RELIANCE
DETECTION TECHNOLOGIES

RS-360 Wireless Plumbing Leak Protection and Valve Closure System

Installation Manual
(Rev C)

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RS-360 Wireless System FCC & Industry Canada information:

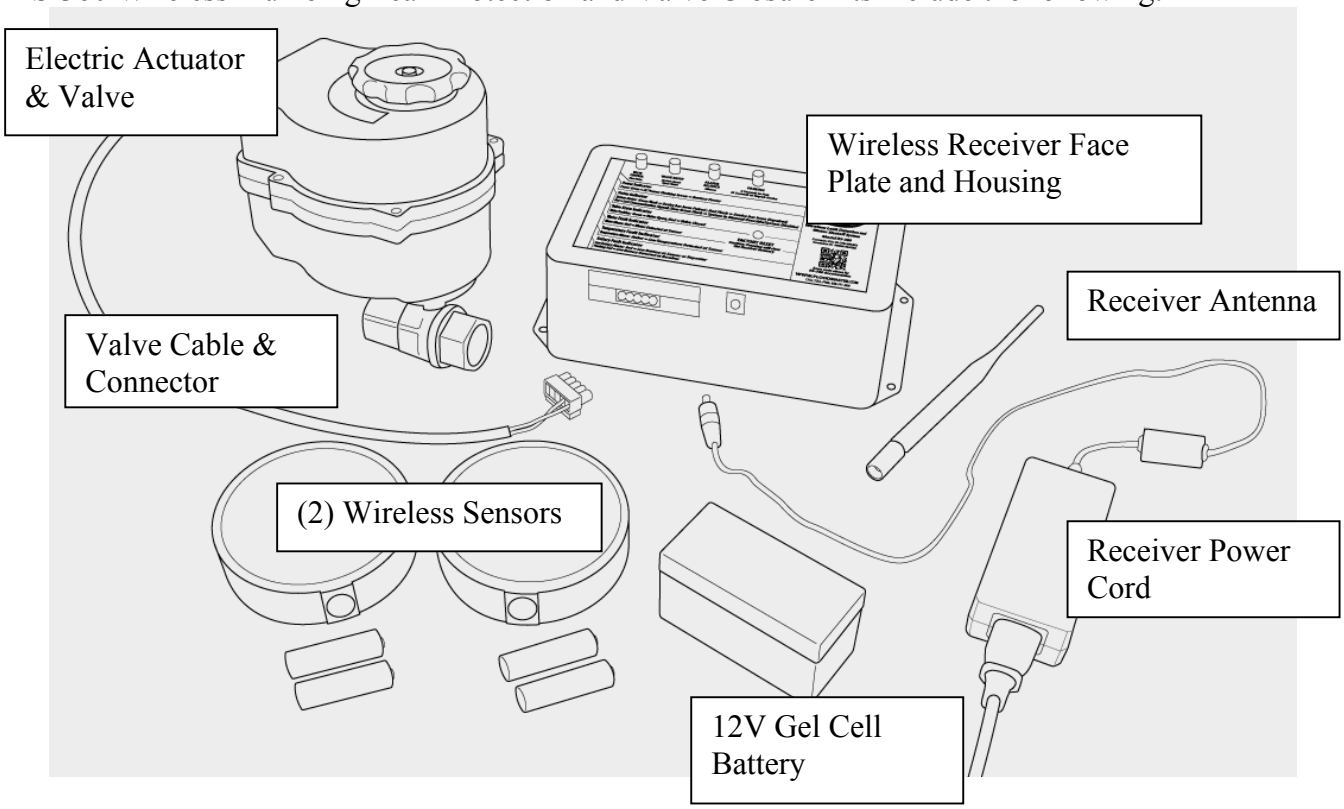
This system and its wireless accessories (sensors and repeaters) include the following:

