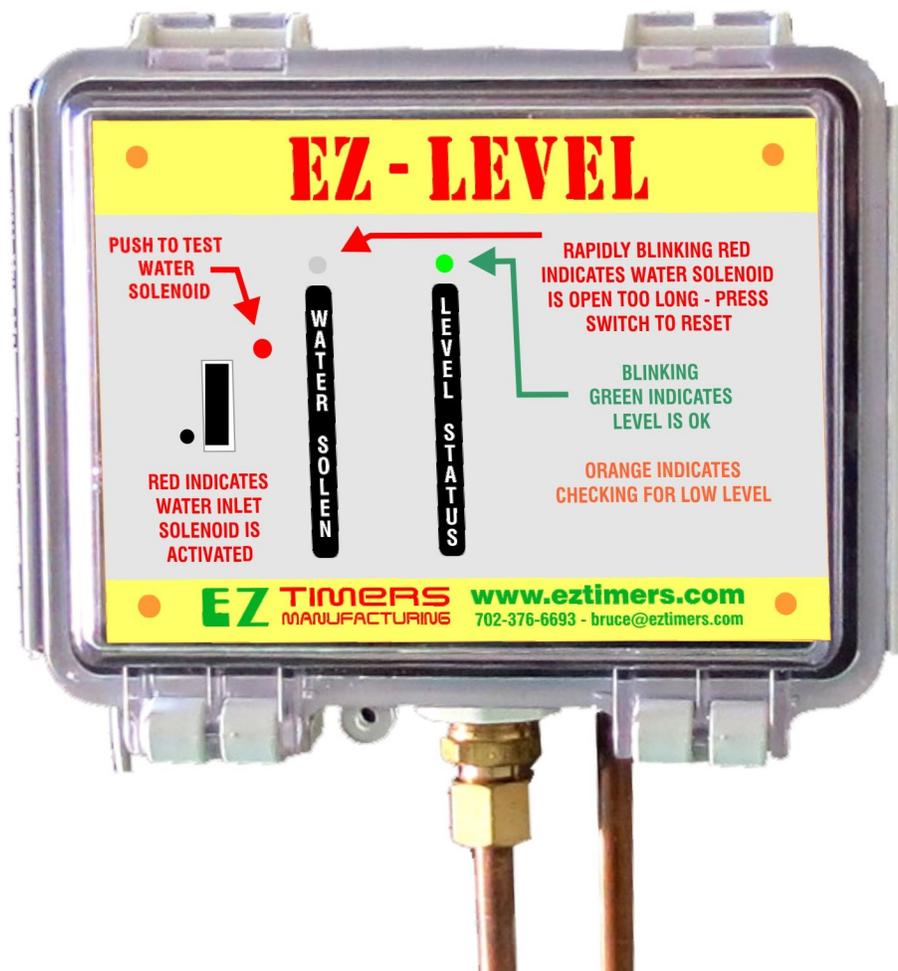


EZ LEVEL

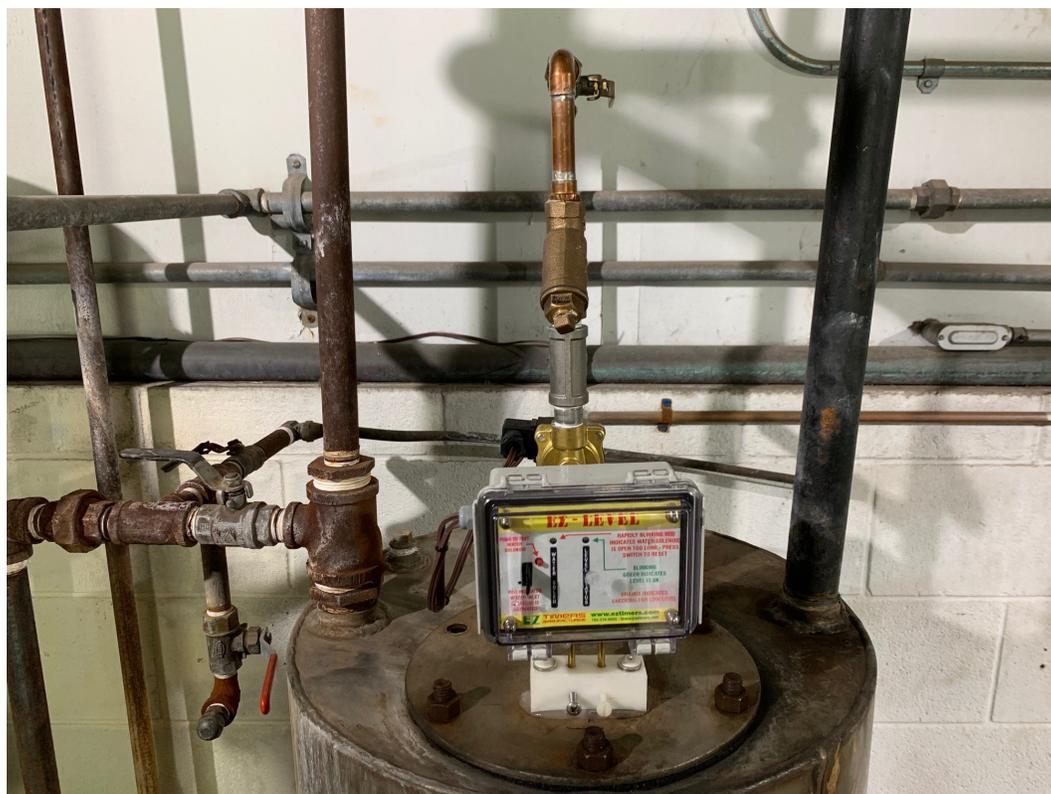
ELECTRONIC LEVEL CONTROL INSTALLATION AND OPERATIONS MANUAL



EXAMPLE OF A PROPER INSTALLATION



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DISCLAIMER

Installation and operation of your unit must comply with any pertinent federal, state or local codes, ordinances of other applicable governing data.

Instructions contained in this publication are intended only as a guide to assist your and assure the safe reliable operation of your machine

WARRANTY

EZtimers Manufacturing will supply new or remanufactured parts at no cost based upon the following time period after the shipping date.

- manufacturers warranty on pumps or components not manufactured by EZtimers Manufacturing

- 2 years-plastic parts

- 3 years-metal or electronic parts

