



# RFH510-1004301

RFH5xx

RFID

**SICK**  
Sensor Intelligence.



## Ordering information

Type	part no.
RFH510-1004301	6072841

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 Singapore
<b>Frequency band</b>	HF (13.56 MHz)
<b>Carrier frequency</b>	13.56 MHz
<b>RFID standard</b>	ISO/IEC 15693, ISO/IEC 18000-3 "Mode 1"
<b>Connection type</b>	IO-Link
<b>Reading range</b>	≤ 60 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 material</b>	Brass (chromium-plated)

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

	PBTP (blue)
<b>Enclosure rating</b>	IP67
<b>Protection class</b>	II
<b>Weight</b>	87 g, Including nuts
<b>Diameter</b>	30 mm
<b>Design</b>	Cylindrical (M30)
<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>Relative humidity</b>	0% ... 95%, non-condensing

## Certificates

<b>EU declaration of conformity</b>	✓
<b>UK declaration of conformity</b>	✓
<b>ACMA declaration of conformity</b>	✓
<b>China RoHS</b>	✓
<b>cULus certificate</b>	✓
<b>FCC certificate</b>	✓
<b>BIS registration</b>	✓
<b>Radio Approval certificate India</b>	✓
<b>Radio Approval certificate Israel</b>	✓
<b>Radio Approval certificate Korea</b>	✓
<b>Radio Approval certificate Mexico</b>	✓
<b>Radio Approval certificate Singapore</b>	✓

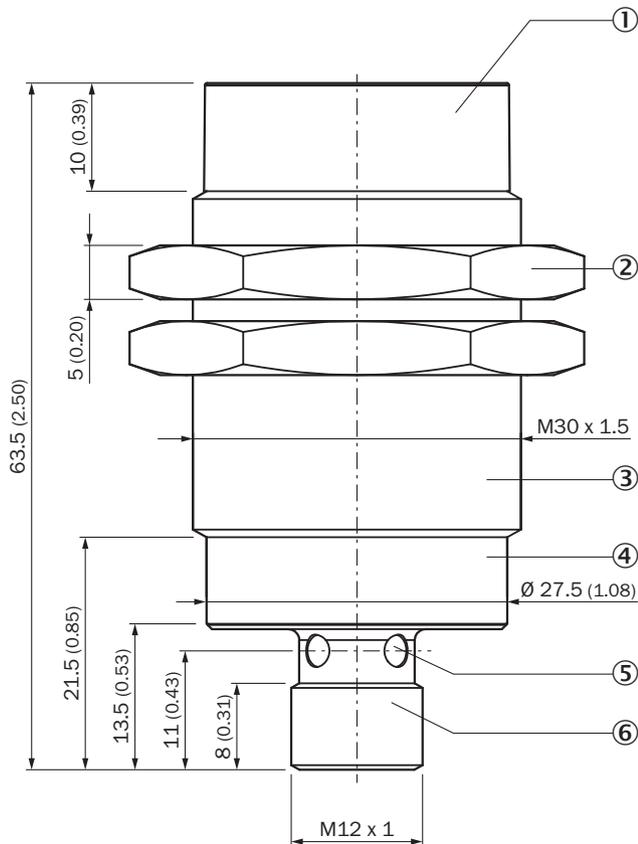
Information according to Art. 3 of Data Act (Regulation EU 2023/2854)

✓

## 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
<b>UNSPSC 16.0901</b>	52161523

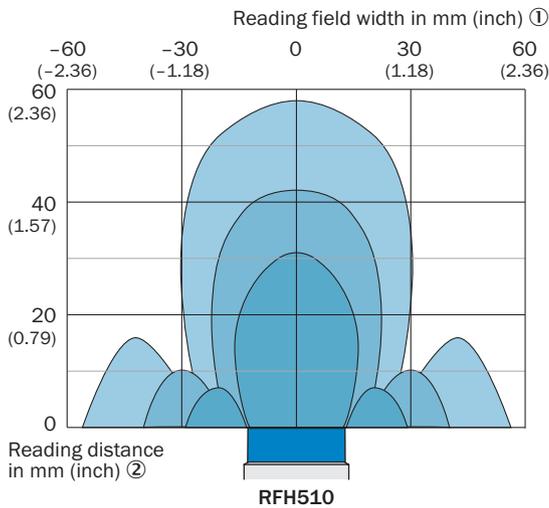
## Dimensional drawing



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)

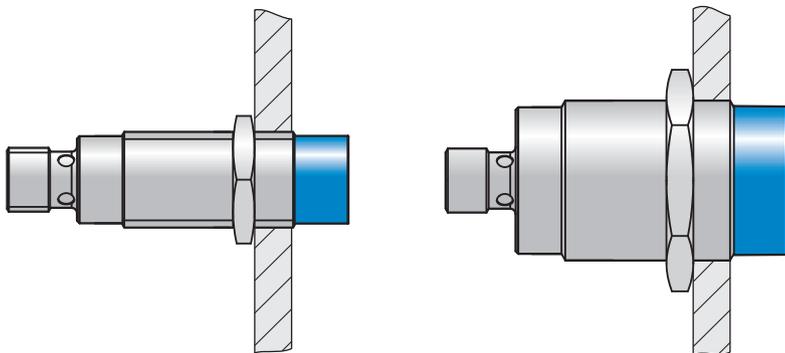
## Reading field diagram



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

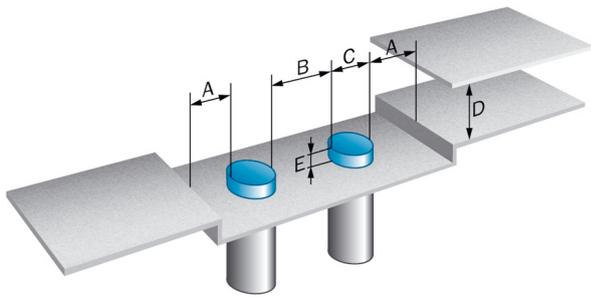
- ① Reading field width in mm (inch)
- ② Reading distance in mm (inch)

## Assembly note RFH505/510 (in metal)



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

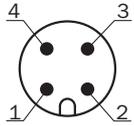
## Assembly note Parallel mounting



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

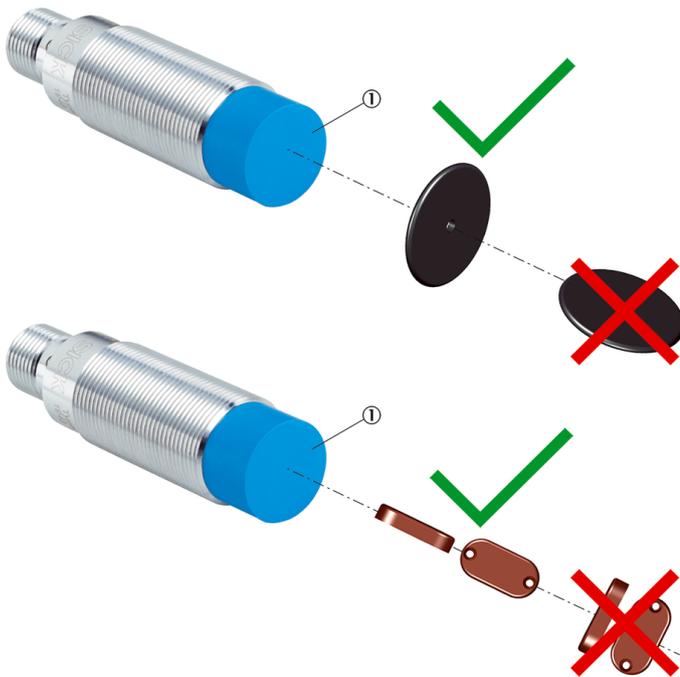
## PIN assignment IO-Link connection



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

- ① L+
- ② Q<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.
RFID transponders			
	<ul style="list-style-type: none"> <li>• <b>Memory capacity (EPC / user memory):</b> 896 Bit (28 x 4 Byte) (User Memory)</li> <li>• <b>Dimensions (L x W x H):</b> 12.5 mm x 25 mm x 5 mm</li> </ul>	HF Transponder, rectangular, on-metal	6039051
Mounting systems			
	<ul style="list-style-type: none"> <li>• <b>Description:</b> Mounting bracket for M30 sensors</li> <li>• <b>Material:</b> Steel</li> <li>• <b>Details:</b> Steel, zinc coated</li> <li>• <b>Items supplied:</b> Without mounting hardware</li> </ul>	BEF-WN-M30	5308445

	Brief description	Type	part no.
network devices			
		SIG200-0A0412200	1089794
		IOLA2US-01101 (SiLink2 Master)	1061790
connectors and cables			
	<ul style="list-style-type: none"> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <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>Application:</b> Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YF2A14- C60UB3M2A14	2095999

## 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](http://www.sick.com)