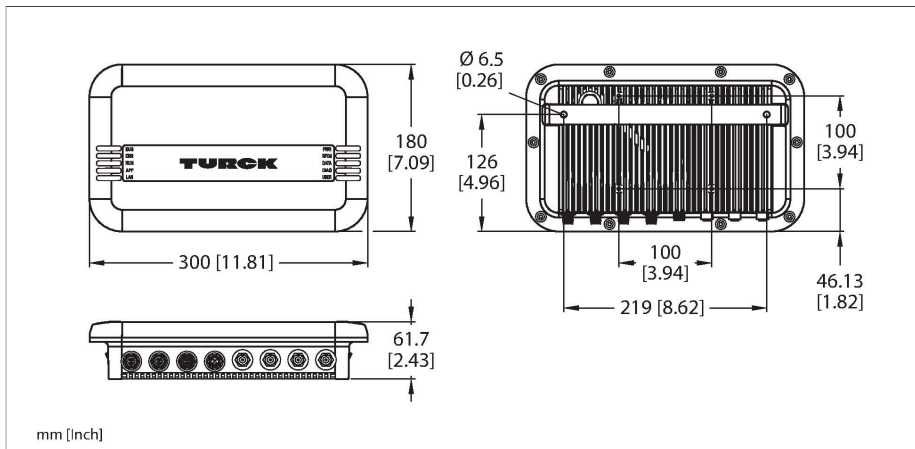


# TN-UHF-Q180L300-SGP-CDS

## UHF Reader



### Technical data

Type	TN-UHF-Q180L300-SGP-CDS
ID	100025567
Approvals	CE
<b>Electrical data</b>	
Operating voltage	18...30 VDC
DC rated operational current	≤ 3500 mA
PoE standard	IEEE 802.3at (PoE+)
Data transfer	Alternating electromagnetic field
Technology	UHF RFID
Region (UHF)	Singapore (920...925 MHz)
Radio communication and protocol standards	ISO 18000-63 EPCglobal Gen 2
Channel spacing	500 kHz
Output power	Conducted power: ≤ 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
Input impedance	50 Ohm

### Features

- Integrated web server with reader parameterization
- Web-based UHF RFID test tool for easy air interface evaluation
- 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
- Programmable according to IEC 61131-3 with CODESYS V3
- Codesys V3 PLC Runtime
- CODESYS OPC-UA server
- PROFINET device, EtherNet/IP device or Modbus TCP master/slave
- "U" data interface for convenient use of the RFID functionality
- Close-to-control integration in PLC systems without the use of a special function module
- LEDs and diagnostics
- Device only suitable for operation in Singapore (SGP) at 920...925 MHz

### 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!

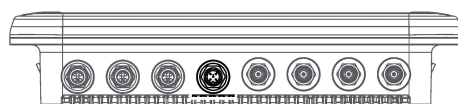
## Technical data

MTTF 49 years acc. to SN 29500 (Ed. 99) 20 °C

System description	
Processor	ARM Cortex A8, 32 Bit, 800 MHz
Memory	256 MB Flash
RAM memory	512 MB DDR3
Programming	CODESYS V3
Released for CODESYS version	V 3.5.11.20
Programming languages	IEC 61131-3 (IL, LD, FBD, SFC, ST)
Application tasks	10
Number of POU's	1024
Programming interface	Ethernet
Cycle time	< 1 ms for 1000 IL commands (without I/O cycle)
Input data	8
Output data	8
RFID data interface	UHF
System data	
Transmission rate Ethernet	10/100 Mbps
Connection technology Ethernet	1 x M12, 4-pin, D-coded
Web server	Default: 192.168.1.254
Modbus TCP	
Addressing	Static IP, BOOTP, DHCP
Supported function codes	FC1, FC2, FC3, FC4, FC5, FC6, FC15, FC16, FC23
Number of TCP connections	8
Output Data Size	max. 1024
Input Data Size	max. 2014
Ethernet/IP	
Addressing	acc. to EtherNet/IP specification
Device Level Ring (DLR)	supported
Input Assembly Instance	103
Input Data Size	248
Output Assembly Instance	104
Output Data Size	248
Class 1 connections (CIP)	10
Class 3 connections (TCP)	3
Configuration Assembly Instance	106
PROFINET	
Addressing	DCP
MinCycleTime	4 ms
Diagnostics	acc. to PROFINET alarm handling
Automatic addressing	supported

## Technical data

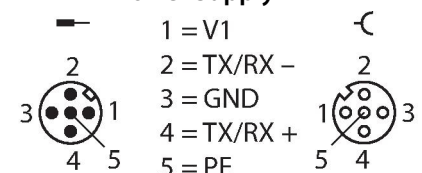
Media Redundancy Protocol (MRP)	supported
Input Data Size	max. 512
Output Data Size	max. 512
<b>Digital inputs</b>	
Number of channels	4
Connectivity inputs	M12, 5-pin
Input type	PNP
Switching threshold	EN 61131-2 type 3, PNP
Low-level signal voltage	< 5 V
High level signal voltage	> 11 V
Low level signal current	< 1.5 mA
High level signal current	> 2 mA
Type of input diagnostics	Channel diagnostics
<b>Digital outputs</b>	
Number of channels	4
Connectivity outputs	M12, 5-pin
Output type	PNP
Type of output diagnostics	Channel diagnostics
<b>General Information</b>	
Packaging unit	1