This warranty extends only to the original purchaser. A receipt of other proof of purchase is required before any warranty action can be taken. This warranty covers only failures due to defects in materials and workmanship. It does not cover damage which is the result of accident, misuse, abuse, neglect, mishandling, misapplication alteration or damage attributed to acts of God. EZtimers Manufacturing

EZ LEVEL INSTALLATION

REQUIRED TOOL AND MATERIALS

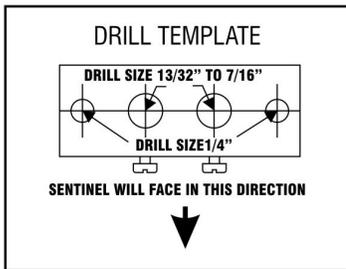
1. 1/2" ELECTRIC DRILL AND DRILL BITS - A 13/32" **OR** 7/16" as well as a 1/4" drill bit will be required. It is advisable to use thread tapping or pipe threading lubricant when drilling
2. A #2 PHILLIPS HEAD SCREW DRIVER
3. CHANNEL LOCK PLIERS
4. PIPE FITTING TOOLS– Because of the variations of plumbing used to install the make up water supply to the Return Tank it not possible to list the required pipe wrenches and other pipe fitting tools required.
5. PIN PUNCH OR CENTER PUNCH
6. TEFLON TAPE– We all know what this tape is used for.

WARNING!

