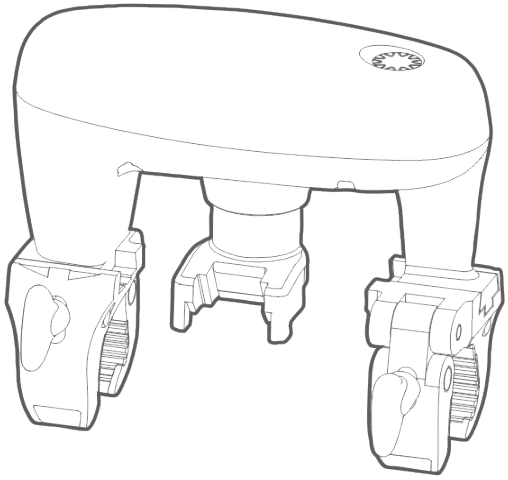
3 USER MANUALS IN ONE

I. BALL VALVE SERVO
II. WIRELESS WATER DETECTOR
III. GATEWAY

BALL VALVE SERVO
User Manual

FIREBOT BALL VALVE SERVO



Content

BVSUL User Manual

6 Steps Installation

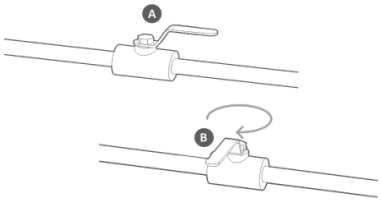
1 FIREBOT BVS

Ball Valve Servo is capable for outdoor deployment for controlling water valve OPEN / CLOSE. It also supports auto CLOSE valve when water leak is detected by Local Leak Sensor Probe.

2 BVS INSTALLATION

1

Close valve: Rotate the handle from position A to position B to turn off your valve.



2

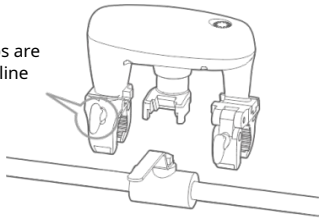
Install Firebot APP: Scan the QR code to install the mobile application.

Android/iOS

3

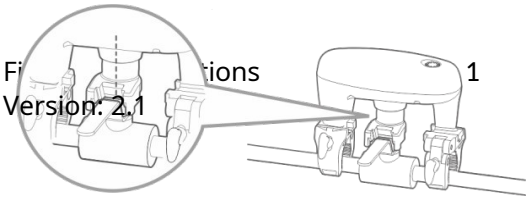
Prepare your valve: Position BVS over the top of the handle of ball valve.

Make sure the knobs are facing on the same line



4

Install BVS on your valve
Align the pivot of the transmission fork with the hex bolt on top of the valve.
Press down firmly to engage the spring loaded gear, then tighten 2 clamps;



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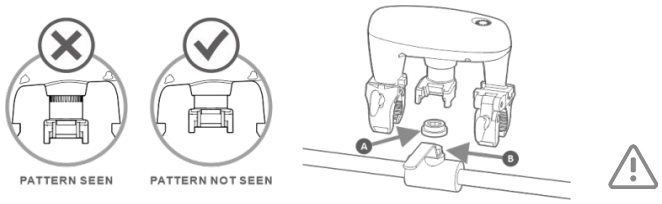
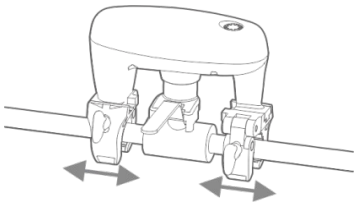


