MICROCARE
SOLAR ENERGY
HOT WATER GENERATOR

USER MANUAL

Version: 2025.1
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1. IMPORTANT INFORMATION AND SAFETY INSTRUCTIONS

- The Microcare PV Geyser Controller must be installed only by a qualified electrician registered with the Department of Labour and holding a valid *Wireman's License*.
- This is not an installation manual. Please refer to the Installation & Wiring Guide for detailed instructions.
- The geyser controller output must never be paralleled with another controller or connected to an AC power source.
- Do not attempt to open, service, or modify the unit. Unauthorized tampering will void the warranty and may cause damage or injury.
- Before carrying out any maintenance, disconnect both AC and DC power supplies. Switching the unit off does not remove hazardous voltages.
- Ensure all wiring connections are properly secured and tightened to avoid overheating or fire risk.
- The AC output is designed exclusively for connection to the geyser element. Do not connect to any other load or device.
- Mount the controller indoors, vertically, at least 2 meters above floor level, and ensure adequate ventilation around the unit.
- Do not install the unit on uneven surfaces or in locations exposed to direct sunlight, moisture, or extreme temperatures.
- All installations must comply with SANS wiring regulations and applicable safety standards.
- Retain this manual for future reference and servicing.

⚠ WARNING
HIGH VOLTAGES PRESENT Voltages capable of causing severe injury or death by electrical shock are present in this unit.

2. INTRODUCTION

2.1 General Description

The Microcare PV Geyser Controller is a locally designed and manufactured solution that heats water directly using solar photovoltaic (PV) panels, replacing the need for traditional solar thermal collectors.

Unlike solar thermal systems that require plumbing, pumps, and piping, the Microcare system connects directly to standard solar panels and your existing geyser element. This makes the system simple to retrofit, highly efficient, and cost-effective over its lifetime.

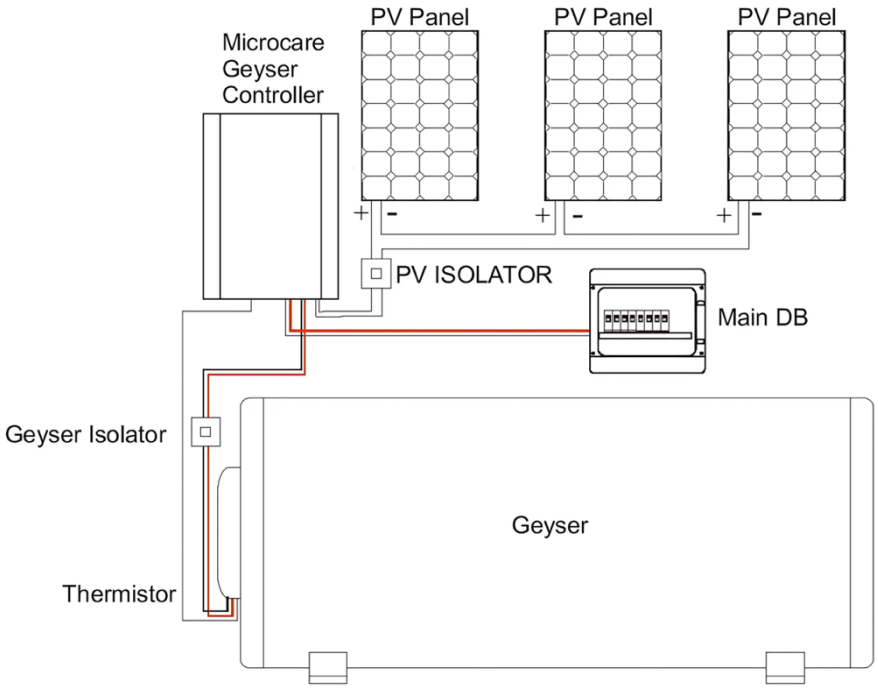
Why Choose Microcare?

- Superior performance compared to solar thermal heaters under real-world conditions.
- No plumbing, pumps, or pipes required.
- Eliminates risks of freezing or boiling associated with thermal systems.
- Straightforward installation using only electrical wiring.
- No water circulation–meaning no heat loss and no delay in accessing hot water.
- Proven reliability for both homes and businesses across South Africa.

2.2 Key Features

- Compatible with standard geyser heating elements (2 kW, 3 kW, and 4 kW).
- Solar heating efficiency is greater than 95%.
- Automatic mains power overrides when solar energy is insufficient.
- Precise digital temperature control via thermistor sensing.
- Utilizes the existing geyser thermostat and element–no replacements required.
- Quick and easy to retrofit into existing installations.
- Compact wall-mounted design.
- Proudly designed and manufactured in South Africa.

