Controlant CO 13.02 Wireless Logger User‘s Guide

Type	Description
CO 13.02	Wireless temperature and humidity logger

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General Information

About this guide

This guide describes the features and functions of a Controlant industrial wireless logger product, including connection and setup information, data retrievals, LEDs and switches.

Scope

This guide covers Controlant wireless logger CO 13.02.

Warranty exception for batteries

Controlant's CO 13.02 logger ships with battery included. Battery must be replaced by qualified service personnel approved by Controlant. No warranty is on the behavior of Controlant's equipment in case of wrong battery installation by non-qualified personnel or in case of usage of batteries which Controlant does not approve of.

Ratings

The CO 13.02 wireless is capable of operating in humidity levels of up to 99%. Note that long term exposure to water in varying temperature environment can affect enclosure.

Absolute maximum operating range is from -35°C to 80°C. Recommended operating range is -30°C to 40°C. Operation outside recommended range may affect the function of the device, such as battery capacity and wireless communications.

Additional reference material

Additional information on the features and functions of Controlant logger products can be found online at www.controlant.com

Questions and Technical Support

For technical assistance with your product, contact Controlant Technical Support at +354-517-0630 or support@controlant.com.

Controlant Industrial Wireless Logger - CO 13.02

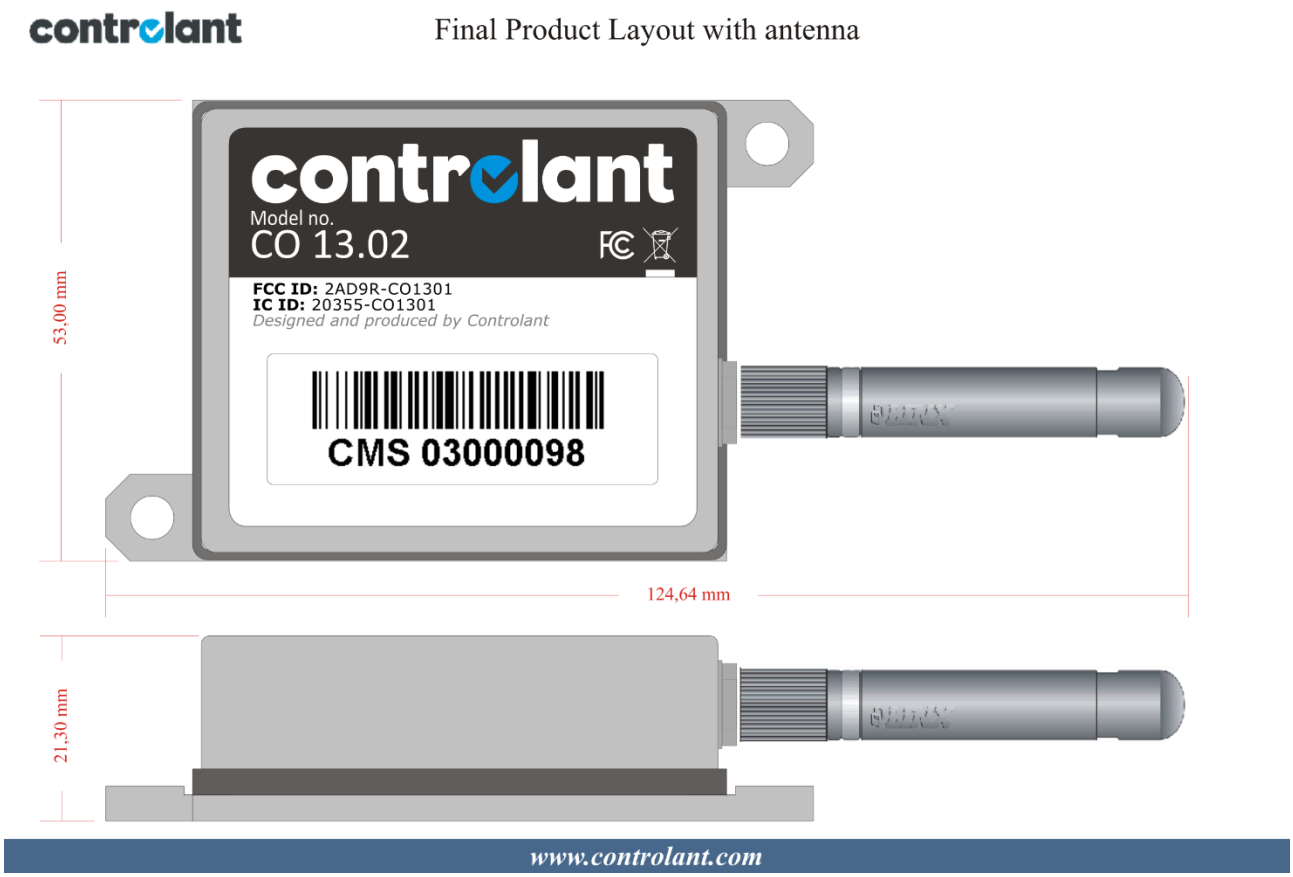

Figure 1: Mechanical drawing of the CO 13.02 wireless logger

Overview

The CO 13.02 wireless logger has a built in ambient temperature and humidity sensor. The logger transmits its data to a local gateway. The gateway then transmits collected data to an on-line central database. The logger logs data into memory when not in the vicinity of a transceiver and automatically transmits all logged data once it has established a connection with a transceiver.

