PARADOX

WV2M

Wireless Electronic Water Valve

INSTALLATION MANUAL

FW Version: V1.00.030

Introduction

The WV2M is an M-series wireless-controlled valve designed for regulating the flow of water and other compatible liquids in challenging outdoor and marine environments. Built with a stainless steel SS304 body, a floating ball to prevent leaks, and durable metal and brass gears, it offers reliable operation in humid, dusty, or harsh conditions, with IP65 protection.

The valve communicates with Paradox M systems using advanced 2-way wireless communication, featuring the latest Gaussian Frequency Shift Keying (GFSK) technology with frequency and encryption hopping.

The WV2M includes a built-in visual position indicator and a manual override, and is available in four sizes: 1/4", 1/2", 3/4", 1", and 1 1/4". The manual override allows the valve to be operated manually if communication with the system is lost or the batteries are drained. Water flow through the valve is bidirectional.

The WV2M can be triggered by WD2M detectors, scheduled events, or system commands, with a battery life exceeding 6 years (based on once-daily activation). When the WV2M is triggered to close by a water detector, clearing the water alert does not reopen the valve; the valve must be opened manually via the BlueEye application or keypad. To ensure valve operation after a long period of inactivity, the M system performs automatic valve cycling after 14 days of inactivity, preventing the valve from getting stuck and ensuring reliable operation when needed.

The WV2M continuously monitors its position, providing open, closed, or mismatch status updates in the BlueEye application if the operation is incomplete.

Quick Installation- Experienced Installers

To install WV2M:

1. Turn ON the new valve (one time only).
   - Bring the magnet close to the top of the **Valve Driver** and move it away three times within eight seconds. For details, see the ***Turning On and Mounting*** section.
2. Pair WV2M with the console (using the BlueEye application):
   - Go to: **Hardware** > **Add Devices** > **Wireless Devices Auto learn/Scan QR code or add devices manually** (by entering serial number).
     NOTE: *If the device is paired by scanning the QR code or entering the serial number before power-up, it appears as **Pending** in the BlueEye application. The device status in BlueEye changes to **Online** after power-up.*
3. Configure WV2M (using the BlueEye application):
   - Go to: **Hardware** > **WV2M** > enter the necessary details > **Save**.
4. Install the valve inline on the liquid supply line.

Inbuilt Status Indications:

- **Green** – valve opening
- **Red** – valve closing/reset to default
- **Blue** – Not paired with the console/ lost communication with the console, about one minute.

For detailed instructions, see the following sections.

Components of WV2M

The following figure displays the components of WV2M.

Components of WV2M

Turning On and Mounting

1. Turn ON the new valve (one time only, when new).
   Bring the magnet (included in the box) close to the top of the **Valve Driver** and move it away *(See **Fig A**)*. Do this three times within eight seconds to turn on the valve.
   NOTE: *The status indicator flashes red each time the magnet is moved away. After 3 times, the WV2M turns ON, and the LED flashes red 5 times. The LED then flashes blue for approximately one minute, indicating that the device is not yet paired with the console.*
2. Pair the valve with the console and configure it using the BlueEye application. See the ***Pairing WV2M with the Wireless M Console*** and ***Configuring the WV2M*** sections in this manual.
3. Install the valve inline on the supply line you want to control.

Fig A: Turning On

Power-up Sequence

During the power-up sequence, the LED flashes five times red if the device is not paired to the console or five times green if it is paired. The WV2M waits between 0 -10 seconds before connecting/pairing with the console.

Pairing WV2M with the Wireless M Console

The pairing and configuration settings of WV2M are managed through the BlueEye application.

Prerequisites

Ensure that:

1. The WV2M is within the range of the console.
2. The BlueEye application is installed on your mobile and connected to the site.
3. The M console is powered on (Paradox logo color - white, red, or green).

Pairing WV2M

To pair the WV2M with the wireless console, by an installer:

1. When in the **Hardware** tab, tap **Add Devices**, and then tap **Wireless Devices Auto learn**.
   The wireless console searches for new devices and a rotating radar icon is displayed. All unpaired devices pair within 6 minutes and appear at the top of the device list with a ***new*** tag and voice announcements.
   The LED flashes blue until it is paired with the console or for a maximum duration of one minute (for battery saving).

