Product data sheet

RFU650-10100

RFU65x

RFID

SICK
Sensor Intelligence.

Ordering information

Type	Part no.
RFU650-10100	1073556

Other models and accessories ➜ www.sick.com/RFU65x

Detailed technical data

Features

Version	Long Range
Product category	RFID read/write device with integrated antenna
Radio approval	European Union [1] South Africa
Frequency band	UHF (860 MHz ... 960 MHz)
Carrier frequency	865.7 MHz ... 867.5 MHz
Output power	1.6 W (ERP, with integrated antenna,)
RFID standard	EPCglobal UHF Class 1 Generation 2, ISO/IEC 18000-6 C
Modulation	PR-ASK, DSB-ASK
Read range	≤ 10 m [2]
Antenna	Integrated
Transmitting power	Adjustable
Polarization	Circular
Axial ratio	Typ. 2 dB
Aperture angle	80°, vertical 55°, horizontal
Front-to-back ratio	> 15 dB
Direction monitoring	✓
Bulk reading	✓
Further functions	Transponder entry detection with direction information at horizontal antenna level, Horizontal transponder angle output, 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)

[1] All member states of the European Union, EEA-EFTA states (Liechtenstein, Iceland, Norway), Switzerland, Turkey.
[2] Depending on transponder used and ambient conditions.

Mechanics/electronics

Connection type	1 x M12, 17-pin male connector, A-coded 1 x M12, 4-pin female connector, D-coded 1 x USB, 5-pin micro-B socket
Supply voltage	12 V DC ... 30 V DC
Power consumption	Typ. 26 W
Housing	Aluminum
Housing color	Blue, black, silver
Enclosure rating	IP67
Protection class	III
Weight	3.9 kg
Dimensions (L x W x H)	400 mm x 252 mm x 70 mm
MTBF	25 years [1)]

[1)] Operation at +25 °C.

Interfaces

Ethernet	✓, 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
PROFINET	✓
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
EtherNet/IP™	✓
Function	Data interface (read result output)
Data transmission rate	10/100 MBit/s
EtherCAT	✓
Type of fieldbus integration	Optional over external fieldbus module CDF600
Function	Data interface (read result output)
Serial	✓, RS-232, RS-422
Remark	RS-422 only via 4-wire
Function	Data interface (read result output), AUX (only RS-232)
Data transmission rate	0.3 kBaud ... 115.2 kBaud, AUX: 57.6 kBaud
CAN	✓
Remark	CSN (SICK CAN Sensor Network)
Function	Data interface (read result output)
PROFIBUS DP	✓
Type of fieldbus integration	Optional over external fieldbus module CDF600-2
Function	Data interface (read result output)
USB	✓
Remark	USB 2.0
Function	Service interface

[1)] 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).

CANopen	✓
Function	Data interface (read result output)
Digital inputs	2 (physical, 2 additional logical inputs via optional CMC600 parameter memory in CDB620 / CDM420)
Digital outputs	2 (physical, 2 additional logical outputs via optional CMC600 parameter memory in CDB620 / CDM420)
Optical indicators	7 LEDs, multi-color (device status) 1 RGB LED (Process feedback)
Acoustic indicators	1 beeper (Feedback)
Control elements	2 buttons (choose and start/stop functions)
Operator interfaces	Web server
Configuration software	SOPAS ET [1)]
Programming interface	Application-specific programming using the SICK AppStudio development environment
Memory card	microSD memory card (parameter cloning, data storage)

[1)] 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).

