



CorivaSat

Localization system

SICK Sensor Intelligence

Described product

CorivaSat

Manufacturer

SICK AG
Erwin-Sick-Str. 1
79183 Waldkirch
Germany

Legal information

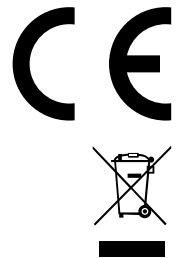
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Original document

This document is an original document of SICK AG.



1 About this document

1.1 Target group

This document is intended for persons who perform the following tasks:

- Incorporation of the product into the application (project planning)
- Mounting
- Electrical installation
- Operation in daily operations
- De-commissioning

1.2 Further information

You can find the product page with further information via the SICK Product ID:

pid.sick.com/{P/N}/{S/N}

(see "Product identification via the SICK product ID", page 7).

The following information is available depending on the product:

- This document in all available language versions
- Data sheets
- Other publications
- CAD files and dimensional drawings
- Certificates (e.g., declaration of conformity)
- Software
- Accessories

1.3 Related applicable documents

Related applicable documents from SICK

Document	Title	Part number	Source
Operating instructions	Coriva User Manual		https://portal.coriva.io
Technical information	Cybersecurity	8031844	www.sick.com/8031844

1.4 Symbols and document conventions

Warnings and other notes



DANGER

Indicates a situation presenting imminent danger, which will lead to death or serious injuries if not prevented.



WARNING

Indicates a situation presenting possible danger, which may lead to death or serious injuries if not prevented.



CAUTION

Indicates a situation presenting possible danger, which may lead to moderate or minor injuries if not prevented.



NOTICE

Indicates a situation presenting possible danger, which may lead to property damage if not prevented.



NOTE

Highlights useful tips and recommendations as well as information for efficient and trouble-free operation.

Instructions to action

- The arrow denotes instructions to action.
- 1. The sequence of instructions is numbered.
- 2. Follow the order in which the numbered instructions are given.
- ✓ The tick denotes the results of an action.

2 Safety information

2.1 General safety notes

Please observe the safety notes and the warnings listed here and in other sections of this product documentation to reduce the possibility of risks to health and avoid dangerous situations.



CAUTION

Failure to observe the relevant work safety regulations may lead to physical injury or cause damage to the system.

Integrating the product



NOTICE

The product must be integrated correctly to provide the expected functionality.

- Plan the integration of the product in accordance with the machine requirements (project planning).
- Implement the integration of the product in accordance with the project planning.

Repairs and modifications



NOTICE

Improper work on the product

A modified product may not provide the expected functionality.

- Apart from the procedures described in this document, do not repair, open, manipulate or otherwise modify the product.

2.2 Intended use

The CorivaSat is intended for use as a stationary infrastructure device within an indoor or designated Coriva Real-Time Location Systems (RTLS) environment. It enables the location of assets within an omlox-compliant UWB system.

The product must only be used in accordance with the specified technical specifications and operating conditions.

Incorrect use, improper modification or manipulation of the product will invalidate any warranty from SICK; in addition, any responsibility and liability of SICK for damage and secondary damage caused by this is excluded.

2.3 Improper use

Impermissible use

- As a safety component as defined in the relevant applicable safety standards for machines, e.g. Machinery Directive.
- Access control or authorization

Impermissible ambient conditions

- Outdoor areas
- Publicly accessible areas
- Explosion-hazardous area

2 SAFETY INFORMATION

- Corrosive environment
- On board aircraft, ships or satellites

CorivaSat IP20 only

- Precipitation
- Inadequate protection against moisture and contamination

2.4 Qualification of personnel

Any work on the product may only be carried out by personnel qualified and authorized to do so.