Instant Pairing:
After tapping **Wireless Devices Auto learn**, bring a magnet near the top of the **Valve Driver** and move it away.

NOTE: *When pairing is successful, the LED flashes green five times (within up to 10 seconds) to confirm pairing with the console.*

Pairing Previously Used Devices

You can pair used devices under the following conditions:

- **When the previously used device is not online with another wireless console:** Start Auto learn. Bring the magnet closer to the product and then move away for instant pairing.

- **When the previously used device is online with another wireless console:** Delete the device, reset it, and then initiate Auto learn. To reset the device, see the ***Resetting*** section in this manual.

Pairing After Deleting the Device from the BlueEye Application

After deleting the device from the BlueEye application, do one of the following to pair it again:

- Reset the device and then pair it using Instant Pairing or Auto learn.
- Wait for up to 10 minutes, and then pair it using Instant Pairing or Auto learn.

Configuring the WV2M

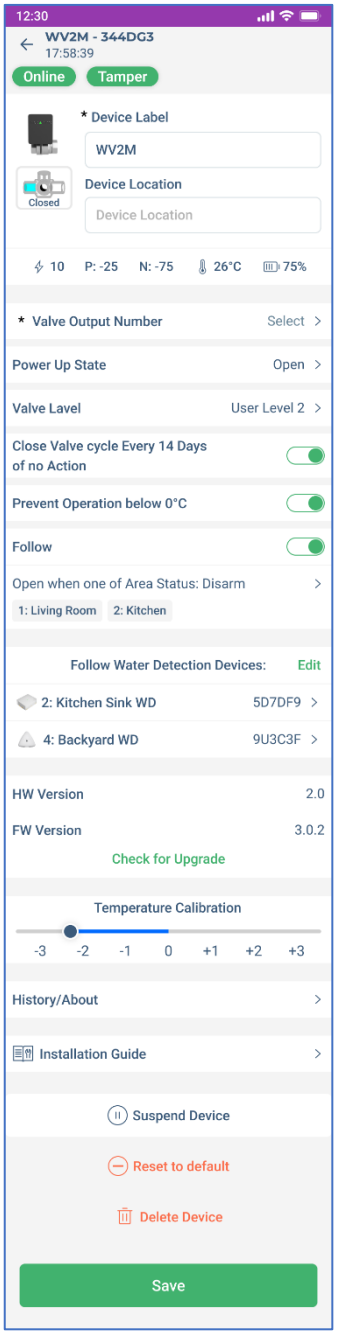
To configure the WV2M settings:

1. When in the **Hardware**, tap the **WV2M** device.
2. On the page that opens, enter the necessary details for the parameters and then tap **Save**.
   For details about each parameter displayed on the page, see Table 1.

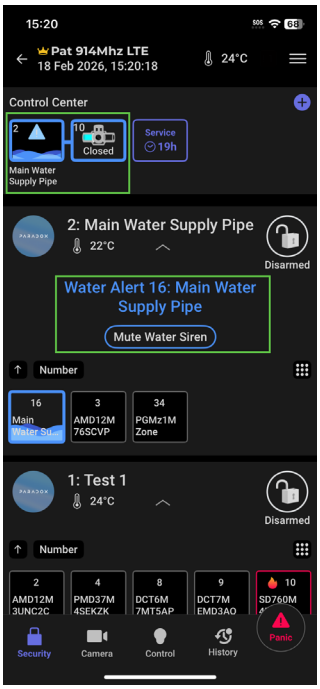
The following table lists the parameters displayed for configuring the WV2M, along with their descriptions.

