



Flow Meter

Lead-Free Z-wave Water Meters



INSTALLATION GUIDE

Congratulations on your purchase of flow meter! With Flow meter, you have the power to automate, manage water consumption, and detect leaks in your home or building. This is an integral part to a complete water management solution. Flow Meter tracks water usage and reports gallons used. Track your households water usage and drill into reports to find out where your peak consumption is and make changes to reduce your water bills. Flow meter tells you if water is flowing or if it's off. It knows if the flow is small, like a running toilet, or if it's large, like a garden hose left on. Flow meter can detect leaks or fixtures left on. It tracks usage and allows you create smart triggers using your Z-wave™ home automation system. To add to it's capabilities, flow meter checks the temperature in the nearby surrounds to detect for freezing conditions and sends temperature alerts. There's also a backup battery, just in case power is interrupted. You won't have to worry about lost data or lack of leak monitoring. Plumbed on the water main, flow meter is sure to be a valuable part of your total home automation & leak prevention system.

Pair together with our Automatic Water Shut-off Valve & Sensors for a complete Damage Preventions system!



PAIRS GREAT WITH OUR
WATER SHUT-OFF VALVE & SENSORS



WARNINGS AND PRECAUTIONS

- Do not store highly flammable items such as oily rags or other combustibles near your FMI.
- Do not apply electrical power to the unit unless the unit is fully assembled to avoid shock.
- Install unit in accordance with electrical & plumbing codes and regulations. In case you are unsure about any part(s) of these instructions consult a licensed electrician, plumber and/or professional Z-Wave™ home automation specialist.
- Functionality is based on wireless radio frequency (RF) transmissions. Any wireless transmission can be subject to RF interference or loss of communication. This interference or loss of communication may cause the unit to not operate as intended. You are responsible for ensuring that the FMI functionality and installation meets your desired requirements.

WARNING: The FMI must not be used in life support and/or safety applications.

- Do not place FMI on or near large metal objects. This decreases the range and/or blocks the wireless transmissions.
- Information provide in this manual is for your convenience and may be superseded by updates. This manual is subject to change without notice.

WHAT'S IN THE BOX?

The components in **Figure 1** are included in the box:

1. Flow Meter Body
2. Data Cable (6')
3. Flow Meter Interface Radio (FMI)
4. Brass Threaded Adaptors (Qty: 2)
5. Sealing Rings (Qty: 2)
6. Brass Pipe Meter Adaptor (Qty: 2)
7. Power Cable (6.5')
8. Power Adaptor

INSTALLATION OF FLOW METER

Before installing the flow meter, it is recommended to consult with a licensed plumber to determine key items that will allow for proper installation of the Flow Meter.

1. Where is your water main inlet located?

You can determine this by finding your main shut-off valve. There should already be an existing Meter there from the City to collect their readings. If you are on a well system, there may be no meter present.

WARNING: It is against the Law to remove or tamper with an existing city meter!

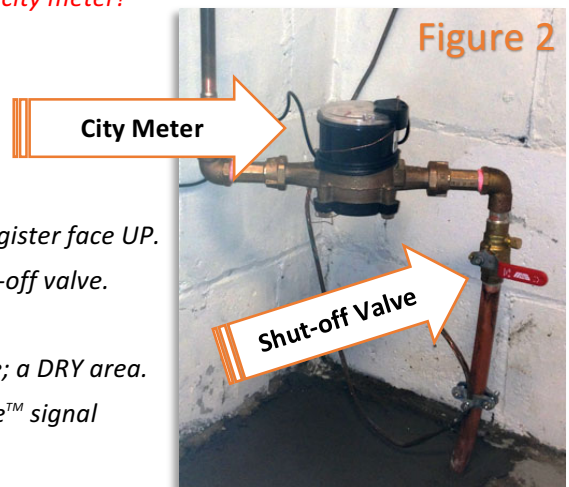
Figure 2 is an example of a main line in a basement:

2. Determine the installation location of the Flow Meter.

Meter Body can be installed Inside or Outside.

If Inside:

- Allow room for meter to be plumbed in the horizontal position, register face UP.
- Meter must be plumbed AFTER (downstream) of main water shut-off valve.
- Within 10 feet of an electrical outlet, in a dry location.
- FMI (interface radio) must be in an air conditioned / heated space; a DRY area.
- FMI must be within 25 feet of the Z-wave™ hub or another Z-wave™ signal repeating device. If Not, add signal repeating devices.

