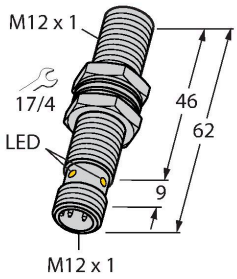
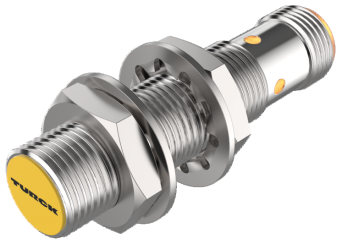
# TB-M12-H1147/C53
# HF Read/Write Head – For Bus Line Topology with TBEN-*



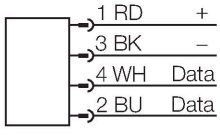
## Technical data

| | |
|---|---|
| Type | TB-M12-H1147/C53 |
| ID | 100003025 |
| Approvals | CE<br>FCC<br>IC<br>MIC<br>UL |
| **Electrical data** | |
| Operating voltage | 10…30 VDC |
| DC rated operational current | ≤ 50 mA |
| inrush current | 700 mA For: 1 ms |
| Data transfer | Inductive coupling |
| Technology | HF RFID |
| Operating frequency | 13.56 MHz |
| Radio communication and protocol standards | ISO 15693<br>NFC Typ 5 |
| Read/Write distance max. | 17 mm |
| Output function | 4-wire, Read/Write |
| Suitable for bus mode to TBEN-*. | Yes |
| **Mechanical data** | |
| Mounting conditions | Flush |
| Ambient temperature | -25…+70 °C |
| Design | Threaded barrel, M12 x 1 |
| Dimensions | 62 mm |
| Housing diameter | Ø 12 mm |
| Housing material | Metal, CuZn, Chrome-plated |
| Active area material | Plastic, PA12-GF30 |
| Vibration resistance | 55 Hz (1 mm) |
| Shock resistance | 30 g (11 ms) |
| Protection class | IP67 |

## Features

- M12 × 1 threaded barrel
- Chrome-plated brass
- 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
- Use a corresponding terminating resistor (see accessories)
- Observe the performance of the power supply, especially when turned 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
- 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 executed simultaneously on 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

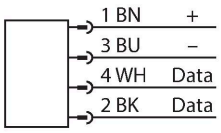
## …/S2503 Connectors



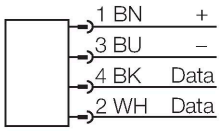

## …/S2500 Connectors

## Technical data

| | |
|---|---|
| Electrical connection | M12 × 1 |
| MTTF | 391 years acc. to SN 29500 (Ed. 99) 20 °C |
| Power-on indication | LED, Green |
| Packaging unit | 1 |



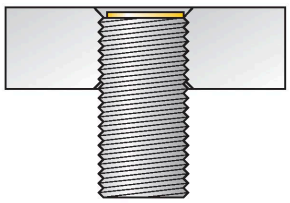

## …/S2501 Connectors




## Functional principle

The HF read/write devices 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 device 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

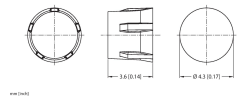
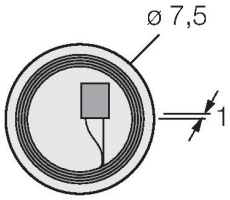
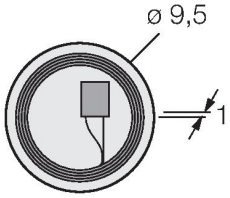
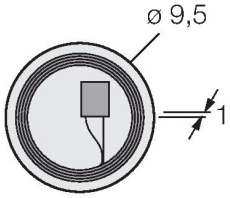
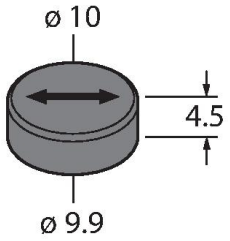
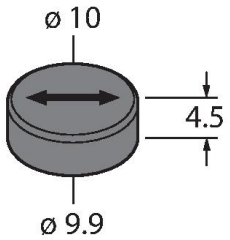
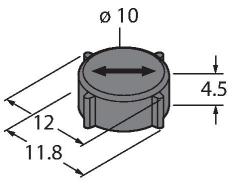
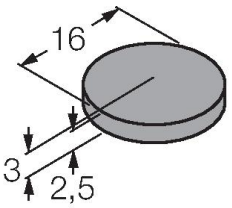
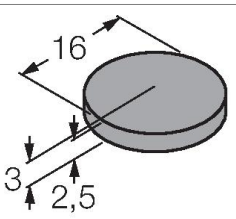


