



ANGEL GUARD

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The word 'CLARENCE' is written in a bold, sans-serif font. It is centered within a glowing, white, oval-shaped frame that has a subtle gradient and a slight shadow, giving it a three-dimensional appearance.

CLARENCE

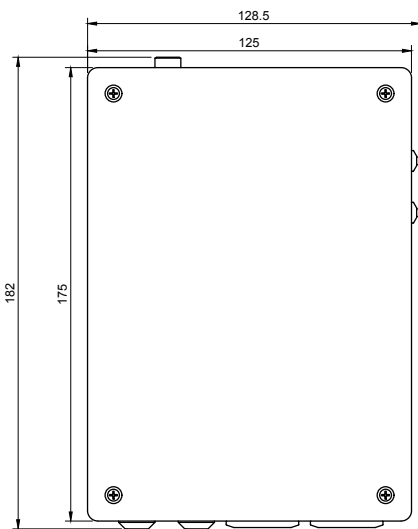
Installation Instructions for the
Clarence C-1 Water Monitoring Device

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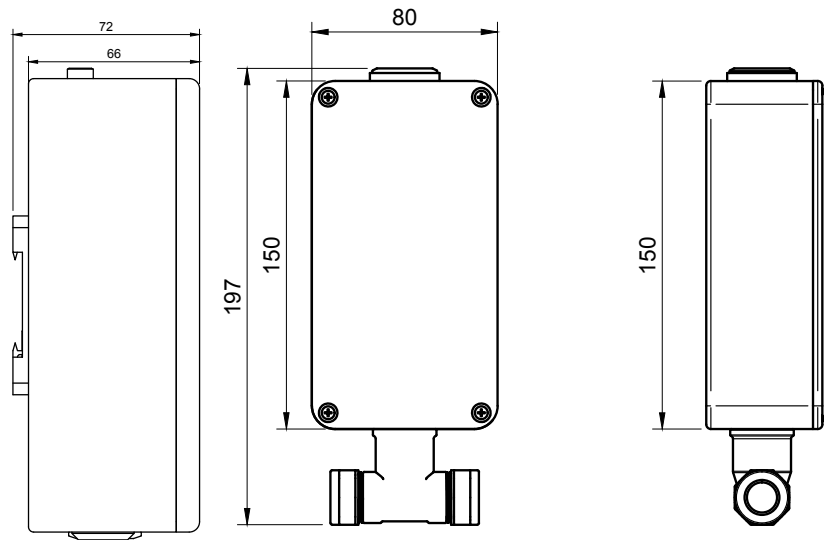
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Product Information

SKU	Description
C10054G	15mm Single Pipe 4G Mains 1.2m
C10064G	15mm Single Pipe 4G Mains 5m
C10074G	15mm Double Pipe 4G Mains 1.2m
C10084G	15mm Double Pipe 4G Mains 5m
C10094G	22mm Single Pipe 4G Mains 1.2m
C10104G	22mm Single Pipe 4G Mains 5m
C10114G	22mm Double Pipe 4G Mains 1.2m
C1012G	22mm Double Pipe 4G Mains 5m
C1013G	22mm Outdoor Single Pipe 4G Mains 5m
C1014EX	Replacement Biofilm Sensor



Controller Box



Sensor Box

General Information

These products are designed for hot- and cold-water services and for use in cooling tower monitoring.

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/Byelaws (Scotland).

All relevant components/materials carry WRAS and KIWA certification.

