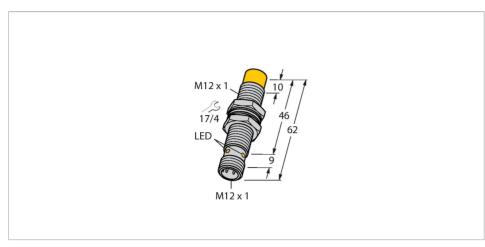


# NI8U-M12E-VP4X-H1141 Inductive Sensor



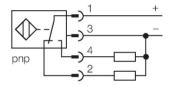
#### Technical data

Type       NI8U-M12E-VP4X-H1141         Ident. no.       1580454         Rated switching distance       8 mm         Mounting conditions       Non-flush         Secured operating distance       ≤ (0.81 × Sn) mm         Repeat accuracy       ≤ 2 % of full scale         Temperature drift       ≤ ± 10 %         ≤ ± 15 %, ≤ -25 °C v ≥ +70 °C         Hysteresis       315 %         Ambient temperature       -30+85 °C         Operating voltage       1065 VDC         Residual ripple       ≤ 10 % U <sub>s</sub> DC rated operational current       ≤ 200 mA         No-load current       ≤ 15 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 breakage/Reverse polarity protection       yes / Complete         Output function       4-wire, Complementary contact, PNP         Insulation class		
Rated switching distance 8 mm  Mounting conditions Non-flush  Secured operating distance ≤ (0.81 × Sn) mm  Repeat accuracy ≤ 2 % of full scale  Temperature drift ≤±10 %  ≤±15 %, ≤-25 °C v ≥ +70 °C  Hysteresis 315 %  Ambient temperature -30+85 °C  Operating voltage 1065 VDC  Residual ripple ≤10 % U <sub>s</sub> DC rated operational current ≤ 200 mA  No-load current ≤15 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 breakage/Reverse polarity protection yes / Complete  Output function 4-wire, Complementary contact, PNP	Type	NI8U-M12E-VP4X-H1141
Mounting conditions       Non-flush         Secured operating distance $\leq (0.81 \times Sn) \text{ mm}$ Repeat accuracy $\leq 2 \% \text{ of full scale}$ Temperature drift $\leq \pm 10 \%$ $\leq \pm 15 \%$ , $\leq -25 \text{ °C v} \geq +70 \text{ °C}$ Hysteresis $315 \%$ Ambient temperature $-30+85 \text{ °C}$ Operating voltage $1065 \text{ VDC}$ Residual ripple $\leq 10 \% \text{ U}_{s}$ DC rated operational current $\leq 200 \text{ mA}$ No-load current $\leq 15 \text{ mA}$ Residual current $\leq 0.1 \text{ mA}$ Isolation test voltage $\leq 0.5 \text{ kV}$ Short-circuit protection       yes / Cyclic         Voltage drop at I <sub>e</sub> $\leq 1.8 \text{ V}$ Wire breakage/Reverse polarity protection       yes / Complete         Output function       4-wire, Complementary contact, PNP	ldent. no.	1580454
Secured operating distance $\leq (0.81 \times \text{Sn}) \text{ mm}$ Repeat accuracy $\leq 2 \% \text{ of full scale}$ Temperature drift $\leq \pm 10 \%$ $\leq \pm 15 \%, \leq -25 \text{ °C V} \geq +70 \text{ °C}$ Hysteresis $315 \%$ Ambient temperature $-30+85 \text{ °C}$ Operating voltage $1065 \text{ VDC}$ Residual ripple $\leq 10 \% \text{ U}_{\text{s}}$ DC rated operational current $\leq 200 \text{ mA}$ No-load current $\leq 15 \text{ mA}$ Residual current $\leq 0.1 \text{ mA}$ Isolation test voltage $\leq 0.5 \text{ kV}$ Short-circuit protection $\text{yes / Cyclic}$ Voltage drop at $\mathbb{I}_{\text{s}}$ $\leq 1.8 \text{ V}$ Wire breakage/Reverse polarity protection $\text{yes / Complementary contact, PNP}$	Rated switching distance	8 mm
Repeat accuracy $\leq 2\%$ of full scale  Temperature drift $\leq \pm 10\%$ $\leq \pm 15\%, \leq -25^{\circ}\text{C}\text{V} \geq +70^{\circ}\text{C}$ Hysteresis $315\%$ Ambient temperature $-30+85^{\circ}\text{C}$ Operating voltage $1065\text{VDC}$ Residual ripple $\leq 10\%\text{U}_{ss}$ DC rated operational current $\leq 200\text{mA}$ No-load current $\leq 15\text{mA}$ Residual current $\leq 0.1\text{mA}$ Isolation test voltage $\leq 0.5\text{kV}$ Short-circuit protection $20.5\text{kV}$ Short-circuit protection $20.5\text{kV}$ Wire breakage/Reverse polarity protection $20.5\text{kV}$ Wire breakage/Reverse polarity protection $20.5\text{kV}$ Output function $20.5\text{kV}$ Output function $20.5\text{kV}$ Polarization $20.5\text{kV}$	Mounting conditions	Non-flush
Temperature drift $\leq \pm 10 \%$ $\leq \pm 15 \%, \leq -25 \degree \text{C v} \geq +70 \degree \text{C}$ Hysteresis $315 \%$ Ambient temperature $-30+85 \degree \text{C}$ Operating voltage $1065 \text{ VDC}$ Residual ripple $\leq 10 \% \text{ U}_{ss}$ DC rated operational current $\leq 200 \text{ mA}$ No-load current $\leq 15 \text{ mA}$ Residual current $\leq 0.1 \text{ mA}$ Isolation test voltage $\leq 0.5 \text{ kV}$ Short-circuit protection $\text{yes / Cyclic}$ Voltage drop at $\text{I}_{e}$ $\leq 1.8 \text{ V}$ Wire breakage/Reverse polarity protection $\text{yes / Complete}$ Output function $4\text{-wire, Complementary contact, PNP}$	Secured operating distance	≤ (0.81 × Sn) mm