Qualified personnel are able to perform tasks assigned to them and can independently recognize and avoid any potential hazards. This requires, for example:

- technical training
- experience
- knowledge of the applicable regulations and standards

3 Product description

3.1 Scope of delivery

CorivaSat IP20

- 1 x CorivaSat base body
- 1 x CorivaSat IP20 cap
- 1 x wall bracket "H"

CorivaSat IP67

- 1 x CorivaSat base body
- 1 x CorivaSat IP66/67 cap
- 1 x wall bracket "H"
- 2 x M4x30 screws for the IP67 cap
- 1 x M25 WISKA ESKV25 cable gland
- 1 x slotted seal for packing gland
- 1 x seal reduction

3.2 Product identification

3.2.1 Product identification via the SICK product ID

SICK product ID

The SICK product ID uniquely identifies the product. It also serves as the address of the web page with information on the product.

The SICK product ID comprises the host name pid.sick.com, the part number (P/N), and the serial number (S/N), each separated by a forward slash.

For many products, the SICK product ID is displayed as text and QR code on the type label and/or on the packaging.



Figure 1: SICK product ID

3.3 Overview of the product



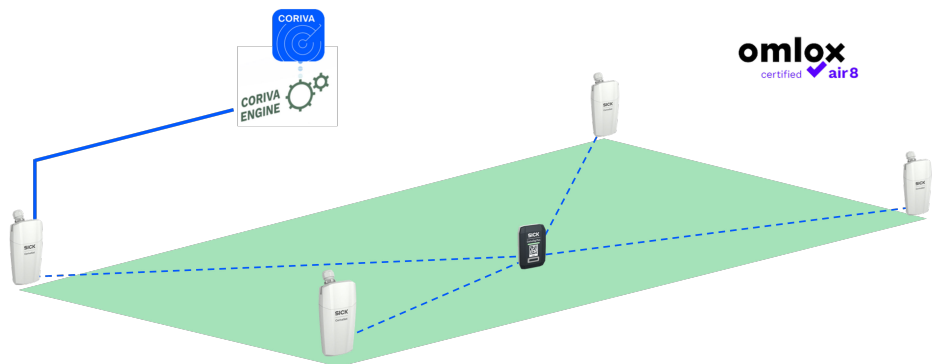
Figure 2: Overview of the product

- ① Pushbutton and connection
- ② Cap
- ③ Housing
- ④ LED

3.4 Product characteristics

3.4.1 Design and function

Structure



Function

The CorivaSat (UWB Satellite) is a permanently installed device of the Coriva Real-Time Location System (RTLS). It is used exclusively to receive ultra-wideband (UWB) signals from omlox-compliant mobile devices - in particular CorivaTag and other "omlox air 8"-certified UWB tags.

The device records the signals emitted by the mobile UWB tags and transmits the received measurement data to the CorivaEngine. The position of the mobile devices is calculated there in real time.

3.4.2 Status indicators

LED behavior	Meaning
○	Device switched off No power supply
● Blue	Network search Device is waiting for an IP address
● Blue	RTLS search The device is searching for an RTLS network (UWB)

LED behavior	Meaning
White	Connected to the network Active status, everything OK
White	Confirmation/identification Among other things, after pressing the "A" pushbutton
 Red	Error General error

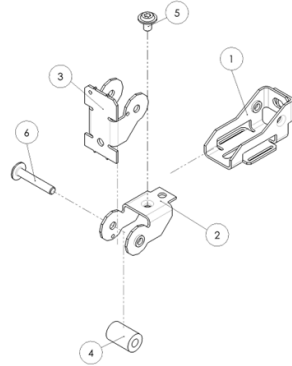
○ LED off.  LED flashes. ● LED illuminates.

4 Mounting

4.1 Wall mounting

Overview

The CorivaSat has a sliding mechanism on the back of the device that can be used to connect it to various mounting brackets or mounting adapters. This allows flexible installation on ceilings, walls or other suitable objects.



Important information



NOTE AVOIDANCE OF RADIO AND RECEPTION INTERFERENCE

If the device causes faults in radio or television reception, the following measures can be taken to improve the situation:

- Realign the receiving antenna or move it to another location.
- Increase the distance between the device and the affected receiver.
- Connect the device to a different socket that is on a different circuit to the receiver.
- If problems persist, contact your specialist dealer or a qualified radio technician.

