SICK.COM



DATA SHEET

RFH510-1004301

RFH5xx
RFID

SICK Sensor Intelligence



RFID

RFH510-1004301

ORDERING INFORMATION

Type	part no.
RFH510-1004301	6072841

Further device versions and accessories at www.sick.com/RFH5xx

DETAILED TECHNICAL DATA

FEATURES

Version	Short Range
Technology	RFID
Product category	RFID read/write device with integrated antenna
Radio approval	European Union [1] USA Canada Australia Korea México China India United Kingdom Singapore
Frequency band	HF (13.56 MHz)
Carrier frequency	13.56 MHz
RFID standard	ISO/IEC 15693, ISO/IEC 18000-3 “Mode 1”
Connection type	IO-Link
Reading range	≤ 60 mm [2]
Antenna	Integrated
Air interface data transmission rate	26 kbit/s

[1] All member states of the European Union, EEA-EFTA states (Liechtenstein, Iceland, Norway), Switzerland, Turkey.

[2] With RFID ISO card transponder in plane parallel alignment to read/write device antenna; depending on dimensions and quality of transponder.

MECHANICS/ELECTRONICS

Connection type	1 x M12, 4-pin male connector
Supply voltage	11 V DC ... 32 V DC
Power consumption	≤ 1.8 W

[1] Continuous operation at ambient operating temperature +25 °C, 322 years at +40 °C, 41 years +80 °C.

Housing material	Brass (chromium-plated) PBTP (blue)
Enclosure rating	IP67
Protection class	II
Weight	87 g, Including nuts
Diameter	30 mm
Design	Cylindrical (M30)
MTTF	> 756 years [1]

[1] Continuous operation at ambient operating temperature +25 °C, 322 years at +40 °C, 41 years +80 °C.

INTERFACES

IO-Link	✓ , IO-Link V1.1
Remark	Process data length: IN (input), 32 bytes; OUT (output), 32 bytes
Function	Process data, parameterization, diagnosis Data interface (read result output)
Data transmission rate	COM3 (230,4 kBaud)
Digital outputs	1 (Q_2, Switching, PNP, in IO-Link mode) 2 (Q_1, Q_2, Switching, PNP, in SIO mode)
Optical indicators	4 LEDs, multi-color (Process feedback)
Configuration software	PLC software SOPAS ET [1]

[1] In combination with SiLink2 Master or SIG200.

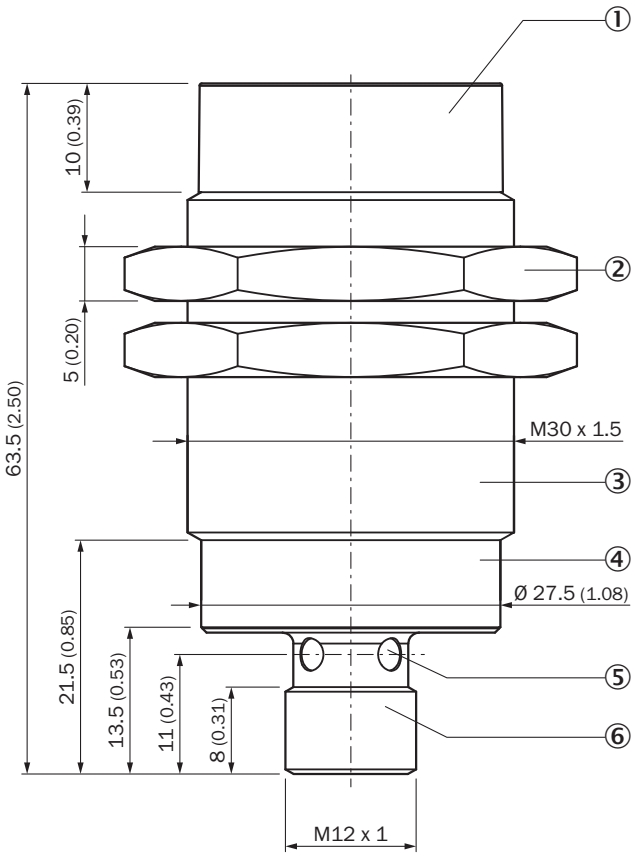
AMBIENT DATA

Electromagnetic compatibility (EMC)	EN 301489-3 V1.6.1 (2013)
Vibration resistance	IEC 60068-2-6:2007-12 (10 Hz to 55 Hz / 1 min / 5 min)
Shock resistance	IEC 60068-2-27:2008-02 (30 gn / 11 ms / half-sine)
Ambient operating temperature	–25 °C ... +80 °C
Storage temperature	–25 °C ... +80 °C
Relative humidity	0% ... 95%, non-condensing

