

# Model FCIS

Flood Control Integrated System (1 1/4" - 10")



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## Installation

Refer to ZW206 installation instruction and backflow preventer (975XL2, 375MS) installation instructions for specific information on these valves during install and startup.

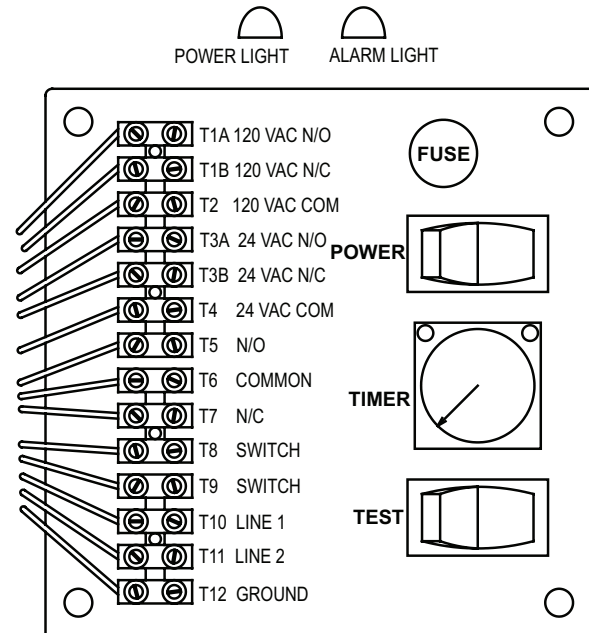
Flush line to remove all debris before installing any valve.

For ease of repair and maintenance, a shutoff valve should be installed upstream of the FCIS assembly if one is not conveniently located nearby. If a strainer is being installed, it should be located upstream of the Model FCIS.

Next the Model ZW206 solenoid control valve with EST mounted to cover should be installed. Note the direction of flow arrow on the inlet flange or inlet side of cover.

The backflow preventer is now installed downstream of the ZW206 and connected to the downstream piping. A gasket set, nipple or grooved coupling is provided to connect the ZW206 to the backflow preventer.

If necessary, an air gap adapter fitting can be installed to the relief valve discharge port to direct water to the drain. A drain MUST be installed in the room to remove discharged water. The Model FCIS will shutdown the water supply to prevent a catastrophic failure of the backflow preventer from flooding the room. It will not prevent small discharges from the relief valve. (A water sensor or float switch that provides contact closure during flooding can also shutdown the water if flooding is caused by other equipment in the mechanical room. Contact factory for details.)



The black wire on the EST should already be connected to the solenoid pilot. If it not, then the pilot coil should be plugged into the end of the black cable. The screw in the center of the plug should be tightened to prevent it from coming accidentally unplugged.

There is a yellow cable that comes from the EST. This should be uncoiled and connected to the black socket on the backflow preventer relief valve located below the backflow. Line up the keyway in the plug and socket, then push the plug into place. Next tighten the threaded lock ring at the end of the cable to the socket to prevent it from coming unplugged.

## Start-up

The solenoid valve, backflow preventer, and water system can be filled and leak tested without having to wait for an electrician to connect power to the EST box.

The solenoid valve is furnished standard as normally open (NO.) This means the valve will open to allow water

flow unless power is applied to the solenoid. A normally closed (NC) solenoid valve is an option. To determine the type of valve you have, look at the ZW206 tag on the inlet flange. NO or NC should appear after the model number. If you have an NO valve, then the system can be filled by simply open the shutoff valve upstream of the FCIS.

**WARRANTY:** ZURN WILKINS Valves are guaranteed against defects of material or workmanship when used for the services recommended. If in any recommended service, a defect develops due to material or workmanship, and the device is returned, freight prepaid, to ZURN WILKINS within 12 months from date of purchase, it will be repaired or replaced free of charge. ZURN WILKINS' liability shall be limited to our agreement to repair or replace the valve only.

**WARNING:** This product contains a chemical known to the State of California to cause cancer, birth defects and other reproductive harm  
**ADVERTENCIA:** Este producto contiene una sustancia química que el Estado de California como causante de cáncer, defectos de nacimiento y otros daños reproductivos



## Start-up

Fill the system slowly to prevent water hammer, and then vent any trapped air from the system.

The solenoid valve cover must be vented of air for proper operation; refer to ZW206 instruction sheet.

There is a red knob on the solenoid pilot. This will allow the pilot valve of a NO or NC valve to be operated without power. If your valve is NC, then the solenoid control valve will prevent water from filling the backflow preventer. Turn the red knob on the solenoid pilot to manually open the valve and fill the system with water.

If the manual operator has been used on the solenoid pilot, make sure that it is returned to unscrewed position for the FCIS to operate properly.

If left for an extended duration in manual override, it may be wise to hang a note pointing this out to others who may continue the system startup and testing.

A ½" plugged conduit knockout is located on the bottom of the EST near the cables. The plug can be removed to allow 120 VAC power to be connected to terminals T10, T11 and T12 in the box. Once the power has been connected to the EST, then proceed to the Testing section.

