ecowitt®

WittFlow Smart Water Timer
User Manual

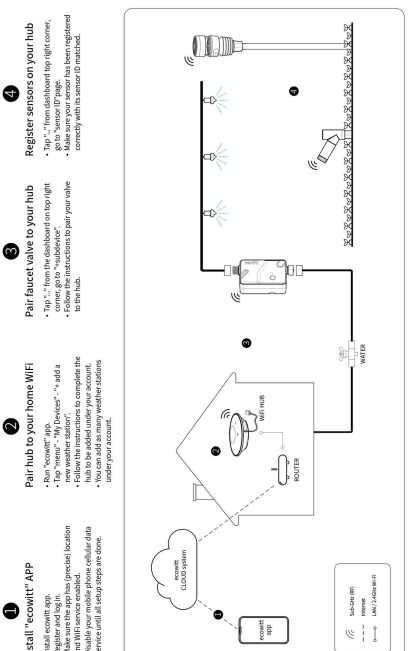
Model: WFC01

https://www.ecowitt.com/api/quickstart/product?id=309

Content

1. Introduction

1.1 Quick Guide on How Ecowitt System Works



* step4 is used when you have any other ecowitt sensors or for future use.

1.2 Feature

Welcome to WFC01, a product that provides you with full control of your watering plan. WFC01 communicates with the Ecowitt IoT gateways or consoles on the SUB_G ISM radio band, which brings you longer connectivity compared to Wi-Fi and Bluetooth products.

The Smart Water Timer is equipped with a flow meter as well as a built-in temperature sensor, which not only functions as a water timer but also allows real-time monitoring of water flow and temperature, providing you with a better understanding of water usage in your home. WFC01 supports cloud-based control, and water usage log is stored in the cloud. With a design featuring all-copper pipelines and connectors, the Smart Water Timer can withstand water pressure of up to 0.9 MPa. It is IP66 waterproof and dustproof, durable, corrosion-resistant, with a long service life.

2. Package List

1* WFC01 Smart Water Timer

1* Retaining Bracket

1* Hexagon Nut

2* Nylon Cable Tie

3* Screw

1* User Manual

3. Configuration Process

Before configuring the WFC01, you need to set up an IoT-enabled gateway. You can refer to the Quick Start manual of the IoT gateway about the IoT gateway configuration.

3.1 Compatible IoT Gateway Models

The WFC01 smart water timer could pair with Ecowitt IoT gateways or IoT-supported consoles. Prepare an IoT-supported gateway that has been added to Ecowitt, ensuring the frequency matches. The compatible models are listed in the table below.

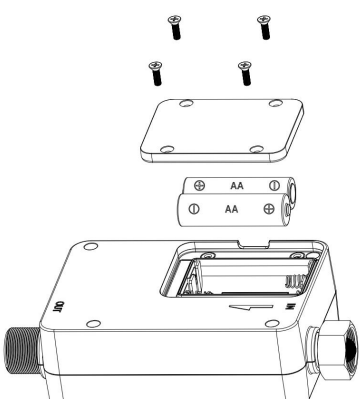
Compatible Models	
Model	**Picture**
GW1200	
GW2000	
WN1980 /WN1920	
WN1820 /WN1821	
WS3800	
WS3900 /WS3910	

Table 1 Compatible IoT Gateway Models

3.2 Pair the WFC01 with an IoT Gateway

3.2.1 Power on

Unscrew the 4 screws on the battery door on the back and put in 2 AA batteries (Batteries not included). The blue light on the front indicates that the device is powered on normally, and screw on the screws. Please do not use rechargeable batteries as they are lower in voltage, which is not good for reliable control.



3.2.2 Test

Press the button to test whether the function of the water timer button is normal. Press the button and you will hear a slight clicking sound and the LED will flicker blue light once.

3.2.3 Enter the Network Pairing Mode

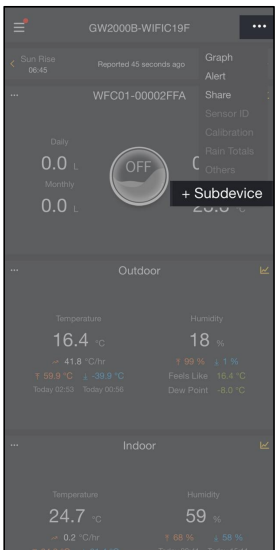
Hold the button for more than 5s, the LED will flash quickly and enter the network pairing mode. If hold the button for more than 10s, the WFC01 will restore factory settings.

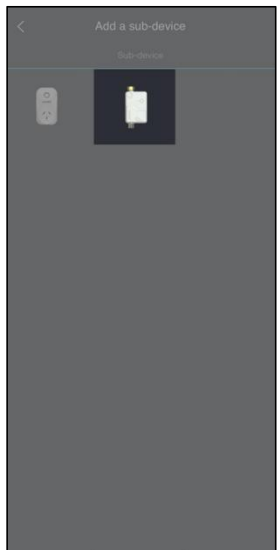
3.2.4 Pair with an IoT Gateway

(To illustrate clearly, here is a Pairing demonstration with GW2000)

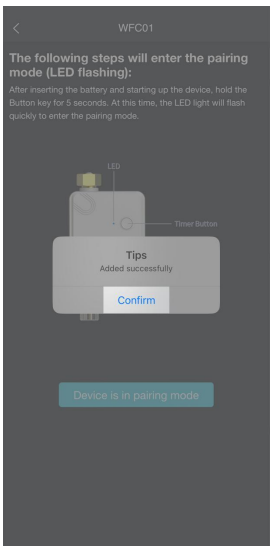
1. Open the ecowitt app.
2. Enter the IoT gateway dashboard. Click '...' on the top right corner.