$ \leq \pm 15 \%, \leq -25 ^{\circ}\text{C}  \text{V} \geq +70 ^{\circ}\text{C} $ Hysteresis 315 %  Ambient temperature -30+85 $^{\circ}\text{C}$ Operating voltage 1065 VDC  Residual ripple $\leq 10 \% \text{U}_{\text{ss}}$ DC rated operational current $\leq 200 \text{mA}$ No-load current $\leq 15 \text{mA}$ Residual current $\leq 0.1 \text{mA}$ Isolation test voltage $\leq 0.5 \text{kV}$ Short-circuit protection yes / Cyclic  Voltage drop at $\text{I}_{\text{e}}$ $\leq 1.8 \text{V}$ Wire breakage/Reverse polarity protection yes / Complete  Output function 4-wire, Complementary contact, PNP	Repeat accuracy	≤ 2 % of full scale
Hysteresis       315 %         Ambient temperature       -30+85 °C         Operating voltage       1065 VDC         Residual ripple       ≤ 10 % U₅         DC rated operational current       ≤ 200 mA         No-load current       ≤ 15 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 breakage/Reverse polarity protection       yes / Complete         Output function       4-wire, Complementary contact, PNP	Temperature drift	≤ ± 10 %
Ambient temperature  -30+85 °C  Operating voltage  1065 VDC  Residual ripple  ≤ 10 % U <sub>ss</sub> DC rated operational current  ≤ 200 mA  No-load current  ≤ 15 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 breakage/Reverse polarity protection  yes / Complete  Output function  4-wire, Complementary contact, PNP		≤ ± 15 %, ≤ -25 °C v ≥ +70 °C
Operating voltage       1065 VDC         Residual ripple       ≤ 10 % U <sub>s</sub> DC rated operational current       ≤ 200 mA         No-load current       ≤ 15 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 breakage/Reverse polarity protection       yes / Complete         Output function       4-wire, Complementary contact, PNP	Hysteresis	315 %
Residual ripple       ≤ 10 % U <sub>s</sub> DC rated operational current       ≤ 200 mA         No-load current       ≤ 15 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 breakage/Reverse polarity protection       yes / Complete         Output function       4-wire, Complementary contact, PNP	Ambient temperature	-30+85 ℃
DC rated operational current $\leq 200 \text{ mA}$ No-load current $\leq 15 \text{ mA}$ Residual current $\leq 0.1 \text{ mA}$ Isolation test voltage $\leq 0.5 \text{ kV}$ Short-circuit protection       yes / Cyclic         Voltage drop at $I_e$ $\leq 1.8 \text{ V}$ Wire breakage/Reverse polarity protection       yes / Complete         Output function       4-wire, Complementary contact, PNP	Operating voltage	1065 VDC
No-load current       ≤ 15 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 breakage/Reverse polarity protection       yes / Complete         Output function       4-wire, Complementary contact, PNP	Residual ripple	≤ 10 % U <sub>ss</sub>
Residual current $\leq 0.1 \text{ mA}$ Isolation test voltage $\leq 0.5 \text{ kV}$ Short-circuit protection       yes / Cyclic         Voltage drop at $I_e$ $\leq 1.8 \text{ V}$ Wire breakage/Reverse polarity protection       yes / Complete         Output function       4-wire, Complementary contact, PNP	DC rated operational current	≤ 200 mA
Short-circuit protection   Short-circuit pro	No-load current	≤ 15 mA
$ \begin{array}{ll} \mbox{Short-circuit protection} & \mbox{yes / Cyclic} \\ \mbox{Voltage drop at I}_{\mbox{\tiny e}} & \leq 1.8 \ \mbox{V} \\ \mbox{Wire breakage/Reverse polarity protection} & \mbox{yes / Complete} \\ \mbox{Output function} & \mbox{4-wire, Complementary contact, PNP} \\ \label{eq:polarity} \end{array} $	Residual current	≤ 0.1 mA
Voltage drop at I₀       ≤ 1.8 V         Wire breakage/Reverse polarity protection       yes / Complete         Output function       4-wire, Complementary contact, PNP	Isolation test voltage	≤ 0.5 kV
Wire breakage/Reverse polarity protection yes / Complete  Output function 4-wire, Complementary contact, PNP	Short-circuit protection	yes / Cyclic
Output function 4-wire, Complementary contact, PNP	Voltage drop at I <sub>e</sub>	≤ 1.8 V
	Wire breakage/Reverse polarity protection	yes / Complete
Insulation class	Output function	4-wire, Complementary contact, PNP
	Insulation class	
Switching frequency 2 kHz	Switching frequency	2 kHz
Design Threaded barrel, M12 × 1	Design	Threaded barrel, M12 × 1
Dimensions 62 mm	Dimensions	62 mm

#### **Features**

- M12 × 1 threaded barrel
- Long version
- Chrome-plated brass
- Factor 1 for all metals
- Protection class IP68
- Resistant to magnetic fields
- Extended temperature range
- High switching frequency
- DC 4-wire, 10...65 VDC
- Changeover contact, PNP output
- M12 x 1 male connector

### Wiring diagram



# Functional principle

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

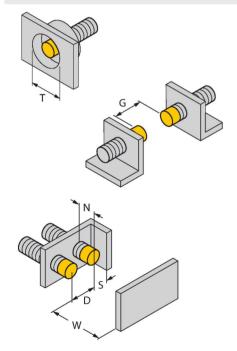


#### Technical data

Housing material	Metal, CuZn, Chrome-plated
Active area material	Plastic, PBT
Max. tightening torque housing nut	10 Nm
Electrical connection	Connector, M12 × 1
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

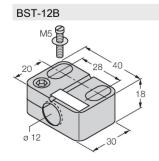
# Mounting instructions

#### Mounting instructions/Description



Distance D	48 mm
Distance W	3 x Sn
Distance T	45 mm
Distance S	1.5 x B
Distance G	6 x Sn
Distance N	2 x Sn
Diameter active area B	Ø 12 mm

## Accessories



6947212	
Mounting clamp for threaded barrel sensors, with dead-stop; material: PA6	

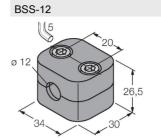


Quick-mount bracket with dead-stop; material: Chrome-plated brass. Male thread M16 × 1. Note: The switching distance of the proximity switches may change when using quick-mount brackets.

6945101

6901321

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

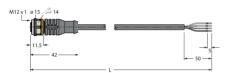


Mounting clamp for smooth and

threaded barrel sensors; material: Polypropylene

## Wiring accessories

Dimension drawing Type Ident. no. RKC4.4T-2/TEL 6625013



Connection cable, female M12, straight, 4-pin, cable length: 2 m, sheath material: PVC, black; cULus approval; other cable lengths and qualities available, see www.turck.com