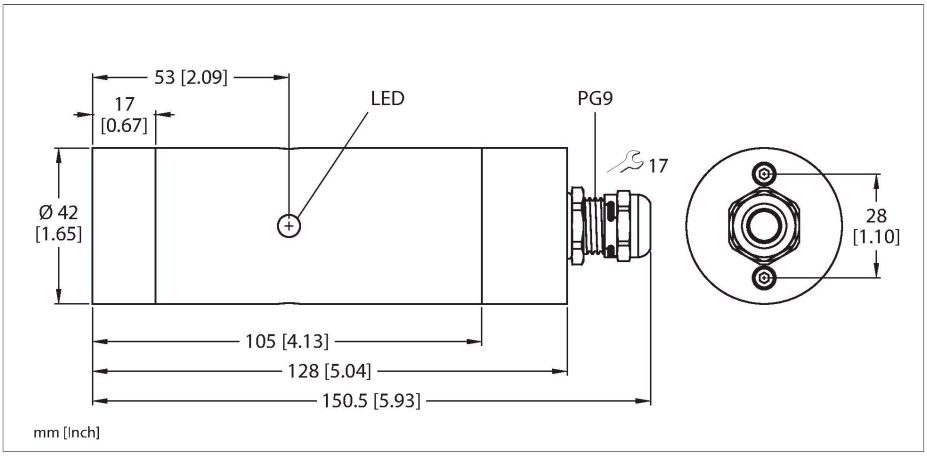
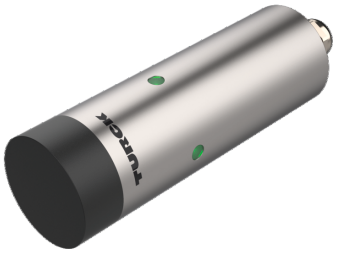
TN-R42TC-EX/C53
HF Read/Write Head – For Explosion Hazardous Areas and Bus Line Topology with TBEN-*





Technical data

Type	TN-R42TC-EX/C53
ID	100020167
Remark to product	The device must be mounted, grounded, connected and commissioned in accordance with the standards applicable at the place of commissioning. EN60079-14 is to be used in the European Union. Examples of mounting and grounding materials to be used include: OBO Bettermann grounding bolt type 950OBO Bettermann band grounding clamp for EX zone 1/21, 2/22
Approvals	CE UKCA FCC IC ATEX
Device marking	Ⓔx II 2G Ex eb mb IIC T6 Gb Ⓔx II 2D Ex tb IIIC T80°C Db
Electrical data	
Operating voltage	21.6…26.4 VDC
DC rated operational current	≤ 70 mA
Data transfer	Inductive coupling
Technology	HF RFID
Operating frequency	13.56 MHz
Radio communication and protocol standards	ISO 15693 NFC Typ 5
Output function	4-wire, Read/Write
Suitable for bus mode to TBEN-*.	Yes
Mechanical data	
Mounting conditions	Non-flush
Ambient temperature	-20…+40 °C

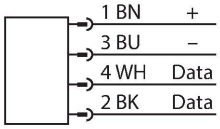
Features

- Smooth barrel
- Ex e terminal chamber with tension springs
- Stainless steel housing V2A
- Front cap made of liquid crystal polymer
- Laser engraved label, permanently legible
- Device without end termination
- Device may only be operated in line topology TBEN-S*-2RFID-* or TBEN-L*-4RFID-*
- Max. 32 nodes per line or connection permitted
- A device with terminating resistor (TN-R42TC-EX/C65) must be used as end termination (last node in a line topology)
- Make allowance for the power supply, especially at switch-on, and the maximum current carrying capacity of the cables
- Observe the voltage drop on the line
- The maximum possible length of the spur line is 2 m
- The maximum possible length of the bus is 50 m. The maximum total length can be 200 m, taking into account the conditions below
- By default, a command can only be processed by one read/write head, making HF bus mode suitable for static applications and slow dynamic applications
- In Continuous HF bus mode, a command is performed simultaneously at all read/write heads in a bus topology. The recorded data is stored in the ring buffer of the module
- The read/write head is automatically assigned an address
- For different application requirements, the address and can be parameterized
- Powered and operated only via connection to BL ident interface module
- M12 × 1 connector, connection only via BL ident extension cable
- ATEX category II 2 G, Ex Zone 1
- ATEX category II 2 D, Ex Zone 21