Contains Transmitter Module FCC ID: TFB-SIFLEX2
IC: 5969A-SIFLEX2

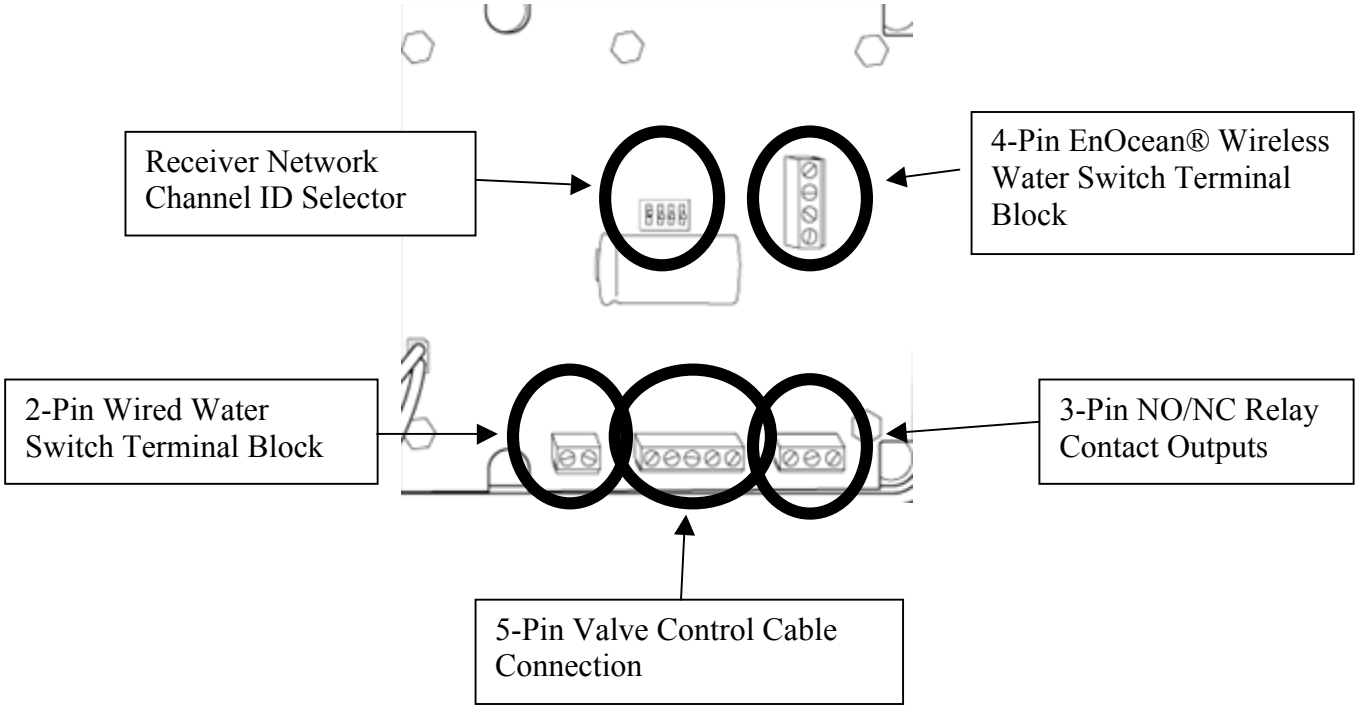
To comply with FCC and Industry Canada RF radiation exposure limits for general population, the antenna(s) used for this transmitter must be installed such that a minimum separation distance of 20cm is maintained between the radiator (antenna) and all persons at all times and must not be co-located or operating in conjunction with any antenna or transmitter.

