McKinley-Ross

WaterSwitch™

Installation/User Manual

McKinley-Ross

NoMoreWaterDamage.com

Rev. 10/6/13

For Technical Support Call: 1-800-843-7222

Warnings

SAFETY STATEMENT

PLEASE REVIEW THE FOLLOWING SAFETY STATEMENTS BEFORE YOU BEGIN THIS INSTALLATION.

BATTERY WARNINGS:

Contains non-spillable, sealed, lead-acid battery and alkaline batteries. Batteries must be recycled or disposed of properly. At the end of battery useful life, under various state and local laws, it may be illegal to dispose of this battery into the municipal waste stream. Discard used batteries according to state and local laws. Dispose of the battery packs only at approved recycling or disposal sites.

CAUTION:

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Replace the internal battery pack only with a OEM recommended equivalent to avoid the risk of fire or explosion resulting in personal injury.

USE ONLY CHARGER PROVIDED WITH UNIT. Do not recharge with adapters other than the ones supplied with this unit. Do not plug charger into extension cord, only plug into properly grounded electrical outlet. Do not submerge in water or allow any component in this system to get wet. This unit is not waterproof.

WARNING:

Operating Temperature. This product is designed for a maximum ambient temperature of 40° degrees C.

WARNING:

Install product in accordance with local and National Electrical Codes.

FCC/IC Statements:

MODEL: McKinley-Ross Transmitter

FCC ID: 2AA2P-MRC101TX

IC: 11429A- MRC101TX

This device complies with Part 15 of 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.

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:

—Reorient or relocate the receiving antenna.

—Increase the separation between the equipment and receiver.

—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

—Consult the dealer or an experienced radio/TV technician for help.

This device complies with Industry Canada licence-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.

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.

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"Changes or modifications not expressly approved by McKinley-Ross Corporation could void the user's authority to operate the equipment."

Note, the critical element is that if the user modifies the device, they void any authority to operate the equipment.

WARNING EXPLOSIVE ATMOSPHERE:

Do not install or operate the system in the presence of flammable gases or fumes. Operation of any electrical equipment in such an environment constitutes a definite safety hazard.

WARNING ELECTRICAL SHOCK HAZARD:

To avoid electrical shock hazard, disconnect power cord or turn off circuit breaker to all appliances BEFORE installing appliance adapter and before removing covers from appliances.

ESD CAUTION:

This product uses components which can be damaged by electrostatic discharge (ESD). To avoid damage, be sure to follow proper procedures for handling, storing and transporting parts and subassemblies which contain ESD sensitive components.

WARNING:

Do not work on plumbing, equipment or cables during periods of lightning activity

Installation Notes

1. **The WaterSwitch™ must be installed by a McKinley-Ross certified installer .**
2. **All paperwork must be filled out, signed and originals submitted to your dealer as part of the installation.**
3. **Complete Post-installation checklist. Customer Acceptance Form.**
4. **The owner will receive a Warranty Card and Owner's Manual as part of the installation.**
5. **WaterSwitch™ system customer familiarization accomplished and form signed.**
6. **Catch water that may drain from pipes and supply lines to avoid damage to floors and walls.**
7. **Some state and local codes require the unit to be installed by a licensed plumber.**
8. **Always follow local, state and national code.**

Installer Notes

Table of Contents

Initial Inspection

1. Before turning off the water supply check all faucets, commodes, hose bibs (exterior faucets) appliances and all other water outlets for leaks. All leaks must be fixed BEFORE installing the WaterSwitch™.
2. Inspect the area where the manifold will be installed. The manifold must be installed immediately after the supply enters the building and after the water supply shut off valve (if there is a local shutoff for the structure). Make sure there are no obstructions and that there is room enough for the manifold and the “Y” filter.
3. Install within 6 foot of a 110 outlet for power supply.
4. Locate where the control panel will be installed and insure you will be able to route the cable from the manifold to the control panel (cable should be routed within walls inside of occupied areas).
5. Inspect each sink and appliance and insure you have the proper flow switch adaptors, and appliance cables. Plan transmitter locations so customer will be able to easily replace transmitter batteries. Insure transmitters are placed in a location that will be pleasing to the eye and the flow switch wires will not be damaged or pulled loose from transmitter.

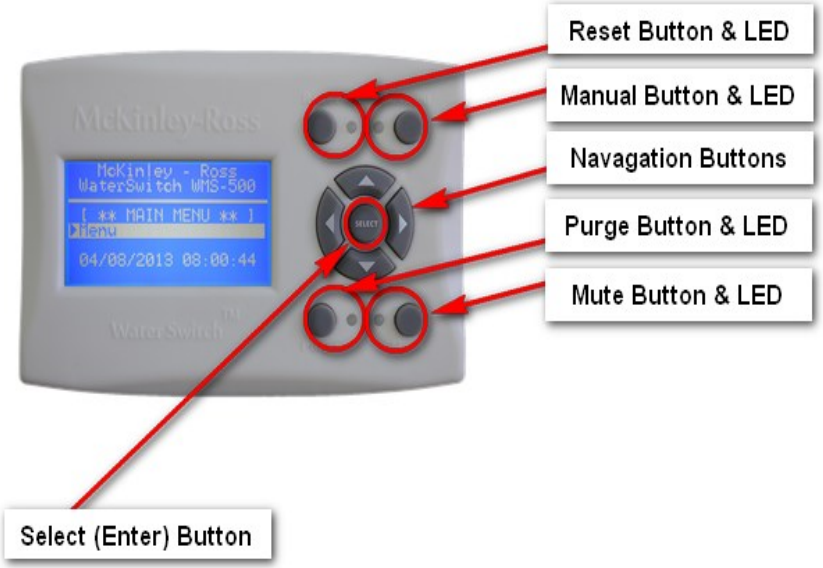
7. Once the reset button is pressed the system will manual fill again and you are ready.

8. Make final trip thru the house testing all installation points for proper operation.

Tests

You are now ready to test the system.

1. Turn the main water supply on.
2. You should see the water pressure increase above 0 on the control panel.
3. Go ahead and do a purge test as follows:



4. Press the purge button.
5. Scroll right and select yes
6. Wait 5 minutes then press the reset button.

Installing the Manifold

Notes: The manifold must be installed as close to the water supply entry point into the building (preferably in garage or laundry room)

and after the main supply cut-off.