CERTIFICATES

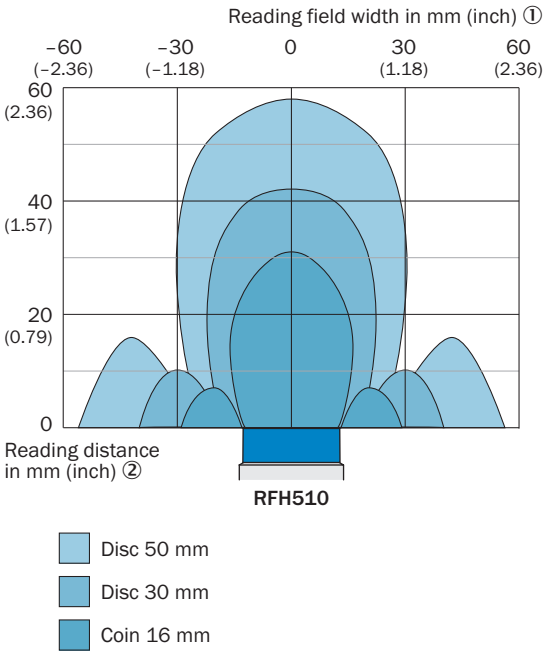
EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
China RoHS	✓
cULus certificate	✓
FCC certificate	✓
BIS registration	✓
Radio Approval certificate India	✓
Radio Approval certificate Israel	✓
Radio Approval certificate Korea	✓
Radio Approval certificate Mexico	✓
Radio Approval certificate Singapore	✓
Information according to Art. 3 of Data Act (Regulation EU 2023/2854)	✓

DIMENSIONAL DRAWING



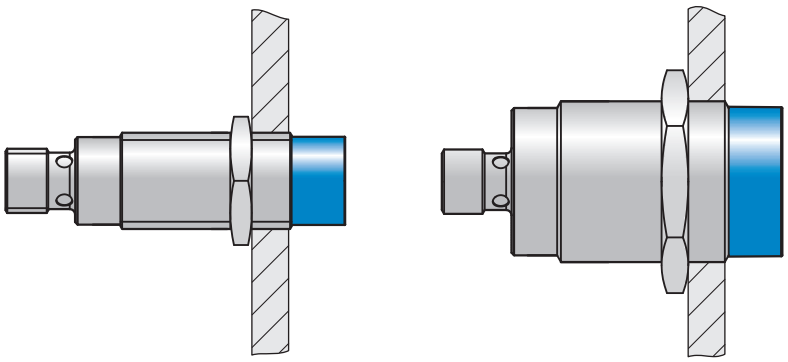
Dimensions in mm (inch)
① Cap with integrated antenna
② 2 x fixing nuts, width across flats SW 36
③ Male thread (M30)
④ Field for product identification data
⑤ 4 x LED, multi-colored (process feedback)
⑥ IO-Link connection (male connector, M12, 4-pin, A-coded)

READING FIELD DIAGRAM



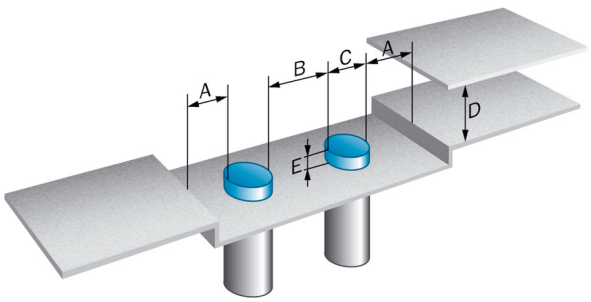
① Reading field width in mm (inch)
② Reading distance in mm (inch)

ASSEMBLY NOTE RFH505/510 (IN METAL)



Required overrun of the active cap (blue) when mounting the device in metal (non-flush installation)

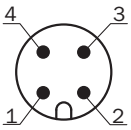
ASSEMBLY NOTE PARALLEL MOUNTING



Distances required to prevent mutual interference with parallel mounting of several devices as well as from the environment.

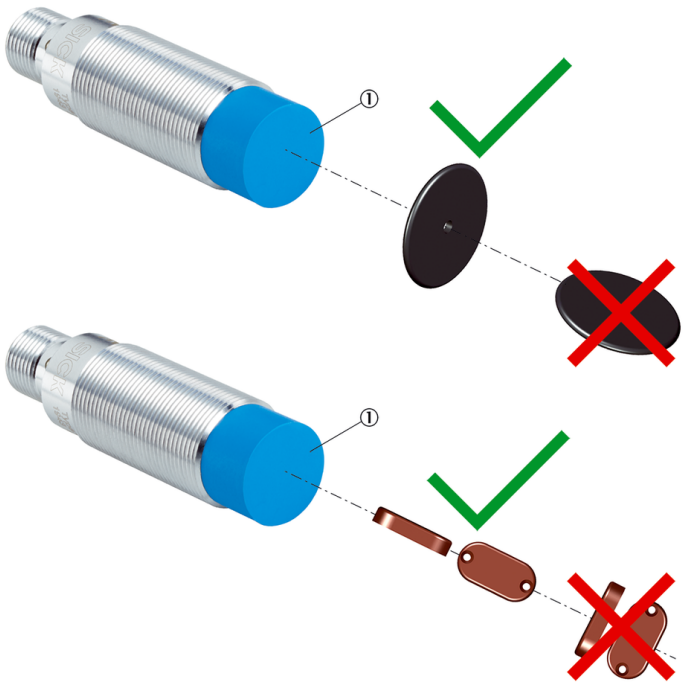
Distance	RFH505-1004301	RFH510-1004301
A	18 mm	30 mm
B	36 mm	60 mm
C	18 mm	30 mm
D	120 mm	180 mm
E	25 mm	10 mm
Tightening torque of fixing nuts	25 nm	70 nm

PIN ASSIGNMENT IO-LINK CONNECTION



IO-Link connection (male connector, M12, 4-pin, A-coded)
① L+
② Q_2
③ L-
④ C/Q1

APPLICATION RFH505/510



Optimal alignment of the transponders for a reliable read and write process
① Cap with integrated antenna

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/6072841

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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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