



IMS12-04BNSNC0S

IMS

INDUCTIVE PROXIMITY SENSORS

SICK
Sensor Intelligence.

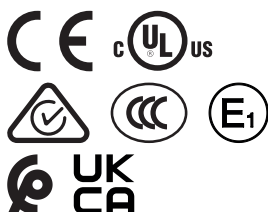


Ordering information

Type	part no.
IMS12-04BNSNC0S	1103178

Included in delivery: BEF-MU-M12 (1)

Other models and accessories → www.sick.com/IMS



Detailed technical data

Features

Housing	Metric
Housing	Standard design
Thread size	M12 x 1
Diameter	Ø 12 mm
Sensing range S_n	4 mm
Safe sensing range S_a	3.24 mm
Installation type	Flush
Switching frequency	2,000 Hz
Connection type	Male connector M12, 4-pin ¹⁾
Switching output	NPN
Switching output detail	NPN
Output function	NO
Electrical wiring	DC 3-wire
Enclosure rating	IP68 ²⁾ IP69K ³⁾
Special features	Resistant to cleaning agents, Temperature resistance
Special applications	Mobile machines, Hygienic and washdown zones, Difficult application conditions
Items supplied	Mounting nut, brass, nickel-plated (2x)

¹⁾ With gold plated contact pins.

²⁾ According to EN 60529.

³⁾ According to ISO 20653:2013-03.

Mechanics/electronics

Supply voltage	7.2 V DC ... 60 V DC
Ripple	≤ 10 %
Voltage drop	≤ 2.5 V ¹⁾
Time delay before availability	100 ms
Hysteresis	3 % ... 20 %
Reproducibility	≤ 2 % ²⁾
Temperature drift (of S_r)	± 10 %
EMC	Emitted interference and interference immunity in accordance with Motor Insurance Directive ECE-R10 Rev. 5: E1-Type approval Interference immunity in accordance with DIN ISO 11452-2: 100 V/m AM vertical 20 MHz - 800 MHz; AM horizontal 200 MHz - 800 MHz; PM vertical/horizontal 800 MHz - 2.7 GHz Conducted disturbances in accordance with ISO 7637-2 (pulse/severity/failure criterion 12 V/failure criterion 24 V): 1/IV/C/C, 2a/IV/A/A, 2b/IV/C/C, 3a/IV/A/A, 3b/IV/A/A, 4/IV/C/A, 5a/IV/B/B, 5b/IV/B/B EN 61000-4-2 ESD: 4 kV CD / 8 kV AD EN 61000-4-3 HF radiated: 10 V/m EN 61000-4-4 burst: 2 kV EN 61000-4-5 surge: 0,5 kV L-to-L, Ri: 2 Ohm EN 61000-4-6 HF wire-bound: 10 V
Environmental test	Quick temperature change EN 60068-2-14, Na: TA = -25 °C, TB = 75 °C, t1 = 40 min, t2 = < 10 s, 300 cycles, Delta S _r ≤ 10%
Corrosion test	Salt spray test EN 60068-2-52: severity 5, 4 cycles
Continuous current I_a	≤ 200 mA ³⁾
No load current	≤ 10 mA
Short-circuit protection	✓
Power-up pulse protection	✓
Shock and vibration resistance	Vibration resistance EN 60068-2-6 Fc: 25 g peak (10 Hz ... 2,000 Hz) / -20 °C ... +50 °C Shock resistance EN 60068-2-27 Ea: 100 g 11 ms; 3 shocks in every direction of the 3 coordinate axes / -40 °C ... +85 °C Continuous shock resistance EN 60068-2-29 Eb: 40 g 3 ms rise, 7 ms fall / 5,000 shocks in every direction of the 3 coordinate axes / -20 °C ... +50 °C Broadband noise EN 60068-2-64: 15 g rms (5 Hz ... 2,000 Hz) / 8 hours in every direction of the 3 coordinate axes / -40 °C ... +85 °C
Ambient operating temperature	-40 °C ... +100 °C
Housing material	Stainless steel V4A, DIN 1.4404 / AISI 316L
Sensing face material	Plastic, LCP
Housing length	65 mm
Thread length	48 mm
Tightening torque, max.	Typ. 20 Nm
Protection class	III
UL File No.	E181493

¹⁾ At I_a max.

²⁾ Supply voltage U_B and constant ambient temperature Ta.

³⁾ See "Continuous current I_a above temperature" characteristic curve.

Safety-related parameters

MTTF_D	1,196 years
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DC_{avg}	0 %
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Reduction factors

Note	The values are reference values which may vary
Stainless steel (V2A, 304)	Approx. 0.65
Aluminum (Al)	Approx. 0.35
Copper (Cu)	Approx. 0.24
Brass (Br)	Approx. 0.38

Installation note

Remark	Associated graphic see "Installation"
B	12 mm
C	12 mm
D	12 mm
F	32 mm

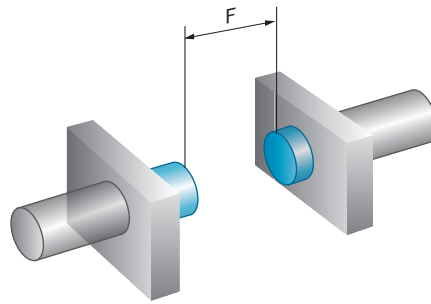
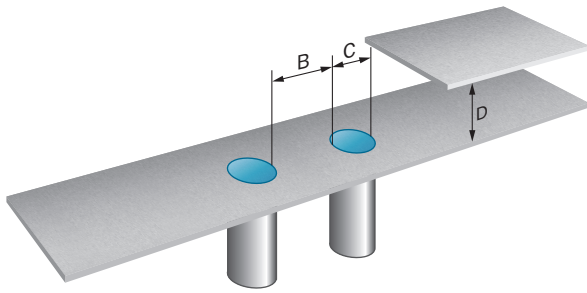
Certificates

