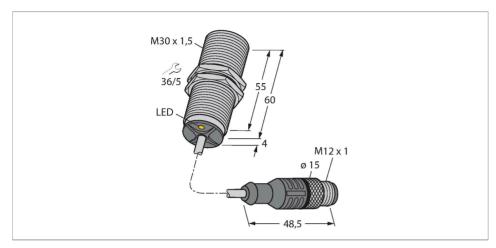


# BI10U-M30-AN6X-0.2-RS4T **Inductive Sensor**



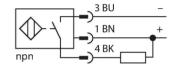
### Technical data

ID         1636191           General data           Rated switching distance         10 mm           Mounting conditions         Flush           Secured operating distance         ≤ (0.81 × Sn) mm           Repeat accuracy         ≤ 2 % of full scale           Exercised accuracy         ≤ 2 % of full scale           Hysteresis         315 %           Electrical data         To30 VDC           Ripple U <sub>ss</sub> ≤ 10 % U <sub>smax</sub> DC rated operating current I <sub>s</sub> ≤ 200 mA           No-load current         ≤ 25 mA           Residual current         ≤ 0.1 mA           Isolation test voltage         0.5 kV           Short-circuit protection         yes/Cyclic           Voltage drop at I <sub>s</sub> ≤ 1.8 V           Wire break/reverse polarity protection         yes/Complete           Output function         3-wire, NO contact, NPN           DC field stability         300 mT           AC field stability         300 mT           Switching frequency         1 kHz	Туре	BI10U-M30-AN6X-0.2-RS4T
Rated switching distance 10 mm  Mounting conditions Flush  Secured operating distance $\leq (0.81 \times Sn)$ mm  Repeat accuracy $\leq 2\%$ of full scale $\leq \pm 15\%, \leq -25 ^{\circ}\text{C v} \geq +70 ^{\circ}\text{C}$ Hysteresis $315\%$ Electrical data  Operating voltage $U_B$ $1030 ^{\circ}\text{VDC}$ Ripple $U_{sc}$ $\leq 10\% ^{\circ}\text{U}_{bmax}$ DC rated operating current $I_c$ $\leq 200 ^{\circ}\text{mA}$ No-load current $\leq 25 ^{\circ}\text{mA}$ Residual current $\leq 0.1 ^{\circ}\text{mA}$ Isolation test voltage $= 0.5 ^{\circ}\text{kV}$ Short-circuit protection $= 0.5 ^{\circ}\text{kV}$ Wire break/reverse polarity protection $= 0.5 ^{\circ}\text{kV}$ DC field stability $= 0.5 ^{\circ}\text{mT}_{ss}$	ID	1636191
Mounting conditions  Flush  Secured operating distance $≤ (0.81 \times Sn) \text{ mm}$ Repeat accuracy $≤ 2 \% \text{ of full scale}$ $≤ \pm 15 \%, ≤ -25 \text{ °C V} ≥ +70 \text{ °C}$ Hysteresis $315 \%$ Electrical data  Operating voltage U <sub>B</sub> $1030 \text{ VDC}$ Ripple U <sub>ss</sub> $≤ 10 \% \text{ U}_{Bmax}$ DC rated operating current I <sub>o</sub> $≤ 200 \text{ mA}$ No-load current $≤ 25 \text{ mA}$ Residual current $≤ 0.1 \text{ mA}$ Isolation test voltage $0.5 \text{ kV}$ Short-circuit protection  yes/Cyclic  Voltage drop at I <sub>o</sub> $≤ 1.8 \text{ V}$ Wire break/reverse polarity protection  yes/Complete  Output function $3$ -wire, NO contact, NPN  DC field stability $300 \text{ mT}$ AC field stability $300 \text{ mT}$	General data	
Secured operating distance $\leq (0.81 \times Sn) \text{ mm}$ Repeat accuracy $\leq 2 \% \text{ of full scale}$ $\leq \pm 15 \%, \leq -25 \text{ °C v} \geq +70 \text{ °C}$ Hysteresis $315 \%$ Electrical data  Operating voltage U <sub>8</sub> $1030 \text{ VDC}$ Ripple U <sub>ss</sub> $\leq 10 \% \text{ U}_{\text{Bmax}}$ DC rated operating current I <sub>e</sub> $\leq 200 \text{ mA}$ No-load current $\leq 25 \text{ mA}$ Residual current $\leq 0.1 \text{ mA}$ Isolation test voltage $0.5 \text{ kV}$ Short-circuit protection $(0.5 \text{ kV})$ Wire break/reverse polarity protection $(0.5 \text{ kV})$ Wire break/reverse polarity protection $(0.5 \text{ kV})$ Wire break/reverse polarity protection $(0.5 \text{ kV})$ Output function $(0.5  $	Rated switching distance	10 mm
Repeat accuracy $\leq 2 \%$ of full scale $\leq \pm 15 \%$ , $\leq -25 \degree \text{C v} \geq +70 \degree \text{C}$ Hysteresis 315 %  Electrical data  Operating voltage U <sub>B</sub> 1030 VDC  Ripple U <sub>ss</sub> $\leq 10 \% \text{U}_{\text{Bmax}}$ DC rated operating current I <sub>e</sub> $\leq 200 \text{ mA}$ No-load current $\leq 25 \text{ mA}$ Residual current $\leq 0.1 \text{ mA}$ Isolation test voltage 0.5 kV  Short-circuit protection yes/Cyclic  Voltage drop at I <sub>e</sub> $\leq 1.8 \text{ V}$ Wire break/reverse polarity protection yes/Complete  Output function 3-wire, NO contact, NPN  DC field stability 300 mT  AC field stability 300 mT  Similar Signal Sig	Mounting conditions	Flush
$≤ \pm 15 \text{ %, } ≤ -25 \text{ °C v} ≥ +70 \text{ °C}$ Hysteresis $315 \text{ %}$ Electrical data $Operating voltage U_{B}$ $1030 \text{ VDC}$ $Ripple U_{ss}$ $≤ 10 \text{ % } U_{Bmax}$ $DC \text{ rated operating current } I_{B}$ $≤ 200 \text{ mA}$ $No-load current$ $≤ 25 \text{ mA}$ $Residual current$ $≤ 0.1 \text{ mA}$ $Isolation test voltage$ $0.5 \text{ kV}$ $Short-circuit protection$ $yes/Cyclic$ $Voltage drop at I_{B}$ $≤ 1.8 \text{ V}$ $Wire break/reverse polarity protection$ $yes/Complete$ $Output function$ $3-wire, NO contact, NPN$ $DC \text{ field stability}$ $300 \text{ mT}$ $AC \text{ field stability}$ $300 \text{ mT}$	Secured operating distance	≤ (0.81 × Sn) mm