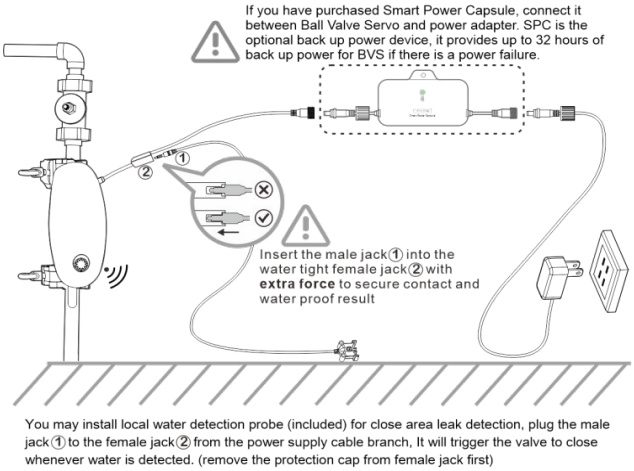
If you have oversized valve or your valve has adjacent pipe elbow, you may slide any or both clamps in or out to fit the space;



Check the transmission fork mechanic engagement by visual. You SHOULD NOT see the PATTERN on the top of transmission fork, if you do, you may not install it securely, please double check, make sure you have pushed the BVS down enough for a secured installation. Otherwise, you have a rare ultra low profile valve, the handle is too low for spring loaded mechanic to engage, in this case, please put the Space A between the hex bolt head of the valve B and the transmission fork.

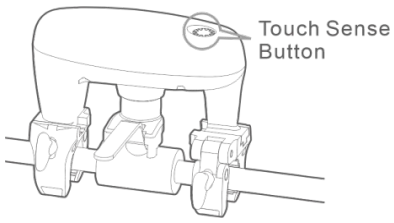
5

Connect SPC & Power Adapter
Insert the local water detection probe (included) for close area leak detection, plug the male jack A to the female jack B from the power supply cable branch (Please push hard enough to achieve water tight result), it will trigger the valve to close whenever water is detected. (Remove the protection cap from female jack first)



Disabling option for outdoor installation

If you are installing the BVS outdoor, you may consider disabling the touch sense button to prevent activation from rain drops or pets.
A) To Disable the button:
Tap and hold touch sense button for 3 beeps, then quickly tap 3 times in a row.
If success, the Yellow LED will flash once, then the Red LED with 1 beep. The LED will slowly flash Yellow indicating the touch sensor button has been locked.
B) To Re-Enable the button:
Do the same action again.
If success, the Yellow LED will flash once, the the Red LED with 3 beeps. LED will then slowly flash Green indicating the touch sense button has been unlocked.



3 KEY & INDICATORS BEHAVIOR

3.1 Touch Sense Button

Short Press: One click comes with one short beep sound.
Long Hold: Press and holding the key. “Come with 1 x short beep per second”

3.2 Visual Indicator

3 Colors LED: GREEN, YELLOW & RED
ON Event: ON, quick blinking, slow blinking and “fade-in & fade-out”

3.3 Sound Indicator

Buzzer: Long & short beep sound

4 TOUCH SENSE BUTTON KEYLOCK

BVS is capable for outdoor deployment. To prevent mis-operation by rain drop, end-user can enable Touch Sense Button Keylock function to forbid the operation of Touch Sense Button until to disable the keylock function.

4.1 Touch Sense Button Keylock Enable

After enabled Touch Sense Button Keylock function, BVS will ignore all key events excepting Touch Sense Button Keylock Disable function.

i. Start: Long hold Touch Sense Button 3 seconds then short click 3 times.
ii. Process: Green LED with 1 beep -> Yellow LED -> Red LED
Iii. Success: Yellow LED slow “fade in & fade out”.

4.2 Touch Sense Button Keylock Disable

i. Start: Long hold Touch Sense Button 3 seconds then short click 3 times.
ii. Process: Green LED with 1 beep -> Yellow LED with 1 beep -> Red LED with 1 beep
iii. Success: LED indicator resume normal status. (Yellow & Green LED blinking)

4.3 Pause Motor Running

i. Short click 1 times on button will pause the open/close action during the motor is running.
ii. Once the motor process has been paused, click button again will resume the motor action.