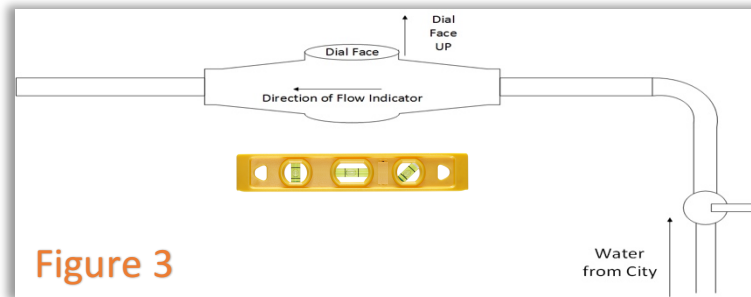


If Outside:

- Allow room for meter to be plumbed in the horizontal position, register face UP. It can be Above or Below grade.
- Meter must be plumbed AFTER (downstream) of the main water shut-off valve OR add a Service Valve.
- FMI radio will require installation INISDE and connected to the flow meter using the supplied data cable. Consider the location to drill and run data cable inside. Cable length varies depending on the model you purchased.
- Protect the flow meter from the elements and direct exposure to the sun. Use a **plastic** protective cover. Here are some examples:



3. The Flow Meter Body must be installed in a **Horizontal** orientation, **Level**, and with the register (**Dial face**) **upward** as seen in **Figure 3**. This will allow for proper functionality and the most accurate readings.



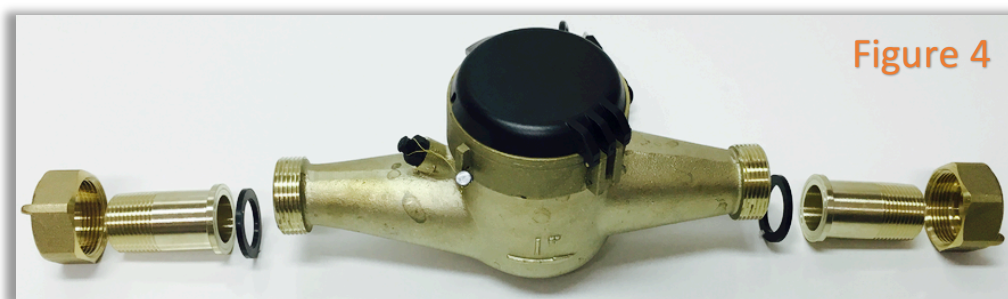
4. Plumbing the Meter

1. Thoroughly flush the service line upstream of the meter to remove dirt and debris.
2. Set the meter in-line, making sure water flow follows the directional arrow cast in the meter body.
 - a. If you have copper line, use a copper female threaded adaptors for a soldered install.
 - b. If you have PEX or CPVC, use the appropriate threaded adaptor type per their specification.



3. **Figure 4** below shows how the flow meter shall be assembled using the supplied hardware:
4. When re-introducing water back into the system, gradually open the shut off valve and allow water to flow **slowly** until valve is completely open. This will prevent damage to the meter.

WARNING: Do not abruptly open water supply after meter install. The sudden pressure may damage the meter!



INCLUDE YOUR FLOW METER INTERFACE (FMI) TO YOUR Z-WAVE NETWORK



1. Install the two AA batteries and secure the bottom cover using the 4 supplied screws.
2. Bring FMI within 3 feet of your Z-wave™ Hub to pair it.
3. Refer to your controller's user manual for specific details on network inclusion, exclusion or association.

Inclusion (adding to network)

1. Set inclusion mode on your controller
2. Press and hold the program button on the FMI for 1-3 seconds. The LED on the FMI will blink twice if successful.

Exclusion (Removing from network)

1. Set up exclusion mode on your controller
2. Press and hold the button on the FMI for 1-3 seconds. The LED on the FMI will blink four times once complete.

CONNECTING FMI TO THE METER

1. Walk the FMI back to the location of the installed meter body.
2. Plug in the data cable coming from the meter body into either port in FMI.
3. Plug in the power adaptor cable end into the remaining open port in FMI.
4. Plug the power adaptor into the wall. The LED will flash to indicate AC power ON.

Note: *It doesn't matter which port you plug power / data into. They are interchangeable.*



Location of FMI

Place FMI in a dry location. Do not place it in a location that may be exposed to high moisture or extreme temperatures. Keep away from metal ducts / surfaces as this may interfere with the wireless signal between the FMI and the Z-wave™ Hub. Make sure it is within 25' of your Hub or another signal repeating device. Do not run on Batteries ONLY. They are only for backup.