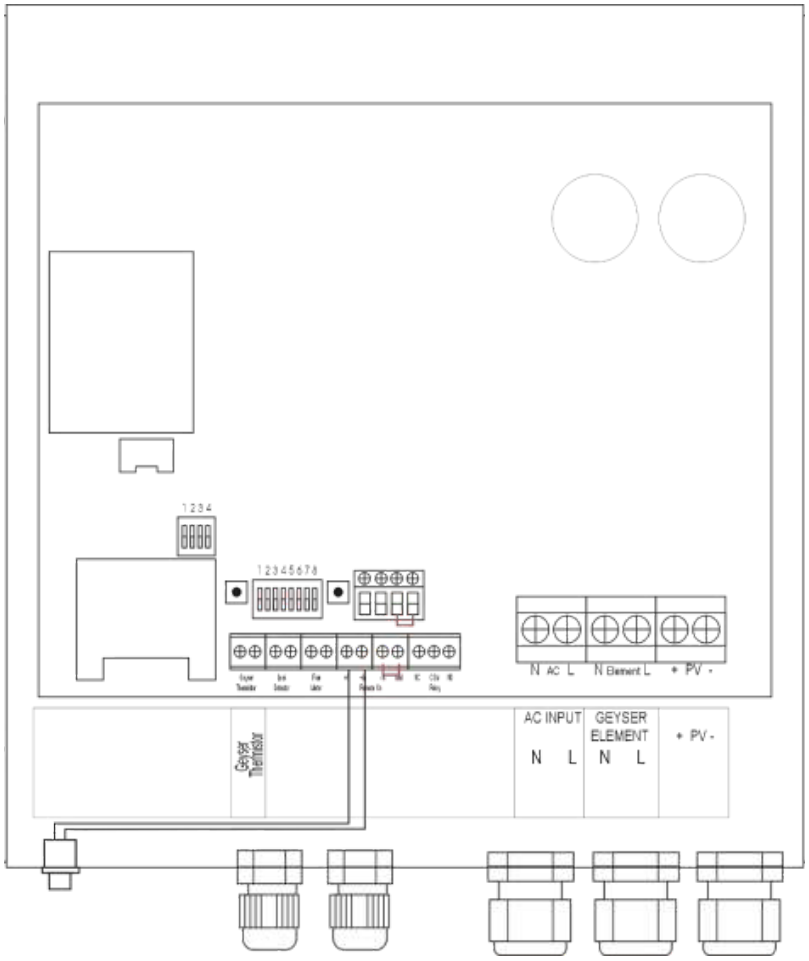
Fig 1: Basic system



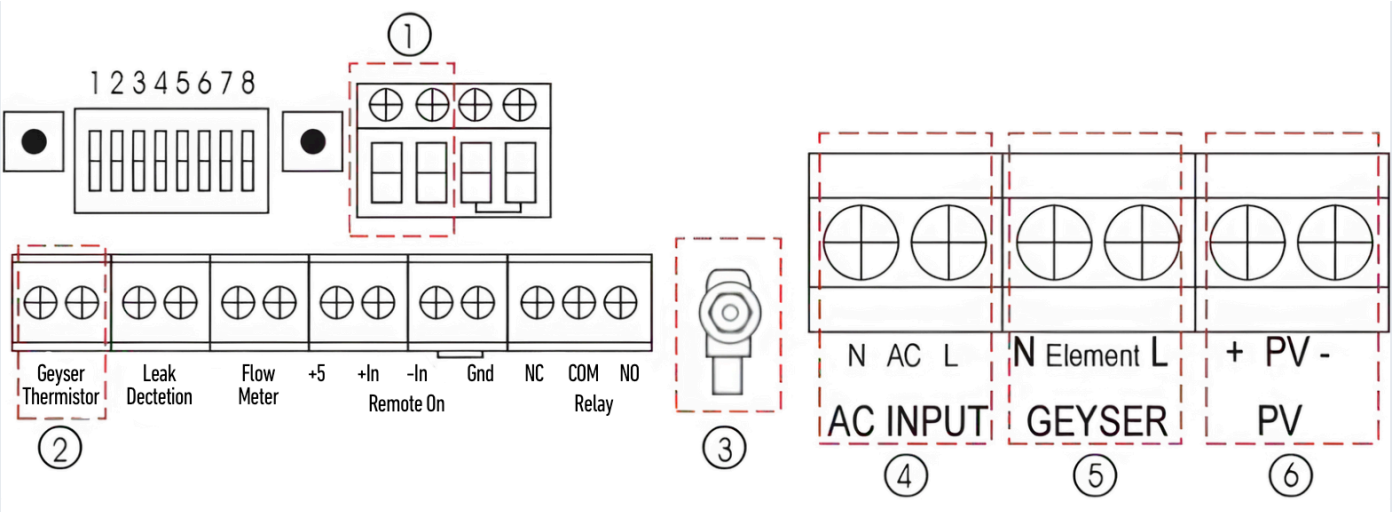
3. OVERVIEW

3.1 Front View

Figure 3-1



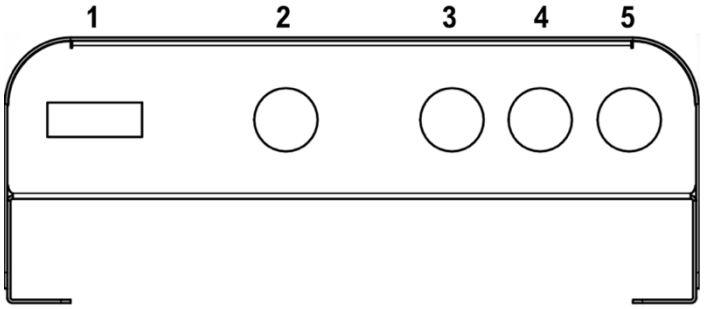
3.2 Terminal Blocks Overview



No	Connector Block Description	No	Connector Block Description
1	Timer Switch Input	4	AC Input Wiring
2	Geyser Thermistor Wiring	5	Geyser Element Wiring
3	Earth Wire Lug	6	Solar Input Wiring Gland

3.3 Bottom View

Figure 3-2



No	Description		
1	ON/OFF Switch	4	Geyser Element Wiring Gland
2	Geyser Thermistor & Timer Wiring Gland	5	PV Input Wiring Gland
3	AC Input Wiring Gland		

3.4 Fault Codes & Solutions

When the controller detects a fault, it will emit a series of beeps to indicate the error. Use the table below to identify the issue and follow the recommended solution. If the problem persists after troubleshooting, please contact Microcare technical support or return the unit to the factory for assessment.

Nr of Beeps	Fault Code	Description	Solution
1	**Clock Battery Faulty**	The internal clock battery has run flat or is no longer holding charge.	Replace the clock battery with a suitable replacement (refer to spare parts list). This battery is essential for maintaining timekeeping and scheduling functions.
4	**Element Fail**	The geyser element is not functioning correctly or is not being detected.	1. Check the thermistor setting is on "MAX". 2. Check that the geyser isolator switch is in the ON position and supplying power. 3. If the fault persists, send the controller to the factory for repair.
5	**FET Fail**	The internal FETs (field-effect transistors) have failed or been damaged.	This is not field-serviceable. Please send the unit to the factory for repair.
9	**Relay Fault – Transfer to AC**	The relay responsible for switching to AC power has malfunctioned.	1. Perform a controller reset (power cycle the unit). 2. If the error persists after reset, send the controller to the factory for repair.
10	**Relay Fault – Transfer to PV**	The relay responsible for switching to PV input has malfunctioned.	1. Perform a controller reset (power cycle the unit). 2. If the error persists after reset, send the controller to the factory for repair.
11	**Thermistor Failed/Faulty**	The temperature sensor (thermistor) is either damaged or providing incorrect readings.	1. Inspect the thermistor wiring for damage or loose connections. 2. Measure thermistor resistance with a multimeter and confirm it is within specification. 3. Replace if faulty.
12	**Panel Voltage Too High**	The solar panel input voltage exceeds the controller's safe operating range.	1. Check the open circuit voltage (Voc) of the PV panels with a multimeter. 2. Confirm the voltage is within specification for the controller. 3. Reconfigure or reduce panel string if necessary.
13	**High Temperature – Geyser**	The geyser temperature has exceeded safe operating levels.	1. Check the thermistor resistance and wiring. 2. Replace the thermistor if damaged. 3. Ensure the geyser is not overheating due to incorrect thermostat settings.
14	**High Controller Temperature**	The controller's internal temperature has risen above safe levels.	1. Improve ventilation around the controller. 2. Ensure the unit is not installed in a confined or poorly ventilated space. 3. Reduce direct sun exposure or ambient heat if possible.

4. SOLAR PANEL SIZING

To achieve best performance, size your PV array according to your geyser element:

- **2 kW element:** VOC 184–274V DC, array size 900–2600 Wp
- **3 kW element:** VOC 140–274V DC, array size 900–2600 Wp
- **4 kW element:** VOC 130–274V DC, array size 900–2600 Wp

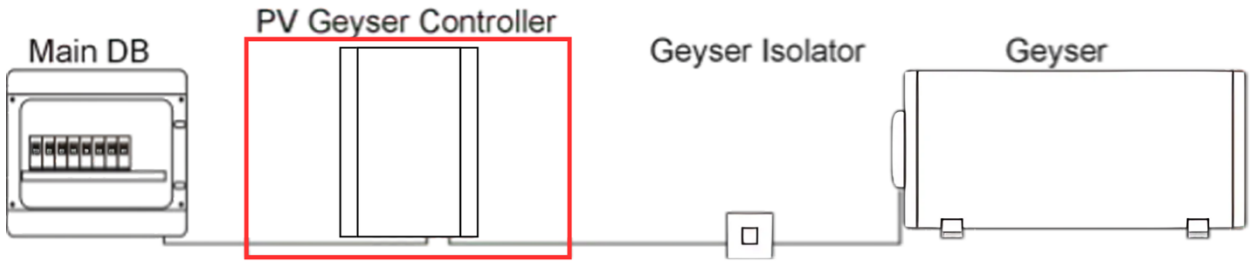
⚠ Always install a rated **DC disconnect switch or fuse** within arm's reach of the controller.

5. GEYSER CONTROLLER INSTALLATION

Consider the following before installing the PV Geyser Controller and read the complete manual before commencing with the installation.

- Install **indoors only**. Do not place the unit inside a roof cavity.
- Mount vertically, at least 2 m above the floor.
- Ensure unobstructed airflow around the controller.
- Install between the **Main DB Board** and the geyser's **double-pole isolator**.
- Mount the programmable timer at **eye level** for easy access.
- Do not enclose the unit in a sealed box – it requires ventilation.

Geyser controller installation location.



5.1 Data Sheet

Product Specifications			
AC Element Size	**2kW**	**3kW**	**4kW**
Min Input Solar Panel Voltage	185Voc	140Voc	130Voc
Recommended Input Solar Panel Voltage	230 – 275 Voc	185 – 230 Voc	140 – 210 Voc
Max Input Solar Panel Voltage	275Voc		
Max Input Solar Panel Power	2600W (2.6kW)		
Min Input Solar Panel Power	900W (0.9kW)		
Rated AC Input Grid Amps	20A		
Rated AC Input Voltage	230V AC		
Dimensions (w x l x d)	22 x 30 x 10cm		
Weight	1.4kg		
Warranty	24 months		

To access further information on the Microcare Hot Water Generator, use the relevant QR codes below:

LAUNCH
WEB BASED INTERFACE

DOWNLOAD
INSTALLATION DOCUMENTS

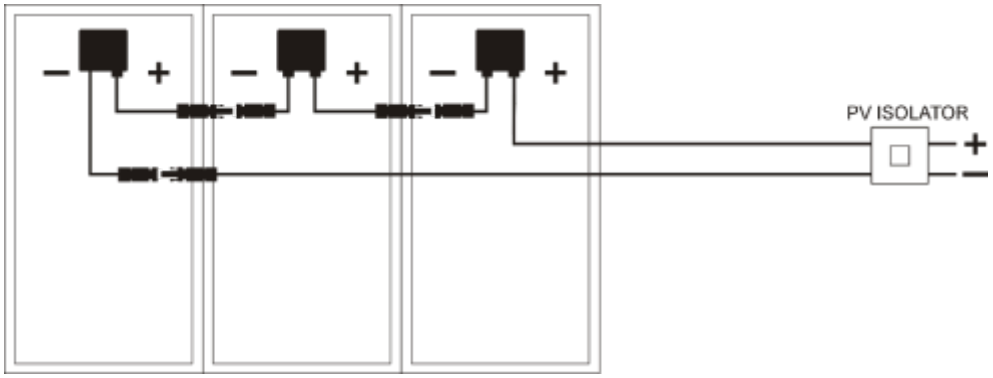
WATCH
INSTALLATION TUTORIALS

6. SOLAR PANEL INSTALLATION

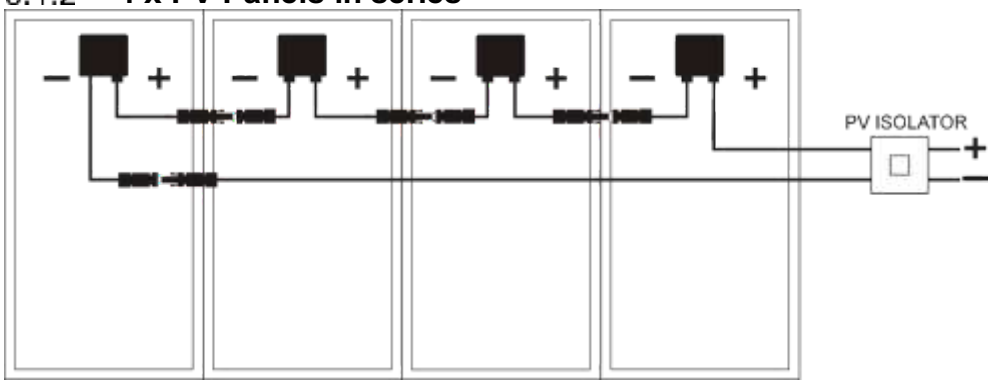
⚠ WARNING
The PV Geyser Controller must be connected to the solar panels via a rated PV disconnect switch/device

- Install the panels as per the solar panel manufacturers specifications and installation manual.

6.1.1 3 x PV Panels in series



6.1.2 4 x PV Panels in series



The Solar Panel “DC isolator” or “Fuse” must be mounted as close as possible to the Geyser Controller. Within arm’s reach.

7. WIRING

⚠ WARNING

HIGH VOLTAGES PRESENT

Voltages capable of causing severe injury or death by electrical shock are present in this unit.

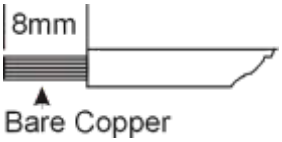
7.1 General Wiring Information

- Wiring must be performed by qualified personnel / certified electrician.
- Familiarize yourself with the content of the manual following before commencing with the wiring.
- The DC array voltage applied must comply with the controller's specified input voltage and must not exceed Voc.
- The AC voltage must not exceed 240VAC.

- Before commencing with the AC wiring of the controller:
  Ensure that the AC double isolator at the geyser is switched off.
  Ensure that the geyser isolator at the main DB board is switched off. Ensure that the controller is switched off.
  Ensure that the Solar Panel isolator is turned off or if a solar fuse is installed open the fuse carriage.

- All wiring must be properly sized.
- Feed the cables through the controllers wiring glands as indicated as per SANS.
- Unscrew the wiring terminal screws fully before connecting wires to the terminal blocks, then tighten the terminal screws.

- The AC and PV wiring that connects to controller's terminal blocks must be stripped to expose 8mm of copper and fully inserted into the terminal blocks.



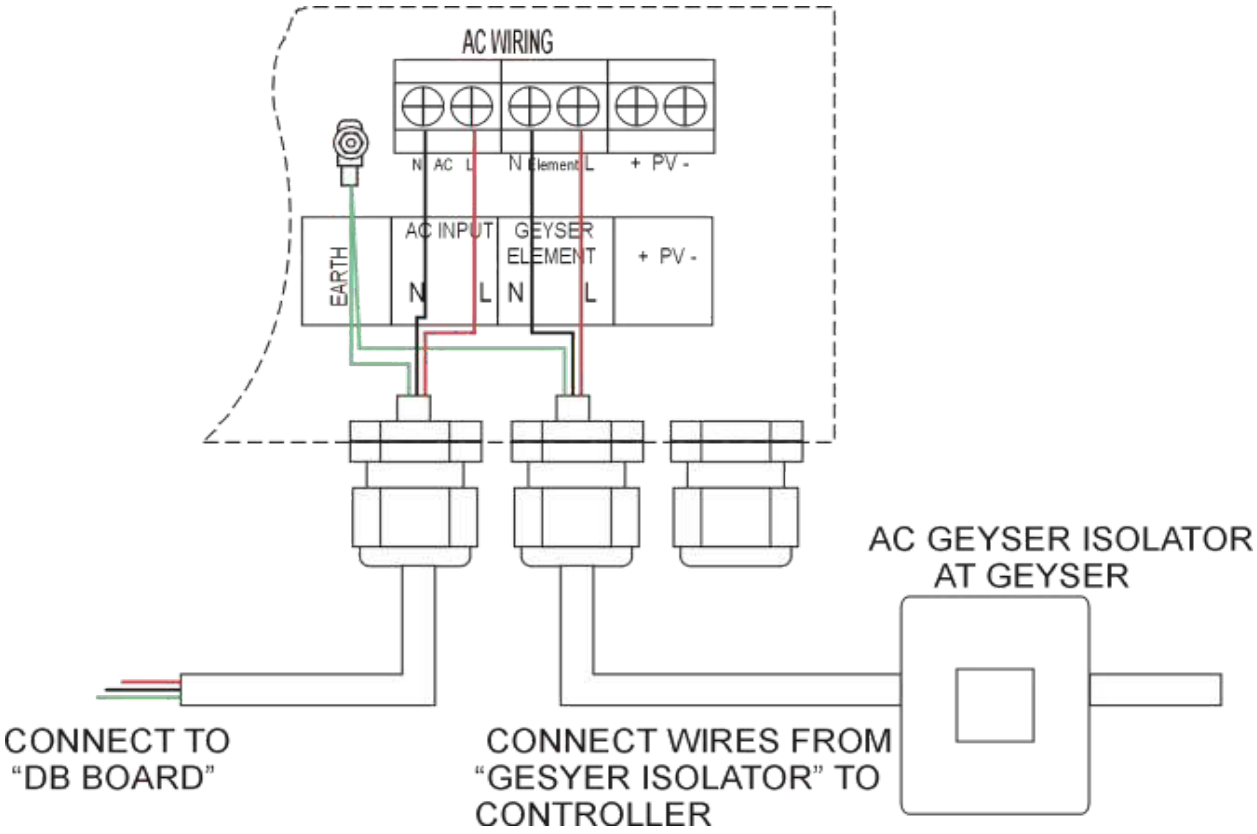
- Use Solar Flex wire for the Solar Panel wiring, do not use house wiring.
- Use bootlace ferrules to terminate the Solar wiring at the controller's terminal block.
- The PV Geyser Controller must be connected to the solar panels via a rated DC Solar disconnect switch or fuse.

⚠ WARNING

- The controller is not designed for parallel operation with another controller.
- Do not connect the controller's AC output directly to another AC source.
- Do not connect the geyser controller to any other electrical device of equipment.
- Do not disconnect or connect any wiring to the controller under load.