5 WATER LEAK SENSOR & ALARM

5.1 Water Leak Detection & Alarm

Firebot BVS comes with Local Leak Sensor Probe and support following functions, in short, once Water Leak is detected, Water Leak Alarm will be activated, depending on configuration parameter the water valve may be closed subsequently, at this moment all other operations will not be accepted except Water Leak Alarm Cancellation.

i. Activated Water Leak Alarm
   a. RED LED fast blinking.
   b. Fast beep sound.

ii. depending on configuration parameter the water valve may be closed subsequently

iii. The operation is forbidden temporally until perform Water Alarm Cancellation operation.

5.2 Water Leak Alarm Cancellation

Water Leak Alarm Cancellation only accepted when Local Water Leak Sensor Probe is no longer detected water.

i. Start: Long hold Touch Sensor Button 2 seconds.

ii. Success: The LED indicator changes to previous status. (Yellow LED blinking or Green LED slow blinking and buzzer goes silence.)

iii. Send out dis-alarm report

6 TEMPERATURE SENSOR

6.1 Temperature Report

Firebot BVS will measure temperature per 5 mins and the report have 2 rules.

i. If the difference between the two measurements is greater than 1, the BVS will send the temperature report early.

ii. By default, the BVS will send the temperature report as a heartbeat per 15 mins

7 APPENDIX

Terminology, all events and operations details including action key event, LED and Buzzer status.

7.1 System Event Status

Event	Detail	LED	Buzzer
System Ready	BVS is ready to operate after power on or reset	Green LED ON 2 seconds	2 beep sounds
Idle mode	BVS is idle, no valve action processing	Yellow & Green LED blinking	---

Event Success	Finished operation and success	Green LED ON 2 seconds	Short beep x 2
Event Error	Operation fails or not available	RED LED blinking 3 times	Long beep x 3 (1500ms per beep)
Event Timeout	Operation timeout	RED LED blinking 3 times	Short beep x 3(500ms per beep)

7.2 Touch Sense Button Keylock

Event	Action / Status	Key Action	LED Status	Buzzer Status
Keylock Enable	Enable Lock Key Function	Hold 3 seconds & click 3 times	Green 300ms -> Yellow 300ms -> Red 300ms	Long beep×1
	Success	---	Yellow LED “fade in & out”	---
Keylock Disable	Disable Lock Key Function	Hold 3 seconds & click 3 times	Green 300ms -> Yellow 300ms -> Red 300ms	Long beep×3
	Success	---	Yellow & Green LED blinking	---

7.3 Operation Mode

Operation Mode	Function	Description	Action Key		Operation Support	
			Long	Short	Standalone	Network
Water Valve Manual Operation	1.Open	Control water valve to full open	---	1	Support	Support
	2.Close	Control water valve to full close	---	1	Support	Support
	3.Auto-calibration	Perform calibrate position and torque force	5	5	Support	Support
	4. Pause/Resume open/close action	Only work during open/close operation	---	1	Support	Support
	5.Alarm Cancellation	Resume to normal operation mode if no alarm triggered	2	---	Support	Support

7.4 Water Valve Operation

Event	Action / Status	Key Action	LED Status	Buzzer Status
OPEN Valve	Start OPEN (Valve in closed position)	Click 1 time	Green LED keep blinking	1” Pulse sound
	Processing	---	Green LED quick blinking	Keep short beep
	Success	---	Green LED blinking X 2	Short beep×2

	Next status	---	Yellow & Green LED blinking	---
CLOSE Valve	Start CLOSE (Valve in opened position)	Click 1 time	Green LED ON 1 second	1” Pulse sound
	Processing	---	Yellow LED quick blinking	Keep beep (1 beep per 1 sec)
	Success	---	Green LED blinking X 2	Short beep×2
	Next status	---	Yellow & Green LED blinking	---
Manual Calibration	Start Manual Calibration	Hold 5 second & click 5 times	---	---
	Processing-Open & Close 1-2 cycles	---	Yellow LED blinking (2 blink per sec)	Keep beep (2 beep per 1 sec)
	Next Status	---	Yellow & Green LED blinking	---

