

WaterStopper User Instruction Setup and Troubleshooting guide

Thank you for purchasing the newest, most exciting development in home automation.

WaterStopper is an affordable state of the art, purpose designed and built system that allows the user to easily reduce their risk of water damage caused by burst or leaky pipes inside a building.

All water systems leak, it is just a matter of time.

System description

Water damage from burst or leaking pipes presents a major risk to landlords and home and business owners. Such losses add up to billions annually. While many such losses may be insurable, the inconvenience and stress associated with such disasters is stressful and unnecessary.

The WaterStopper system consists of 5 water sensors which, when activated (by water), send a coded signal to the receiver. The receiver actuates a ball valve (included) which is installed in-line with the building's main water line. This closes the valve and minimizes any further water damage. The receiver's LED turns from green to red and the receiver emits an audible alarm tone. **The receiver also sends a text** (via Ethernet) if it has been plugged into a connected router with an Ethernet cable. This alerts the user of the water situation and allows them to take timely action.

Precautions and limitations

There are some important things to remember when setting up and using your new system

- 1) Like all low power radio devices it has a limited range. The sensors should not be located more than about 60 feet from the receiver.
- 2) A repeater unit can be installed between the sensor and the receiver to help increase the range.
- 3) The repeater is powered using a 3.3V DC adaptor (wall wart) with a smaller barrel jack.
- 4) The receiver is powered using a 5VDC AC adaptor (wall wart). It can also be powered using USB to barrel jack (cable supplied). If the receiver is not powered (indicated by a green LED) , the system will not function.
- 5) The ball valve must be installed correctly as described and illustrated below.

The electrical cable must be plugged fully into the side of the receiver in order to actuate the ball valve and to allow the ball valve to be reset following a repair of a leak.



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Figure 1- Sensor Top side- coins for size comparison

- 6) Placement of sensors is important. The local microenvironment may require that the sensor is moved a few inches to allow its transmission to be received.
- 7) Sensors need to be located near a source of potential leaks, such as between a sink and a toilet, beside a hot water heater or near the floor drain in a basement.
- 8) Use of any unapproved parts or using the supplied parts in ways not described here could lead to unsatisfactory performance and loss of protection against water damage



Figure 2- Electrical ball valve- prior to installation

Regulatory warnings

FCC/Industry Canada

- This device complies with FCC Part 15 and Industry Canada license exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.
- This device complies with Health Canada's Safety Code. The installer of this device should ensure that RF radiation is not emitted in excess of the Health Canada's requirement.
- Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
- 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
- Cet appareil est conforme avec Santé Canada Code de sécurité 6. Le programme d'installation de cet appareil doit s'assurer que les rayonnements RF n'est pas émis au-delà de l'exigence de Santé Canada.
- Les changements ou modifications non expressément approuvés par la partie responsable de la conformité pourraient annuler l'autorité de l'utilisateur à utiliser cet équipement.

Setup and Installation

Ensure that your Waterstopper system contains the following items:

- Wireless sensors (qty 5)- see illustration 1 above
- Receiver module- (qty 1)- see illustration
- Screws and tape to attach receiver to wall
- AC adaptor for **receiver** module (5VDC)- has 3.5 mm barrel jack (qty 1)
- Ball valve assembly- has audio style 2.5mm jack (qty1)
- Repeater (qty 1) –small enclosure marked “Repeater” with one hole for 3.3VDC plug
- AC Adaptor for **repeater** (3.3VDC)- has smaller 2.5 mm barrel jack (qty 1)
- Ethernet cable cat5 6 foot (qty 1)

Steps Un packaging and test

- 1) Plug the 5VDC power adaptor into the receiver- to the right of the red reset button
- 2) Plug the power adapter into a 120VAC receptacle
- 3) Plug the ball valve into the receiver



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4) Plug the Ethernet cable into the receiver and the other end into a router (LAN port) or repeater such as a Dlink DIR-505

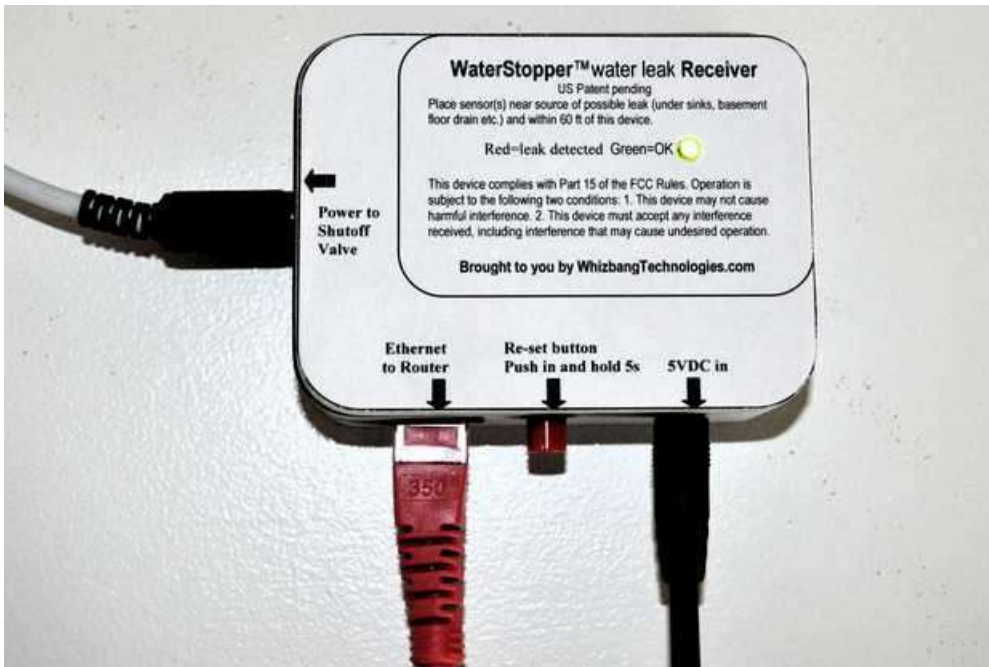


Figure 3- Receiver- showing ball valve connection on left, red Ethernet cable on bottom left, red reset button in bottom middle and DC power supply on bottom right.



Figure 4- Sensor metal pins up for testing (must be placed with pins down to operate)

5) Place a sensor (figure 4) -metal contact sides up- on a firm level surface. Wet two fingers of the other hand and touch (hold) both metal contacts for 20 seconds- the valve should actuate
6) Within 30 seconds of wet finger touch, you should receive a text telling you the valve has closed in response to a leak



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- 7) You should hear an audible alarm (single 2.73kHz tone 80dB @ 5V, 10cm) from the receiver (figure 3) and the LED should now be red
- 8) Depress and hold the red reset button for a full 5 seconds. You should hear the valve move and reset.

Installation

In order for Waterstopper to be able to turn off a building's water supply it must have the ball valve installed in series (in line) with the building's manual shut off valve.

The user is cautioned against installing the ball valve if lacking the required skill and expertise to do so competently. It is best to use a professional plumber to avoid any problems.

The valve assembly has brass threaded female fittings on both ends into which a variety of plumbing fittings may be inserted to allow for quick and easy installation. The user is cautioned to inspect all plumbing installations periodically and have any leaks repaired promptly to minimize the risks of any water damage.

Once the valve is installed, the receiver can be affixed to a nearby (less than 3 ft) wall in a location (using two wood screws (e.g. $\frac{3}{4}$ " #8) or double sided carpet tape to allow the white cable with the audio jack extending out of the valve assembly to be plugged into the end of the receiver.

The 5VDC adaptor plugs into the receiver hole marked 5VDC using the 3.5mm diameter barrel jack. The adapter must then be plugged into a code compliant 120VAC receptacle.

The Ethernet cable is plugged into the receiver and the other end into a LAN port of a router or repeater such as a Dlink DIR-505 to allow the user to receive texts at the previously programmed cell phone number.

The system can now be checked by activating the sensors (wetting the contacts against your fingers) one by one. Each time it is activated the building's water supply will be stopped. The ball valve must be reset by depressing the red reset button for a full five seconds to restore water flow.

The user is cautioned that periodic checks (as described above-at least annually) of the sensors are necessary in order to ensure that they remain operative.

The sensors can then be placed throughout the building, in locations that are prone to water leakage. It is recommended that sensors be located near sources of potential leaks, such as between a sink and a toilet or beside a hot water heater or near the floor drain in a basement.



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The user is cautioned that the sensors, repeater and receiver may be damaged or depleted and could become inoperative if subjected to any kind of mechanical or chemical damage and should not be left in areas where children or pets may damage or displace them.

The repeater should be placed in a location approximately central in the building to allow it to receive signals from all directions and repeat them to the receiver. It must be plugged into the 3.3VDC wall adaptor (supplied, which must be plugged into a 120VAC receptacle.

When a leak is detected

The ball valve closes immediately, an audible alarm sounds and the LED turns red and you receive a text- which is why you were asked for your cell number and service provider when ordering.

Example text

**"your.name@gmail.com
Subj: WaterStopper unit 101
Water sensor tripped, valve closed"**

Once a text is received, the user must take the appropriate action to remedy the cause of the leak (e.g. call a plumber, etc.) before resetting the WaterStopper by pressing the red reset button for 5 seconds. The leak may be near any of 5 sensor locations. Each must be investigated to rule them out.

If there is an extended delay in getting the leak fixed, it may be possible to isolate the source of the leak by using a local shutoff such as is commonly installed with most plumbing appliances. This would allow the user to restore water to the building but minimize the potential damage from the leak.

If the WaterStopper is powered down by removing the AC adaptor input, the valve will remain in a closed position if it was previously actuated. Likewise, if the valve is open and the WaterStopper is powered down the valve will remain open until power is restored and a signal from a sensor is received.

For further information, assistance or troubleshooting please visit our website at WhizBangtechnologies.com or contact Michael Cogill mpcogill@telus.net

Or refer to the following system graphical representation.



Graphical Representation of WaterStopper System Function

Lightning is used to represent wireless radio signal

