MWS INSTALLERS GUIDE

1 CONTENTS

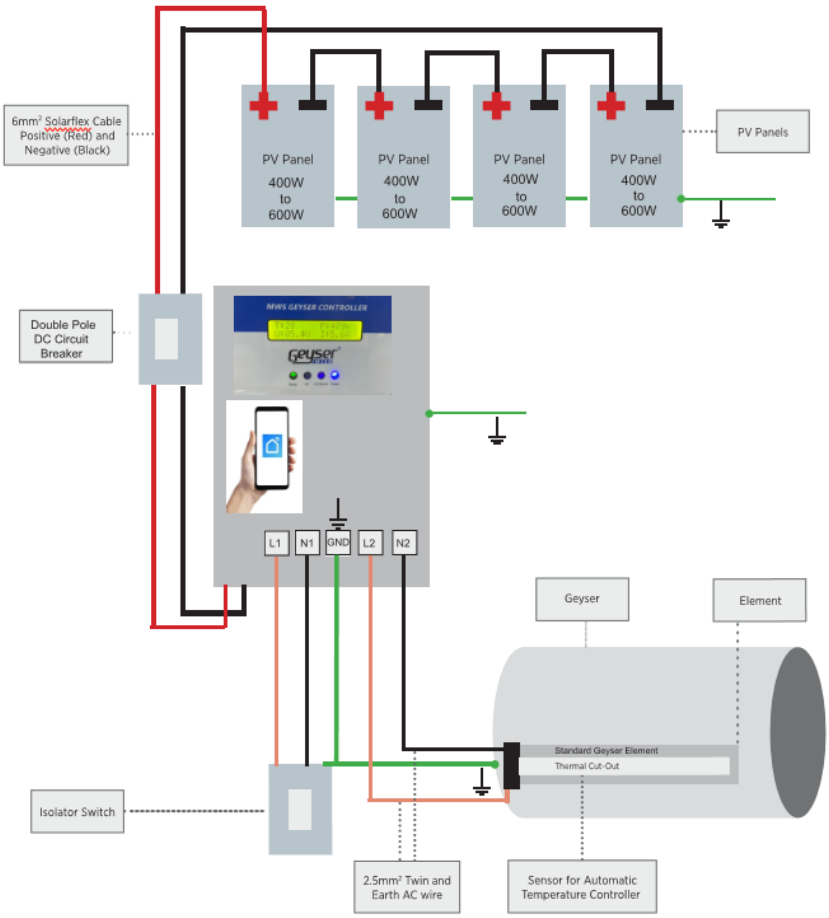
2 INTRODUCTION

The system makes use of photovoltaic technology to heat the water in the geyser. This differs from traditional thermal hot water systems where water is cycled from a collector through pipes to the geyser by either making use of a 220V Pump, 12V Pump or natural convection.

Advantages over thermal hot water systems are as follows:

- Any existing geyser can be converted No Additional plumbing is required
- No pumps necessary to circulate water
- No risk of damaged panels in frost prone areas
- The water temperature can be controlled on very hot summer days - reduced risk of overheating problems
- Suitable in all water conditions
- Suitable in areas where the geyser is not situated near the panels

3 SYSTEM OVERVIEW USING 4 PANELS

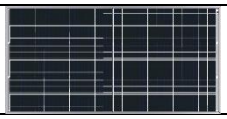


4 SOUTH AFRICAN IRRADIATION LEVELS

Please select your system combination according to the area you live in. For low irradiation areas, please use combination as for low irradiation areas (highlighted in yellow in the table). For high irradiation areas, please use combination as for high irradiation areas (highlighted in green in the table).

Irradiation kWh/m2/day												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
BELA-BELA	6,44	5,87	5,31	4,72	4,26	3,88	4,18	4,88	5,72	6,02	6,20	6,30
BETHAL	6,66	6,08	5,41	4,76	4,16	3,78	4,03	4,73	5,60	5,94	6,20	6,53
BLOEMFONTEIN	7,02	6,19	5,28	4,44	3,74	3,32	3,54	4,36	5,29	5,97	6,71	7,07
BOTSHABELO	6,90	6,10	5,23	4,44	3,78	3,35	3,57	4,35	5,30	5,82	6,59	6,95
BRITS	6,70	6,10	5,46	4,77	4,21	3,80	4,08	4,78	5,69	5,98	6,29	6,62
CAPE TOWN	7,93	7,02	5,63	4,06	2,91	2,50	2,67	3,41	4,63	6,16	7,44	7,96
DE AAR	7,58	6,60	5,46	4,35	3,54	3,03	3,31	4,20	5,19	6,31	7,19	7,80
DELMAS	6,66	6,08	5,41	4,76	4,16	3,78	4,03	4,73	5,60	5,94	6,20	6,53
DURBAN	5,57	5,18	4,75	4,01	3,41	3,01	3,17	3,72	4,32	4,53	4,83	5,44
EAST LONDON	5,68	5,27	4,44	3,69	3,15	2,70	2,85	3,53	4,29	4,78	5,35	5,74
EMALAHLENI	6,66	6,08	5,41	4,76	4,16	3,78	4,03	4,73	5,60	5,94	6,20	6,53
EMBALENHLE	6,39	5,83	5,19	4,54	3,99	3,66	3,88	4,57	5,43	5,63	6,03	6,28
JOHANNESBURG	6,70	6,10	5,46	4,77	4,21	3,80	4,08	4,78	5,69	5,98	6,29	6,62
KIMBERLEY	7,10	6,30	5,39	4,53	3,79	3,36	3,59	4,45	5,42	6,16	6,91	7,21
KLERKSDORP	6,55	5,92	5,24	4,58	4,04	3,64	3,92	4,67	5,57	5,86	6,36	6,57
MIDDELBURG	6,66	6,08	5,41	4,76	4,16	3,78	4,03	4,73	5,60	5,94	6,20	6,53
MOKOPANE	6,45	5,98	5,32	4,75	4,22	3,83	4,11	4,81	5,62	5,87	6,11	6,34
ORKNEY	6,55	5,92	5,24	4,58	4,04	3,64	3,92	4,67	5,57	5,86	6,36	6,57
PHALABORWA	6,10	5,69	5,07	4,51	4,00	3,60	3,77	4,47	5,16	5,28	5,72	6,00
POLOKWANE	6,45	5,98	5,32	4,75	4,22	3,83	4,11	4,81	5,62	5,87	6,11	6,34
PORT ELIZABETH	6,41	5,68	4,63	3,63	2,97	2,50	2,71	3,39	4,29	5,07	5,91	6,55
POTCHEFSTROOM	6,55	5,92	5,24	4,58	4,04	3,64	3,92	4,67	5,57	5,86	6,36	6,57
PRETORIA	6,70	6,10	5,46	4,77	4,21	3,80	4,08	4,78	5,69	5,98	6,29	6,62
RUSTENBURG	6,68	5,99	5,40	4,74	4,21	3,79	4,09	4,82	5,71	6,01	6,38	6,63
SOWETO	6,70	6,10	5,46	4,77	4,21	3,80	4,08	4,78	5,69	5,98	6,29	6,62
STILFONTEIN	6,55	5,92	5,24	4,58	4,04	3,64	3,92	4,67	5,57	5,86	6,36	6,57
UPINGTON	7,71	6,86	5,68	4,50	3,78	3,34	3,57	4,43	5,40	6,69	7,46	7,98
VIRGINIA	6,78	6,12	5,24	4,49	3,88	3,45	3,71	4,45	5,39	5,77	6,35	6,71
WELKOM	6,78	6,12	5,24	4,49	3,88	3,45	3,71	4,45	5,39	5,77	6,35	6,71

5 MWS SYSTEM COMPONENTS

PV Modules	
Mounting Clips	
Strut	
MWS Controller	
Thermostat	
DC Circuit Breaker	
MWS Connection Cable	
6m Red Solflex	
6m Black Solflex	

6 COMPONENT TECHNICAL SPECIFICATION

6.1 PV Panels

It is important to note that the maximum size of the system is limited to 350 VOC (Open Circuit Voltage). It is important to configure the PV panels in such a way that this open circuit voltage is not exceeded.

460W PV Panels technical specifications

Dimensions:	2,117 X 1,052 X 35 mm	Vmp	41.79 V
VOC:	49.91 V	Imp	11.01 A
ISC	11.50 A	Weight	27.3 kg

The maximum number of 460W PV Panels that can be connected in series six:

6 X 49.91 = 299.46V. (If seven panels are used the VOC will be 349.7V and in colder weather conditions this will exceed the limit of 350V.)

600W PV Panels technical specifications

Dimensions:	2,278 X 1134 X 30 mm	Vmp	43.9 V
VOC:	53.0 V	Imp	13.68 A
ISC	14.18 A	Weight	27.60 kg

The maximum number of 600W PV Panels that can be connected in series is six:

6 X 53.0 = 318.0V

6.2 MWS Technical Specifications

Maximum input voltage 350 VOC

Solar Input.

- Input Voltage Range 125 VOC – 350 VOC DC
- Maximum Input Current 15 Amp
- Maximum Solar Power Conversion 4000W
- MPPT Range 120 – 350 V DC
- Connection MC4 Solar Connectors
- Installation PV Isolator (DC circuit Breaker Double pole)
- Maximum Solar Array Size 4000 Watt

Solar output

- Voltage 40-230Vrms Modulated Sine Wave
- Current 20Amp
- Max Voltage 230V
- AC INPUT
- 230 Vac 50HZ

Geyser Element

- Power 1500W - 4000W
- Element Resistance 12Ω – 27Ω
- Connection at MWS MPPT 3 x 4mm2 Screw Terminals (Live -Neutral-Earth)
- Connection at Element Conventional 2 terminal (live -Neutral – Earth) or plug in
- **Not Suitable for use with PTC Elements**

Thermostat

- Geyserwise Thermostat.

Communication

- RS 485 between display and main MWS Box
- Wi-Fi Tuya or Smartlife applications.

Mounting

- MWS to be mounted vertically

SPECIFICATIONS

Rated input voltage	230V AC, 350V DC
Rated input current	20A AC, 15A DC
Maximum input PV power	4000W
Mains (AC) voltage range	85~250Vac
System power supply	Solar PV or 230V AC
Solar Voltage	120~350V DC
Thermostat	Electronic thermostat
Thermostat safety	Electromechanical thermal cutout
Reverse polarity protection	For solar PV connections
Enclosure ingress protection rating	IP32
Standards conformance	EN / IEC 62109-1, IEC 60730-2-9, IEC 60730-1, EN / IEC 61000-6-3, EN 61000-3-12, EN / IEC 61000-3-11, EN / IEC 61000-6-1, ICASA Type Approval
Communications	RS 485 between display and main MWS Box Wi-Fi Tuya or Smartlife applications

7 INSTALLATION TOOLS REQUIRED

- AC/DC Clamp meter
- Screwdriver set
- Socket Set
- Crimping Tool
- 4mm or 6mm (depending on distances) Black and Red Solar Flex Cable (No other cable may be used on DC Connections)
- 2.5mm Twin and Earth wire for AC Connection on Geyserwise MWS Controller

8 INSTALLATION STEPS SUMMARY

Step 1 Read this manual thoroughly. In case of any ambiguities, contact our office for further advice.
Step 2 Always ensure familiarity with all local safety procedures.
Step 3 Mount the PV Panels.
Step 4 Install Geyserwise MWS Controller.
Step 5 Recheck all connections.
Step 6 Switch on the DC circuit breaker.

9 SAFETY PRECAUTIONS

Observe all precautions as set out in SANS 10142-1 when working with electricity. To be installed by suitably qualified persons. Electrical COC required.

9.1 Electricity on the Geyser

An installer should always take precautions when working with electricity. The most important precautions to perform before doing maintenance on a geyser are:

Switch off the circuit breaker of the geyser at the main DB. This is done to ensure that there is no power supply to the geyser	
Switch off the isolator in the roof. The isolator acts as a switch to isolate both the live and neutral from the main supply should someone accidentally switch on the main supply, or the circuit breaker fails	
Test with a MULTIMETER to ensure that there is no current on the wires. IMPORTANT Make sure that there is no reading on the multimeter	

9.2 Electricity on PV Panels

PV modules can produce current and voltage when exposed to light of any intensity. Electrical current increases with higher light intensity. DC voltages of 30 Volts or higher is potentially lethal. Contacting the live circuitry of a PV system operating under light can result in lethal electric shock. De-energize PV modules by removing them entirely from light or by covering the front surface with an opaque material. Regard the safety regulations for live electrical equipment when working with modules that are exposed to any light. Use insulated tools and do not wear metallic jewelry while working with PV modules.

In order to avoid arcing and electrical shock, do not disconnect electrical connections under load. Faulty connections can also result in arcing and electrical shock. Keep connectors dry and clean and ensure that they are in proper working condition. Never insert metallic objects into the connectors or modify them in any way in order to secure an electrical connection.

Do not touch or handle PV modules with broken glass, separated frames or a damaged back sheet unless the PV modules are first disconnected and you are wearing proper protective clothing. Avoid handling PV modules when they are wet. Never touch electrical connections that are wet without protecting yourself with insulated gloves.

Make sure that the double pole circuit breaker on the live side of the DC connection from the PV panels is in the off position until all other connections are completed. Also only turn on AC power once all connections are completed and checked.

10 MOUNTING OF PV PANELS

Rooftop PV systems should only be installed on dwellings that have been formally analysed for structural integrity and confirmed to be capable of handling the additional weighted load of PV system components, including PV modules, by a certified building specialist or engineer.

For your safety, do not attempt to work on a rooftop until safety precautions have been identified and taken, including without limitation fall protection measures, ladders or stairways, and personal protective equipment.

For your safety, do not install or handle PV modules under adverse conditions, including without limitation strong or gusty winds, and wet or frosted roof surfaces

10.1 Installation of PV Panels

Each manufacturer of PV panels will make available instructions on how to best install its PV panels. Be sure to read and follow instructions on the specific brand of PV panels used in the system. The information below is based on information as contained in the guidance notes of Renesola PV panels.

- Do not dismantle the Modules or tear up any labels.
- Installation should be done by qualified professionals only. Ensure that the correct connector pairs are used.
- Do not touch the exposed cables or connectors.
- De-energize PV modules by removing it entirely from light or by covering the front surface with an opaque material.
- System designers shall design an appropriate bracket and follow the instructions to fix the PV module to the bracket.

- Installation and maintenance shall be performed in accordance with all electrical safety regulations.
- Do not stand on the modules.
- Do not paint the modules or spray any material on the modules.
- Always transport the modules carefully and according to the manufacturer's instructions.
- Take care that the modules are not scratched, as scratches may influence the efficiency of the modules

10.1.1 STEP1

Choose the location of the PV panels - be sure to choose a location where the panels will be fully exposed to the sun and that the areas are not shaded. Look out for shade produced by trees or other buildings. In the Southern Hemisphere the panels should face north at an angle calculated according to your location

Optimal angle for fixed solar panels depending on installation position

- for a latitude up to 25° take your latitude and multiply it by 0,87
- for a latitude between 25° to 50° take your latitude multiply by 0,87. After that you will add 3,1 degrees
- for a latitude over 50° the ideal angle is approximately 45° degrees.

You will need to know your current latitude to count out the ideal angle to position your solar panels. The easiest way to do this is to do a search for your location on Google maps and then right click on the location and choose "what is here". A green arrow will then appear. If you click on that arrow, you will get the GPS coordinates for that location on the map. The first number is the latitude of the location. Use this number in your calculations. For example, GPS coordinates for Goodwood, Cape Town are given below.