Hysteresis 315 %  Electrical data  Operating voltage U <sub>B</sub> 1030 VDC  Ripple U <sub>ss</sub> ≤ 10 % U <sub>Bmax</sub> DC rated operating current I <sub>e</sub> ≤ 200 mA  No-load current ≤ 25 mA  Residual current ≤ 0.1 mA  Isolation test voltage 0.5 kV  Short-circuit protection yes/Cyclic  Voltage drop at I <sub>e</sub> ≤ 1.8 V  Wire break/reverse polarity protection yes/Complete  Output function 3-wire, NO contact, NPN  DC field stability 300 mT  AC field stability 300 mT <sub>ss</sub>	Repeat accuracy	≤ 2 % of full scale
Electrical data  Operating voltage $U_B$ 1030 VDC  Ripple $U_{ss}$ $\leq 10 \% U_{Bmax}$ DC rated operating current $I_e$ No-load current $\leq 25 \text{ mA}$ Residual current $\leq 0.1 \text{ mA}$ Isolation test voltage  0.5 kV  Short-circuit protection  yes/Cyclic  Voltage drop at $I_e$ $\leq 1.8 \text{ V}$ Wire break/reverse polarity protection  Output function  3-wire, NO contact, NPN  DC field stability  300 mT  AC field stability  300 mT		≤ ± 15 %, ≤ -25 °C v ≥ +70 °C
Operating voltage $U_B$ 1030 VDC         Ripple $U_{ss}$ ≤ 10 % $U_{Bmax}$ DC rated operating current $I_e$ ≤ 200 mA         No-load current       ≤ 25 mA         Residual current       ≤ 0.1 mA         Isolation test voltage       0.5 kV         Short-circuit protection       yes/Cyclic         Voltage drop at $I_e$ ≤ 1.8 V         Wire break/reverse polarity protection       yes/Complete         Output function       3-wire, NO contact, NPN         DC field stability       300 mT         AC field stability       300 mT	Hysteresis	315 %
Ripple U <sub>ss</sub> $\leq 10 \% U_{\text{Bmax}}$ DC rated operating current I <sub>e</sub> $\leq 200 \text{ mA}$ No-load current $\leq 25 \text{ mA}$ Residual current $\leq 0.1 \text{ mA}$ Isolation test voltage $= 0.5 \text{ kV}$ Short-circuit protection $= 0.5 \text{ kV}$ Voltage drop at I <sub>e</sub> $= 0.1 \text{ kV}$ Wire break/reverse polarity protection $= 0.1 \text{ kV}$ Wire break/reverse polarity protection $= 0.1 \text{ kV}$ Duput function $= 0.1 \text{ kV}$ DC field stability $= 0.1 \text{ kV}$ AC field stability $= 0.1 \text{ kV}$ 300 mT	Electrical data	
DC rated operating current I <sub>e</sub> ≤ 200 mA  No-load current ≤ 25 mA  Residual current ≤ 0.1 mA  Isolation test voltage 0.5 kV  Short-circuit protection yes/Cyclic  Voltage drop at I <sub>e</sub> ≤ 1.8 V  Wire break/reverse polarity protection yes/Complete  Output function 3-wire, NO contact, NPN  DC field stability 300 mT  AC field stability 300 mT <sub>ss</sub>	Operating voltage U <sub>B</sub>	1030 VDC
No-load current ≤ 25 mA   Residual current ≤ 0.1 mA   Isolation test voltage 0.5 kV   Short-circuit protection yes/Cyclic   Voltage drop at I₀ ≤ 1.8 V   Wire break/reverse polarity protection yes/Complete   Output function 3-wire, NO contact, NPN   DC field stability 300 mT   AC field stability 300 mTss	Ripple U <sub>ss</sub>	≤ 10 % U <sub>Bmax</sub>
Residual current       ≤ 0.1 mA         Isolation test voltage       0.5 kV         Short-circuit protection       yes/Cyclic         Voltage drop at I₀       ≤ 1.8 V         Wire break/reverse polarity protection       yes/Complete         Output function       3-wire, NO contact, NPN         DC field stability       300 mT         AC field stability       300 mTss	DC rated operating current I <sub>e</sub>	≤ 200 mA
Isolation test voltage     0.5 kV       Short-circuit protection     yes/Cyclic       Voltage drop at I₀     ≤ 1.8 V       Wire break/reverse polarity protection     yes/Complete       Output function     3-wire, NO contact, NPN       DC field stability     300 mT       AC field stability     300 mTss	No-load current	≤ 25 mA
Short-circuit protection $yes/Cyclic$ Voltage drop at $I_e$ ≤ 1.8 V  Wire break/reverse polarity protection $yes/Complete$ Output function $3-wire$ , NO contact, NPN  DC field stability $300 \text{ mT}$ AC field stability $300 \text{ mT}_{ss}$	Residual current	≤ 0.1 mA
Voltage drop at I <sub>e</sub> ≤ 1.8 V  Wire break/reverse polarity protection yes/Complete  Output function 3-wire, NO contact, NPN  DC field stability 300 mT  AC field stability 300 mT <sub>ss</sub>	Isolation test voltage	0.5 kV
Wire break/reverse polarity protection yes/Complete  Output function 3-wire, NO contact, NPN  DC field stability 300 mT  AC field stability 300 mT <sub>ss</sub>	Short-circuit protection	yes/Cyclic
Output function 3-wire, NO contact, NPN  DC field stability 300 mT  AC field stability 300 mT <sub>ss</sub>	Voltage drop at I <sub>e</sub>	≤ 1.8 V
DC field stability 300 mT  AC field stability 300 mT <sub>ss</sub>	Wire break/reverse polarity protection	yes/Complete
AC field stability 300 mT <sub>ss</sub>	Output function	3-wire, NO contact, NPN
	DC field stability	300 mT
Switching frequency 1 kHz	AC field stability	$300 \text{ mT}_{ss}$
	Switching frequency	1 kHz

