

NOTE: This Troubleshooting Guide is intended for electricians and not general users. Users should please refer to the User Manual, which can be found at www.poweroptimal.com/manuals.

Unit no.	Development name	Elon® serial no.
Date	Name: 1 st level support person	
Unit construction status (Works OR Final Completion)	Resident name	
Reported issue (customer)		
Reported issue (Level 1 Support)		

Troubleshooting Steps



No.	Action	Result	Units
1	Open the Elon Smart app. (Download the Elon Smart Water app from the Google Play or Apple app stores if you don't have it installed on your phone)	<input type="checkbox"/>	
2	If you don't have the specific thermostat in your device list, scan its QR code (on the house DB or on the thermostat itself) to add it by tapping the + button in the Elon Smart app. 	<input type="checkbox"/>	
3	Open the thermostat Configuration screen by tapping the Configure (hammer & spanner) button to the right of the thermostat on the app status screen. 	<input type="checkbox"/>	
4	Check for any alarms at the bottom of the screen and rectify accordingly.	<input type="checkbox"/>	
5	If you cannot access the thermostat from the app, confirm that a. the DC isolator / circuit breaker is closed (on); b. the AC circuit breaker at DB and AC isolator are closed (on).	<input type="checkbox"/>	DC closed
		<input type="checkbox"/>	AC closed
6	If you still cannot access the thermostat from the app, remove the geyser end cover and: a. Visually inspect the wiring ensuring that AC and DC wiring are still inserted into screw terminals; b. Check using a voltage meter that DC voltage is present on the DC screw terminals and polarity is not reversed (Figure 1); c. Check using a voltage meter that AC voltage is present on the AC screw terminals (Figure 2).	<input type="checkbox"/>	Wiring correct
			V DC & correct polarity
			V AC
7	Write down the conclusion from your testing (What caused the reported issue?) & any other observations:		



Figure 1 Checking DC voltage



Figure 2 Checking AC voltage

Things to Remember

- After power up, the unit **runs a self-test that takes about 30 seconds**. Once the self-test passes the unit will engage the correct power source determined by the heating policy. If the water is below the temperature set point for the source (Grid or Solar), it will start heating water. You should hear a click when this happens.
- If the two earth wires are not connected to the earth stud the unit will fail the self-test and never start the heating process.
- **The unit will detect the following installation faults** and display them on the configuration screen. These will stop the unit from connecting power to the element until they are cleared:
 1. DC + and DC – are reversed (reversed polarity);
 2. The earth straps are not connected to the earth stud;
 3. AC is connected to DC input;
 4. There is a fault between the solar wiring and earth (insulation failure);
 5. Element faulty (this may happen if you insert the unit so only a single spade connector makes contact with the element);
 6. Unit component failure.
- **The unit will also warn the installer** if there is:
 1. No power on the AC input. The alarm is not shown if heating policy *Solar Only* is selected.
 2. No power on the DC input and it is daytime. The alarm is not shown if heating policy *Grid Only* is selected.
- For any Heating policy except *Grid Only*, solar power is normally engaged except for the periods listed in the **table below**.
- If the unit has no grid power and engaging the element causes the DC voltage of the solar panels to drop below the voltage required to power the unit, the unit disconnects the element. If AC power is supplied, then the unit can run down to 0 V on DC. If the unit disconnects the element, it will stay disconnected for 2 minutes before connecting to the element again.
- If the unit is connected to the grid, it may draw a small amount of power (<3W) from the grid even if *Solar Only* heating policy is selected.
- **How to switch on solar power to element:** Select *Solar Only* heating policy on the configuration screen.
- **How to switch on mains power to element:** Select *Grid Only* heating policy on the configuration screen.

Heating Profile option	Solar power use	Grid power use	Comments
Grid Only	Never	Always	Select this option if you don't have any solar panels installed.
Solar Only	Always	Never	ONLY use solar power. NEVER use grid power.
Morning Shower	Always except for 3 – 5 am	3 am – 5 am	Solar power will be used whenever available, and grid power will only be used early in the morning to boost water temperature to the Grid set point if the temperature is lower than that.
Evening Shower	Always except for 5 – 7 pm	5 pm – 7 pm	Solar power will be used whenever available, and grid power will only be used in the late afternoon to boost water temperature to the Grid set point if the temperature is lower than that.
Morning and Evening Shower	Always except for 3 – 5 am & 5 – 7 pm	3 am – 5 am & 5 pm – 7 pm	Solar power will be used whenever available, and grid power will only be used in the early morning and late afternoon to boost water temperature to the Grid set point if the temperature is lower than that.



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