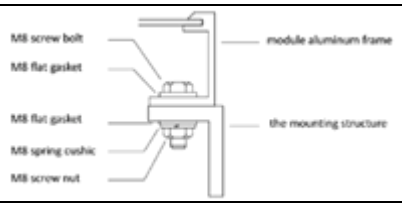
100 Townsend St
Cape Town 7460
-33.906552, 18.540870

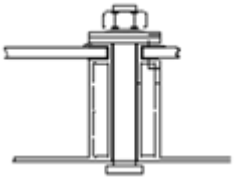
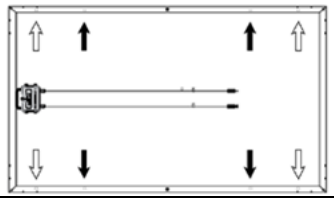
33.9 x 0.87 = 29.50
Then add 3.1 degrees
29.5+3.1=32.60degrees

10.1.2 STEP 2

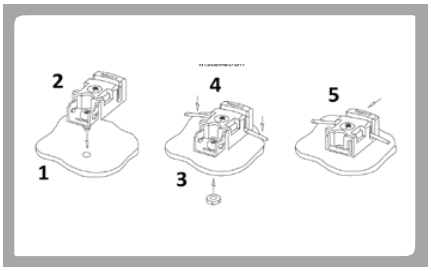
Use a bracket structure that can withstand high winds. The bracket structure must be made of durable, corrosion resistant and UV

10.1.3 STEP 3 Choose a fixing method

Installed by nut and bolt	

Installed by fixture	
Fix the module to the structure using the prefabricated holes	

10.1.4 STEP 4 Grounding

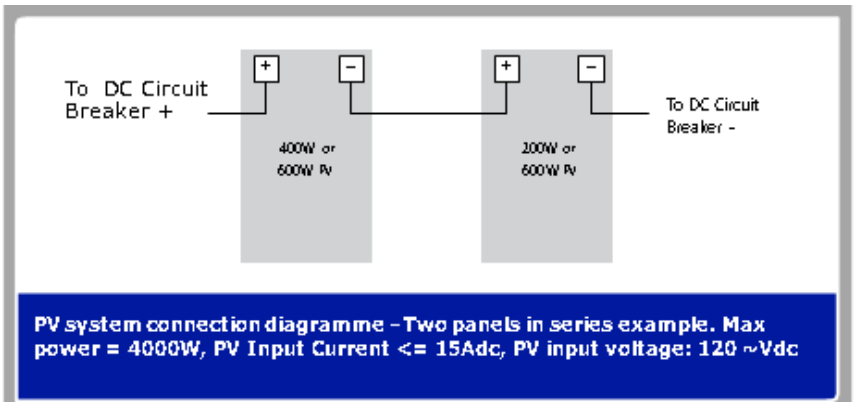


Negative system grounding is recommended

The ground wire shall be bare copper wire with no insulation sleeve. Wire cable with cross sectional area of 4mm2 to 6mm2 is recommended and ground clamp is recommended (See picture)

10.1.5 STEP 5 Wiring and connection

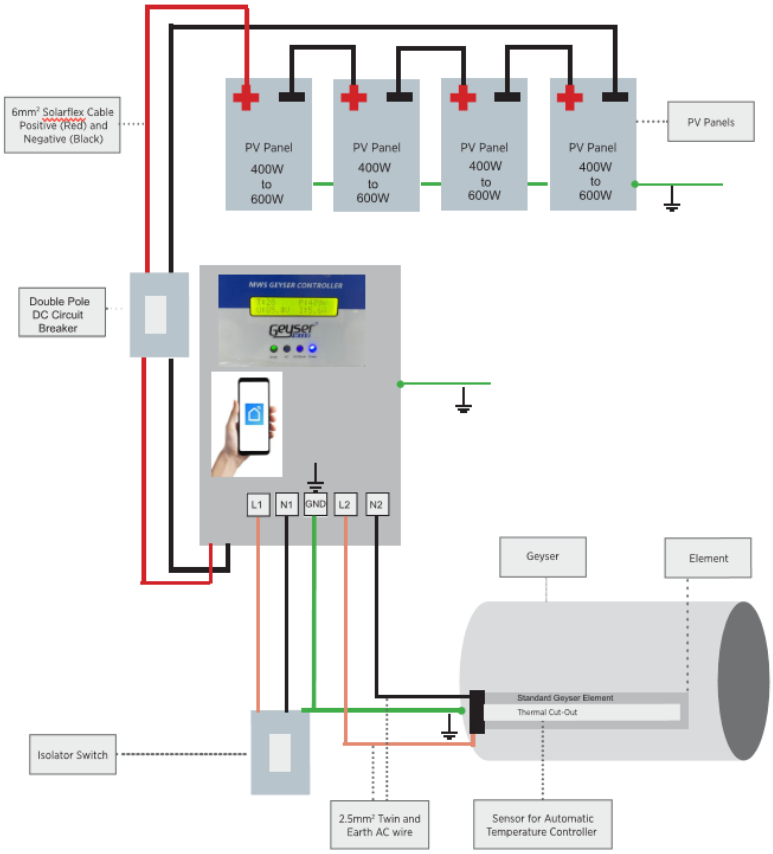
Use 6mm solflex cable depending on the distance of the panels from the MPPT. 6mm solflex cable for up to 35m. Ensure that the correct connectors are used MC4 connectors)



11 INSTALLATION OF THE MWS CONTROLLER

A summary of the installation steps as follows:

- Install the display unit.
- Remove existing thermostat and replace with new supplied thermostat.
- Complete all AC electrical connections.
- Connect the PV panels to the DC Circuit Breaker.
- Connect MWS to DC Circuit Breaker with MWS Connection cable supplied.
- Set up the controller and all settings.



11.1 Install the display

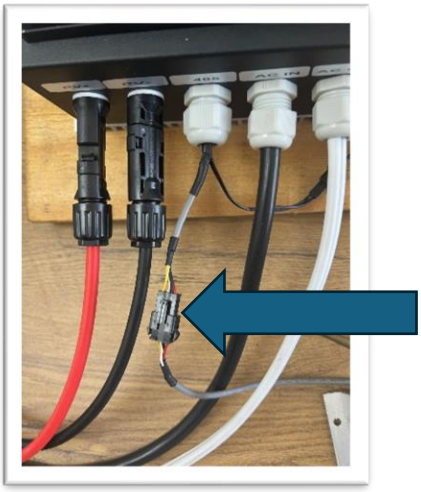
The display unit must be installed in a location that is accessible to the end user, but not in reach of children that might want to play with it.

The display unit provides valuable information on the functionality and status of your hot water system.

Draw the display unit cable from the unit to the control box. Plug it into the four-pin plug as provided on the control box. It can only fit into one plug.

The standard display cable of 5m is supplied. 5m, 10m, and 20m Extension cables are available on request from our offices. A maximum extension of 20m is recommended.

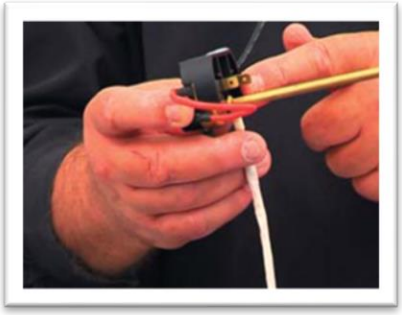
Only use Geyserwise extension cables for extensions!!!



11.2 Remove the thermostat and insert the Geyserwise thermostat

The geyser's thermostat needs to be removed. The geyser temperature probe provided by Geyserwise has a built-in probe that measures the temperature in the geyser. It also supplies information to the element whether it should switch it on or not.

The Geyserwise geyser temperature probe incorporates a thermal cut out to prevent electrical overheating. The live feed to the element will be broken at temperatures above 90°C. When the cut out switches off, it needs to be reset manually by pressing the red button on the thermal cut out.

1. Remove the existing thermostat by disconnecting all the wires on the connector terminal block of the thermostat	
2. Pull the thermostat out of the pocket. Please note that certain types of geysers require the user to remove the front part of the geyser temperature probe as provided	

3. Ensure that you insert the geyser temperature probe into the correct pocket.	
4. Insert the new geyser temperature probe and connect the live wires once again on the connector terminal block	
5. Plug it into the dedicated plug as provided on the control unit	

11.3 Complete the electrical connections

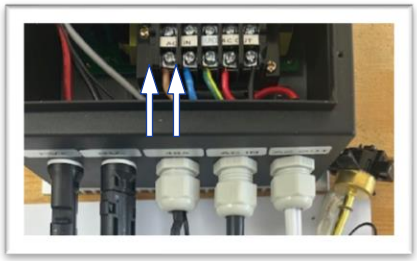
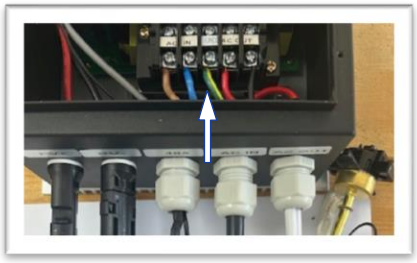
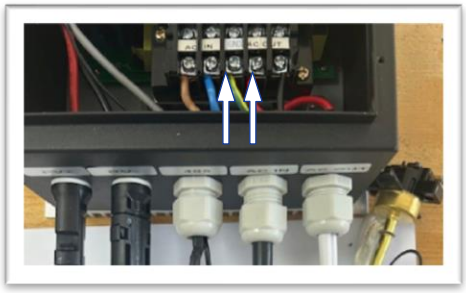
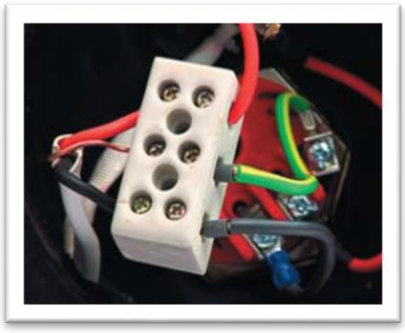
The hard wiring of a controller is critical.

Main power supply

- The main power supply is provided from the isolator switch.
- The Red wire is your Live wire.
- The **Black** wire is your **Neutral**.
- The other wire provided is your **Earth**. (Green/Yellow or Bare Copper)

Each control box has two cable glands fitted at the bottom of the unit. Use cable glands supplied to make an entry into the control box.

Connect the wire from the isolator to the controller. Note – ensure that a wire that complies with SANS10142-1 is used

1. Connect Live and Neutral as indicated. Ensure that the wires are properly fastened as they are drawing a large current. Loose connections can damage the connector block	
2. Connect Earth wire as indicated	
3. Connect the wire from controller to geyser. Connect Live and Neutral as indicated. Ensure that the wires are properly fastened as they are drawing a large current. Loose connections can damage the connector block	
4. Connect Earth wire as indicated.	
5. Fasten all connections with the cord grip as indicated to ensure that the wire cannot be moved.	
6. Connect wires to the geyser's connector block.	

7. Replace cover of geyser to protect the electrics.	

11.4 Connect the PV Panels to the DC Circuit breaker and connect the controller

1. Connect the PV Panels to the DC Circuit breaker and surge arrestor where required.	
2. Connect the DC Circuit breaker to the MWS controller with the MWS Connector Cable	
3. Review all electrical connections and close the lid	

Power up system

1. Switch on main supply at DB board.
2. Switch on power at the isolator
3. Switch on DC Circuit breaker

12 DISPLAY

The display is the feedback mechanism to the user and displays important information about the solar system or electric geyser.

It displays the following:

Geyser Temperature	
Real time clock	
Day of the week	
Element on/off indicator If spanner flashes and droplets are on, the element is powered from Mains power	
Timers	

Error Message	
PV Indicator If spanner is solid and droplets are on, the element is powered from PV power	

12.1 Adjusting the day of the week

To adjust the day of the week, follow the steps below:

1. Press the green set button repeatedly until the day of the week flashes (Important) do not hold the button in	
2. Adjust the day of the week by using the ^ and v arrow buttons	

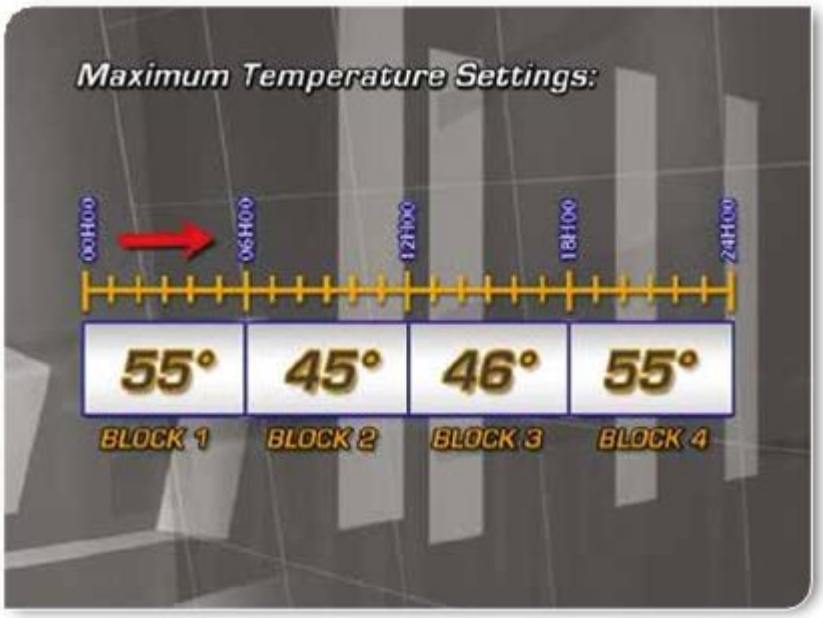
12.2 Adjusting the real time clock

To adjust the real time clock follow the steps below

1. Press the green set button repeatedly until the time flashes (Important) do not hold the button in	
2. And set the hours to your requirement. Press the green set button immediately after setting the hours to get to the minute counter. Set the minutes according to your requirements by using the ^ and v arrow keys.	

12.3 Maximum Temperature settings

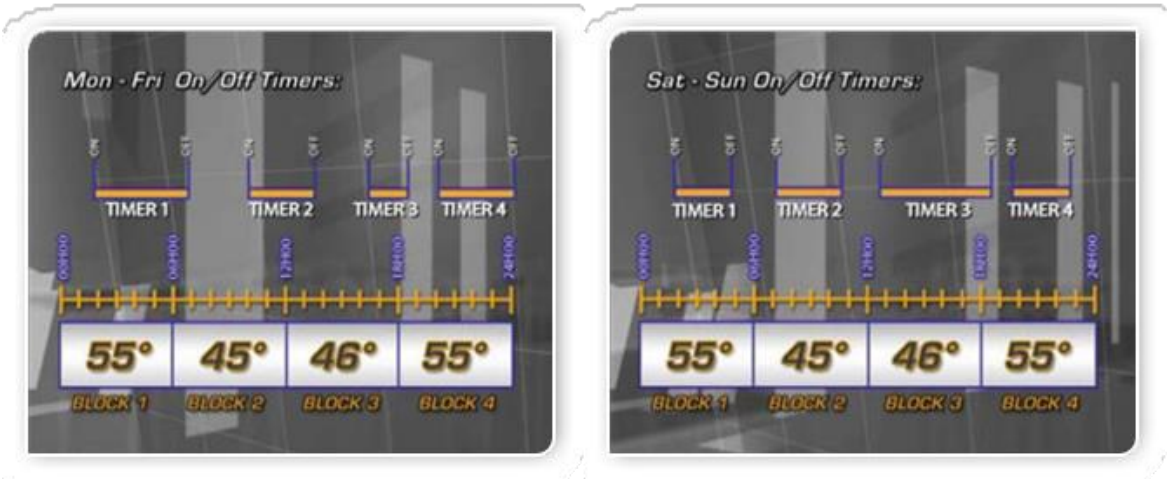
There are four maximum temperature settings. It is important to note that these settings apply to the four quarters of the day and not to the set times that the elements must come on. These four apply to heating from Mains supply only.



1. To adjust the maximum temperature settings, press the green set button until the first block temperature setting is displayed. The temperature will be flashing, and the number of the block will be displayed in the timer indicator block. The 5th temperature block is the DC Temperature setting (for controlling electricity from the PV panels). The maximum temperature setting for DC is 75 ˚C	
2. Set the temperature per block to user requirements by using ^ and v arrow keys	

12.4 Setting Timers

There are four on/off timers that can be set with the GeyserWise. Note that you can set different timers for the weekend. These four apply to heating from Mains supply only.



1. Press the green set button until the timer indicators and Monday to Friday flashes. The below picture shows that you are at the Monday to Friday setting for timer number 1 on	
2. Adjust the hours you require by using the ^ and v buttons. Immediately press the green set button again to get to the minutes and use the ^ and v buttons to adjust the minutes	
3. To set the number 1 off timer, press the green set button until the timer indicators and Monday to Friday flashes.	
4. To get to the weekend timer setting press the green set button until the timer indicators and Saturday and Sunday flashes.	5. Adjust the hours you require by using the ^ and v buttons. Immediately press the green set button again to get to the minutes and use the ^and v buttons to adjust the minutes.
6. Follow the same steps as above for timer 2, 3 and 4.	

12.5 Eliminating Timers

To Eliminate all timers, hold the green button in for 10 seconds

12.6 Element indicators

The element indicator shows the user when the element is switched on. When the element indicator is on, it means that the element is switched on.

When the element indicator is flashing, it means the water has reached the maximum temperature setting and the water will be allowed to cool down 6°C at which time the element switches back again.

12.7 AC BOOST

To switch the AC Power on press the yellow boost button

13 CONNECTIONG TO WI-FI

Step 1: Using your mobile phone, scan the QR code below or via Google Play or Apple iStore search for the app called 'Tuya' or smart Life - install the app

Step 2: Open the App and Create an account. Enter email address and then request a verification code and create your password.
Step 3: Activate Bluetooth on your phone.
Step 4: In settings on your phone ALLOW PERMISSIONS for the specific application.
Step 5: On Geyserwise display press the up button for 3-5 seconds the WIFI icon will flash in top right corner.
Step 6: Add device Tap "+" on the top right corner of the APP.
Step 7: Confirm your phone is connected to your Wi-Fi network to which the device will be added, enter your Wi-Fi password, and confirm. Note 2.4Ghz Wi-Fi networks ONLY.