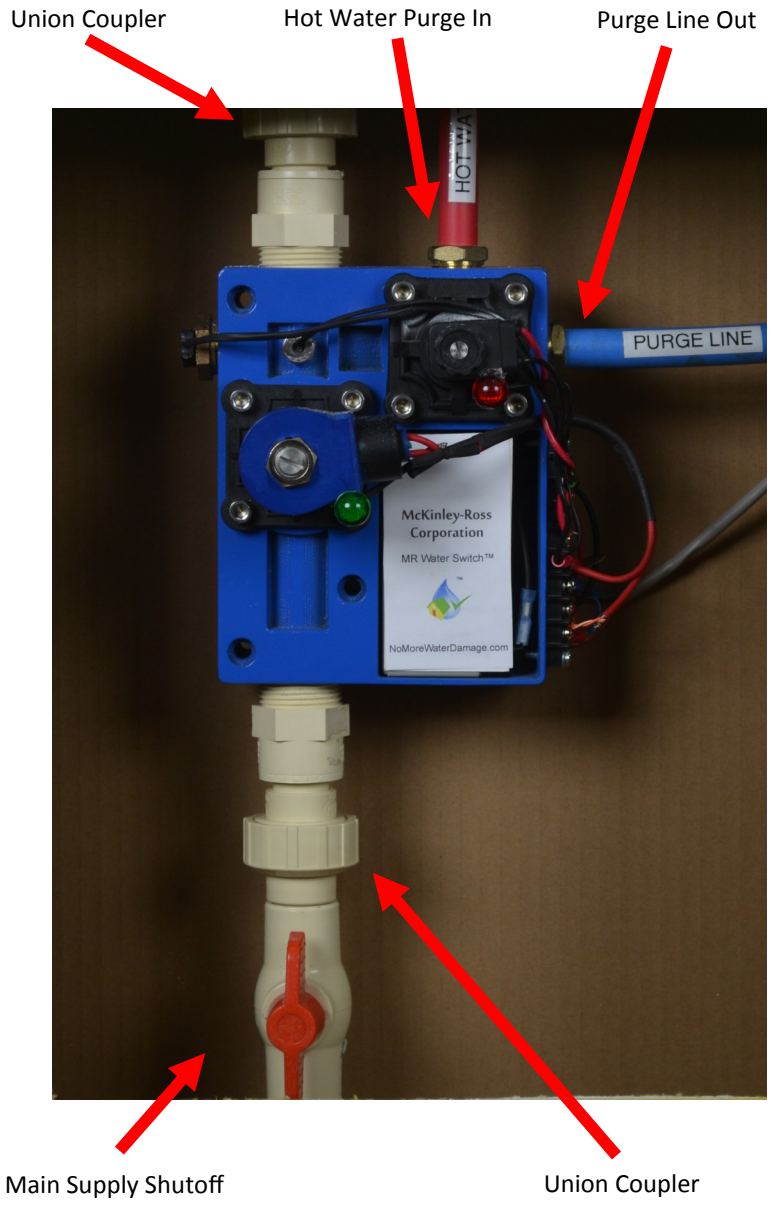
Catch all water draining from supply lines.

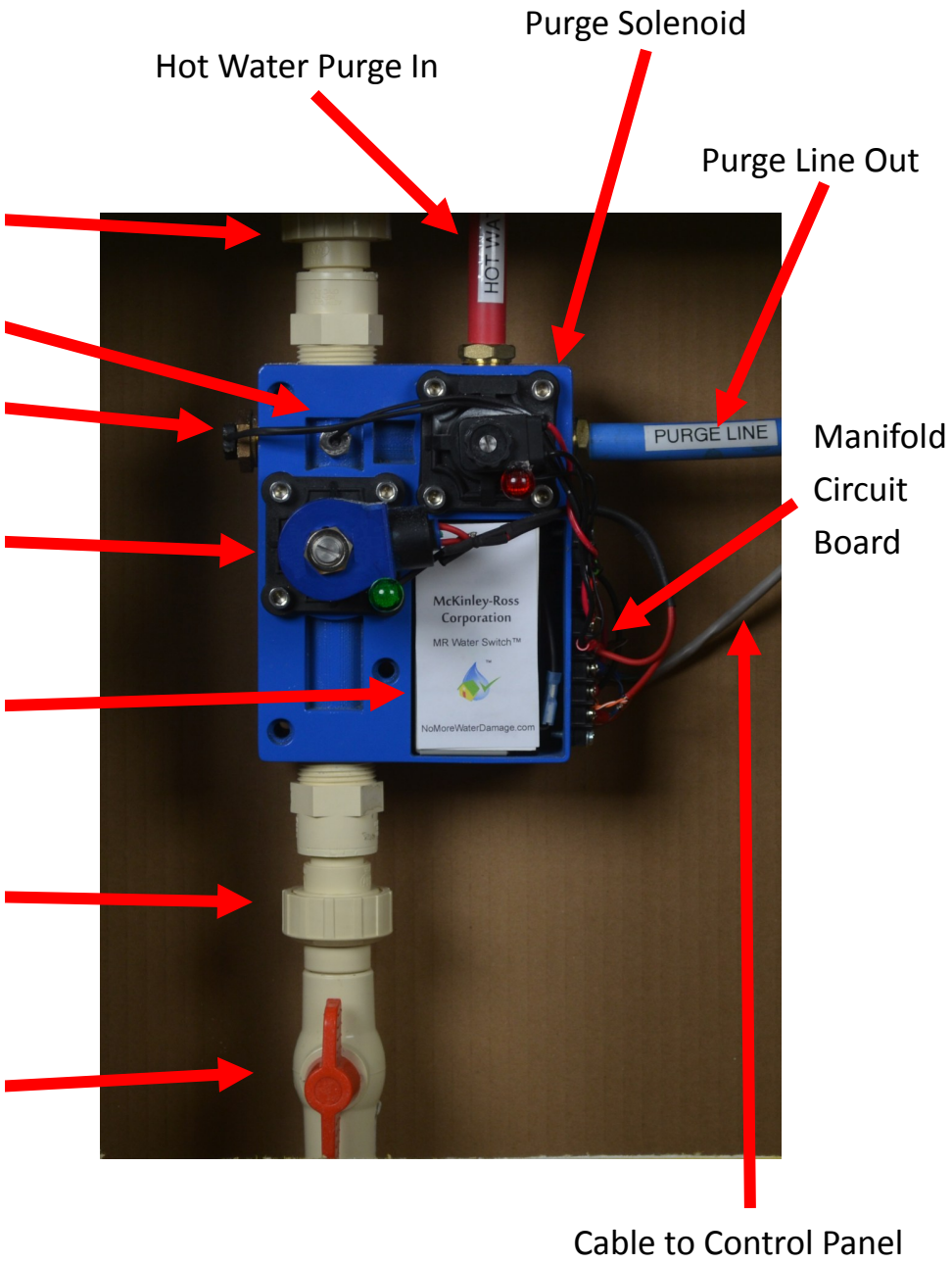
1. Turn of water supply to the structure; at the structure if it exists or at the municipal supply if no local structure shutoff valve exists.
2. Relieve the pressure in the water supply lines.
3. **If no local structure shutoff valve exists:**

   a. Close municipal supply valve. Install new shutoff where the supply line enters.