3. Click ‘+Subdevice’ and choose the icon of WFC01.

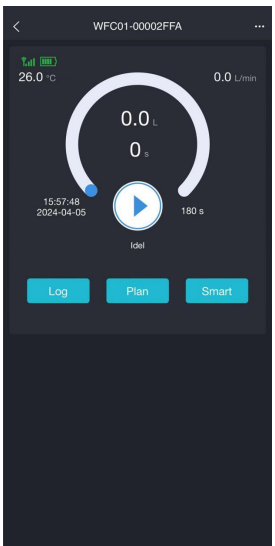




4. Click ‘Device is in pairing mode’, click Confirm and wait till the success tip pops up.



5. Pairing completed, and it will automatically navigate to the WFC01 interface.

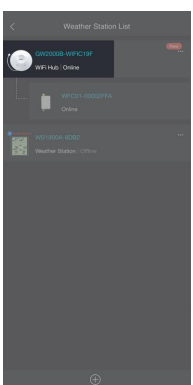


4. App Operation Introduction

4.1 Main Interface Introduction

4.1.1 Enter into WFC01 Module Editing

Enter into the GW2000 page, click the "..." of the WFC01 module's left-top corner and the drop-down option box will pop up. You can edit the WFC01's title name, move this module to the top or bottom, and sort the modules.



4.2 WFC01 Interface Introduction

① Battery Status	② Signal Strength
③ Current Temperature of Water	④ Current Water Consumption
⑤ Running Time of Current Program	⑥ Program Time

⑦ Current Status：

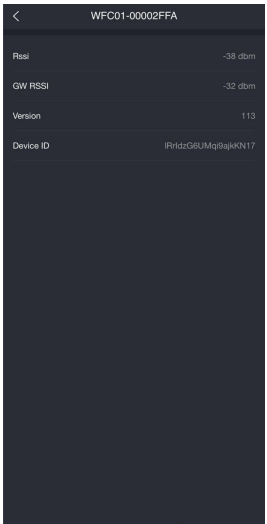
ICON / Mode	Complete (Blue)	Running (Green)	Stop (Yellow)
Manual Control			
App Control			
Smart Control			
Plan Control			

⑧ Enter Log Diary and Alert Notifications

⑨ Enter Plan Mode

⑩ Enter Smart Mode

⑪ Other Information



Rssi: Signal Strength of WFC01
GW RSSI: Signal Strength of Gateway
Version: Version Information
Device ID: Device Name

Note: if any of the RSSl readings is less than -60dbm, it indicates the
signal is relatively weak and might lead to communication problem
Please relocate your device and gateway if necessary.

⑫ Current Speed of Water	⑬ The Progress Bar of The Current Program
⑭ Switch Button	⑮ Total Runtime of The Current Program

5. Software Functions

5.1 Operation Modes

The operation modes include Button mode, Manual Watering mode on the APP, Plan mode and Smart mode.

Each mode trigger will interrupt the others, and the operation mode generated by the most recent trigger will take effect.

For example, if the watering is currently in progress based on a scheduled plan and a certain condition is met to switch the timer off, the timer will be immediately off. When the next scheduled time arrives, the watering will resume, and the timer will be switched on again.

5.1.1 Button Mode

If there is a running program, a short button press will terminate the current program; If it is in an idle state, a short button press will run the program set on the Manual Watering Mode on the APP.

5.1.2 Manual Watering Mode on the APP

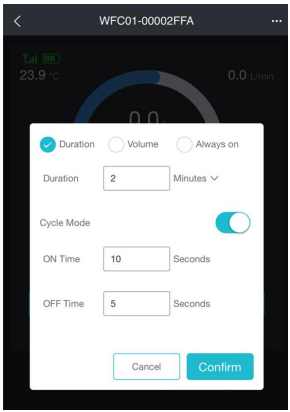
In the initial state, clicking the switch button  allows you to choose between [Duration]/[Volume]/[Always on]. In the [Duration]/[Volume] modes, you can also select the on and off states for the cycle mode.

[Cycle Mode]:

When cycle mode is turned on, a duty cycle is introduced against the current working mode. The duty cycle can be used to regulate more precisely for lower water rate application.

On/off time: 5 ~ 3600 seconds.

A. By Duration



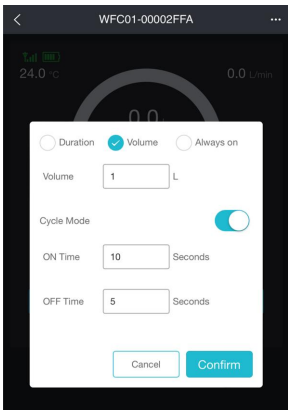
Duration Range:
10 ~ 43200 seconds or 1 ~ 720 minutes.

Click Confirm to execute current setting.

For example, suppose I set the 2 minutes on Duration, 10 seconds for ON Time, and 5 seconds for OFF Time.
It means that the program will last for 2 minutes and the WFC01 will be on for 10 seconds and then turn to be off for 5 seconds and repeat these two states again and again until the program finishes.

After you click the button Confirm, the program of the WFC01 will execute the instruction you set before, as the left picture shows.

B. By Volume

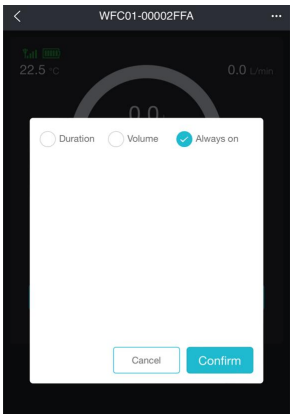


Volume Range:
1 ~ 6500 L.
Click Confirm to execute current setting.

For example, suppose I set the 1L on Volume, 10 seconds for ON Time, and 5 seconds for OFF Time.
It means that the total volume of watering is 1L in this program. The WFC01 will be on for 10 seconds and then turn to be off for 5 seconds, and repeat these two states again and again until the volume of watering in this program is up to 1L.

After you click the button Confirm, the program of the WFC01 will execute the instruction you set before, as the left picture shows.