Functional Capability

Flow Meter will immediately begin measuring flow, logging it, and then reporting the information, which can be used for automation, consumption tracking, and notification's. ****Function's below are dependent on your Z-wave Hub integration. Refer to your specific Z-wave Hub for details. Visit our website product page for downloadable plug-in's / APPS for your specific controller.***

Flow vs No Flow

Flow meter indicates if water is flowing immediately upon detection of water flow. Minimum flow required to activate meter is 0.25 gallons' / minute flow. If flow stops (No flow for >1 minute), Flow meter will report a NO FLOW state.

Flow vs High Flow

Flow meter indicates if water flow rate is below 5 Gallons / minute (default is 5gpm) or ABOVE. If Above, it will indicate a HIGH FLOW State. The 5gpm threshold trigger is configurable. See technical manual for details.

Water Consumption Metering

Flow Meter will keep the running total of gallons consumed. See your consumption report(s) and view your total's by day, week, and month. Reset the count at anytime to start over.

Flood Detector

Flow Meter information can be used as a trigger for a water leak alarms. For more information, visit our website under the Flow Meter product page.

Associations

Once in a network, a controller can be used to associate the FMI with other devices in the Z-Wave network such as a light or a remote audible alarm. The FMI supports four association groups with a maximum of 5 associated devices in each group. Refer to the technical user manual table for additional information.

Resetting the Flow Meter Interface

Press and hold the program button for 20 seconds then release. The LED's will blink rapidly for about 10 seconds indicating that the FMI has been reset. **CAUTION – When a reset is done in-network, the device will no longer be in the network. All configurations and associations will be set to default.**

Configuring your Flow Meter (Z-wave™)

Temperature Alarms:

- The high and low temperature set points can be configured via Z-wave™. The low setpoint must always be set at least 2 degrees C below the high setpoint. The low setpoint cannot be less than -10 deg C, and the high setpoint cannot be higher than 70 deg C. Refer to your controllers' manual on how to send configurations. Refer to our technical user manual for details on configuration parameters.

Meter Count Reset:

- The meter count can be reset back to “0” via Z-wave™ configuration. Refer to our technical manual for details.

Flow Threshold Alarms:

- Water Flow threshold is set by default to 5 gallons / minute. Flow above 5 gallons / minute will display “High flow”. This can be configured to a different value. Refer to our technical manual for details.

MAINTENANCE & CARE

Flow Meter Body

The Flow Meter is a low maintenance system and only requires attention once a year.

1. Shut-off water main & drain the lines.
2. Disconnect Flow Meter body from FMI and remove it from your water main.
3. On the inlet side, remove the mesh filter (see figure 5). Inspect it for damage, clean it, and place the filter back in.
4. Check O-ring seals and replace if necessary.
5. Re-install meter body back on the water main.
6. SLOWLY open water main valve to re-pressurize the system (Leave a faucet open to allow air to escape the line's)

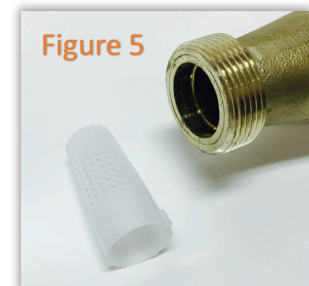


Figure 5

Note: Your system may require more frequent filter cleanings if you have well water or high sediment content in your water supply.

FMI Maintenance

FMI uses 2 AA batteries for back-up. When low, FMI will alert you to change your batteries.

Replacing batteries: (See Figure 6)

1. DO NOT un-plug FMI from AC power source.
2. Remove the bottom cover to expose the batteries.
3. Remove the AA batteries and replace with NEW one's.
4. Re-fasten bottom cover using the four screw's.



Figure 6

TROUBLESHOOTING

Trouble connecting to your Z-wave Network?

Check to make sure FMI isn't already in a network. Press the program button and observe LED indicator. See table below. You may need to first exclude the unit from a network, then include it. You can also perform the RESET function.

Note: Your Z-wave HUB may not support this device. Contact us for a list of recommended Z-wave Hub's.

LED Status Indications

Fast Blinks	Slow Blinks	Continuous Blinks?	Description
1			Button has been pressed
	1	Yes	Network-Wide Inclusion(NWI) mode (automatically entered at power-up when not "in network")
2			FMI is 'in-network' (indication after inclusion and after power up)
	2		Main Power (+5v adapter) has dropped out
4		Yes	FMI is 'out-of-network' (indication after Button is pressed)
	3		Waiting for Over-The-Air firmware update(initiated by pressing button quickly 3 times in a row; exit by another button press)
30 (approx.)			After a device rest has been completed

Is your meter not reporting flow data?