Product Performance

- Ambient operating temperatures between 5°C to 55°C
- Pressure up to a maximum 16 bar (for water temperatures between 5°C and 90°C)
- All copper is Cu-DHP grade giving excellent corrosion and very-high fire resistance
- Copper acts as a bactericide helping to suppress bacterial growth
- Approximately 90% of Clarence devices and components can be recycled after use
- No hot works permits or insurance are required due to heat-free jointing

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:

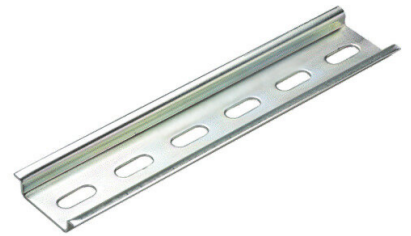
- Screwdriver
- Tape Measure
- DIN Rail (fitted in position with appropriate fixings for the type of wall/surface)
- Marker/Pen
- Spanners (that are a suitable size)
- Digital Temperature Probe (suitable for measuring the surface temperature of a pipe)



Digital Temperature Probe



Screwdriver



DIN Rail



Marker/Pen



Measuring Tape



Spanners

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 and have isolated the pipework ahead of time, either via pre-existing full-bore isolation valves or the addition of suitable fittings either side of the C-1 device.

Installation

1. When considering the location for the C-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 C-1 device (see page 3), mark the positions for the wall fixings (for the DIN Rail) and the Compression pipe fittings (that are on the Sensor Box).
3. If installing the C-1 into a pre-existing section of pipework; first you must ensure the water is isolated either side of the installation site, then measure, mark and cut out the required section.
4. Secure the C-1 to the wall in the pre-marked position where you have fitted the DIN Rail.
5. Connect the pipework either side of the Sensor box to the female connections of the tee, ensuring they are secure.
6. Check pipework is secure and leak-proof.
7. Connect Sensor Boxes and Temperature Sensors to the Controller Box, using the supplied cables.
8. Insert the provided power supply into the device and then insert the attached 3-pin plug into a suitable socket. Turn on to supply power to the C-1 device.
9. Check to see that the green LED found on the device is lit once power has been supplied to the unit.
10. Once power has been supplied, move on to the commissioning step (found on the next page).

Commissioning

Follow these steps to commission your C-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 all fields are completed and that the ID matches the LOT no. on the box.

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, showing 'C-1' and 'O-1' options. Below this is a form with the following fields:

- Name: First Last
- Device ID: Select Device (dropdown)
- Dept Area: Area
- Healthcare Environment:
- Choose Location Group: [dropdown]
- Location: Angel Guard HQ
- Install Date: No date selected
- Position: [dropdown]
- Recirculatory Water System:
- Extra Location Information: [text area]

Below the main form is a 'C-1 Calibration' section with the instruction 'Please enter all times in UTC/GMT+0.' It contains:

- Time of Calibration: No time selected
- Date: No date selected
- Feed: Select Device Feed (dropdown)
- Temperature (C): Temperature (C)
- Flow:

At the bottom of the calibration section 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 a second temperature sensor.

You have now completed the commissioning process, and your Clarence C-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. Check for leaks on the Sensor box pipework.
3. 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

It is recommended that in certain cases (*for example: severe contamination, relocation of the device, etc*) that the Biofilm Sensor is replaced. To do so, follow the steps below:

1. Isolate the water flow to the sensor by turning the isolation valves (previously installed either side of the device) to the closed position.
2. Open the Sensor box to gain access to the Biofilm Sensor.
3. Carefully remove the cable that is connected to the end of the sensor.
4. Loosen the fitting that contains the sensor, ensuring you have a suitable cloth or towel to catch any water that may drip out.
5. Remove the sensor fitting from the pipework, and replace with new sensor fitting.
6. Apply a suitable WRAS-approved jointing compound to the exposed thread.
7. Tighten the sensor fitting to secure the new sensor. Be careful not to damage the other contents of the sensor box, or the sensor itself.
8. Carefully connect the cable on to the end of the new sensor.
9. Ensure the isolation valve is turned to the open position, to allow water to flow to the sensor.
10. Check for leaks. If there are no leaks, then close the box.

You have now completed the replacement of a new biofilm sensor. You should check the readings on the Seraph Protect dashboard, ensuring that the device is outputting regular Biofilm readings upon completion.



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