GEASY

INSTRUCTION MANUAL

Models: Mk6
Date: January 21, 2020
Email: support@bridgiot.co.za

BRIDGIOT
Remote Intelligence and Control

Contents

Warranty

1. We, BridgIoT (RF) (Pty) Ltd, warrant to you that, for a 6-month period from the date of purchase, the Geasy (from here on referred to as the "good") will be free of any defect.

2. If any defect in the good is discovered by you within a 6-month period from the date of purchase, you can return the good to us or to one of our duly authorised service agents. A good returned under this warranty must be presented to us in its original packaging together with all accessories. We will then, at your option:

   a) repair or replace the good; or

   b) refund to you the price paid by you for the good.

3. If within three months after repair, the failure, defect or unsafe feature has not been remedied, or a further failure, defect or unsafe feature is discovered, the supplier must:

   a) replace the good; or

   b) refund to the consumer the price paid by the consumer for the goods.

4. We will refuse the return of any good which has been:

   a) partially or wholly disassembled;

   b) physically altered;

   c) damaged;

   d) used in a manner contrary to any instructions provided by us; or

   e) permanently installed or attached and/or combined with other goods or property in any way.

5. We will not:

   a) repair the good where the defect or damage to the good is found to be a direct result of your negligence, recklessness or malicious behaviour; and/or

   b) be liable for damage caused to the good as a result of wear and tear unless such damage manifests itself:

      i. within 6 months from the date of purchase (where the good has been used for normal family, personal or household purposes); or

      ii. 6 months from the date of purchase (where the good has been used for commercial or professional purposes).

6. Where we issue a refund under this warranty, we will deduct the charges we are allowed to deduct under the Consumer Protection Act, No 68 of 2008.

7. Please note that our normal warranty does not cover any natural disasters, for example; flooding, lightning, earthquakes, etc.

About Geasy

Geasy is suitable for installation on electric water heaters (geysers). When installing the Geasy be sure to follow the appropriate instructions of each particular manufacturer for all other components as well.

Installation, maintenance and dismantling may only be performed by trained personnel in accordance with this instruction manual and safety instructions.

Use the Geasy only after first thoroughly reading and understanding this instruction manual and the safety instructions. In the event of any ambiguities regarding the installation and operation, consult trained personnel or contact our offices.

Improper Usage

The Geasy must not be operated in the following environments:

1. Outdoors.

2. In damp conditions.

3. In rooms in which the operation of electrical and electronic components may be dangerous.

Safety During Installation & Use

Please take note of the following when installing, conducting maintenance or using your Geasy:

1. Risk of death by electrocution.

2. Risk of fire due to short circuit.

3. All work on an open Geasy must be performed with the mains supply disconnected.

4. All safety regulations apply when working on the mains supply.

5. Before connecting the Geasy, make sure that the power supply matches the specifications on the type plate.

6. Factory labels and markings may not be altered, removed or rendered unreadable.

7. Make sure that all devices which are connected to the Geasy conform to the technical specifications of the Geasy.

Exclusion of Liability

The manufacturer cannot monitor, or be held responsible, for compliance to this manual or the conditions and methods during installation and operation. Improper installation of the system may result in damage to the property and/or in bodily injury.

Therefore, we assume no responsibility for loss, damage or costs which result from or are in any way related to incorrect installation, improper operation, incorrect execution of installation work and incorrect usage and maintenance.

The manufacturer reserves the right to make changes to the product, technical data or assembly and operating instructions without prior notice.

Physical Properties

Mass	~ 1 kg
Enclosure	Allbro IP66 Enlec (ENL2021509C) Dimensions: 200 x 150 x 90 mm

Technical Specifications

Make	BridgIoT (RF) (Pty) Ltd
Model	Geasy MK6
Power Supply	DIN RAIL input: 100 - 240 VAC (50-60 Hz) 25 A (25 mA + LOAD) Battery input: 9 - 12 VDC 420 mA
Temperature Range	0 - 70 °C

Installation Procedure Steps

A summary of the installation steps are as follows:

1. Apply all safety measures.

2. Complete all electrical connections.

3. Complete all sensor connections.

4. Set up the controller and all settings via the web-app.

Apply All Safety Measures

1. Switch off circuit breaker of geyser at the main distribution board (DB).

2. Switch off the isolator switch in the roof. The isolator disconnects the live and neutral so that - should someone accidentally switch on the main supply or the circuit breaker fails - there will be no power at the geyser.