Table 1

Parameter	Description
Device Details	Enter a name for the zone.
Valve Output Number	Assign a number to the valve.
Power Up State	Select the default state of the valve. • Open • Close • No Change
Valve Level	Choose one of the following options: • User Level 1 (All Permitted) – The installer, site owner, or site master can activate the water valve. A user can activate it only if the **PGM Scenario Activation** option is enabled in their profile. • User Level 2 – The installer, site owner, or site master can activate the water valve. A user can activate it only if both **PGM Scenario Activation** and **Restricted PGM/scenario** options are enabled in their profile.
Close Valve Cycle Every 14 Days of no action	When enabled, the system automatically cycles (closes and reopens) the valve if it remains open for 14 days without any user action, preventing sticking or malfunction.
Prevent Operation below 0°C	Prevents the valve from operating when the temperature drops below 0°C to avoid freezing issues.
Follow	When enabled, the valve will operate according to the area status, or the configured schedule.
Follow Water Detection Devices	Select water detection devices whose status the valve will follow.
Temperature Calibration	Allows manual calibration of the device's reported temperature to match the actual ambient temperature.
Suspend Device	Disables monitoring of the device in the system.
Reset to Default	This will reset the device to the factory default settings. Only users **NOTE**: *Only an installer can reset the device.*
Delete Device	This option deletes the device from the system completely. After deletion, the system generates a push notification only if the owner registration is complete, not during installation. **NOTE**: *Only an installer can delete the device.*



When a water leak is detected by a water detector assigned to the WV2M, an alert appears in the **Control Center**.



Manual Override

IMPORTANT: Lifting the handwheel disables motor operation. Do not leave the handwheel pulled out in manual mode.

The manual override function allows you to operate the valve manually in situations such as a power failure or during system commissioning.

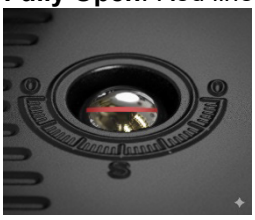
In the event of panel disconnection or power loss, the WV2M retains its last operating state (open or closed). When power is restored, the system updates and displays the current valve status in the BlueEye application.

NOTE: *When a water alarm is triggered by a water detector (such as WD2M), the system automatically closes the valve. Clearing the alarm does not reopen the valve; the valve must be opened manually after the alarm is cleared.*

*When a fire alarm occurs, the WV2M opens and remains open until the alarm condition is cleared. This function is enabled by default. To disable it, go to **Firmware** > **General** > then tap the **Fire Alarm Open Water Valves** toggle to turn it off.*

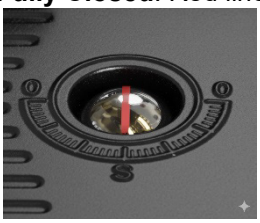
To operate the valve manually:

1. Lift the handwheel. Rotate clockwise or counterclockwise until the valve is fully open or closed.
    - **Fully Open**: Red line on the position indicator aligns with **0**.



Valve is fully open

- **Fully Closed**: Red line on the position indicator aligns with **S**.



Valve is fully closed

2. Press the handwheel downward to restore automatic operation.

Replacing Battery

To replace the battery:

1. Detach the **Valve Driver** from the motor as shown in ***Fig B***.
2. Remove the four screws from the back of the **Valve Driver**.
3. Remove the front cover of the **Valve Driver**.
4. Replace with new batteries. Ensure correct polarity.
5. Reattach the front cover and secure the **Valve Driver** back onto the motor.

Fig B

LED Indications

After configuring WV2M, the valve displays various LED indications based on specific events. The following table lists the LED indications and their corresponding event.

Table 2

LED Indication	Event
Green	valve opening
Red	valve closing/reset to default
Blue	Not paired with the console/lost communication with the console (about 1 minute)

Resetting

Bring a magnet close to the top of the water valve and hold it for 8 seconds, then move it away. The LED will flash five times red. Bring the magnet close again within these five flashes, and then the device resets to its default settings. The red LED flashes rapidly three times to confirm the reset.

NOTE*: If the device is already paired and online, delete the device first, then perform the reset on the device, and pair it again. Otherwise, the reset will have no effect.*

Upgrading Firmware

To upgrade the firmware:

1. When in the **Hardware** tab, tap on the device from the list > **Check for Upgrade**.
2. If an upgrade is available, tap **Upgrade** when prompted.
   The process may take a few minutes. Keep track of the progress in the BlueEye application to ensure that the upgrade is completed successfully. Both the Installers and owners can perform the upgrade.