C. Always On



Click Confirm to execute Always On setting.

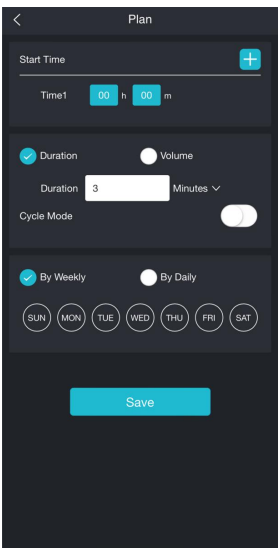
After you click the button Confirm, the program of the WFC01 will execute the instruction you set before, as the left picture shows.

5.1.3 Plan Mode

After successfully setting up the plan, it will be saved on WFC01. Even if the WFC01 is disconnected from the IoT gateway, it can still execute the plan as scheduled.

1. Select "Plan" to enter the plan editing interface.

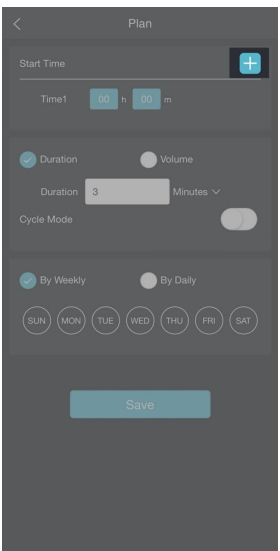
2. Click “Add” and enter into the settings page of Plan Mode.

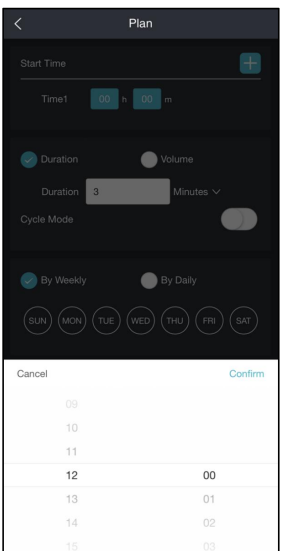


3. Adjust the details of the plan on the settings page.

A. Add start time

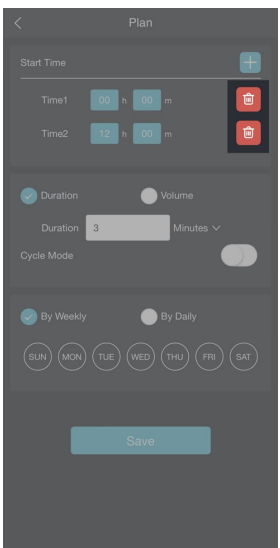
Click , you can add the start time according to your own needs.



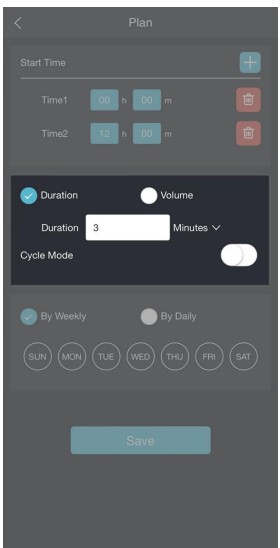


B. Delete start time

Click , you can delete the start time you set before.



C. Set the method of watering: By Duration



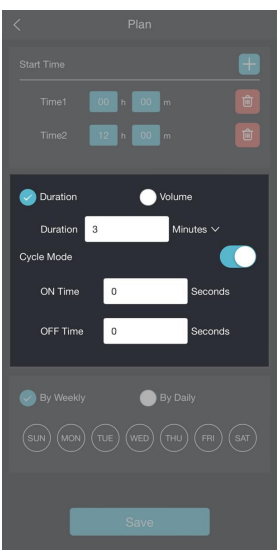
D. Set the method of watering: By Volume

E. Set the Cycle Mode

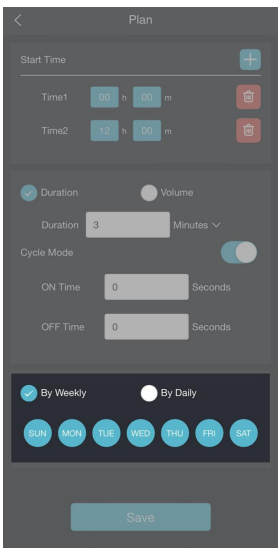
Cycle Mode;

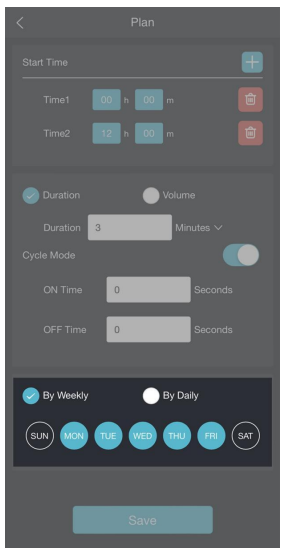
Can be set as on/off by opening the button of Cycle Mode;

On/off time range: 5 ~ 3600 seconds.

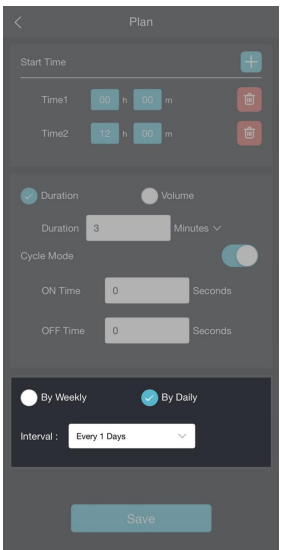


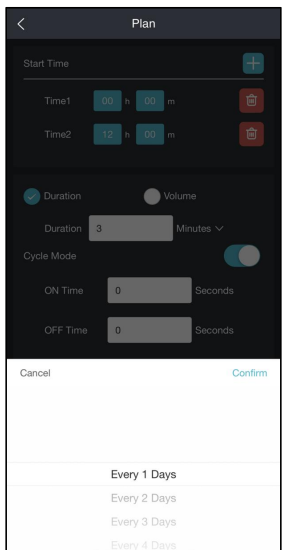
F. Can be set by weekly.



