>IFT                            |
| <b>Electrical data</b>                     |                                                   |
| Operating voltage $U_B$                    | 18...30 VDC                                       |
| DC rated operating current $I_a$           | $\leq 3500$ mA                                    |
| PoE standard                               | IEEE 802.3at (PoE+)                               |
| Data transfer                              | Alternating electromagnetic field                 |
| Technology                                 | UHF RFID                                          |
| Region (UHF)                               | USA, Canada, Mexico (902...928 MHz)               |
| Radio communication and protocol standards | ISO 18000-63<br>EPCglobal Gen 2                   |
| Channel spacing                            | 500 kHz                                           |
| Output power                               | Conducted power: $\leq 30$ dBm, adjustable        |
| Output function                            | Read/Write                                        |
| <b>Mechanical data</b>                     |                                                   |
| Mounting conditions                        | Non-flush                                         |
| Ambient temperature                        | -20...+50 °C                                      |
| Design                                     | Rectangular                                       |
| Dimensions                                 | 300 x 180 x 61.7 mm                               |
| Housing material                           | Aluminium, AL, Silver                             |
| Active area material                       | Glass fiber-reinforced polyamide, PA6-GF30, black |
| Vibration resistance                       | 55 Hz (1 mm)                                      |
| Shock resistance                           | 30 g (11 ms)                                      |
| Protection class                           | IP67                                              |
| Electrical connection                      | RP-TNC                                            |

### Features

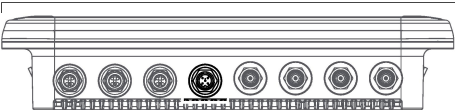
- Integrated OPC UA server standardized in accordance with AutoID Companion Specification
- Calling of data via OPC UA clients
- Universal interface offers interoperability
- Supports security mechanisms and authentication
- Resistant to UV radiation
- 4 connections for passive UHF RFID antennas
- 4 configurable digital channels as PNP inputs and/or outputs with 0.5 A per channel
- 2-W (ERP) maximum output power
- Support VDA 5050
- Device only suitable for operation in North America (NA) at 902...928 MHz (USA, Canada, Mexico)

### Functional principle

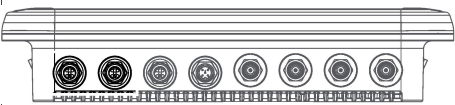
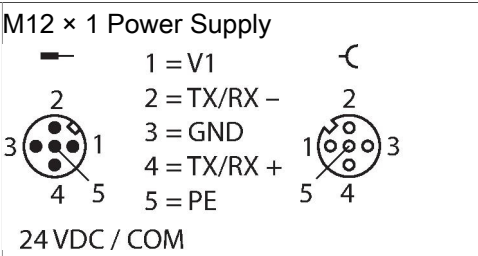
The UHF readers form a transmission zone, the size of which may vary depending on the combination of reader and tag used. The achievable distances may be different due to component tolerances, mounting location in the application, ambient conditions and the effect of materials (particularly metal). Testing of the application under real operating conditions is therefore essential, especially with on-the-fly reading and writing!

Technical data

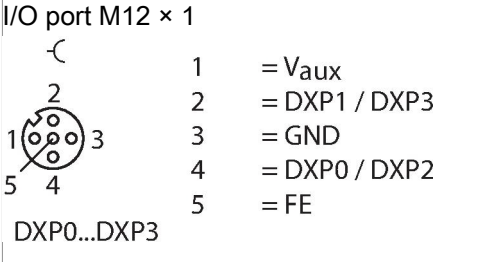
|                                |                                          |
|--------------------------------|------------------------------------------|
| Input impedance                | 50 Ohm                                   |
| MTTF                           | 49 years acc. to SN 29500 (Ed. 99) 20 °C |
| System description             |                                          |
| Network protocol               | OPC UA                                   |
| Processor                      | ARM Cortex A8, 32 Bit, 800 MHz           |
| Memory                         | MB Flash                                 |
| RAM memory                     | 512 MB DDR3                              |
| System data                    |                                          |
| Transmission rate Ethernet     | 10/100 Mbps                              |
| Connection technology Ethernet | 1 x M12, 4-pin, D-coded                  |
| Digital inputs                 |                                          |
| Number of channels             | 4                                        |
| Connectivity inputs            | M12, 5-pin                               |
| Input type                     | PNP                                      |
| Switching threshold            | EN 61131-2 type 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                                   |
| Type of input diagnostics      | Channel diagnostics                      |
| Digital outputs                |                                          |
| Number of channels             | 4                                        |
| Connectivity outputs           | M12, 5-pin                               |
| Output type                    | PNP                                      |
| Type of output diagnostics     | Channel diagnostics                      |
| General Information            |                                          |
| Packaging unit                 | 1                                        |

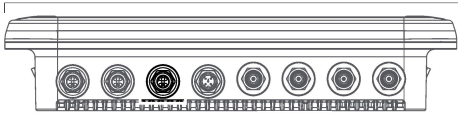


Note  
Power cable:  
UX18415 RKC 4.4T-0.5-RSM 40/S3520  
UX18416 RKC 4.4T-2-RSM 40/S3520  
UX14184 RKC 4.4T-3-RSM 40/S3520  
UX14185 RKC 4.4T-5-RSM 40/S3520



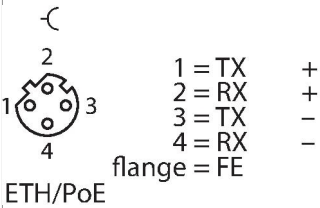
Note  
Actuator and sensor cable/PUR  
connection cable (example):  
RKC4.4T-2-RSC4.4T/TXL  
ID no. 6625608  
Y-piece for DXPs  
VBS2-FSM4.4-2FKM4  
ID no. 6930560





