



RFH505-1004301

RFH5xx

RFID

SICK
Sensor Intelligence.



Ordering information

Type	Part no.
RFH505-1004301	6072840

Other models and accessories → www.sick.com/RFH5xx



Detailed technical data

Features

Version	Short Range
Product category	RFID read/write device with integrated antenna
Radio approval	European Union ¹⁾ USA Canada Australia Korea México China India United Kingdom
Frequency band	HF (13.56 MHz)
Carrier frequency	13.56 MHz
Output power	200 mW
RFID standard	ISO/IEC 15693
Connection type	IO-Link
Read range	≤ 35 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
Housing	Brass (chromium-plated) PBTP (blue)

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

Enclosure rating	IP67
Protection class	II
Weight	37 g, Including nuts
Diameter	18 mm
Design	Cylindrical (M18)
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 Host
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
Permissible relative humidity	0% ... 95%, non-condensing

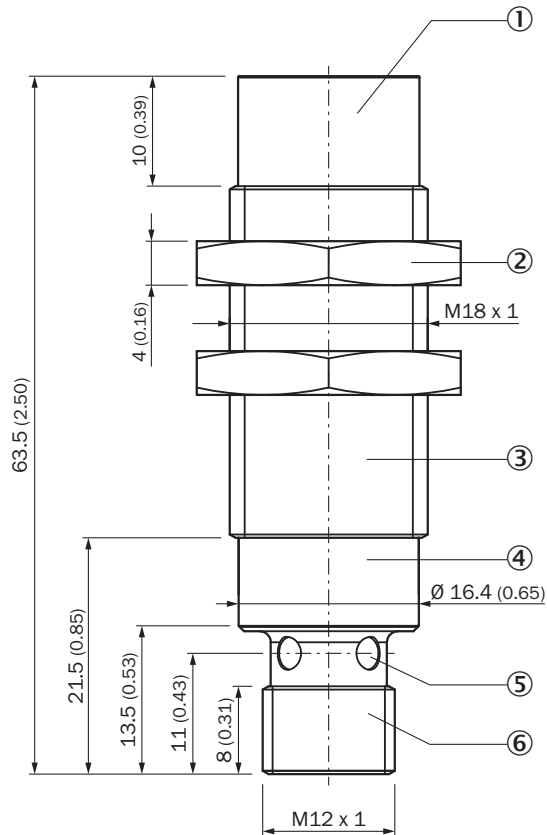
Classifications

eCl@ss 5.0	27280401
eCl@ss 5.1.4	27280401
eCl@ss 6.0	27280401
eCl@ss 6.2	27280401
eCl@ss 7.0	27280401
eCl@ss 8.0	27280401
eCl@ss 8.1	27280401
eCl@ss 9.0	27280401
eCl@ss 10.0	27280401
eCl@ss 11.0	27280401
eCl@ss 12.0	27280401
ETIM 6.0	EC002998
ETIM 7.0	EC002998
ETIM 8.0	EC002998

UNSPSC 16.0901

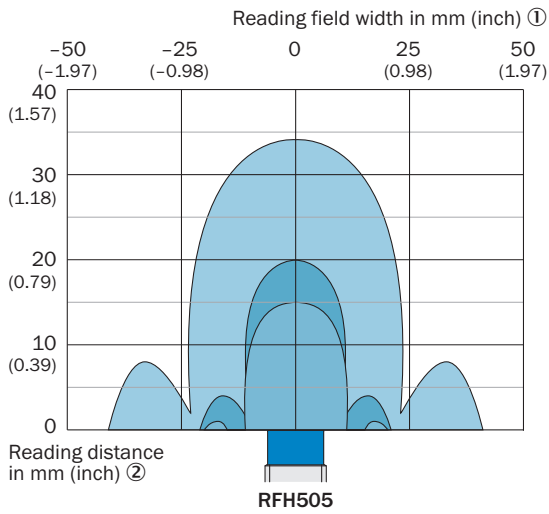
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Dimensional drawing (Dimensions in mm (inch))



- ① Cap with integrated antenna
- ② 2 x fixing nuts, width across flats SW 24
- ③ Male thread (M18)
- 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

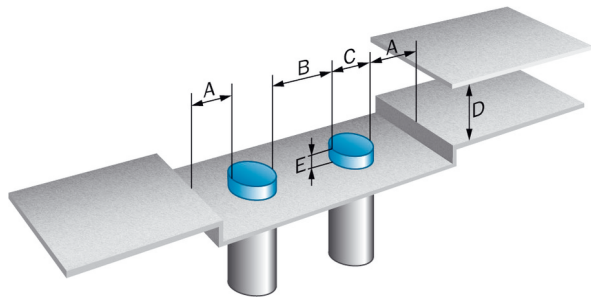


- Disc 50 mm
- Disc 30 mm
- Coin 16 mm

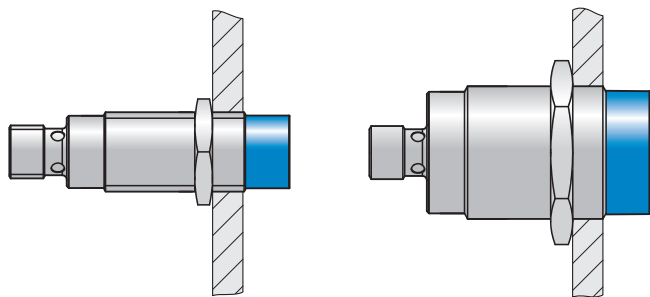
- ① Reading field width in mm (inch)
- ② Reading distance in mm (inch)