7.5 Water Leak Event & Alarm

Event	Action / Status	Key Action	LED Status	Buzzer Status
Leak Sensor Probe Triggered	Start Water Leak Alarm	---	RED LED fast blinking	Fast beep sound
	Processing-Close Water Valve Automatically	---	RED LED fast blinking	Fast beep sound
Leak Alarm Cancellation	Alarm Cancellation	Long hold 2 seconds	Green LED blinking 2 times	Short beep×2
	Success cancellation	---	Green LED blinking 3 times	Short beep×3
	Next Status	---	Yellow & Green LED blinking	---

8 FEATURES & SPECIFICATIONS

8.1 Physical Specifications

Model No.	BVSULU (US) / BVSULE (EU)
Dimensions	14.8 x 9.6 x 13.3cm
Weight	BVS Unit: 603g
Body Color	White
Knob Color	Light Blue
Waterproof and Dustproof	IP66 level / Outdoor deployment
Usage	For Indoor and Outdoor Water Valve On/Off
Operation Temperature	14~122°F (-10 ~ +50°C)
Relative Humidity	8% ~ 80%

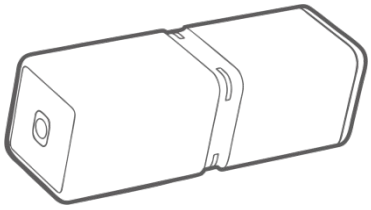
8.2 Hardware Specifications

RF Modulation	Chirp Spread Spectrum
RF Distance	40m (Indoor)/120m (Outdoor)
Region Frequency	923.3Mhz
Motor Torque Power	Adaptive torque output max: 8n.m
Water Leak Sensor	Local Water Leak Sensor Probe
Temperature Sensor	Built-in temperature sensor, Range from -40°C to +125°C / (-40°F to +257°F)
Action Button	Touch Sense Button x 1
LED Indicator	3 colors LED. (Green, Yellow & Red)
Sound Indicator	Buzzer (Max. 85dB)

WIRELESS WATER DETECTOR

User Manual

WIRELESS WATER DETECTOR (WWD)



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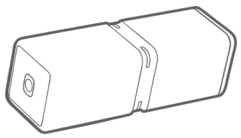
WIRELESS WATER DETECTOR (WWD)



1 FIREBOT WWD

Firebot Wireless Water Detector "WWD" is an innovative water leak detector that boasts unparalleled functionality and convenience. It is the only one on the market that can work in all orientations, ensuring you never have to worry about misorientation or flipping.

With its compact sub-lipstick size, you can deploy in any location prone to water leaks. Its special design makes it incredibly easy to fit into any corner or edge. Plus, it has an impressive battery life of one decade, so you can rest assured that it will provide you with reliable protection for years to come.

