



DATA SHEET

IQR40-45NPPKC0K

IMR
Inductive proximity sensors

SICK

Sensor Intelligence



INDUCTIVE PROXIMITY SENSORS

IQR40-45NPPKC0K

ORDERING INFORMATION

Type	part no.
IQR40-45NPPKC0K	6069284

Further device versions and accessories at www.sick.com/IMR



DETAILED TECHNICAL DATA

FEATURES

Housing	Rectangular
Housing	Short-body
Dimensions (W x H x D)	40 mm x 40 mm x 65 mm
Sensing range S_n	45 mm
Safe sensing range S_a	36.4 mm
Installation type	Non-flush
Switching frequency	250 Hz
Connection type	Male connector M12, 4-pin
Switching output	PNP
Switching output detail	PNP
Output function	Complementary
Electrical wiring	DC 4-wire
Enclosure rating	IP68
Special features	Reduction factor 1, Magnetic-field-resistant
Special applications	Welding range, Difficult application conditions
Items supplied	Clamp-lock mounting system (1x)

MECHANICS/ELECTRONICS

Supply voltage	10 V DC ... 30 V DC
Ripple	≤ 10 %

¹⁾ At I_a max.
²⁾ Supply voltage U_a and constant ambient temperature T_a .
³⁾ Of S_r .
⁴⁾ -25 °C ... +70 °C.
⁵⁾ Reference voltage: 50 V DC.

Voltage drop	$\leq 1.8 \text{ V}^{1)}$
Hysteresis	3 % ... 15 %
Reproducibility	$\leq 2 \text{ \%}^{2)}$ 3)
Temperature drift (of S_r)	$\leq \pm 10 \% \leq \pm 15 \%^{4)}$
Continuous current I_a	$\leq 200 \text{ mA}$
No load current	$\leq 15 \text{ mA}$
Off-state current	$\leq 0.1 \text{ mA}$
Short-circuit protection	✓
Magnetic field strength	$\leq 100 \text{ mT}$
Shock and vibration resistance	30 g, 11 ms / 10 ... 55 Hz, 1 mm
Ambient operating temperature	-30 °C ... +85 °C
Housing material	Plastic, PBT
Sensing face material	Plastic, PBT
Protection class	II ⁵⁾
UL File No.	E191603

¹⁾ At I_a max.

²⁾ Supply voltage U_a and constant ambient temperature T_a .

³⁾ Of S_r .

⁴⁾ -25 °C ... +70 °C.

⁵⁾ Reference voltage: 50 V DC.

SAFETY-RELATED PARAMETERS

MTTF _D	139 years
DC _{avg}	0%
T _M (mission time)	20 years

REDUCTION FACTORS

Note	The values are reference values which may vary
Reduction factor	Reduction factor 1
Stainless steel (V2A, 304)	1
Aluminum (Al)	1
Copper (Cu)	1
Brass (Br)	1

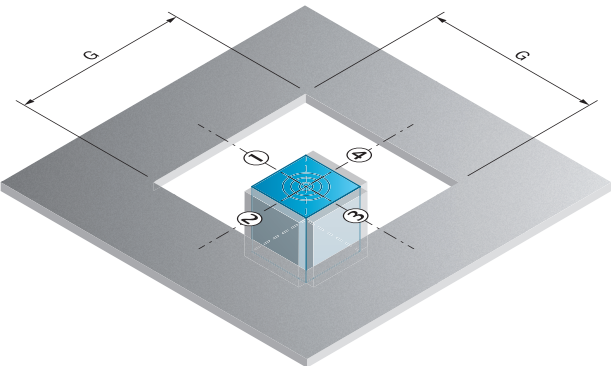
INSTALLATION NOTE

Remark	Associated graphic see "Installation"
A	40 mm
B	200 mm
C	40 mm
D	75 mm
E	30 mm
F	300 mm
G	150 mm

CERTIFICATES

EU declaration of conformity	✓
China RoHS	✓
China Compulsory Product Certification (CCC) ex-empt	✓
cULus certificate	✓

