



DATA SHEET

IQ12-04BPPKQ8SA71

IMC
Inductive proximity sensors

SICK

Sensor Intelligence

INDUCTIVE PROXIMITY SENSORS

IQC12-04BPP-
KQ8SA71

ORDERING INFORMATION

Type	part no.
IQC12-04BPPKQ8SA71	1083798

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



Illustration may differ

DETAILED TECHNICAL DATA

FEATURES

Housing	Rectangular
Dimensions (W x H x D)	12 mm x 40 mm x 26 mm
Sensing range S_n	0 mm ... 4 mm ¹⁾
Safe sensing range S_s	3.24 mm
Number of switching points	Up to 4 adjustable switching points or windows
Switching modes	Single point, Window mode, Two point mode, Visual adjustment indicator
Switching frequency Qint.1 / Qint.2 on Pin2	1,000 Hz
Installation type	Flush
Connection type	Cable with M12 male connector, 4-pin, 0.2 m ²⁾
Switching output	PNP
Switching output detail	PNP
Output Q/C	Switching output or IO-Link mode
Output MFC	Switching output or input
Output function	NC / NO
Output characteristic	Programmable
Electrical wiring	DC 4-wire
Enclosure rating	IP68 ³⁾
Special features	Smart Task

¹⁾ Adjustable.

²⁾ With gold plated contact pins.

³⁾ According to EN 60529.

Pin 2 configuration	External input, Teach-in, switching signal
---------------------	--

¹⁾ Adjustable.

²⁾ With gold plated contact pins.

³⁾ According to EN 60529.

MECHANICS/ELECTRONICS

Supply voltage	10 V DC ... 30 V DC ¹⁾
Ripple	≤ 10 %
Voltage drop	≤ 2 V ²⁾
Hysteresis	Programmable ³⁾
Reproducibility	≤ 5 % ⁴⁾ ⁵⁾
Temperature drift (of S _i)	± 10 %
EMC	According to EN 60947-5-2
Continuous current I _a	≤ 200 mA ⁶⁾
No load current	35 mA
Cable material	PUR
Short-circuit protection	✓
Power-up pulse protection	✓
Shock and vibration resistance	30 g, 11 ms / 10 ... 55 Hz, 1 mm
Ambient operating temperature	-25 °C ... +75 °C
Housing material	Plastic, VISTAL®
Sensing face material	Plastic, VISTAL®
Tightening torque, max.	< 1 Nm
Teach-in accuracy	+/- 3% of Sr
Resolution, typical (range)	20 μm (0 mm ... 4 mm)
Resolution, maximum (area)	40 μm (0 mm ... 4 mm)

¹⁾ IO-Link mode: 18 VDC ... 30 VDC.

²⁾ At I_a max.

³⁾ To comply with EN 60947-5-2, a hysteresis of approx. 10% must be set.

⁴⁾ Supply voltage U_s and constant ambient temperature Ta.

⁵⁾ Of Sr.

⁶⁾ 200 mA total for both switching outputs.

SAFETY-RELATED PARAMETERS

MTTF _D	688 years
DC _{avg}	0 %
T _M (mission time)	20 years

COMMUNICATION INTERFACE

Communication interface	IO-Link V1.1
Communication Interface detail	COM2 (38,4 kBaud)
Cycle time	5 ms
Process data length	32 Bit
Process data structure	Bit 0 = switching signal Q _{L1} Bit 1 = switching signal Q _{L2}

	Bit 2 = switching signal Q_{Int3} Bit 3 = switching signal Q_{Int4} Bit 18 ... 31 = counting value
Factory setting	Switching Point 1: reference value 1 Output: normally open Pin 2 configuration: input

REFERENCE VALUES

Note	Reference value in Digits for switching point in mm stored in the sensor
Reference value 1	4 mm
Reference value 2	3 mm
Reference value 3	2 mm
Reference value 4	1 mm

REDUCTION FACTORS

Stainless steel (V2A, 304)	Approx. 0.7
Aluminum (Al)	Approx. 0.4
Copper (Cu)	Approx. 0.3
Brass (Br)	Approx. 0.4

INSTALLATION NOTE

Remark	Associated graphic see "Installation"
A	0 mm
B	12 mm
C	12 mm
D	12 mm
E	0 mm
F	32 mm
G	0 mm

SMART TASK

Smart Task name	Counter + debouncing
Logic function	Window Hysteresis Direct
Timer function	Deactivated Switch-on delay Off delay ON and OFF delay Impulse (one shot)
Inverter	Adjustable
Maximum counting frequency	SIO Logic: 1000 Hz ¹⁾ IOL: 1000 Hz ²⁾
Counter reset	SIO Logic: 500 μ s IOL: ---
Debounce time max.	SIO Logic: 30 s ¹⁾ IOL: 30 s ²⁾
Switching signal	Switching signal Q_{L1} Output type (dependant on the adjusted threshold) Switching signal Q_{L2} Output type (dependant on the adjusted threshold)

¹⁾ SIO Logic: Sensor operation in standard I/O mode without IO-Link communication. Sensor-internal logic or timing parameters plus Automation Functions used.

