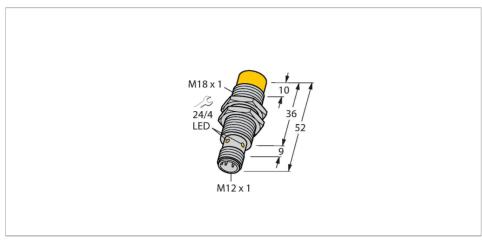


NI12U-EM18-AP6X-H1141 **Inductive Sensor**



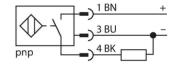
Technical data

ID	Туре	NI12U-EM18-AP6X-H1141
Rated switching distance 12 mm Mounting conditions Non-flush, partially embeddable Secured operating distance ≤ (0.81 × Sn) mm Repeat accuracy ≤ 2 % of full scale Temperature drift ≤ ±10 % ≤ ± 20 %, ≤ -25 °C v ≥ +70 °C Hysteresis 315 % Electrical data Operating voltage U _s 1030 VDC Ripple U _{ss} ≤ 10 % U _{bmax} DC rated operating current I _s ≤ 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 _s ≤ 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	ID	1645340
Mounting conditions Non-flush, partially embeddable Secured operating distance ≤ (0.81 × Sn) mm Repeat accuracy ≤ 2 % of full scale Temperature drift ≤ ±10 % ≤ ± 20 %, ≤ -25 °C v ≥ +70 °C Hysteresis 315 % Electrical data Operating voltage U _B 1030 VDC Ripple U _{ss} ≤ 10 % U _{Braux} 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, PNP DC field stability 300 mT AC field stability 300 mT	General data	
Secured operating distance ≤ (0.81 × Sn) mm Repeat accuracy ≤ 2 % of full scale Temperature drift ≤ ±10 % ≤ ± 20 %, ≤ -25 °C v ≥ +70 °C Hysteresis 315 % Electrical data Operating voltage Us 1030 VDC Ripple Uss ≤ 10 % Usmax DC rated operating current Is ≤ 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 Is ≤ 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	Rated switching distance	12 mm
Repeat accuracy≤ 2 % of full scaleTemperature drift≤ ± 10 %≤ ± 20 %, ≤ -25 °C v ≥ +70 °CHysteresis315 %Electrical data0perating voltage U $_{\rm B}$ 1030 VDCRipple U $_{\rm se}$ ≤ 10 % U $_{\rm Breax}$ DC rated operating current I $_{\rm e}$ ≤ 200 mANo-load current≤ 25 mAResidual current≤ 0.1 mAIsolation test voltage0.5 kVShort-circuit protectionyes/CyclicVoltage drop at I $_{\rm e}$ ≤ 1.8 VWire break/reverse polarity protectionyes/CompleteOutput function3-wire, NO contact, PNPDC field stability300 mTAC field stability300 mT	Mounting conditions	Non-flush, partially embeddable
Temperature drift $\leq \pm 10 \%$ $\leq \pm 20 \%, \leq -25 ^{\circ}\text{C V} \geq +70 ^{\circ}\text{C}$ Hysteresis 315% Electrical data Operating voltage U_{B} 1030 VDC Ripple U_{es} $\leq 10 \% U_{\text{Bmax}}$ DC rated operating current I_{e} $\leq 200 \text{ mA}$ No-load current $\leq 25 \text{ mA}$ Residual current $\leq 0.1 \text{ mA}$ Isolation test voltage 0.5 kV Short-circuit protection 0.5 kV Wire break/reverse polarity protection 0.5 kV Wire break/reverse polarity protection 0.5 kV Wire break/reverse polarity protection 0.5 kV Output function 0.5 kV Other break/reverse polarity protection 0.5 kV Wire break/reverse polarity protection 0.5 kV Wire break/reverse polarity protection 0.5 kV Other break/reverse polarity protection 0.5 kV	Secured operating distance	≤ (0.81 × Sn) mm
$\leq \pm 20 \ \%, \leq -25 \ ^{\circ}\text{C} \ \vee \geq +70 \ ^{\circ}\text{C}$ Hysteresis $315 \ \%$ Electrical data $Operating \ voltage \ U_{\scriptscriptstyle B}$ $1030 \ VDC$ Ripple $U_{\scriptscriptstyle SS}$ $\leq 10 \ \% \ U_{\scriptscriptstyle Bmax}$ $DC \ rated \ operating \ current \ I_{\scriptscriptstyle e}$ $\leq 200 \ \text{mA}$ No-load current $\leq 25 \ \text{mA}$ Residual current $\leq 0.1 \ \text{mA}$ Isolation test voltage $0.5 \ \text{kV}$ Short-circuit protection $yes/Cyclic$ $Voltage \ drop \ at \ I_{\scriptscriptstyle e}$ $\leq 1.8 \ V$ Wire break/reverse polarity protection $yes/Complete$ Output function $3-wire, \ NO \ contact, \ PNP$ $DC \ field \ stability$ $300 \ \text{mT}$ $AC \ field \ stability$ $300 \ \text{mT}$	Repeat accuracy	≤ 2 % of full scale