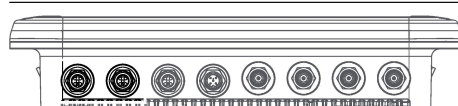
### Note

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

### M12 × 1 Power Supply



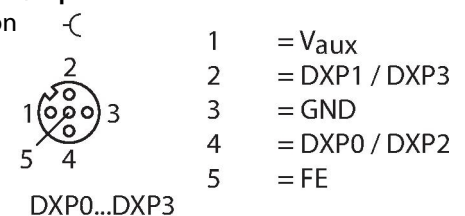
24 VDC / COM



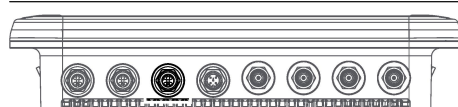
### Note

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

### I/O port M12 × 1



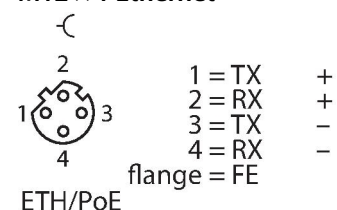
DXP0...DXP3



### Note








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

### M12 × 1 Ethernet

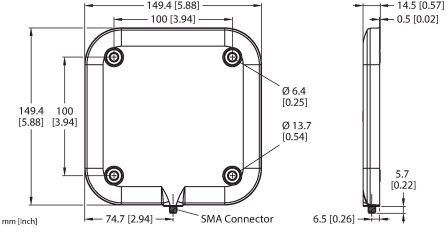
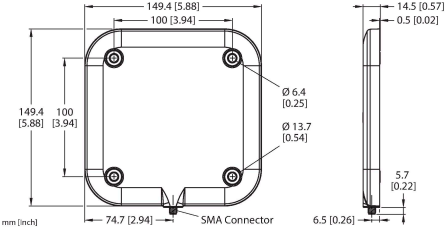
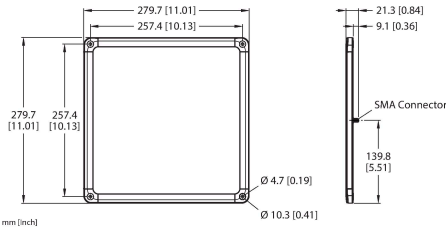
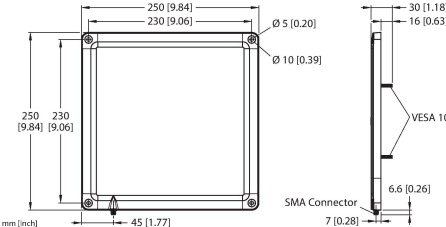


ETH/PoE

## 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

## Accessories

Dimension drawing	Type	ID	
 <p>Technical drawing showing top and side views of the TN-UHF-ANT-Q150-FCC antenna. Dimensions include: 149.4 [5.88] mm width, 100 [3.94] mm height, SMA Connector, Ø 6.4 [0.25] mm, Ø 13.7 [0.54] mm, 14.5 [0.57] mm, 0.5 [0.02] mm, 5.7 [0.22] mm, 6.5 [0.26] mm.</p>	TN-UHF-ANT-Q150-FCC	100028596	Passive UHF RFID antenna with dimensions of 150 × 150 mm
 <p>Technical drawing showing top and side views of the TN-UHF-ANT-NF-Q150-ETSI-FCC antenna. Dimensions include: 149.4 [5.88] mm width, 100 [3.94] mm height, SMA Connector, Ø 6.4 [0.25] mm, Ø 13.7 [0.54] mm, 14.5 [0.57] mm, 0.5 [0.02] mm, 5.7 [0.22] mm, 6.5 [0.26] mm.</p>	TN-UHF-ANT-NF-Q150-ETSI-FCC	100028594	Passive UHF RFID near-field antenna with dimensions of 150 × 150 mm
 <p>Technical drawing showing top and side views of the TN-UHF-ANT-Q280-FCC antenna. Dimensions include: 279.7 [11.01] mm width, 257.4 [10.13] mm height, SMA Connector, Ø 4.7 [0.19] mm, Ø 10.3 [0.41] mm, 21.3 [0.84] mm, 9.1 [0.36] mm, 139.8 [5.51] mm.</p>	TN-UHF-ANT-Q280-FCC	100028602	Passive UHF RFID antenna with integrated VESA100 pins and dimensions of 280 × 280 mm
 <p>Technical drawing showing top and side views of the TN-UHF-ANT-Q250-FCC antenna. Dimensions include: 250 [9.84] mm width, 230 [9.06] mm height, SMA Connector, Ø 5 [0.20] mm, Ø 10 [0.39] mm, 30 [1.18] mm, 16 [0.63] mm, VESA 100, 6.6 [0.26] mm, 7 [0.28] mm.</p>	TN-UHF-ANT-Q250-FCC	100028600	Passive UHF RFID antenna with dimensions of 250 × 250 mm