7.2 AC Wiring

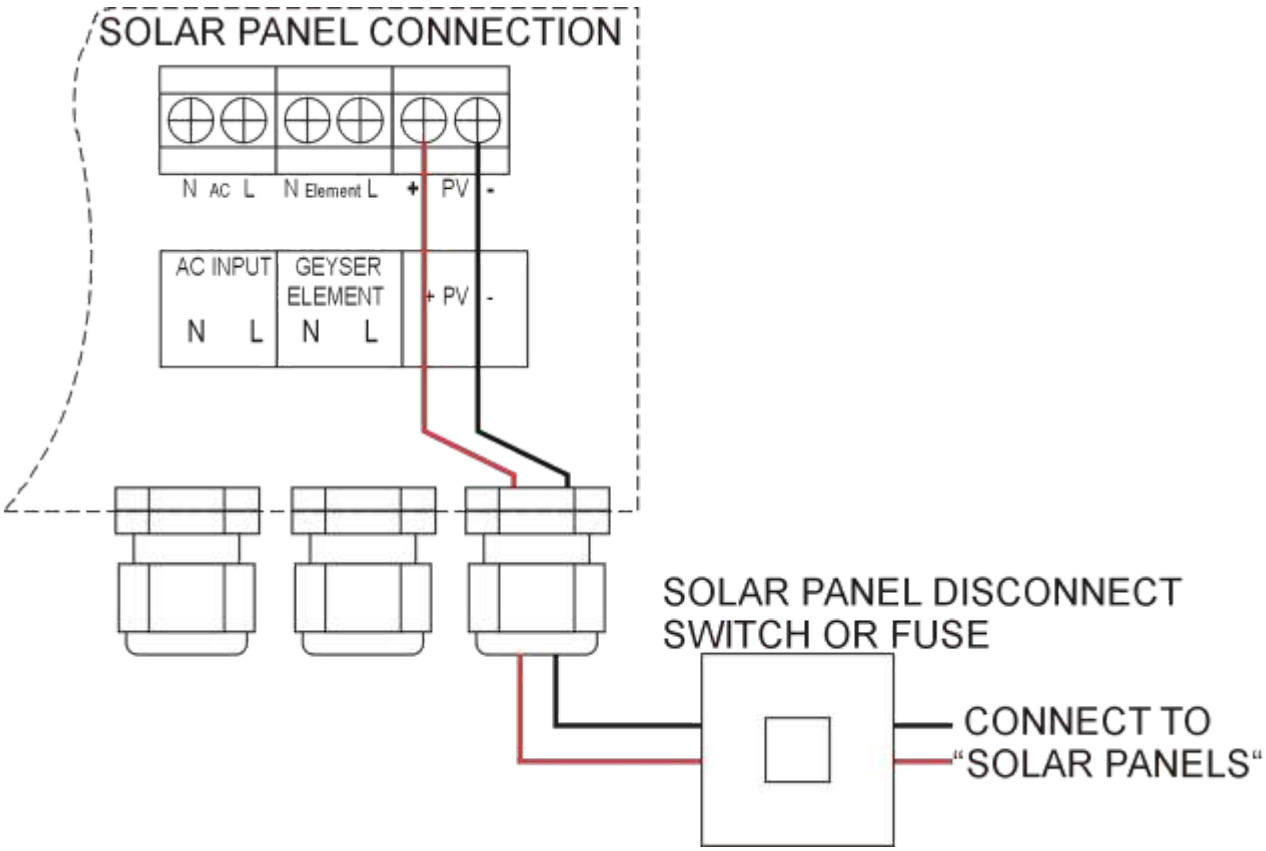
- Switch the controller On/Off switch to the OFF position.
- Wire the AC wiring from the DB board to controller AC input connector blocks marked below as “AC INPUT”.
- Wire the earth to the earth stud by means of a lug.
- Wire the wiring from the geyser double pole isolator to the controller connector block marked below as “Geyser Element”.
- Wire the earth to the earth stud by means of a lug.



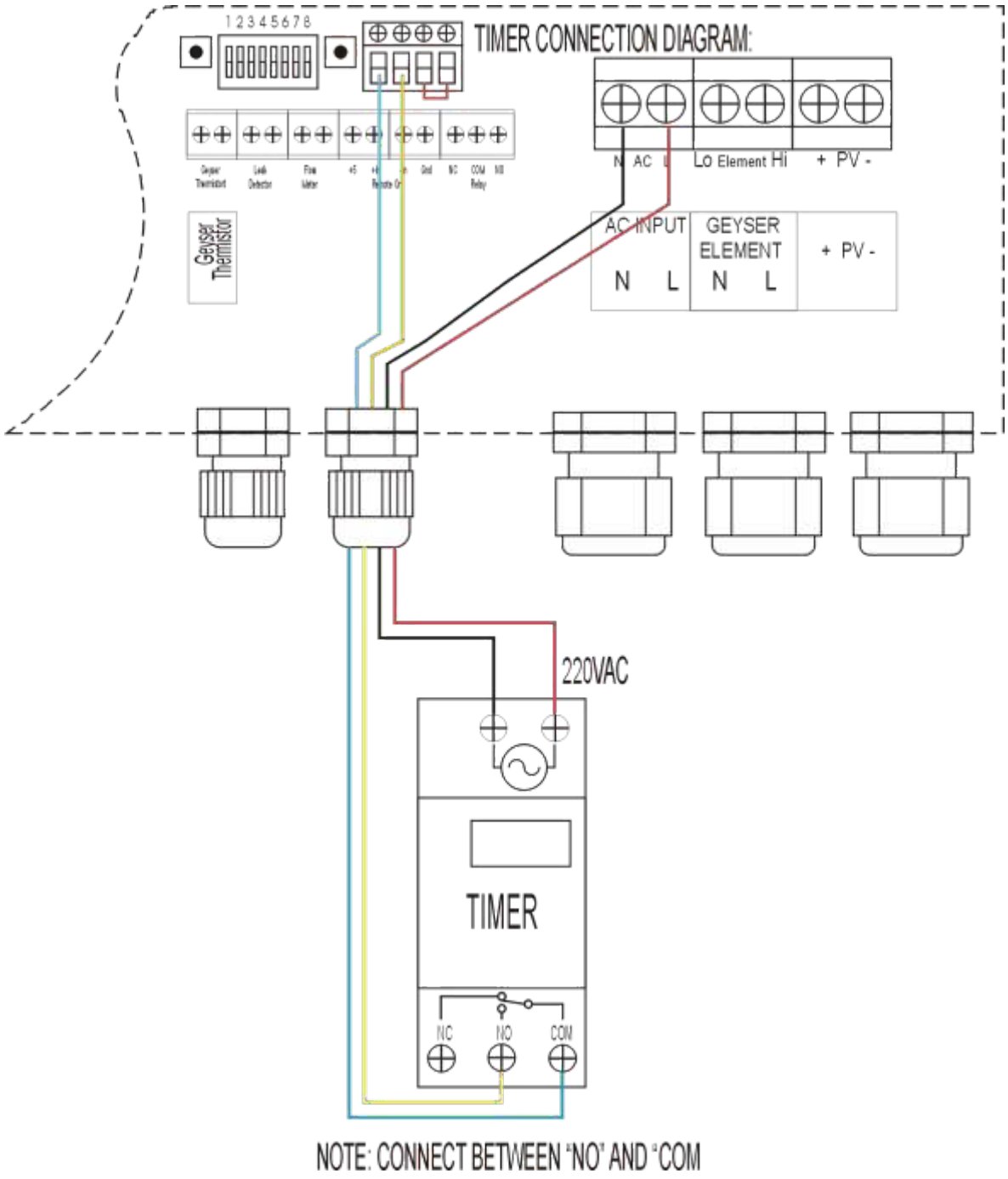
7.3 Solar Panel Wiring

Warning! The solar panel input is not reverse polarity protected.
Reverse polarity will damage the unit!!

- Ensure that the solar panel array wiring polarity is correct.
- Before connecting the solar panel wires to the controller ensure that the solar panel array voltage is correct.
- Switch the externally installed Solar Panel DC disconnect switch to the **OFF** position.
- If a solar fuse is installed, open the fuse carriage.
- Before connecting the wires to the controller ensure that the polarity is correct.
- Connect the Positive wire from the solar panel array to the Geyser Controller + PV connector.
- Connect the Negative wire from the solar panel array to the Geyser Controller – PV connector.



7.4 Timer Wiring (OPTIONAL)

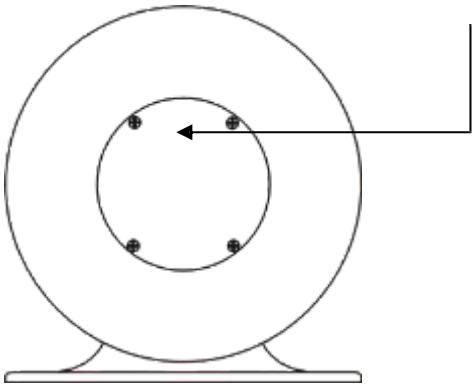


Also, not that the timer output contact configuration could be different to the diagram above. Use the “NO” – Normally open and “COM” – Common contacts.