System Components

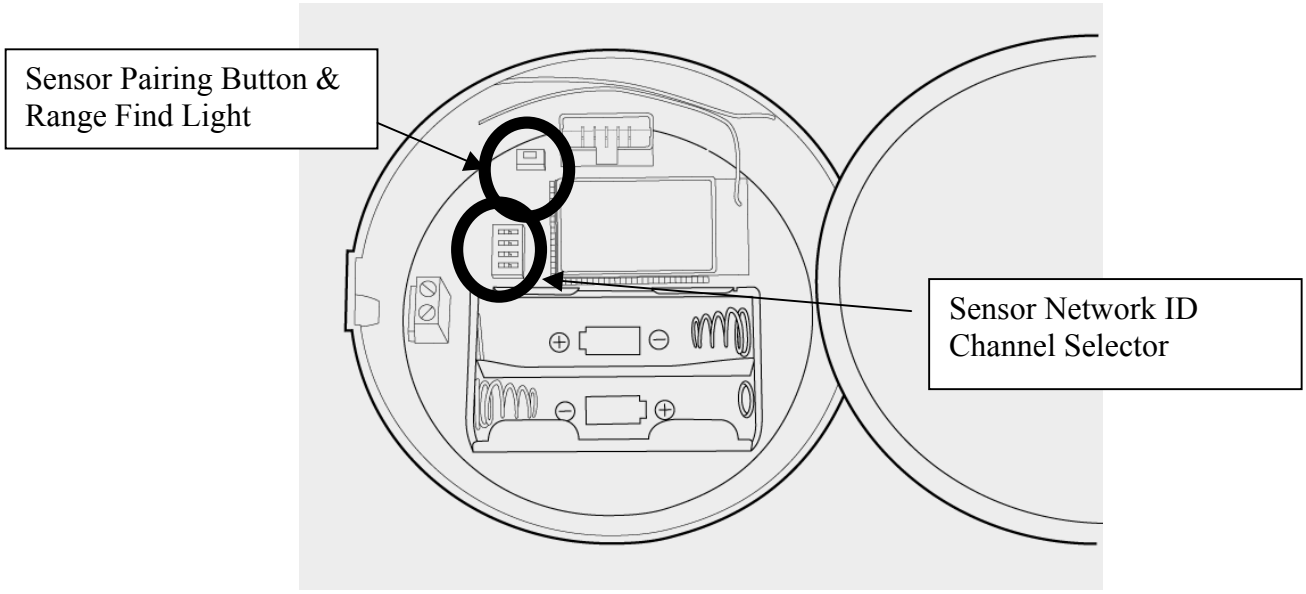
The RS-360 Wireless Plumbing Leak Protection and Valve Closure kits include the following:



Wireless Receiver PC Board Call Outs



Wireless Sensor PC Board Call Outs



Best Practices for Optimum System Performance

DO test for optimum signal strength and valve controller location prior to valve installation
DO install the shutoff valve AFTER the manual shutoff and AFTER any fire suppression systems
DO place sensors in areas where water is likely to accumulate first in the event of a leak
DO install the valve controller in an accessible location at least 5 feet above the floor
DON'T place your fingers or anything inside the valve ports; doing so can result in the loss of finger and/or damage to the valve.
DO mount the Receiver in a location at least 10' away from metal panels, large electric motors and other typical wireless interferences.

Initial Start-up and Installation

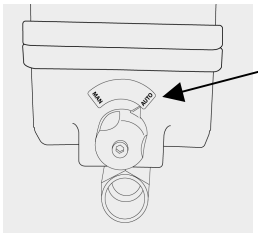
Step 1 – Install the Valve and Electric Actuator

We strongly recommend that a licensed plumber perform the installation of the valve on the water pipe. The shutoff valve should always be installed AFTER the manual water shutoff valve and AFTER all fire suppression lines that may be in place for the facility. The valve is bi-directional full-port and can be installed in any direction or orientation to meet the needs of the application (horizontal, vertical, etc).

1. The shutoff valve should always be installed AFTER the manual water shutoff valve and AFTER all fire suppression lines that may be in place for the facility.
2. Turn off the water supply to the building.
3. Install the valve using best plumbing practices and in adherence to all local plumbing codes.
    a. Note: Butterfly valves (2-1/2", 3" and 4") require appropriate mounting flange and hardware (not included).
    Flange = 316/316SS Forged, Threaded NPT-F, 150 lb ANSI Raised Face Flange (Raised surface on the back).

Valve Size	NPT Dimension	Flange OD	316 SS, 5/8-11 Bolts	316 SS Flat Washers	316 SS Nut 5/8-11	316 SS Split LocK Washer
			Qty	Qty	Qty	Qty
2-1/2"	2-1/2"	7"	4	8	4	4
3"	3"	7-1/2"	4	8	4	4
4"	4"	9"	8	16	8	8

4. Open water supply and inspect for leaks.
5. For Full Port Valves (3/4" – 2") - Confirm the dial on the back of the actuator is in the "Auto" position.

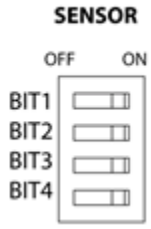


Step 2 – Wireless Network Channel Selection

Use the Wireless Receiver to confirm factory default Wireless Network Channel is the appropriate wireless channel for the system in the installation environment.