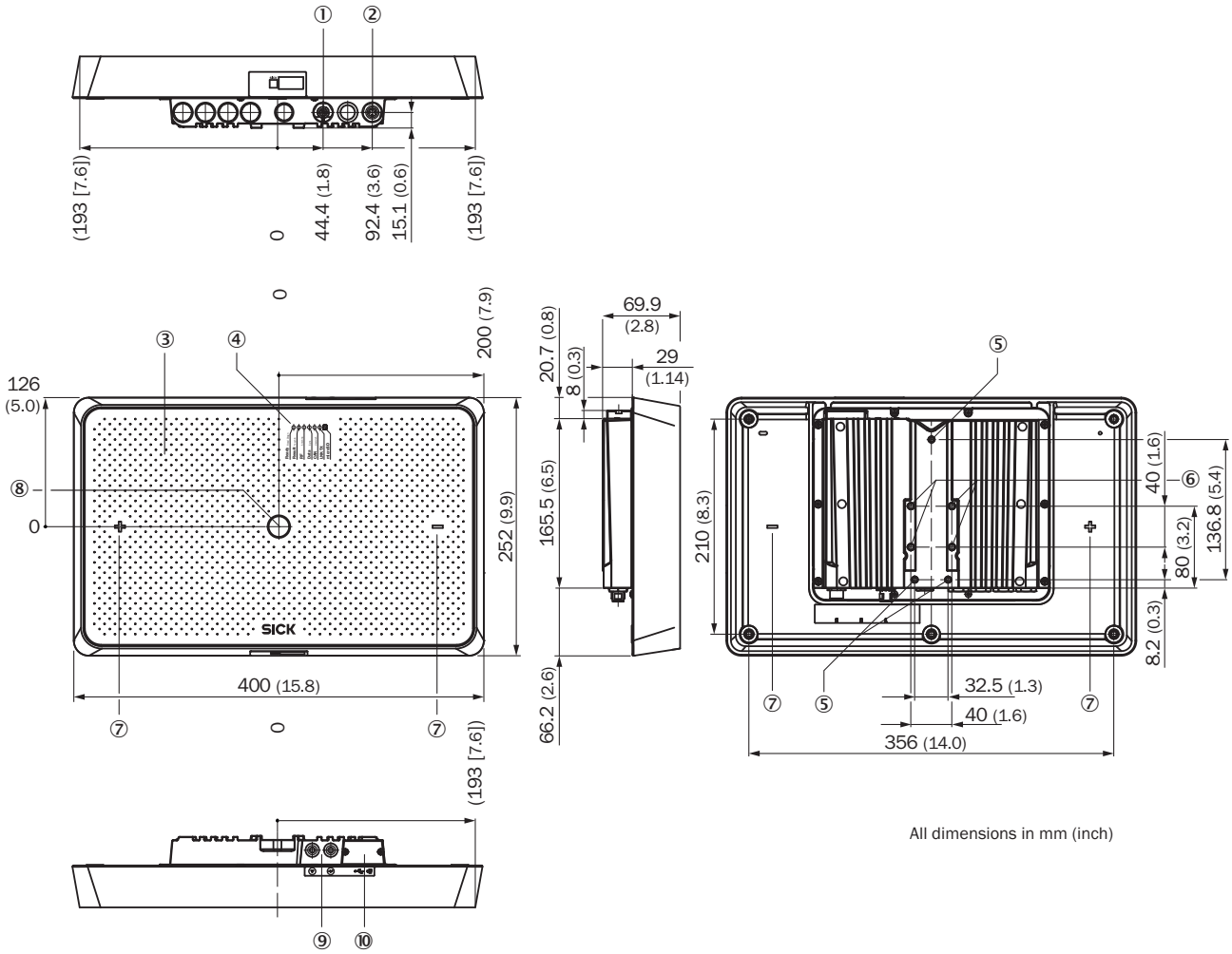
Ambient data

Electromagnetic compatibility (EMC)	EN 301489-3
Vibration resistance	EN 60068-2-64:2008-02
Shock resistance	EN 60068-2-27:2009-05
Ambient operating temperature	–25 °C ... +60 °C
Storage temperature	–30 °C ... +70 °C
Permissible relative humidity	90 %, Non-condensing

Classifications

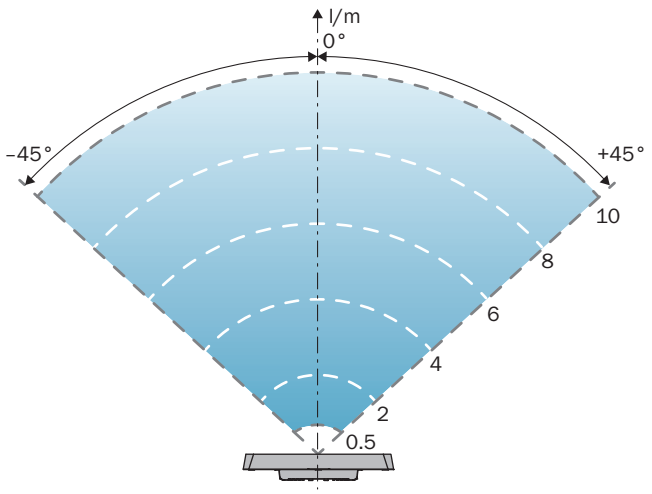
ECLASS 5.0	27280401
ECLASS 5.1.4	27280401
ECLASS 6.0	27280401
ECLASS 6.2	27280401
ECLASS 7.0	27280401
ECLASS 8.0	27280401
ECLASS 8.1	27280401
ECLASS 9.0	27280401
ECLASS 10.0	27280401
ECLASS 11.0	27280401
ECLASS 12.0	27280401
ETIM 6.0	EC002998
ETIM 7.0	EC002998
ETIM 8.0	EC002998
UNSPSC 16.0901	52161523

Dimensional drawing (Dimensions in mm (inch))

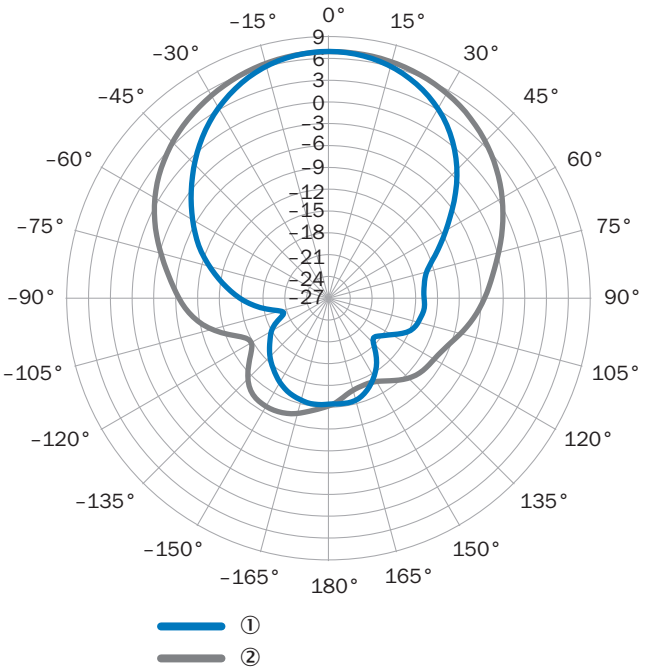


All dimensions in mm (inch)