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China-RoHS	✓
CCC certificate	✓
cULus certificate	✓
ECE test certificate	✓

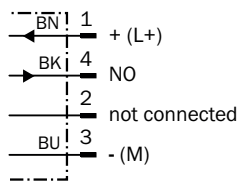
Classifications

ECLASS 5.0	27270101
ECLASS 5.1.4	27270101
ECLASS 6.0	27270101
ECLASS 6.2	27270101
ECLASS 7.0	27270101
ECLASS 8.0	27270101
ECLASS 8.1	27270101
ECLASS 9.0	27270101
ECLASS 10.0	27270101
ECLASS 11.0	27270101
ECLASS 12.0	27274001
ETIM 5.0	EC002714
ETIM 6.0	EC002714
ETIM 7.0	EC002714
ETIM 8.0	EC002714
UNSPSC 16.0901	39122230

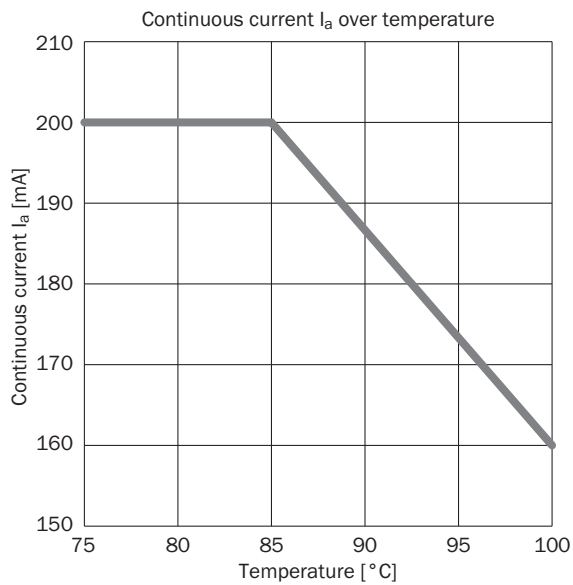
Installation note Flush installation



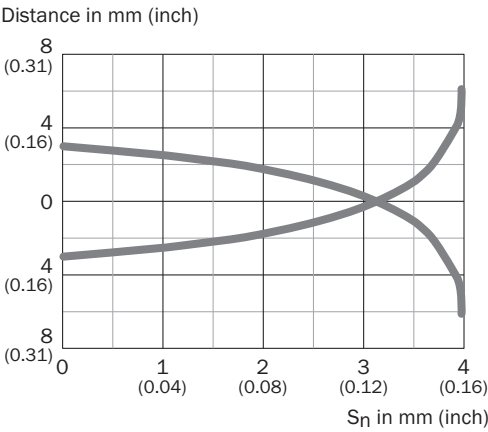
Connection diagram Cd-007



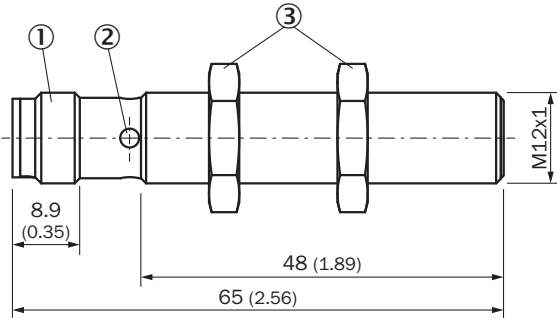
Temperature derating



Response diagram



Dimensional drawing IMS12, V4A, flush



Dimensions in mm (inch)

- ① Connection
- ② Display LED
- ③ fastening nuts (2x); width across 17, brass nickel-plated

Recommended accessories

Other models and accessories → www.sick.com/IMS

	Brief description	Type	part no.
Mounting systems			
	Description: Plate N06N for universal clamp bracket, M18 Material: Stainless steel, stainless steel Details: Stainless steel 1.4571 (sheet), Stainless steel 1.4408 (clamp) Items supplied: Universal clamp (5322627), mounting hardware Usable for: MH15, MH15V, V180-2, V18V, W15, GR18, V18, V18 Laser, V12-2, SimpleSense, SureSense, M18 round sensors	BEF-KHS-N06N	2051622
	Description: Mounting bracket for M12 sensors Material: Steel Details: Steel, zinc coated Items supplied: Without mounting hardware	BEF-WN-M12	5308447

	Brief description	Type	part no.
connectors and cables			
	• Connection type head A: Female connector, M12, 4-pin, straight • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 5 m, 4-wire, PP • Description: Sensor/actuator cable, unshielded • Connection systems: Flying leads • Note: This product is generally resistant to chemical cleaning agents (see ECOLAB) and other chemical compounds such as H2O2 and CH2O2. Before permanent installation is carried out, the material's resistance to the cleaning agent being used must be checked., Resistant against lactic acid & hydrogen peroxide (H2O2) • Application: Hygienic and washdown zones, Drag chain operation	DOL-1204-G05MRN	6058476
	• Connection type head A: Female connector, M12, 4-pin, straight, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 5 m, 4-wire, PUR, halogen-free • Description: Sensor/actuator cable, unshielded • Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation	YF2A14-050UB3XLEAX	2095608
	• Connection type head A: Female connector, M12, 4-pin, straight, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 5 m, 4-wire, PVC • Description: Sensor/actuator cable, unshielded • Application: Zones with chemicals, Uncontaminated zones	YF2A14-050VB3XLEAX	2096235

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.”

WORLDWIDE PRESENCE:

Contacts and other locations –www.sick.com