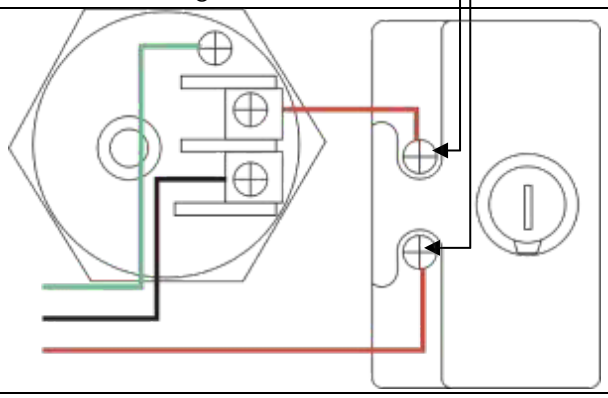
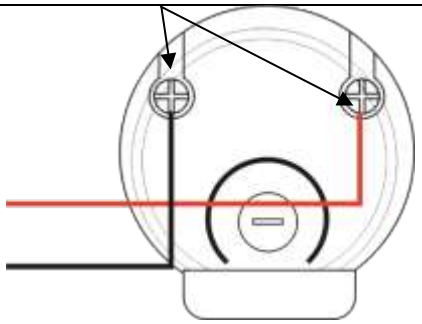
8. THERMISTOR INSTALLATION

Ensure that the Geyser Double Pole isolator is switched off.

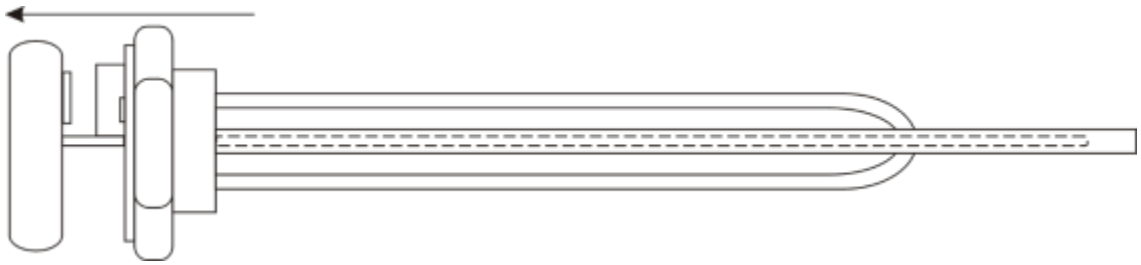
8.1 Remove Geyser Access Cover



8.2 Disconnect Geyser Thermostat Wiring

Thermostat wiring sample 1. Disconnect thermostat wiring	Thermostat wiring sample 2. Disconnect thermostat wiring
	

8.3 Remove Geyser Thermostat

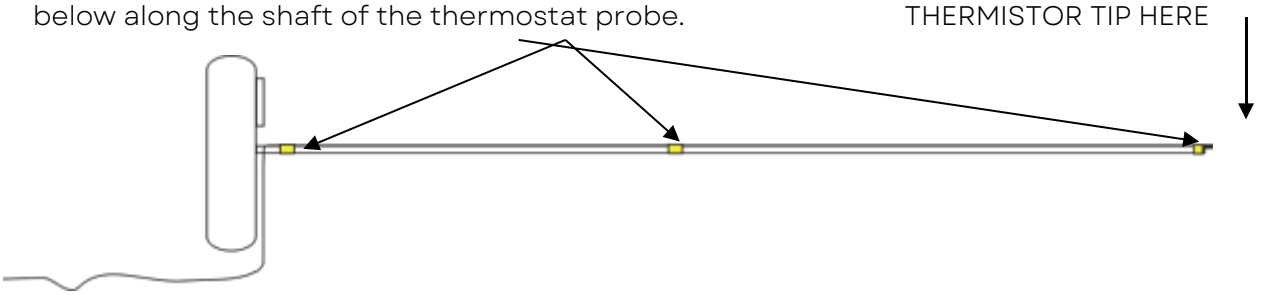


8.4 Thermistor Supplied

- The thermistor is supplied with 20m, 0,5 sq mm ripcord. Handle the thermistor with care.
- Ensure that the thermistor is free of any knots or kinks.
- Gently straighten the thermistor wire.

8.5 Fit Thermistor to Thermostat

- Fit the thermistor to the thermostat with the supplied high temperature tape as seen below along the shaft of the thermostat probe.

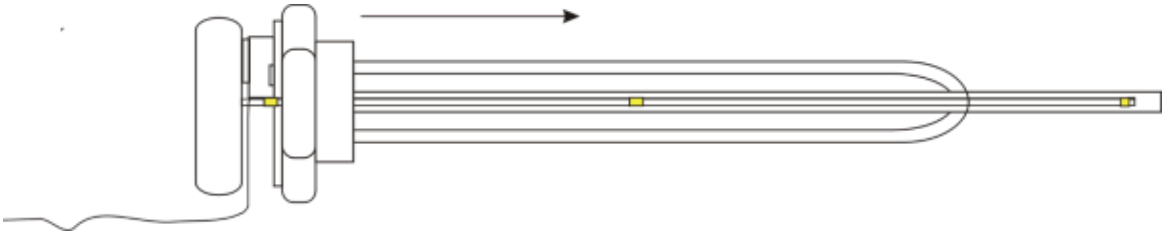


8.6 Refit Thermostat

PLEASE NOTE: Set the thermostat temperature to maximum by turning the dial to max temp.

In other words:
Set the temperature setting on a 75°C thermostat to 75°C. Set the temperature setting on a 70°C thermostat to 70°C.

The reason being that the geyser controller will control the temperature via the installed thermistor. Insert the thermostat into the geyser thermostat tube.

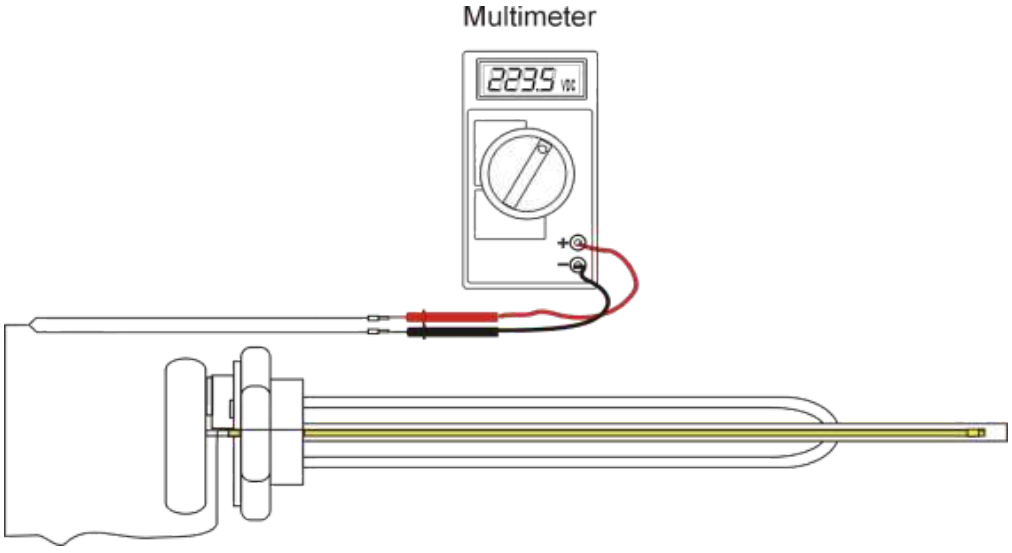


- Ensure that the thermistor wire does not pinch at the exit of the thermostat tube.
- Secure the thermistor ripcord securely as to prevent the thermistor wiring from breaking off.

8.7 Thermistor continuity test

At this point use your multi-meter to measure the resistance of the thermistor.