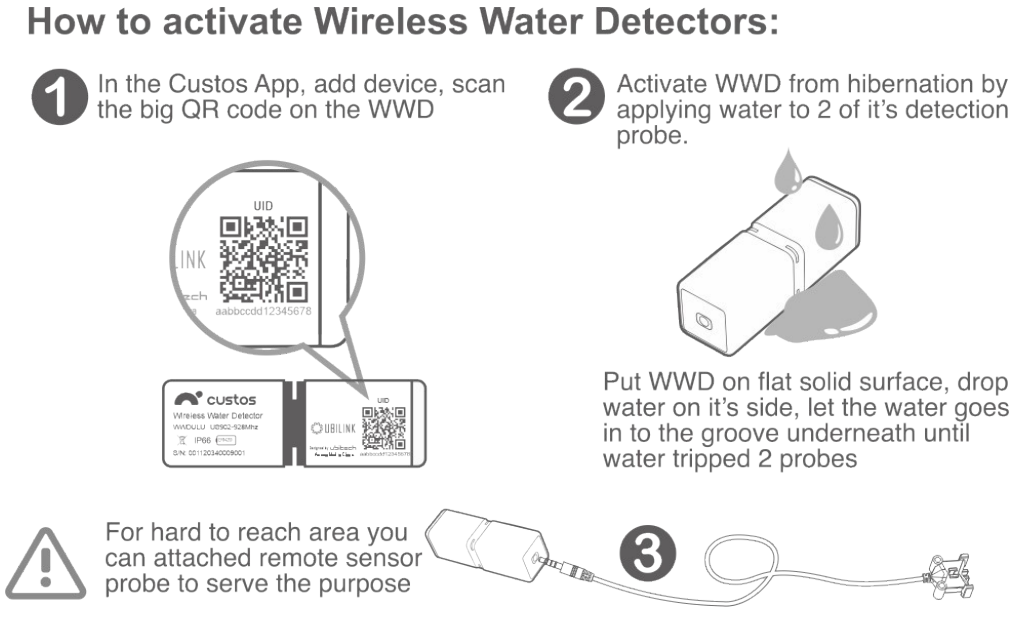
Firebot WWD also features a secondary detection port that allows for wired remote detection probe, enabling dual area coverage or detection in hard-to-reach areas. Additionally, it has temperature detection capabilities that trigger an automatic alert for rapid temperature changes. And with a tamper alert, you'll be notified immediately if the detector is moved.

2 SETUP WITH FIREBOT SYSTEM

2.1 Pair with Firebot System

-Firebot WWD can support pairing as below:

i. Wake up WWD from hibernation (for shipping and storage);
ii. Register WWD information with "Firebot Home" APP;
iii. Follow the instruction of APP to finish the relevant (Pairing) operations



3 EVENT REPORTS

3.1 Heartbeat Report

WWD will send Heartbeat Report to Firebot Gateway in 1 hour interval, the Heartbeat Report will also carry battery level and temperature data.

3.2 Water Detection Report

Once the Water Leak Sensor Probe is tripped by water, the Firebot WWD sends to Firebot gateway immediately, by default the gateway will send down link command to BVS to shut off the water main in order to stop potential damages, but this can be override in advanced setting, users will be notified by APP for this event.

3.3 Tamper Report

In case WWD detects vibration, it will wake up and send Tamper report to Gateway and Firebot App will send notification to user.

3.4 Unpair from Firebot System

There are couple reasons you may need to unpair WWD from a FireBot Network (1) the WWD is lost or faulty (2) move it to another FireBot Network:

i. Remove device from "Firebot Home" APP;
ii. If the WWD is available and working, perform “Factory Default Reset”, refer to item 2.7.3;

4 ACTION SENSOR & INDICATORS BEHAVIOR

Built-in 3-Axis Accelerometer for gesture recognition by detecting a series of movements, Once the 3-Axis Action Sensor is activated, you also can see below Visual and Sound Indicators response with the 3-Axis Action Sensor.
-3 Colors LED: GREEN, YELLOW & RED
-ON Event: ON, quick blinking and slow blinking.
-Buzzer: Long & short beep sound.

5 LEAK SENSORS

Firebot WWD supports two points of water detection:

Primary detection point (for normal horizontal placement on ground)
WWD has patented design with primary detection probes on all 4 corners of the recessed stripe located in the middle of body, thanks to capillary effect it can actively induce water run through it to trigger water detection no matter water approached from which side.

Secondary remote detection point
You may install remote water detection probe (included) for second point of water detection or to reach out hard to reach area, in order to ensure the sensor probe works reliably, plug the male jack to the WWD tightly without any gap exposed between the 3.5mm jack and WWD.

6 WORKING MODE

6.1 Shipping Mode

By default, Firebot WWD is set in Shipping Mode to keep it in hibernation to stop battery consumption during transportation & storage, in this mode all functions will be disabled until unlocked it from Shipping Mode to Active Mode.

6.2 Switch WWD from Shipping Mode to Active Mode

Trip water detection probe by water or wet fingers (more infos provided in App).

