

RFH505-1004301

RFH5xx

RFID

**SICK**  
Sensor Intelligence.



## Ordering information

Type	Part no.
RFH505-1004301	6072840

Other models and accessories → [www.sick.com/RFH5xx](http://www.sick.com/RFH5xx)



## Detailed technical data

## Features

<b>Version</b>	Short Range
<b>Product category</b>	RFID read/write device with integrated antenna
<b>Radio approval</b>	European Union <sup>1)</sup> USA Canada Australia Korea México China India United Kingdom
<b>Frequency band</b>	HF (13.56 MHz)
<b>Carrier frequency</b>	13.56 MHz
<b>Output power</b>	200 mW
<b>RFID standard</b>	ISO/IEC 15693
<b>Connection type</b>	IO-Link
<b>Read range</b>	≤ 35 mm <sup>2)</sup>
<b>Antenna</b>	Integrated
<b>Air interface data transmission rate</b>	26 kbit/s

<sup>1)</sup> All member states of the European Union, EEA-EFTA states (Liechtenstein, Iceland, Norway), Switzerland, Turkey.

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

## Mechanics/electronics

<b>Connection type</b>	1 x M12, 4-pin male connector
<b>Supply voltage</b>	11 V DC ... 32 V DC
<b>Power consumption</b>	≤ 1.8 W
<b>Housing</b>	Brass (chromium-plated) PBTP (blue)

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

<b>Enclosure rating</b>	IP67
<b>Protection class</b>	II
<b>Weight</b>	37 g, Including nuts
<b>Diameter</b>	18 mm
<b>Design</b>	Cylindrical (M18)
<b>MTTF</b>	> 756 years <sup>1)</sup>

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

## Interfaces

<b>IO-Link</b>	✓, 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)
<b>Digital outputs</b>	1 (Q <sub>2</sub> , Switching, PNP, in IO-Link mode) 2 (Q <sub>1</sub> , Q <sub>2</sub> , Switching, PNP, in SIO mode)
<b>Optical indicators</b>	4 LEDs, multi-color (Process feedback)
<b>Configuration software</b>	PLC software SOPAS ET <sup>1)</sup>

<sup>1)</sup> In combination with SiLink2 Master or SIG200.

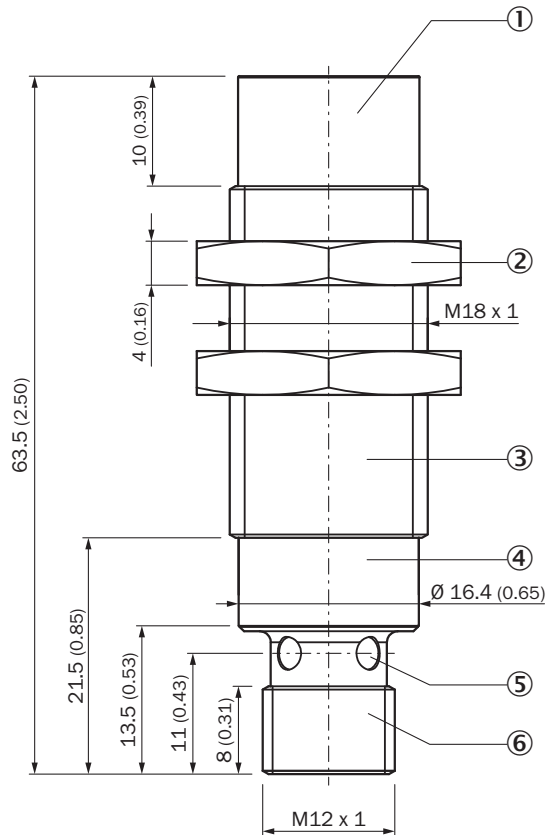
## Ambient data

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

## Classifications

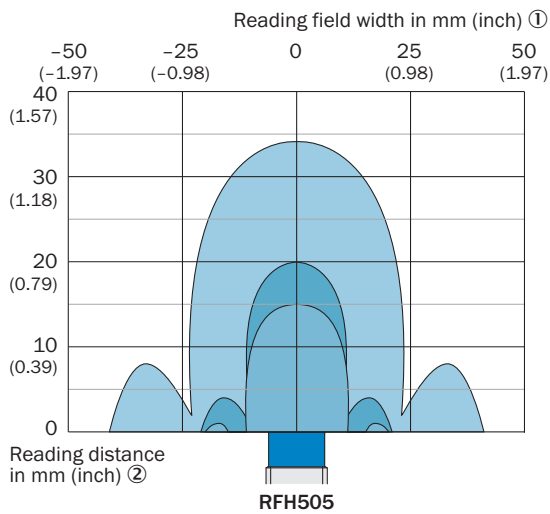
<b>ECLASS 5.0</b>	27280401
<b>ECLASS 5.1.4</b>	27280401
<b>ECLASS 6.0</b>	27280401
<b>ECLASS 6.2</b>	27280401
<b>ECLASS 7.0</b>	27280401
<b>ECLASS 8.0</b>	27280401
<b>ECLASS 8.1</b>	27280401
<b>ECLASS 9.0</b>	27280401
<b>ECLASS 10.0</b>	27280401
<b>ECLASS 11.0</b>	27280401
<b>ECLASS 12.0</b>	27280401
<b>ETIM 6.0</b>	EC002998
<b>ETIM 7.0</b>	EC002998
<b>ETIM 8.0</b>	EC002998

