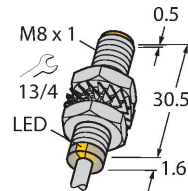


# BI3-M08-AP6X

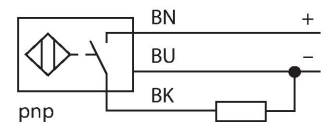
## Inductive Sensor – With Increased Switching Distance



### Features

- Threaded barrel, M8 x 1
- Nickel-plated brass
- Large sensing range
- DC 3-wire, 10...30 VDC
- NO contact, PNP output
- Cable connection

### Wiring diagram



### Technical data

|                                        |                                                     |
|----------------------------------------|-----------------------------------------------------|
| Type                                   | BI3-M08-AP6X                                        |
| ID                                     | 4602910                                             |
| General data                           |                                                     |
| Rated switching distance               | 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 |
| Repeat accuracy                        | $\leq 2$ % of full scale                            |
| Temperature drift                      | $\leq \pm 10$ %                                     |
| Hysteresis                             | 3...15 %                                            |
| Electrical data                        |                                                     |
| Operating voltage $U_B$                | 10...30 VDC                                         |
| Ripple $U_{ss}$                        | $\leq 10$ % $U_{Bmax}$                              |
| DC rated operating current $I_o$       | $\leq 150$ mA                                       |
| No-load current                        | $\leq 15$ mA                                        |
| Residual current                       | $\leq 0.1$ mA                                       |
| Isolation test voltage                 | 0.5 kV                                              |
| Short-circuit protection               | yes/Cyclic                                          |
| Voltage drop at $I_o$                  | $\leq 1.8$ V                                        |
| Wire break/reverse polarity protection | yes/Complete                                        |
| Output function                        | 3-wire, NO contact, PNP                             |
| Switching frequency                    | 2.8 kHz                                             |
| Mechanical data                        |                                                     |
| Design                                 | Threaded barrel, M8 x 1                             |
| Dimensions                             | 32.1 mm                                             |
| Housing material                       | Metal, CuZn, Nickel Plated                          |

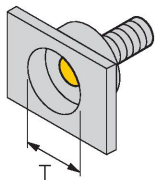
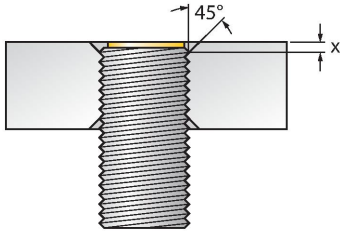
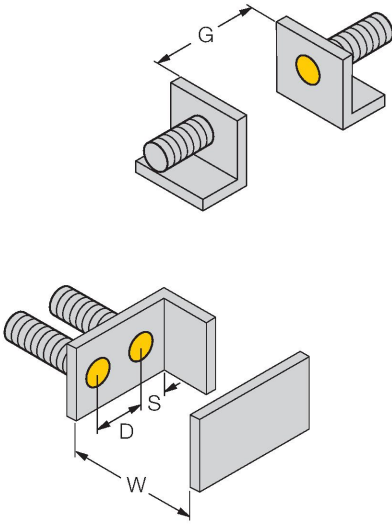
### Functional principle

Inductive sensors detect metal objects contactless and wear-free. For this, they use a high-frequency electromagnetic AC field that interacts with the target. Inductive sensors generate this field via an RLC circuit with a ferrite coil.

Technical data

|                                       |                                                                     |
|---------------------------------------|---------------------------------------------------------------------|
| Active area material                  | Plastic, PP-GF20                                                    |
| End cap                               | Plastic, PP-GF20                                                    |
| Max. tightening torque of housing nut | 7 Nm                                                                |
| Electrical connection                 | Cable                                                               |
| Cable quality                         | Ø 3 mm, Gray, Lif9Y-11Y, PUR, 2 m                                   |
|                                       | Suited for E-ChainSystems® acc. to manufacturers declaration H1063M |
| Core cross-section                    | 3 x 0.14 mm <sup>2</sup>                                            |
| Environmental conditions              |                                                                     |
| Ambient temperature                   | -25...+70 °C                                                        |
| Vibration resistance                  | 55 Hz (1 mm)                                                        |
| Shock resistance                      | 30 g (11 ms)                                                        |
| Protection class                      | IP67                                                                |
| MTTF                                  | 2283 years acc. to SN 29500 (Ed. 99) 40 °C                          |
| Switching state                       | LED, Yellow                                                         |

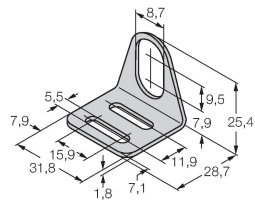
Mounting instructions

|                                                                                     |                                                                                                                                                                                                                                                                                              |            |       |            |        |            |       |            |         |            |        |                        |
|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-------|------------|--------|------------|-------|------------|---------|------------|--------|------------------------|
| Mounting instructions/Description                                                   |                                                                                                                                                                                                                                                                                              |            |       |            |        |            |       |            |         |            |        |                        |
|  |                                                                                                                                                                                                          |            |       |            |        |            |       |            |         |            |        |                        |
|                                                                                     | <table><tr><td>Distance D</td><td>2 x B</td></tr><tr><td>Distance W</td><td>3 x Sn</td></tr><tr><td>Distance T</td><td>3 x B</td></tr><tr><td>Distance S</td><td>1.5 x B</td></tr><tr><td>Distance G</td><td>6 x Sn</td></tr><tr><td>Diameter active area B</td><td>Ø 8 mm</td></tr></table> | Distance D | 2 x B | Distance W | 3 x Sn | Distance T | 3 x B | Distance S | 1.5 x B | Distance G | 6 x Sn | Diameter active area B |
| Distance D                                                                          | 2 x B                                                                                                                                                                                                                                                                                        |            |       |            |        |            |       |            |         |            |        |                        |
| Distance W                                                                          | 3 x Sn                                                                                                                                                                                                                                                                                       |            |       |            |        |            |       |            |         |            |        |                        |
| Distance T                                                                          | 3 x B                                                                                                                                                                                                                                                                                        |            |       |            |        |            |       |            |         |            |        |                        |
| Distance S                                                                          | 1.5 x B                                                                                                                                                                                                                                                                                      |            |       |            |        |            |       |            |         |            |        |                        |
| Distance G                                                                          | 6 x Sn                                                                                                                                                                                                                                                                                       |            |       |            |        |            |       |            |         |            |        |                        |
| Diameter active area B                                                              | Ø 8 mm                                                                                                                                                                                                                                                                                       |            |       |            |        |            |       |            |         |            |        |                        |
|  | <p>Flush installation in brass, aluminium and stainless steel with the supplied nuts is possible without restrictions.<br/>If installed flush in steel, a phase of 45° and min. depth of 1.7 mm (dimension X) must be observed.</p>                                                          |            |       |            |        |            |       |            |         |            |        |                        |

Accessories

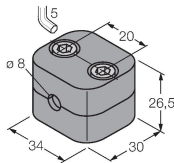
MW086945008

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



BSS-086901322

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



MBS8069479

Mounting clamp for smooth barrel sensors; mounting block material: Anodized aluminum