Please check your connections. Make sure FMI is plugged into the meter body. Is the reed switch on the register loose? Do you have the meter plumbed with the flow arrow in the correct orientation?

MORE RESOURCES

For more troubleshooting help, online resources, and more, please visit our website or contact us.

www.fortrezz.com

CONTACT US

MAIN OFFICE: (248) 481-7092 HOURS: (M-F 9AM-5PM EST) *

Sales & Product Inquiries: sales@fortrezz.com

Tech Support / Warranty Inquiries: support@fortrezz.com

LIMITED WARRANTY

THIS PRODUCT IS PROVIDED WITH ONE YEAR LIMITED MANUFACTURER'S WARRANTY. FORTREZZ, LLC warrants its products to be free from defects in material and workmanship under normal use for one year, and is not responsible for consequential damages or installation costs of any nature. FORTREZZ, LLC. Expressly disclaims all implied warranties, including but not limited to the implied warranties of merchantability and fitness for a particular purpose. FORTREZZ, LLC. Does not warrant, guarantee, or make any representations regarding the use or the results of the use of the products or any accompanying materials in terms of their correctness, accuracy reliability or otherwise. In no event shall FORTREZZ, LLC. Be liable to Purchaser hereunder or in respect of any products ordered or delivered to Purchaser, whether in contract, tort including negligence or otherwise for a loss of profits or loss of use or for any incidental, consequential, special or indirect damages howsoever caused whether or not FORTREZZ, LLC. has been advised of the possibility of such loss or damage. FORTREZZ LLC's maximum liability to Purchaser under subject of the claim and in respect of all claims for products ordered from FORTREZZ, LLC. To which these conditions apply to the amount paid by Purchaser for the products which are the subject of the claims. If you are not comfortable with your limited warranty, or not completely satisfied with the Flow Meter, or the FMI does not perform as expected we encourage you to return it to your DISTRIBUTOR for an exchange or for a refund within 30 days of purchase.

REGULATORY INFORMATION

FCC Compliance Statement 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. Contains Transmitter Module FCC ID: WRD-FM5202
FCC Warning (Part 15.21). Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC Interference Statement (Part 15.105 (b)). 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 of the following measures:

(1) Reorient or relocate the receiving antenna / (2) Increase the separation between the equipment and 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.

Industry Canada Statement per Section 4.0 of RSP-100

The term "IC:" before the certification/registration number only signifies that the Industry Canada technical specifications were met.

Section 7.1.5 of RSS-GEN. 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.

From section 5.2, RSS-Gen, Issue 2, June 2007 Equipment Labels: Contains IC: 8156A-FM5202; PN: Model: FM5202-US-SMT

From section 7.1.6, RSS-Gen, Issue 2, June 2007

Digital Circuits:

If the device contains digital circuitry that is not directly associated with the radio transmitter, the device shall also have to comply with ICES-003, Class A or B as appropriate, except for ICEC-003 labeling requirements. The test data obtained (for the ICES-003 tests) shall be kept by the manufacturer or importer whose name appears on the equipment label, and made available to Industry Canada on request, for as long as the model is being marketed in Canada.

Le présent appareil est conforme aux CNR d'Industrie 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, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

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

HELPFUL WEB SITE: Industry Canada <http://www.ic.gc.ca/>

Europe

The FMI module has been tested for use in European countries. The following testing has been completed:

Test standard EN 300 220 ; (2012-05) Test standards ETSI EN 301 489-1 ; (2011-09)

A helpful document that can be used as a starting point in understanding the use of short range devices (SRD) in Europe is the European Radio Communications Committee (ERC) Recommendation 70-03 E, downloadable from the European Radio Communications Office (ERO) <http://www.ero.dk>. The end user is responsible for ensuring compliance with harmonized frequencies and labeling requirements for each country the end device is marketed and sold. A Declaration of Conformity must be issued for each of these standards and kept on file as described in Annex II of the R&TTE Directive.



The Waste Electrical and Electronic Equipment (WEEE) directive (2002AA/96/EC) was approved by the European Parliament and the Council of the European Union in 2003. This symbol indicates that this product contains electrical and electronic equipment that may include batteries, printed circuit boards, liquid crystal displays or other components that may be subject to local disposal regulations at your location. Please understand these regulations and dispose of this product in a responsible manner.