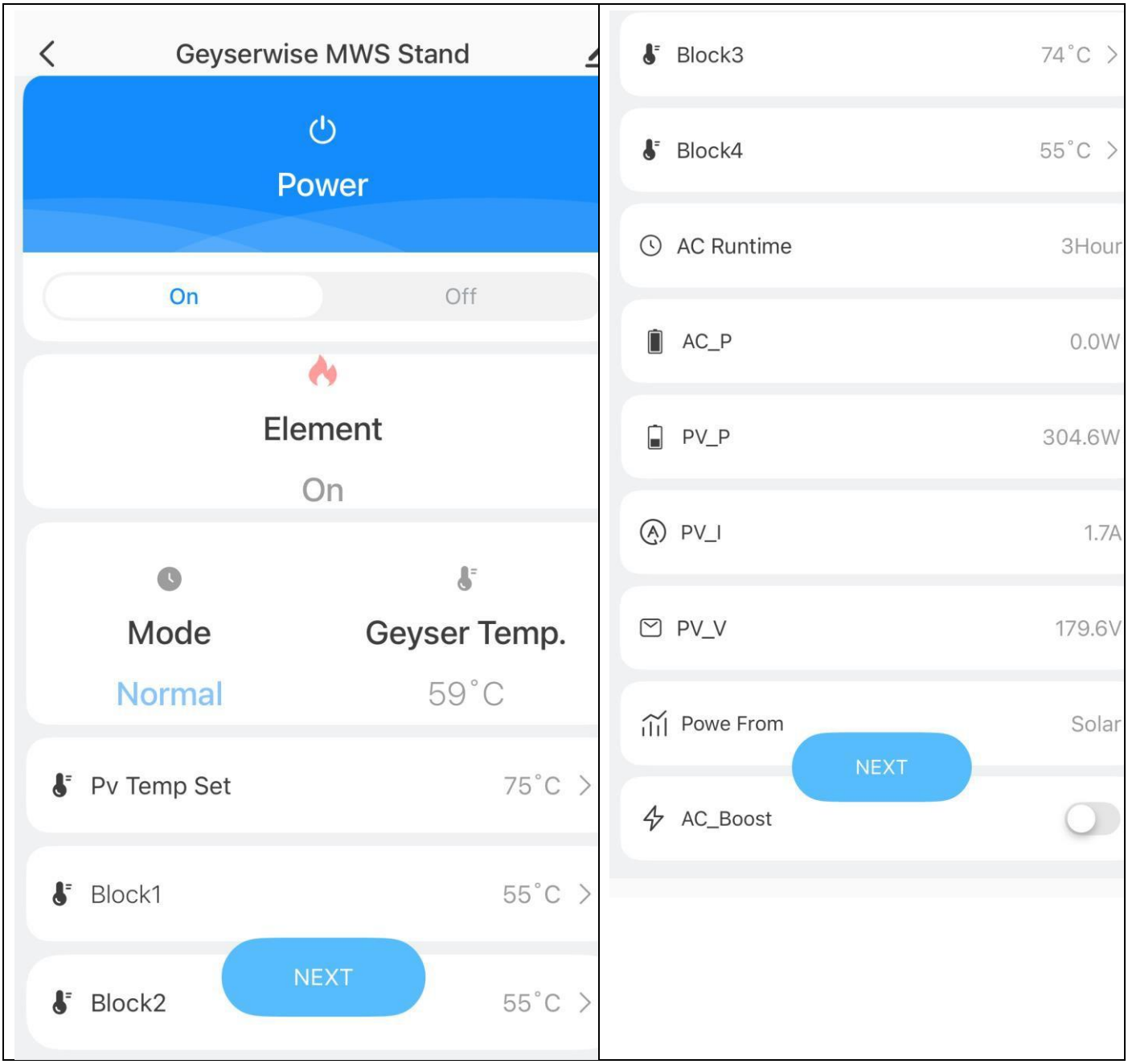
When connected the WIFI icon in the top right of display turns to a solid state the unit is connected.

The unit time will synchronize once a day from app.

13.1 HOME Screen

From the unit home screen, you can do the following: Changes made on the app will reflect on the display unit.

- manually switch the AC Boost on and off.
- Set the mode – Holiday or normal.
- View the Geyser temperature.
- View the element runtime hours. (Using Grid power)
- Set the required temperatures for the 4 different Blocks. (Using Grid power)
- Set the PV temperature. (Using Solar power)
- View AC Power in Watts
- View PV Power in Watts
- View PV Current
- View PV Voltage
- View Element power source – Solar or AC


Geyserwise MWS Stand
Power
On
Off
Element
On
Mode
Normal
Geyser Temp.
59˚C
Pv Temp Set
75˚C
Block1
55˚C
Block2
55˚C
NEXT
Block3
74˚C
Block4
55˚C
AC Runtime
3Hour
AC_P
0.0W
PV_P
304.6W
PV_I
1.7A
PV_V
179.6V
Powe From
Solar
NEXT
AC_Boost

13.2 Understanding Timer settings

Timers set on the display unit will not automatically transfer to the app.

Say for example you had a timer set to go on at 03:00 and off at 06:00 but you had load shedding from 02:00 to 04:00 the element will switch on at 04:00 if the timers were set from the display unit.

The default power source is PV when available. If a timer is set on the display unit, the controller will use Grid power for the duration of the timer and only switch back to PV (if available) once the off timer is activated.

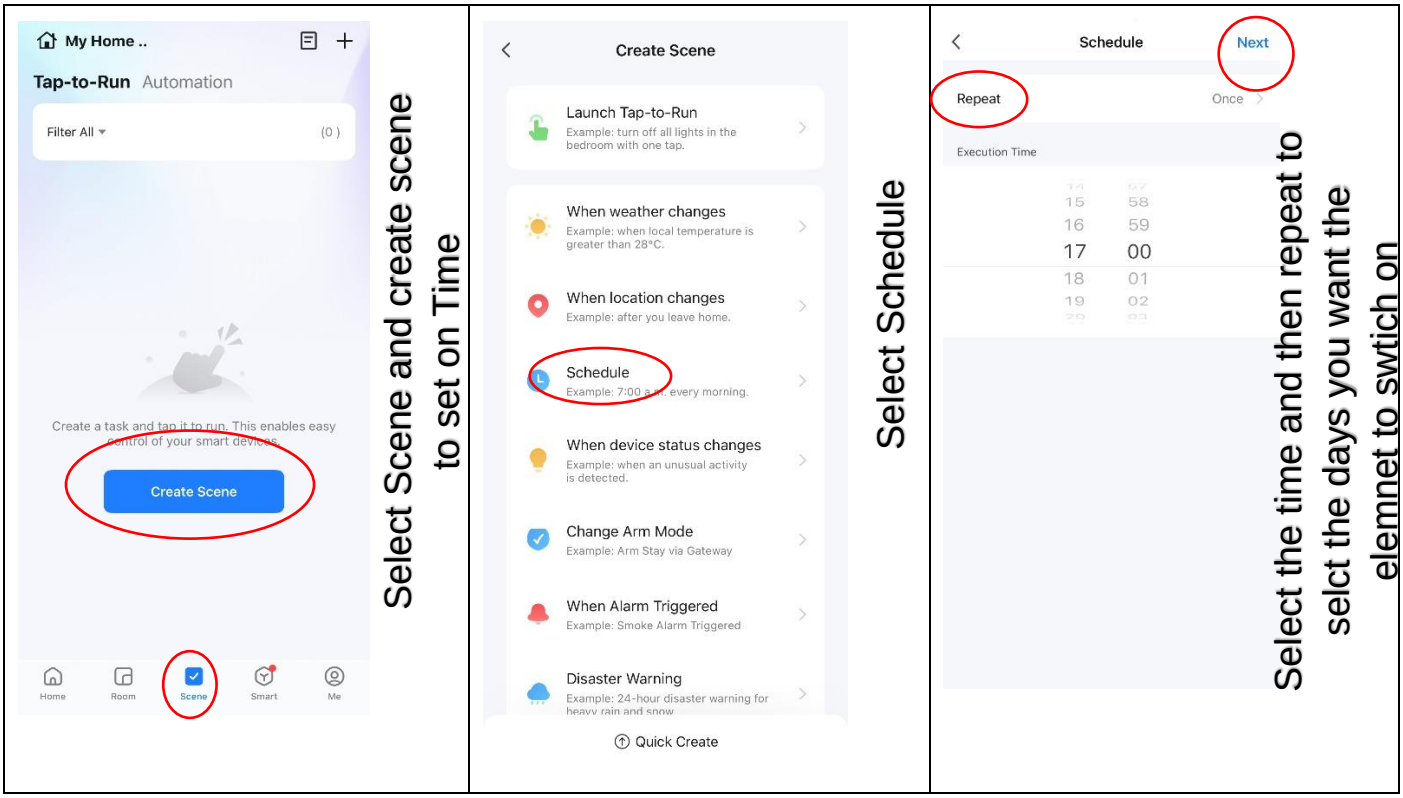
If these same timers were set from the app (with no timers set on the display) with the unit being off due to load shedding the element will not switch on once the power comes on because the unit would not have received the command (due to being off-line).

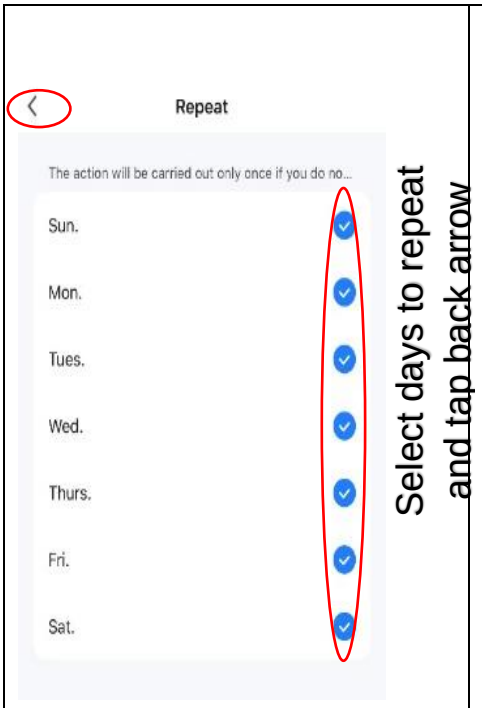
a. All schedule or timer settings will remain in the cloud and not show on display.
b. To eliminate time settings on display press and hold the “SET” button for 10 seconds.

Back up timers can be set on the display in the event of WI-FI failure or unavailability.

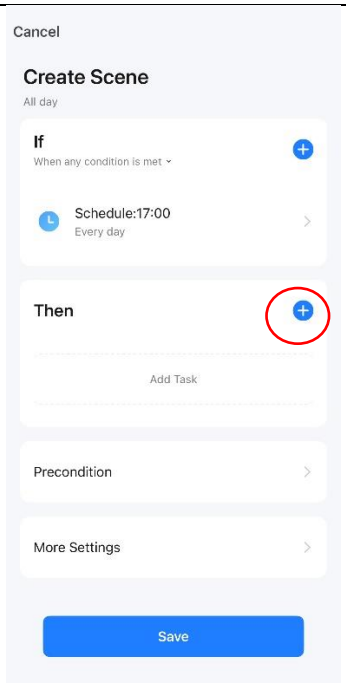
13.3 Setting Timers on the APP

Go to Scene on the Tuya or Smart Life Apps and set your timers there. Below example to switch the element on from Grid power every day of the week at 17:00 (only if the water temperature is below 55°C and switch the element off when the Geyser temperature is above 55°C.

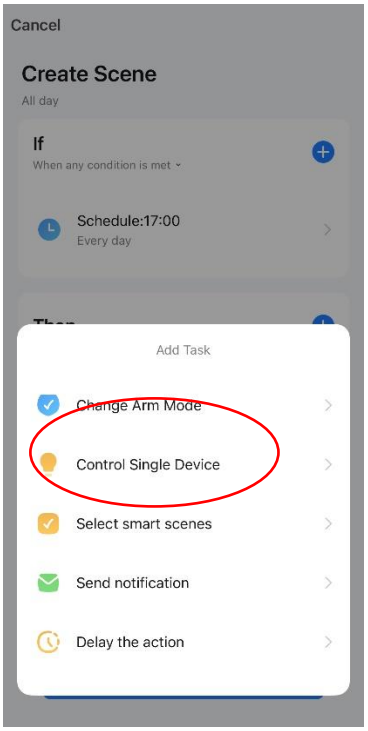




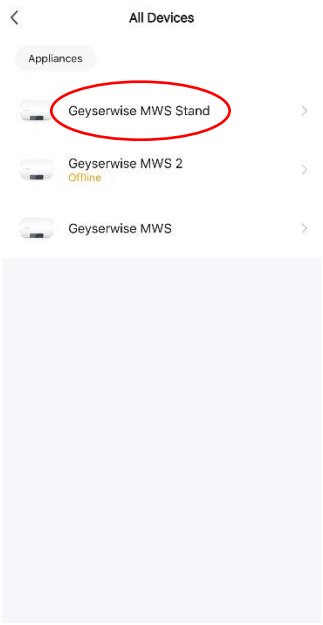
Select days to repeat and tap back arrow