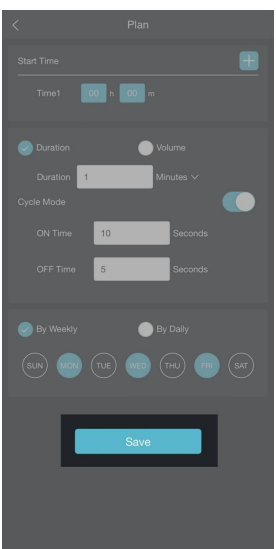


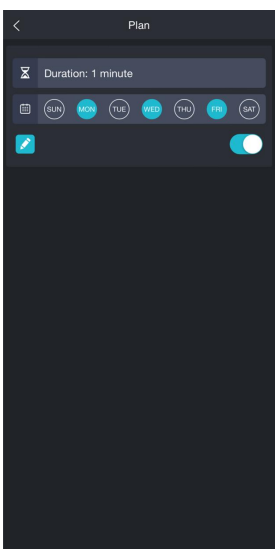
G. Can be set by daily.



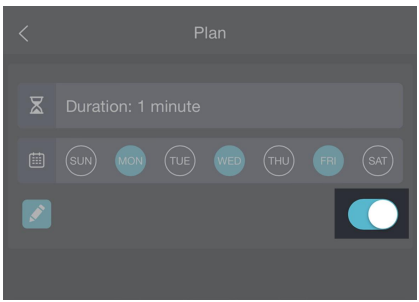


4. After you finish the above settings, you can click "Save" and complete one plan mode setting. Suppose you set a plan, like the following example, click “Save” and then the page will automatically jump to the interface as the second picture shows.

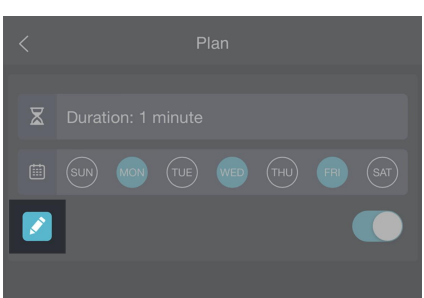




5. Use the switch icon on the right to control the activation or deactivation of the plan.



6. Click the edit icon on the left to access the plan editing interface.



5.1.4 Smart Mode

This feature enables the control of the WFC01 according to pre-programmed conditions. After successfully setting up the Smart mode, it will be saved on the IoT gateway/console. Even if the IoT gateway/console is disconnected from the Internet, it can still execute the Smart mode as intended. If the WFC01 is disconnected from the IoT gateway/console, it cannot execute the Smart mode.

A DESIRED FEATURE ON OUR WISHING LIST:

If you have multiple IoT gateways, sensor data from other IoT gateways can serve as a triggering source. However, this functionality implicitly requires that all hubs are registered under the same user account and connected to the server as a bridge. While this is technically feasible, the cross-hub triggering feature has not been implemented in the current design. We plan to introduce support for this feature through Over-The-Air (OTA) upgrades to your hub firmware.

Please stay tuned for announcements regarding the addition of this feature in future updates.

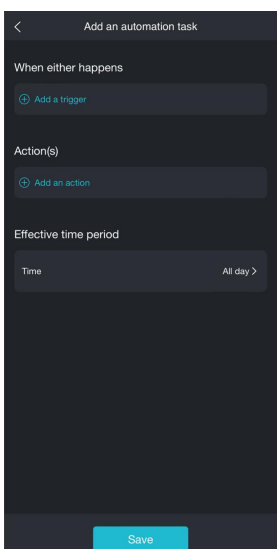
5.1.4.1 Log Diary Interface of Smart Mode

When in the Smart mode interface, click on the '...' icon at the top right corner to access the log diary interface.

5.1.4.2 Add an Automatic Task

The following introduces the content of each section when setting up an automation task.

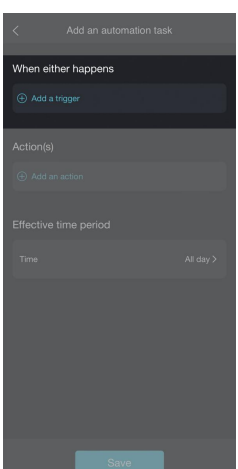
A. Enter the Smart Mode Editing Page by clicking the “Add” at the bottom of the Smart Mode Page.

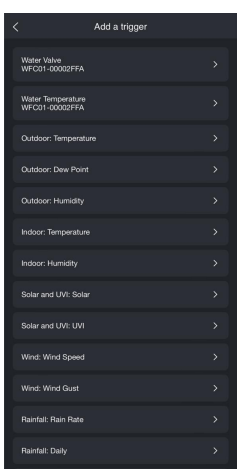


B. “When either happens - ⊕Add a trigger”
Click the “⊕Add a trigger” of the "When either happens" module and enter the settings page to set the conditions under which you want the task executed.

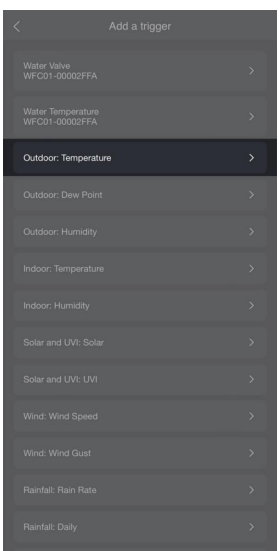
【NOTE】In the "When either happens" module, you can set up to 5 trigger conditions.