1. Screw the Antenna onto the nut located in the upper right hand corner of the Receiver.
2. Place the Receiver in the general installation location it will be mounted (typically nearest the shutoff valve location) and power up the Receiver via the power cord connector.
3. Using a paperclip or similar device, press and hold the recessed Factory Reset Button on the Receiver for 10-15 seconds until you observe all Lights turn on and light solid.
4. Release the Factory Reset Button and observe that all of the Lights begin to flash randomly while the system checks for interference on the factory default channel.
5. Wait 60 seconds.
6. If after 65 seconds:
   (a) Lights **STOP** flashing – the factory default channel is a good channel – confirm all sensors are set the same factory default channel as the Receiver and proceed to Installation Step 3.

   Factory Default Channel:



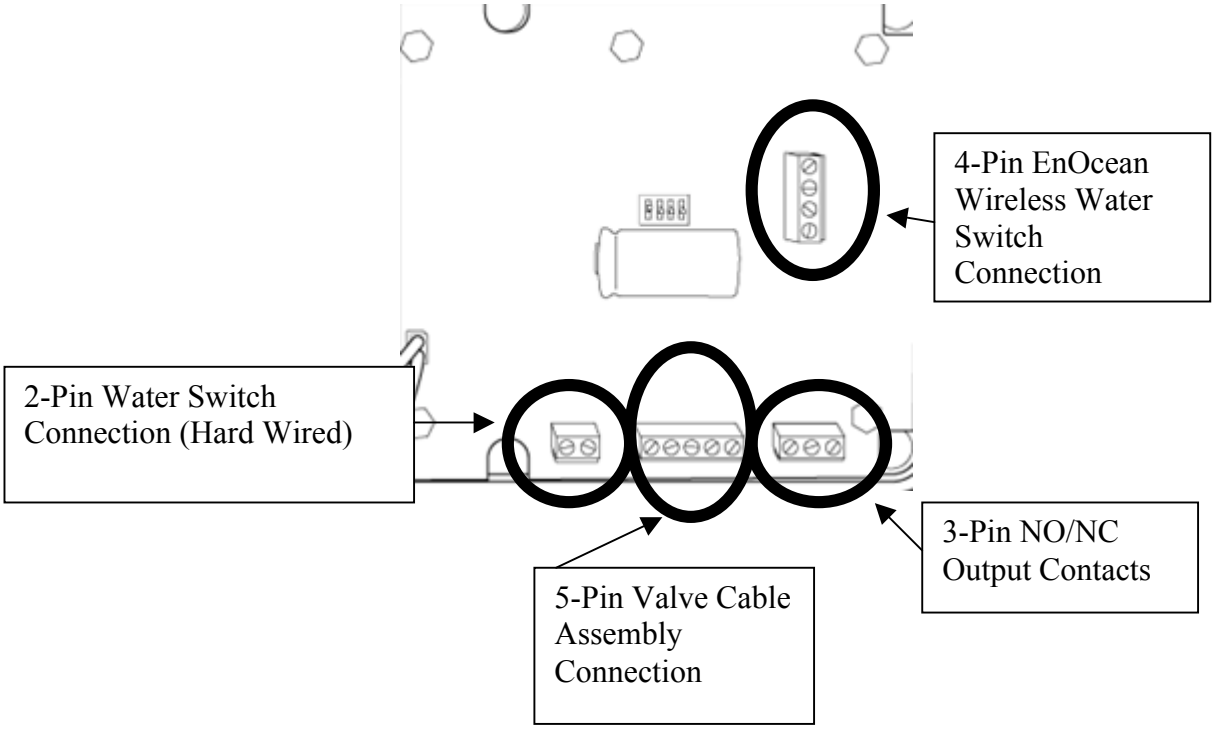
   (b) Lights **CONTINUE** to flash – a new Network Channel ID needs to be selected and tested
      (i) Remove the Receiver Power Cord to power down the unit
      (ii) Remove the two factory installed face place screws on the Receiver to expose the Receiver pc board.
      (iii) Locate the Network Channel ID on the pc board
      (iv) Move one of the four channel selectors from On to Off
      (v) Reconnect the Receiver Power Cord
      (vi) Repeat Steps 3-6 above until a good channel is found
      (vii) Set the new Network Channel ID on all of the Sensors to match the Receiver.