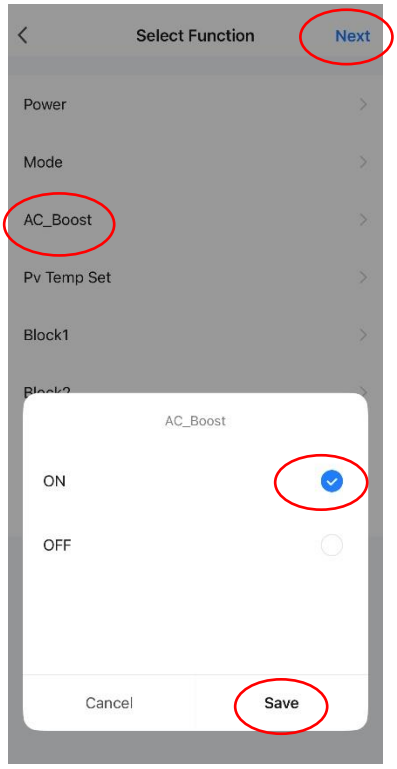
Select Plus



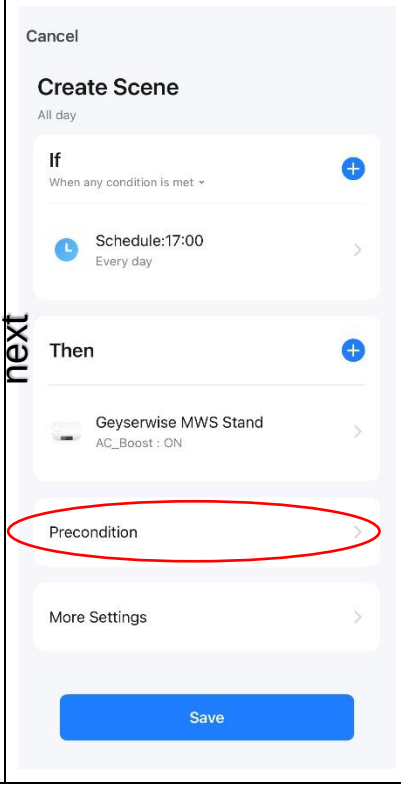
Select Control Single Device



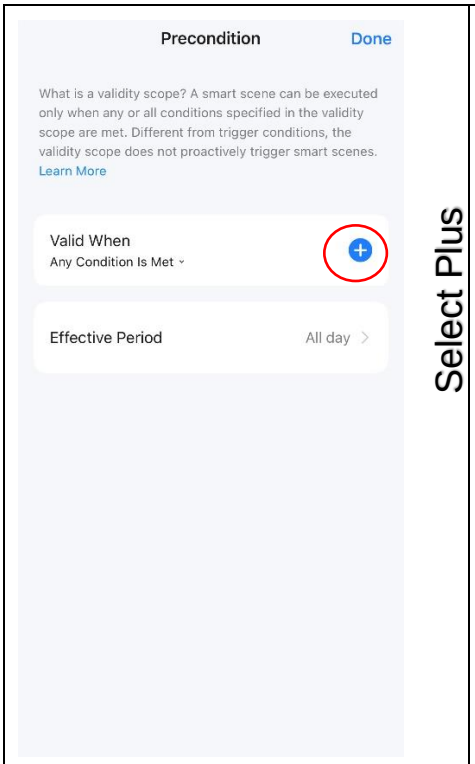
Select your device



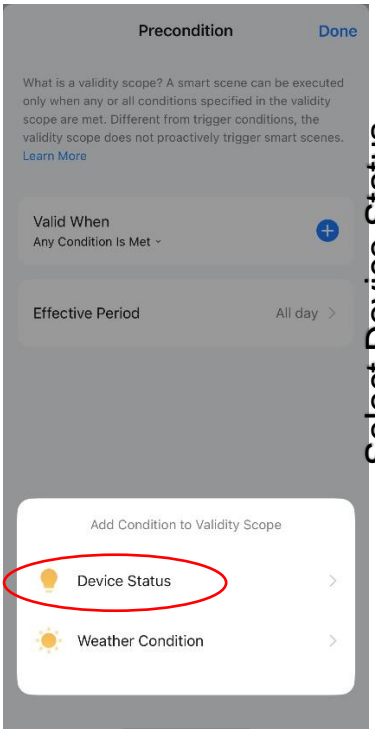
Select AC Boost, ON , save, then next



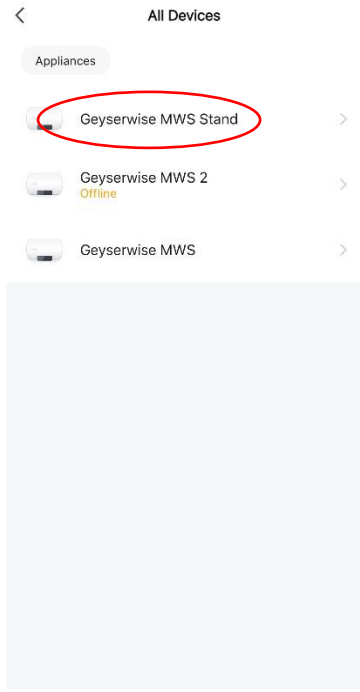
Set Precondition



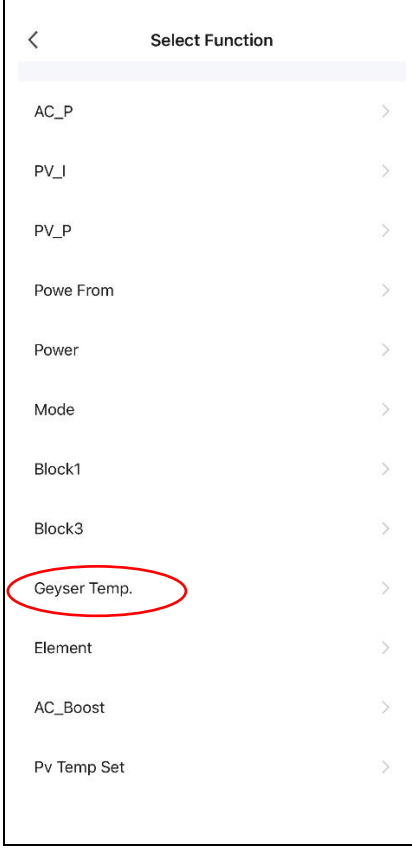
Select Plus



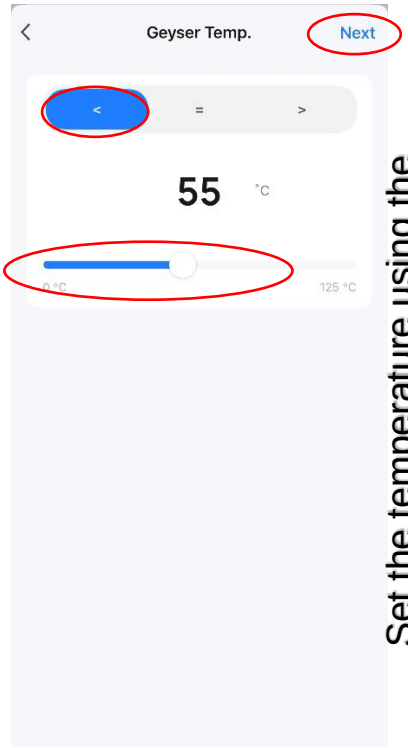
Select Device Status



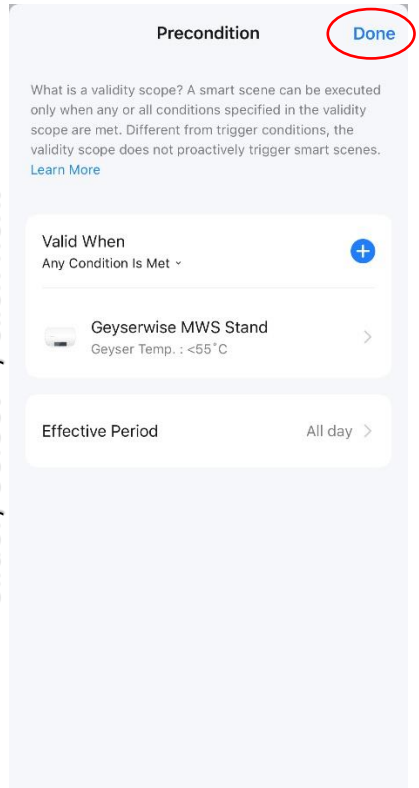
Select your device



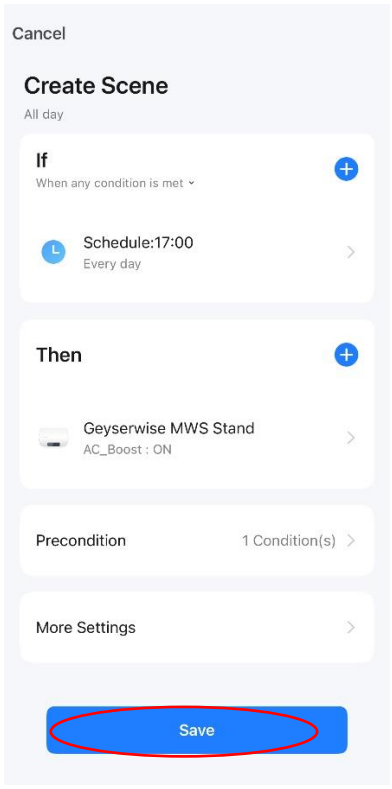
Select Geyser temp

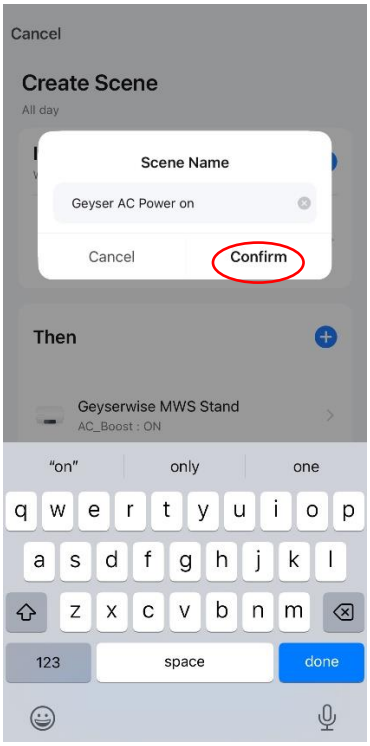


Set the temperature using the slider, select <, click next

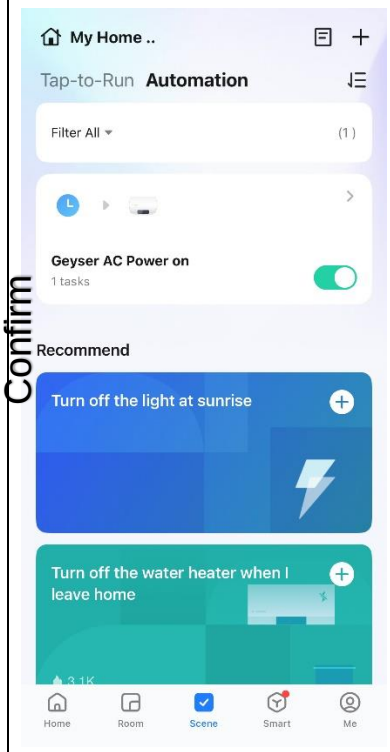


Select Done

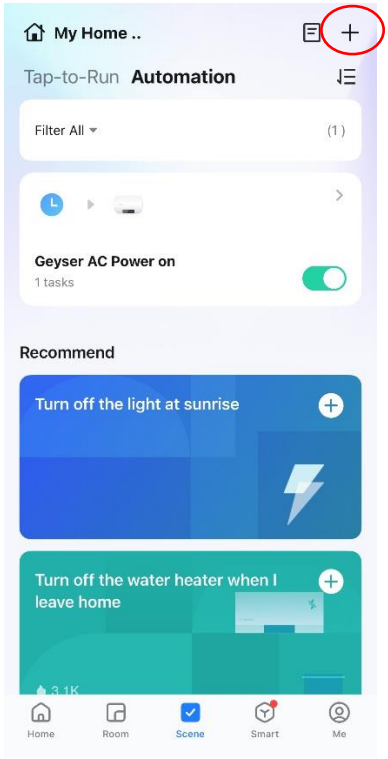




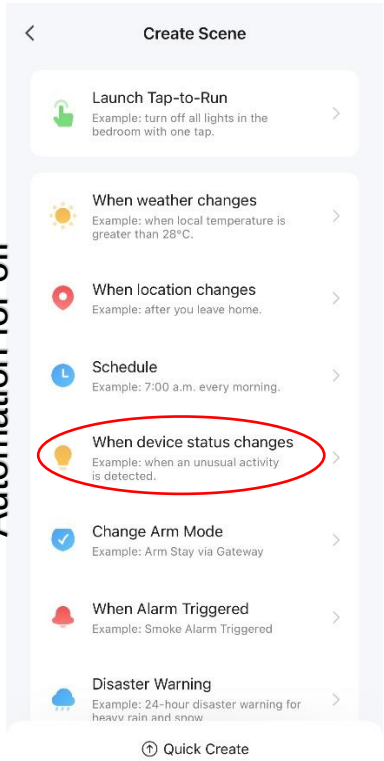
Enter Scene Name and Confirm



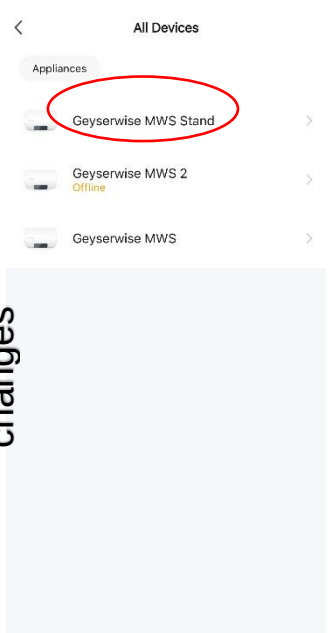
Once confirmed it will look like this



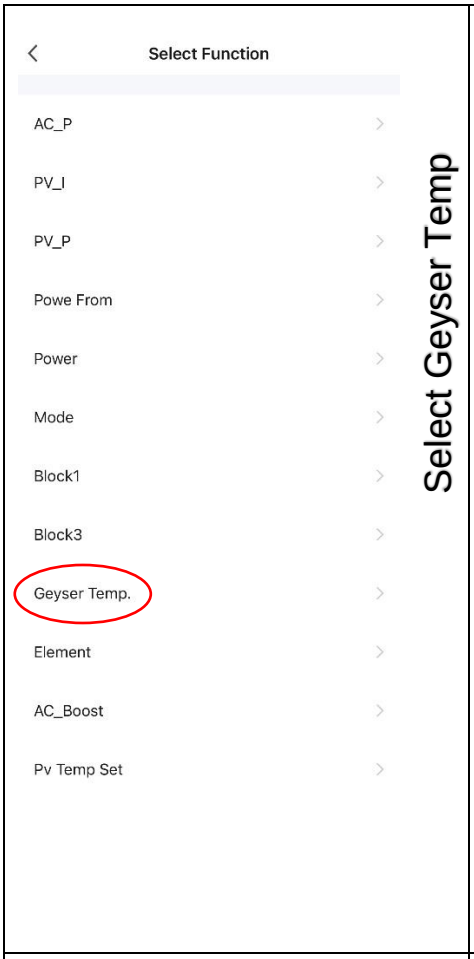
Select Plus to add Automation for off



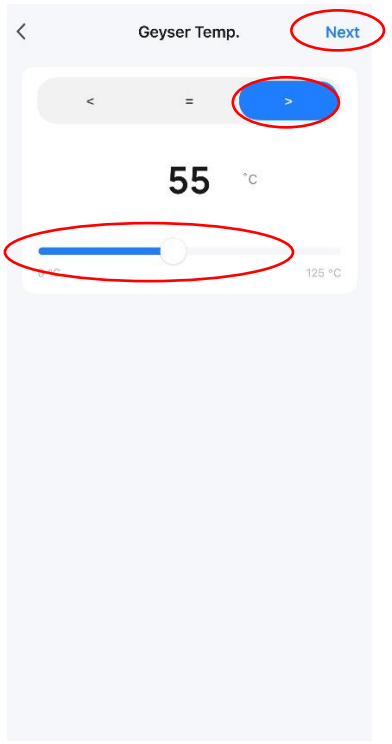
Select When device status changes



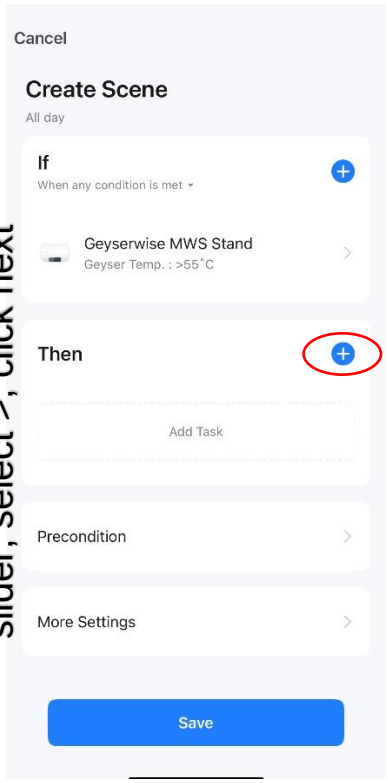
Select your device



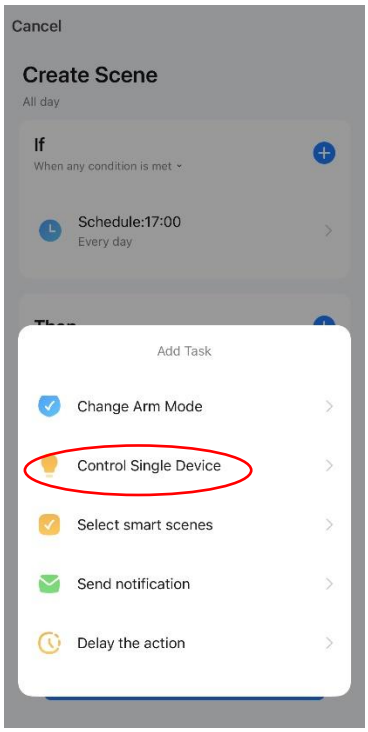
Select Geyser Temp

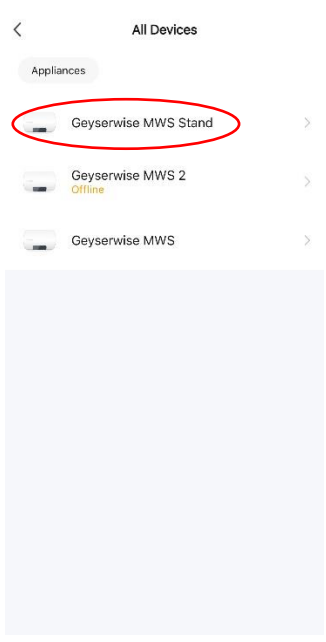


Set the temperature using the slider, select >, click next

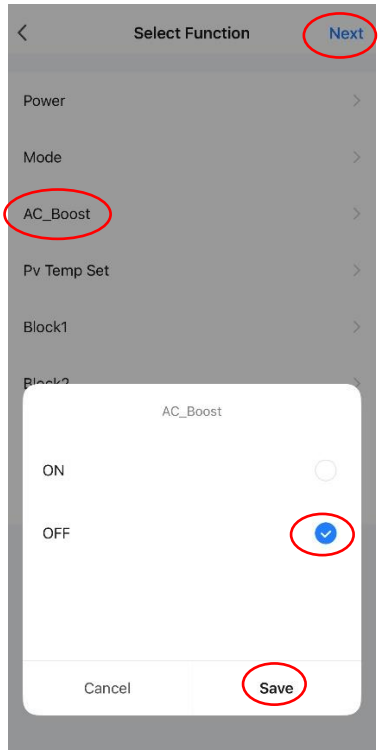


Select Plus

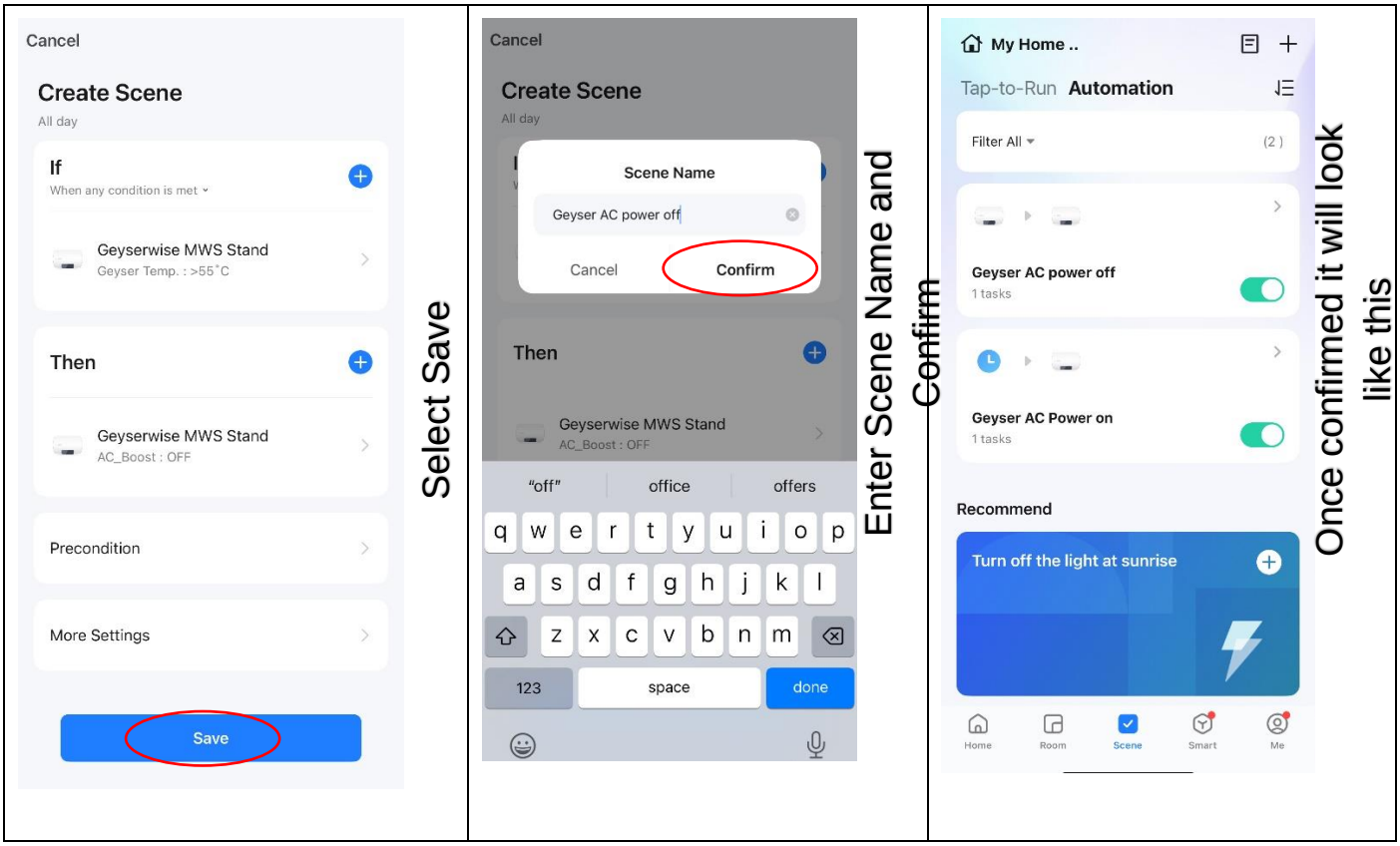


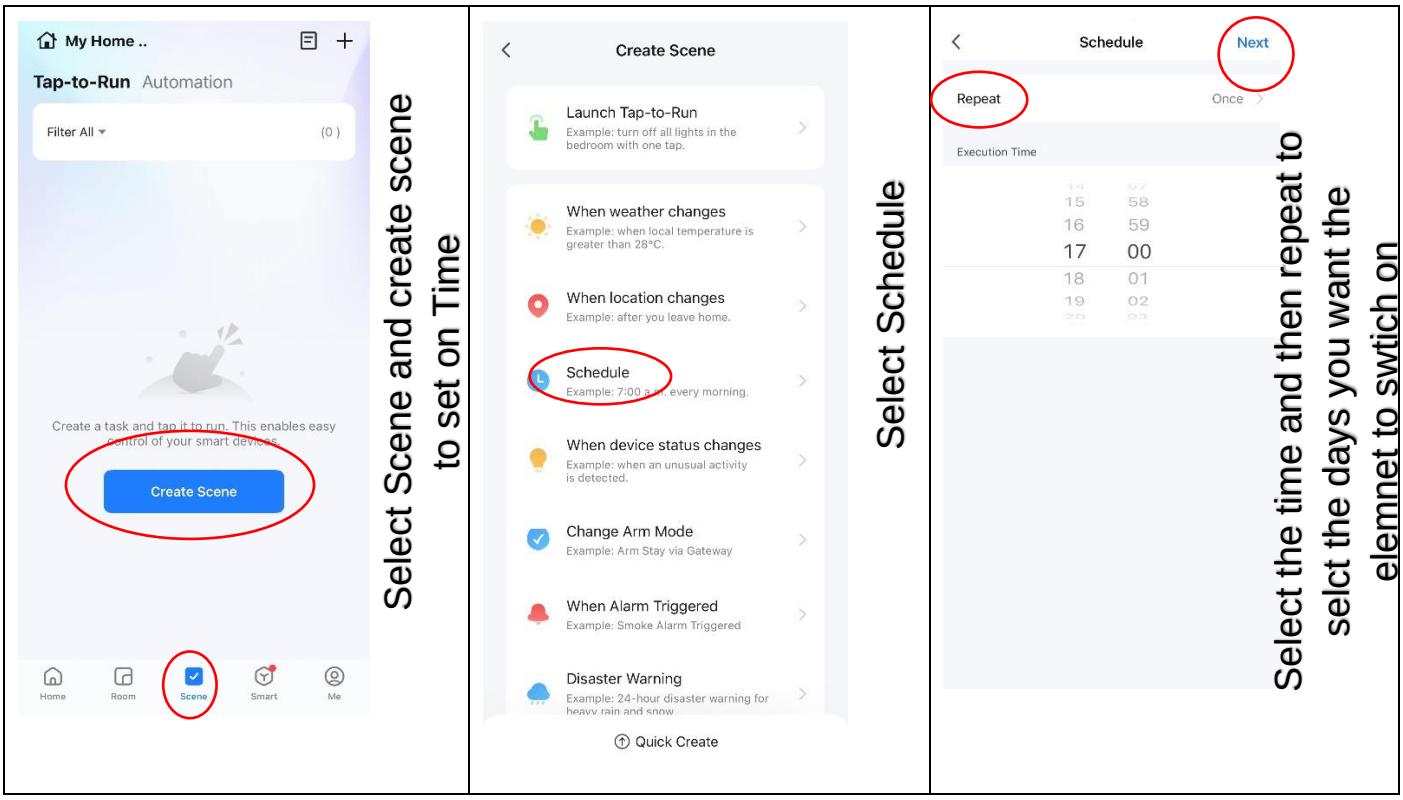


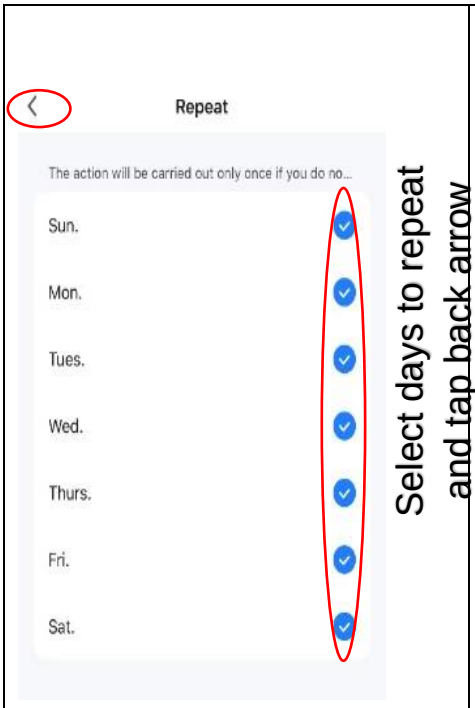
Select your device



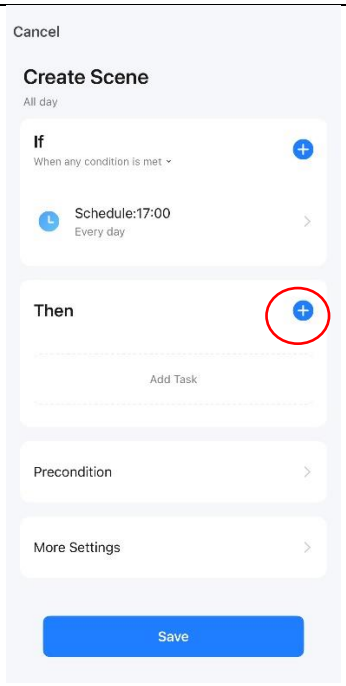
Select AC Boost, OFF , save, then next