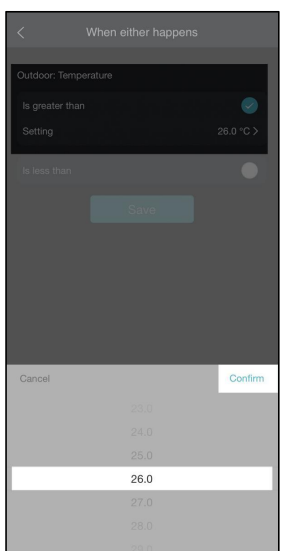
【NOTE】When you set more than 1 trigger condition, as long as one of the trigger conditions is met, the "When either happens" module is valid.

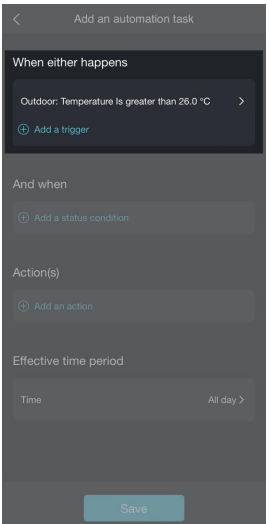


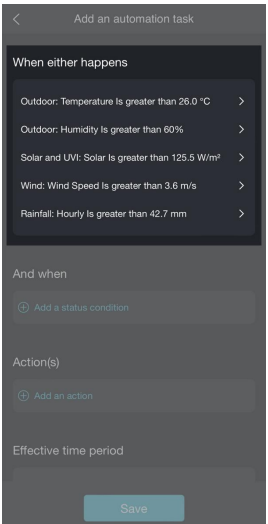


For example, suppose you own an Ecowitt outdoor thermometer sensor connected to the same IoT gateway and choose outdoor temperature as the trigger condition. In that case, you click “Outdoor: Temperature” and you will enter the outdoor temperature setting page to set the trigger condition as what you want.





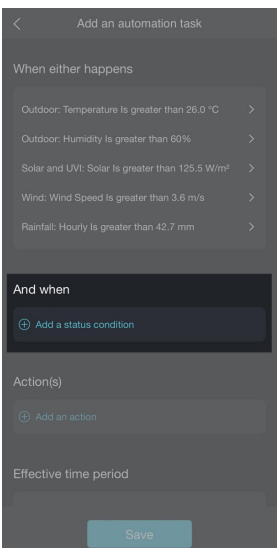


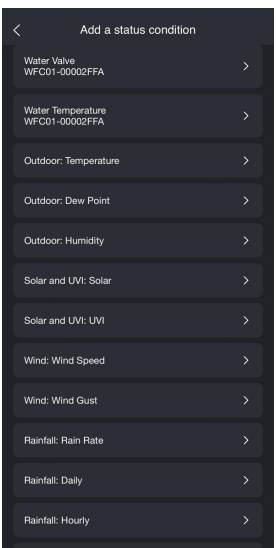


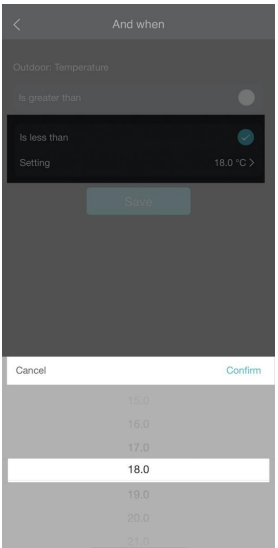
C. “And when - ⊕Add a status condition”

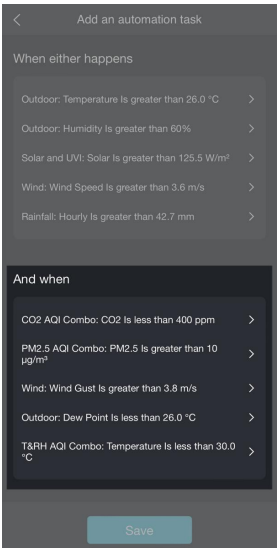
After you set the trigger conditions in the “When either happens - ⊕Add a trigger” module, you will see “And When - ⊕Add a status condition”. In this module, you can also set up to 5 trigger conditions.

【NOTE】If you set the trigger conditions in this module, only when all the trigger conditions you set in the“And When”module are met can the WFC01 perform the following action.







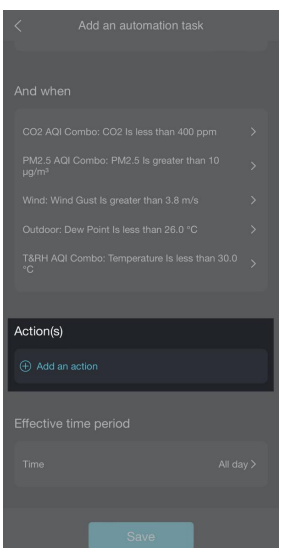


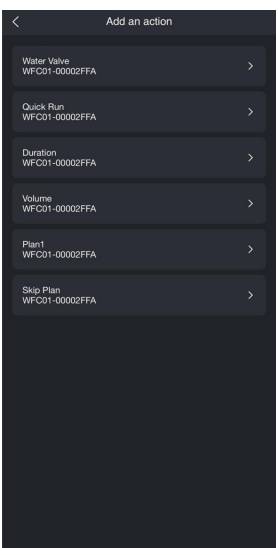
D. Add an action

In the "Actions" module, you can configure the actions you want the WFC01 to perform when the conditions are met.

