



ANGEL GUARD

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CLARENCE

Installation Instructions for the
Clarence O-1 Water Monitoring Device

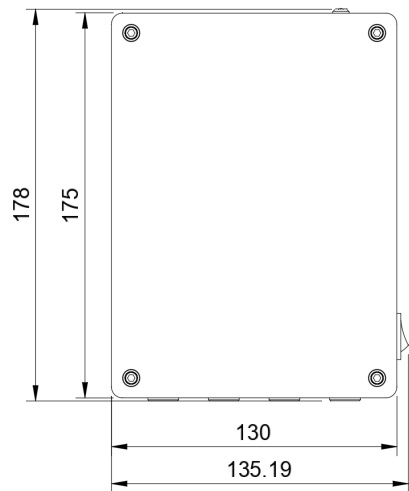
Contents

3	Product Information
4	General Information
6	Installation
9	Commissioning
10	Calibration
11	Care & Maintenance

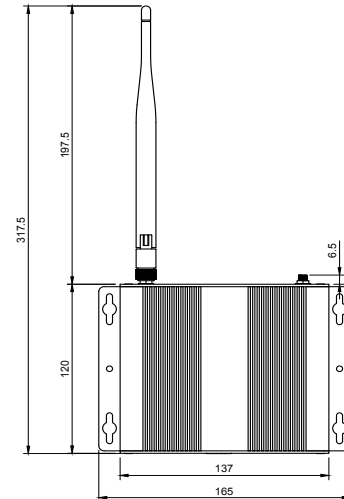
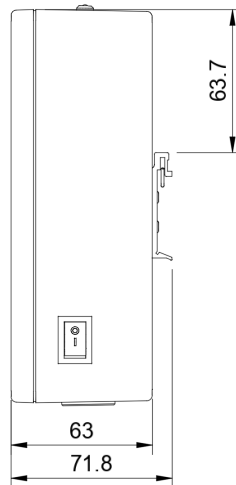
Product Information

Clarence O-1 Remote Water Monitoring Box

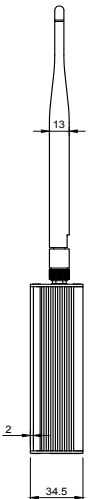
SKU	Description
C2000LW	O-1 Device with 1 Temperature/Flow Sensor
C2001EX	Additional Temperature/Flow Sensor
C2002EX	Additional Battery
C2003EX	Communication Hub #1
C2004EX	Communication Hub #2



O-1 Device



Communication Hub #1



General Information

These products are designed for hot and cold water services, with the ability to monitor hot/cold/mixed/return water.

All monitoring devices should be installed and used in accordance with appropriate specifications or codes of practice and Angel Guard technical recommendations.

Electrical connections (where applicable) – all installations must be correctly earthed. If in doubt, the installation should be handled by a qualified electrician in accordance with current regulations.

Installation of the device should be carefully planned to ensure that existing joints and pipework are not disturbed or stressed.

Installation should be carried out in accordance with all current water supply (water fittings) regulations and all relevant building regulations.

General Information

Regulations

Angel Guard Clarence water monitoring devices are tested and comply with the requirements of current United Kingdom Water Regulations/Bye-laws (Scotland).

Product Performance

- Ambient operating temperatures between 5°C to 55°C
- Approximately 90% of Clarence devices and components can be recycled after use

Guarantee

Angel Guard products carry a 5-year guarantee against manufacturing defects when installed in accordance with these installation instructions and guidelines.

Installation

You will require:

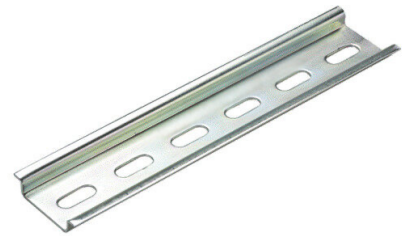
- Screwdriver
- Tape Measure
- DIN Rail (fitted in position with appropriate fixings for the type of wall/surface)
- Marker/Pen
- Digital Temperature Probe (suitable for measuring the surface temperature of a pipe)



Digital Temperature Probe



Screwdriver



DIN Rail



Marker/Pen



Measuring Tape

It is intended that a technically competent installer should undertake installation.

When you are ready to start, ensure that you have the right tools to hand.

Installation

Communication Hub

1. When considering the location for the O-1 Communication Hub, be mindful of the positioning of the O-1 devices, all within a reasonably close proximity of the Hub.
2. If necessary, to fit the hub to the wall, (using the dimensions for the hub see page 3) mark the positions for the wall fixings and secure the Hub to the wall in position.
3. Plug in the hub using the power supply and power on.
4. The supplied hub will connect automatically with in-range O-1 devices, however, pre-configuration of backhaul (outgoing communication from hub) options are to be considered as following:
 1. 4G: Supplied pre-configured. SIM pre-installed. No further setup required.
 2. Ethernet: Supplied pre-configured. Connect to appropriate port using suitable cable. Considerations need to be made for firewall and communication configurations client-side.
 3. Wi-Fi: Supplied pre-configured, however, configuration requires SSID and password information to be supplied.
5. Upon the completion of setup, hub connection can be verified by checking the relevant (power, network & LoRa) lights are active on the hub.
6. Once the Hub has been installed and set up, move on to the installation of the O-1 devices (found on the next page).