3. Test with a multimeter that there is no current on the wires.

Electrical Installation Instructions

Included below is a schematic diagram of how the different components of the system should be installed, where after step-by-step instructions are given.
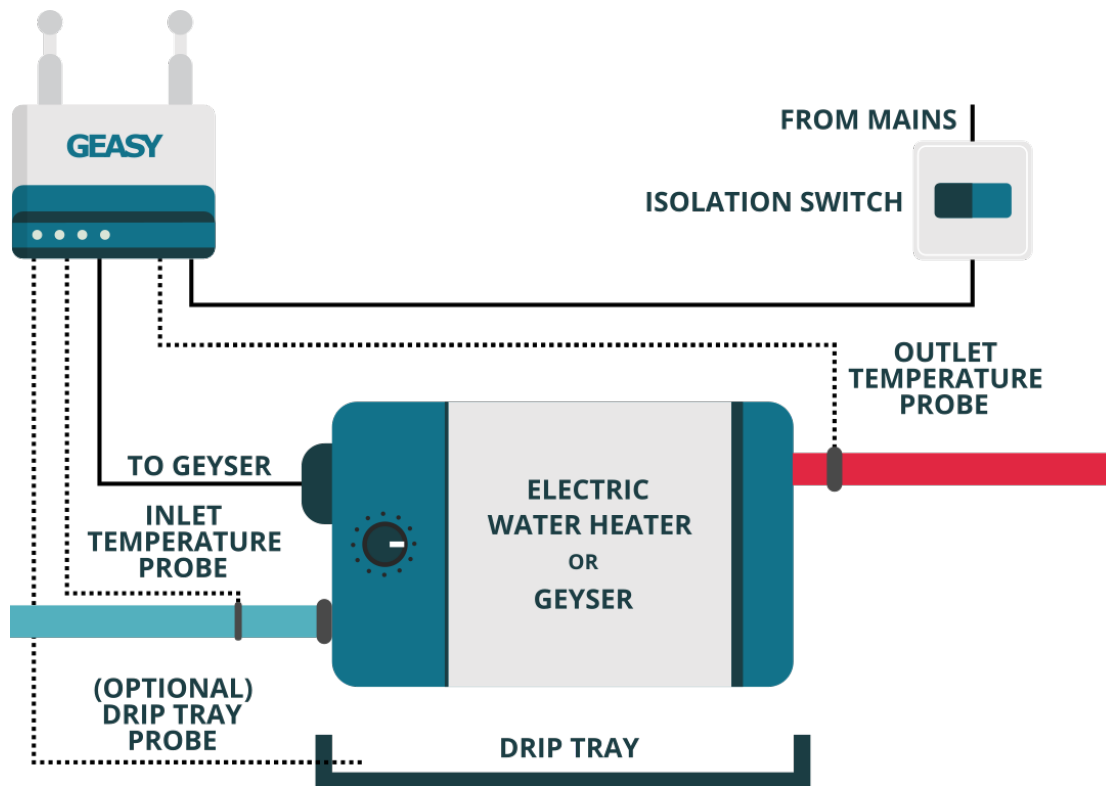
Power Installation

Step-by-step instructions are included below, followed by a photo of the Geasy PCB.

1. Remove the mains supply from the geyser's thermostat.

2. Install a new length of "twin and earth" cable between the Geasy controller and the geysers thermostat, for the electrical supply of the geyser's heating element.

   a) Connect the earth wire to the right-hand side terminal for the geyser's supply, labelled 'E'
   Note: The Geyser must be earthed.

   b) Connect the neutral wire to the right-hand side terminal labelled 'N'.

   c) Connect the live wire to the right-hand side terminal labelled 'L-out'.

   d) Now, connect the earth, neutral and live wires to the appropriate terminals on the geyser's thermostat.

