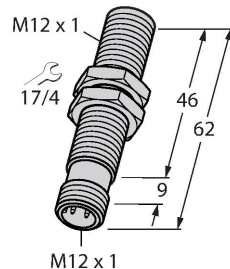


# BI4-M12-LIU-H1141

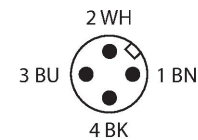
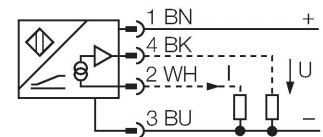
## Inductive Sensor – With Analog Output



### Features

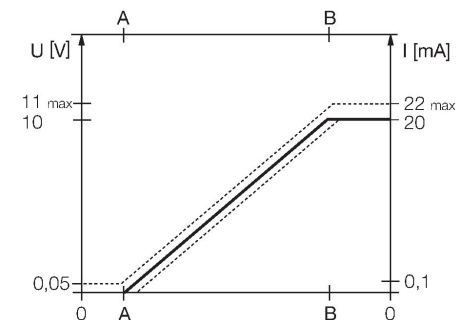
- M12 × 1 threaded barrel
- Chrome-plated brass
- 4-wire, 15...30 VDC
- Analog output
- 0...10 V and 0...20 mA
- M12 × 1 male connector

### Wiring diagram



### Functional principle

Inductive TURCK sensors with analog output accomplish simple control tasks. They provide a current, voltage or frequency signal proportional to the target's distance. The output signal is linear to the distance of the target over the entire sensing range.



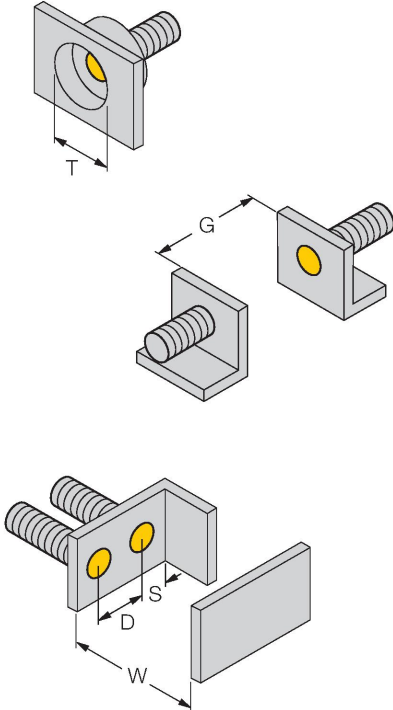
### Technical data

|                                           |                                                         |
|-------------------------------------------|---------------------------------------------------------|
| Type                                      | BI4-M12-LIU-H1141                                       |
| ID                                        | 1535531                                                 |
| <b>General data</b>                       |                                                         |
| Measuring range                           | 0.5...3 mm                                              |
| Mounting conditions                       | Flush                                                   |
| Secured operating distance                | $\leq (0.81 \times S_n)$ mm                             |
| Correction factors                        | St37 = 1; Al = 0.3; stainless steel = 0.7; Ms = 0.4     |
| Repeatability                             | $\leq 1 \%$ of measuring range  A - B                   |
|                                           | 0.5 %, after warm-up 0.5 h                              |
| Reproducibility                           | $\leq 25 \mu\text{m}$                                   |
|                                           | $\leq 12.5 \mu\text{m}$ , after a warm-up time of 0.5 h |
| Linearity deviation                       | $\leq 5 \%$                                             |
| Temperature drift                         | $\leq \pm 0.06 \%$ /K                                   |
| <b>Electrical data</b>                    |                                                         |
| Operating voltage                         | 15...30 VDC                                             |
| Residual ripple                           | $\leq 10 \%$ $U_{ss}$                                   |
| No-load current                           | 8 mA                                                    |
| Isolation test voltage                    | $\leq 0.5 \text{ kV}$                                   |
| Short-circuit protection                  | yes                                                     |
| Wire breakage/Reverse polarity protection | no / Complete                                           |
| Output function                           | 4-wire, Analog output                                   |
| Voltage output                            | 0...10 V                                                |
| Current output                            | 0...20 mA                                               |
| Load resistance voltage output            | $\geq 4.7 \text{ k}\Omega$                              |
| Load resistance current output            | $\leq 0.4 \text{ k}\Omega$                              |
| Measuring sequence frequency              | 200 Hz                                                  |