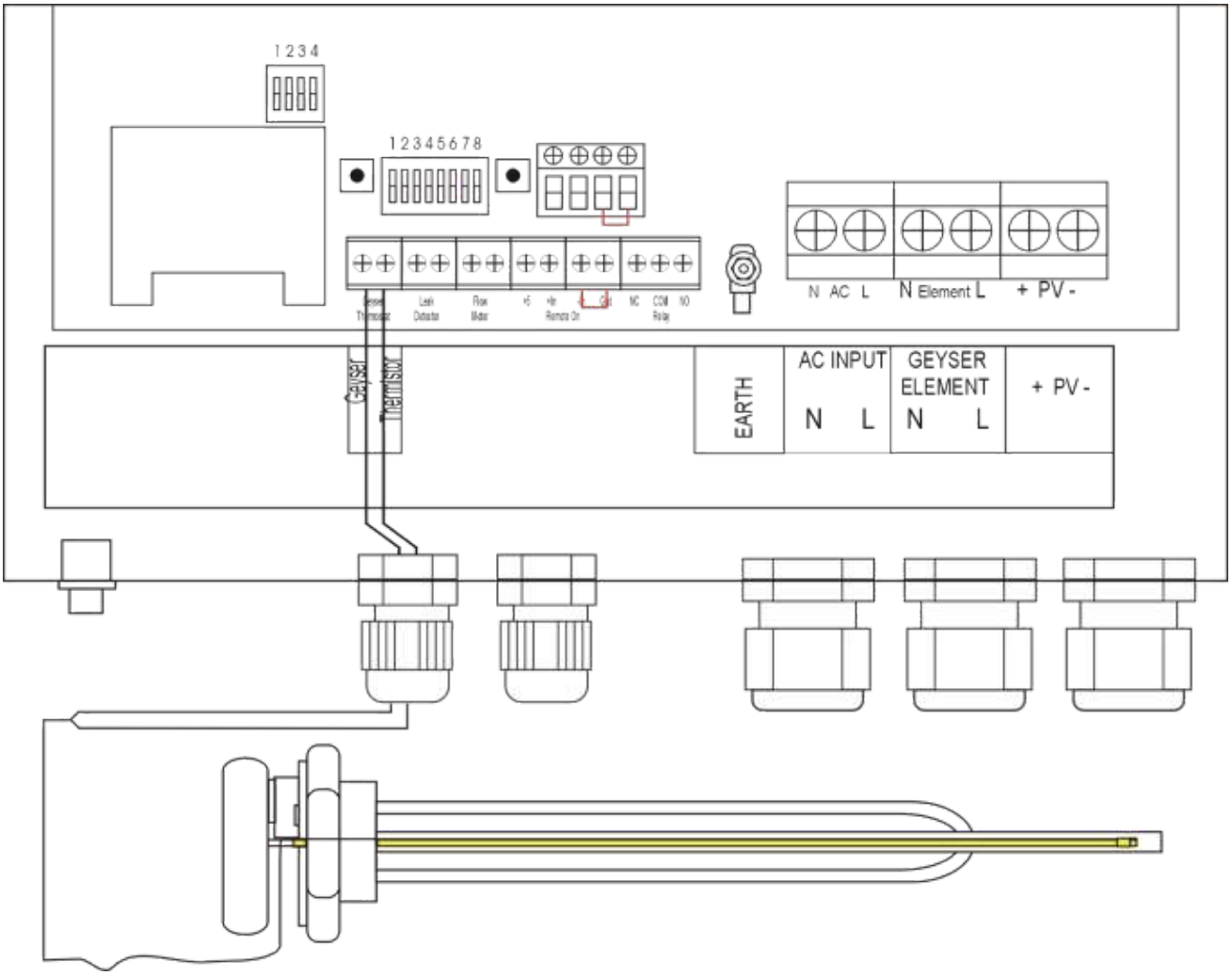
- Set your multi-meter to ohms and measure across the thermistor bootlace ferrules.



- Depending on the ambient temperature, a reading between 6K Ohm and 10k Ohm should indicate that the thermistor wires are intact.
  The thermistor is calibrated at 10k Ohm at 25 °C. The higher the temperature the lower the k Ohm reading.

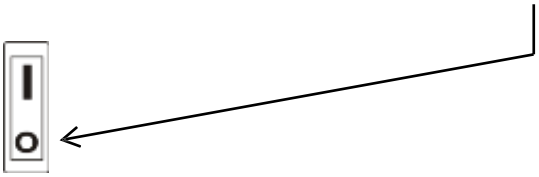
- Route the thermistor wiring to the Geyser Controller.
- Repeat the Thermistor Continuity test as described in 8.7.

- If the continuity is correct, connect the thermistor ripcord wires to the controller connector blocks marked “Geyser Thermistor” as displayed below.



9. CHECKS PRIOR TO START-UP

Ensure that the Geyser Controller “ON/OFF” SWITCH is switched “OFF.



- Ensure that the controller is mounted vertically.
- Check if the Input and Output cables are secured.
- Ensure the correct polarity of the PV connections.
- Ensure that the AC wiring is secured.
- Switch the geyser double pole isolator at the geyser to the “ON” position.
- Switch the external DC PV connect switch to the “ON” position.

9.1 Setup and Test Procedure

Follow the steps below to correctly set up and test the Microcare Hot Water Generator. Ensure all safety precautions are observed.

1. **Power Off the Unit**
   - Confirm that both the AC supply and PV supply are turned off.
   - Make sure the unit is switched off at the toggle switch.
2. **Switch on Geyser Isolator**
   - Turn on the isolator between the unit and the geyser.
3. **Set Thermistor to Maximum**
   - Ensure the existing geyser thermostat is adjusted to the highest temperature (Max setting).
4. **Switch on PV Supply**
   - Switch on the PV supply.
   - Verify that voltage can be measured using a multi-meter.
5. **Switch on AC Supply**
   - Switch on the AC supply connection (typically at the distribution board).
6. **Wi-Fi Setup**
   - Log on to the unit’s Wi-Fi network.
   - Complete the setup process through the Wi-Fi module interface.
7. **Power On the Unit**
   - Switch on the unit using the toggle switch.
   - Refer to the Wi-Fi module interface to ensure all systems are running according to the setup configuration.

10. PROGRAMMING VIA DIP SWITCHES

Programming via dipswitches is performed by means of dipswitches located at the bottom of the controller.

- The controller must be connected to the PV array, and the array must produce sufficient power to program the controller OR,
- The controller can be connected to AC.
- Turn the Controller ON/OFF Switch to the off position.

Refer to the programming chart for the "Dipswitch Settings" and the section "Programming Example".

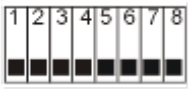
Set **1** Bank of 8way Dip Switches Saves the selected Value.

Dipswitches
Selects the programming parameter.
Geyser element size, temperature etc.

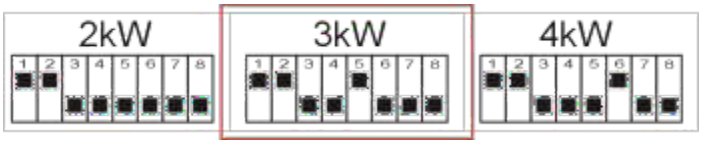
10.1 Programming Example:

To select a 3kW Element

Step 1: Switch the controller On/Off Switch to the "**OFF**" position. 

Step 2: Ensure that all the dipswitches are in the off position. 

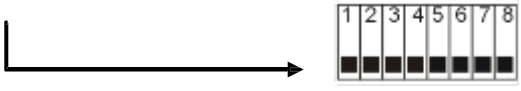
Example: To set the element size for 3kW, refer to the programming chart "Geyser Element Size", set the Dipswitches to the corresponding settings as in "Step 3".



Step 3:
Set Dipswitches according to the dipswitch configuration on the programming chart "GEYSER ELEMENT SIZE".

Step 4:
Push the "SET Button" until the buzzer beeps. The setting is now saved.

Step 5:
Set all the dipswitches to the off position.



To program another setting repeat steps 3, 4, and 5.
When all settings are programmed, ensure that the dipswitches are all in the "OFF" Position.

Switch the ON/OFF switch to the ON position to resume operation.

10.2 Programming Chart

10.2.1 Geyser Element Size

10.2.2 DC Temperature

10.2.3 DC Temperature Hysteresis

10.2.4 AC Temp Below DC

10.2.5 AC Temp Hysteresis

10.3 Factory Reset

- Switch the controller On/Off Switch to the "**OFF**" position.
- Set the DIP switches as per the above figure.
- Push and Hold the **SET** Button until the buzzer beeps.
- All the LED's will flash once to indicate that the factory reset was successful.
- Set all the dipswitches to the off position.

Re-fit the wiring cover and secure with the 1 screw if no further programming is necessary.

11. WI-FI MODULE SETUP

11.1. Connecting to the Hot Water Generator Web Application

1. Navigate to the **Settings** icon on your home screen.

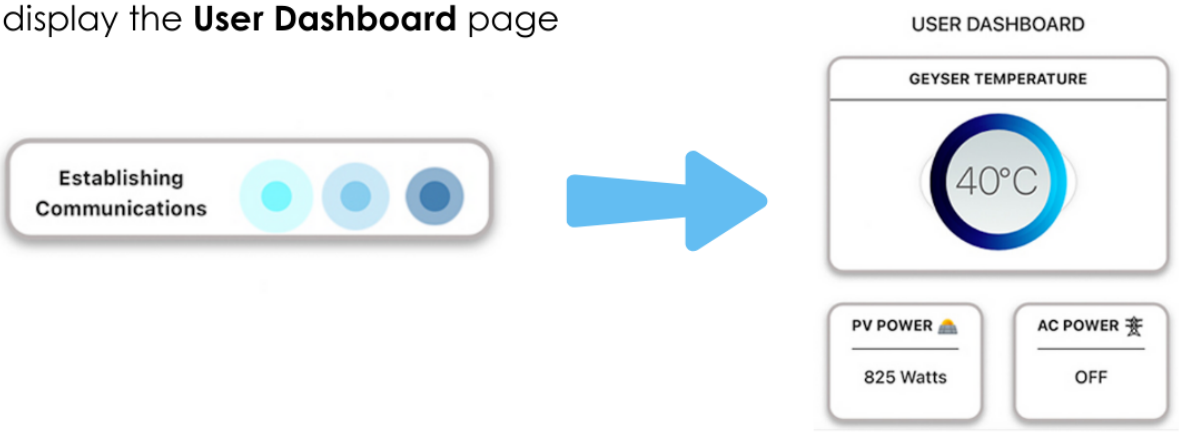
2. Press the **Wi-Fi tab** in the settings menu

3. Find the Wi-Fi network name that begins with **MC SmartCom**

4. Connect to the network & type the **password:**
   Microcare (Capital M)

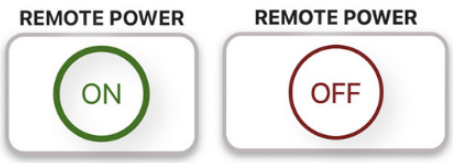
5. Once connected, navigate to your browser (Safari or Google Chrome) and type in **192.168.123.1**

6. The web application will establish connection & display the **User Dashboard** page

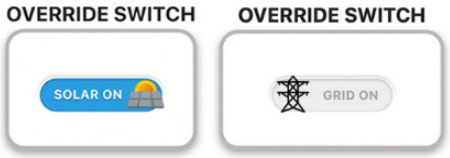


11.2. Hot Water Generator App - User Settings

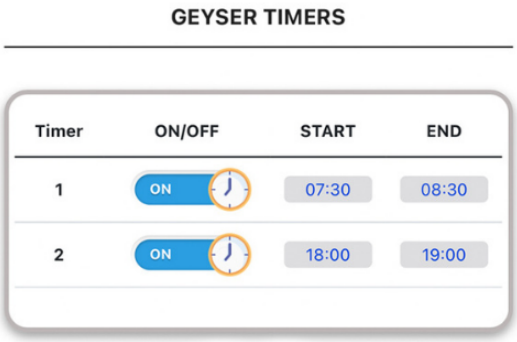
Switch the heating function on and off remotely



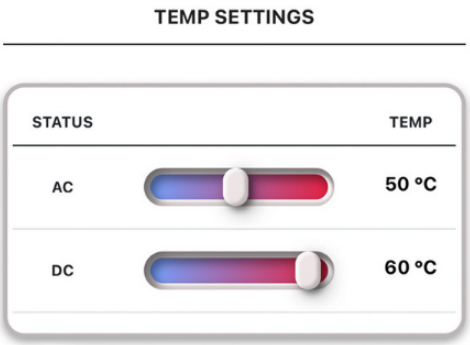
Manually override the Geyser Controller to heat from Solar to Grid



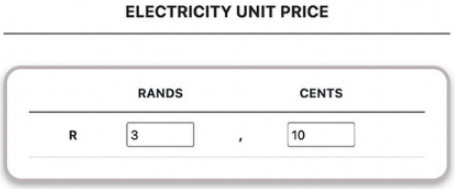
By setting the start and end times for each of the 2 timers, the Geyser Controller will automatically heat your geyser from the AC Grid when the time of day falls between the times.



Adjust the AC (Grid) and DC (Solar) sliders to set the temperature limit for each heating system.
Recommended Temperatures:
AC -50°C , DC - 60°C



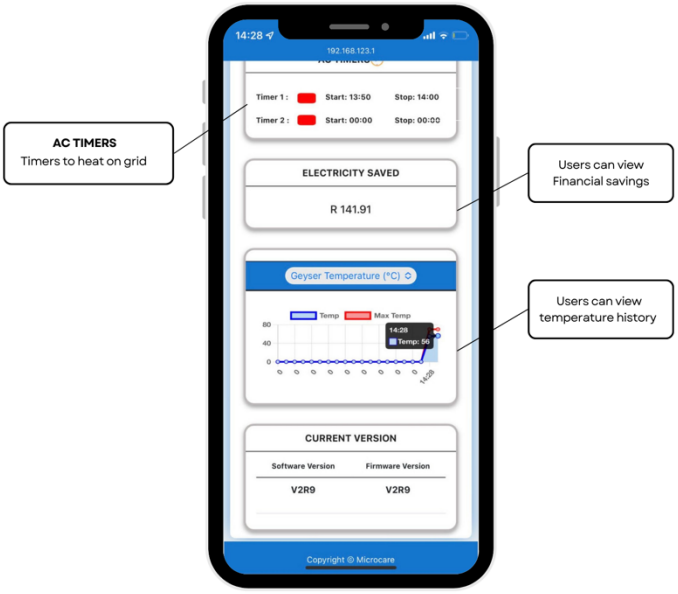
Set the Electricity Price per kWh to be used in the savings calculations



11.3. Hot Water Generator Application Screens

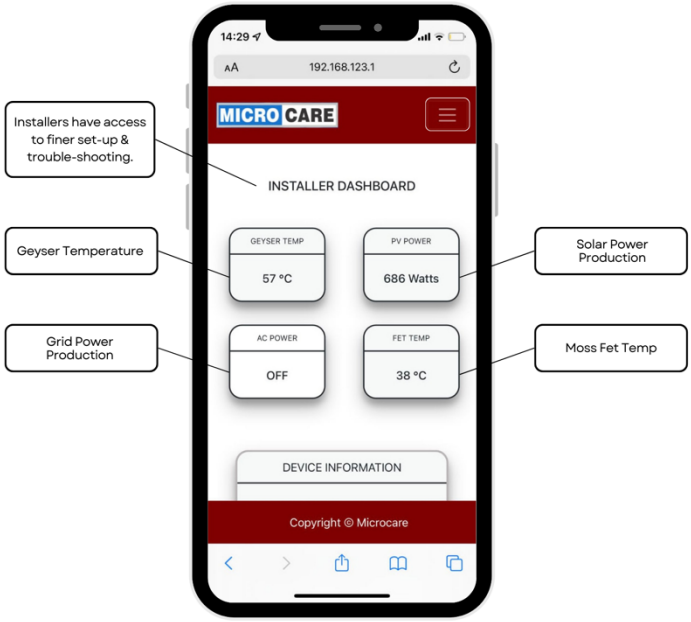
USER DASHBOARD

USER DASHBOARD CONTINUED



USER SETTINGS PAGE

INSTALLER DASHBOARD



12. SETTINGS EXPLAINED

12.1 Element Size

Default Element Size: 3kW

Sets the controller dipswitches to match the geyser element size:

Settings: 2kW, 3kW or 4kW.

12.2 DC Temperature

Default temp: 60 °C.

Sets the max water temperature in PV mode. Settings: 45, 50, 55, 60, 65 and 70°C.
For a 75°C thermostat set the max DC temp to 65°C or less. For a 70°C thermostat set the max DC temp to 60°C or less.

12.3 DC Temperature Hysteresis

Sets DC temperature hysteresis. Settings: 1, 2, 5, 7 or 10°C.

Hysteresis is the difference between the geyser's on and off temperature. DC Temperature minus 1, 2, 5, 7 or 10°C.

When the water reaches the set DC temp and the DC hysteresis is set for 5°C, the geyser heats the water until 60°, the temperature set in section 9.2.

The controller then stops supplying power to the element at 60°C. Set temperature – Hysteresis = 60°C – 5°C = 55 °C.
When the temperature reaches 55°C the geyser switches on.