3. Use the electrical supply from the isolation switch to power the controller:

   a) Connect the earth wire to the left most terminal, labelled 'E'
   Note: The Geyser must be earthed.

   b) Connect the neutral wire to the terminal located second from left and labelled 'N'.

   c) Connect the live wire to the terminal located third from left and labelled 'L'.
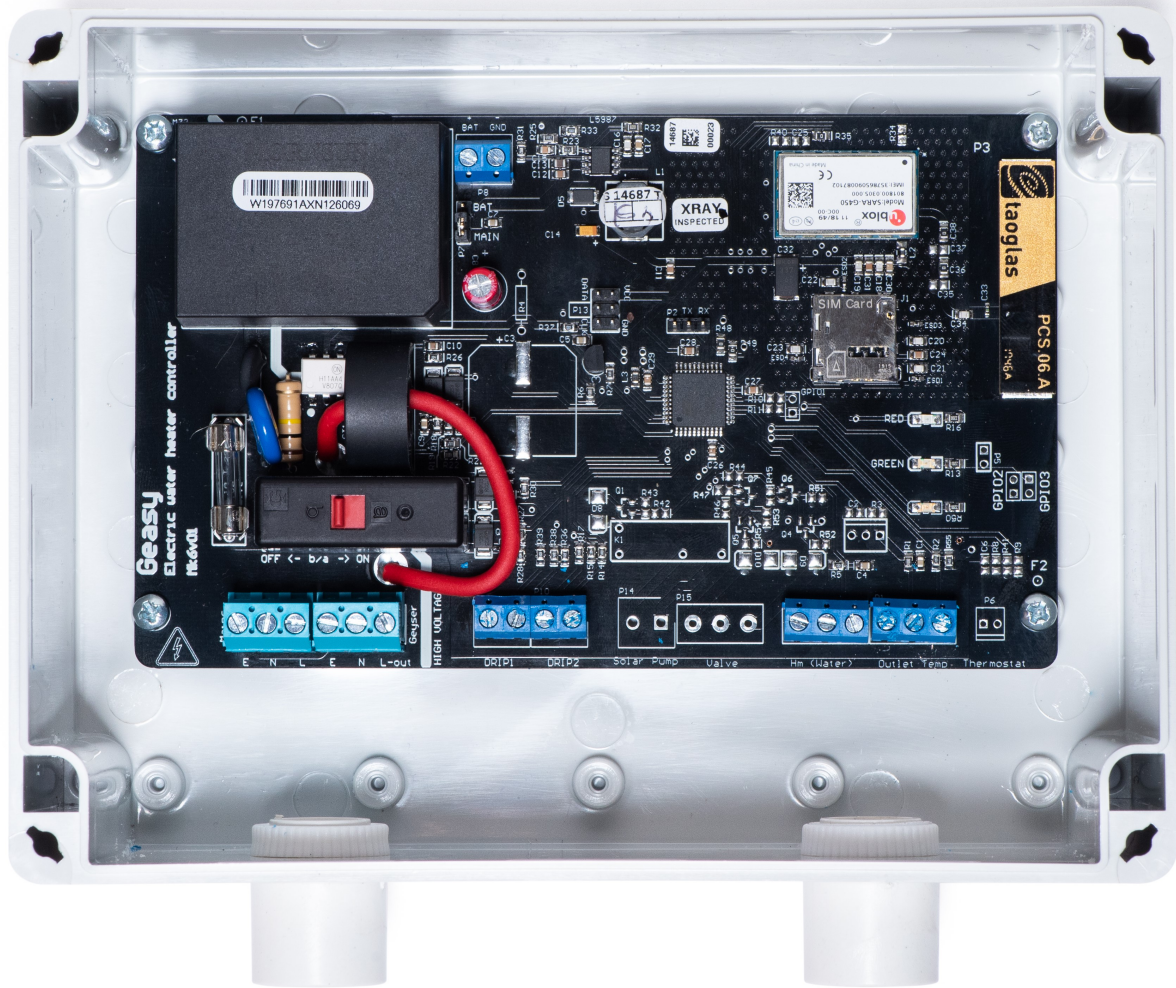
Sensors Installation

1. Use self-fusing silicone tape to secure the temperature sensors' flat part onto the piping. Ensure secure attachment.

2. Attach the "Inlet" temperature to the inlet pipe, near the water meter. Attach the "Outlet near" onto the outlet pipe as close as possible to the geyser.

3. Allow the white flex wire to rest in the drip tray, ensuring that the flex wires do not touch (the wire connects to the "Drip" connector on the PCB).

Inserting a Sim Card

If your Geasy was supplied with a Sim Card, we will already have inserted the Sim Card and will keep it topped up with data. If your Geasy was not supplied with a Sim Card please follow these instructions to install the Sim Card.