…/S2500 Connectors

Technical data

	For explosion hazardous areas see instruction leaflet
Design	Smooth barrel, R42TC
Dimensions	150.5 mm
Housing diameter	Ø 42 mm
Active area material	Plastic, PA6
Vibration resistance	55 Hz (1 mm)
Shock resistance	30 g (11 ms)
Protection class	IP67
Electrical connection	Terminal chamber
Power-on indication	LED, Green
Packaging unit	1



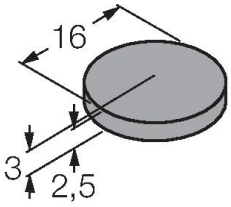
Functional principle

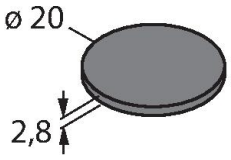
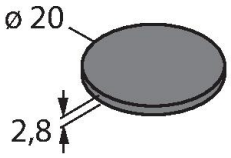
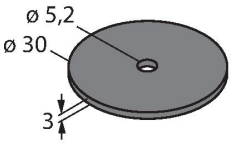
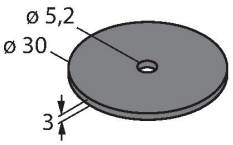
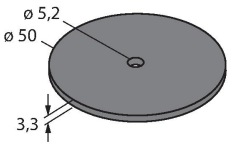
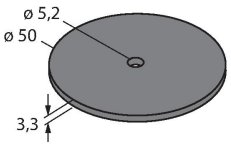
The HF read/write heads operating at a frequency of 13.56 MHz, form a transmission zone the size of which (0…500 mm) varies, depending on the combination of read/write head and tag used.
The read/write distances mentioned here only represent standard values measured under laboratory conditions, free from any influences caused by surrounding materials.
The read/write distances of the tags for mounting in metal TW-R**-M(MF) were determined in metal.
Attainable distances may vary by up to 30 % due to component tolerances, mounting conditions, ambient conditions and material qualities (especially when mounted in metal)
Testing of the application under real operating conditions is therefore essential, especially with on-the-fly reading and writing!

Mounting instructions/Description

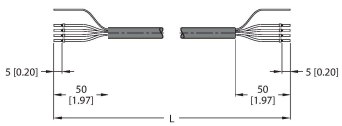
This figure illustrates an example of operating a read/write head in a compact multiprotocol I/O module TBEN-S*-2RFID-* or TBEN-L*-4RFID-* in a line topology

LED	Color	Status	Meaning
1	OFF	OFF	Operating voltage switched off
	GREEN	ON	Operating voltage switched on
	GREEN	FLASHING (1 Hz)	HF field switched off
	GREEN	FLASHING (2 Hz)	Tag in detection range

Dimensions	Type designation	Read-write distance		Transfer zone		Minimum distance between two read-write heads
	Ident - no.	Recommended (mm)	max. [mm]	length max. [mm]	width offset max. [mm]	[mm]
	**LOGI TAG 161 SLIX2** 100002353	20	38	44	22	120

	**IN TAG 200 SLIX** 100002354	22	40	34	17	120
	**IN TAG 200 2K FRAM** 100002358	17	31	32	16	120
	**IN TAG 300 SLIX2** 100002356	22	43	56	28	120
	**IN TAG 300 2K FRAM** 100002359	23	42	50	25	120
	**IN TAG 500 SLIX2** 100027728	40	72	76	38	120
	**IN TAG 500 2K FRAM** 100002360	30	58	76	38	120

Accessories

Dimension drawing	Type	ID	
	CABLE-BLIDENT-2M/S2500	100019079	BL ident cable, standard version, 4-wire, shielded, cable length: 2 m, jacket material: PUR, yellow; other cable lengths and qualities available, see www.turck.com

Accessories

Dimension drawing	Type	ID	
	TC-R42	100026834	Coupling cap for TN-R42TC-*, made of conductive plastic, black, incl. stainless steel locking pin, incl. 2-m stainless steel cable (Ø 1 mm), tags (Ø 30 mm) can be integrated, tag must be ordered separately.
	RPL-R30	100026836	Gravity holder, lower part, made of conductive plastic, black, tags (Ø 30 mm) can be integrated, tag must be ordered separately.
	RPT-70-R30	100026838	Gravity holder, upper part, made of conductive plastic, black, to be mounted on a Ø 70 mm barrel.