6.3 Active Mode

WWD is running normally ready to be paired with Firebot Gateway or paired

7 CHANGE WWD BATTERY

FireBot Sensors are fit with a battery that has a lifespan of 10 years. If the battery should be changed at the end of the 10 years follow the following steps:

1. Remove the screws of battery cover;
2. Replace new ER14250 battery;
3. Make sure the gasket is installed between the cover and body for waterproof;
4. Put the battery cover and align with two battery metal contacts then tighten the screws

8 REST SENSOR

8.1 Switch WWD from Active Mode to Shipping Mode

Refer to 2.7.3 Procedure for Factory Reset

8.2 Factory Reset (For firmware version 0.6 and later)

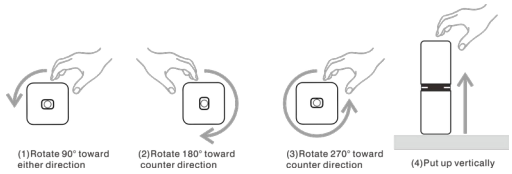
Purpose: Remove all the registered setup information, unpair with registered gateway, return to factory state and go to hibernation mode for storage or shipping.

Step One: Trigger Active Standby State to get into Gesture Command mode

Action 1 : Shake the WWD, until you hear a beep sound and green light flashing, this will give you 10 seconds window of Active Standby Mode
Action 2: Within this 10 second Active Standby window, lay the WWD on level surface, WWD will engage in Gesture Command mode, this mode will give 10 seconds window to receive gesture command sequence.

Remark: Double RED flash and beep indicates termination of this process due to time out or wrong gesture sequence

Step Two: Enter Gesture Command:
Action: within 10 seconds Gesture Command Window,
(1) Rotate the WWD horizontally 90° to either direction, a double beep will be generated to indicate current gesture command is recognised and waiting next gesture within 10 seconds windows (all subsequent gestures are same)
(2) Rotate the WWD toward counter direction for 180°,
(3) Then rotate to counter direction again for 270°,
(4) Put up WWD vertically



Success: Green light will show up for about 10 seconds while it's cleaning up internal data and transmit unpair request to gateway, then WWD will be hibernated
Fail: Double RED flash and beep then sleep

9 FEATURES & SPECIFICATIONS

9.1 Physical Features

Model No.	WWDULU(US)/ WWDULE(EU)
Dimensions	2.1*2.1*6.7cm
Weight	WWD Unit: 52g
Body Color	White
Water Detection Method	Conduction
Waterproof & Dustproof	IPX5
Operation Temperature	14~122°F (-10~+50℃)
Relative Humidity	8%~80%

9.2 Hardware Specifications

RF Modulation	Chirp Spread Spectrum
RF Working Distance	40m (Indoor) / 120m (Outdoor) “Life of sight"
Region Frequency	923.3Mhz
Water Leak Sensor	Dual Water Detection Probes “Built-in & Remote"
Temperature Sensor	Temperature Sensor Range from -40°C to +125°C / (-40°F to +257°F)
Action Sensor	3-Axis Accelerometer Sensor
LED Indicator	3 colors LED. (Green, Yellow & Red)
Power Supply	ER14250 - Battery 3.6V 1200mAH

Battery Life	Standby: ~3.uA over 10 Years

9.3 Software Specifications

RF Wireless Protocol	Ubilink
Firmware Update	By Over-The-Air
Alarm Report	Water Detection, Temperature, Tamper
Heartbeat Report	1 hour interval