Cancel
Create Scene
All day
If
When any condition is met
Geyserwise MWS Stand
Geyser Temp. : >55°C
Then
Geyserwise MWS Stand
AC_Boost : OFF
Precondition
More Settings
Save
Select Save
Cancel
Create Scene
All day
Scene Name
Geyser AC power off
Cancel
Confirm
Then
Geyserwise MWS Stand
AC_Boost : OFF
"off"
office
offers
Enter Scene Name and Confirm
My Home ..
Tap-to-Run Automation
Filter All
(2)
Geyser AC power off
1 tasks
Geyser AC Power on
1 tasks
Recommend
Turn off the light at sunrise
Home
Room
Scene
Smart
Me
Once confirmed it will look like this

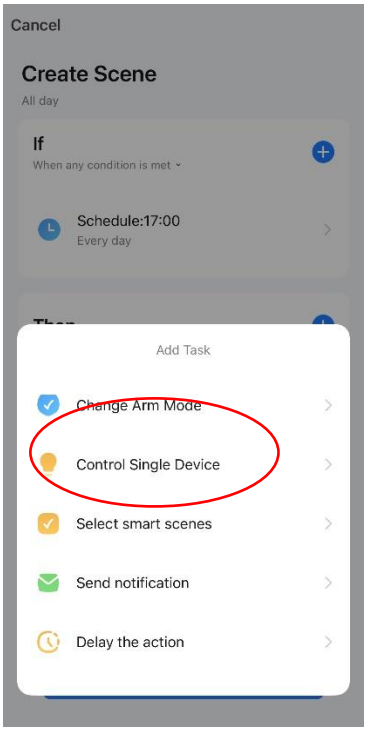

My Home ..
Tap-to-Run Automation
Filter All
(0)
Create a task and tap it to run. This enables easy control of your smart devices.
Create Scene
Home
Room
Scene
Smart
Me
Select Scene and create scene to set on Time
Create Scene
Launch Tap-to-Run
Example: turn off all lights in the bedroom with one tap.
When weather changes
Example: when local temperature is greater than 28°C.
When location changes
Example: after you leave home.
Schedule
Example: 7:00 a.m. every morning.
When device status changes
Example: when an unusual activity is detected.
Change Arm Mode
Example: Arm Stay via Gateway
When Alarm Triggered
Example: Smoke Alarm Triggered
Disaster Warning
Example: 24-hour disaster warning for heavy rain and snow
Quick Create
Select Schedule
Schedule
Next
Repeat
Once
Execution Time
15 58
16 59
17 00
18 01
19 02
Select the time and then repeat to selct the days you want the elemnet to swtich on



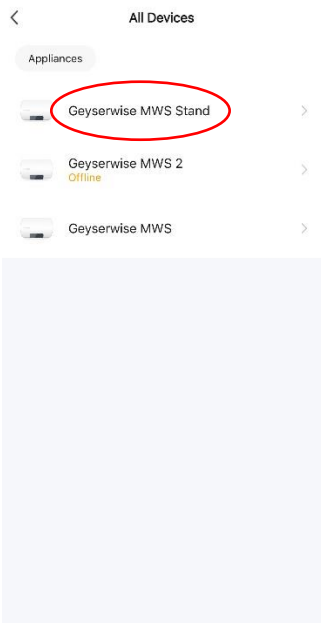
Select days to repeat and tap back arrow