### **Features**

- ■M30 × 1.5 threaded tube
- Chrome-plated brass
- Factor 1 for all metals
- Protection class IP68
- Resistant to magnetic fields
- ■Extended temperature range
- High switching frequency
- ■DC 3-wire, 10...30 VDC
- ■NO contact, NPN output
- Pigtail with M12 × 1 connector

## Wiring diagram





Functional principle

Inductive sensors are designed for wear-free and contactless detection of metal objects. uprox Factor 1 sensors have significant advantages due to their patented ferrite-coreless multi-coil system. They detect all metals at the same large switching distance and are resistant to magnetic fields.

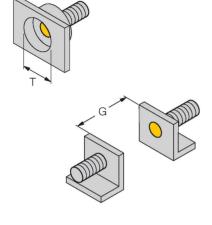


## Technical data

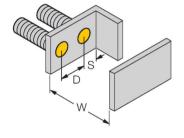
Mechanical data	
Design	Threaded barrel, M30 x 1.5
Dimensions	65 mm
Housing material	Metal, CuZn, Chrome-plated
Active area material	Plastic, PBT
End cap	Plastic, EPTR
Material coupling nut	metal, CuZn, nickel-plated
Max. tightening torque of housing nut	75 Nm
Electrical connection	Cable with connector, M12 × 1
Cable quality	Ø 5.2 mm, LifYY, PVC, 0.2 m
Core cross-section	3 x 0.34 mm <sup>2</sup>
Environmental conditions	
Ambient temperature	-30+85 °C
Vibration resistance	55 Hz (1 mm)
Shock resistance	30 g (11 ms)
Protection class	IP68
MTTF	874 years acc. to SN 29500 (Ed. 99) 40 °C
Switching state	LED, Yellow

## Mounting instructions

### Mounting instructions/Description



Distance D	60 mm
Distance W	27 mm
Distance T	3 x B
Distance S	45 mm
Distance G	54 mm
Diameter active area B	Ø 30 mm

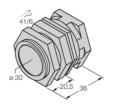


## Accessories

BST-30B

6947216

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



6945103

Quick-mount bracket with dead-stop; material: Chrome-plated brass. Male thread M36 × 1.5. Note: The switching distance of the proximity switches may change when using quick-mount brackets.

MW30

6945005

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



QM-30

6901319

Mounting clamp for smooth and

threaded barrel sensors; material: Polypropylene