1. Switch off the power supply to the device at the isolation switch.

2. Open the enclosure of the device. (The screws only require a quarter turn)

3. Locate the sim card holder.

4. Slide the sim tray open and lift the flap.

5. Slide the micro size sim card into the tray, with its pads facing downwards.

6. Close the flap and slide the slider back until it clicks, securing the sim card.

7. Close the enclosure, securing the screws.

8. Switch the power supply on again.

Device and User Linking

There are two ways of device linking. The first, for partner organisations, is through our installer application which can be found here. The second method of device linking is to contact us directly at support@bridgiot.co.za, including your device ID found on the outer surface of the device and the email address used to register your user profile.

Operation

Product Description

Geasy is a smart geyser controller that enables the management of an electric water heater (EWH), commonly known as a geyser, through an online platform. Geasy has internet connectivity whereby it sends information and receives instructions from the BridgIoT (RF) (Pty) Ltd web-app. The Geasy is retrofitted to an existing EWH and offers the following functionality:

1. Switching the EWH ON and OFF by switching the supply to the heating element. Control through:

    a) scheduling or;
    b) real-time temperature control.

2. Measure power consumption.

3. Internet connectivity through a cellular connection.

4. Measuring up to 3 temperatures:

    a) water outlet temperature and/or;
    b) water inlet temperature and/or;
    c) ambient temperature.

5. Optional: Detect the presence of water in the drip tray.

Safety

Do not interfere with the device. If you have to open the enclosure of the device, for whatever reason, only do so after switching off the power supply at the isolation switch. Only switch on the isolation switch after the enclosure has been closed.

User Responsibilities

The user may not use the device's sim card (if supplied by BridgIoT (RF) (Pty) Ltd) for any other purposes if the sim card was provided with the device. The sim card must, therefore, remain within the device. The user must immediately notify BridgIoT (RF) (Pty) Ltd, or their service provider, if the sim card is lost/stolen.

Device Status

There are two LED lights indicating the status of the device. The number of times each LED flashes per cycle indicates a state. These definitions are subject to change.

The green LED indicates the connectivity status of the device.

Single Flash	Fully connected
Two flashes	Partially connected
Three flashes	Not connected

The red LED can indicate the state of the EWH.

Single Flash	EWH supply is switched off (i.e, not heating)
Two flashes	EWH supply is on, but not drawing power (i.e, not heating)
Three flashes	EWH supply is on and drawing power (i.e, heating)

If your device loses connectivity to the online platform, for whatever reason, it will go into a default state. The default state is an "Always on" state with a temperature set point of 55 °C. The quality of the connectivity is dependent on the cellular service provider (CSP) used for the device. If your device is experiencing consistent connectivity issues, it might be necessary to change CSP.

To reset your device, switch off the supply to the device by switching the EWH circuit breaker off at the distribution board.

The only way of overriding the device is for an installer to electrically bypass the device.

Temperature Control & Scheduling

Heating scheduling is performed via the cloud, no scheduling information is stored locally and thus your Geasy requires continuous internet connectivity.