   b. Once shutoff is installed open supply line and check for leaks.
4. Install the “Y” filter according to manufacturer’s instructions.
5. Measure the distance needed to install the manifold and union couplers and cut the supply line at a length needed to install the manifold and couplers.
6. Install the union connectors on both ends of the supply line then install the manifold and tighten the couplers.
7. Install “T” in nearest hot water supply line and connect pipe from “T” to “Hot Water Purge” input on manifold.
8. Install purge line running to the outside of building.

Manifold Installed





Manifold Diagram

Union Coupler

Temperature Sensor

Pressure Sensor

Main Solenoid

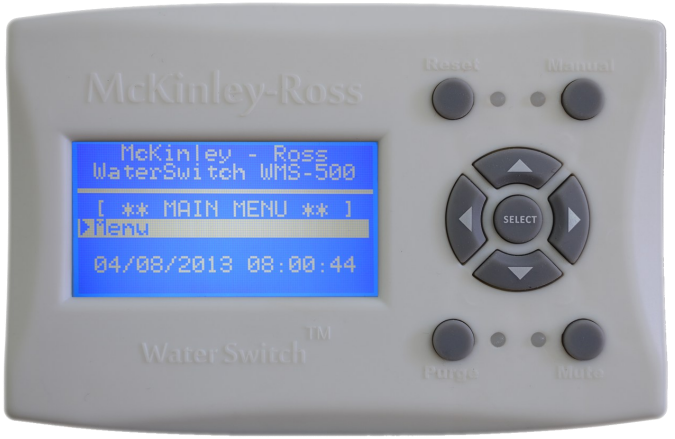
12 Volt Backup Battery

Union Coupler

Main Supply Shutoff

Installing the Control Panel

1. Make Sure control panel is within 20 feet of Manifold.
2. Make sure control panel is level.
3. Mount backing plate onto 2 studs.
4. Drill a 3/8” hole through the control panel backing plate.

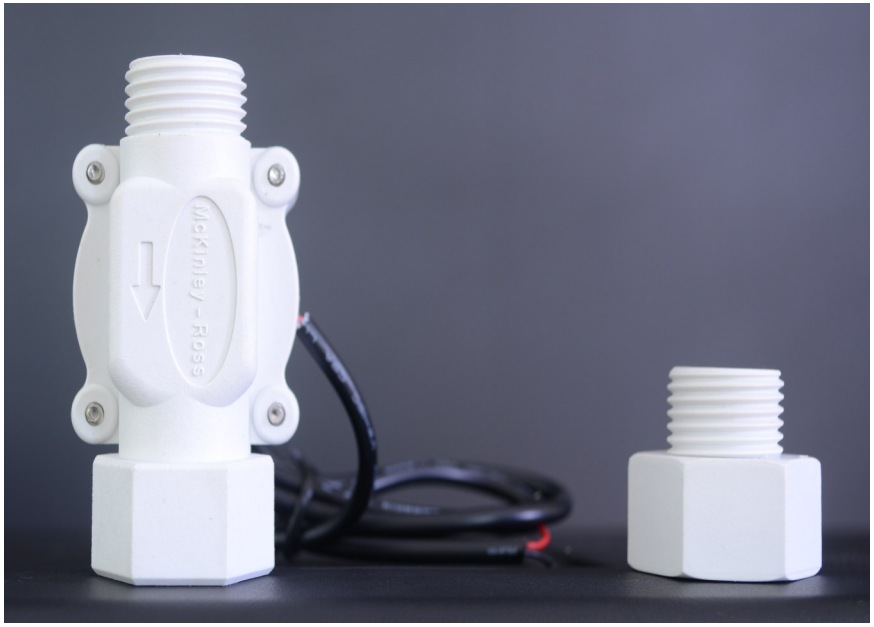


Installing Flow Switches

Note 1: <u>INSURE THE MAIN WATER SUPPLY IS OFF!</u>

Note 2: Flow switches must be installed in the vertical position with arrow pointing up or horizontal with screws on top . They will not work properly and water flow must be in the direction of the arrow as indicated on the switch. Do not over-tighten flow switches or adaptors; silicone washers will be damaged.

Flow Switch **Toilet Adapter**



sink	kitchen 3 sink		
r 2	dishwasher 3		
or 2	refrigerator 3	refrigerator 4	refrigerator 5
2	ice maker 3		
ine 2	wash machine 3		
	laundry 3		
shr	masterbath sink	masterbath tub	masterbath tlt
ower	bath 1 sink	bath 1 tub	bath 1 toilet
ower	bath 2 sink	bath 2 tub	bath 2 toilet
ower	bath 3 sink	bath 3 tub	bath 3 toilet
ower	bath 4 sink	bath 4 tub	bath 4 toilet
ower	bath 5 sink	bath 5 tub	bath 5 toilet
ower	bath 6 sink	bath 6 tub	bath 6 toilet
ower	bath 7 sink	bath 7 tub	bath 7 toilet
ower	bath 8 sink	bath 8 tub	bath 8 toilet
ower	bath 9 sink	bath 9 tub	bath 9 toilet
hower	bath 10 sink	bath 10 tub	bath 10 toilet
ten 2	water soften 3		
2	hose bib 3	hose bib 4	hose bib 5
7	hose bib 8	hose bib 9	hose bib 10
12	hose bib 13	hose bib 14	hose bib 15
2	sprinkler 3	sprinkler 4	sprinkler 5
7	sprinkler 8	sprinkler 9	sprinkler 10
	garage 3		
2	humidifier 3		
sis 2	rev osmosis 3		
	bar 3		
	bedroom 3	bedroom 4	bedroom 5
	bedroom 8	bedroom 9	bedroom 10
	dining 3		
2	basement 3		
	den 3		
	family 3		
	living 3		
er 2	transmitter 3	transmitter 4	transmitter 5
er 7	transmitter 8	transmitter 9	transmitter 10
er 12	transmitter 13	transmitter 14	transmitter 15
er 17			
	ignore		