Assembly note

Parallel mounting



Distances required to prevent mutual interference with parallel mounting of several devices as well as from the environment.
RFH505/510 (in metal)

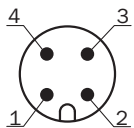


Required overrun of the active cap (blue) when mounting the device in metal (non-flush installation)

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

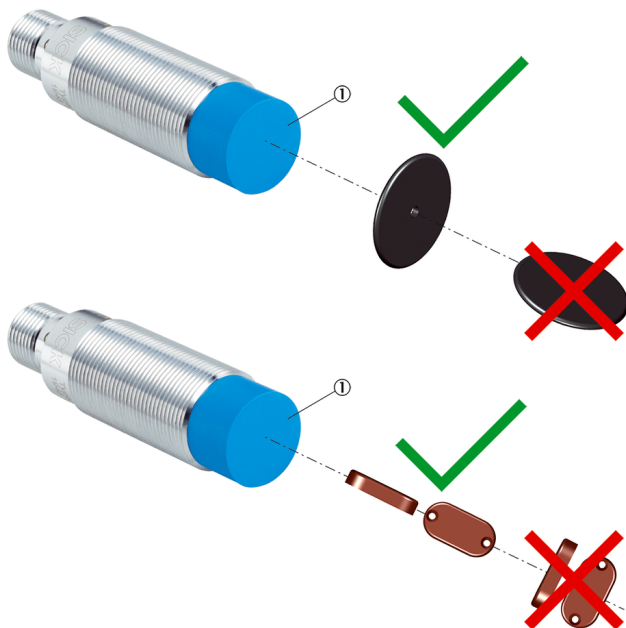


IO-Link connection (male connector, M12, 4-pin, A-coded)

- ① L+
- ② Q₂
- 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

Recommended accessories

Other models and accessories → www.sick.com/RFH5xx

	Brief description	Type	Part no.
Mounting brackets and plates			
	Mounting bracket for M18 sensors, steel, zinc coated, without mounting hardware	BEF-WN-M18	5308446
Plug connectors and cables			
	Head A: female connector, M12, 4-pin, straight, A-coded Head B: male connector, M12, 4-pin, straight, A-coded Cable: Sensor/actuator cable, PUR, halogen-free, unshielded, 0.6 m	YF2A14-C60UB3M2A14	2095999
Others			
	IO-Link V1.1 Class A port, USB2.0 port, optional external power supply 24V / 1A		On request
	<ul style="list-style-type: none"> • Carrier frequency: 13.56 MHz • Special features: High Temperature • Memory capacity (UII / user memory): 896 Bit (28 x 4 Byte) • Diameter: 16 mm 	HF transponder, coin	6041592
Sensor Integration Gateway			
	<ul style="list-style-type: none"> • Further functions: Web server integrated, USB connection for easy configuration of the SIG200 Sensor Integration Gateway with SOPAS ET, the engineering tool from SICK, logic editor is available for easy configuration of logic functions • Connection CONFIG: 1 x M8, 4-pin female connector, USB 2.0 (USB-A) • Logic editor: yes • Communication interface: IO-Link, USB, Ethernet, PROFINET, REST API • Product category: IO-Link Master 	SIG200-0A0412200	1089794

Recommended services

Additional services → www.sick.com/RFH5xx

	Type	Part no.
Maintenance		
<ul style="list-style-type: none"> • Product area: RFID • Range of services: Inspection, analysis and restoring of defined functions, Checking and adjustment of reading configuration, data processing, network, interfaces and inputs and outputs as well as operating data • Duration: Additional work will be invoiced separately • Travel expenses: The prices do not include travel costs such as hotel, flight, travel time and expenses. 	Maintenance RFU/RFH	1611424
Commissioning		
<ul style="list-style-type: none"> • Product area: RFID • Range of services: Inspection of connection, alignment, optimization of parameters of the RFU/RFH as well as tests, Setup of previously defined functions of reading configuration, data processing and network, interfaces and inputs and outputs • Travel expenses: The prices do not include travel costs such as hotel, flight, travel time and expenses. • Duration: Additional work will be invoiced separately 	Commissioning RFU/RFH	1610018

	Type	Part no.
Extended warranty		
<ul style="list-style-type: none">• Product area: Identification solutions, machine vision, Distance sensors, Detection and ranging solutions• Range of services: The services correspond to the scope of the statutory manufacturer warranty (SICK general terms of delivery).• Duration: Five-year warranty from delivery date.	Extended warranty for a total of five years from delivery date	1680671

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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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