Prerequisites

- A completed project plan is available. For the project plan of an RTLS and its positioning accuracy, use the satellite planning tool at <https://portal.coriva.io>.
- General installation instructions can be found under **User Manual > Setup > Satellite Planning**.
- Suitable substrate (e.g. concrete wall)

Procedure

Mounting the base bracket

1. Connect part (1) and part (2) together
2. Fasten both parts with a short screw (5).
3. Use the outermost position of the slot to extend the mounting as far as possible.
4. Align the curved areas of (1) and (2) parallel to each other.
5. Make sure that the two circular elements are not underneath part (1).

Mounting the extension

6. Place part (3) on the base bracket.
7. Position the spacer (4) between the components.
8. Fasten everything with a long screw (6).

NOTE | Part (3) can be mounted in several positions.

9. For wall mounting: Make sure that the small hole in part (3) is located on top.
10. As the bending directions of the parts are identical, the elements must be shifted slightly in relation to each other when assembling.

Engaging the CorivaSat

11. Slide the CorivaSat into the sliding mechanism of the adapter from above.
12. Check that the device audibly clicks into place and is securely fixed.

Final mounting on the wall

13. Position the adapter/device unit on the concrete wall.
14. Fasten the unit with a screw.
15. Check that it is seated securely.

5 Electrical installation

5.1 Connecting voltage supply

Overview

The CorivaSat can be supplied with voltage either via a 24 V DC supply or via Power over Ethernet (PoE) LAN. To use the WLAN option, a 24 V DC supply is mandatory.

The network interface is used exclusively for integration into local, isolated networks.

The device is not intended for access to the Internet.

Procedure

Connection to 24 V DC

1. Open the "DC IN" screw terminal.
2. Connect the positive and negative conductors as marked.
3. Tighten the screw terminals to max. 0.5 Nm.
4. Check the cables are seated securely.
5. Switch on the 24 V DC supply and check the device status.

Connection via Power over Ethernet (PoE)

1. Plug the network cable into the "ETH" RJ45 connector on the top side of the CorivaSat.
2. Establish a network connection. If required, the device receives an IP address from the DHCP server of the local network.

5.2 Attaching the cable entry and seal for CorivaSat IP67

Overview

The CorivaSat can be equipped with an optional IP67 cap to protect the device in environments exposed to dust, dirt, moisture or direct exposure to water. Correct cable entry and reliable sealing are crucial to ensure the IP67 enclosure rating.

Important information



NOTE

If the device is exposed to rain or water, provide a U-shaped drainage elbow immediately after the cable gland to prevent water ingress.

Procedure

1. Insert the M25 cable gland into the IP67 cap.
2. Hand-tighten the screw connection so that it is seated correctly in the thread.
3. Strip about 4 cm of insulation from the outer cable sheath of the DC cable.
4. Strip about 8 mm of insulation from individual wires.
5. Use ferrules for flexible conductors.
6. Select the appropriate sealing insert:
 - DC cable: Select a sealing kit that matches the outer diameter of the cable. Use a multi-slot sealing insert for daisy chain cabling.
 - RJ45 network cable: Guide the RJ45 connector with cable through the fully opened cable gland. Place a slotted sealing insert over the cable on the outside and insert it into the screw connection.
 - DC and RJ45 cable: Insert a sealing insert with two slots.
7. Feed the DC cable from the outside through the IP67 cap.
8. Slightly tighten the counter nut of the cable gland so that the cable is held but can still be moved.

9. Attach the DC wire ends to the terminal block according to the polarity.
10. Plug in the RJ45 network cable if necessary.
11. Fully engage the DC connector and/or RJ45 connector.
12. Place the cap on the device housing.
13. Tighten the housing with the M4x30 mm screws alternately and evenly until the gap is almost closed all around.
14. Fully tighten the cable gland.
15. Check the seal by pulling lightly on the cable.
16. Ensure the cable exits the screw connection straight and free of tension.

