

# Warrick<sup>®</sup> Series 26 Control Installation and Operation Bulletin

This bulletin should be used by experienced personnel as a guide to the installation of Series 26 Controls. Selection or installation of equipment should always be accompanied by competent technical assistance. We encourage you to contact Gems Sensors or a representative if further information is required.

## Specifications

**Control Design:** Open-board design (no housing)

**Contact Design:** Level Control -1 SPDT (1 form C), dry contacts

**Contact Ratings:** 10A @120/220/240-VAC resistive (120° F), 1A @ 120, 208/240, 240 resistive (150°F), 1/3 Hp @ 120, 208/240, 240 VAC

**Contact Life:** Mechanical -5 million operations  
Electrical -100,000 operations minimum at rated load

**Supply Voltage:** 24, 120, 220, or 240 VAC models, +10%/-15%, 50/60 Hz. **208/240 Model:** 187V Min to 242V Max, VAC 50/60 Hz

**Power Consumption:** 24/120/208/220/240-VAC with both relays energized ~ 4.4 VA.

**Secondary Circuit:** 2.3 VAC RMS voltage on probes, < 1 milliamper source capability.

**Sensitivity:** Factory programmed to 4.7K, 10K, 26K, 50K, or 100K Ohms.

**Operating Ambient Temperature Range:** -40°F to +150°F (-40°C to +65°C)

**Terminals:** Probe connections 3/16" male quick connects, Line and Power connections 1/4" male quick connects

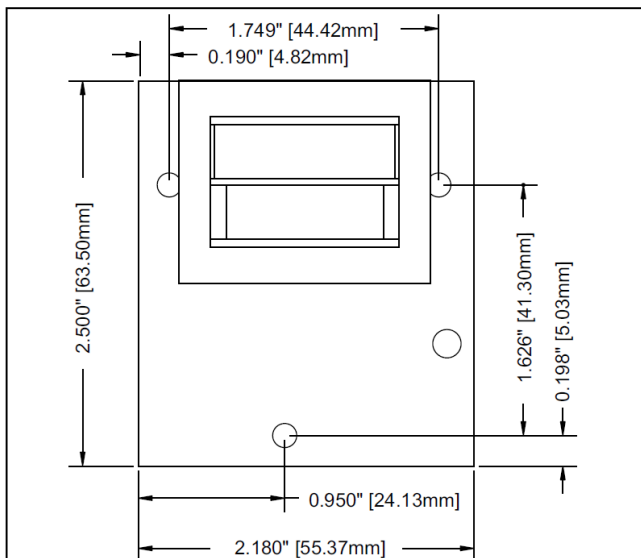
**Time Delays:** Standard, 0.5 seconds rising level, LLC0 probe, 3 seconds lowering level.

**Listings:** Control carries U.L. Limit Control Listing (UL-353) for supply voltages of 120-VAC and below.

## Installation

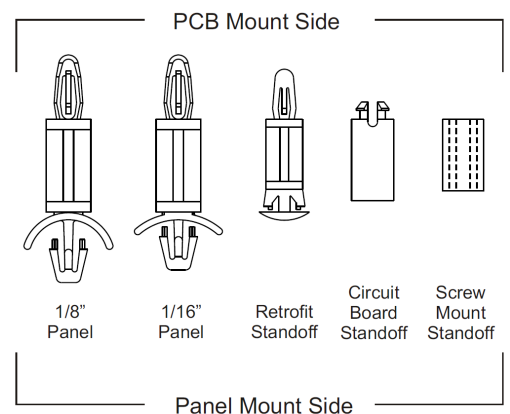
1. Drill three 0.187" holes in customer supplied back plate using stick on template supplied with control. Standard standoffs are designed for back plate thicknesses of 0.062 (1/16"). Standoffs are available for back plates of 0.125 (1/8") nominal thickness. If retrofit plate standoffs are used, drill 5 (five) 0.250 dia. Holes in proper locations.
2. Install five standoffs into back plate. Install two support standoffs into circuit board. **CAUTION:** Be careful not to bend or flex the circuit board during installation as this can damage the control. Do not push down on transformer or relays during installation. Install circuit board onto standoffs by gently pushing down on circuit board at board edges near standoff locations until board is fully seated. See sketch for proper installation. Install control in appropriate enclosure.
3. Wire controls per wiring diagram, following N.E.C. and local codes. Use appropriately sized spade terminals.