The logger is built to be easy to set-up and maintain, thus reducing installation and operation cost. The logger is able to run with full functionality for up to 3 years while operating within recommended conditions.

Enclosure

The logger comes in a standard aluminum enclosure.

Battery

Each logger has a built in battery which is capable of running the logger with full functionality for up to 3 years in normal conditions. The battery should only be replaced by Controlant employees or trained personnel. In case of replacement, only batteries provided by Controlant should be used.

LED behavior and turning the logger off

The LED and battery plug accessible once bottom plate is removed. The bottom plate should only be removed by qualified personnel approved by Controlant.

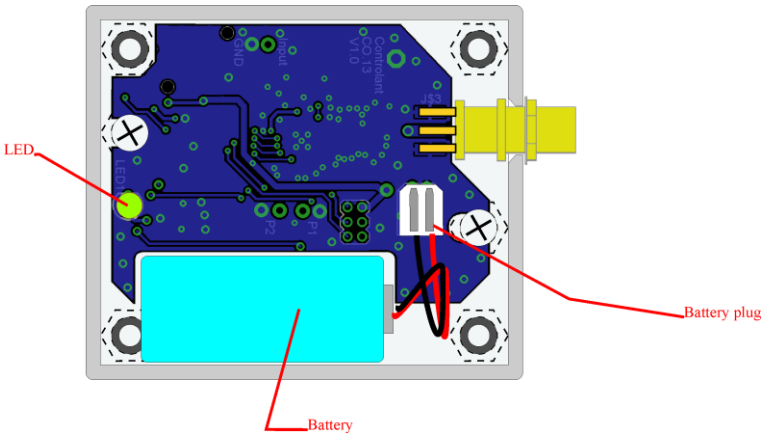

Figure 2: Internal view of the CO 13.02 wireless logger

A green led indicates whether or not the logger is operating normally.

LED Indicates:

LED status	Logger status
No blink	May indicate a malfunction in the logger or that battery power has depleted.
Four short blinks	Indicates that logger is operating normally when battery is plugged in.

To turn off wireless activity, the battery must be disconnected.

To reset the logger, battery must be unplugged for at least 15 seconds and then re-plugged.

Specifications and Measurement Characteristics

Environment range

The wireless logger's working range is the following

1. Humidity
    a. 0-99% non-condensing humidity for normal operation.
    b. Long term exposure to high levels of humidity may cause fault in device.
2. Temperature
    a. Operating range: -30°C to 80°C
    b. Recommended range -30°C to 40°C

Measurement Specifications

- Temperature: -20°C to 30°C
    - ±0.5°C (2°C to 30°C)
    - ±1.0°C (-20°C to 2°C)
    - Resolution: 0.1°C
- Humidity: 10%RH to 90%RH
    - ±5%RH @23°C
    - Resolution: 0.1%RH

Mounting and connectors

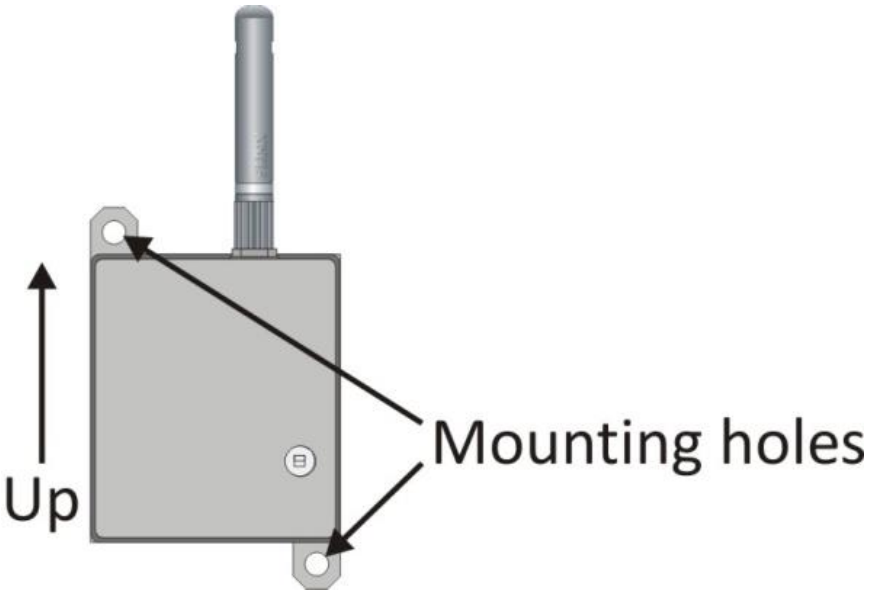

Figure 3: Mounting holes in the CO 13.02 wireless logger

Handling and Installation

The logger's enclosure ensures a good protection against external hits from equipment, personnel and other objects. The enclosure does not protect external objects such as antennas.

