



DATA SHEET

RFU650-10105

RFU65x
RFID

SICK Sensor Intelligence

RFID

RFU650-10105

ORDERING INFORMATION

Type	part no.
RFU650-10105	1083559

Further device versions and accessories at www.sick.com/RFU65x



DETAILED TECHNICAL DATA

FEATURES

Version	Long Range
Product category	RFID read/write device with integrated antenna
Radio approval	China (800 900 RFID 设备检验标准)
Frequency band	UHF (860 MHz ... 960 MHz)
Carrier frequency	920.625 MHz ... 924.375 MHz
Output power	1.6 W (ERP, with integrated antenna,)
RFID standard	EPCglobal UHF Class 1 Generation 2, ISO/IEC 18000-6 C, RAIN
Modulation	PR-ASK, DSB-ASK
Aperture angle	80°, vertical 55°, horizontal
Reading range	≤ 10 m ¹⁾
Antenna	Integrated
Transmitting power	Adjustable
Polarization	Circular
Axial ratio	Typ. 2 dB
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⁾ 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 material	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
Data transmission rate	Function	Data interface (read result output), Service interface
		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
Data transmission rate	Function	Data interface (read result output), AUX (only RS-232)
		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
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

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).

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).

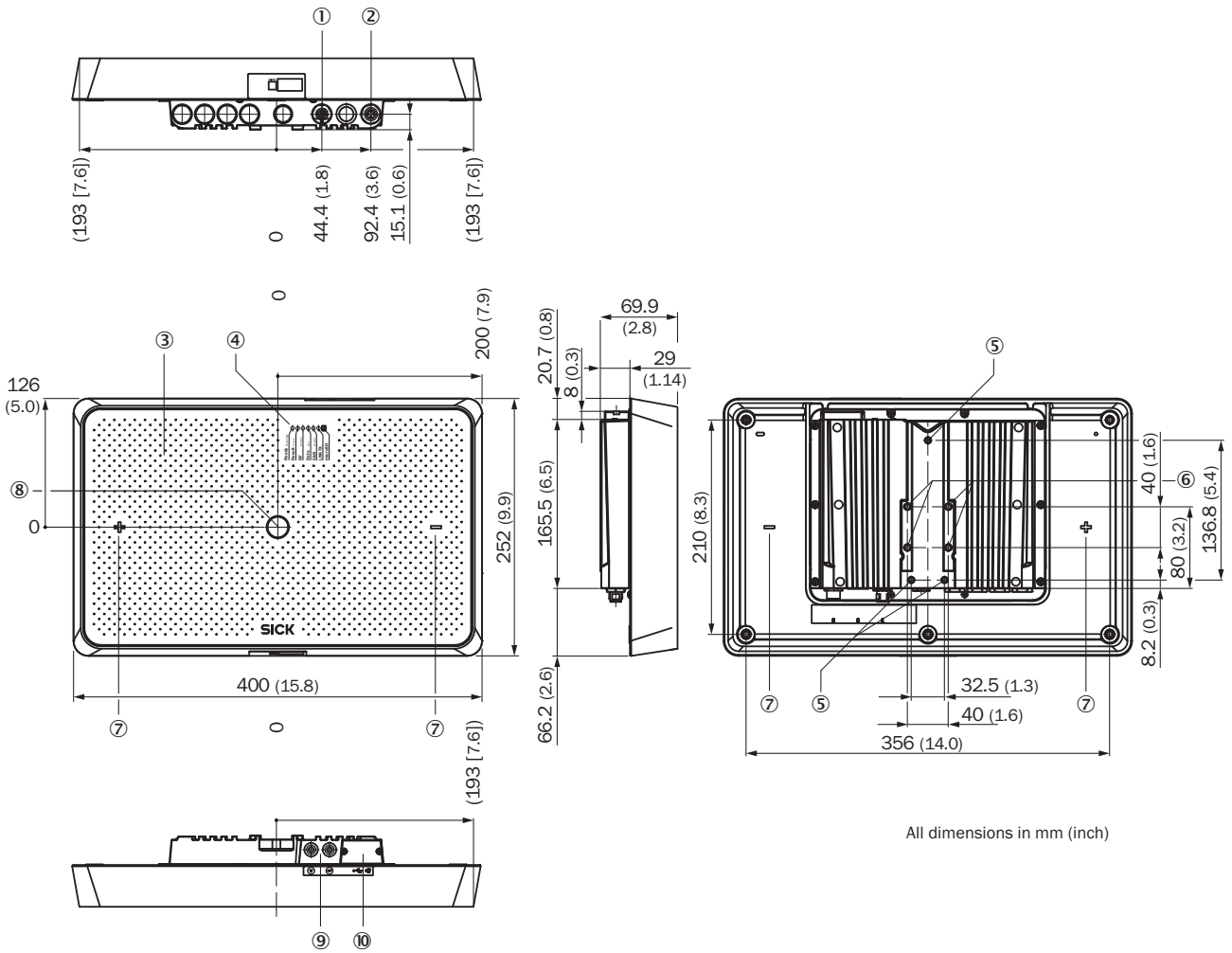
AMBIENT DATA

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
Relative humidity	90 %, Non-condensing

CERTIFICATES

China RoHS	✓
Profinet certificate	✓
Radio Approval certificate China	✓
RAIN RFID	✓

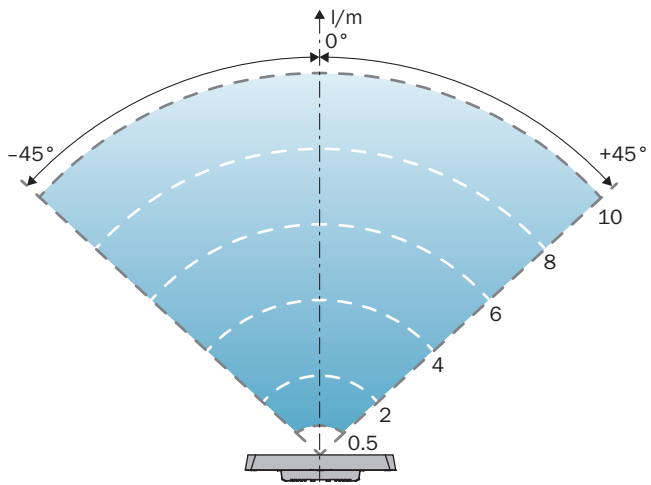
DIMENSIONAL DRAWING



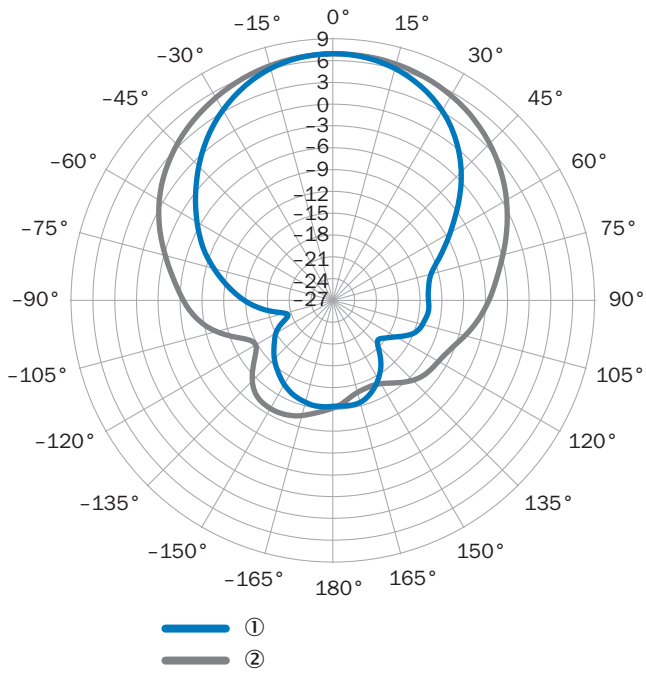
All dimensions in mm (inch)

Dimensions in mm (inch)

WORKING RANGE DIAGRAM



RADIATION PATTERN



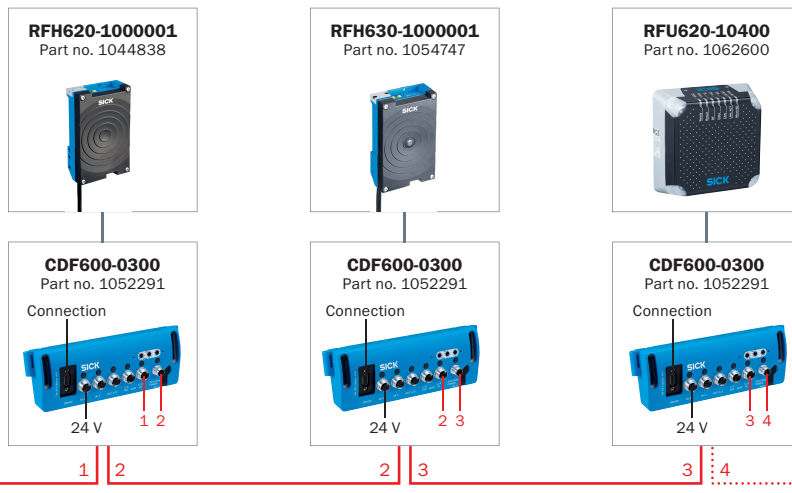
measured antenna gain in dBic at 866.5 MHz, RHCP (right-hand circularly polarized)

① Horizontal plane (azimuth)

② vertical plane (elevation)

CONNECTION DIAGRAM ETHERCAT®

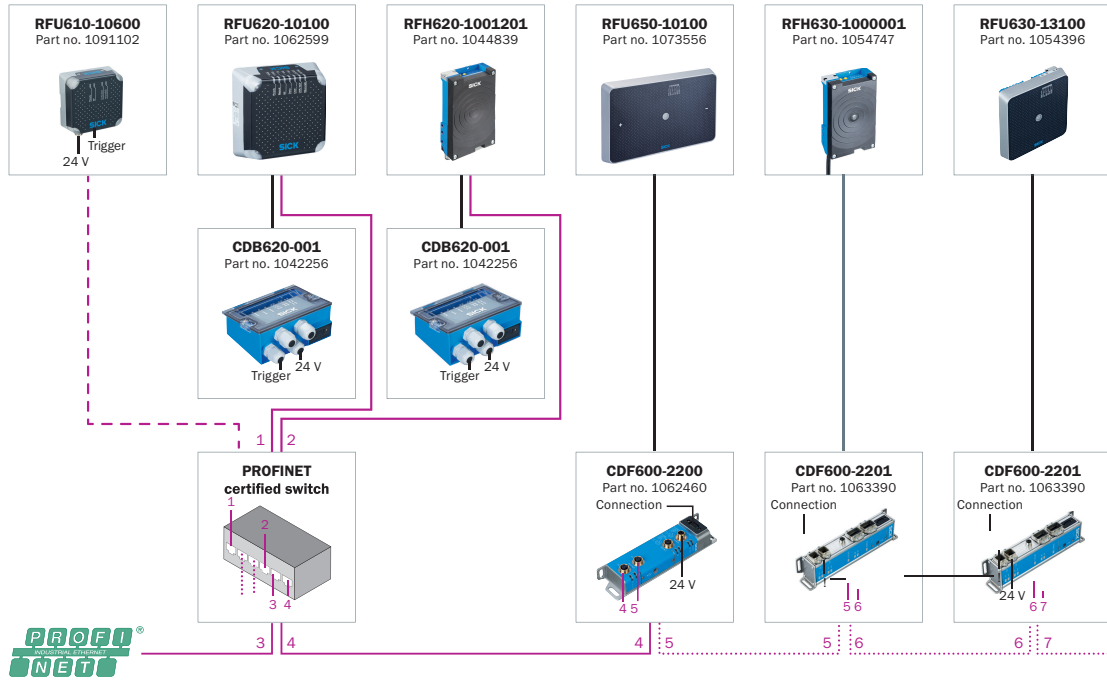
EtherCAT®



— Connecting cable (already present on device)
 — EtherCAT® 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

Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at www.sick.com/1083559



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SICK AT A GLANCE

SICK is a leading global technology company for intelligent sensors and integrated solutions in industrial automation. Our technologies set benchmarks, making your industrial processes more efficient, safer and more sustainable – both in logistics and manufacturing operations.

SICK combines sensor intelligence with industry expertise and certified consulting services. We provide the ideal foundation for scalable as well as tailor-made automation solutions and create added value along the entire value chain. Our close partnerships with our customers are more than just a promise: Together, we optimize productivity, improve quality, protect health and safety, and help build a sustainable future. All with empathy and trust.

Since 1946, we have been developing innovative technologies with passion and a pioneering spirit. With a global network in around 40 countries, SICK has a global presence and is always close by. The company's headquarters are located in Waldkirch near Freiburg, Germany. Our customers benefit from our understanding of both local and global requirements, which enables us to deliver tailor-made solutions

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