You have the option to set the following action:

1. Water Valve: Turn on/off
2. Quick Run
3. By Duration: Specify the duration
4. By Volume: Specify the volume
5. Execute Plans
6. Skip Plans

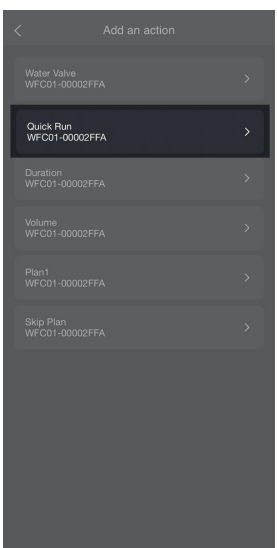


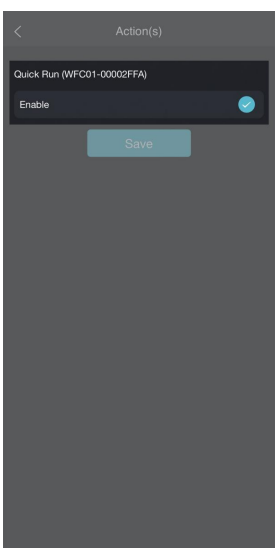


【NOTE】You can set more than 1 or all the actions.

【NOTE】 If you choose multiple actions and some of them are contradictory, the WFC01 will take the last action of the "Add an action" module.

For example, suppose you set the "Quick Run" as the action, you can choose the "Quick Run" and enable it.



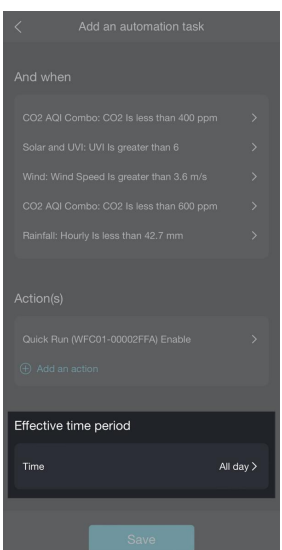


E. Set the Effective time period.

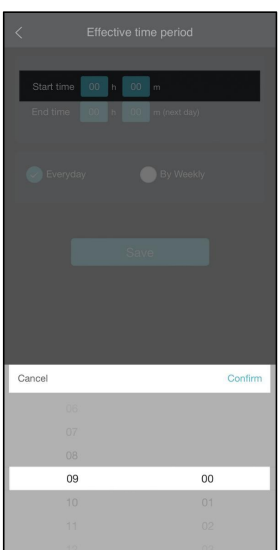
Adjust the details of the Effective time period on the settings page, Clicking “Time - All day＞” and entering the page to set the conditions under which you want the task to be executed.

The operation sequence is shown in the following figures:

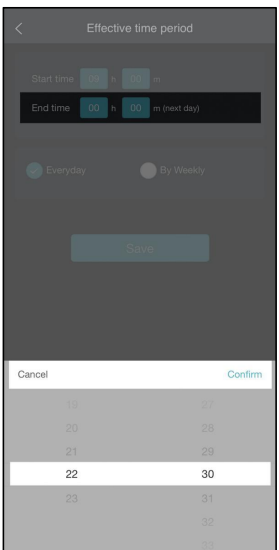
* Click "Time - All day＞"



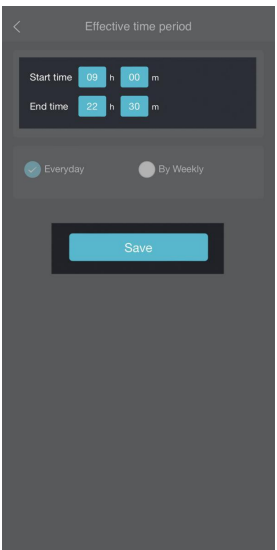
* Setup Start time



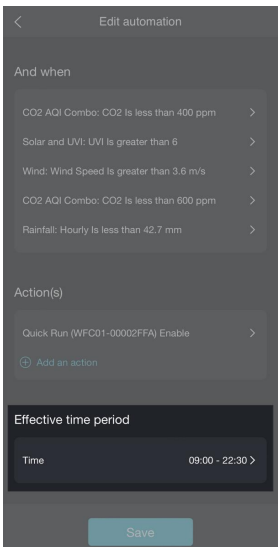
* Setup End time



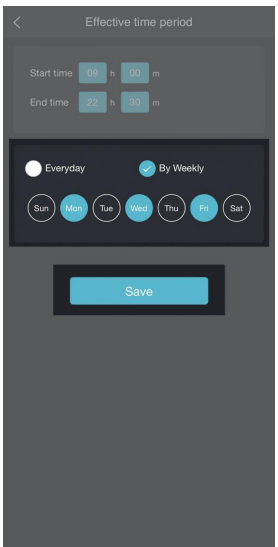
* Select Everyday and click Save



* Effective time period setting finished



* Set effective time period by weekly

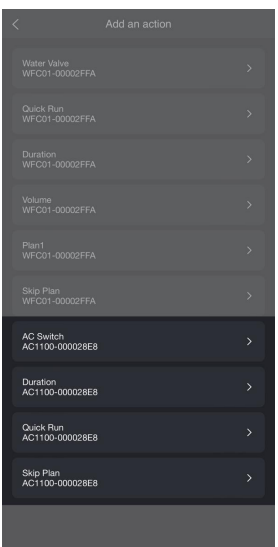


F. If adding more than 1 Sub-devices pairing with the IoT gateway

If you add more than 1 WFC01 smart water timer or other ecowitt IoT sub-devices(such as AC1100) to

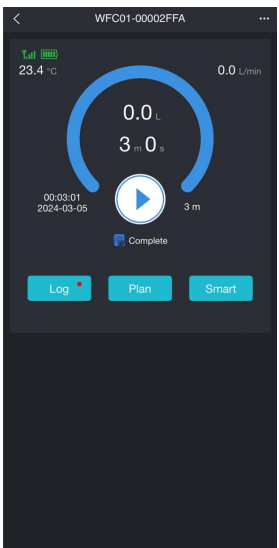
this IoT gateway, the number of actions will correspondingly increase on the "Add an action" module.