Installation

O-1 Device

1. When considering the location for the O-1 device, use the information found in the “Location Advice” document (which can be found on the Angel Guard website).
2. Using the dimensions for the O-1 device (see page 3), mark the positions for the wall fixings (for the DIN Rail).
3. Secure the O-1 to the wall in the pre-marked position where you have fitted the DIN Rail.
4. Connect Temperature Sensors to the Controller Box, using the supplied cables. The sensor(s) can then be fitted to the pipework using the built-in strap.
5. Turn the switch found on the side of the device to supply power to the O-1 box.
6. Check to see that the LED found on the O-1 device is lit once power has been supplied to the unit.
7. Once a successful connection to the hub has been made, the LED will begin flashing for a few moments and then go off. If no network connection is made, the LED will remain lit. In the case of no connection, you should then seek further advice using the contact details found within this document.
8. Once power has been supplied and connection verified, move on to the commissioning step (found on the next page).

Commissioning

Follow these steps to commission your O-1 device:

1. Scan the QR code on your device, which sends you to the login portal.
2. Enter login details to gain access to the commissioning page.
3. Fill in the information requested on the commissioning page ensuring the ID no. matches the one on the device.

The screenshot shows the 'Maintenance Portal' for 'Angel Guard HQ'. The page has a navigation bar with 'Commissions', 'Calibration', 'Device Actions', 'Water Management', and 'Appointments'. The 'Commissions' tab is active, and the 'O-1' device is selected. The form contains the following fields:

- Name:** First Last
- Device ID:** Select Device (dropdown)
- Dept Area:** Area (dropdown)
- Healthcare Environment:** Choose Location Group (dropdown)
- Location:** Angel Guard HQ
- Install Date:** No date selected (checkbox)
- Position:** (dropdown)
- Extra Location Information:** (text input)

Below the main form is the 'O-1 Calibration' section, which includes a 'Probe 1' dropdown and a note: 'Please enter all times in UTC/GMT+0.' The calibration fields are:

- Date:** No date selected (checkbox)
- Time:** No time selected (checkbox)
- Feed:** Select Device Feed (dropdown)
- Temp:** Temperature (C) (dropdown)
- Reirculatory Water System:** (checkbox)
- Flow:** (checkbox)

There are also sections for 'Probe 2', 'Probe 3', and 'Probe 4', each with a dropdown arrow. At the bottom of the form are 'Submit' and 'Reset' buttons.

4. The final step in the commissioning is to undergo a temperature calibration. The steps for this are found on the next page.

Calibration

The final step of the commissioning process is the calibration of your temperature readings. To do so:

1. Click on the calibration button found on the commissioning page.
2. Run the water until the temperature has reached a stable level (leave the water running until you have finished the calibration).
3. Using the digital temperature probe, take a reading of the outside of the pipe where the temperature sensor is fitted.
4. Enter this temperature into the calibration page for the correct sensor probe.
5. Submit your reading.
6. Repeat these steps if calibrating additional temperature sensors.

You have now completed the commissioning process, and your Clarence O-1 device will now be fully operational.

The calibration process can also be manually initiated, when required, from the device dashboard. To do so, find the Calibration button on the device page, and follow the same steps as listed above.

Care & Maintenance

Regular care and maintenance requirements have been kept to a minimum, but the following will help to ensure the devices have a long life and will provide trouble-free operation.

Every 12 months:

1. Check that the outer box looks to be in good condition, cleaning the outside faces of the box using a clean cloth.
2. Calibrate your device's temperature sensors to ensure accurate readings. You will be alerted when 12 months have passed without a calibration. Follow the steps previously detailed in the Calibration section.

Care & Maintenance

Via Seraph Protect, information on battery life of the O-1 device will be provided, notifying the user when required to replace the batteries. To do so, follow the steps below:

1. Turn off power to the device via the switch on the side of the device, ensuring this has been placed into the off position.
2. Open the device box to gain access to the internals, containing the batteries.
3. Carefully remove each battery.
4. Replace with fresh batteries, ensuring the positive and negative ends align correctly within the battery holder.
5. Close the device box.
6. To check power, turn device on using the switch. The green light on the side should then light up.

You have now completed the replacement of device batteries. You should check the readings on the Seraph Protect dashboard, ensuring that the device is outputting regular readings shortly after completion.



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