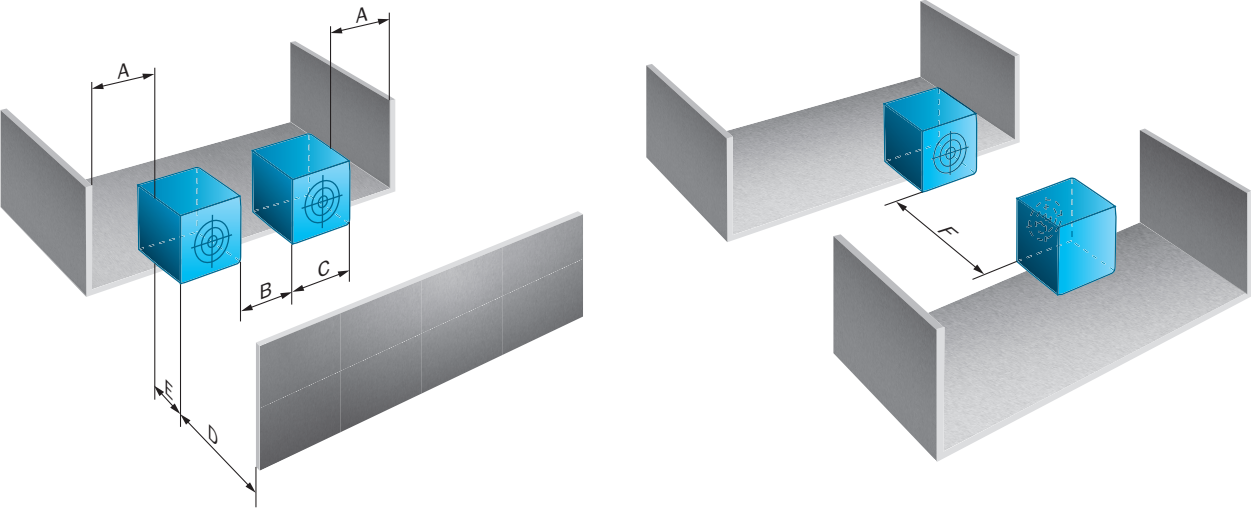
INSTALLATION NOTE INSTALLATION IN PINHOLE APERTURE



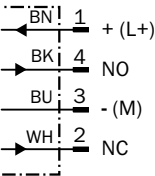
Sensor with rotated turning angle (the specified values refer to 1 mm thick sheet steel).

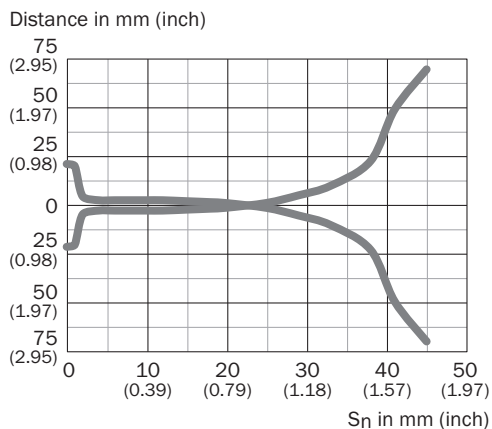
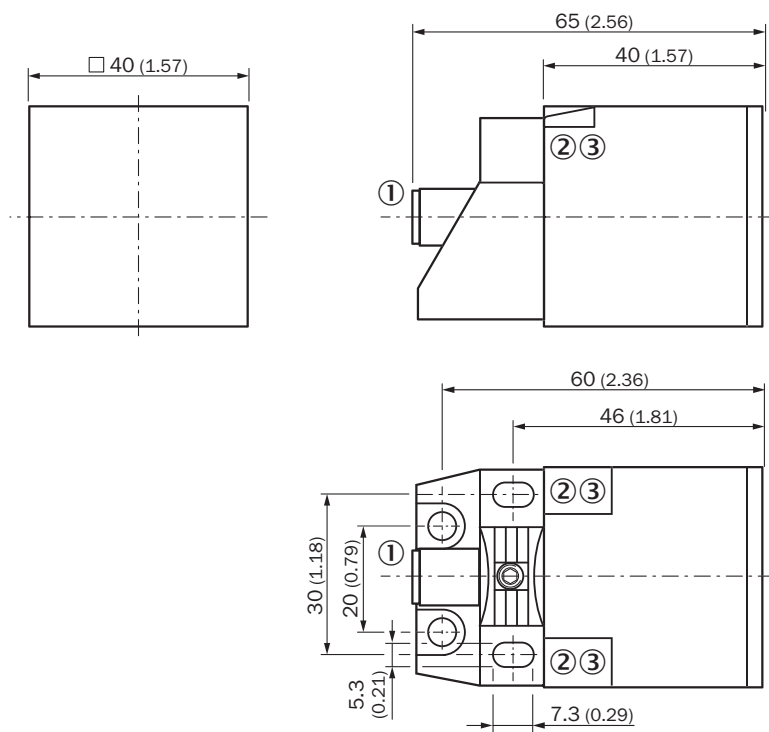
- ① Resting on metal $S_r = 45\text{ mm}$
- ② Resting on metal and a side panel $S_r = 22\text{ mm}$
- ③ Resting on metal and two side panels $S_r = 13\text{ mm}$
- ④ Resting on metal and three side panels $S_r = 10\text{ mm}$

INSTALLATION NOTE



CONNECTION DIAGRAM CD-009



RESPONSE DIAGRAM**DIMENSIONAL DRAWING**

Dimensions in mm (inch)

- ① M12 x 1
- ② LED output state, yellow
- ③ operational status LED, green

Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at www.sick.com/6069284



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SICK AT A GLANCE

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SICK combines sensor intelligence with industry expertise and certified consulting services. We provide the ideal foundation for scalable as well as tailor-made automation solutions and create added value along the entire value chain. Our close partnerships with our customers are more than just a promise: Together, we optimize productivity, improve quality, protect health and safety, and help build a sustainable future. All with empathy and trust.

Since 1946, we have been developing innovative technologies with passion and a pioneering spirit. With a global network in around 40 countries, SICK has a global presence and is always close by. The company's headquarters are located in Waldkirch near Freiburg, Germany. Our customers benefit from our understanding of both local and global requirements, which enables us to deliver tailor-made solutions

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