Failure to confirm a "good" wireless network channel for the installation could result in communication errors and false alerts.

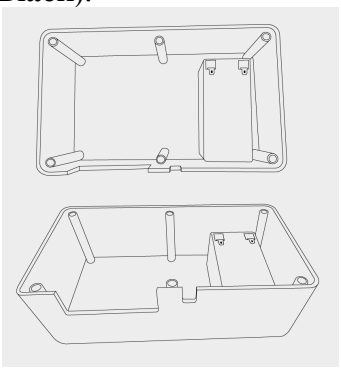
Step 3 – Receiver Assembly and Mounting

For best results, mount the Receiver in a location at least 10' away from metal panels, large electric motors and other typical wireless interferences. Make sure the Receiver is powered down during the following steps.

1. With the **Receiver unplugged and powered down** wire up any optional connections to the Receiver PCB (Water Switch, NO/NC Relay Contacts, etc) by first removing the two factory installed screws on the Receiver face plate to access the pc board. If no connectivity is desired, proceed to Step 2.



2. Mount 12V SLA Gel Cell Battery into the Receiver housing lower right corner and secure in place with the provided Velcro pads. Connect the Receiver pc board Battery Cable connectors to the battery spade connectors (**Red to Red; Black to Black**).



3. Carefully secure the Receiver Face Plate and PC Board to the Receiver enclosure housing via the 6 screws holes, taking care that no wire connections are in the way of a secure fit.
4. Mount the Receiver to the wall via the (4) mounting holes using supplied hardware or other suitable hardware as might be appropriate. Confirm the Power Indicator LED on the Receiver Interface Panel is

flashing Green for Battery Power. If not, remove faceplate and check battery terminal connection (Red to Red; Black to Black).

5. Connect the male and female ends of the valve cable assembly together.
6. Plug the Receiver Power Cord into the mating hole on the bottom of the Receiver housing. Plug the Power Cord into a standard 120VAC wall outlet.
7. On initial power-up, the Power Indicator should change from flashing to steady Green
    a. Power Indicator (Green=AC Power)
8. Press and release the Receiver Valve Control button to confirm Valve operation. Valve should close and Valve State Indicator light will turn Red. Press and Release the Receiver Valve Reset button; valve should open and Valve State Indicator light should turn Green.

Step 4 – Wireless Sensor Pairing

Program the Wireless Sensors to communicate with the Receiver.

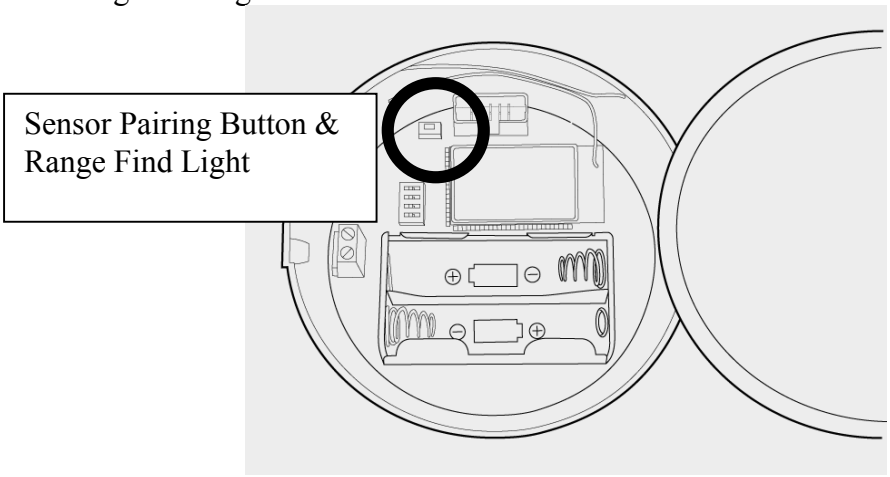
1. Slide the Sensor cover to the side to expose the internal PCB. Confirm the Sensor Network Channel ID matches that of the Receiver (refer to Step 1.)
2. Install 2-AA Batteries into the Sensor to be enrolled into the wireless network.
3. Press and hold the Pairing button on the Receiver User Interface Panel for 5 seconds until the Receiver Status Indicator light begins to flash Green.
4. With the Receiver Status Indicator light still flashing, Press and hold the Sensor Pairing button for 5 seconds or until it also flashes a green light.
5. Release the Sensor Pairing button
    a. Observe both the Receiver Status Indicator and Sensor **lights turn solid green then turn off**. System pairing/communication has been established; Repeat steps 1 – 5 for each Sensor then proceed to Step 4.
    b. Receiver Status Indicator keeps flashing green and Sensor Installation light is Red.
        i. Confirm same Network Channel ID setting at Receiver and all Sensors
        ii. Repeat Steps 1-5 again