## 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)

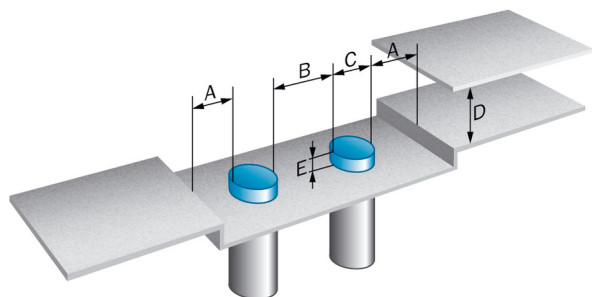
### Reading field diagram



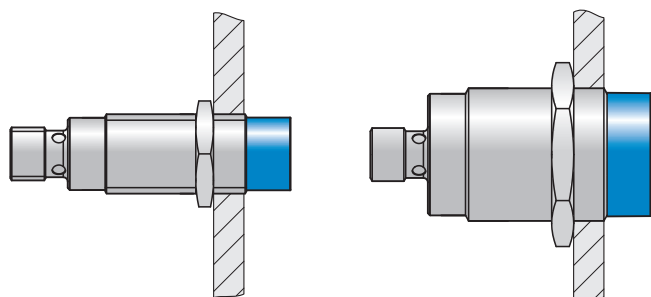
- ① Reading field width in mm (inch)
- ② Reading distance in mm (inch)

### 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)

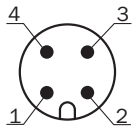


Required overrun of the active cap (blue) when mounting the device in metal (non-flush installation)

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

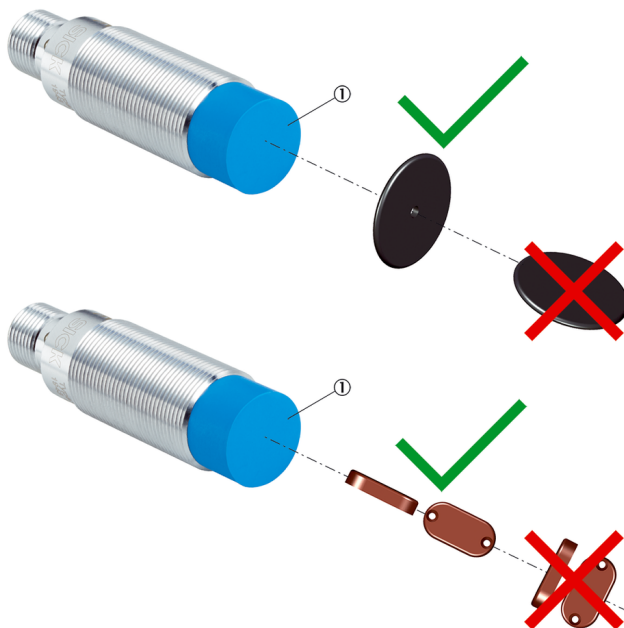


IO-Link connection (male connector, M12, 4-pin, A-coded)

- ① L+
- ② Q<sub>2</sub>
- 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](http://www.sick.com/RFH5xx)

	Brief description	Type	Part no.
Connection modules			
	IO-Link V1.1 Class A port, USB2.0 port, optional external power supply 24V / 1A	IOLA2US-01101 (SiLink2 Master)	1061790
Mounting brackets and plates			
	Mounting bracket for M18 sensors, steel, zinc coated, without mounting hardware	BEF-WN-M18	5308446
	<ul style="list-style-type: none"> <li>• <b>Carrier frequency:</b> 13.56 MHz</li> <li>• <b>Special features:</b> High Temperature</li> <li>• <b>Memory capacity (Ull / user memory):</b> 896 Bit (28 x 4 Byte)</li> <li>• <b>Diameter:</b> 16 mm</li> </ul>	HF transponder, coin	6041592
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 4-pin, straight, A-coded</li> <li>• <b>Connection type head B:</b> Male connector, M12, 4-pin, straight, A-coded</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 0.6 m, 4-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with oils and lubricants, Drag chain operation, Robot</li> </ul>	YF2A14-C60UB3M2A14	2095999
Sensor Integration Gateway			
	<ul style="list-style-type: none"> <li>• <b>Further functions:</b> 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</li> <li>• <b>Connection CONFIG:</b> 1 x M8, 4-pin female connector, USB 2.0 (USB-A)</li> <li>• <b>Logic editor:</b> yes</li> <li>• <b>Communication interface:</b> IO-Link, USB, Ethernet, PROFINET, REST API</li> <li>• <b>Product category:</b> IO-Link Master</li> </ul>	SIG200-0A0412200	1089794

## Recommended services

Additional services → [www.sick.com/RFH5xx](http://www.sick.com/RFH5xx)

	Type	Part no.
Commissioning		
<ul style="list-style-type: none"> <li>• <b>Product area:</b> RFID</li> <li>• <b>Range of services:</b> 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</li> <li>• <b>Travel expenses:</b> The prices do not include travel costs such as hotel, flight, travel time and expenses.</li> <li>• <b>Duration:</b> Additional work will be invoiced separately</li> </ul>	Commissioning RFU/RFH	1610018
Maintenance		
<ul style="list-style-type: none"> <li>• <b>Product area:</b> RFID</li> <li>• <b>Range of services:</b> 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</li> <li>• <b>Duration:</b> Additional work will be invoiced separately</li> <li>• <b>Travel expenses:</b> The prices do not include travel costs such as hotel, flight, travel time and expenses.</li> </ul>	Maintenance RFU/RFH	1611424

	Type	Part no.
Extended warranty		
<ul style="list-style-type: none"><li>• <b>Product area:</b> Identification solutions, machine vision, Detection and ranging solutions, safety camera sensors, Safety laser scanners, Safety radar sensors</li><li>• <b>Range of services:</b> The services correspond to the scope of the statutory manufacturer warranty (SICK general terms of delivery).</li><li>• <b>Duration:</b> Five-year warranty from delivery date.</li></ul>	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.”

## WORLDWIDE PRESENCE:

Contacts and other locations –[www.sick.com](http://www.sick.com)