Geasy can perform temperature control of the EWH based on the estimated internal temperature. Geasy does not replace your standard thermostat, and can therefore not heat the water higher than the thermostat is set at. This ensures the safe operation of the EWH and prevents overheating.
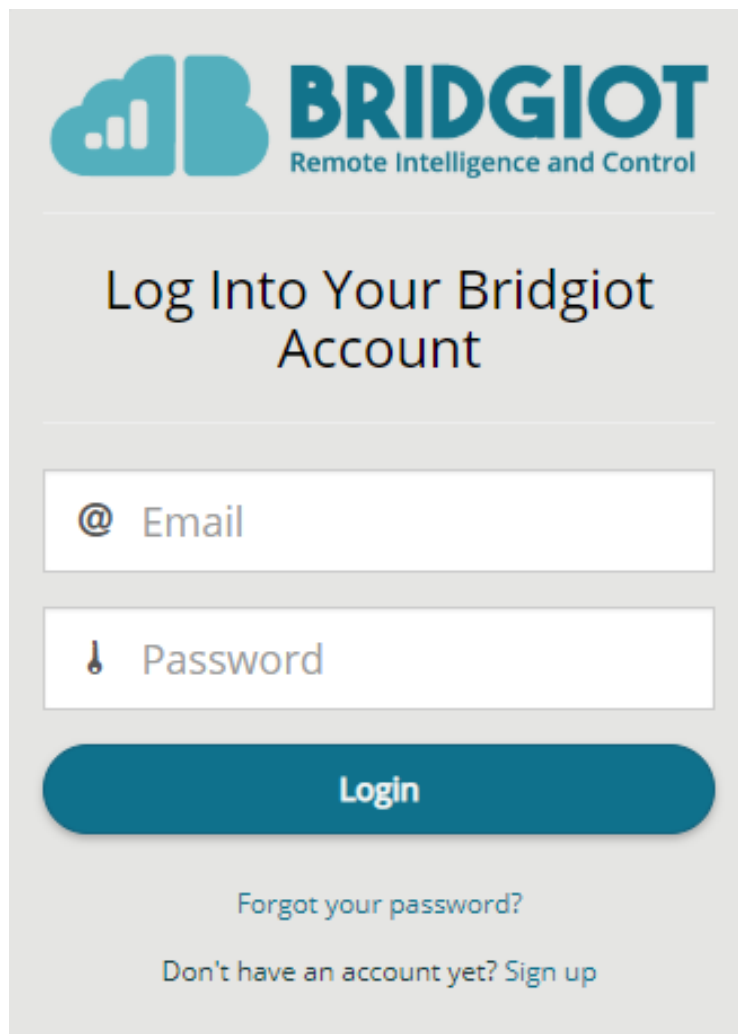
Burst/leak Detection

Depending on what components are installed, the device can provide burst/leak detection and mitigation. The drip detection sensor in the drip tray can detect the presence of water. Upon detection of water, the online platform then notifies the user of a potential leak or burst. Note that your Geasy must have power and an internet connection for the notification to be sent.

To open the water supply and turn the EWH on again, the device typically has to be reset.

If there is still water present in the drip tray, the device will trigger a burst event again. It is therefore required that the user ensures that there is no burst or leak and removes the water from the drip tray before resetting the device.

User Interface

The user can manage their device via the BridgIoT (RF) (Pty) Ltd online web-app, found at app.bridgiot.co.za. Please sign up on this web interface, by clicking the "Sign up" link on the landing page as shown below, in order to access your device data and settings.


The user interface will typically include the following functionality (although functionality may be added (or subtracted) from time to time):

1. Switching the EWH heating ON and OFF.

2. Schedule heating of the EWH.

3. Power consumption.

4. Burst/leak detection notifications (optional).

App Usage

Once logged in you will see all of the devices linked to your profile and some information regarding those devices on the landing page, similar to the image below.
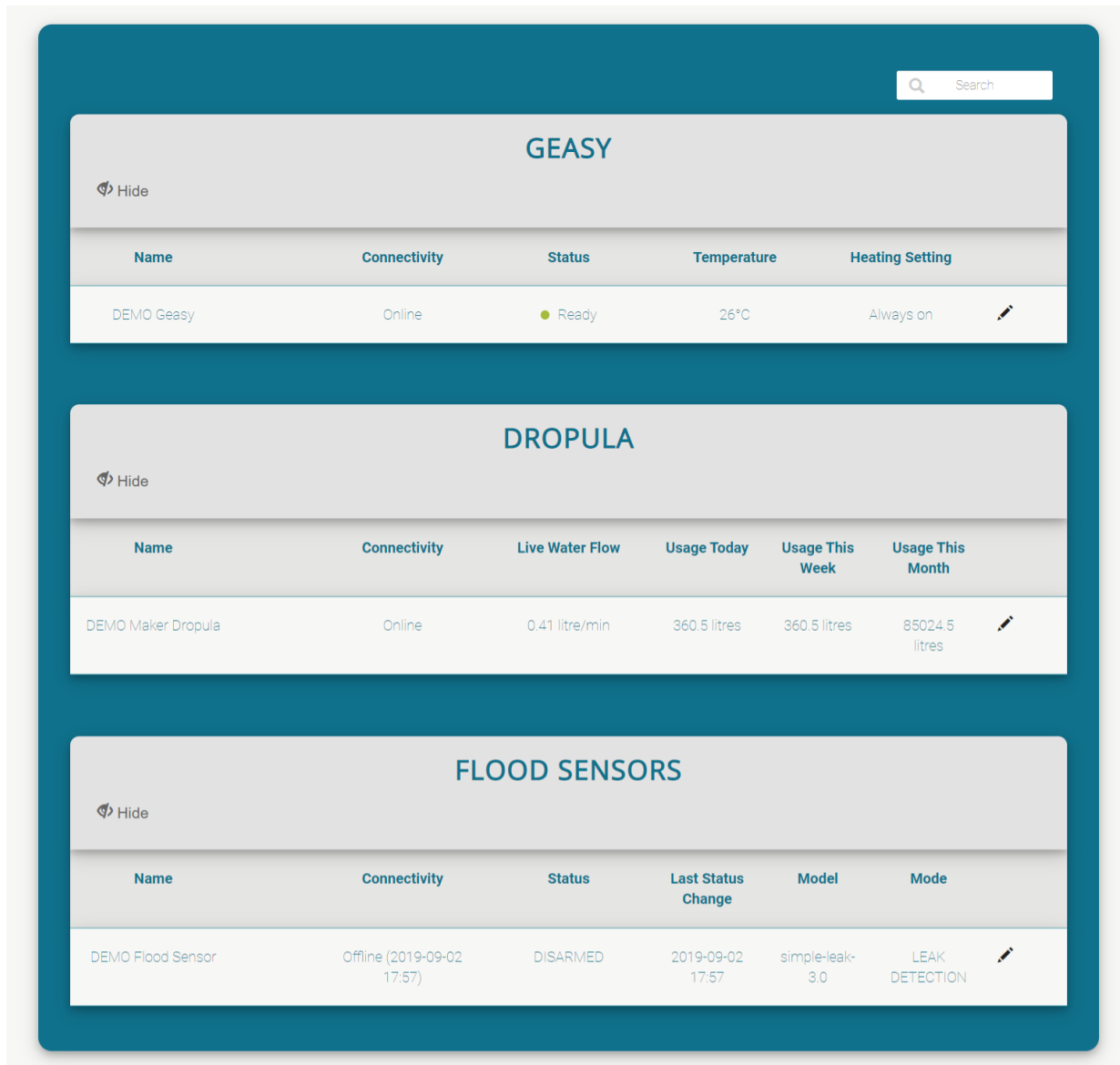
Selecting your Geasy from the list will take you to a status display similar to the one below, where you can see some basic information and settings regarding your Geasy.

CURRENT STATUS

🔴 OFF

Estimated Temp: 51°C
Water Flow Rate: 0 litres/minute
Valve Status: Open

Leak/Burst: None
Connectivity: Online
Valve Control: [Close]

USAGE

TODAY

Total Energy: 1.6 kWh
Total Hot Water: 6.0 litres

THIS MONTH

Total Energy: 37.7 kWh
Total Hot Water: 704.0 litres

[View more >]

TODAY'S LARGEST EVENTS

- 5.0 litres at 5:45
- 0.5 litres at 5:39
- 0.5 litres at 6:38

[View more >]

HEATING CONTROL

[Always on]   [Always off]   [**Timer control**]

[Boost]

[More options >]

HEATING SCHEDULE

Schedule 1	Mon Tue Wed Thu Fri Sat Sun	03:00 pm - 05:00 pm	50°C
Schedule 2	Mon Tue Wed Thu Fri Sat Sun	03:00 am - 05:00 am	50°C

[Configure >]

ANALYTICS

Widget content coming soon.

[View more >]

Clicking on the 'View more' button under 'USAGE' will take you to a display similar to the one below, where a summary of the electricity and water measured by your Geasy is available.

From the status display screen, clicking on the 'View more' button under 'TODAY'S LARGEST EVENTS' will take you to a screen similar to the one below where water usage events can be seen. This view gives you an indication of how much water is used during specific water usage events making it easy to compare between your own shower and that of your spouse.

| | | 20 Jan 2020 📅 | | |
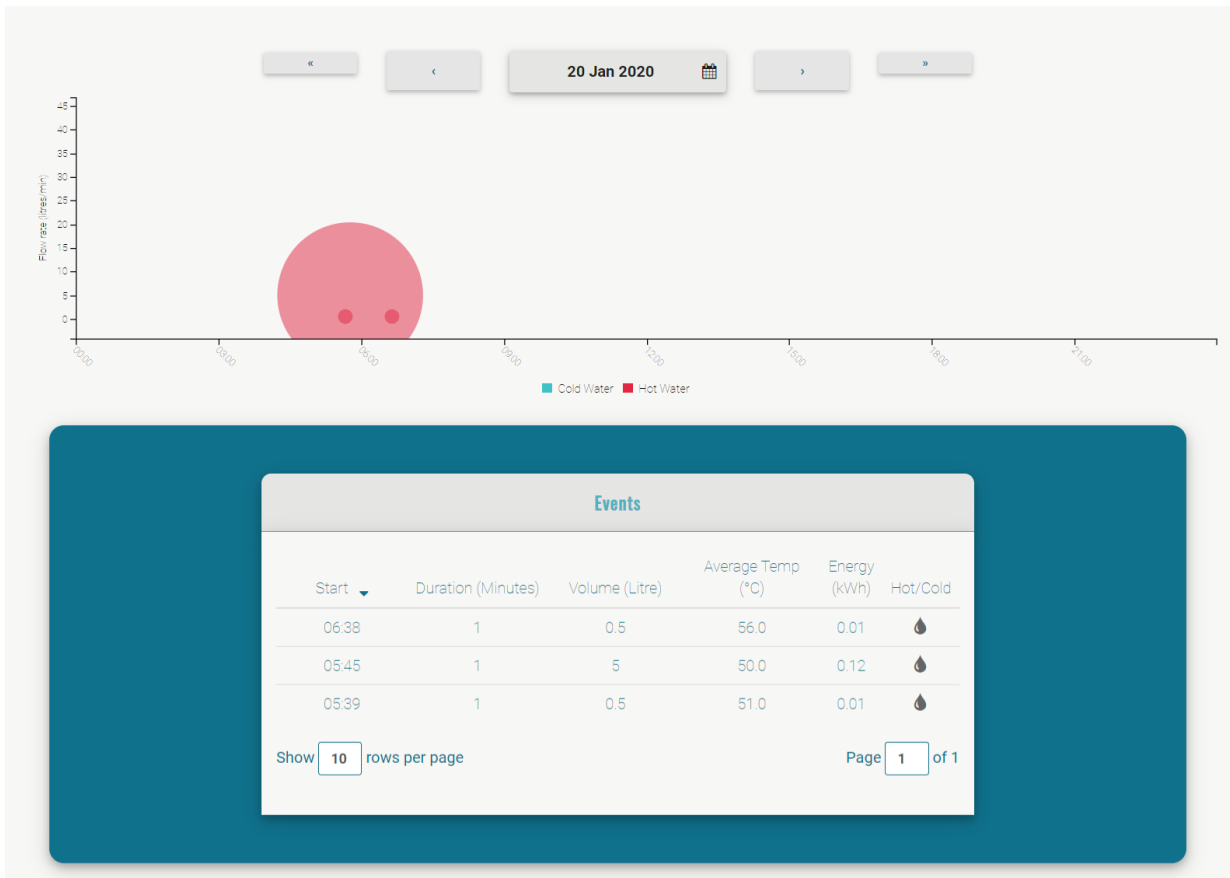
From the status display screen, clicking on the 'More options' button under 'HEATING CONTROL' will take you to a screen similar to the one below where your geyser can be switched on/off or on timer control for scheduling. Additionally, the boost functionality can be used to turn your geyser on, and heat to the thermostat maximum temperature, for 60 minutes.

From the heating control screen given above, clicking on the 'View' next to 'Timer control' will take you to a screen similar to the one below where a schedule of the current heating times and temperatures are given. The minimum scheduling temperature has been limited to 51 °C in order to prevent legionella growth in the geyser and piping.