6 Operation

6.1 Pushbuttons on the device

Important information

**NOTE RESETTING THE DEVICE**

Resetting the connection settings or loading the factory settings always requires the device to be set up again in the RTLS and should only be carried out by qualified persons.

Using the pushbuttons

There are two pushbuttons on the connection surface of the device.

- Pushbutton "B": Restart pushbutton – to restart the device (no settings are lost)
- Pushbutton "A": User button – has several functions:

Duration of action	Function	LED signaling
Short press	Identification	Flashing white
Long press (> 10 s)	Reset connection	Flashing blue
Long press (> 15 s)	Reset to factory settings	Flashing red

7 Decommissioning

7.1 Disposal

Procedure

- Observe the applicable local and statutory environmental regulations and guidelines for the disposal of industrial and electrical waste.
- Always dispose of unusable devices in accordance with national waste disposal regulations.
- Do not dispose of batteries, accumulators, if present, or electrical or electronic devices with household waste.



8 Technical data

8.1 Data sheet

Features

Identification technology	UWB
Spectral output power density	-41.3 dBm/MHz
Maximum output power (conducted)	-3.61 dBm
Scanning range	≤60 m ¹⁾
Operating frequency (localization)	7,737 ... 8,237 MHz, UWB channel 9
Wireless transmission protocol	IEEE 802.15.4z
Type of antenna	Integrated UWB, ISM, WLAN 2.4 & 5 GHz antennas
Weight IP20	270 g
Weight IP67	340 g
Housing material	ASA polycarbonate
Housing color	White
Dimensions, IP20 system (LxWxH)	102 mm x 54 mm x 187 mm
Dimensions, IP67 system (LxWxH)	102 mm x 54 mm x 218 mm

¹⁾ Depending on the application

Mechanics/electronics

Supply voltage	PoE 802.3af or 24V DC
Power consumption	2.0 W / 1.0 A
Enclosure rating	IP20 / IP67

Interfaces

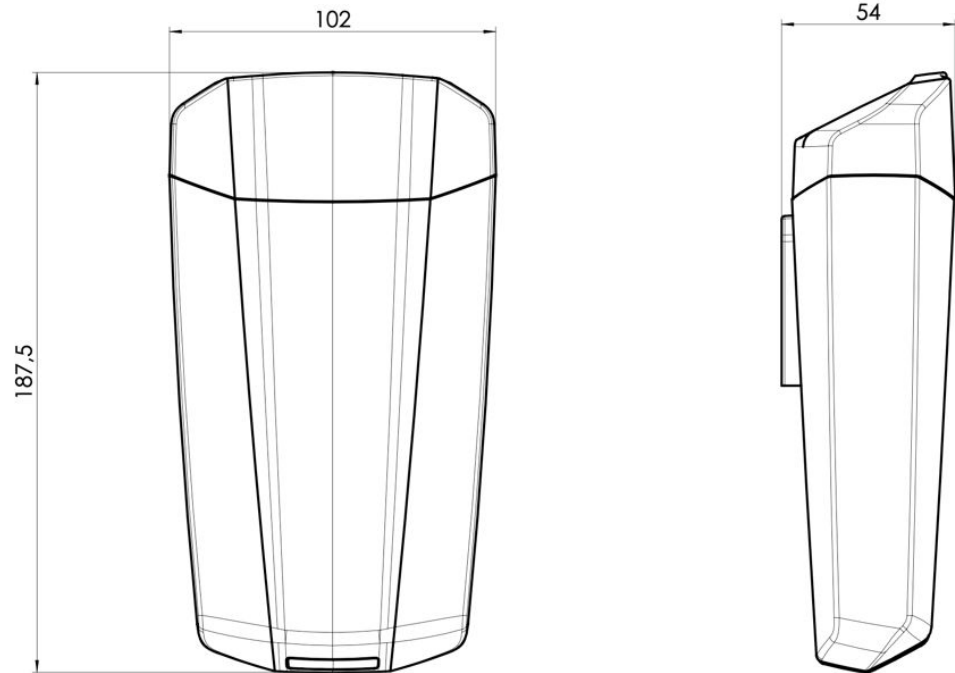
Physical interfaces	• Ethernet • WLAN
Connection type	8P8C RJ45 for shielded FTP (max. 100 m)
Configuration interface	REST API, ISM band (2,405 ... 2,480 MHz, IEEE 802.15.4)
Interface for application program- ming	REST API, MQTT
WLAN	WLAN 2.4 GHz (2,400 ... 2,483.5 MHz, IEEE 802.11 b/g/n) • ETSI domain: ch1 - ch13 • FCC domain: ch1 - ch11 WLAN 5 GHz (5,150 ... 5,850 MHz, IEEE802.11 a/n) • ETSI domain: ch36 - ch140 • FCC domain: ch36 - ch165