The enclosure is designed to withstand splashing water from any direction.

The CO 13.02 wireless logger can be mounted to a non-metal surface by using screws, bolts or straps as shown in the figure above. Care must be taken that screws or bolts are chosen correctly for the surface being mounted on. The logger weighs 105 g. Care must be taken that screws and bolts can handle the weight for the given surface type. Wrong mounting and installation can cause the logger to fall from its intended position and cause potential harm to nearby people. To lower risk of harm due to improper installation, installation should be carried out by a qualified person.

Cleaning of logger should be done with neutral soap to prevent rubber sealing, buttons and LEDs from failing. Care must be taken around the openings into the logger enclosure. The openings are necessary to provide accurate humidity measurements. No liquid material should enter the logger enclsoure. In case of a need to sanitize or sterilize use alcohol based compounds and wipe with a cloth.

Mounting Orientation

Recommended mounting orientation is shown in Figure 3. Mounting can affect range of wireless communication.

Antenna

The CO 13.02 logger has 1 antenna connector, shown in the image below. The antenna connector type is RP-SMA.

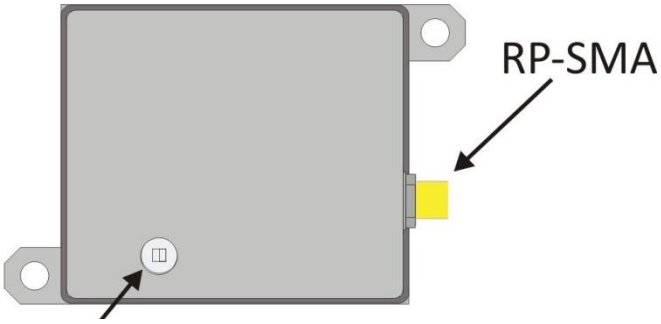

Figure 4: Antenna connector on CO 13.02 wireless logger

Wireless Connectivity

Controlant wireless devices have up to 400m range in open air. The communication frequency channels are placed around 868MHz for Europe and 915 MHz in North America.

The range in open air depends on various factors, including:

1. Mounting and antenna orientation
2. Proper assembly and selection of antennas.
3. Antenna gain and directivity.
4. Disturbance on communication frequencies caused by electronic devices, both low and high current.
5. Disturbance on communication frequencies caused by other wireless devices which are using the same or similar communication frequency.

Wireless range is significantly affected by occluding objects. The range in occluded environment depends on various factors, including:

1. The building materials used in walls and ceilings.
2. Metal objects which occlude the path of the signal
3. Antenna gain and directivity.
4. Disturbance on communication frequencies caused by electronic devices, low and high current.
5. Disturbance on communication frequencies caused by other wireless devices which are using the same or similar communication frequency.

For further information on how to set up the wireless monitoring system for best wireless connectivity please refer to the wireless setup guide.

For best results in setting up and using the wireless system, please refer to our selection of solutions and accessories.

FCC Regulatory notices

THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS.

(1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, AND (2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED, INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRED OPERATION.

Note:

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. 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:

1) Re-orientate or relocate the receiving antenna,

2) Increase the separation between the equipment and the radiator,

3) Connect the equipment into an outlet on a circuit different from that to which the receiver is connected,

4) Consult the dealer or an experienced radio/TV technician for help.

FCC Antenna Gain Restriction:

The CO 13.02 has been designed to operate with the following antennas:

- ANT-916-CW-QW antenna that has 1.8 dBi gain
- ANT-916-OC-LG-RPS with 2.2 dBi gain
- Q868-X-Ap with 3 dBi gain
- Q8019-900LW with 2.5 dBi gain

Antennas are supplied by Controlant or its resellers. Using antennas with larger gain is prohibited. The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

Warning:

Changes or modifications to this product which are not expressly approved by the manufacturer may void the user's authority to operate it.

Industry Canada Regulatory notices

Antennas

This radio transmitter 20355-CO1301 has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Le présent émetteur radio 20355-CO1301 a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés ci−dessous et ayant un gain admissible maximal. Les types d'antenne non inclus dans cette liste, et dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.

- ANT-916-CW-QW with 1.8 dBi gain
- ANT-916-OC-LG-RPS with 2.2 dBi gain
- Q868-X-Ap with 3 dBi gain
- Q8019-900LW with 2.5 dBi gain

User notifications

This device complies with Industry Canada's license-exempt RSSs. Operation is subject to the following two conditions: (1) This device may not cause interference; and (2) This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.