Data sheet



IN40-E0109K

IN4000 Direct

NON-CONTACT SAFETY SWITCHES

SICK
Sensor Intelligence.



Ordering information

Type	part no.
IN40-E0109K	6050281

Other models and accessories ➜ 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 [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

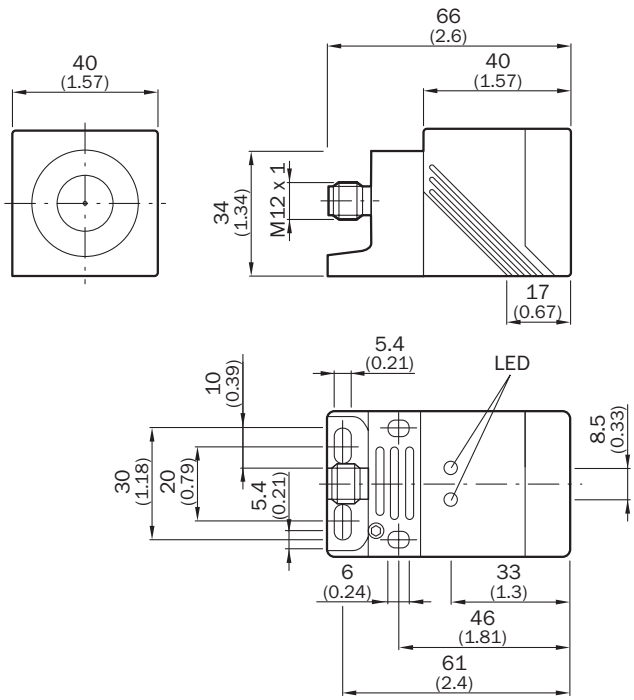
EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
cULus certificate	✓
Third party certificate	✓

Classifications

ECLASS 5.0	27272401
ECLASS 5.1.4	27272401
ECLASS 6.0	27272401
ECLASS 6.2	27272401
ECLASS 7.0	27272401
ECLASS 8.0	27272401
ECLASS 8.1	27272401

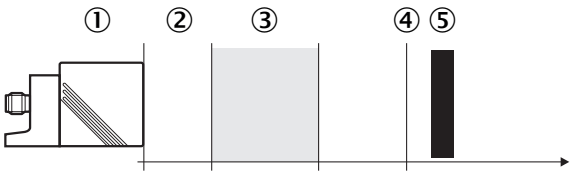
ECLASS 9.0	27272401
ECLASS 10.0	27272401
ECLASS 11.0	27272401
ECLASS 12.0	27274101
ETIM 5.0	EC001818
ETIM 6.0	EC001818
ETIM 7.0	EC001818
ETIM 8.0	EC001818
UNSPSC 16.0901	39122205

Dimensional drawing



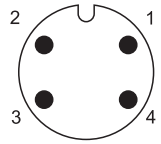
Dimensions in mm (inch)

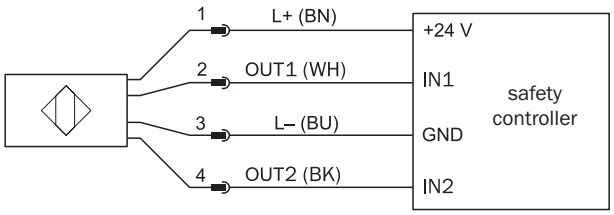
Response range



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

Pinouts


2
1
3
4


1
L+ (BN)
+24 V
2
OUT1 (WH)
IN1
safety
controller
3
L– (BU)
GND
4
OUT2 (BK)
IN2

SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

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