Note  
Ethernet cable (example):  
RSSD-RJ45S-4416-5M  
Ident. no. 6441633

M12 × 1 Ethernet

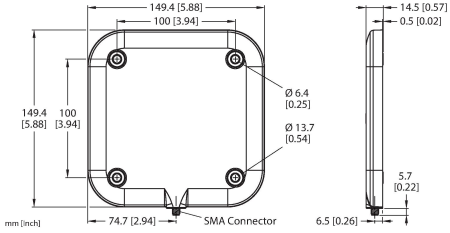
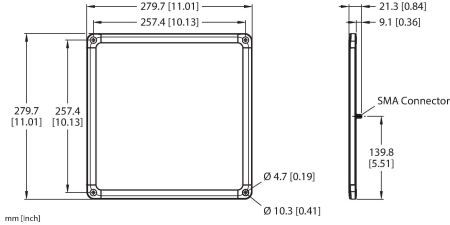
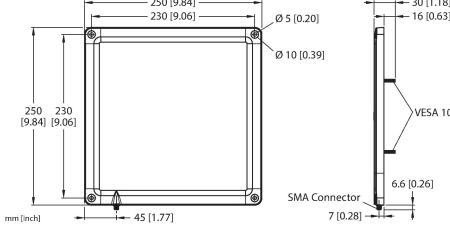
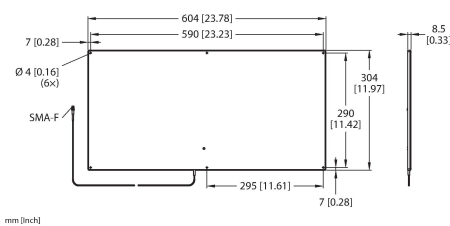
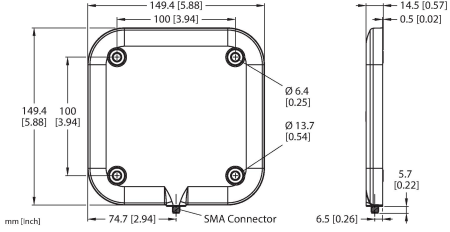
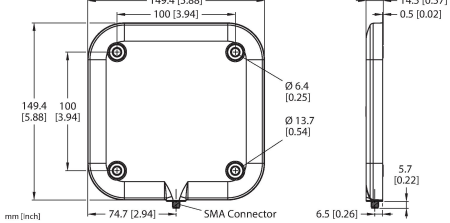


Accessories

| Dimension drawing | Type                          | ID        |                                                                                                                                                               |
|-------------------|-------------------------------|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                   | TN-UHF-CBL-HF240-RPTNC-1-SMA  | 100028191 | HF240 coaxial cable, length 1 m                                                                                                                               |
|                   | TN-UHF-CBL-HF240-RPTNC-2-SMA  | 100028192 | HF240 coaxial cable, length 2 m                                                                                                                               |
|                   | TN-UHF-CBL-HF240-RPTNC-4-SMA  | 100028193 | HF240 coaxial cable, length 4 m                                                                                                                               |
|                   | TN-UHF-CBL-HF240-RPTNC-6-SMA  | 100028194 | HF240 coaxial cable, length 6 m                                                                                                                               |
|                   | TN-UHF-CBL-HF240-RPTNC-8-SMA  | 100028195 | HF240 coaxial cable, length 8 m                                                                                                                               |
|                   | TN-UHF-CBL-HF240-RPTNC-10-SMA | 100028196 | HF240 coaxial cable, length 10 m                                                                                                                              |
|                   | TN-UHF-CBL-HF240-RPTNC-12-SMA | 100028197 | HF240 coaxial cable, length 12 m                                                                                                                              |
|                   | RSSD-RSSD-4422-2M             | 6635150   | Cable for Industrial Ethernet, M12 male connector, D-coded, straight to M12 male connector, D-coded, straight, cable length: 2 m, jacket material: PUR, green |
|                   | RKC5T-2-RSC5T/TXL             | 6625616   | Extension cable, M12 female connector to M12 male connector, straight, 4-pin + PE, cable length: 2 m, jacket material: PUR, black; cULus approval             |

Accessories

| Dimension drawing | Type                | ID        |                                                          |
|-------------------|---------------------|-----------|----------------------------------------------------------|
|                   | TN-UHF-ANT-Q150-FCC | 100028596 | Passive UHF RFID antenna with dimensions of 150 × 150 mm |

| Dimension drawing                                                                   | Type                        | ID        |                                                                                      |
|-------------------------------------------------------------------------------------|-----------------------------|-----------|--------------------------------------------------------------------------------------|
|    | TN-UHF-ANT-NF-Q150-ETSI-FCC | 100028594 | Passive UHF RFID near-field antenna with dimensions of 150 × 150 mm                  |
|    | TN-UHF-ANT-Q280-FCC         | 100028602 | Passive UHF RFID antenna with integrated VESA100 pins and dimensions of 280 × 280 mm |
|    | TN-UHF-ANT-Q250-FCC         | 100028600 | Passive UHF RFID antenna with dimensions of 250 × 250 mm                             |
|   | TN-UHF-ANT-Q300L600-FCC     | 100047593 |                                                                                      |
|  | TN-UHF-ANT-Q150-MR-FCC      | 100047589 |                                                                                      |
|  | TN-UHF-ANT-Q150-LX-FCC      | 100047591 |                                                                                      |