Transmitter Names

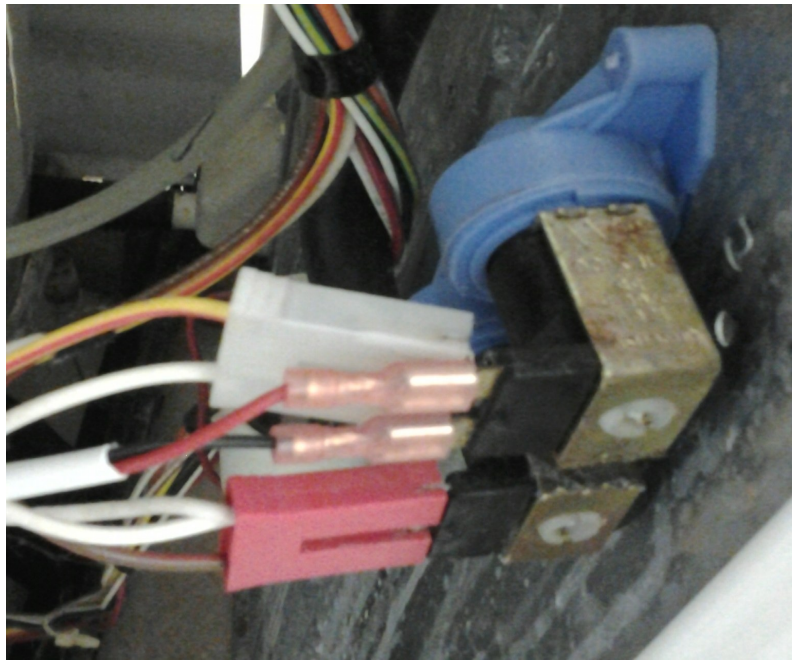
kitchen 1 sink	kitchen 2
dishwasher 1	dishwashe
refrigerator 1	refrigerat
ice maker 1	ice maker
wash machine 1	wash mach
laundry 1	laundry 2
masterbath	masterbath
bath 1	bath 1 sh
bath 2	bath 2 sh
bath 3	bath 3 sh
bath 4	bath 4 sh
bath 5	bath 5 sh
bath 6	bath 6 sh
bath 7	bath 7 sh
bath 8	bath 8 sh
bath 9	bath 9 sh
bath 10	bath 10 s
water soften 1	water soft
hose bib 1	hose bib
hose bib 6	hose bib
hose bib 11	hose bib
sprinkler 1	sprinkler
sprinkler 6	sprinkler
garage 1	garage 2
humidifier 1	humidifier
rev osmosis 1	rev osmos
bar 1	bar 2
bedroom 1	bedroom 2
bedroom 6	bedroom 7
dining 1	dining 2
basement 1	basement
den 1	den 2
family 1	family 2
living 1	living 2
transmitter 1	transmitte
transmitter 6	transmitte
transmitter 11	transmitte
transmitter 16	transmitte
undefined	unknown

Installing Flow Switches

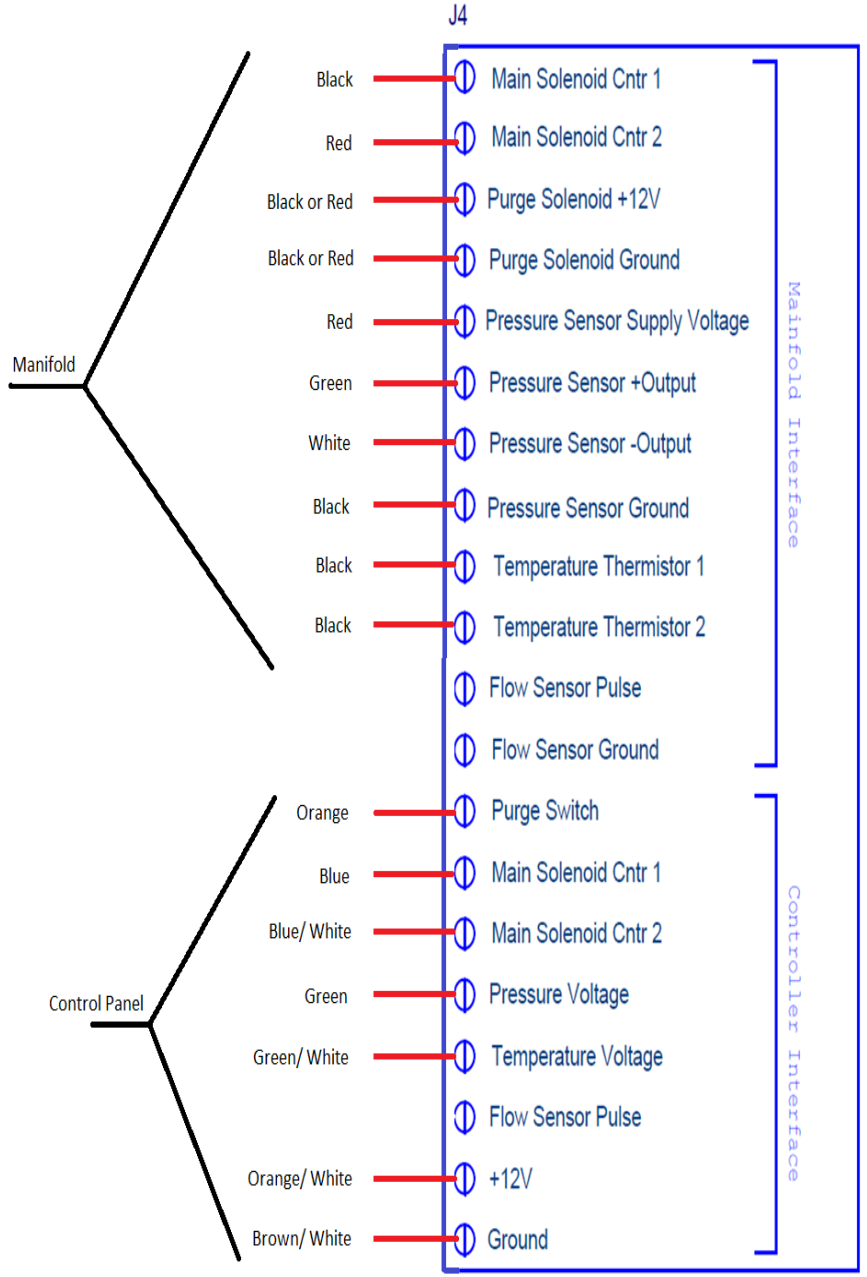
1. Open the hot and cold faucet (if working on a toilet flush the toilet).
2. Inspect each flow switch and adapter and insure the silicone seal is in place.
3. Disconnect the supply lines where they connect to the plumbing fixture or toilet.
4. **For toilets** screw the toilet adapter onto the flow switch until it seats then tighten an additional 1/2 turn. Replace existing supply hose with standard sink supply hose.
5. Screw flow switch onto plumbing fixture until it seats then tighten an additional 1/2 turn.
6. Install Transmitter with Velcro or provided screws insuring transmitter is out of sight but accessible to the customer so batteries can be replaced.

Installing Appliance Adapters

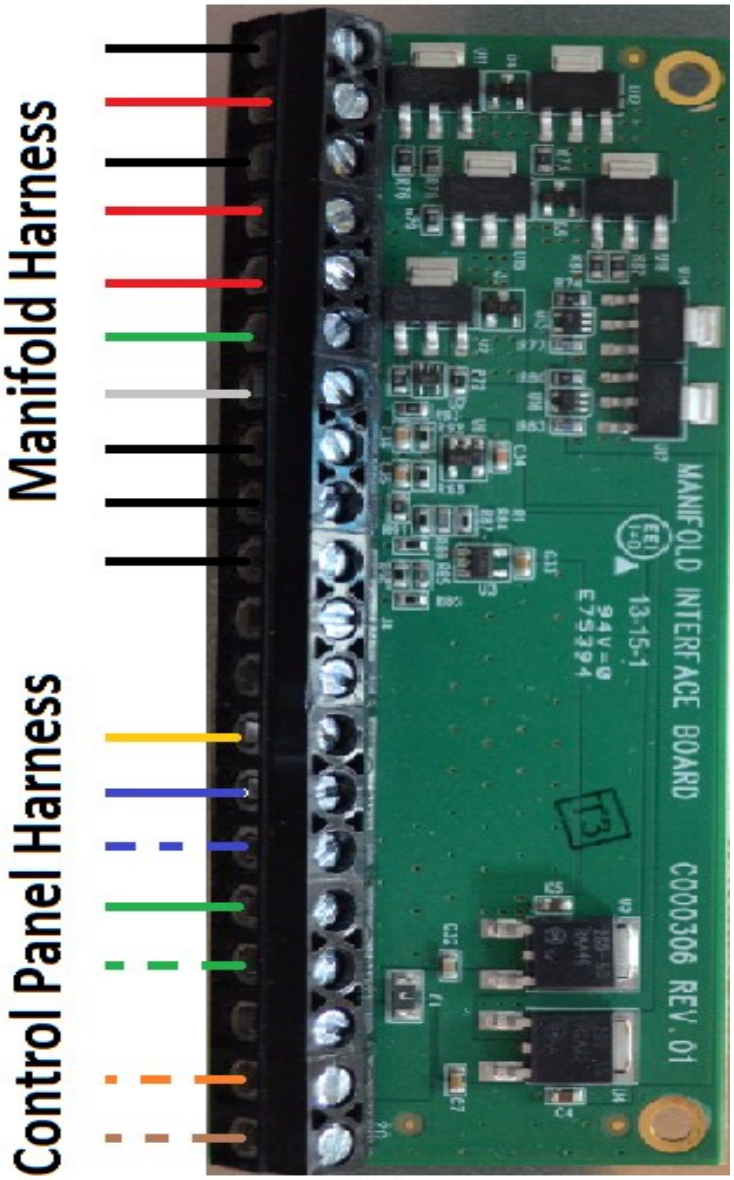
<u>WARNING</u>: DISCONNECT ALL APPLIANCES FROM POWER SOURCE OR TURN OFF CIRCUIT BREAKER BEFORE INSTALLING APPLIANCE ADAPTERS!



Manifold Wiring Schematic



Manifold Wiring Schematic



Installing Appliance Adapters

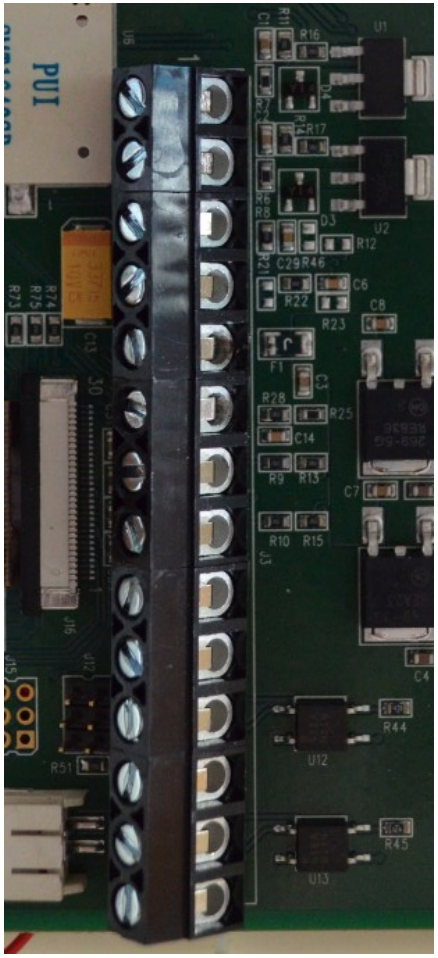
1. Find the solenoid that opens for water on the appliance .
2. Remove the factory connector
3. Place supplied piggyback connectors on solenoid.
4. Plug factory connector back into supplied piggyback terminals.
5. Install Transmitter with Velcro or provided screws insuring transmitter is out of sight, but accessible to the customer so batteries can be replaced.

Installing Motion Sensors

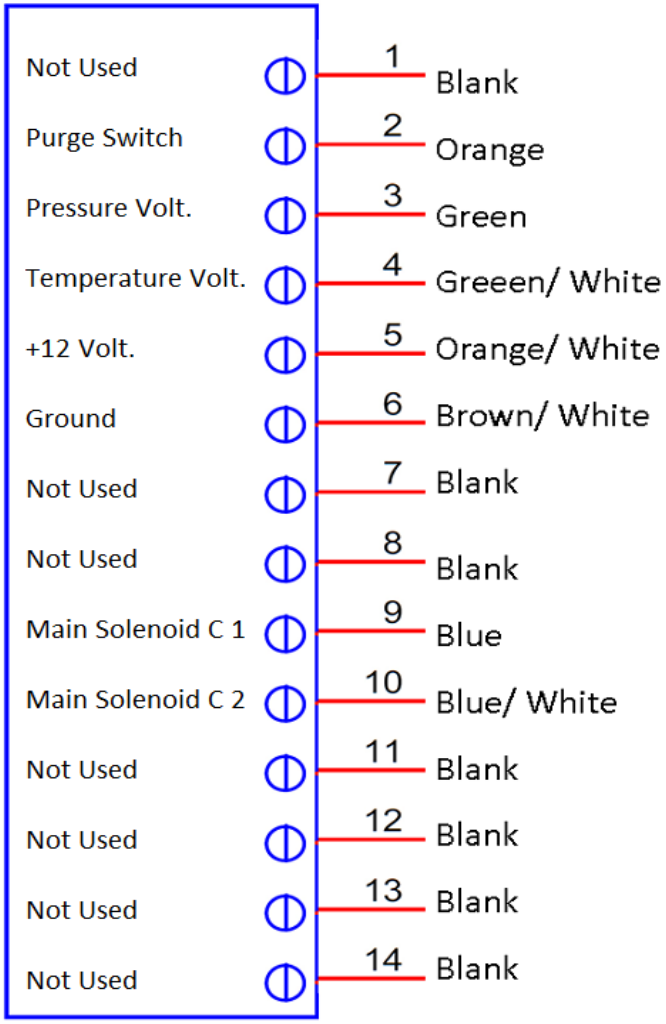
Notes: 1. Motion sensors are used to prevent having to install flow sensors on shower and tub supply lines which would necessitate having to cut into walls.

1. Install motion sensors on the ceiling above all bath tubs and showers.
2. Use supplied screws or Velcro tape as appropriate.

1. Cut the wire 8” from the knot.
2. Strip the outer shield back 4” and strip the insulation on each wire 1/4”.
3. Wire the control panel according to Appendix B “Control Panel Wiring Diagram”.
4. Mount the control panel onto the backing plate.



Control Panel Wiring



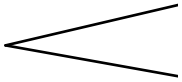
1. Feed the data cable through the hole in the backing plate.
2. Tie a knot in the data cable close to the wall to provide strain relief.

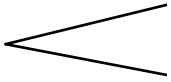
1. Now turn on main water supply and check every-thing for leaks.
2. Repair any known leaks before moving forward.
3. Once hardware is Installed and no leaks are found it is time to wire in all appliance cables, and flow switches to transmitters.

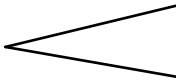
Connecting Transmitters

Notes:

1. Polarity does not matter for flow switches.
2. Appliance cables **are** polarized (Red or White) **MUST** connect to odd numbered terminals and black **MUST** connect to even numbered terminals. For example connecting a refrigerator with an icemaker and a water dispenser: the icemaker appliance cable would be connected **WHITE** wire to 1, **BLACK** wire to 2 - and the water dispenser would be connected **WHITE** wire to 3, **BLACK** wire to 4. Just remember, **white to odd**, **black to even.**

Flow Switch or Appliance 

Flow Switch or Appliance 

Flow Switch or Appliance 

1. Make sure no leaks are present at manifold before wiring In manifold board.
2. Always Remember to keep wiring hidden and clean as much as possible.
3. Strip back Only as much as needed to keep bare wires from touching near connections.
4. Make sure positives and negative wires are oriented as supposed to be.
5. Only 2 wires on manifold board from purge solenoid can go either way positive or negative.
6. Make sure any electronics are dry before proceeding to power up the control panel and manifold.

Transmitter Testing

NOTE: If you suspect you have a bad transmitter use this screen.

Menu > Advanced Setup > CTLR Test Mode > TX Monitor >

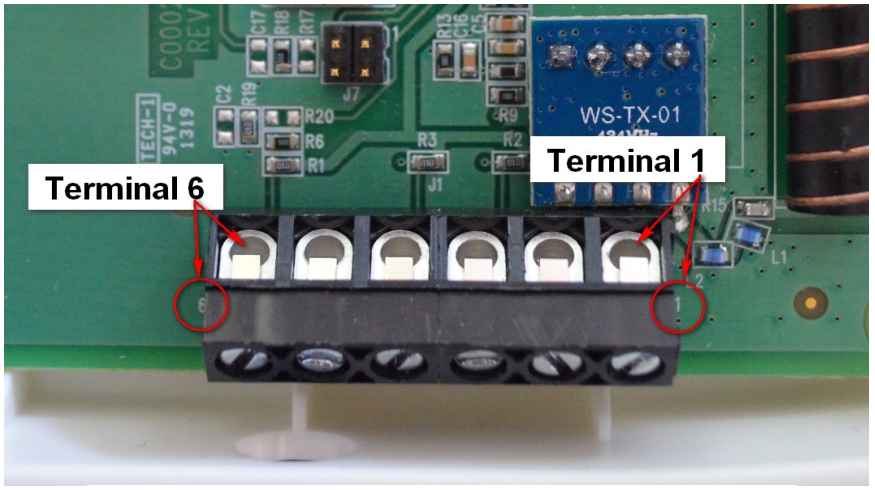
Press “Select”