## Dimensional Drawing

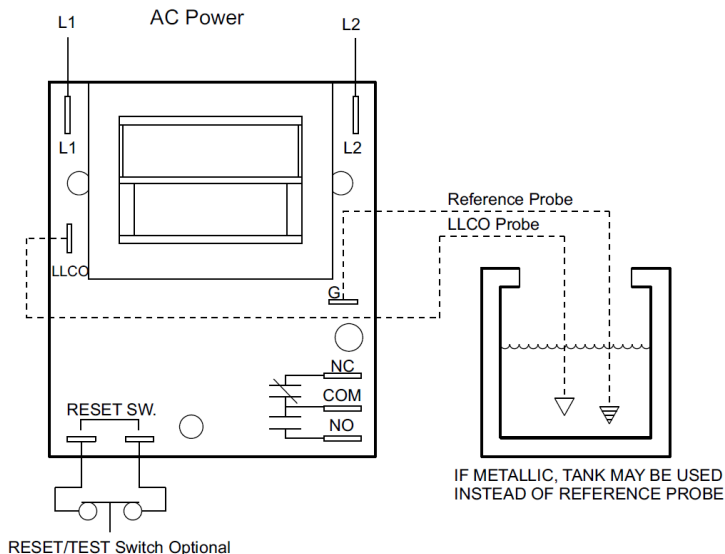


## Standoff Options

There are 5 standoff styles offered by Gems to connect circuit boards to panels.



# Wiring Diagram



## Operation

**AUTOMATIC RESET** (Reset Switch terminals not wired) When the liquid rises to the electrode on terminal LLCO, the control energizes, changing state of the load contacts. (LED will be lit) The control remains energized until the liquid level recedes below electrode on terminal LLCO. The control then de-energizes, (LED will not be lit) returning load contacts to original state. Unless otherwise specified, there is a three second time delay on decreasing level. Liquid must be below probe on terminal LLCO for a full three seconds before control de-energizes.

**MANUAL RESET** (Normally closed pushbutton installed across reset terminals) When the liquid rises to the electrode on terminal LLCO, the control will remain de-energized until the pushbutton is depressed. Upon Reset Switch activation, the control will energize, (LED will be lit) changing the state of the contacts. The control remains energized until the liquid level recedes below electrode on terminal LLCO. The control then de-energizes, (LED will not be lit) returning load contacts to their original state. Unless otherwise specified, there is a three second time delay on decreasing level. Liquid must be below probe on terminal LLCO for full three seconds before control de-energizes.

**Operator to wait 5 full seconds after power is applied before pressing reset switch (if manual reset is used).**

**MANUAL RESET OPTIONAL POWER OUTAGE FEATURE** (Normally closed pushbutton across reset terminals) Control will auto-recover from a power loss. With liquid above electrode on terminal LLCO at a power outage event, the control will de-energize and will automatically re-energize upon return of power with liquid present on the probe at power-up. However, if loss of liquid is sensed on power-up, the control will remain de-energized until liquid again rises to electrode and pushbutton is depressed. The control will not attempt to auto-recover from a power outage if no liquid was present on the probe at power loss.

### TEST FEATURE

Allows LLCO circuit to be tested without the need to drop the water level in the boiler to create a dry probe condition. Holding down the reset button for 3 seconds will allow the LLCO circuit to trip, simulating a dry probe. The controller will return to normal operation once the reset button is pressed a second time.

**LED STATUS INDICATOR** In normal operation, the LED on the control will either be on or off depending on the controller state. On-board microprocessors continuously monitor for fault conditions. In the event a fault is detected, the LED will blink a pattern indicating the fault type. If you experience an inoperable control and the LED is blinking, attempt to leave the control in the blinking state and contact the factory for assistance.

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- Time Delay: (Decreasing Level) LLCO level function 3 sec. standard.
- Optional Character: see Chart
- Enclosure: 0-none, 1-NEMA 1, 4-NEMA 4, 7-NEMA 7, 12-NEMA 12
- Standoff Style: A-1/16" panel, B-1/8" panel, C-screw mount, D-retrofit
- Supply Voltage: 1-120VAC (+10%/-15%), 2-240VAC (+10%/-15%), 3-24VAC (+10%/-15%), 5-220VAC (+10%/-15%), 8-208/240VAC (187 to 242 VAC Absolute Range)
- Mode/Sensitivity: A-4.7K, B-10K, C-26K, D-50K, E-100K

|   | N.C. Pushbutton | Power Outage | Retrofit Plate | Test Feature |
|---|-----------------|--------------|----------------|--------------|
| C | X               |              |                |              |
| E |                 | X            |                |              |
| F | X               | X            |                |              |
| N |                 | X            | X              |              |
| P | X               | X            | X              |              |
| R |                 |              | X              |              |
| B |                 |              |                | X            |
| Y | X               |              |                | X            |
| Z |                 | X            |                | X            |
| A | X               | X            |                | X            |