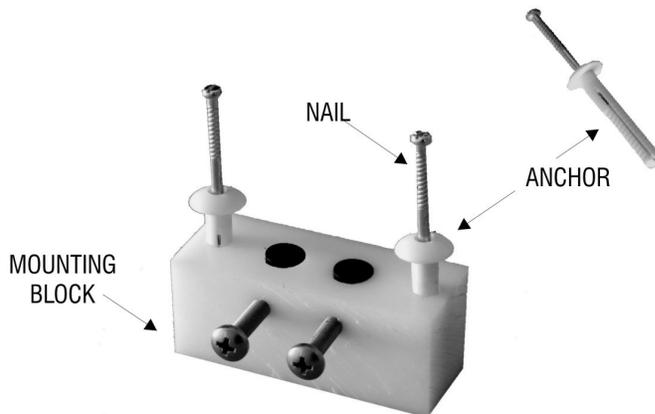
**NEVER PERFORM ANY MAINTENANCE OR REPAIR ON
A BOILER WHICH IS HOT AND/OR UNDER PRESSURE.**

INSTALLING THE EZ LEVEL

MOUNTING TO THE RETURN TANK

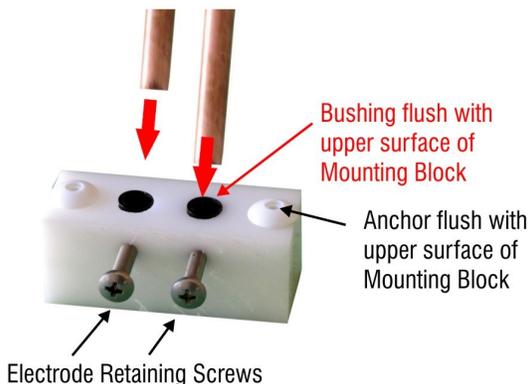
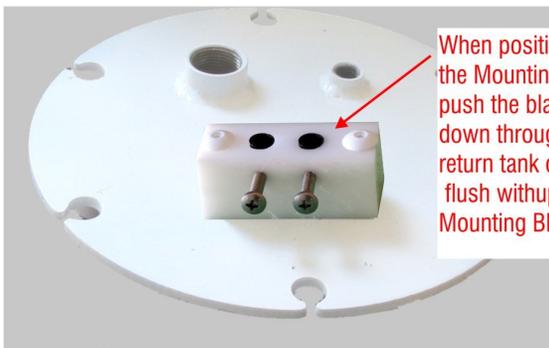


STEP 1: Tape the drill template to the top of the Return Tank. Generally there will be a round access plate bolted to the top of the tank, this plate is usually an excellent place to mount the Sentinel. In the case of a remotely located Sentinel the level/temperature sensing module would be mounted there. Be sure to note the arrow on the drill template which indicates the direction the Sentinel will face so it will be easily seen from a convenient location. Before attempting any drilling be sure to use a center punch to mark the holes so the drill bit doesn't "walk" during drilling. Take a magnet and test the area which you will be drilling. If the magnet "sticks" to the area use a HS grade drill bit. If the area is non-magnetic it is probably Stainless Steel and you will need Cobalt drill bits. The two larger holes can be either 13/32" or 7/16" the smaller two holes are 1/4". Be sure to use cutting oil when drilling, it will prevent dulling of the drill bit.

