



# RFU630-13115

RFU63x

RFID

**SICK**  
Sensor Intelligence.



## Ordering information

| Type         | part no. |
|--------------|----------|
| RFU630-13115 | 1083558  |

Other models and accessories → [www.sick.com/RFU63x](http://www.sick.com/RFU63x)



## Detailed technical data

## Features

|                                 |                                                                                                                                                                                                           |
|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Version</b>                  | Long Range                                                                                                                                                                                                |
| <b>Product category</b>         | RFID read/write device with integrated antenna                                                                                                                                                            |
| <b>Radio approval</b>           | Morocco                                                                                                                                                                                                   |
| <b>Frequency band</b>           | UHF (860 MHz ... 960 MHz)                                                                                                                                                                                 |
| <b>Carrier frequency</b>        | 867.7 MHz ... 867.9 MHz                                                                                                                                                                                   |
| <b>Output power</b>             | 0.5 W (ERP, for integrated antenna, alternatively 27 dBm at external antenna port, power adjustable)                                                                                                      |
| <b>RFID standard</b>            | EPCglobal UHF Class 1 Generation 2, ISO/IEC 18000-6 C, RAIN                                                                                                                                               |
| <b>Modulation</b>               | PR-ASK, DSB-ASK                                                                                                                                                                                           |
| <b>Aperture angle</b>           | 72°                                                                                                                                                                                                       |
| <b>Reading range</b>            | ≤ 10 m <sup>1)</sup>                                                                                                                                                                                      |
| <b>Antenna</b>                  | Integrated                                                                                                                                                                                                |
| Transmitting power              | Adjustable                                                                                                                                                                                                |
| Polarization                    | Circular                                                                                                                                                                                                  |
| Axial ratio                     | Typ. 2 dB                                                                                                                                                                                                 |
| Front-to-back ratio             | > 17 dB                                                                                                                                                                                                   |
| Connection of external antennas | 3 (Up to + 27 dBm, can be adjusted separately)                                                                                                                                                            |
| <b>Bulk reading</b>             | ✓                                                                                                                                                                                                         |
| <b>Further functions</b>        | Diagnosis, updatable firmware, freely programmable data output format, Heartbeat, triggering, SICK AppSpace functionalities can be enabled with the SD card accessory SDK6U-P00100 (for firmware ≥ 2.0.0) |

<sup>1)</sup> Depending on transponder used and ambient conditions.

## Mechanics/electronics

|                               |                                                                                                                      |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------|
| <b>Connection type</b>        | 1 x M12, 17-pin male connector, A-coded<br>1 x M12, 4-pin female connector, D-coded<br>1 x USB, 5-pin micro-B socket |
| <b>Supply voltage</b>         | 18 V DC ... 30 V DC                                                                                                  |
| <b>Power consumption</b>      | Typ. 20 W                                                                                                            |
| <b>Housing material</b>       | Aluminum die cast                                                                                                    |
| <b>Housing color</b>          | Blue, black, silver                                                                                                  |
| <b>Enclosure rating</b>       | IP67                                                                                                                 |
| <b>Protection class</b>       | III                                                                                                                  |
| <b>Weight</b>                 | 2.6 kg                                                                                                               |
| <b>Dimensions (L x W x H)</b> | 239 mm x 239 mm x 64 mm                                                                                              |
| <b>MTBF</b>                   | > 100 years                                                                                                          |

## Interfaces

|                     |                              |                                                                                                                                  |
|---------------------|------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| <b>Ethernet</b>     |                              | ✓ , TCP/IP, OPC UA                                                                                                               |
|                     | Remark                       | Companion Spec V1.0 from firmware 2.20                                                                                           |
|                     | Function                     | Data interface (read result output), Service interface                                                                           |
|                     | Data transmission rate       | 10/100 MBit/s                                                                                                                    |
| <b>PROFINET</b>     |                              | ✓                                                                                                                                |
|                     | Function                     | PROFINET Single Port, PROFINET Dual Port (optional via external connection module CDF600-2), Data interface (read result output) |
|                     | Data transmission rate       | 10/100 MBit/s                                                                                                                    |
| <b>EtherNet/IP™</b> |                              | ✓                                                                                                                                |
|                     | Function                     | Data interface (read result output)                                                                                              |
|                     | Data transmission rate       | 10/100 MBit/s                                                                                                                    |
| <b>EtherCAT®</b>    |                              | ✓                                                                                                                                |
|                     | Type of fieldbus integration | Optional over external fieldbus module CDF600                                                                                    |
|                     | Function                     | Data interface (read result output)                                                                                              |
| <b>Serial</b>       |                              | ✓ , RS-232, RS-422                                                                                                               |
|                     | Remark                       | RS-422 only via 4-wire                                                                                                           |
|                     | Function                     | Data interface (read result output), Service interface                                                                           |
|                     | Data transmission rate       | 0.3 kBaud ... 115.2 kBaud, AUX: 57.6 kBaud                                                                                       |
| <b>CAN</b>          |                              | ✓                                                                                                                                |
|                     | Remark                       | CSN (SICK CAN Sensor Network)                                                                                                    |
|                     | Function                     | Data interface (read result output)                                                                                              |
| <b>PROFIBUS DP</b>  |                              | ✓                                                                                                                                |
|                     | Type of fieldbus integration | Optional over external fieldbus module CDF600-2                                                                                  |
|                     | Function                     | Data interface (read result output)                                                                                              |
| <b>USB</b>          |                              | ✓                                                                                                                                |
|                     | Remark                       | USB 2.0                                                                                                                          |
|                     | Function                     | Service interface                                                                                                                |
| <b>CANopen</b>      |                              | ✓                                                                                                                                |

<sup>1)</sup> Another alternative is to generate your own configuration tools based on the SICK command language CoLa (e.g. in your own software or on PLC function blocks).

|                               | Function                                                                                                                                  |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Digital inputs</b>         | Data interface (read result output)<br>2 (physical, 2 additional logical inputs via optional CMC600 parameter memory in CD-B620 / CDM420) |
| <b>Digital outputs</b>        | 2 (physical, 2 additional logical outputs via optional CMC600 parameter memory in CD-B620 / CDM420)                                       |
| <b>Optical indicators</b>     | 7 LEDs, multi-color (device status)<br>1 RGB LED (Process feedback)                                                                       |
| <b>Acoustic indicators</b>    | 1 beeper (Feedback)                                                                                                                       |
| <b>Control elements</b>       | 2 buttons (choose and start/stop functions)                                                                                               |
| <b>Operator interfaces</b>    | Web server                                                                                                                                |
| <b>Configuration software</b> | SOPAS ET <sup>1)</sup>                                                                                                                    |
| <b>Programming interface</b>  | Application-specific programming using the SICK AppStudio development environment                                                         |
| <b>Memory card</b>            | microSD memory card (parameter cloning, data storage)                                                                                     |

<sup>1)</sup> Another alternative is to generate your own configuration tools based on the SICK command language CoLa (e.g. in your own software or on PLC function blocks).

## Ambient data

|                                            |                                 |
|--------------------------------------------|---------------------------------|
| <b>Electromagnetic compatibility (EMC)</b> | EN 301489-3                     |
| <b>Vibration resistance</b>                | EN 60068-2-64:2008-02           |
| <b>Shock resistance</b>                    | EN 60068-2-27:2009-05           |
| <b>Ambient operating temperature</b>       | -30 °C ... +60 °C <sup>1)</sup> |
| <b>Storage temperature</b>                 | -30 °C ... +70 °C               |
| <b>Permissible relative humidity</b>       | ± 90 %, Non-condensing          |

<sup>1)</sup> From Firmware version V2.02.

## Certificates

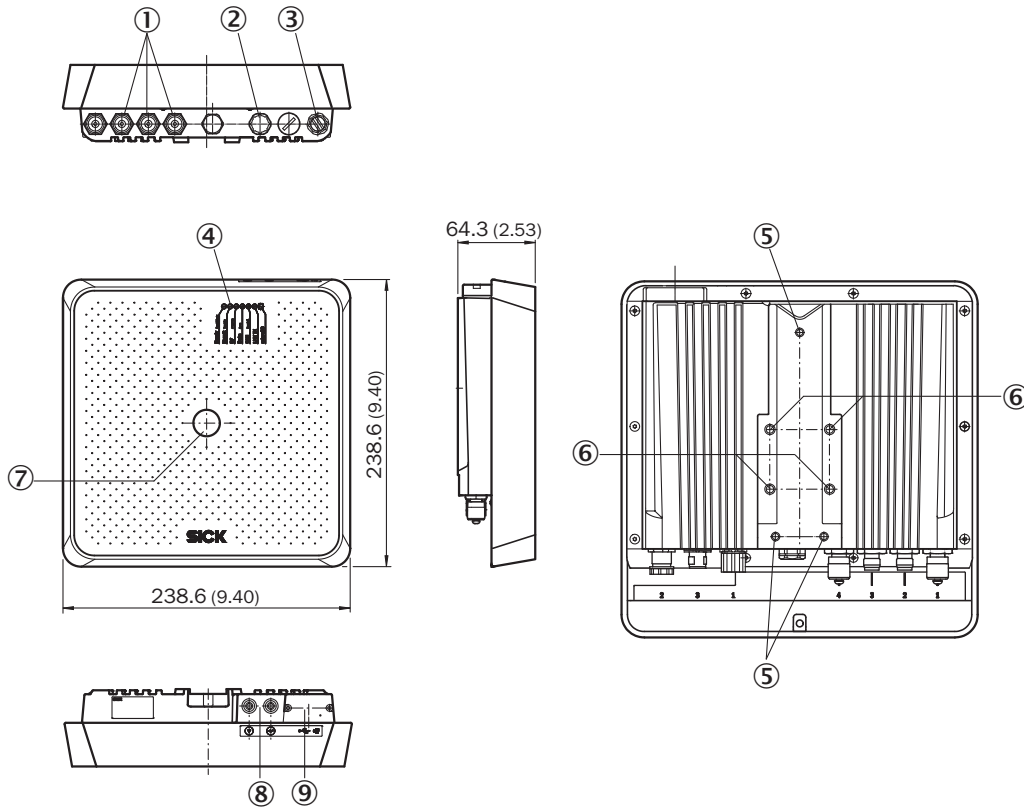
|                                           |   |
|-------------------------------------------|---|
| <b>China RoHS</b>                         | ✓ |
| <b>Profinet certificate</b>               | ✓ |
| <b>Ethernet/IP certificate</b>            | ✓ |
| <b>Radio Approval certificate Morocco</b> | ✓ |
| <b>4Dpro</b>                              | ✓ |
| <b>RAIN RFID</b>                          | ✓ |

## 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 5.0</b>       | EC002998 |
| <b>ETIM 6.0</b>       | EC002998 |
| <b>ETIM 7.0</b>       | EC002998 |
| <b>ETIM 8.0</b>       | EC002998 |
| <b>UNSPSC 16.0901</b> | 52161523 |

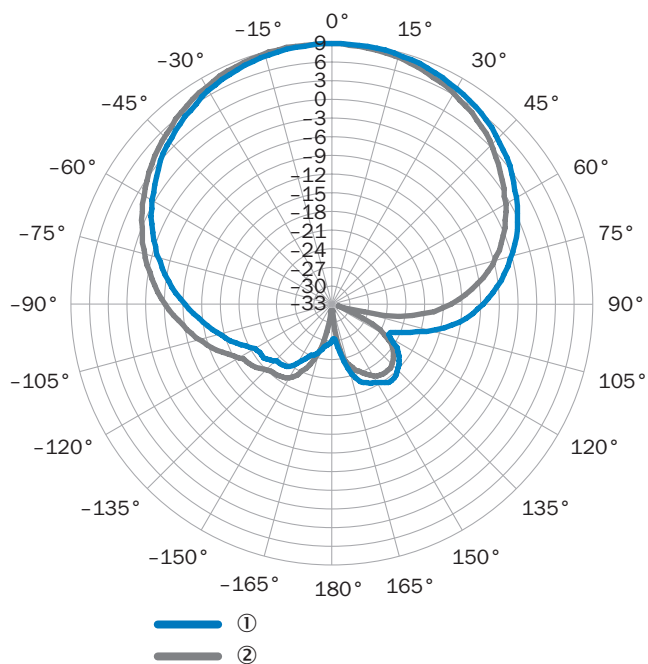
## dimensional drawing RFU63x



Dimensions in mm (inch)

- ① 3 x antenna input ("external", TNC plug, reverse)
- ② "Power/Serial Data/CAN/I/O" connection
- ③ Ethernet connection
- ④ 7 x LED for status display
- ⑤ 3 x M5 threaded mounting holes, 8 mm deep
- ⑥ 4 x M6 threaded mounting holes, 11 mm deep
- ⑦ 1 x LED, multi-colored (process feedback)
- ⑧ Function buttons
- ⑨ micro-USB female connector and slot for microSD memory card, behind screw-mounted cover

### Radiation pattern



measured antenna gain in dBic at 868.5 MHz, RHCP (right-hand circularly polarized)

① Horizontal plane (azimuth)

② vertical plane (elevation)

### Connection diagram EtherCAT<sup>®</sup>

EtherCAT<sup>®</sup>



— Connecting cable (already present on device)

— EtherCAT<sup>®</sup> cable, 2 m (Part no. 2106159)

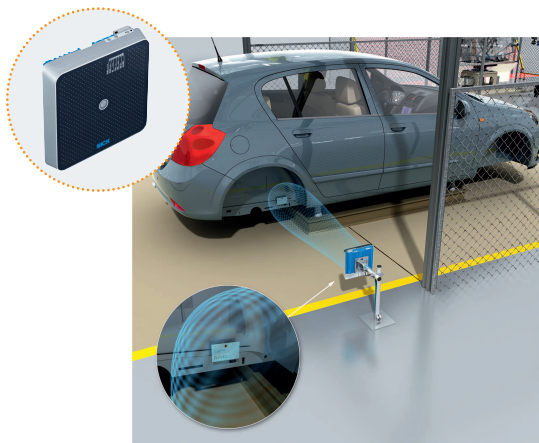
## Connection diagram PROFINET IO/RT

### PROFINET

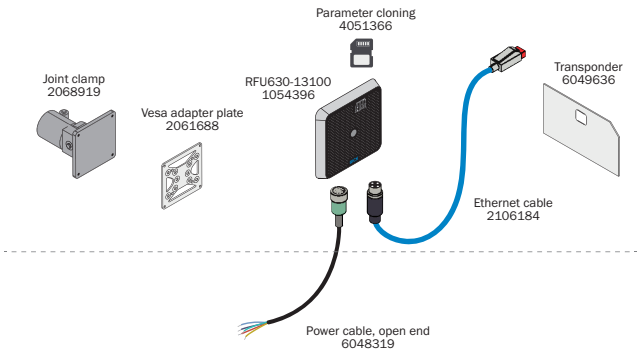


- Connecting cable (already present on device)
- Connection cable, 2 m (Part no. 6061702)
- PROFINET cable, 2 m (Part no. 2106182)
- PROFINET cable, 2 m (Part no. 2106258)
- ... PROFINET cable, ready to assemble AIDA plug connectors

System construction



RFU63x



Car body identification in bodyshell construction

Recommended accessories

Other models and accessories → [www.sick.com/RFU63x](http://www.sick.com/RFU63x)

|                                                                                     | Brief description                                                                                                                                                                                                                                                                                      | Type                | part no. |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|----------|
| Storage media                                                                       |                                                                                                                                                                                                                                                                                                        |                     |          |
|  | <ul style="list-style-type: none"><li><b>Description:</b> microSD memory card with 1 GB for industrial use</li></ul>                                                                                                                                                                                   | microSD memory card | 4051366  |
| Mounting systems                                                                    |                                                                                                                                                                                                                                                                                                        |                     |          |
|  | <ul style="list-style-type: none"><li><b>Description:</b> Mounting bracket for wall mounting, incl. assembly material</li></ul>                                                                                                                                                                        | Mounting bracket    | 2060912  |
|  | <ul style="list-style-type: none"><li><b>Description:</b> Pivot mounting bracket, incl. assembly material</li><li><b>Suitable for:</b> Pivot mounting bracket incl. mounting material, can be adjusted +/-30°. Device can be replaced without the need to mechanically readjust the bracket.</li></ul> | Mounting bracket    | 2080967  |

|                                                                                   | Brief description                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Type                                 | part no. |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|----------|
| connectors and cables                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                      |          |
|  | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Male connector, Micro-B, 4-pin, straight</li> <li>• <b>Connection type head B:</b> Male connector, USB-A, 4-pin, straight</li> <li>• <b>Signal type:</b> USB 2.0</li> <li>• <b>Cable:</b> 2 m, 4-wire</li> <li>• <b>Description:</b> USB 2.0, unshielded</li> </ul>                                                                                                                                          | USB cable                            | 6036106  |
|  | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 17-pin, straight, A-coded</li> <li>• <b>Connection type head B:</b> Male connector, M12, 17-pin, straight, A-coded</li> <li>• <b>Signal type:</b> Power, serial, CAN, digital I/Os</li> <li>• <b>Cable:</b> 0.9 m, 17-wire</li> <li>• <b>Description:</b> Power, suitable for 2 A, shielded, Serial, CAN, Digital I/Os</li> <li>• <b>Application:</b> Drag chain operation</li> </ul> | YM2A8D-C90XXXF2A8D                   | 6052945  |
|  | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Male connector, M12, 4-pin, straight, D-coded</li> <li>• <b>Connection type head B:</b> Male connector, RJ45, 4-pin, straight</li> <li>• <b>Signal type:</b> Ethernet, PROFINET</li> <li>• <b>Cable:</b> 2 m, 4-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Ethernet, shielded, PROFINET</li> <li>• <b>Application:</b> Drag chain operation, Zones with oils and lubricants</li> </ul>           | YM2D24-020P-N1MRJA4                  | 2106182  |
| Junction boxes                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                      |          |
|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | CDB650-204                           | 1064114  |
| RFID transponders                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                      |          |
|  | <ul style="list-style-type: none"> <li>• <b>Carrier frequency:</b> 865 MHz ... 928 MHz</li> <li>• <b>Memory capacity (EPC / user memory):</b> 496/128 Bit (EPC / User Memory)</li> <li>• <b>Dimensions (L x W x H):</b> 18 mm x 122 mm x 2 mm</li> </ul>                                                                                                                                                                                                                             | UHF Transponder, Rectangular, global | 6088050  |

## 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)