GATEWAY

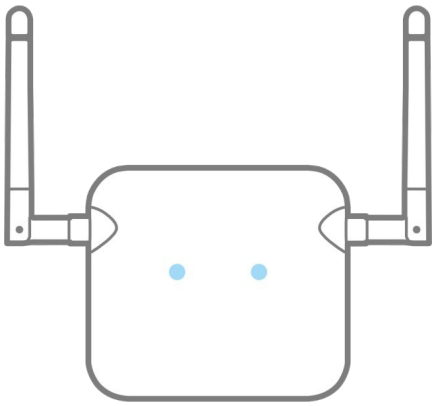
User Manual

FirebotSuppression.com

Date: January 31, 2024

CGW User Manual

FIREBOT GATEWAY



Content

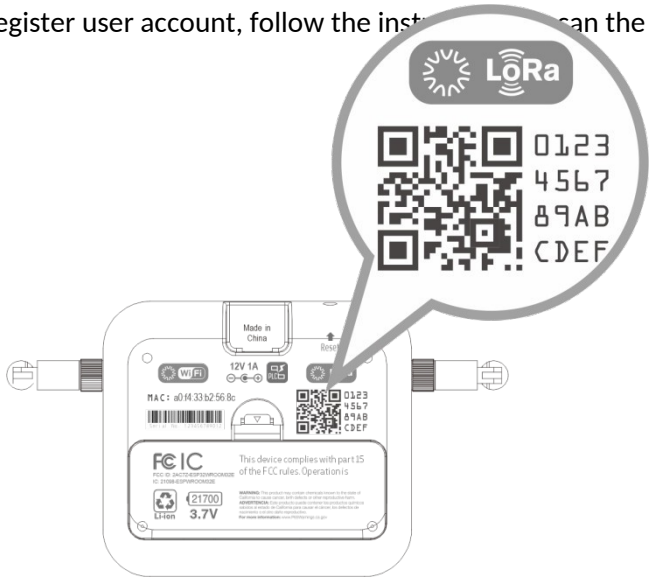
1 FIREBOT GATEWAY

The Firebot Gateway acts as the central control hub, equipped with full smart home capability (with other compatible devices becoming available soon). It continuously monitors the status and activity of your sensors and actuators, runs your defined rules, and provides remote access from anywhere in the world through your mobile device.
Additionally, it features an advanced weather proof 18Wh backup power system that can sustain operations for up to 24 hours, including the Ball Valve Servo, ensuring the safety of your home even during power outages.

2 DOWNLOAD APP

Scan the QR code to download Firebot APP, or search it from Apple Store/Google Store

After App installed, register user account, follow the inst[illegible]can the QR code on the Firebot gateway to activate it.



2.1 Resting the Gateway to a new Wi-Fi network

Should a new Wi—Fi be installed it is possible to connect the Gateway to the new Wi-Fi network
This process is easy and fast. Using a sharp pencil press three times in rapid sequence the set black
Rest botton on the side of the Gateway. At this point go to the app on your phone and select the new Wi-Fi network.

3 FEATURES & SPECIFICATIONS

3.1 Physical Features

Model No.	FBGW-1
Dimensions	
Weight	
Body Color	White
Operation Temperature	14~122°F (-10~+50°C)
Relative Humidity	8%~80%

3.2 Hardware Specifications

CPU	Dual-Core 32-bit LX6 Micro processor with clock frequency up to 240MHz
Memory	520KB of SRAM, 448KB of ROM, 16KB of RTC SRAM ， 2MB PSRAM and 8MB flash memory
Wi-Fi	• 802.11 b/g/n (2.4 GHz)
Bluetooth	Support for both Classic Bluetooth v4.2 and BLE specifications
PowerLine communication	UBILINK specification 115.2Kbps
LED Indicator	RGB LED x 2. one for cloud connection one for battery status

4 CGW LED DISPLAY & BUZZER INDICATION

Event	Status	Action	LED Color
Cloud LED Indicator	Wi-Fi not connected	Steady	Yellow
	Connecting Internet/Cloud	Blink	Yellow
	Cloud connected	Steady	Blue
	Internet/Cloud malfunction	Steady	Red

Battery LED Indicator	Fully Charged	Steady	Blue
	Recharging	Slow blink	
	Discharging	Intermittent flash	
Buzzer Indicator	Power Supply Lost	Triple Beep	-NA-
	Power Supply Restore	Double Beep	-NA-