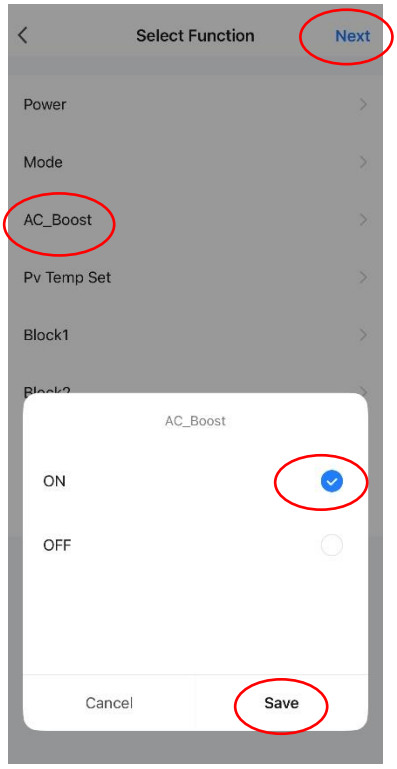
Select Plus



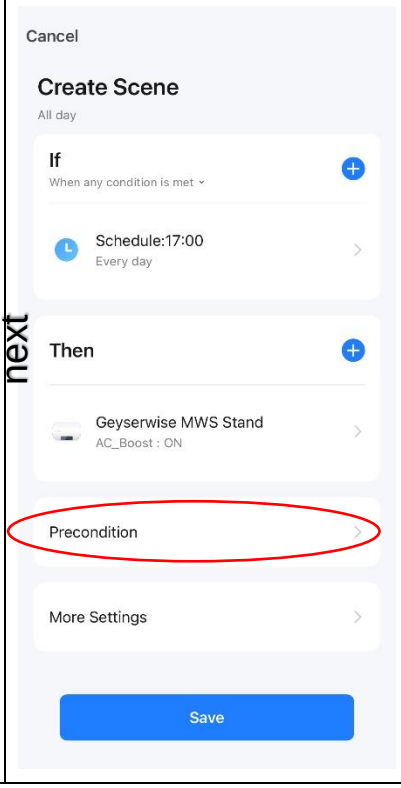
Select Control Single Device



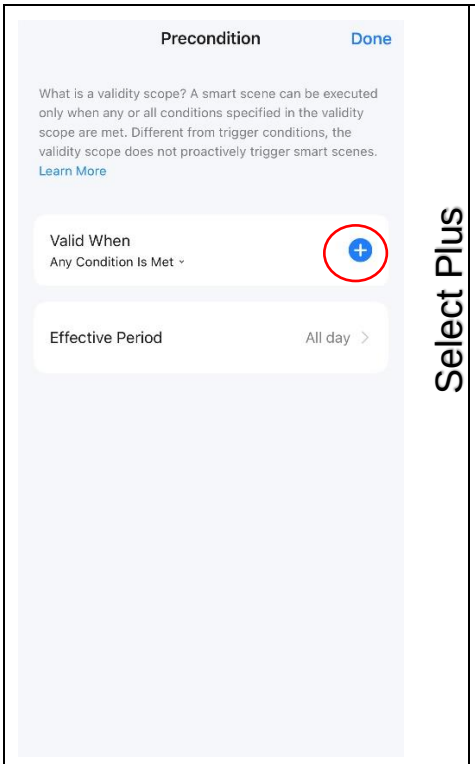
Select your device



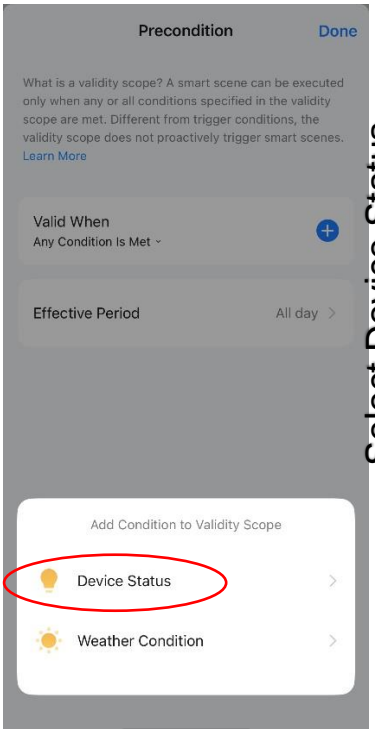
Select AC Boost, ON , save, then next



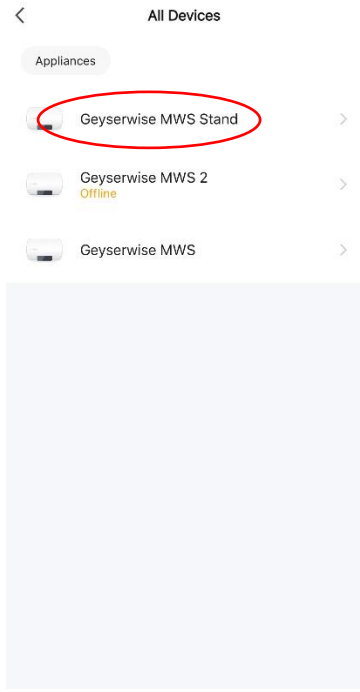
Set Precondition



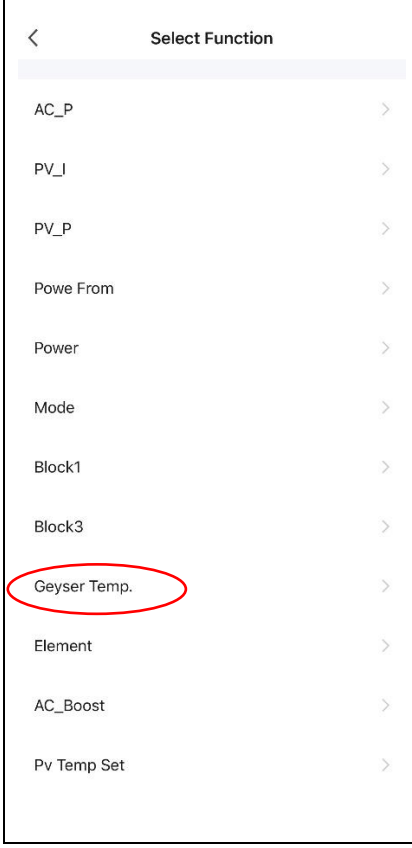
Select Plus



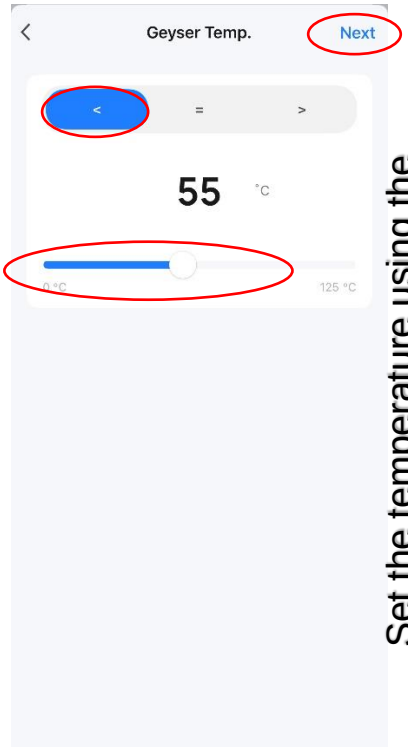
Select Device Status



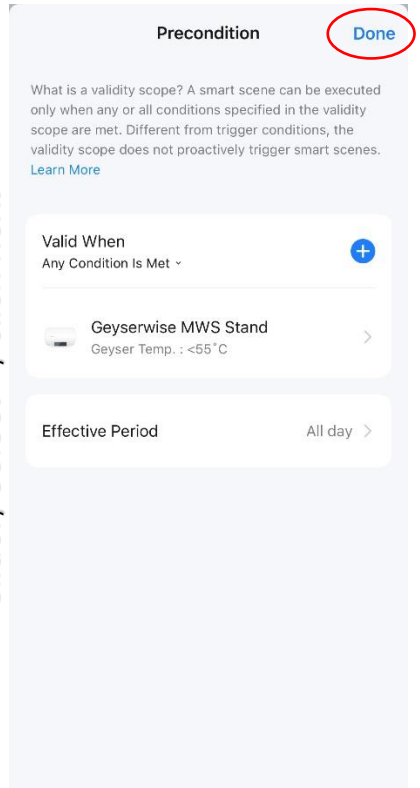
Select your device



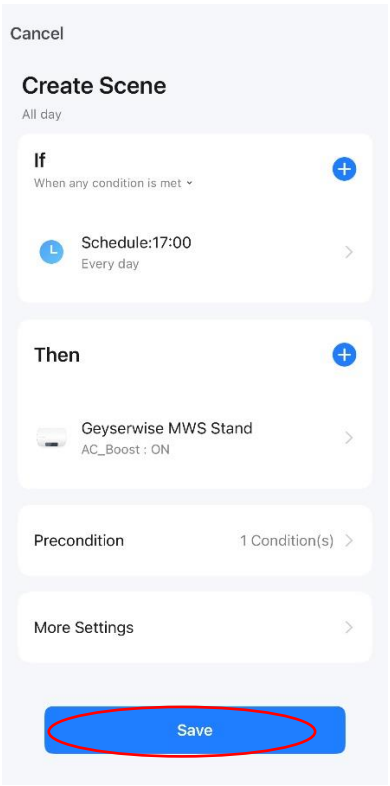
Select Geyser temp

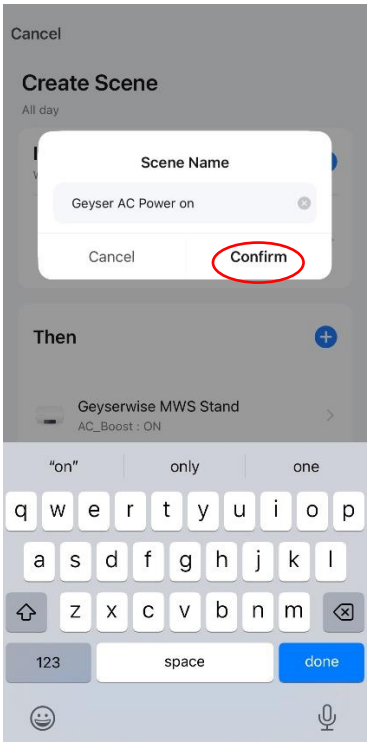


Set the temperature using the slider, select <, click next

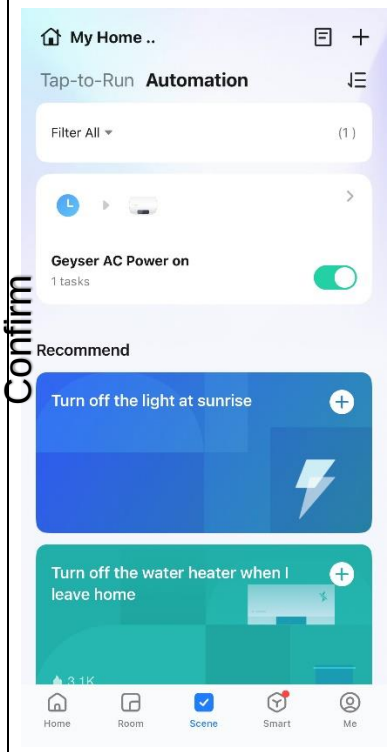


Select Done

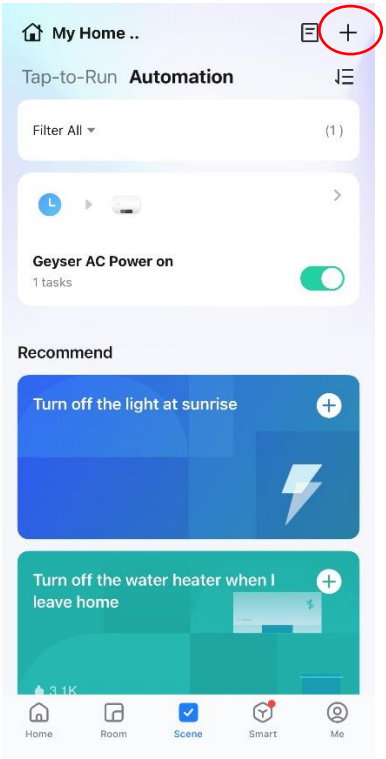




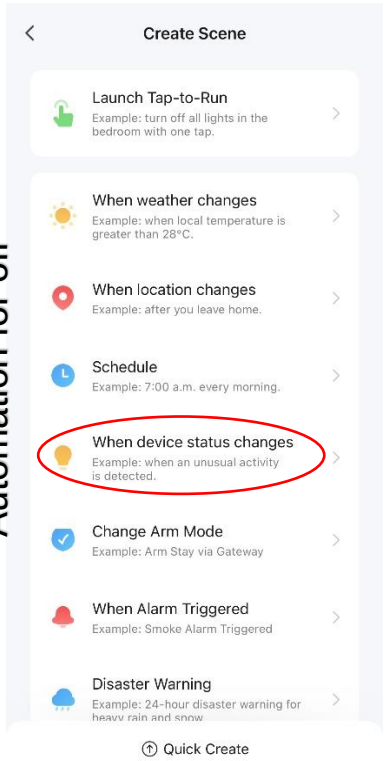
Enter Scene Name and Confirm



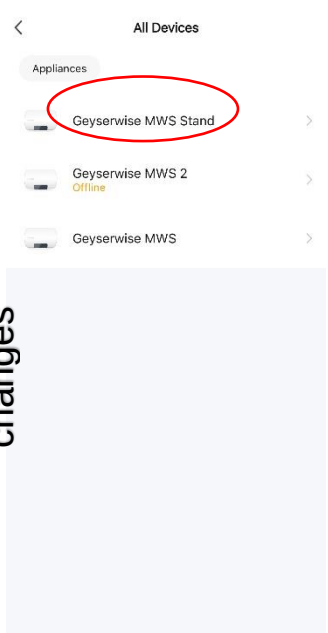
Once confirmed it will look like this



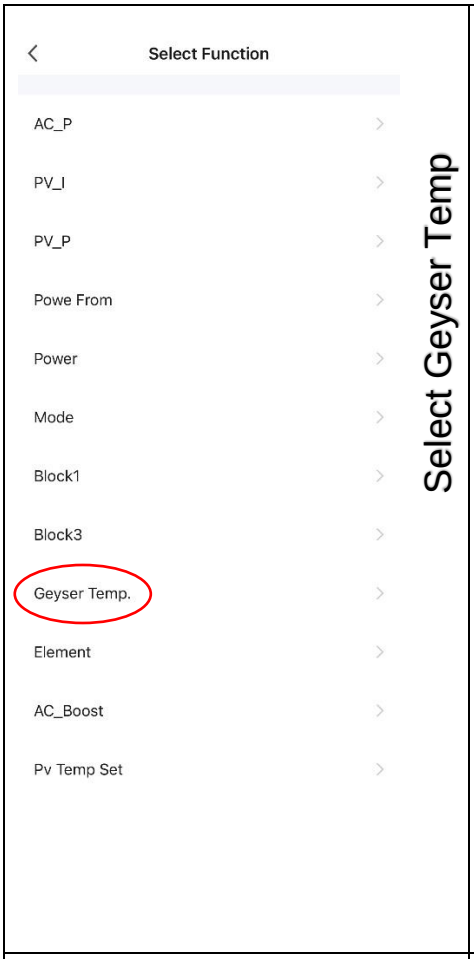
Select Plus to add Automation for off



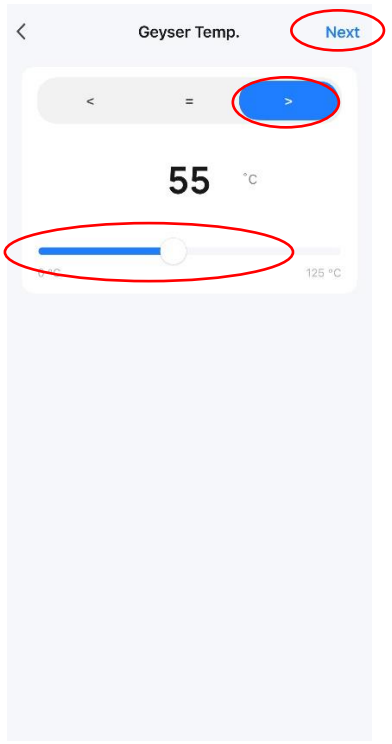