From here any number of schedules can be create by any of the users associated with this geyser controller and all of them will be visible here.
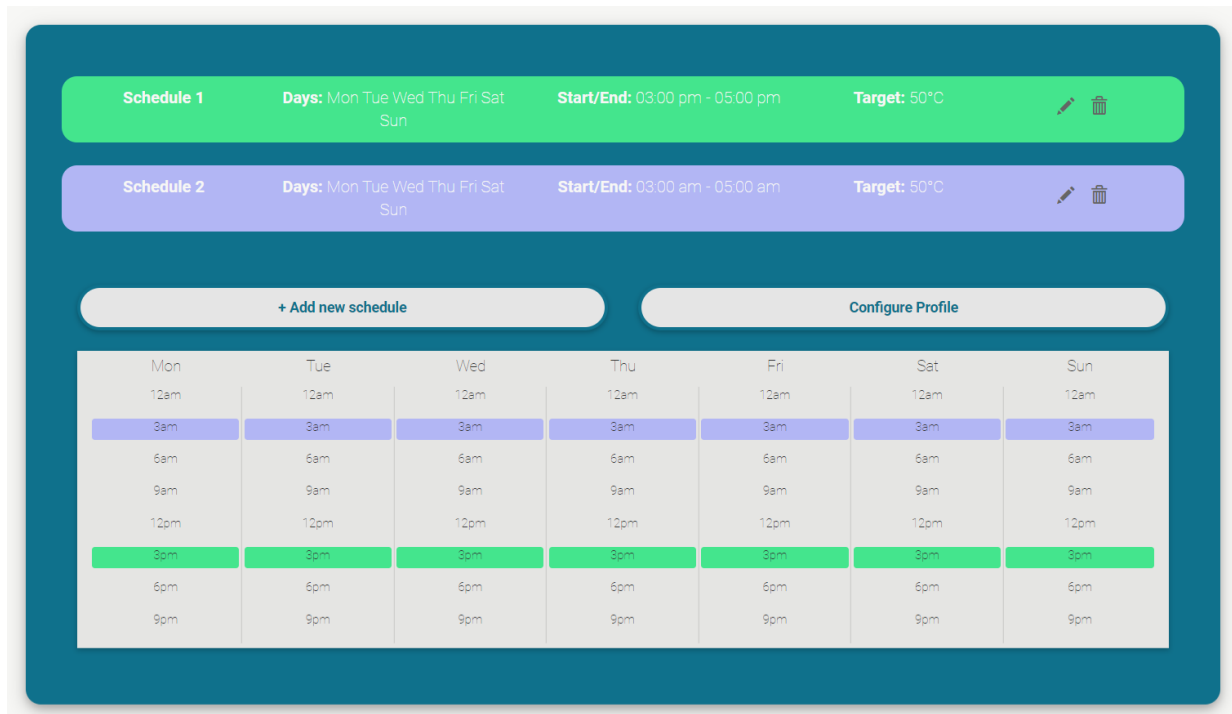
For the more data driven individuals, there is an analytics view, where the heating and water usage data (if water meters have been installed) is available as time series data. This view helps to identify usage patters as well as quantities of power and water usage over different time periods[1].

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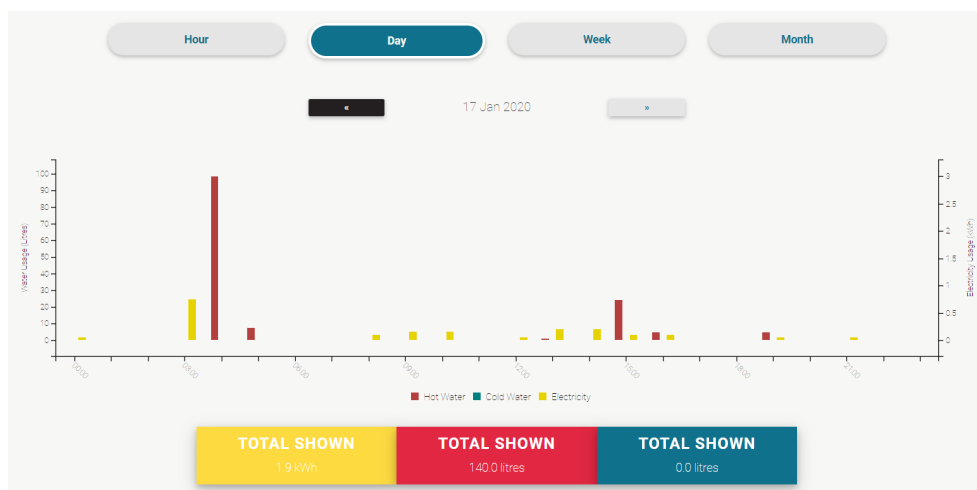
[1]Hint: Each column is clickable, which makes navigation and closer inspection of data more user friendly.

BridgIoT (RF) (Pty) Ltd Website

https://www.bridgiot.co.za/

Company Registration Number

2015/284421/07

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South Africa	South Africa	South Africa