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DATA SHEET

IN40-E0109K

IN4000 Direct
Non-contact safety switches

SICK Sensor Intelligence

NON-CONTACT SAFETY SWITCHES

IN40-E0109K

ORDERING INFORMATION

Type	part no.
IN40-E0109K	6050281

Further device versions and accessories at www.sick.com/IN4000_Direct

DETAILED TECHNICAL DATA

FEATURES

Sensor principle	Inductive
Number of safe outputs	2
Switching delay from state change	Max. 50 ms [1]
Enable zone	4 mm ... 20 mm [2]
Assured switch off distance S_{ar}	45 mm [2]
Actuation directions	5
Active sensor surfaces	1
Monitoring time minimum dwell time	≥ 0.2 s

[1] During this time the output is switched off (Logical “0”), see response range.

[2] Dependent on material. The indicated values refer to steel ST37.

SAFETY-RELATED PARAMETERS

Safety integrity level	SIL 3 (IEC 61508)
Category	Category 3 (EN ISO 13849)
Performance level	PL e (EN ISO 13849)
PFH_D (mean probability of a dangerous failure per hour)	1.0×10^{-8}
T_M (mission time)	10 years (EN ISO 13849) [1] 20 years (EN ISO 13849) [2]
Type	Type 3 (EN ISO 14119)
Actuator coding level	Uncoded (EN ISO 14119)
Classification in compliance with IEC/EN 60947-5-3	PDF-M

[1] At –25 °C ... +70 °C and 5 % ... 95 % relative air humidity.

[2] At +10 °C ... +40 °C and 5 % ... 70 % relative air humidity.

FUNCTIONS

Safe series connection	With Flexi Loop (with diagnostics)

INTERFACES

Connection type	Plug connector, M12, 4-pin
Coupling nut material	Brass
Display elements	LEDs
Power indication	✓
Status display	✓

ELECTRONICS

Protection class	III (EN 50178)
Supply voltage V_s	24 V DC (19.2 V DC ... 30 V DC)
Power consumption	30 mA
Type of output	Self-monitoring semiconductor outputs (OSSDs)

MECHANICS

Design	Rectangular
Weight	0.22 kg
Material	
Housing	Zinc die cast (housing), PPE (cover)
Installation type	Non-flush

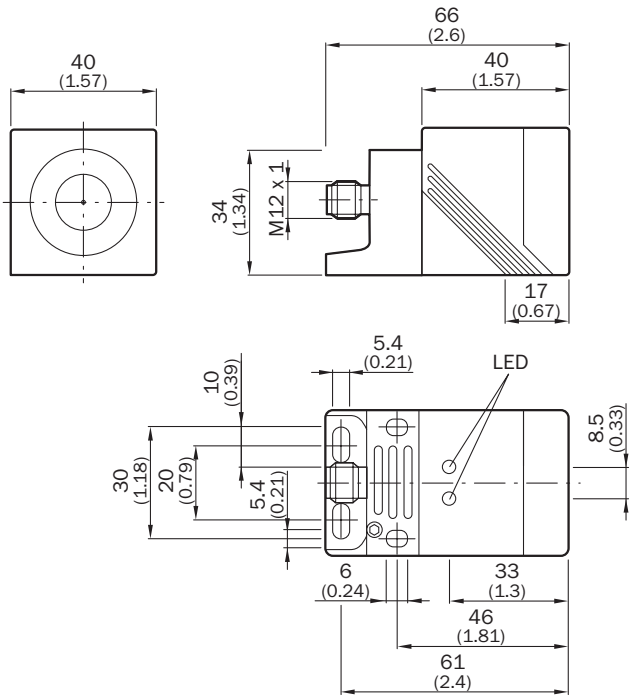
AMBIENT DATA

Enclosure rating	IP67 (IEC 60529)
Ambient operating temperature	–25 °C ... +60 °C
Storage temperature	–25 °C ... +70 °C
Vibration resistance	10 Hz ... 55 Hz, 1 mm (EN 60947-5-3)
Shock resistance	30 g, 11 ms (EN 60947-5-3)

CERTIFICATES

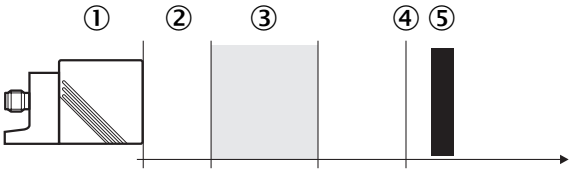
EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
cULus certificate	✓
Third party certificate	✓

DIMENSIONAL DRAWING



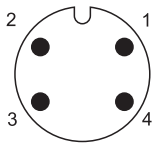
Dimensions in mm (inch)

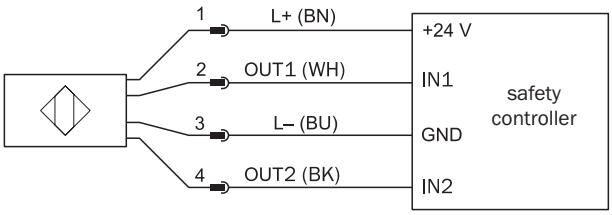
RESPONSE RANGE



① sensor
② Close range
③ enable zone
④ assured switch off distance S_{ar}
⑤ actuator

PINOUTS





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/6050281

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SICK AT A GLANCE

SICK is a leading global technology company for intelligent sensors and integrated solutions in industrial automation. Our technologies set benchmarks, making your industrial processes more efficient, safer and more sustainable – both in logistics and manufacturing operations.

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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