## Testing Procedures

### DANGER!

Death or injury can result if safety precautions are not followed. There are 120VAC wires and connections located inside the EST box. Only properly trained personnel should work near these connections. If all wires are installed properly, there should be no risk of contact with energized components. Care should still be exercised. Do not use any screwdrivers or other un-insulated metal objects inside the box when the power wires in the box are energized.

There are three user controls inside the EST box. A power switch, a delay timer knob and a test switch. Open the EST box to access these controls.

### SET TIMER DELAY

The timer is provided so that nuisance relief valve discharges due to water hammer will not cause the system to shutdown. It should be set so it is long enough for the valve to reclose if it opens for pressure fluctuations. If it is set too long, then more discharge will occur before shutdown starts.

The timer has a range up to 10 minutes, but comes from the factory set for a 1 second to 60 second range. When it leaves the factory, the indicator of the timer should be pointing directly to the left for a 10 second delay.

Turn the POWER switch on. The green power light on top of the box will light.

If the backflow is not pressurized, the monitor switch will start the timer. If the backflow is pressurized, manually start the timer by pushing and holding the TEST switch below the timer. A green light on the front of the timer should come on when it is triggered. You can start counting or use a stopwatch to check the timer adjustment. A red light on the front of the timer and on top of the box will come on when the timer reaches the end. The solenoid coil will also click and hum if it is a normally open valve. On a normally closed valve, the humming will stop; a click may not be audible. (When the timer is reset and the power turned back on, the normally closed valve should click.) If this time delay does not match your requirements, turn the knob and repeat this test. The timer is reset by turning the power switch off and back on. (Note: the coil will become hot while it is powered.)

# Testing Procedures

## TEST BACKFLOW MONITOR SWITCH

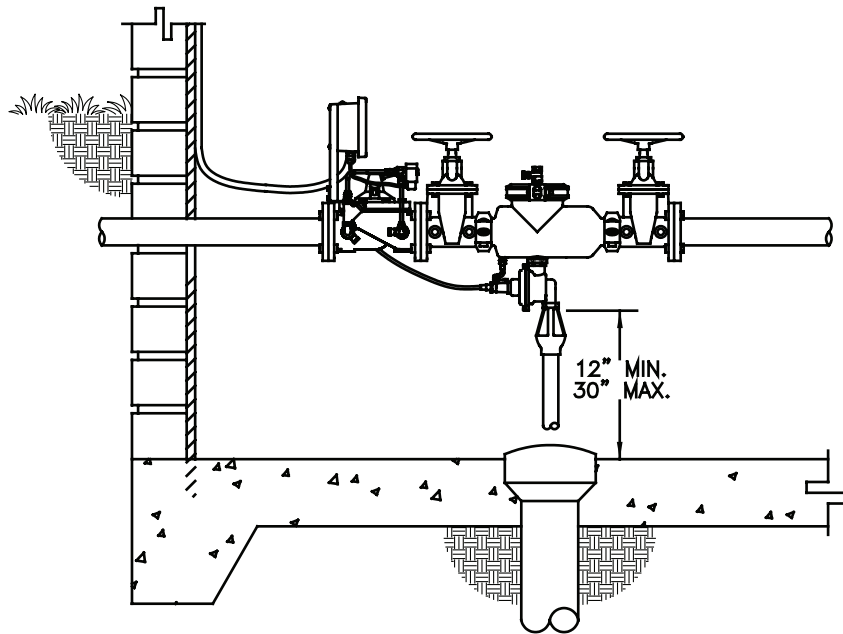
The EST should be open to monitor the lights on the timer during this test. Close the inlet shutoff valve to the backflow preventer. Slowly open the #2 test cock on the backflow preventer. It is located between the inlet shutoff valve and the cover of the backflow preventer. (It may be on the shutoff valve or on the body of the backflow preventer.) As the pressure in the valve drops below 5 psi, the relief valve located at the bottom will start to open and water will drain from the zone between the check valves in the backflow preventer. As it starts to open and discharge water, watch the timer in the EST. The green light will light when the monitor switch in the relief valve triggers. Following the time delay, the two red lights will come on and the ZW206 will start to shutdown.

The actual time for the ZW206 to close during an actual relief valve discharge depends greatly on the size of the valve, the water pressure, and the amount of water flowing

through the valve. It can be mere seconds or up to 2 minutes. You can verify the ZW206 closes by slightly opening the inlet shutoff valve to the backflow preventer. Trapped water will vent through the open #2 test cock and flow should stop.

Close the #2 test cock. Reset the EST by turning the power off and back on. If the shutoff valve is not open far enough to pressurize the backflow preventer during the time delay, the EST will time out and turn the water off again. On large systems, you can avoid this by noting the timer setting then adjusting the timer all the way clockwise. Once the backflow has been pressurized, adjust the timer back to the previous setting. Open the backflow inlet shutoff valve completely. Close the EST

The system is ready for operation.



# Maintenance Instructions

## MAINTENANCE

**NOTICE: Annual inspection and maintenance is required of all plumbing system components. To ensure proper performance and maximum life, this product must be subject to regular inspection, testing and cleaning.**

The EST function, timer setting, and backflow switch operation should all be checked annually by performing the two tests above. This will also allow you to see if the ZW206 is closing properly and tightly. Refer the individual instruction sheets for the ZW206 and backflow preventer for suggested maintenance on those valves.