IMPORTANT: The firmware upgrade can be done only when the system is disarmed.

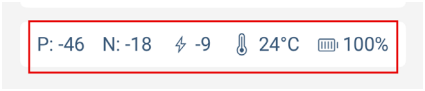
Signal Strength and Transmit Power Monitoring

The BlueEye application provides insights into each device's received signal strength and transmission power to optimize performance.

To view the RSSI and transmit power range:

1. When in the **Hardware tab**, tap the ⓘ icon next to the **Wireless** tab.
   A pop-up window with the RSSI and transmit power range is displayed.
2. Maximum power transmitted by WV2M:
   - 868 MHz: +14 dBm
   - 914 MHz: +22 dBm

Tap on any listed device to view signal strength and additional device metrics. The following parameters are displayed for each device:



- **P** - Received signal strength at the panel
- **N** - Received signal strength at the device
- - Transmit power of the device
- - Current temperature reading of the device
- - Battery level of the device

A higher P and N value indicates stronger and clearer communication between the console and the device.

- If **P** is low, the console struggles to receive signals from the device.
- If **N** is low, the device struggles to receive signals from the console.

NOTE: *Values below -93 with maximum Tx power are not recommended values, and RPT5M can be used to extend the range.*

Power transmission impacts only **P**:

- When **power transmission** increases, the **P** value at the console generally improves, as a stronger signal is sent.
- If the **P** value is good, the device can reduce its transmission power to save battery life.

IMPORTANT: All nodes adjust their transmission power to save battery life. The adjustment depends on the surrounding noise level and is updated at intervals set by the supervision timer or during a node status update.

Technical Specifications

The following table lists the technical specifications of WV2M along with their descriptions.
NOTE: *The specifications are subject to change without prior notice.*

Table 3

Specification	Description
Wireless Type	GFSK two-way with frequency and encryption hopping
RF Frequency	868 (865.05 - 867.95) MHz or 914 (902.25 - 927.55) MHz May vary by region
RF Power	868 MHz up to +14 dBm radiated, 914 MHz up to +22 dBm in permitted countries
Status Indicators in Application	Battery, temperature, TX/RX values, open/close
Opening or Closing Time	• Valve mechanical operation– approximately 6 seconds • Valve LED status update– approximately 12 seconds • Status update in the app– 14 seconds (Depends on the communication speed between the panel and server.)
Battery	2 x ER17335 6+ years of battery life
Humidity Range	Up to 95%
Transmission Time	Less than 20 ms
Supervision Time	20 minutes, 10 minutes (Default), and 3 minutes
Installation Environment	Indoor/Outdoor
Firmware Upgrade	Remotely over the air, via BlueEye
Operating Temperature	-20°C to +45°C (-4°F to 113°F)
IP Rating	IP65 for wireless control unit, IP67 for valve
Auto Learn	Yes
Colors	Black
Dimensions	7.7W x 11.2H x 9D cm (3" W x 4.4" H x 3.5" D)
Weight	WV2M (1") = 0.673 kg WV2M (1/2") = 0.455 kg WV2M (3/4") = 0.543 kg
Certification	CE, FCC 15.247

FCC Statements

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.
If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and the receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio/TV technician for help.

WARNING – RF EXPOSURE COMPLIANCE: This equipment should be installed and operated with a minimum distance 20 cm between the radiator and your body.

FCC ID: KDYWV2M
IC: 2438A-WV2M

- This Class B digital apparatus complies with Canadian ICES-003.
- -Cet appareil numerique de la classe B est conforme a la norme NMB-003 du Canada.

IC Statements

This device contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's license-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

1. L'appareil ne doit pas produire de brouillage;
2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

AVERTISSEMENT – CONFORMITÉ AUX NORMES D'EXPOSITION AUX RF: Cet équipement doit être installé et utilisé à une distance minimale de 20 cm entre le radiateur et votre corps.

Warranty

For complete warranty information on this product, see the Limited Warranty Statement document, or contact your local Paradox distributor.

Patents

US, Canadian, and international patents may apply. Paradox is a trademark or registered trademark of Paradox Security Systems (Bahamas) Ltd.