Technical data

| Mechanical data                       |                                           |
|---------------------------------------|-------------------------------------------|
| Design                                | Threaded barrel, M12 x 1                  |
| Dimensions                            | 62 mm                                     |
| Housing material                      | Metal, CuZn, Chrome-plated                |
| Active area material                  | Plastic, PA12-GF30                        |
| Max. tightening torque of housing nut | 10 Nm                                     |
| Electrical connection                 | Connector, M12 × 1                        |
| Environmental conditions              |                                           |
| Ambient temperature                   | -25...+70 °C                              |
| Vibration resistance                  | 55 Hz (1 mm)                              |
| Shock resistance                      | 30 g (11 ms)                              |
| Protection class                      | IP67                                      |
| MTTF                                  | 751 years acc. to SN 29500 (Ed. 99) 40 °C |

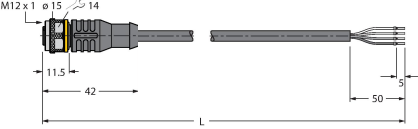
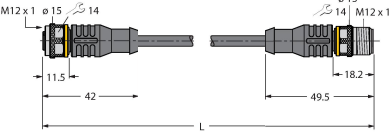
Mounting instructions

| Mounting instructions/Description                                                   |                        |         |
|-------------------------------------------------------------------------------------|------------------------|---------|
|  | Distance D             | 24 mm   |
|                                                                                     | Distance W             | 9 mm    |
|                                                                                     | Distance T             | 3 x B   |
|                                                                                     | Distance S             | 18 mm   |
|                                                                                     | Distance G             | 18 mm   |
|                                                                                     | Diameter active area B | Ø 12 mm |
|                                                                                     |                        |         |

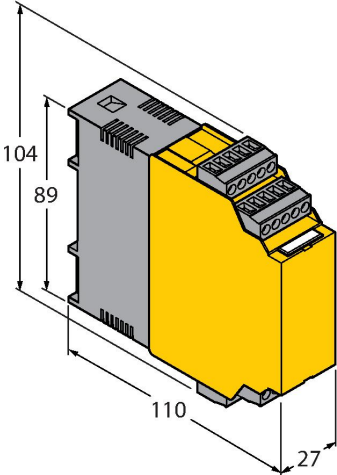
Accessories

|                                                                                   |         |                                                                                                                                                                                            |                                                                                    |         |                                                                                |
|-----------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------------|
| QM-12                                                                             | 6945101 | Quick-mount bracket with dead-stop; material: Chrome-plated brass. Male thread M16 × 1. Note: The switching distance of the proximity switches may change when using quick-mount brackets. | 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      |                                                                                                                                                                                                                                                        |
|-------------------------------------------------------------------------------------|------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | RKC4.4T-2/TEL                | 6625013 | Connection cable, M12 female connector, straight, 4-pin, cable length: 2 m, jacket material: PVC, black; cULus approval                                                                                                                                |
|  | RKC4.301T-0.15-RSC4.334T/TXL | 6631382 | Extension cable, M12 female/male, straight, 4-pin, cable length: 0.15m, jacket material: PUR, black; cULus approval; Adapter cable for sensors with analog output on pin 2, for connection to analog inputs of fieldbus modules with 4-wire technology |

Accessories

| Dimension drawing                                                                 | Type       | ID      |                                                                                                                                                                                                                                                                                                                                                                    |
|-----------------------------------------------------------------------------------|------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | IM43-13-SR | 7540041 | Trip amplifier; 1-channel; input 0/4... 20 mA or 0/2...10 V; supply of 2- or 3-wire transmitters/sensors; limit value adjustment via teach button; three relay outputs with one NO contact each; removable terminal blocks; 27 mm wide; universal voltage supply 20...250 VUC; further Limit value indicators are described in our "Interface Technology" catalog. |