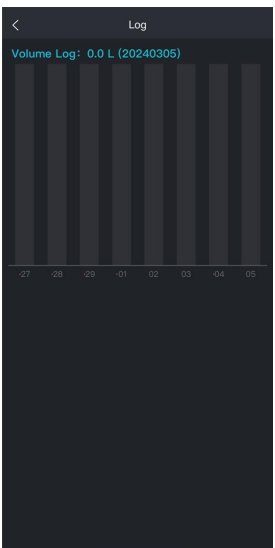
【NOTE】The maximum number of actions you could choose is up to 10 when you set the Smart Mode.



5.2 Log Diary Interface

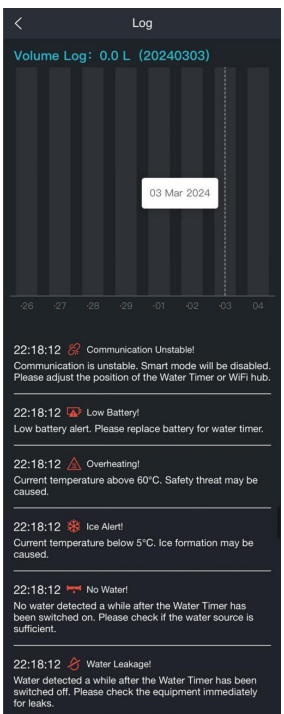
Click ‘Log’ to enter the log diary interface.





5.3 Alert

There are 5 kinds of alerts. The details of the alerts can be inquired below.

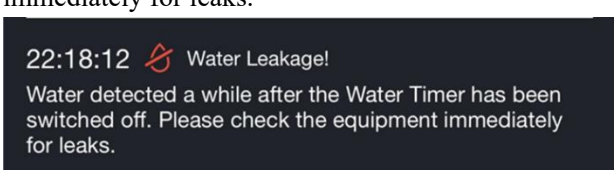


5.3.1 No Water!

No water was detected a while after the Water Timer has been switched on. Please check if the water source is sufficient.

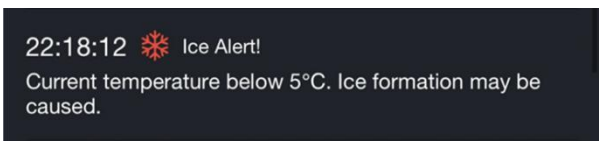
5.3.2 Water Leakage!

Water Flow is still detected after the Water Timer has been switched off. Please check the equipment immediately for leaks.



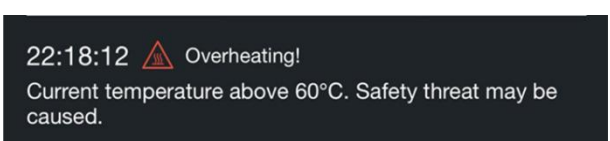
5.3.3 Ice Alert!

Current temperature below 5°C (41°F). Ice formation may be caused.



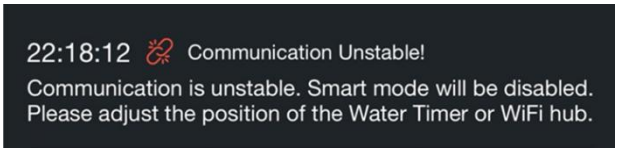
5.3.4 Overheating!

Current temperature above 60°C (140°F). Safety threat may be caused.



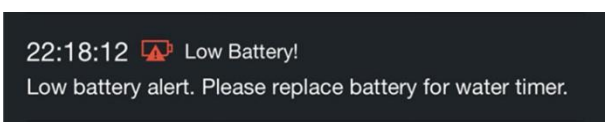
5.3.5 Communication Unstable!

Communication is unstable. Smart mode functions will be disabled. Please adjust the position of the Water Timer or IoT Wi-Fi gateway.



5.3.6 Low Battery!

Low battery alert. Please replace the battery of the water timer.

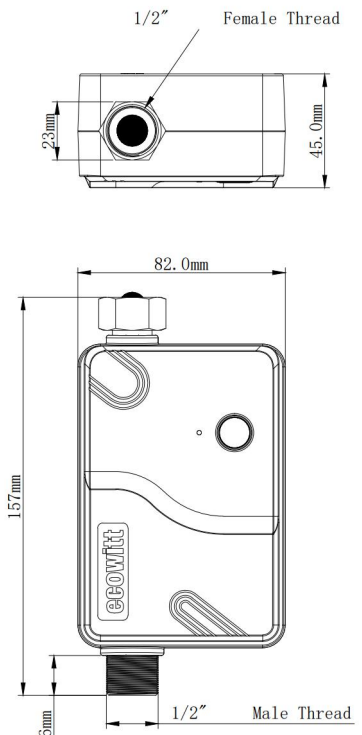


5.4 Protection Functions

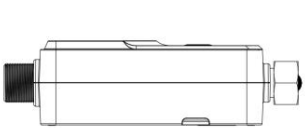
We place a high emphasis on user water safety. The WFC01 has been designed with protective measures. When the battery level drops below one bar, the WFC01 will automatically be switched off in case of waste.

