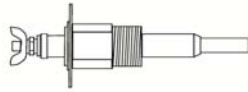


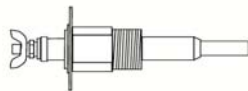
# Safgard™ 250 Series

## Pump Control Low Water Cut-Off Combination

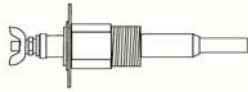
120 VAC Operating Voltage  
Max. Pressure 250 psi



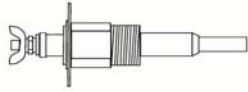
No moving parts to stick, wear or hang-up.



No replacement or rebuilding of floats or mechanical parts.



Reliable Electronic Design



Made in the U.S.A

## HOW TO INSTALL

### 1 WARNING!

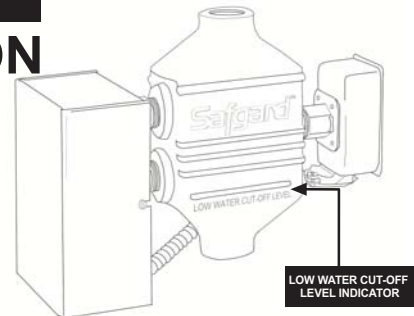


**WARNING:** To prevent electrical shock and equipment damage, power must be off during installation or servicing of the control. To prevent serious burns the boiler should be thoroughly cooled before installing or servicing control.

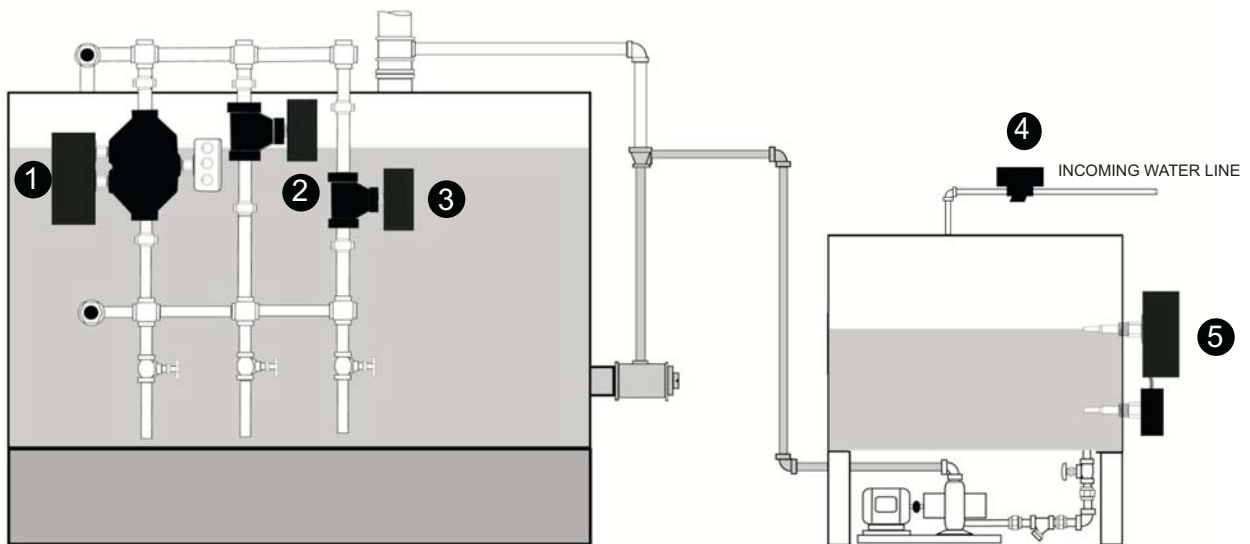
Only qualified personnel may install or service the control in accordance with local codes and ordinances. Read instructions completely before proceeding.

### 2 LOCATION

Install the Safgard 250 in a 1" equalizing line equipped with a blow-down valve meeting applicable state and local codes. The control should be located so that the "LOW WATER CUT-OFF LEVEL" marked on the control casting is at least 1/2" above the lowest permissible water level as specified by the boiler manufacturer.



## TYPICAL APPLICATIONS



1 Safgard 250 Pump Controller LWCO Combination

2 Safgard 270 High Water Limit/Alarm

3 Safgard 550 or 750 as Secondary LWCO

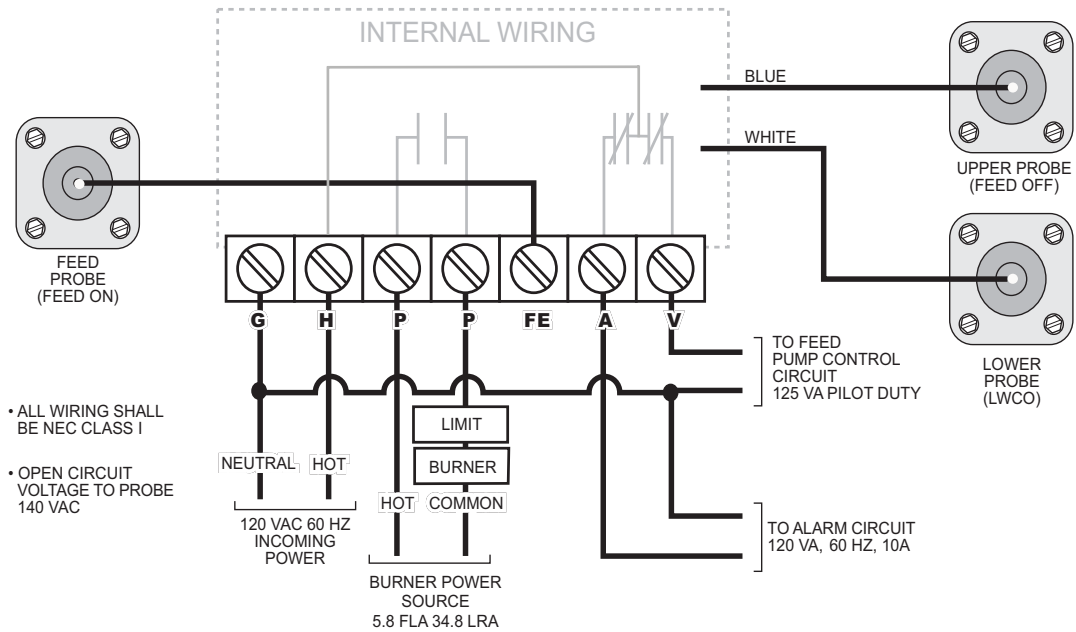
4 Safgard VF-120 Solenoid Valve

5 Safgard 727 Tank Control

# WIRING

## MODEL 250 Low Water Cut-Off and Pump Control

MAXIMUM PRESSURE: 250 PSI

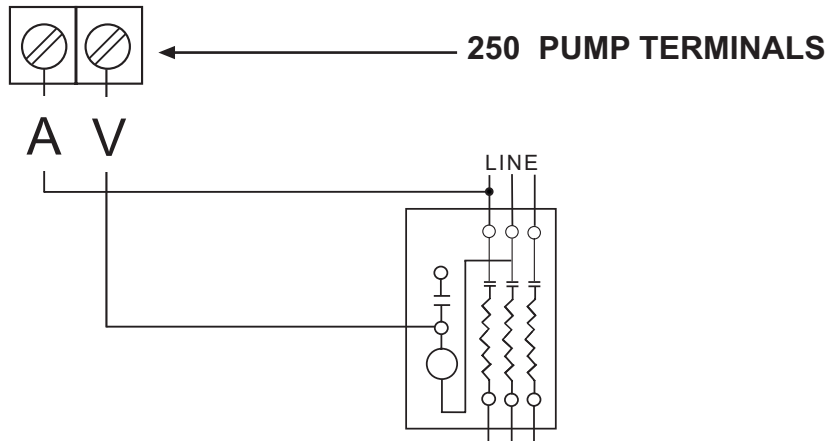


The Safgard 250 requires connection to a 120VAC power source to enable the control to operate.



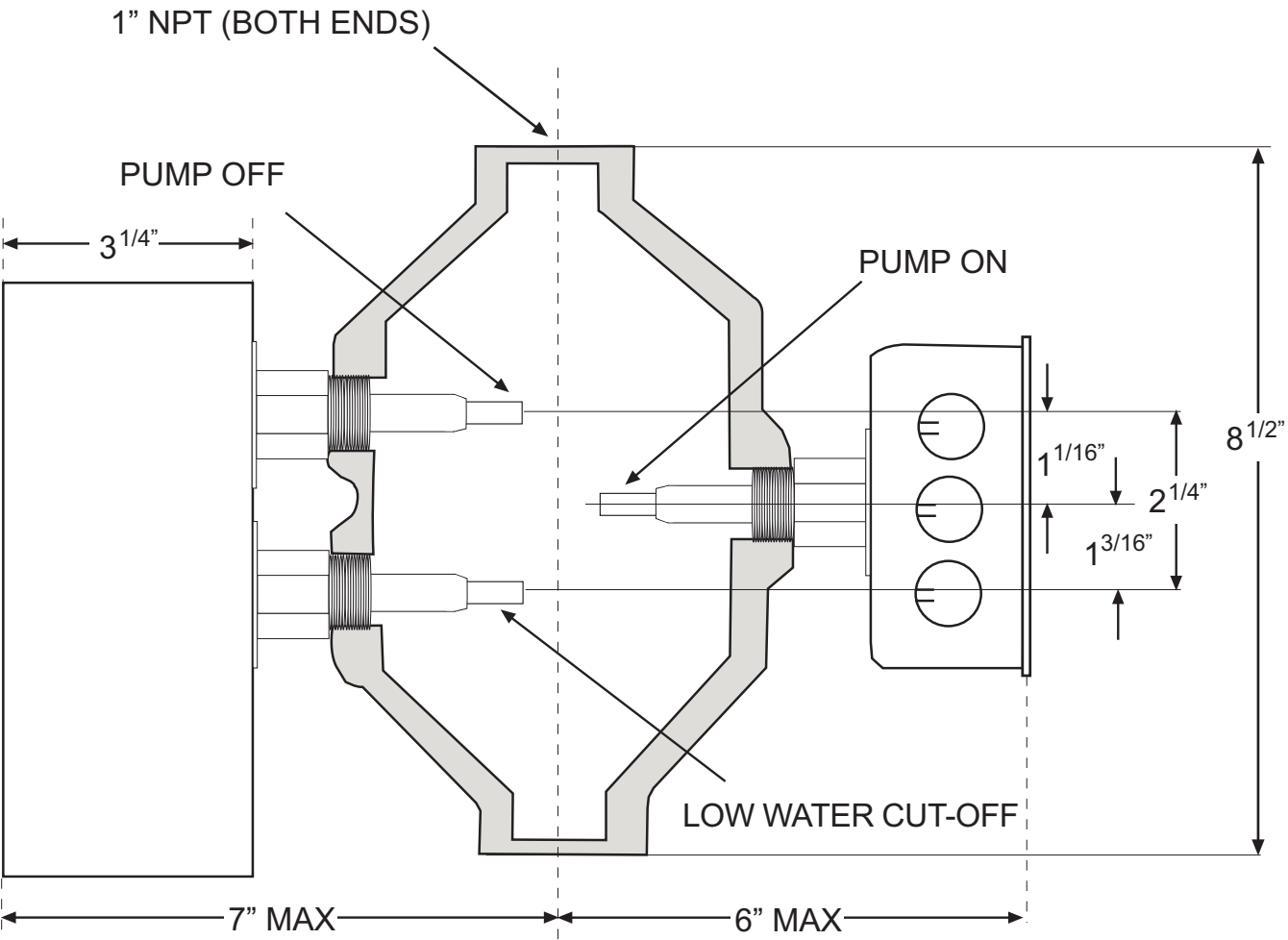
# IMPORTANT!

The Safgard 250 is intended as a pilot control only and must be installed with a relay between it and both the condensate pump and burner circuit. Direct wiring of the control to either the burner circuit or condensate pump can result in failure of the control.



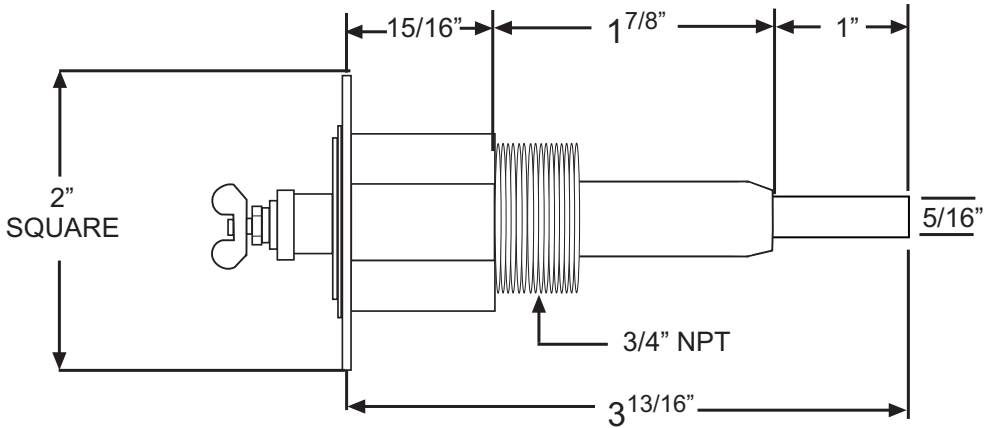
TYPICAL PUMP STARTER WIRING. SEE RELAY MANUFACTURER'S INSTRUCTIONS FOR MORE COMPLETE INFORMATION.

# DIMENSIONAL DATA



Maximum Steam Pressure 250 PSI

# PROBE DATA



Probe Test Pressure 1000 PSI

# BLOW-DOWN & TEST PROCEDURE

**CAUTION!**- Blow down valve should be piped to a proper drain connection to avoid exposure to steam discharge. Severe injury could result from failure to follow these instructions.

*Blow down the 250 Series control when the water level is at its normal operating level (between middle and upper probe) - with the burner on.*

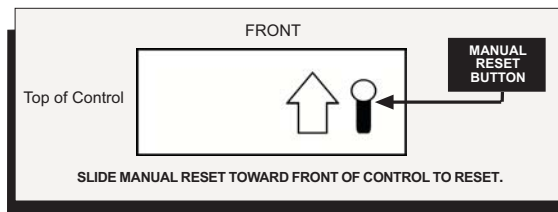
Slowly open the column blow-down valve. The water level should begin to drop in the site glass. When water falls below the middle probe, the pump or valve should energize. Continue draining the blow down column until water has fallen below the bottom probe. Boiler should shut down immediately. Close the blow-down valve. Water should begin to rise in the site glass. The burner should re-fire after covering the bottom probe and water should continue to rise in the site glass. When water reaches the top probe the burner should continue to fire and the pump or valve should de-energize. If the control fails to react as described above recheck wiring and/or probes for sludge or sediment buildup.

## MAINTENANCE

In addition to the blow-down and test procedure above, the probes should be removed and examined annually. The probes can usually be cleaned with a soft cloth although they are rugged enough to be cleaned with steel wool or a scouring pad if a more crystalline or solid buildup is present. Probes should be inspected and cleaned more often on systems with high make-up water or untreated boiler water.

## MANUAL RESET FEATURE (Model 250M)

The Safgard 250M manual reset incorporates a 90-second time delay that prevents nuisance lockouts. During temporary low water conditions such as column blow-down, excessive surge or slow condensate return, the burner will shut down immediately but will not lock out for 90 seconds. The burner will restart automatically if the water returns to a safe level within 90 seconds. **The manual reset does not require resetting after a power failure.** Likewise, power interruptions will not reset the manual reset once engaged. With the Safgard manual reset design, a genuine low water condition must be detected before reset is actuated and *the only procedure for resetting a tripped reset involves operator contact.*



### LIMITED MANUFACTURER'S WARRANTY

We warrant products manufactured by Hydrolevel Company to be free from defects in material and workmanship for a period of two years from the date of manufacture or one year from the date of installation, whichever occurs first. In the event of any claim under this warranty or otherwise with respect to our products which is made within such period, we will, at our option, repair or replace such products or refund the purchase price paid to us by you for such products.

In no event shall Hydrolevel Company be liable for any other loss or damage, whether direct, indirect, incidental or consequential. This warranty is your EXCLUSIVE remedy and shall be IN PLACE OF any other warranty or guarantee, express or implied, including, without limitation, any warranty of MERCHANTABILITY or fitness for a particular purpose. This warranty may not be assigned or transferred and any unauthorized transfer or assignment thereof shall be void and of no force or effect.

# HYDROLEVEL COMPANY

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[www.hydrolevel.com](http://www.hydrolevel.com)

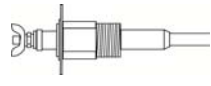
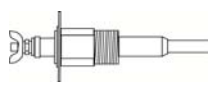
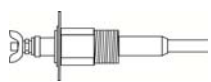
# Safgard™

## 250WC Series

### Pump Control Low Water Cut-Off Combination

120 VAC Operating Voltage  
Max. Pressure 250 psi



-  No moving parts to stick, wear or hang-up.
-  No replacement or rebuilding of floats or mechanical parts.
-  Reliable electronic design.
-  Made in the U.S.A.

## HOW TO INSTALL

### 1 WARNING!



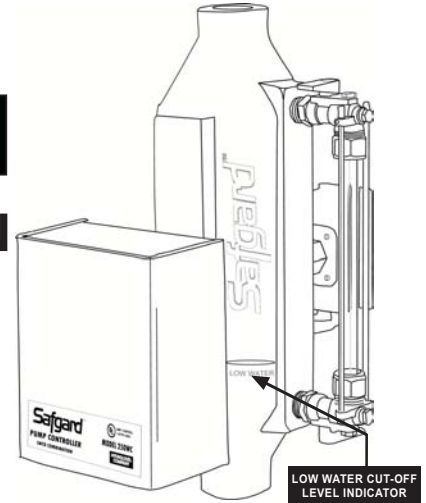
To prevent electrical shock and equipment damage, power must be off during installation, inspection or servicing of the control.

To prevent serious burns the boiler should be thoroughly cooled before installing or servicing control.

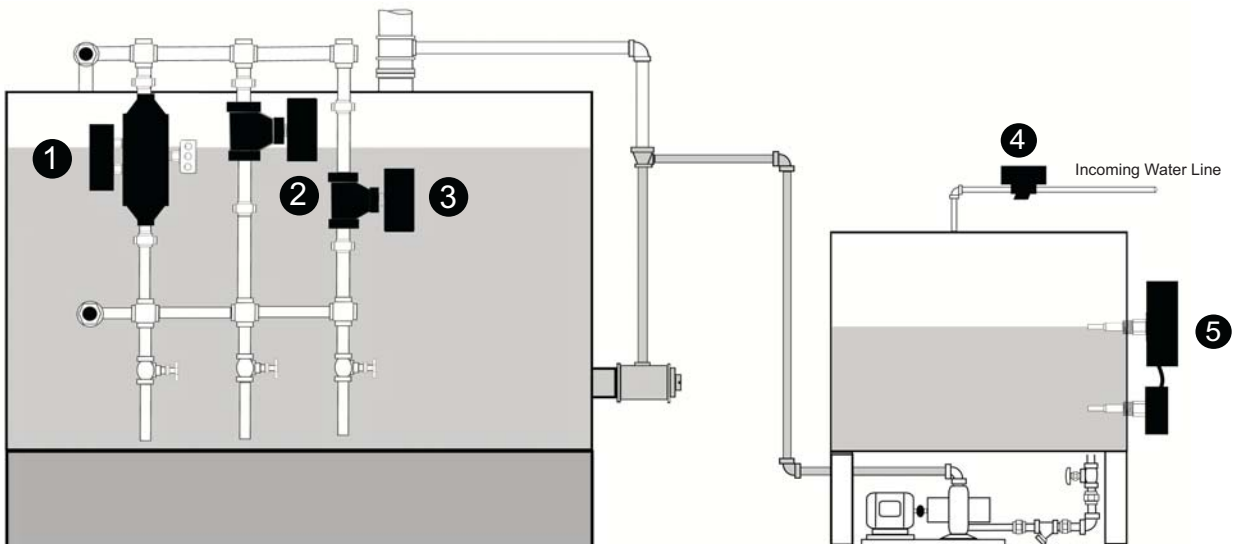
Only qualified personnel may install or service the control in accordance with local codes and ordinances. Read instructions completely before proceeding.

### 2 LOCATION

Install the Safgard 250WC in a 1" equalizing line equipped with a blow-down valve meeting applicable state and local codes. The control should be located so that the "LOW WATER CUT-OFF LEVEL" marked on the control casting is at least 1/2" above the lowest permissible water level as specified by the boiler manufacturer.



## TYPICAL APPLICATIONS



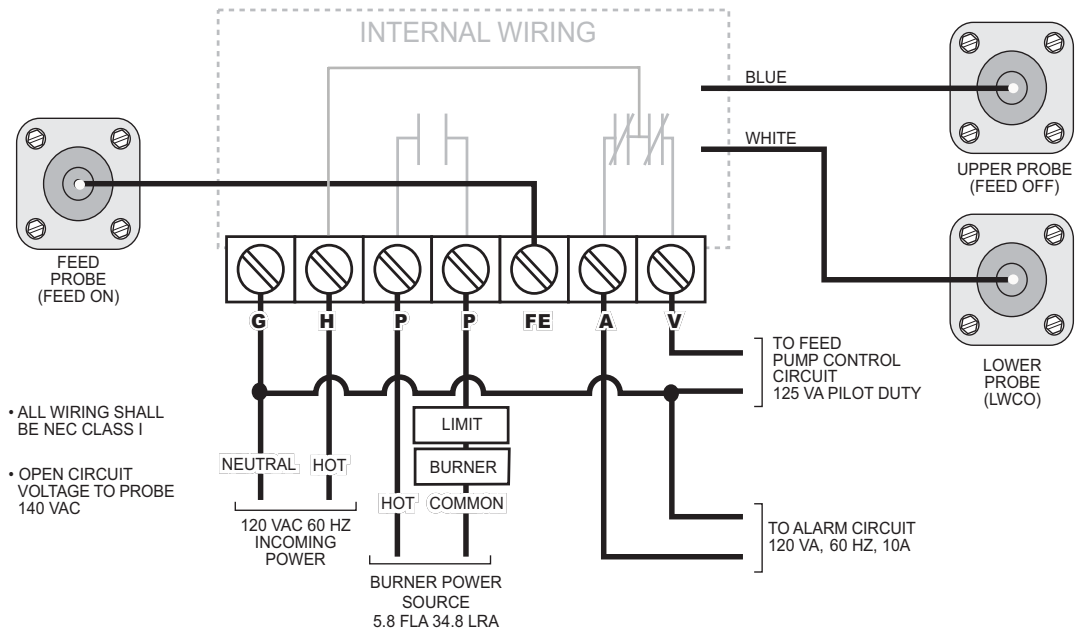
- 1** Safgard 250 Pump Controller LWCO Combination
- 2** Safgard 270 High Water Alarm
- 3** Safgard 550 or 750 as Secondary LWCO

- 4** Safgard VF-120 Solenoid Valve
- 5** Safgard 727 Tank Control

# WIRING

## MODEL 250WC Low Water Cut-Off and Pump Control

MAXIMUM PRESSURE: 250 PSI



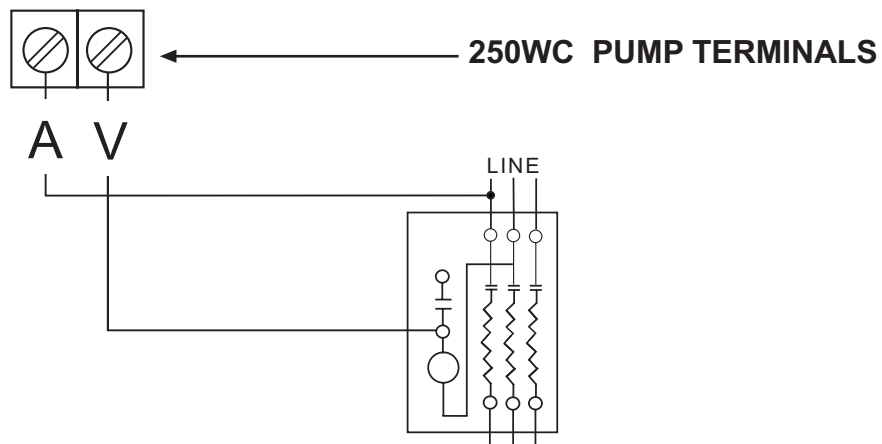
- ALL WIRING SHALL BE NEC CLASS I
- OPEN CIRCUIT VOLTAGE TO PROBE 140 VAC

The Safgard 250WC requires connection to a 120VAC power source to enable the control to operate.



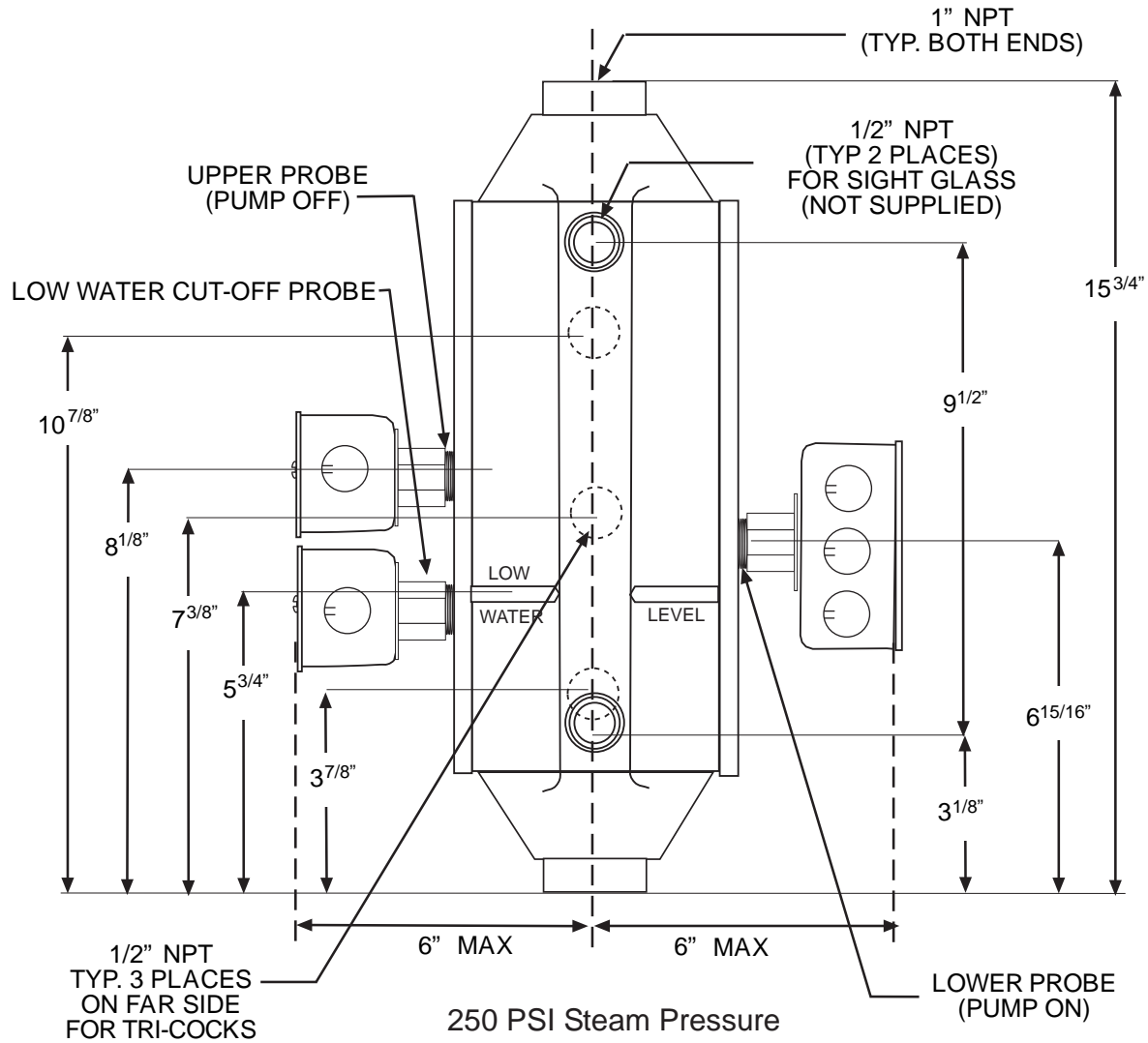
# IMPORTANT!

The Safgard 250WC is intended as a pilot control only and must be installed with a relay between it and both the condensate pump and burner circuit. Direct wiring of the control to either the burner circuit or condensate pump can result in failure of the control.

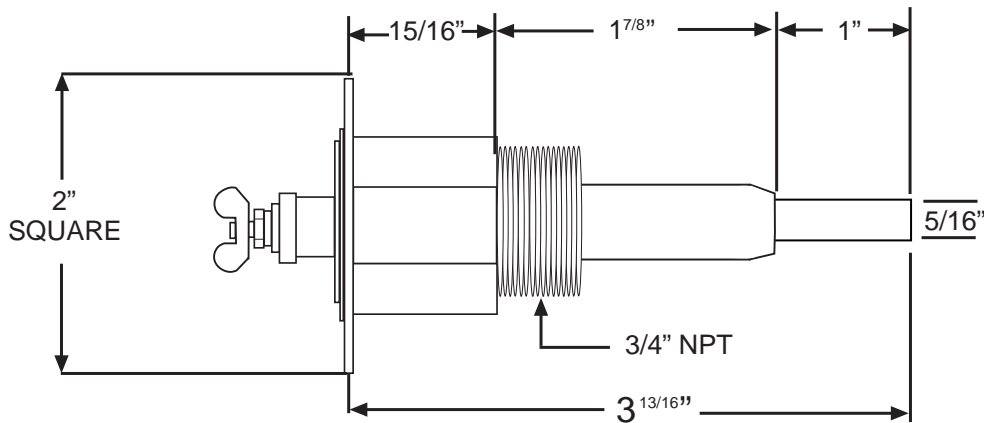


TYPICAL PUMP STARTER WIRING. SEE RELAY MANUFACTURER'S INSTRUCTIONS FOR MORE COMPLETE INFORMATION.

# DIMENSIONAL DATA



# PROBE DATA



Probe Test Pressure 1000 PSI

# BLOW-DOWN & TEST PROCEDURE

**CAUTION!**- Blow down valve should be piped to a proper drain connection to avoid exposure to steam discharge. Severe injury could result from failure to follow these instructions.

Blow down the 250WC Series control when the water level is at its normal operating level (between middle and upper probe) - with the the burner on.

Slowly open the column blow-down valve. The water level should begin to drop in the site glass. When water falls below the middle probe, the pump or valve should energize. Continue draining the blow down column until water has fallen below the bottom probe. Boiler should shut down immediately. Close the blow-down valve. Water should begin to rise in the site glass. The burner should refire after covering the bottom probe and water should continue to rise in the site glass. When water reaches the top probe the burner should continue to fire and the pump or valve should de-energize. If the control fails to react as described above recheck wiring and/or probes for sludge or sediment buildup.

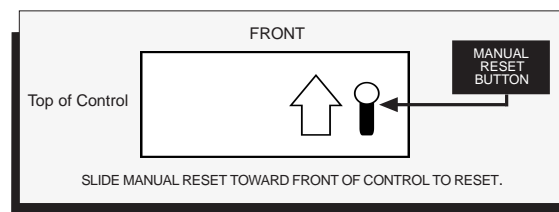
## MAINTENANCE

In addition to the blow-down and test procedure above, the probes should be removed and examined annually. The probes can usually be cleaned with a soft cloth although they are rugged enough to be cleaned with steel wool or a scouring pad if a more crystalline or solid buildup is present. Probes should be inspected and cleaned more often on systems with high make-up water or untreated boiler water.

## MANUAL RESET FEATURE (Model 250MWC)

The Safgard 250MWC manual reset incorporates a 90-second time delay that prevents nuisance lockouts. During temporary low water conditions such as column blow-down, excessive surge or slow condensate return, the burner will shut down immediately but will not lock out for 90 seconds. The burner will restart automatically if the water returns to a safe level within 90 seconds. The manual reset does not require resetting after a power failure.

Likewise, power interruptions will not reset the manual reset once engaged. With the Safgard manual reset design, a genuine low water condition must be detected before reset is actuated and the only procedure for resetting a tripped reset involves operator contact.



### LIMITED MANUFACTURER'S WARRANTY

We warrant products manufactured by Hydrolevel Company to be free from defects in material and workmanship for a period of two years from the date of manufacture or one year from the date of installation, whichever occurs first. In the event of any claim under this warranty or otherwise with respect to our products which is made within such period, we will, at our option, repair or replace such products or refund the purchase price paid to us by you for such products.

In no event shall Hydrolevel Company be liable for any other loss or damage, whether direct, indirect, incidental or consequential. This warranty is your EXCLUSIVE remedy and shall be IN PLACE OF any other warranty or guarantee, express or implied, including, without limitation, any warranty of MERCHANTABILITY or fitness for a particular purpose. This warranty may not be assigned or transferred and any unauthorized transfer or assignment thereof shall be void and of no force or effect.

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