Ambient data

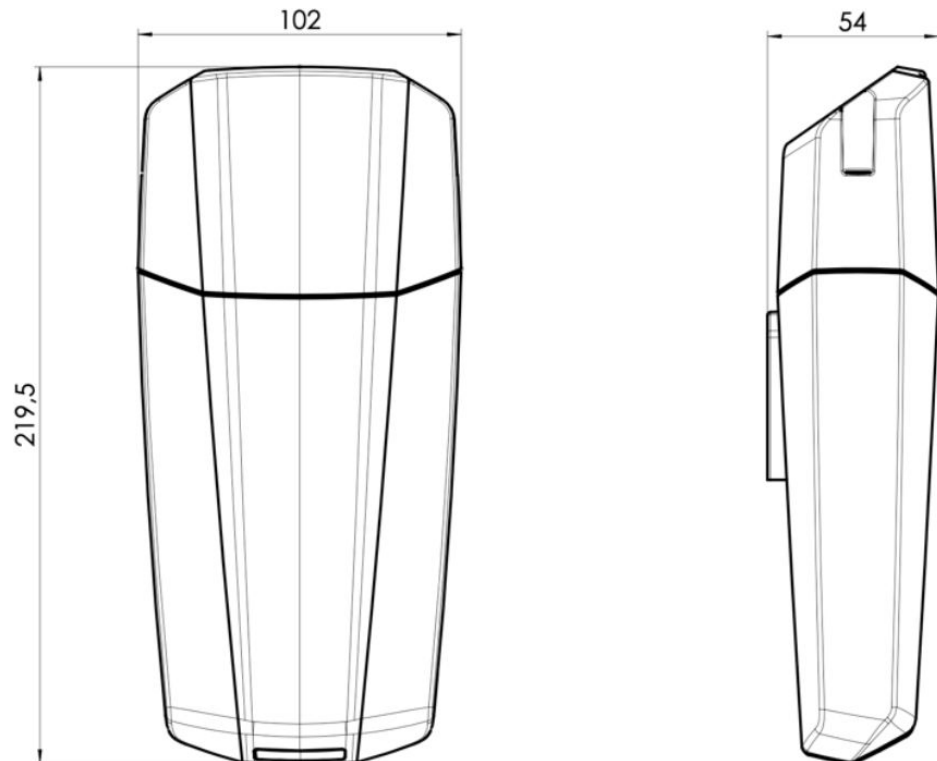
Ambient temperature, operation	-30 °C ... +60 °C
Permissible relative humidity	0% ... 90% (non-condensing)

8.2 Dimensional drawings

IP20 version



IP67 version



Open source software

This product may contain open source software components. The use of such components is subject to the terms of the respective open source licenses.

For additional information visit www.sick.com/licensetexts.

FCC radio approval

- FCC ID: 2AHDRSAT1

The device fulfills the EMC requirements for use in the USA, in accordance with the following extracts from the relevant approval:

Interference Statement

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- this device must accept any interference received, including interference that may cause undesired operation.

Modification Statement

[Any] changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Class B Warning

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be

determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

RF Exposure Statement

This device is a radio transmitter and receiver.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.

This equipment should be installed and operated with a minimum distance of 20 cm between the radiator and the human body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Indoor Use Restriction

This device is intended for indoor use only.

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