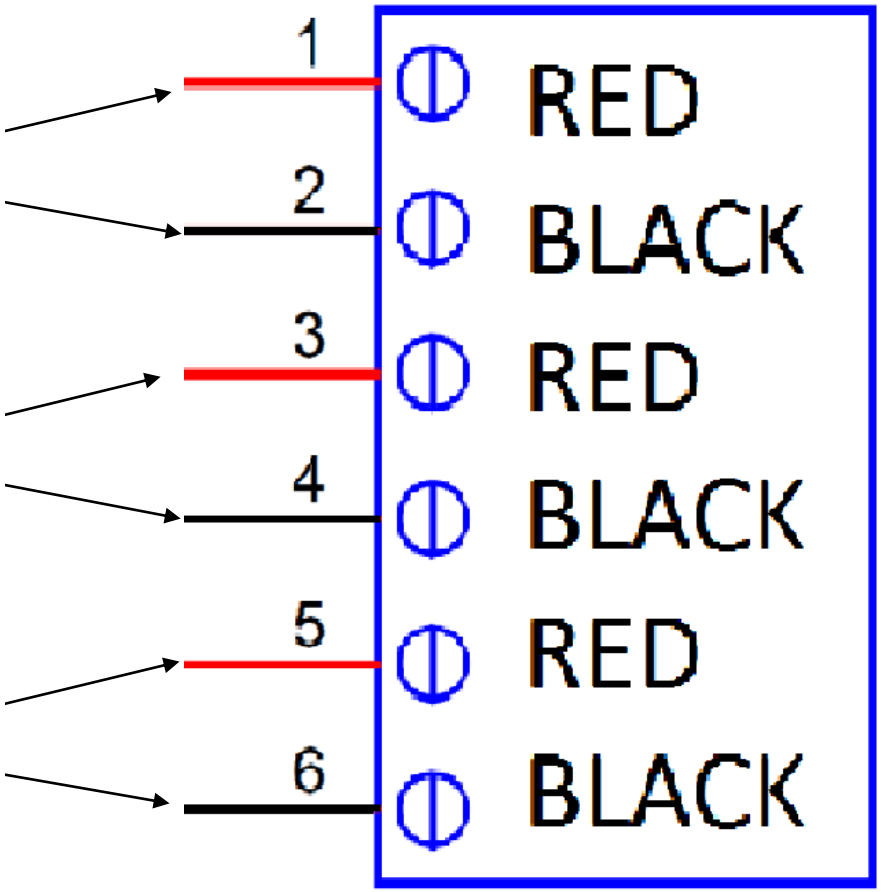
Press Red Initialize button on Transmitter.

If transmitter is working you will see the transmitter serial number appear..

The first 6 characters of serial #’s should always be 55 AA 70.

McKinley-Ross WaterSwitch™





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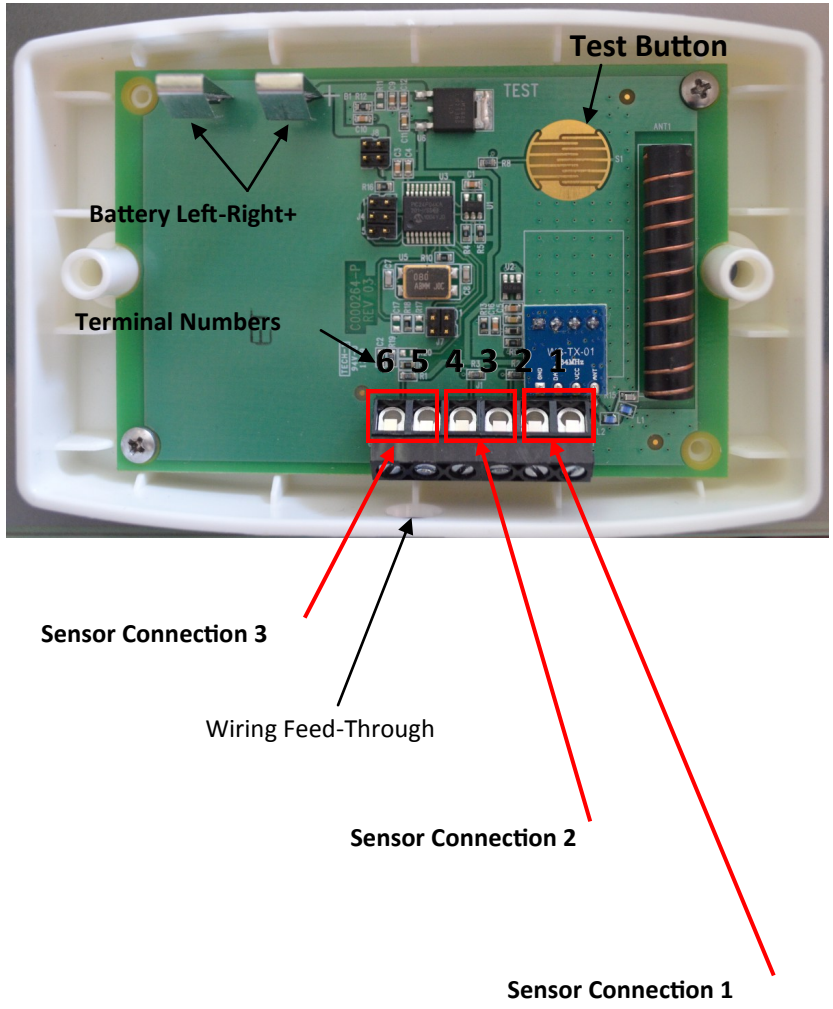
Transmitter Circuit Board

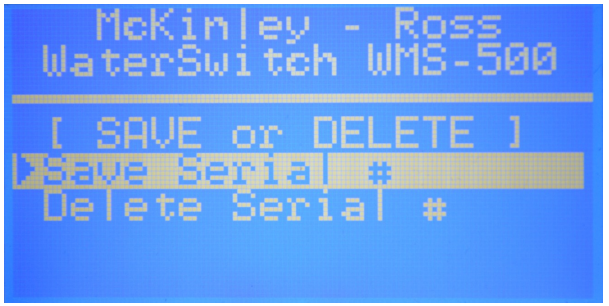


11. When you have set the timer for the correct duration press "Select".

12. You will be taken back to the "Sensor Edit" screen.

11. Use the \/ button to select the transmitter serial number.

12. Press "Select".



11. The "Save or Delete" screen will appear with "Save Serial Number" Highlighted.

12. Press "Select" to save the serial number or delete if you have entered the wrong transmitter serial number.

13. Annotate the sensor number, location, timer duration and serial number on the transmitter log form.

14. Repeat the process from step 1 until you have saved all of the transmitter serial numbers.

10. Use the /\ and \/ buttons to select a timer length.

NOTE: The timer is set based upon water usage for that particular location. The timer tells the Control Panel how long to allow water to flow for that particular location. For example, a timer on a refrigerator ice maker would probably never need to run more than 60 to 90 seconds. Whereas a shower timer may be set to 20 or 30 minutes. Set the timer as low as possible to allow the task to be completed (filling an ice tray, taking a shower, filling a toilet, filling a washing machine tub with water etc.) but no higher than needed.

Setting the timer too low will cause false alarms and require the user to have to reset the system.

Setting the timer too high will minimize protection since the system does not monitor the pressure when a timer is active.

If in doubt talk to the user and find out what their water usage habits are for each location.

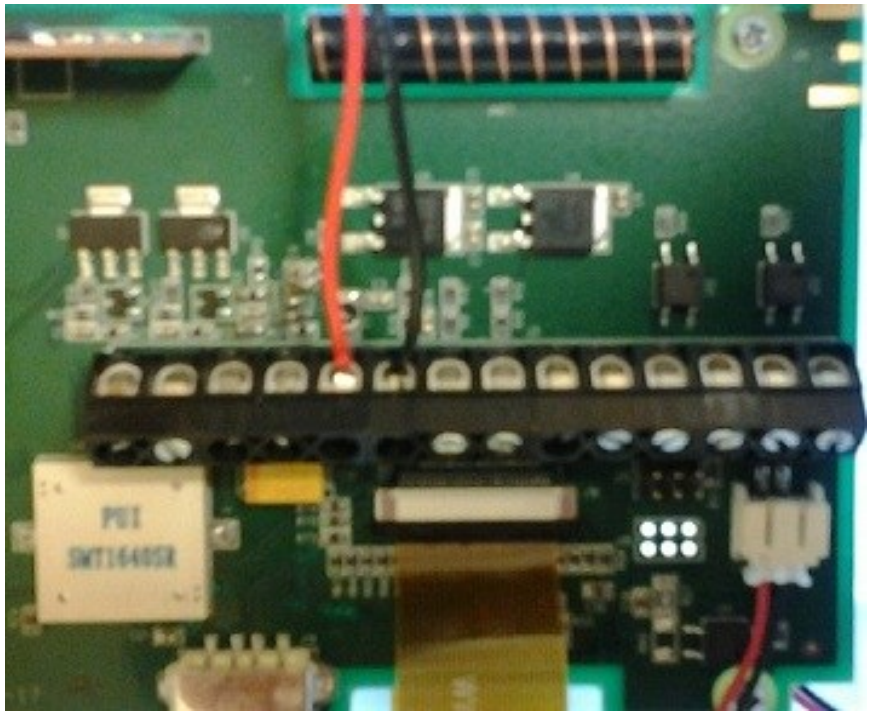
Shower/tub timers should be set for 20 minutes. Near the end of the timer cycle the motion sensor will detect if someone is still in the shower or tub and will automatically reset the timer for another 20 minutes.

1. Finish Wiring .
2. Replace Case Screws with washers.
3. Install cover but don't forget the red button.
4. Install Battery with large negative terminal towards outside of Case.
5. Replace Battery Door.

Sensor Setup

1. Take the 9v quick connect harness and wire the red wire to terminal 5 and the black wire to terminal 6. This will provide enough power to walk throughout the house to program all the transmitters and motion detectors.

2. Connect 9v battery source and carry it with one hand throughout the house to each transmitter. **Do Not allow the Battery to touch the Circuit Board.**



4. With the “Name” field highlighted press “Select” again.

5. Select the sensor/transmitter name (the location of the transmitter) See Appendix F for transmitter names.

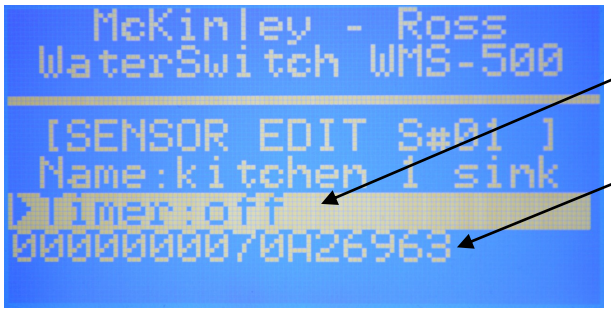
6. Use the /\ and \/ buttons to move from room to room/ appliance to appliance.

7. When you have the correct location/room/appliance use the > button to advance. for example use the /\

Sensor Setup

NOTES: Sensor Setup is where you program each sensor number, sensor name, transmitter serial number and timer.

The words sensor and transmitter are used interchangeably in this section.



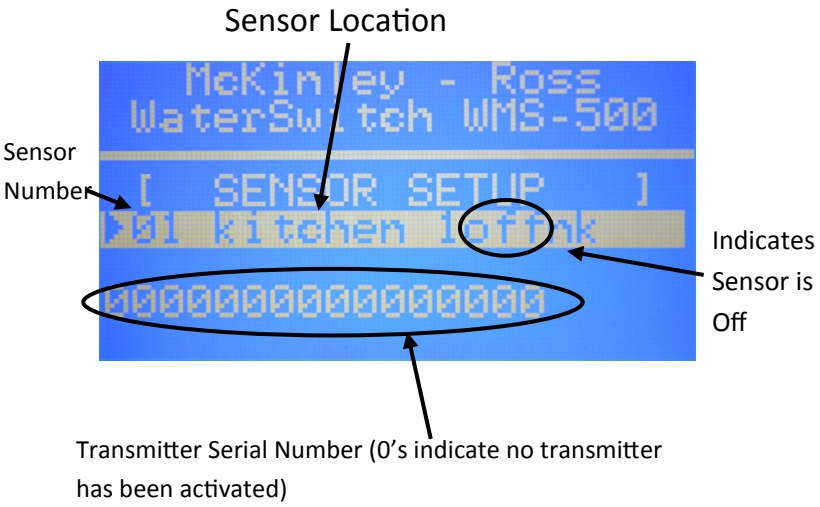
Menu > Advanced Setup > Enter Password> Sensor Setup >

Menu/ Press select, using V arrow twice

Highlight Advanced Setup/ Press Select

Use Directional keys to enter password then/ Press Select

Sensor Setup/ Press Select



Sensor Setup

Transmitter Serial Number shows up indicating the Control Panel Has received the transmitter signal.

1. On this screen use the /\ button to select the sensor (transmitter) number that you would like to program (you must select the correct sensor number BEFORE you proceed to the next step).
2. Press the “Test” button on the transmitter (green “Initialize Transmitter” action in flow chart below) and you will see the transmitter serial number appear on the bottom line.
3. The instruction will appear “Press Select” press the “Select” button which will take you to the Edit Name and time screen.