Working range diagram



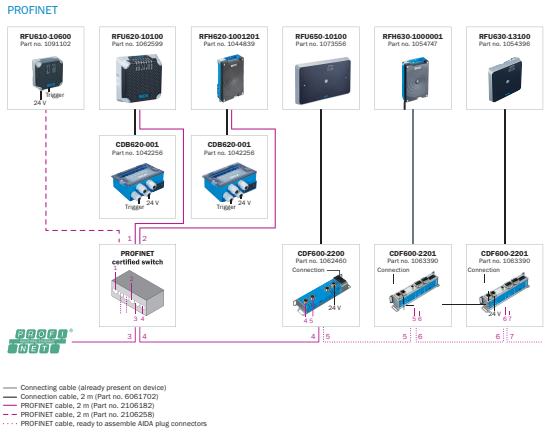
Radiation pattern



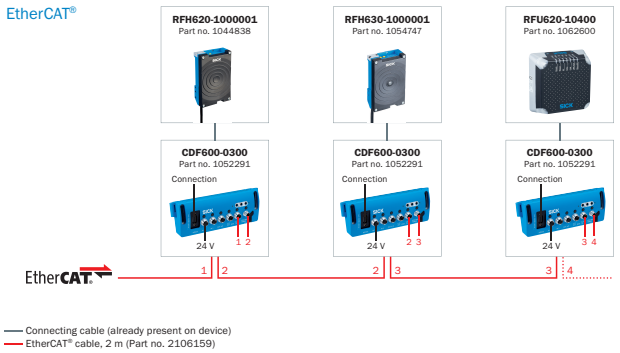
Measured antenna gain in dBic at 866.5 MHz, RHCP (right-hand circularly polarized)
① Horizontal plane (azimuth)
② Vertical plane (elevation)

Connection diagram

PROFINET IO/RT



EtherCAT®



Overview

SICK AppSpace

Recommended accessories

Other models and accessories ➜ www.sick.com/RFU65x

	Brief description	Type	Part no.
Storage media			
	microSD memory card with 1 GB for industrial use	microSD memory card	4051366
Mounting brackets and plates			
	Pivot mounting bracket, incl. assembly material	Mounting bracket	2080967
Plug connectors and cables			
	• **Connection type head A:** Male connector, M12, 4-pin, straight, D-coded • **Connection type head B:** Male connector, RJ45, 4-pin, straight • **Signal type:** Ethernet, PROFINET • **Cable:** 2 m, 4-wire, PUR, halogen-free • **Description:** Ethernet, PROFINET, shielded • **Application:** Drag chain operation, Zones with oils and lubricants	YM2D24-020PN1MRJA4	2106182
Others			
	• **Connection type head A:** Male connector, USB-A • **Connection type head B:** Male connector, Micro-B • **Signal type:** USB 2.0 • **Cable:** 2 m • **Description:** USB 2.0, unshielded	USB cable	6036106
	• **Connection type head A:** Female connector, M12, 17-pin, straight, A-coded • **Connection type head B:** Male connector, M12, 17-pin, straight, A-coded • **Signal type:** Power, serial, CAN, digital I/Os • **Cable:** 0.9 m, 17-wire • **Description:** Power, serial, CAN, digital I/Os, suitable for 2 A, shielded, to connection module CDB650 • **Application:** Drag chain operation	YM2A8D-C90XXXF2A8D	6052945
	• **Carrier frequency:** 865 MHz ... 928 MHz • **Memory capacity (UII / user memory):** 128/512 Bit • **Dimensions (L x W x H):** 18 mm x 122 mm x 2 mm	UHF Transponder, rectangular, global	6068184
Modules			
	• **Sub product family:** CDB650 • **Supported products:** Lector® series, CLV62x - CLV64x (depending on type), CLV69x, RFID read/write device, InspectorP series • **Brief description:** Connection device basic for connecting one sensor with 2 A fuse, 5 cable glands and RS-232 interface to sensor via M12, 17-pin female connector, all outputs available on screw/spring-loaded terminals.	CDB650-204	1064114

Recommended services

Additional services ➜ www.sick.com/RFU65x

	Type	Part no.
Commissioning		
• **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
Maintenance		
• **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
Extended warranty		
• **Product area:** Identification solutions, machine vision, Detection and ranging solutions, safety camera sensors, Safety laser scanners, Safety radar sensors • **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

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