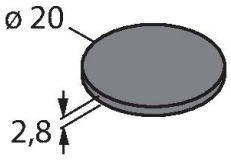
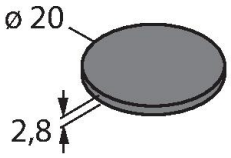
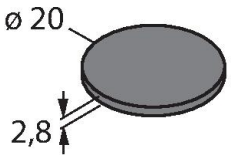
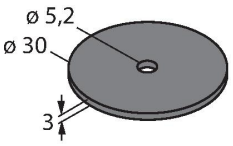
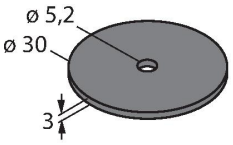
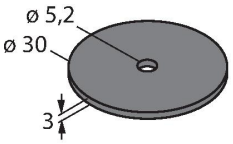
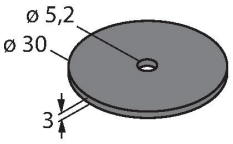
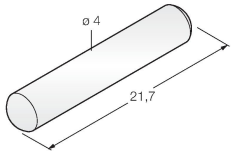
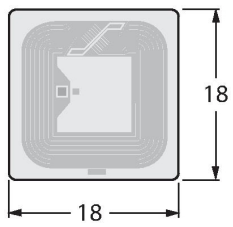
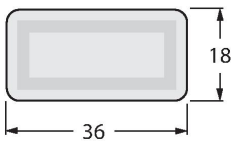
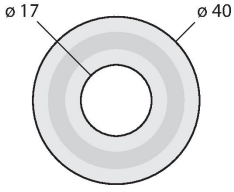
| | |
|---|---|
| Diameter active area B | Ø 12 mm |

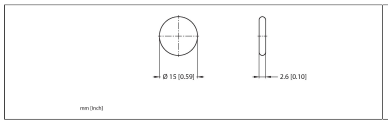
flush mounting

| 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] |

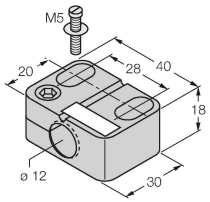
| | | | | | | |
|---|---|---|---|---|---|---|
|  | **TW-R4-3-M-B320-10PCS**<br>100013771 | 1 | 2 | 4 | 2 | 36 |
|  | **TW-R7.5-B128**<br>7030231 | 5 | 10 | 8 | 4 | 36 |
|  | **TW-R9.5-B128**<br>7030252 | 5 | 11 | 5 | 2 | 36 |
|  | **TW-R9.5-K2**<br>7030558 | 5 | 10 | 10 | 5 | 36 |
|  | **TW-R10-M-B146**<br>7030545 | 3 | 6 | 9 | 4 | 36 |
|  | **TW-R10-M-K2**<br>100002368 | 3 | 6 | 9 | 4 | 36 |
|  | **TW-R12-M-B146**<br>7030500 | 3 | 6 | 9 | 4 | 36 |
|  | **TW-R16-B128**<br>6900501 | 0 | 0 | 0 | 0 | 36 |
|  | **TW-R16-K2**<br>7030410 | 0 | 0 | 0 | 0 | 36 |

| | | | | | | |
|---|---|---|---|---|---|---|
|  | **TW-R20-B128**<br>6900502 | 5 | 11 | 16 | 8 | 36 |
|  | **TW-R20-B320**<br>100005244 | 0 | 0 | 0 | 0 | 36 |
|  | **TW-R20-K2**<br>6900505 | 5 | 12 | 16 | 8 | 36 |
|  | **TW-R30-B128**<br>6900503 | 7 | 15 | 22 | 11 | 36 |
|  | **TW-R30-B320**<br>100005245 | 7 | 15 | 22 | 11 | 36 |
|  | **TW-R30-K2**<br>6900506 | 6 | 13 | 20 | 10 | 36 |
|  | **TW-R30-K9**<br>7030565 | 5 | 11 | 20 | 10 | 36 |
|  | **TW-R4-22-B128**<br>7030237 | 2 | 4 | 11 | 5 | 36 |
|  | **TW-L18-18-F-B128**<br>7030634 | 6 | 13 | 6 | 3 | 36 |
|  | **TW-L36-18-F-B320-100PCS**<br>100025059 | 6 | 13 | 32 | 16 | 36 |
|  | **TW-L40-P-B128-100PCS**<br>7030658 | 6 | 17 | 30 | 15 | 36 |

| | | | | | | |
|---|---|---|---|---|---|---|
|  | **TW-R15-B320**<br>10004102 | 6 | 13 | 6 | 3 | 36 |

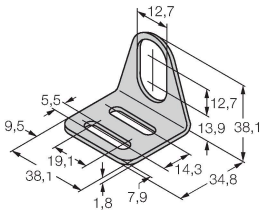
## Accessories

BST-12B 6947212



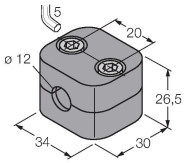

Mounting clamp for threaded barrel sensors, with dead-stop; material: PA6

MW-12 6945003



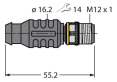
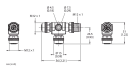
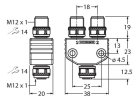
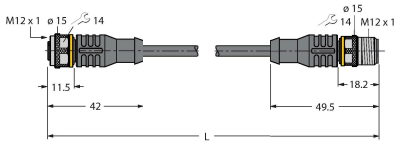

Mounting bracket for threaded barrel sensors; material: Stainless steel A2 1.4301 (AISI 304)

BSS-12 6901321




Mounting clamp for smooth and threaded barrel sensors; material: Polypropylene

## Accessories

| Dimension drawing | Type | ID | |
|---|---|---|---|
|  | RSE57-TR2/RFID | 6934908 | Terminating resistor to build an RFID line topology |
|  | VT2-FKM5-FKM5-FSM5 | 6930573 | T-splitter to build an RFID line topology |
|  | VB2-FKM5-FSM5.205-FSM5.305/ S2550 | 6936821 | Y-splitter for re-powering a supply voltage for the RFID bus topology |
|  | RK4.5T-2-RS4.5T/S2503 | 7030331 | BL ident cable, M12 female connector, straight to M12 male connector, straight, cable length: 2 m, jacket material: PUR, black |