Hysteresis 315% Electrical data1030 VDCRipple U _{ss} ≤ 10 % U _{Bmax} DC rated operating current I _e ≤ 200 mANo-load current≤ 25 mAResidual current≤ 0.1 mAIsolation test voltage0.5 kVShort-circuit protectionyes/CyclicVoltage drop at I _e ≤ 1.8 VWire break/reverse polarity protectionyes/CompleteOutput function3-wire, NO contact, PNPDC field stability300 mTAC field stability300 mT	Temperature drift	≤ ±10 %
Electrical data Operating voltage U_{B} The standard stability Description of the stability Description of the stability 1030 VDC 10.		≤ ± 20 %, ≤ -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, PNP DC field stability 300 mT AC field stability 300 mT	Hysteresis	315 %
Ripple U _{ss} ≤ 10 % U _{Bmax} DC rated operating current I _s ≤ 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 _s ≤ 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	Electrical data	
DC rated operating current I₀ ≤ 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 I₀ ≤ 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 mTss	Operating voltage U _в	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, PNP DC field stability 300 mT AC field stability 300 mTss	Ripple U _{ss}	≤ 10 % U _{Bmax}
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, PNP DC field stability 300 mT AC field stability 300 mTss	DC rated operating current I _e	≤ 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, PNP DC field stability 300 mT AC field stability 300 mTss	No-load current	≤ 25 mA
Short-circuit protection Voltage drop at I₀ Wire break/reverse polarity protection Output function DC field stability AC field stability Short-circuit protection yes/Cyclic ≤ 1.8 V yes/Complete yes/Complete 3-wire, NO contact, PNP 300 mT AC field stability 300 mT _{ss}	Residual current	≤ 0.1 mA
Voltage drop at I₀ ≤ 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 mT₅s	Isolation test voltage	0.5 kV
Wire break/reverse polarity protection yes/Complete Output function 3-wire, NO contact, PNP DC field stability 300 mT AC field stability 300 mT _{ss}	Short-circuit protection	yes/Cyclic
Output function 3-wire, NO contact, PNP DC field stability 300 mT AC field stability 300 mT _{ss}	Voltage drop at I _e	≤ 1.8 V
DC field stability 300 mT AC field stability 300 mT _{ss}	Wire break/reverse polarity protection	yes/Complete
AC field stability 300 mT _{ss}	Output function	3-wire, NO contact, PNP
•	DC field stability	300 mT
Insulation class	AC field stability	300 mT _{ss}
	Insulation class	

Features

- ■Threaded barrel, M18 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 predamping
- ■DC 3-wire, 10...30 VDC
- ■NO contact, PNP output
- ■M12 x 1 male 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.

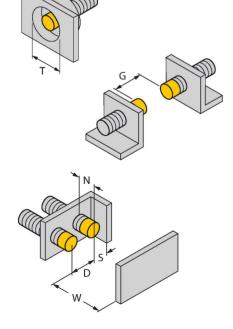


Technical data

Switching frequency	1 kHz
Mechanical data	
Design	Threaded barrel, M18 x 1
Dimensions	52 mm
Housing material	Stainless steel, 1.4301 (AISI 304)
Active area material	Plastic, PBT
Max. tightening torque of housing nut	25 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	65 mm
Distance S	1.5 x B
Distance G	6 x Sn
Distance N	2 x Sn
Diameter active area B	Ø 18 mm

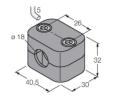
6945004

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

BSS-18

6901320

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



6945102 QM-18



Quick-mount bracket with dead-stop; material: Chrome-plated brass. Male thread M24 × 1.5. Note: The switching distance of the proximity switches may change when using quick-mount brackets.

Wiring accessories

Dimension drawing Type

RKH4-2/TFE

6935482

ID

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