Select When device status changes



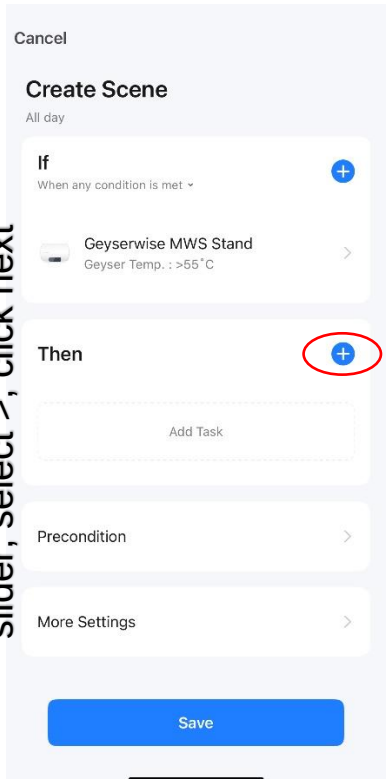
Select your device



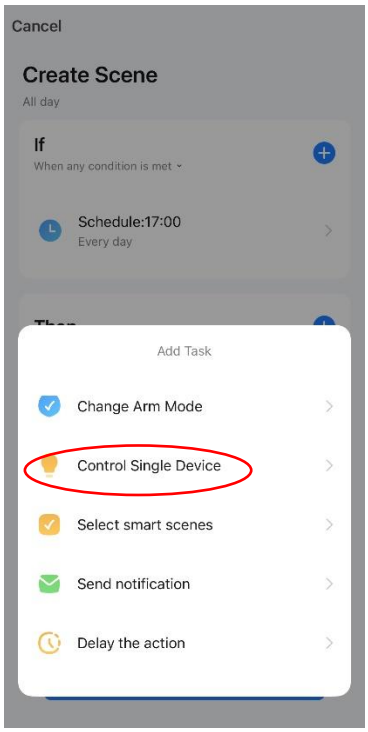
Select Geyser Temp

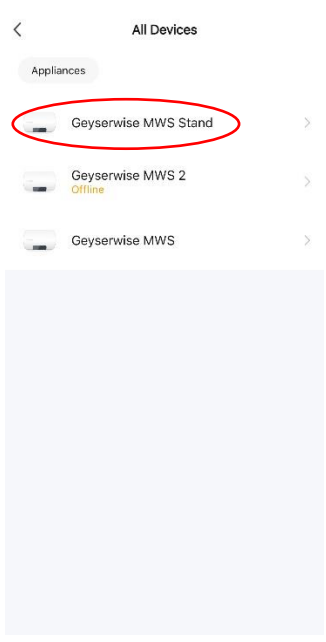


Set the temperature using the slider, select >, click next

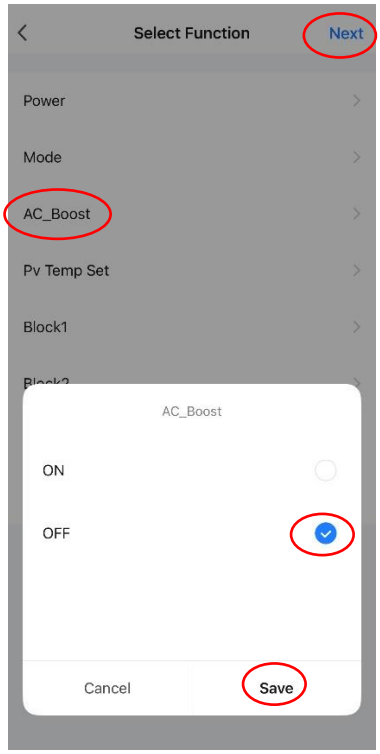


Select Plus

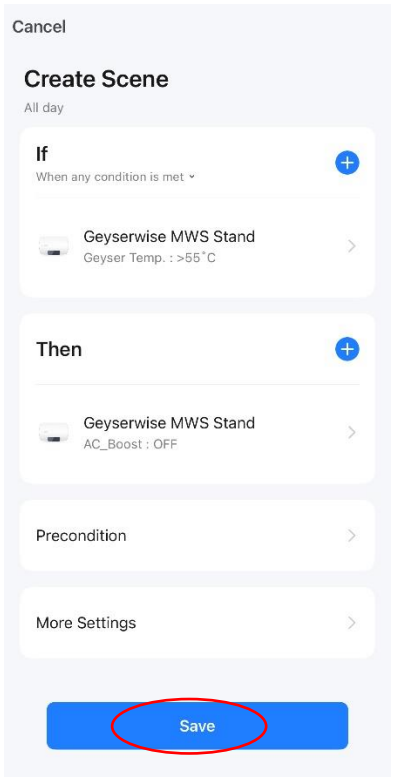




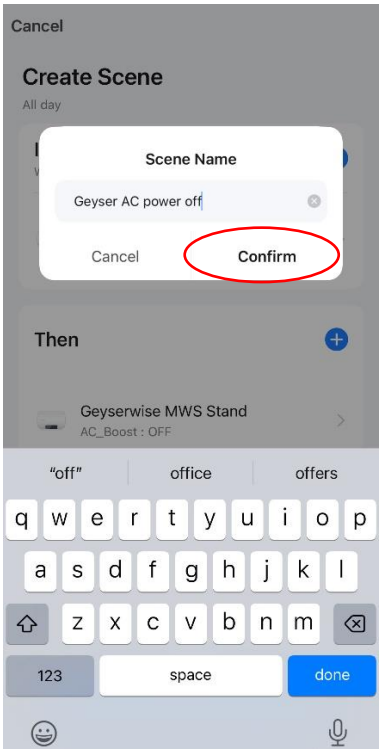
Select your device



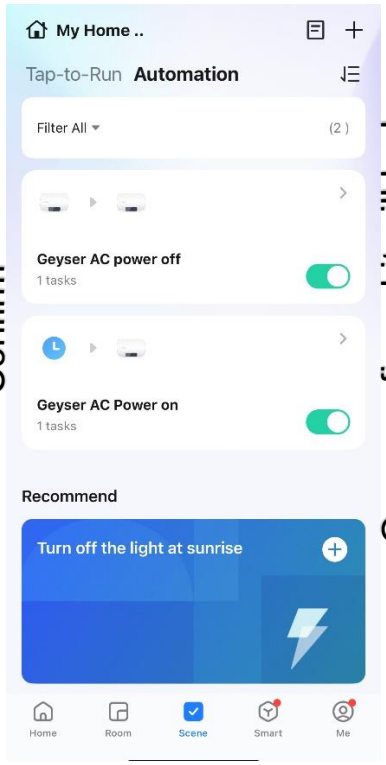
Select AC Boost, OFF , save, then next



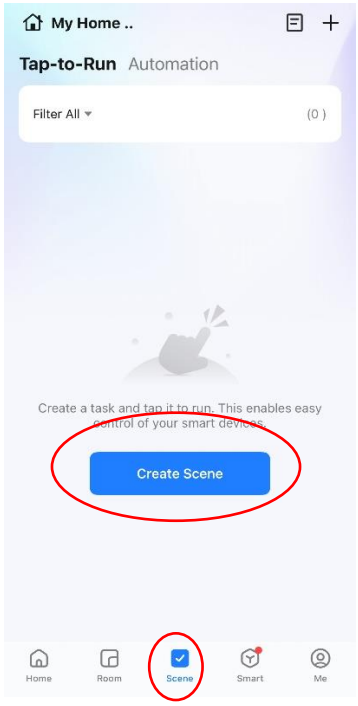
Select Save



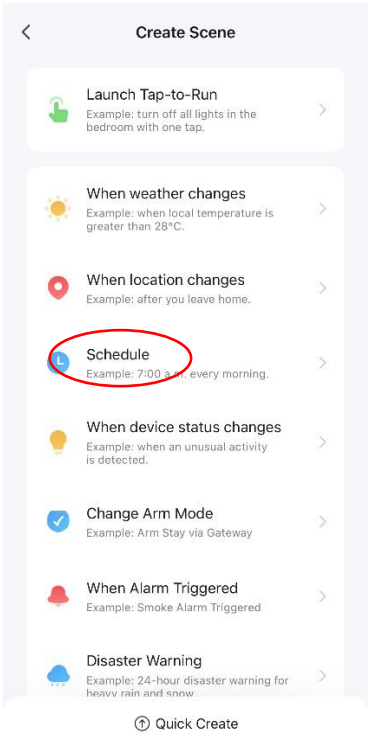
Enter Scene Name and Confirm



Once confirmed it will look like this

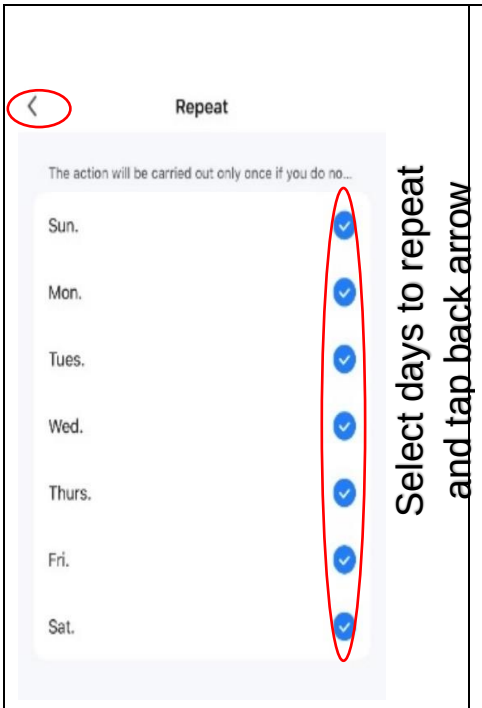


Select Scene and create scene to set on Time

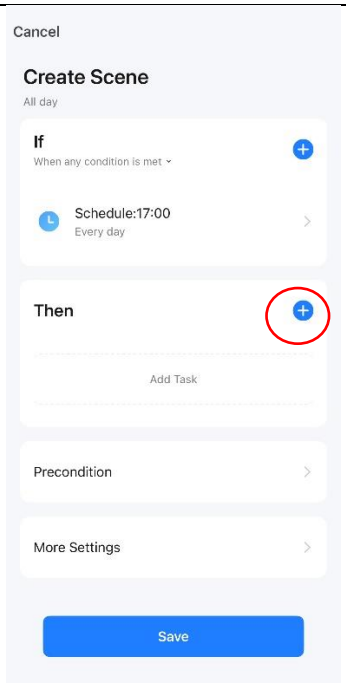


Select Schedule

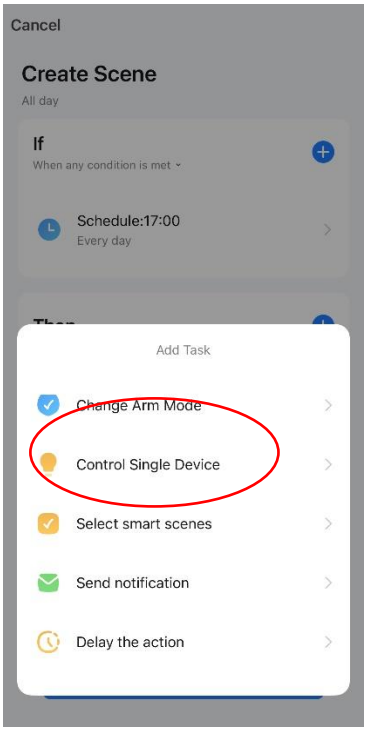
Select the time and then repeat to selct the days you want the elemnet to swtich on



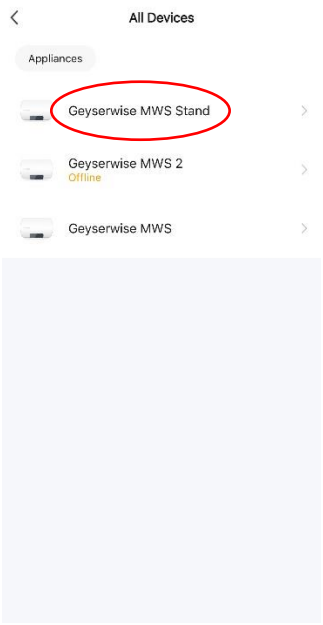
Select days to repeat and tap back arrow



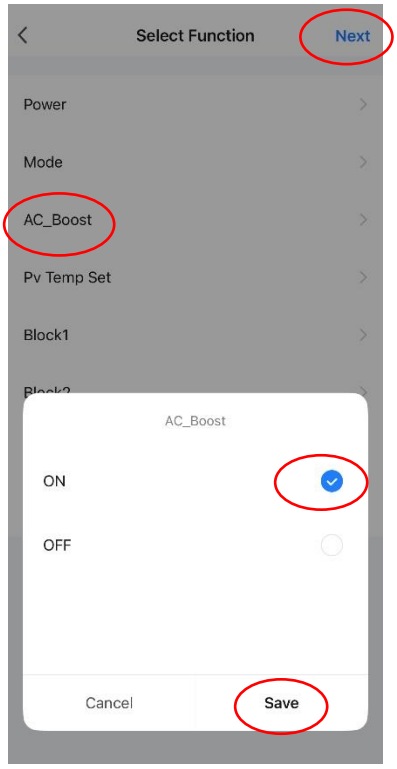
Select Plus



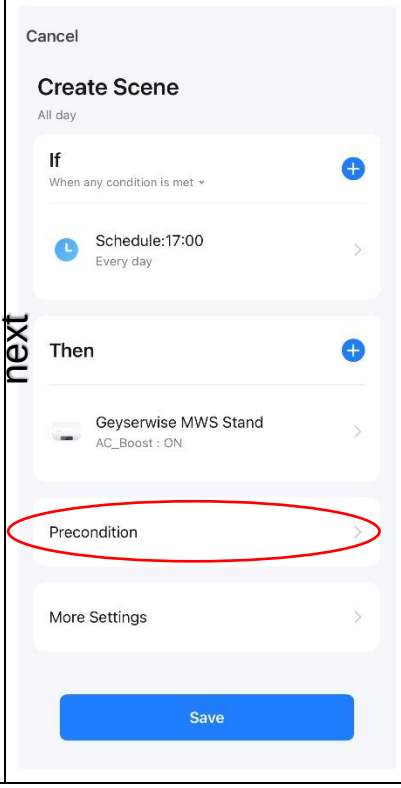
Select Control Single Device



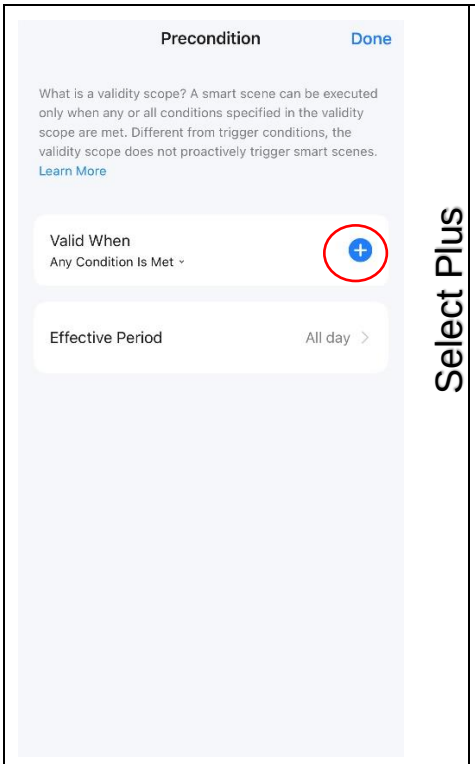
Select your device



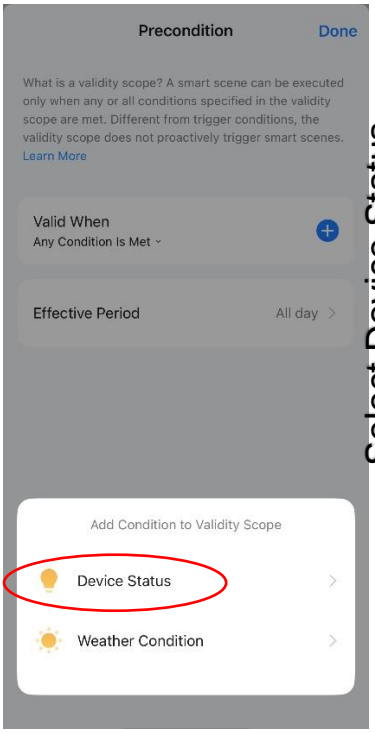
Select AC Boost, ON , save, then next



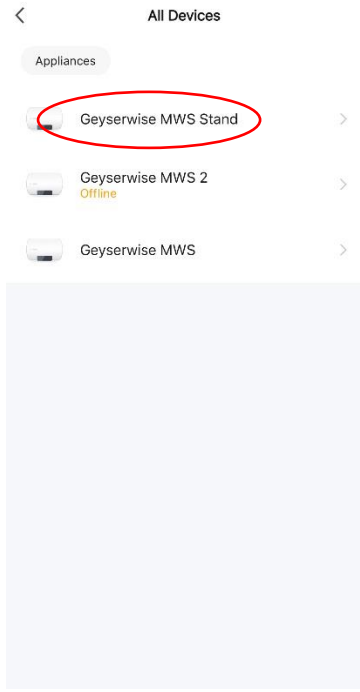
Set Precondition



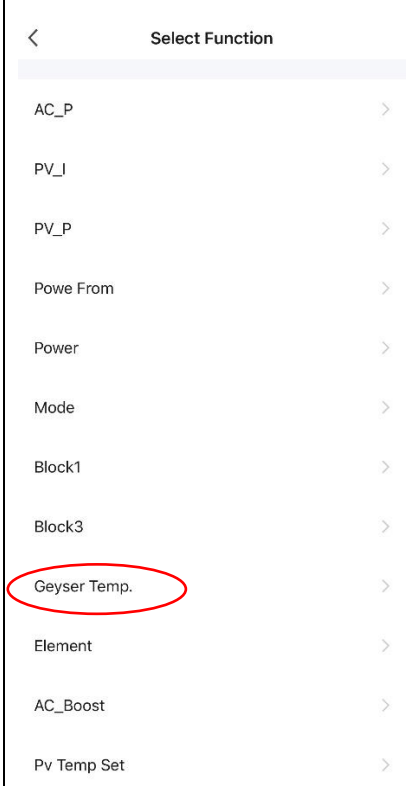
Select Plus



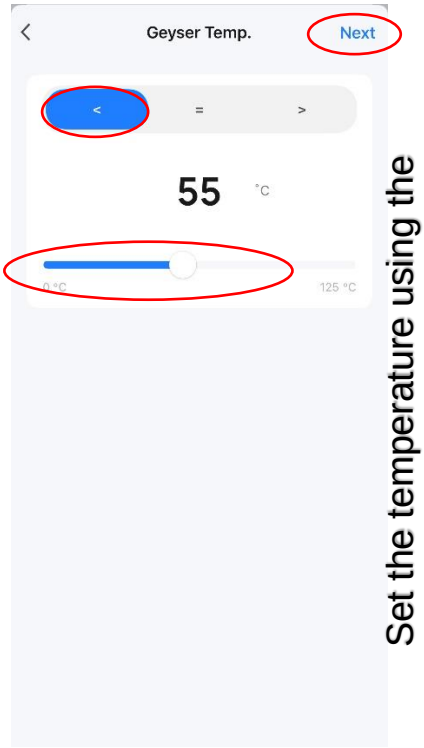
Select Device Status



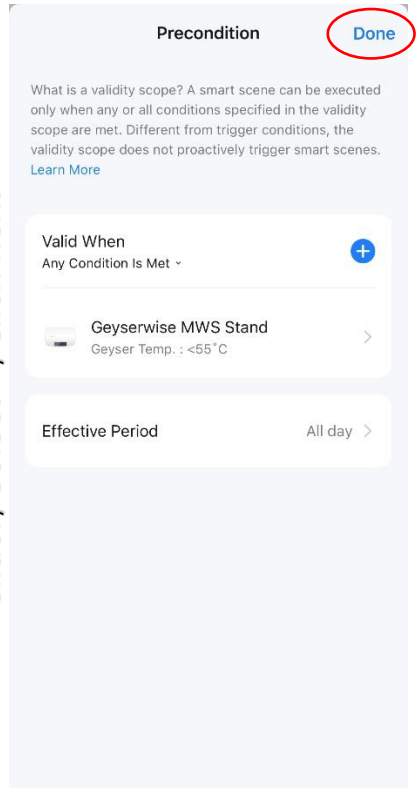
Select your device



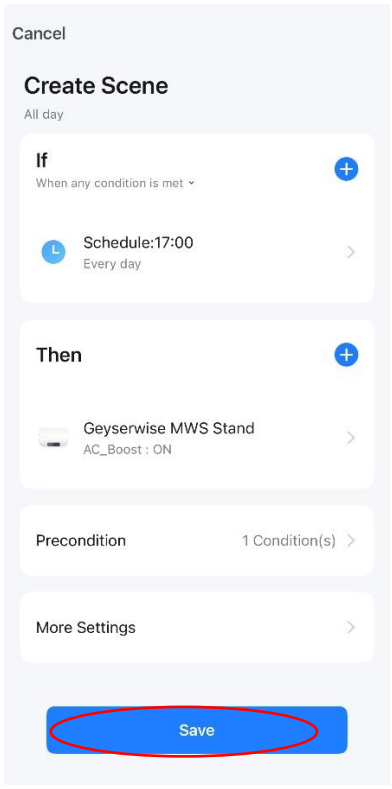
Select Geyser temp

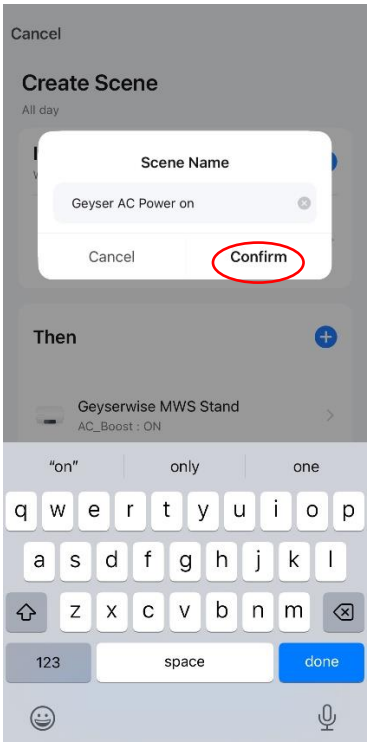


Set the temperature using the slider, select <, click next

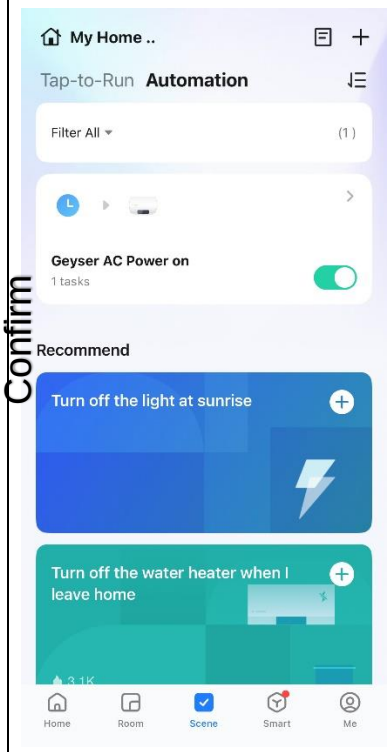


Select Done

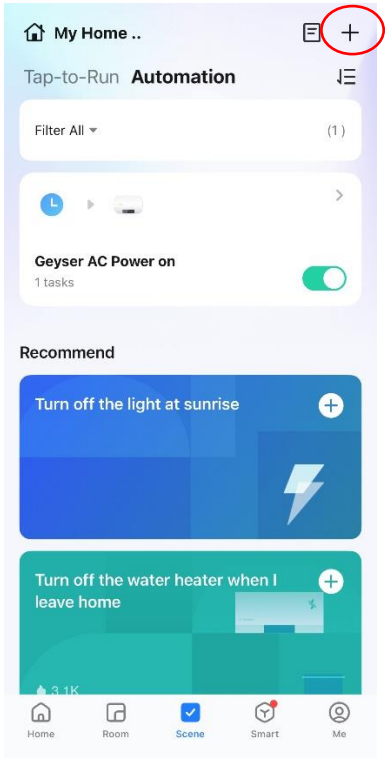




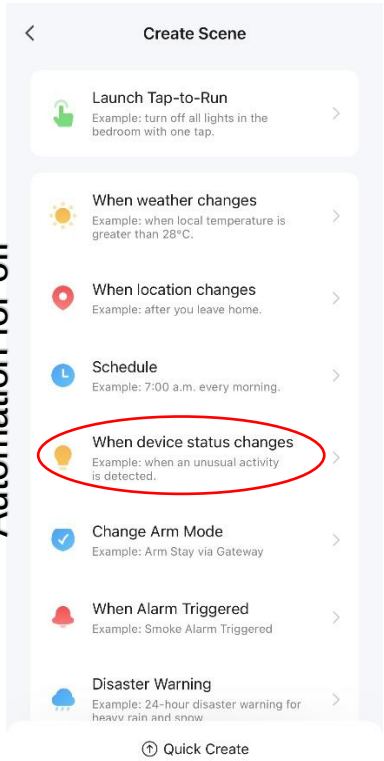
Enter Scene Name and Confirm



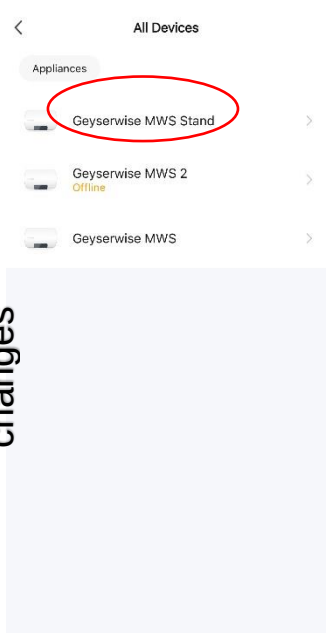
Once confirmed it will look like this



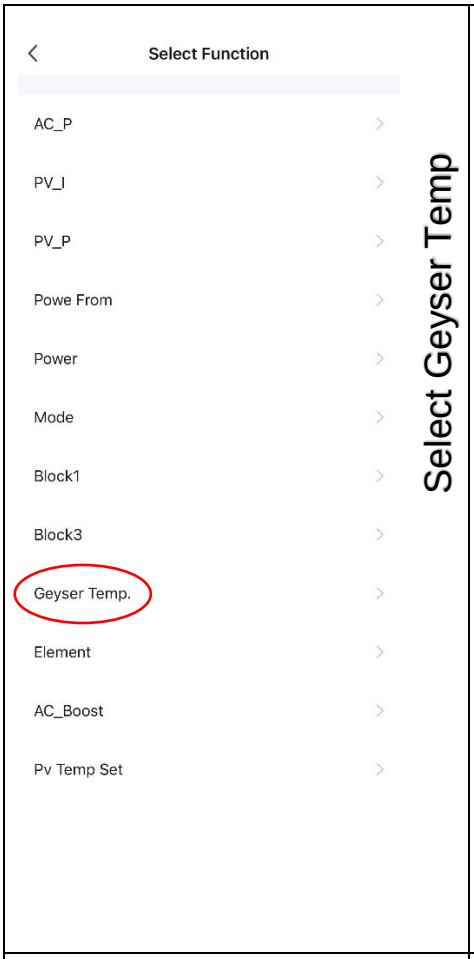
Select Plus to add Automation for off



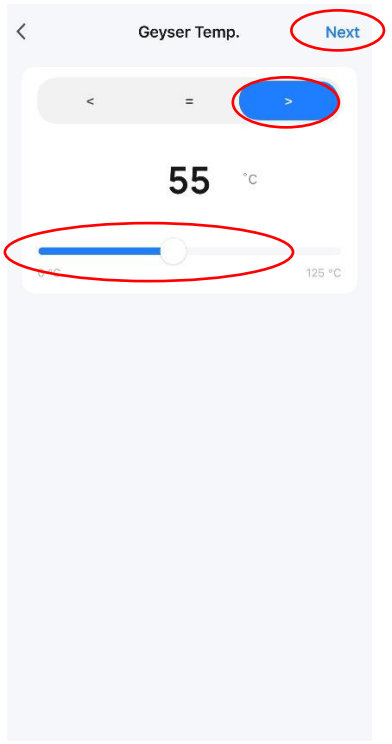
Select When device status changes



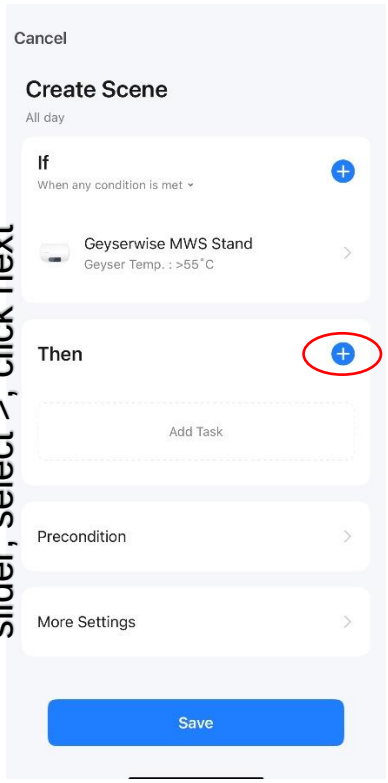
Select your device



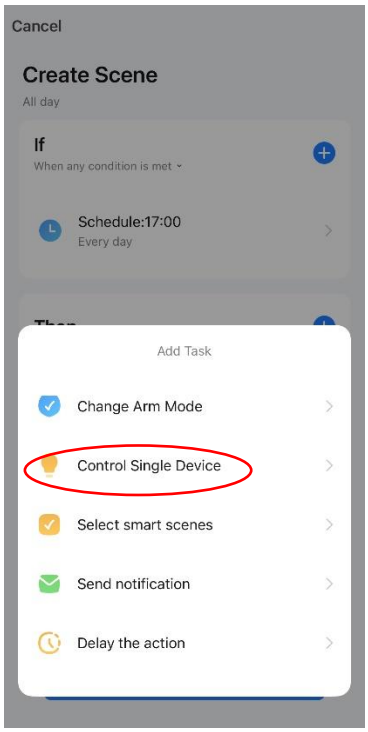
Select Geyser Temp

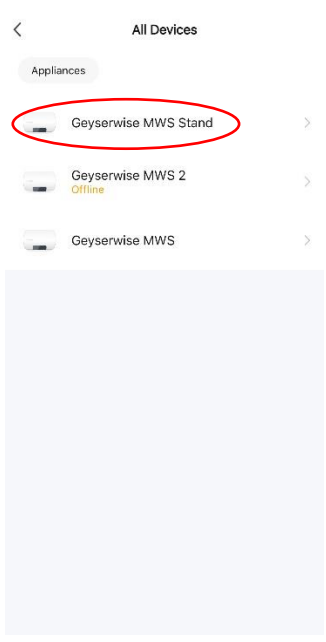


Set the temperature using the slider, select >, click next

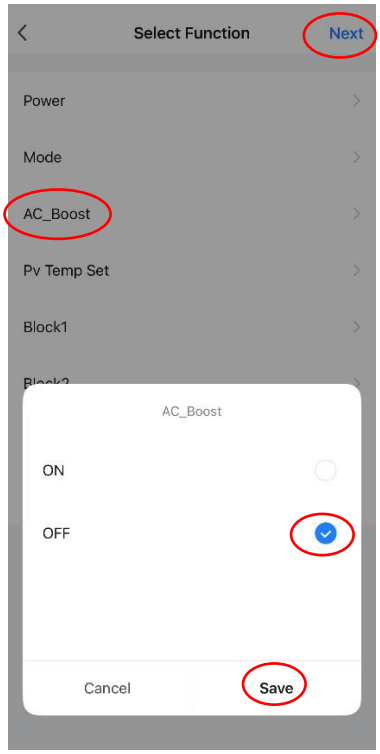


Select Plus

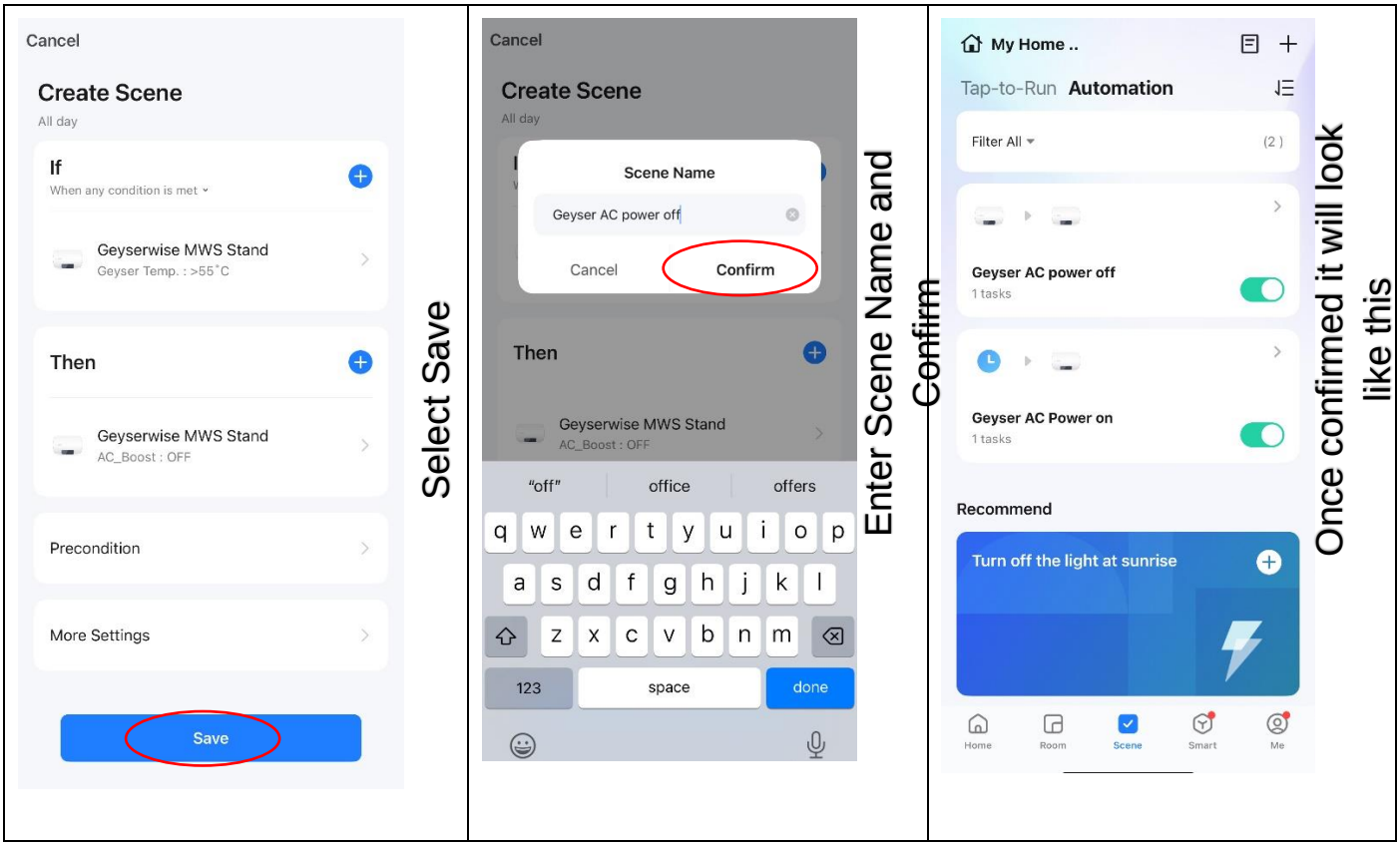




Select your device



Select AC Boost, OFF , save, then next



14 ERROR Codes

14.1 Error code: E2 -Dry burn protection

Possible cause:
Empty cylinder
Thermal pocket too close to element
Action(s):
Check all water connections to the geyser

Please note that the geyser element will not work during an E2 error code. First try to reset the unit by switching the geyser off at the DB board and then switching it back on after 3 seconds. If the error persists, follow the steps below.
Possible cause
Empty cylinder due to:
• Geyser is empty due to work on main water supply.
• The thermal pocket too close to the element.

Remedial action
• Make sure there is water in the geyser by opening a hot water tap.
• If the geyser does have water in it, get a technician to check the thermal pocket is pulled away from the element (DO NOT DO THIS YOURSELF).
• Note that a red copper element could suffer damages in case the tank is empty.

14.2 Error code: E3 - Sensor failure water geyser

Possible cause:
The sensor could be damaged or there is a connection problem
Action(s):
Replace sensor
Check electrical connections and/or plug in control unit

Please note that the geyser element will not work during an E3 error code. First try to reset the unit by switching the geyser off at the DB board and then switching it back on after 3 seconds. If the error persists, follow the steps below.
Possible cause
The sensor to the geyser is damaged or not connected properly.

Remedial action
Get a technician to check the connector, wiring and geyser probe to ensure all wires are intact and connections made properly as per this instruction manual

14.3 Error code: E4 - Heating loss (Heating from Mains supply only).

Possible causes:
Leaking hot water pipe
Faulty valve
Scale build up
No power supply to the element
Reversed thermosiphoning
Faulty heating element
Action(s):
Check all of the above

An E4 error code occurs when the element is switched on and heats at a tempo of less than 4° in an hour- considerably less than what would be expected. This means that the element is not working to capacity or a heat loss is occurring somewhere. This could lead to using a lot more electricity than would be expected. The heat loss could occur for various reasons:
• No power supply to element.
• Element failure.
• Leaking hot water pipe.
• Pipe work not installed correctly.

The E4 error code is based on the specific heat equation. How long should it take a body of water to be heated from one temperature to another higher temperature? For example:

If a 150 litre geyser filled with cold water (20°C, say) is switched on, how long will it take a 3kW element to heat the water to 65°C? The basic equation is:

Q = mc(T2-T1)/3600
Q = energy in KWh needed to raise water temperature from T1 to T2
m = mass of water (Kg); = 150 in this case
c = specific heat of water (4.19 KJ/Kg/ C)

Therefore Q can be calculated as 7.85kWh, and a 3kW element will take 7.85/3 = 2.6h to bring the geyser's water up to 65°C.

In the above equation it takes a 3kW element 2.6 hours to heat 150 litre of water by 45 degrees. On average 17.4°C per hour.

Remedial action
• Switch off mains to geyser at DB board for 3 seconds.
• Switch the geyser back on at the DB board.
• Press the red power button on the GeyserWise to switch on element.
• You should see at least 1°C temperature rise in 20 minutes without any water withdrawals.
• If you still get an E4 error code please contact our offices for further advice.

14.4 Error code: E5 - Over temperature protection

Possible cause:
Geyser temperature exceeds 85°C
Action(s):
Open hot water tap to reduce temperature in geyser

Please note that the geyser element will not work during an E5 error code. First try to reset the unit by switching the geyser off at the DB board and then switching it back on after 3 seconds. If the error persists, follow the steps below.
Possible cause
Geyser temperature exceeds 85°C
Action(s) Open hot water tap to reduce temperature in geyser

Action(s)
Check communications wire between control box and display unit

14.5 Error code: E7 - Communications failure

Possible cause:
Poor contact or damaged cable
Action(s):
Check communications wire between control box and display unit

Please note that the geyser element will not work during an E7 error code. First try to reset the unit by switching the geyser off at the DB board and then switching it back on after 3 seconds. If the error persists, follow the steps below.

Possible cause
Poor contact or damaged cable