12.4 AC Temperature Below DC

Sets the max AC Temperature in AC mode. Settings: 0, 3, 5 or 10°C.

The water heats to this temperature when connected to AC as described below.

If the DC temperature is set for 60°C and the AC Temp Below DC setting is 5°C, then the geyser heats the water to 60°C - 5°C = 55°C.

12.5 AC Temperature Hysteresis

Sets the AC temperature hysteresis. Settings: 1, 2, 5, 7 or 10°C.

Hysteresis is the difference between the controller's on and off temperature. AC Temperature minus 1, 2, 5, 7 or 10°C.

When the water reaches the set AC temp and the AC hysteresis is set for 5°C, the geyser heats the water until 55°C, the temperature set in section 9.4.

The controller then stops supplying power to the element at 55°C. Set temperature – Hysteresis = 55°C – 5°C = 50 °C.
When the temperature reaches 50°C the geyser switches on.

13. SEASONAL PERFORMANCE OF THE HOT WATER GENERATOR

Solar PV Performance: Winter vs Summer

The performance of solar panels in South Africa is influenced by seasonal changes, particularly between winter and summer. While South Africa enjoys high levels of solar irradiation throughout the year, there are important differences to consider:

- Summer (October – March)
  - Longer daylight hours and higher sun angles increase the total solar energy available.
  - Solar panels generate higher daily outputs, often exceeding the geyser's heating requirements.
  - Ambient temperatures are warmer, meaning less energy is required to heat cold water to the desired temperature.
  - The Hot Water Generator will generally operate more efficiently, with surplus PV capacity.
- Winter (April – September)
  - Shorter days and lower sun angles reduce the total solar energy available.
  - Cooler ambient temperatures increase the energy required to heat incoming cold water.
  - PV panel efficiency may slightly improve in cooler temperatures, but the reduced irradiation and shorter sunshine duration result in lower total daily yield.
  - In some regions, particularly the Cape provinces with more winter cloud cover, supplementary AC input may be required more frequently to ensure consistent hot water.

Impact on the Hot Water Generator Solution

The Microcare Hot Water Generator is designed to optimise both PV and AC input to provide reliable hot water year-round. Seasonal differences impact the balance of these energy sources:

- In **summer**, the system will rely heavily on PV power, reducing grid consumption and operating costs.
- In **winter**, PV contribution may be lower, and the system will automatically supplement with AC power when required to maintain water temperature.
- Users should expect **higher electricity savings in summer months**, while still benefiting from reliable operation during winter with minimal user intervention.

The Role of Hot Water Usage

In addition to seasonal conditions, **the timing and volume of hot water usage** has a direct impact on performance:

- **Evening showers**: In most households, evening showers are common. By this time of day, the geyser has been heated using PV power during peak sunlight hours, meaning little to no additional AC power is typically required.
- **Morning usage**: Heavy morning demand may require the unit to supplement with AC, especially in winter, as PV generation will only ramp up later in the day.
- **High consumption households**: Where hot water demand exceeds the geyser's storage capacity, the system may engage more AC input to maintain adequate supply.

Practical Considerations

- **System Sizing**: When selecting the number of PV panels, consider both seasonal solar yield and household water usage patterns.
- **DC temperature setting:** Keeping the thermistor at the maximum setting ensures the system can store as much solar-heated water as possible before evening use.
- **Maintenance**: Ensure panels remain free of dust in summer and free of debris (e.g., leaves) in winter for optimal performance.

14. RETURN ON INVESTMENT (ROI) FOR HOT WATER GENERATOR

We've built a **10-year ROI projection** for the Hot Water Generator based on the following assumptions:

- Average R4.00 per kWh starting electricity cost
- 3 kW geyser element (common size)
- Minimum 2 hours per day usage
- Minimum 8% annual electricity price increase
- R20,000 average installation cost

This model shows how savings accumulate against rising electricity prices, and where the system pays for itself.

ROI Projection (Years 5–10)

Year	Cost per kWh (R)	Annual Electricity Cost (R)	Cumulative Cost (R)
5	5.44	11,917.88	51,391.42
6	5.88	12,871.31	64,262.73
7	6.35	13,901.02	78,163.75
8	6.86	15,013.10	93,176.85
9	7.40	16,214.15	109,391.00
10	8.00	17,511.28	126,902.28

Return on Investment Analysis

- **Payback Period:** The system pays for itself in **Year 3**. By the end of Year 3, the cumulative cost of grid electricity (R28,438) already exceeds the installation cost (R20,000).
- **10-Year Cost of Doing Nothing:** Without the Hot Water Generator, you would spend about **R126,900** on heating water over 10 years.
- **10-Year Savings with Hot Water Generator:** After covering the R20,000 installation, the system delivers about **R106,900 in savings** over a decade.
- **Annual Benefit Growth:** Because of the 8% electricity price escalation, your savings compound each year. By Year 10, a single year of hot water costs over **R18,900** – nearly as much as the **entire system installation**.

Observations & Selling Points

1. **Fast Payback:** A 3-year payback is very attractive compared to most renewable energy solutions.
2. **High Long-Term ROI:** The system returns **5x its initial cost** in savings over 10 years.
3. **Protection Against Tariff Increases:** With rising electricity costs, your savings accelerate year after year.
4. **Energy Independence:** Reduced reliance on Eskom protects households from loadshedding & price shocks.
5. **Sustainability Advantage:** Beyond the financial benefit, households cut their carbon footprint by moving heating loads to solar.

15. LIMITED CARRY-IN WARRANTY

The following Warranty is conditional on the Microcare Geyser Controller (Hot Water Generator) having been installed by an approved Microcare Installer, the required paperwork having been submitted to Microcare, and the Client being in receipt of our acknowledgement thereof. Incorrect installation has historically been the overriding cause of product failure, and no exception to this condition will be considered.

Microcare warrants the Geyser Controller against defects in workmanship and materials, fair wear and tear accepted, for a period of two (2) years from the date of collection. This warranty is provided on a carry-in basis. Where the installation of the product makes it impractical to carry-in to our workshops, Microcare reserves the right to charge for travel time and kilometres travelled to and from the site where the product is installed.

During this warranty period, Microcare will, at its own discretion, repair or replace the defective product free of charge. This warranty will be considered void if the unit has suffered any physical damage or alteration, either internally or externally, and does not cover damages arising from improper use such as, but not exclusive to:

- Incorrect or inadequate connection of the product and/or its accessories.
- Mechanical shock or deformation.
- Contact with liquid or oxidation by condensation.
- Use in an inappropriate environment (dust, corrosive vapour, humidity, high temperature, biological infestation).
- Breakage or damage due to lightning, surges, spikes, or other electrical events.
- Connection terminals and screws destroyed or damage such as overheating due to insufficient tightening of terminals.
- Electronic failure caused by lightning, over-voltage, incorrect polarity, or similar external factors.

This warranty will not apply where the product has been misused, neglected, improperly installed, or repaired by anyone other than Microcare. To qualify for the warranty, the product must not be disassembled or modified. Repair or replacement are our sole remedies, and Microcare shall not be liable for damages, whether direct, incidental, special, or consequential, even if caused by negligence or fault.
Microcare owns all parts removed from repaired products. Microcare may use new or re-conditioned parts from various manufacturers in performing warranty repairs and building replacement products. If Microcare repairs or replaces part of a product, the warranty term is not extended. Removal of serial numbers may void the warranty.

All remedies and the measure for damages are limited to the above. Microcare shall in no event be liable for consequential, incidental, contingent, or special damages, even if advised of the probability of such damages. Any and all other warranties, expressed or implied, arising by law, course of dealing, course of performance, usage of trade or otherwise–including but not limited to implied warranties of merchantability and fitness for a particular purpose–are limited in duration to two (2) years from the date of purchase.

While all care is taken to dispatch goods with adequate packaging, Microcare is not responsible for any damage caused to products after they have left our premises. Please ensure that your transport company or delivery team is aware of the sensitivity of the products they are collecting.

16. REGISTRATION OF MY MICROCARE PRODUCT

Product Serial Number: _____

Product Description: _____

Date Purchased _____

Where was the Product Purchased?

Company Name _____

Contact Person _____

Contact Number _____

E-mail Address _____

Installation Company Information:

Company Name _____

Contact Person _____

Contact Number _____

E-mail Address _____

Details of Product Owner

Name & Surname _____

Address _____

City & Province _____

Contact Number _____

E-mail Address _____

Date Installed _____

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