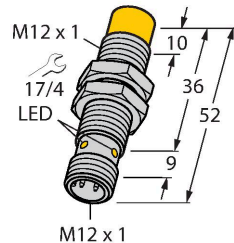


# NI8U-EM12-AP6X-H1141

## Inductive Sensor



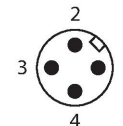
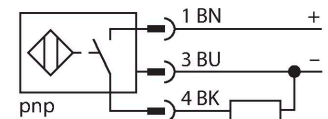
### Features

- Threaded barrel, M12 x 1
- Stainless steel, 1.4301
- Factor 1 for all metals
- Protection class IP68
- Resistant to magnetic fields
- Extended temperature range
- High switching frequency
- Auto-compensation protects against pre-damping
- DC 3-wire, 10...30 VDC
- NO contact, PNP output
- M12 x 1 male connector

### Technical data

|                                        |                                                                      |
|----------------------------------------|----------------------------------------------------------------------|
| Type                                   | NI8U-EM12-AP6X-H1141                                                 |
| ID                                     | 1644340                                                              |
| <b>General data</b>                    |                                                                      |
| Rated switching distance               | 8 mm                                                                 |
| Mounting conditions                    | Non-flush, partially embeddable                                      |
| Secured operating distance             | $\leq (0.81 \times S_n)$ mm                                          |
| Repeat accuracy                        | $\leq 2 \%$ of full scale                                            |
| Temperature drift                      | $\leq \pm 10 \%$                                                     |
|                                        | $\leq \pm 20 \%, \leq -25^\circ\text{C} \vee \geq +70^\circ\text{C}$ |
| Hysteresis                             | 3...15 %                                                             |
| <b>Electrical data</b>                 |                                                                      |
| Operating voltage $U_B$                | 10...30 VDC                                                          |
| Ripple $U_{ss}$                        | $\leq 10 \%$ $U_{Bmax}$                                              |
| DC rated operating current $I_o$       | $\leq 200$ mA                                                        |
| No-load current                        | $\leq 25$ 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                                              |
| DC field stability                     | 300 mT                                                               |
| AC field stability                     | 300 mT <sub>ss</sub>                                                 |
| Insulation class                       | □                                                                    |
| Switching frequency                    | 1 kHz                                                                |
| <b>Mechanical data</b>                 |                                                                      |
| Design                                 | Threaded barrel, M12 x 1                                             |

### Wiring diagram



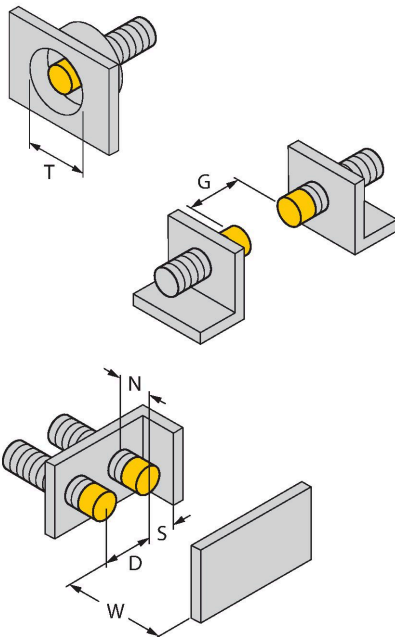
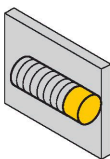
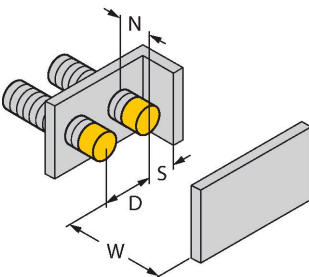
### Functional principle

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.

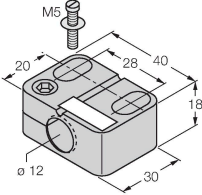
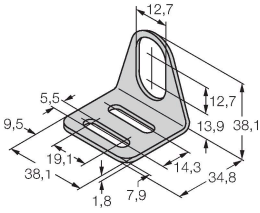
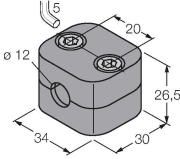
Technical data

|                                       |                                           |
|---------------------------------------|-------------------------------------------|
| Dimensions                            | 52 mm                                     |
| Housing material                      | Stainless steel, 1.4301 (AISI 304)        |
| Active area material                  | Plastic, PBT                              |
| Max. tightening torque of housing nut | 10 Nm                                     |
| Electrical connection                 | Connector, M12 × 1                        |
| 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                               |

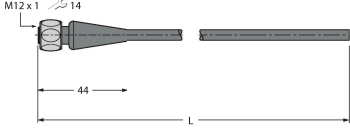
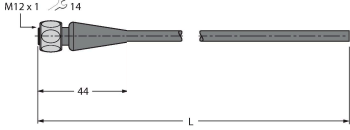
Mounting instructions

| Mounting instructions/Description                                                   |                                                                     |         |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------|---------|
|  | Distance D                                                          | 3 x B   |
|                                                                                     | Distance W                                                          | 3 x Sn  |
|                                                                                     | Distance T                                                          | 45 mm   |
|  | Distance S                                                          | 0.5 x B |
|                                                                                     | Distance G                                                          | 6 x Sn  |
|                                                                                     | Distance N                                                          | 2 x Sn  |
|  | Diameter active area B                                              | Ø 12 mm |
|                                                                                     | 1-side flush mounting possible:<br>1-side flush mounting: Sr = 6 mm |         |

Accessories

|                                                                                   |         |                                                                                |                                                                                    |         |                                                                                              |
|-----------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------------|------------------------------------------------------------------------------------|---------|----------------------------------------------------------------------------------------------|
| BST-12B                                                                           | 6947212 | Mounting clamp for threaded barrel sensors, with dead-stop; material: PA6      | MW12                                                                               | 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      |                                                                                                                                                                        |
|-------------------------------------------------------------------------------------|------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | RKH4-2/TFE | 6935482 | Connection cable, M12 female connector, straight, 3-pin, stainless steel coupling nut, cable length: 2 m, jacket material: PVC, gray; temperature range: -25...+80 °C  |
|  | RKH4-2/TFG | 6934384 | Connection cable, M12 female connector, straight, 3-pin, stainless steel coupling nut, cable length: 2 m, jacket material: TPE, gray; temperature range: -40...+105 °C |