Step 5 – Wireless Sensor Placement / Range Finding Mode

Use the Wireless Sensors to test wireless communication strength between each Sensor and Receiver via the Sensor Range Find Mode.

Whenever performing range testing for wireless signal communication, be sure all interior doors are in the shut or closed position. Also ensure that no one is holding or standing within 5' of either the test Sensor or the Receiver. Humans can act as an antenna and thus interfere with normal communication conditions.

1. Slide the Sensor Cover to the open position on a previously paired Sensor and press and release Sensor Pairing button and observe a continuously flashing green light on the Sensor. The Sensor is now in Range Finding mode.



2. Move the sensor to the desired leak or low temperature detection location, being sure to close all doors as you move throughout the facility. Place the sensor in the detection area (typically on the floor where water is first likely to accumulate) and step back five (5) feet. Observe the flashing light.
    a. A quick flashing green light indicates excellent communication with the Receiver.
    b. A slow flashing green light indicates good communication with the Receiver.
    c. A slow flashing red light indicates less than optimal communication with the Receiver.
    d. A steady red light indicates no communication with the Receiver (bad location)
3. Adjust the sensor placement in the desired location until you are satisfied with the communication.
4. Press and release the Sensor Interface button again to EXIT the Range Find mode. Slide the Sensor cover to the closed position.
5. Repeat steps 1-4 for each sensor you wish to deploy.

See Troubleshooting Guide for alternate Sensor options and Wireless Signal Repeaters for any challenging or solid Red light indicator locations.

Step 6 - Sensor Testing (Requires two people for optimum efficiency)

 Whenever testing the wireless signal performance, be sure all interior doors are in the shut or closed position. Also, the human body can act as an antenna and thus interfere with normal communication, therefore ensure that no one is holding either the Sensor (or the Receiver) during testing.

1. With the Sensor in the desired location (on the floor, inside a vanity, etc) rest the pins on the underside of the Sensor on a damp paper towel and step back 5 feet.
2. Observe Fault indications as follows:
    a. Sensor – Red Flashing Light
    b. Receiver – Water Fault Indicator Light = Red; Valve begins to close; Valve State Indicator Light turns Red and Audible Alarm Sounds
    c. Reset:
        i. Sensor
            1. Remove the Sensor from the paper towel.
            2. Press and release Sensor Pairing Button; observe Red Flashing Light Stops
        ii. Receiver
            1. Press and release Valve Reset Button; observe system return to normal monitoring state (Power Indicator = Green/AC Power; Valve State Indicator = Green/Open)

Repeat Steps 1-2 for each Sensor.

Step 7 – Final System Testing

Refer to the Trouble Shooting Guide for any unexpected behavior(s).

1. Confirm final integrity of the system installation – retest Sensors per Step 6 above.
2. Confirm Correct Operation of Valve Opening & Closing – visually at the valve or via a nearby faucet (open = water; closed = no water).
3. Confirm Dry Output Connections function as expected (if applicable).
4. Confirm correct operation for Battery Back-up by simulating a power outage - disconnect the Receiver Power Supply from the wall outlet; Receiver Power Indicator Light should flash Green.
5. Document Wireless Sensor locations in the section provided.

Technical Support Information

Reliance Detection Technologies, LLC
27 Business Park Drive
Branford CT 06405
www.reliancedetection.com
Phone: 888 771 4929 / 203 488 4477
Fax: 203 481 5036
e-mail: info@reliancedetection.com
Normal Business Hours: 8:30 am to 5:00 pm (EST) Monday – Friday (Closed for major Holidays)

Wireless Sensor Locations

Sensor #	Location
Example: 1	*2nd Floor Master Bathroom*

System Maintenance Log

Installation Date:
Installed by:
Installer Contact Info: