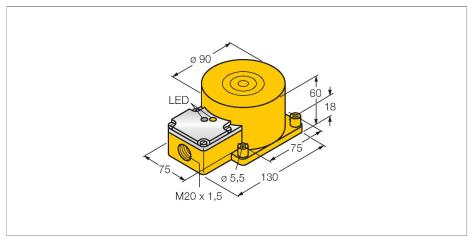


NI100U-K90SR-VN4X2 Inductive Sensor – With Extended Switching Distance



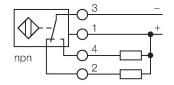
Technical data

ID	Type	NI100U-K90SR-VN4X2
Rated switching distance 100 mm Mounting conditions Non-flush, partially embeddable Secured operating distance ≤ (0.81 × Sn) mm Repeat accuracy ≤ 2 % of full scale Temperature drift ≤ ± 10 % ≤ ± 15 %, ≤ -25 °C v ≥ +70 °C Hysteresis 315 % Electrical data Operating voltage U ₈ 1065 VDC Ripple U ₈ ≤ 10 % U _{brasx} DC rated operating current I ₆ ≤ 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 ₆ ≤ 1.8 V Wire break/reverse polarity protection yes/Complete Output function 4-wire, Complementary contact, NPN DC field stability 300 mT AC field stability 300 mT AC field stability 300 mT Insulation class Image: Switching frequency 0.25 kHz Mechanical data	•	1515503
Mounting conditions Non-flush, partially embeddable Secured operating distance ≤ $(0.81 \times Sn)$ mm Repeat accuracy ≤ 2 % of full scale Temperature drift ≤ ± 10 % ≤ ± 15 %, ≤ -25 °C v ≥ +70 °C Hysteresis 315 % Electrical data Operating voltage Us 1065 VDC Ripple Us ≤ 10 % Usmax DC rated operating current Is ≤ 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 Is ≤ 1.8 V Wire break/reverse polarity protection yes/Complete Output function 4-wire, Complementary contact, NPN DC field stability 300 mT AC field stability 300 mT AC field stability 300 mT Insulation class □ Switching frequency 0.25 kHz Mechanical data	General data	
Secured operating distance ≤ (0.81 × Sn) mm Repeat accuracy ≤ 2 % of full scale Temperature drift ≤ ± 10 % ≤ ± 15 %, ≤ -25 °C v ≥ +70 °C Hysteresis 315 % Electrical data Operating voltage U_{0} 1065 VDC Ripple U_{0} ≤ 10 % U_{0} DC rated operating current I_{0} ≤ 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_{0} ≤ 1.8 V Wire break/reverse polarity protection yes/Complete Output function 4-wire, Complementary contact, NPN DC field stability 300 mT AC field stability 300 mTss Insulation class Insulation class Switching frequency 0.25 kHz Mechanical data	Rated switching distance	100 mm
Repeat accuracy ≤ 2 % of full scale Temperature drift ≤ ±10 % ≤ ± 15 %, ≤ -25 °C v ≥ +70 °C Hysteresis 315 % Electrical data 1065 VDC Ripple U _{ss} ≤ 10 % U _{Broakx} DC rated operating current I _s ≤ 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 _s ≤ 1.8 V Wire break/reverse polarity protection yes/Complete Output function 4-wire, Complementary contact, NPN DC field stability 300 mT AC field stability 300 mT _{ss} Insulation class □ Switching frequency 0.25 kHz Mechanical data	Mounting conditions	Non-flush, partially embeddable
Temperature drift $\leq \pm 10 \%$ $\leq \pm 15 \%$, $\leq -25 \degree \text{C v} \geq +70 \degree \text{C}$ Hysteresis 315% Electrical data Operating voltage U _B 1065 VDC Ripple U _{ss} $\leq 10 \% \text{ U}_{Bmax}$ DC rated operating current I _B $\leq 200 \text{ mA}$ No-load current $\leq 15 \text{ mA}$ Residual current $\leq 0.1 \text{ mA}$ Isolation test voltage 0.5 kV Short-circuit protection $yes/Cyclic$ Voltage drop at I _B $\leq 1.8 \text{ V}$ Wire break/reverse polarity protection $yes/Complete$ Output function 4 -wire, Complementary contact, NPN DC field stability 300 mT AC field stability 300 mT Switching frequency 0.25 kHz Mechanical data	Secured operating distance	≤ (0.81 × Sn) mm
$≤ \pm 15 \%, \le -25 ^{\circ}\text{C v} \ge +70 ^{\circ}\text{C}$ Hysteresis 315 % Electrical data Operating voltage U _B 1065 VDC Ripple U _{ss} $≤ 10 \% \text{U}_{\text{Breax}}$ DC rated operating current I _B $≤ 200 \text{mA}$ No-load current $≤ 15 \text{mA}$ Residual current $≤ 0.1 \text{mA}$ Isolation test voltage 0.5 kV Short-circuit protection yes/Cyclic Voltage drop at I _B $≤ 1.8 \text{V}$ Wire break/reverse polarity protection yes/Complete Output function 4-wire, Complementary contact, NPN DC field stability 300 mT AC field stability 300 mT AC field stability 300 mT Switching frequency 0.25 kHz Mechanical data	Repeat accuracy	≤ 2 % of full scale
Hysteresis Electrical data Operating voltage U _B 1065 VDC Ripple U _{ss} ≤ 10 % U _{Bmax} DC rated operating current I _e × 200 mA No-load current Esidual current Solution test voltage Voltage drop at I _e Vire break/reverse polarity protection Cutput function Cutput function AC field stability AC field stability Switching frequency Mechanical data 1065 VDC 1065 VDC	Temperature drift	≤ ±10 %
Electrical data Operating voltage U _B Ripple U _{ss} Signal operating current I _e DC rated operating current I _e No-load current Signal our operating current I _e Signal our		≤ ± 15 %, ≤ -25 °C v ≥ +70 °C
Operating voltage U _B 1065 VDC Ripple U _{ss} ≤ 10 % U _{Bmax} DC rated operating current I _e ≤ 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 break/reverse polarity protection yes/Complete Output function 4-wire, Complementary contact, NPN DC field stability 300 mT AC field stability 300 mT AC field stability 300 mT _{ss} Insulation class □ Switching frequency 0.25 kHz Mechanical data	Hysteresis	315 %
Ripple U _{ss} ≤ 10 % U _{Bmax} DC rated operating current I _e ≤ 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 break/reverse polarity protection yes/Complete Output function 4-wire, Complementary contact, NPN DC field stability 300 mT AC field stability 300 mT _{ss} Insulation class □ Switching frequency 0.25 kHz Mechanical data	Electrical data	
DC rated operating current I₀ ≤ 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 break/reverse polarity protection yes/Complete Output function 4-wire, Complementary contact, NPN DC field stability 300 mT AC field stability 300 mT AC field stability 300 mT Switching frequency 0.25 kHz Mechanical data	Operating voltage U _B	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 I₀ ≤ 1.8 V Wire break/reverse polarity protection yes/Complete Output function 4-wire, Complementary contact, NPN DC field stability 300 mT AC field stability 300 mT₅s Insulation class □ Switching frequency 0.25 kHz Mechanical data	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 4-wire, Complementary contact, NPN DC field stability 300 mT AC field stability 300 mTss Insulation class □ Switching frequency 0.25 kHz Mechanical data	DC rated operating current I _o	≤ 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 4-wire, Complementary contact, NPN DC field stability 300 mT AC field stability 300 mTss Insulation class □ Switching frequency 0.25 kHz Mechanical data	No-load current	≤ 15 mA
Short-circuit protection yes/Cyclic Voltage drop at I_e ≤ 1.8 V Wire break/reverse polarity protection yes/Complete Output function 4-wire, Complementary contact, NPN DC field stability 300 mT AC field stability 300 mTss Insulation class □ Switching frequency 0.25 kHz Mechanical data	Residual current	≤ 0.1 mA
Voltage drop at I₀ ≤ 1.8 V Wire break/reverse polarity protection yes/Complete Output function 4-wire, Complementary contact, NPN DC field stability 300 mT AC field stability 300 mTss Insulation class □ Switching frequency 0.25 kHz Mechanical data	Isolation test voltage	0.5 kV
Wire break/reverse polarity protection yes/Complete Output function 4-wire, Complementary contact, NPN DC field stability 300 mT AC field stability 300 mT _{ss} Insulation class □ Switching frequency 0.25 kHz Mechanical data	Short-circuit protection	yes/Cyclic
Output function 4-wire, Complementary contact, NPN DC field stability 300 mT AC field stability 300 mT _{ss} Insulation class □ Switching frequency 0.25 kHz Mechanical data	Voltage drop at I _e	≤ 1.8 V
DC field stability AC field stability 300 mT 300 mTss Insulation class Switching frequency 0.25 kHz Mechanical data	Wire break/reverse polarity protection	yes/Complete
AC field stability Insulation class Switching frequency Mechanical data	Output function	4-wire, Complementary contact, NPN
Insulation class Switching frequency 0.25 kHz Mechanical data	DC field stability	300 mT
Switching frequency 0.25 kHz Mechanical data	AC field stability	300 mT _{ss}
Mechanical data	Insulation class	
	Switching frequency	0.25 kHz
Design Rectangular, K90SR	Mechanical data	
	Design	Rectangular, K90SR

Features

- Rectangular, height 60 mm
- Plastic, PBT-GF30-V0
- Factor 1 for all metals
- ■Increased switching distance
- ■Protection class IP68
- Resistant to magnetic fields
- ■Extended temperature range
- Auto-compensation protects against predamping
- ■One-sided fitting possible
- ■DC 4-wire, 10...65 VDC
- Changeover contact, NPN output
- ■Terminal chamber

Wiring diagram



Functional principle

Inductive sensors are designed for wear-free and contactless detection of metal objects. uprox+ sensors have significant advantages due to their patented multi-coil system. They excel thanks to their optimum switching distances, maximum flexibility and operational reliability as well as efficient standardization.



Technical data

Dimensions	130 x 75 x 60 mm
Housing material	Plastic, PBT-GF30-V0
Active area material	PBT-GF30-V0
Electrical connection	Terminal chamber
Clamping ability	≤ 2.5 mm²
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
Power-on indication	LED, Green
Switching state	LED, Yellow

Mounting instructions