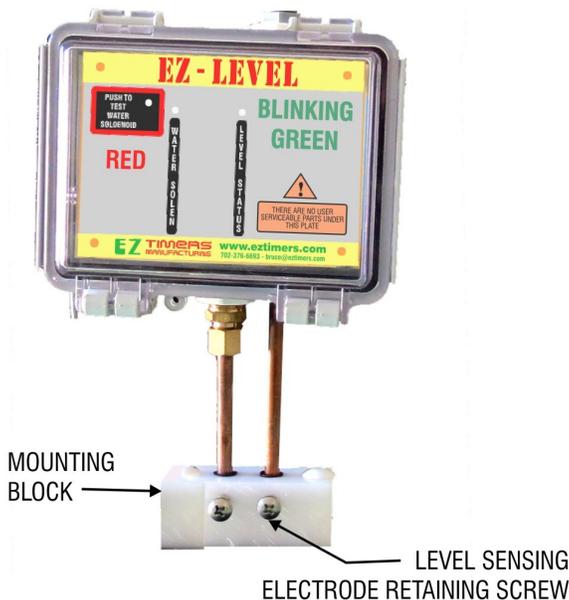


STEP 2 : Place the Mounting Block over the holes drilled in the Return Tank, pushing the anchors down and through until they are flush with the top of the Mounting Block (see illustration in STEP 3:). When the Mounting Block is properly positioned hammer down the nails into the anchor. This will securely fasten the Mounting Block to the return tank.

TYPICAL LID ON CYLINDRICAL RETURN TANK FROM A FULTON RETURN TANK



STEP 3: Slide the Electrodes through the holes in the Mounting Block.



STEP 4: Slide the entire EZ LEVEL down through the holes in the Mounting Block until it is about an inch above the Mounting Block. The EZ LEVEL can slide up and down through the Mounting Block to adjust the water level height in the return tank. When the desired water level is determined secure the adjustment by screwing in the Retaining Screws until they firmly hold the EZ LEVEL in place.

PIPING THE EZ-LEVEL CONTROL WATER INLET MANIFOLD

THIS MANIFOLD IS AN OPTIONAL ASSEMBLY NOT INCLUDED IN THE PURCHASE PRICE OF THE EZ LEVEL

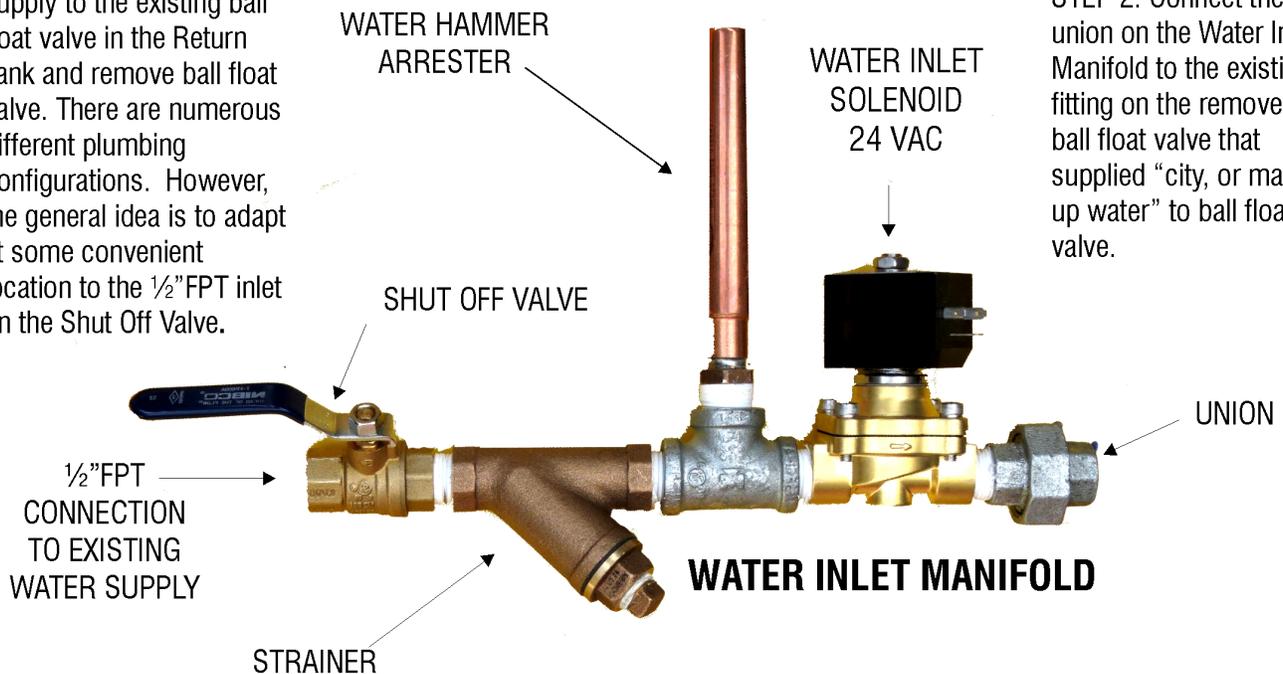
INSTALLATION OVERVIEW

What we are doing here is removing the ball float valve that controls the flow of “make up water” into the return tank and replace it with Eztimers WATER INLET ASSEMBLY. This kit containing the required parts to install the Sentinel. However, because of the many different piping schemes that exist we can only outline a general procedure to follow. When doing the plumbing for this installation remember that the Water Inlet Manifold must not be used as supporting structures for other piping components.

CAUTION- DO NOT USE THE WATER INLET MANIFOLD AS A SUPPORT FOR OTHER COMPONENTS

STEP 1: Shut off the water supply to the existing ball float valve in the Return Tank and remove ball float valve. There are numerous different plumbing configurations. However, the general idea is to adapt at some convenient location to the 1/2" FPT inlet on the Shut Off Valve.

STEP 2: Connect the 1/2" union on the Water Inlet Manifold to the existing fitting on the removed ball float valve that supplied “city, or make up water” to ball float valve.



STEP 3: Once all the connections are made and tightened close the Shut off Valve on the Water Supply Manifold and turn on the water supply to the manifold. After the water is turned on slowly open the Shut off Valve, there may be a short surge of water through the Water Inlet Solenoid. Check for leaks.

EZ LEVEL OPERATIONS

WARNING!

**NEVER PERFORM ANY MAINTENANCE OR REPAIR
ON A BOILER WHICH IS HOT AND/OR UNDER
PRESSURE.**

EZ LEVEL

AVAILABLE OUTPUTS:

1. **WATER INLET SOLENOID**– A 24 VAC signal powers the solenoid which allows make up water to flow into the Return Tank. **THIS SIGNAL CAN BE USED TO TRIGGER A BOILER COMPOUND PUMP (400 ma. max.).** Using this source for controlling compound addition will be more accurate than using the condensate return pump contactor coil as a signal source.

THEORY OF OPERATIONS

The EZ LEVEL does the following:

1. Control the level of water in the Return Tank electronically, eliminating the troublesome ball-float valve. The volume of water added is measured and tracked, providing the ability to add the precise amount of boiler compound and other chemistry compensating for the water addition.
2. Indicate the status of the level of the water in the Return Tank.

SETTINGS AND DEFAULTS - GETTING STARTED

110 VAC power within 10 ft. of the EZ LEVEL is required. Plug the 24 V transformer into the power outlet and turn on the power (**CAUTION-THE POWER TRANSFORMER MUST NOT LIE IN WATER SO DON'T SET IT DOWN ON THE BOILER ROOM FLOOR. DEDICATE AN OUTLET FOR ITS USE AND USE THE SCREW IN THE MOUNTING TAB SECURE IT TO THE OUTLET PLATE**).

AVAILABLE INPUTS:

1. **RETURN TANK WATER LEVEL SENSING**– A pair of brass conductivity probes senses the presence of water by a minute current flow between them when water contact both probes. There is a an immediate change in the color of the **LEVEL STATUS** lite from green to orange when the level is low. After a few seconds the **WATER SOLENOID** lite will turn red indicating the signal to open has been sent to the WATER INLET SOLENOID.
2. **WATER INLET SOLENOID TEST SWITCH**– A push button switch which manually sends a signal to open the WATER INLET SOLENOID.

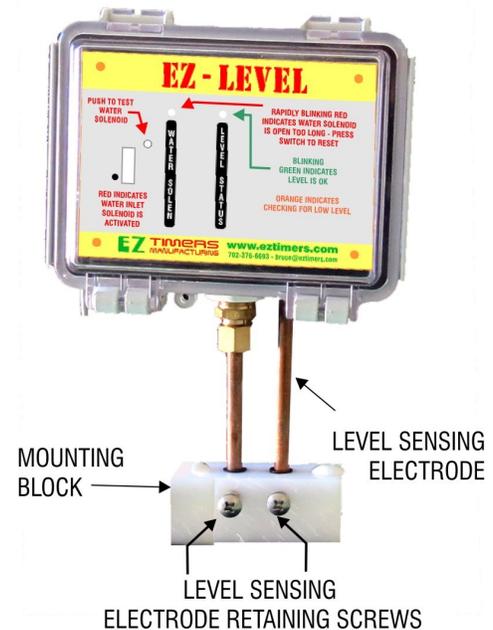
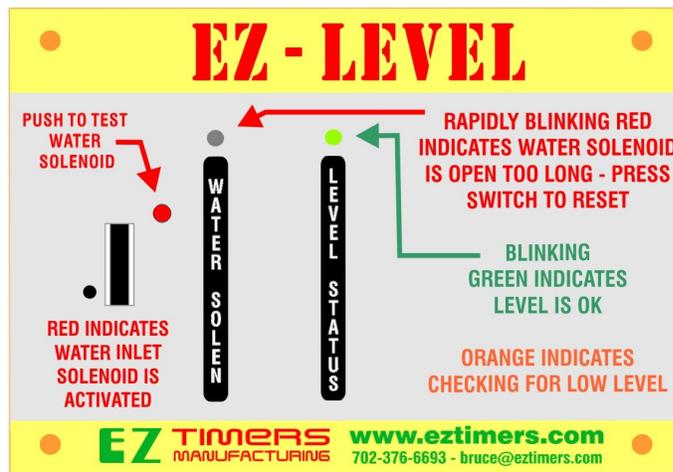
AVAILABLE OUTPUTS:

1. **WATER INLET SOLENOID**– A 24 VAC signal powers the solenoid which allows make up water to flow into the Return Tank. **THIS SIGNAL CAN BE USED TO TRIGGER A BOILER COMPOUND PUMP (50 ma. max.).** Using this source for controlling compound addition will be more accurate than using the condensate return pump contactor coil as a signal source.

EZ LEVEL OPERATIONS

SETTING THE RETURN TANK LEVEL

STEP 1: The Return Tank should be empty and the sight glass clear enough to see a water level in the tank. The Water Supply and Inlet piping must be complete and checked for leaks. Plug the 24 VAC power transformer in a 110 VAC outlet and turn on the water supply.



STEP 2: Shortly after turning power on to the EZ LEVEL the indicator light labeled LEVEL STATUS should be glowing orange indicating that a low level has been sensed. After a few seconds indicator light labeled WATER SOLN will glow red indicating that the Water Inlet Solenoid has been energized, allowing make up water to flow into the return tank and begin the filling process.

STEP 3: When the water level rises high enough to contact the Level Sensing Electrodes the color of the light labeled LEVEL STATUS will change from orange to green and the light labeled WATER SOLENOID will go dark. This indicates that the water has reached the level of the Level Sensing Electrode and the Water Inlet Solenoid has shut. Now that you have seen how this level sensing function behaves simply draw the EZ LEVEL up and away from the Return Tank in stages until you have the level activating at about ½ way up the sight glass. When you are satisfied with the level gently tighten down the Electrode Retain Screws.

THERE IS AN ANTI-FLOODING TIMER BUILT INTO THE CONTROLLER THAT TURNS OFF THE WATER INLET SOLENOID AND SIGNALS WITH A RAPIDLY BLINKING RED LIGHT AFTER ABOUT 2 ½ MINUTES. TO RESET THE SYSTEM PRESS THE WATER SOLENOID SWITCH FOR 2 SECONDS.

EZ LEVEL PANEL INDICATORS AND CONTROLS