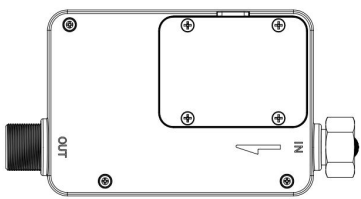
6. Overview and Product Structure

6.1 Overview



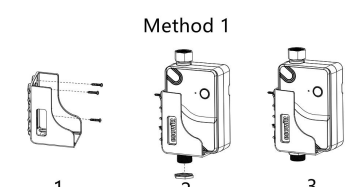
6.2 Product Structure





7. Installation and Use

7.1 Two Installation Methods



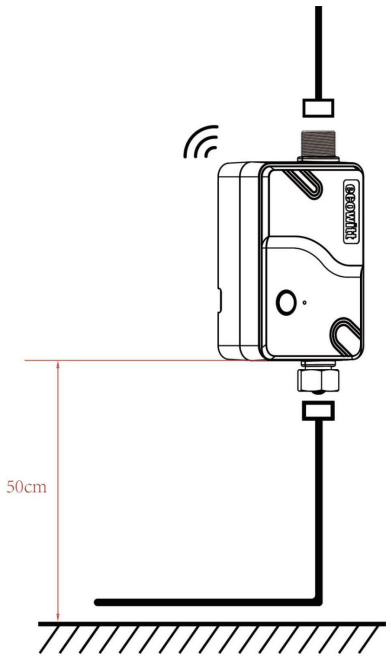
7.2 Installation Environment

The WFC01 smart water timer should be installed in a dry and well-ventilated location, avoiding prolonged exposure to high humidity, extreme temperature, or harmful gas environments.

The installation position should be as close as possible to the water source or the pipe that needs to be controlled, and avoid excessive bending or twisting of the pipe.

Please observe the RSSI reading on the Ecowitt APP before installation. If the RSSI reading is less than -60dbm, it indicates the signal is relatively weak and might lead to a communication problem. Please relocate your device and gateway if necessary.

It is highly recommended that the WFC01 is installed at least 50cm higher than the ground, ensuring the stability of the signal transmission.

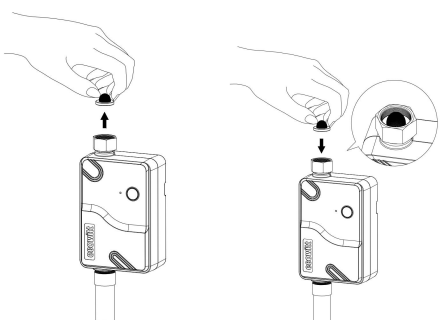


7.3 Maintenance

To ensure the normal operation of the smart water timer, regular maintenance is required.

During daily use, please pay attention to cleaning the water timer and its surrounding area to prevent the accumulation of dust and dirt.

In addition, please remember to take down the filter net of the inlet of the WFC01, clean it by the brush and then install the filter net back to the WFC01. Otherwise the water stream would get smaller and smaller because the scale would block the filter net.



Also, remember to replace the batteries promptly.

8. Specifications

Product Name	Smart Water Timer
Product Model	WFC01
Product Size	159×82×45(mm) | L×W×H
Weight	520g
Housing Material	ABS+PC
Inlet Material	Brass
Outlet Material	Brass + Chrome Plating
Waterproof Level	IP66
Power Supply	1.5V AA Battery × 2 (Not Included)
Power	1.5mW (Average power of switching on and off once a day)
Battery Runtime	Over 6 months (Average runtime of switching on and off once a day)
Interface Type	NPT thread (915 MHz) ; BSP thread (868/433 MHz)
Maximum Flow Rate	30L/min
Working Pressure	0.03 ~ 0.9MPa

Flow Rate Error	±10%
Working Temperature	1 ~ 60℃ (33.8~140℉) (The equipment can still transmit data during -40 ~ 0℃ (-40~32℉), but water freezing may cause DAMAGE to the product)
Working Humidity	1 ~ 99%
RF Communication Distance	100 meters

9. Warranty

We disclaim any responsibility for any technical error or printing error or the consequences thereof.
All trademarks and patents are recognized.
We provide a 1-year limited warranty on this product against manufacturing defects or defects in materials and workmanship.
This limited warranty begins on the original date of purchase, is valid only on products purchased, and only to the original purchaser of this product. To receive warranty service, the purchaser must contact us for problem determination and service procedures. This limited warranty covers only actual defects within the product itself.

Manufacture: Shenzhen Fine Offset Electronics Co., Ltd.

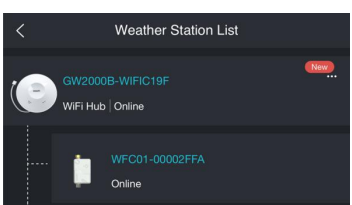
Address: 4/F, Block C, JiuJiu Industrial City, Shajing Town, Baoan District, Shenzhen City, China

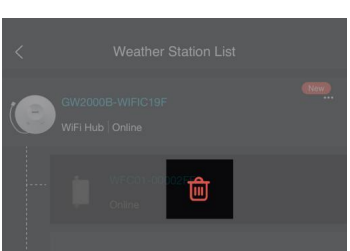
10. Trouble shooting

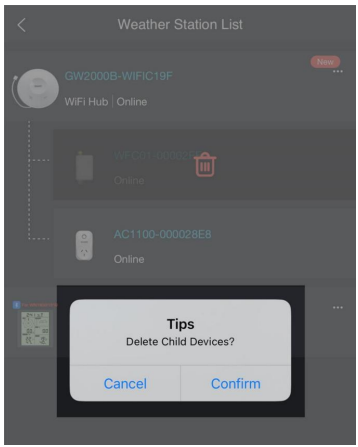
10.1 When You Need to Reconfigure the WFC01

10.1.1 Delete the WFC01

1. Enter the Weather Station List interface and find the IoT gateway.
2. long press the WFC01 under the IoT gateway till the delete icon appears, click the icon.
3. WFC01 is successfully deleted.







10.1.2 Reconfigure the WFC01

Please take a look at sections 3.2.3 and 3.2.4 to recon figure the WFC01.

11. Contact Us

If you encounter any missing or incorrect shipments of Ecowitt products purchased, please reach out to the respective platform's customer service from the store you bought product for assistance.

For any issues related to product usage, feel free to contact our customer support team at **support@ecowitt. com** with your WFC01 SN Number provided.

We are committed to aiding and resolving any concerns you may have.

support@ecowitt.com

Stay in Touch

Ask questions, watch setup videos, and provide feedback on our social media outlets. Follow Ecowitt on Discord, YouTube, Facebook and Twitter.