²⁾ IOL: Sensor operation with full IO-Link communication and usage of logic, timing and Automation Function parameters.

Measuring value	Counting value
-----------------	----------------

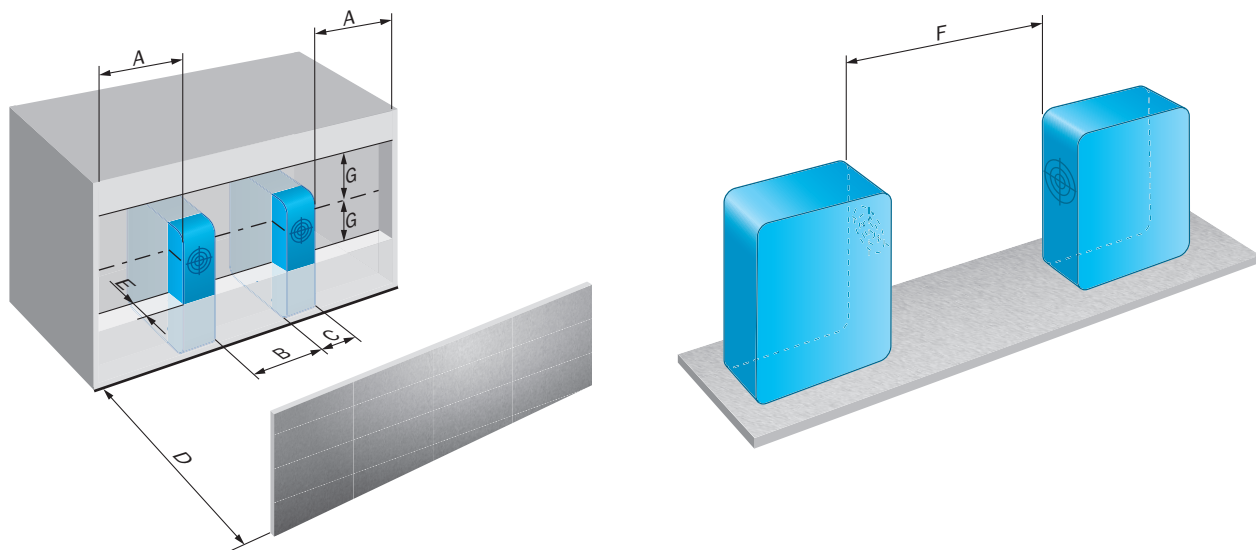
¹ SIO Logic: Sensor operation in standard I/O mode without IO-Link communication. Sensor-internal logic or timing parameters plus Automation Functions used.

² IOL: Sensor operation with full IO-Link communication and usage of logic, timing and Automation Function parameters.

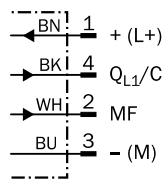
CERTIFICATES

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
cULus certificate	✓
IO-Link certificate	✓
Information according to Art. 3 of Data Act (Regulation EU 2023/2854)	✓

INSTALLATION NOTE

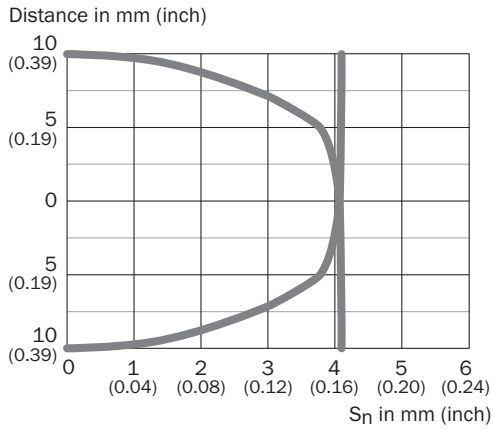


CONNECTION DIAGRAM CD-526

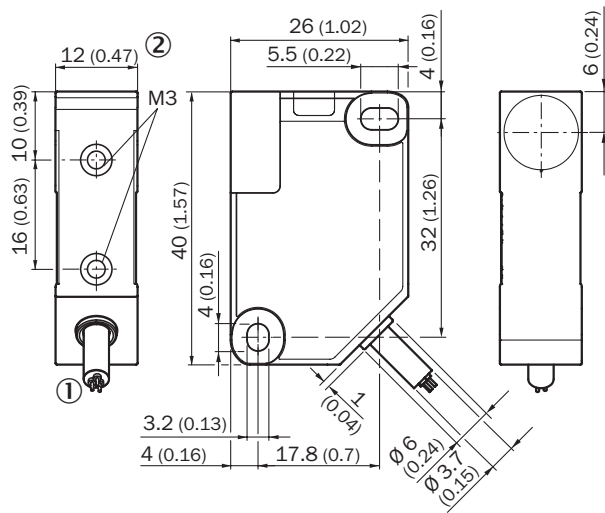


Q_{L1}/C = Switching output,
IO-Link communication
MF = Multifunction

RESPONSE DIAGRAM



DIMENSIONAL DRAWING IQ12, CABLE



Dimensions in mm (inch)

- ① Connection
- ② LED indicator 270°

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/1083798



SICK AG
WALDKIRCH
GERMANY
SICK.COM

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

SICK
Sensor Intelligence