WARNING: To prevent electrical shock or 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.

1. Where To Install

HOT WATER BOILERS: Probe must be installed at or above the minimum safe water level established by the boiler manufacturer. The probe may be installed directly in the boiler (A) if a suitable tapping is available, in the riser (B), in the header horizontally (C), or in the header vertically (D).

STEAM BOILERS (Secondary): OEM 550/750 Only. Control must be installed in a suitable tapping provided in the boiler (A), or in an equalizing line (B). The control should be located below the level of the primary low water cut-off but above the lowest permissible water line as specified by the boiler manufacturer.

Note: For installations in equalizing lines, Watts recommends the use of FOEM Series or 1214C-2 Cast Iron Tees (see step 2).

2. Tee Options

FABRICATED TEE

FOEM-TEE (160psi)

TEE MOUNTING: If a field fabricated tee is used, make sure that the tee drains thoroughly when the water level falls below it, and that it conforms to the spacing requirements described in Step 3. Models equipped with the shorter EL1214-SV probe can be installed in most standard reducing tees. Safgard cast iron tees are also available to accommodate all probe models (See page 4).

Note: Use of Teflon tape is not recommended.

3. Probe Installation

Check to insure 1/4” clearance from the probe to any surface within the boiler or tee. Apply pipe sealing compound to threads.

Note: Use of Teflon tape is not recommended.

4. Control Mounting

Loosen the two control box cover binding head screws and remove the cover.

Assemble the control box to the probe flange and secure with the screws provided with the probe.

Connect the ring terminal wire lead to the probe terminal stud and secure with the lock washer and wing nut provided. With the power removed, proceed with installation and wiring according to Method A or B described on next page.
WIRING METHOD A: SAME POWER SOURCE FOR CONTROL AND BURNER CIRCUIT.

A1 Connect the hot lead of the input voltage (120 VAC, 60 HZ) to terminal 1 (or H). Connect the neutral lead to terminal 2 (or GN). 120 VAC, 60 HZ must be supplied to terminals 1 (or H) and 2 (or GN) for internal operation of the control.

Install a jumper between terminal 1 (or H) and terminal P1. Power from terminal P1 is supplied to terminal P2 through the control relay when water is at the probe.

A3 Connect terminal 2 (or GN) to burner circuit neutral. Connect terminal P2 to burner circuit in series with other limit controls. Consult boiler manufacturer instructions for proper terminal connections. Control should be wired in series with and before other circuits.

Optional alarm connection. Connect alarm common to terminal 2 (or GN). Connect alarm hot to terminal A.

Upon completion of wiring, replace control box cover.

WIRING METHOD B: SEPARATE POWER SOURCE FOR CONTROL AND BURNER CIRCUIT.

B1 Connect the hot lead of the input voltage (120 VAC, 60 HZ) to terminal 1 (or H). Connect the neutral lead to terminal 2 (or GN). 120 VAC, 60 HZ must be supplied to terminals 1 (or H) and 2 (or GN) for internal operation of the control.

Connect hot lead from the 24 VAC or 120 VAC burner power source to terminal P1. This terminal supplies power to terminal P2 in normal operating conditions when water is at the probe. Connect neutral to burner circuit. Note: consult boiler manufacturer instructions for proper terminal connections.

B3 Connect terminal P2 to burner circuit in series with and before other limit controls.

Optional alarm connection. Connect alarm hot to terminal A. Connect alarm common to neutral of the burner power source.

Upon completion of wiring, replace control box cover.
**OPERATING INSTRUCTIONS**

**OEM 170: Automatic Reset**
1. Turn on the power and set the thermostat to call for heat. The burner will fire immediately.
2. Slowly lower the water level below the probe. The burner will shut down.

**OEM 650: Automatic Reset & Test Button**
1. Turn on the power and set the thermostat to call for heat. The burner will fire immediately. The LED lamp should be off.
2. Push the test button on the top of the control to simulate a low water condition. The LED lamp will light and the burner will shut down within two seconds.

**OEM 750: Manual Reset**
1. Turn on the power and set the thermostat to call for heat. The LED lamps should be off.
2. Slowly lower the water level below the probe. The amber light will come on and the burner will shut down within two seconds.
3. Wait 30 seconds. The red LED lamp will come on indicating that the control is locked-out.
4. Raise the water above the probe. The red LED lamp will remain lit and the burner will not fire.
5. Push the RESET button to reset the control and restore burner operation.

**OEM 550: Manual Reset & Test Button**
Follow the operating instructions for the OEM 650 & 750 above.
Note: To test the manual reset feature on the OEM 550 without lowering the water level:
1. Push and hold down the TEST button. The red LED lamp will come on in approximately 30 seconds indicating that the control is locked-out.
2. Once the red LED is lit, release the TEST button. The burner will not fire.
3. Push the RESET button to reset the control and restore burner operation.

**TROUBLE SHOOTING**

**IF THE BURNER DOES NOT SHUT DOWN**
If the burner does not shut down when the water drops below the probe:
1. Remove power immediately and re-check wiring.
2. Remove power and check for adequate clearance from the probe to any surface within the boiler or tee.

**IF THE BURNER DOES NOT FIRE**
1. Make sure water is at probe and probe lead wire is properly secured to the terminal.
2. Check for proper ground between probe and boiler shell. Excessive use of Teflon tape or sealing compound may insulate the probe from the boiler shell.
3. Re-check wiring and test for correct incoming voltage.

**IF THE RED LED LAMP IS ON**
The red LED lamp indicates that the control is locked-out. This feature will activate if the boiler experiences a low water condition exceeding 30 seconds in duration. **IMPORTANT:** Do not reset control until the cause of the low water condition is corrected. **CAUTION:** Do not add water until boiler is cool.

**MAINTENANCE**
To ensure optimum performance, inspect probe annually. Clean any scale or build-up from the probe using a scouring pad or steel wool. Re-install the probe and test control in accordance with the Operating Instructions.
LIMITED WARRANTY:

WATTS Industries Canada Inc. warrants each product against defects in material and workmanship for a period of one year from the date of original shipment. In the event of such defects within the warranty period, the Company will, at its option, replace or recondition the product without charge. This shall constitute the exclusive remedy for breach of warranty, and the Company shall not be responsible for any incidental or consequential damages, including, without limitation, damages or other costs resulting from labor charges, delays, vandalism, negligence, fouling caused by foreign material, damage from adverse water conditions, chemicals, or any other circumstances over which the Company has no control. This warranty shall be invalidated by any abuse, misuse, misapplication or improper installation of the product.

THE COMPANY MAKES NO OTHER WARRANTIES EXPRESS OR IMPLIED EXCEPT AS PROVIDED IN THIS LIMITED WARRANTY.

MAXIMUM PRESSURE: 250 PSI
INPUT VOLTAGE: 120 VAC, 60 HZ
SWITCH RATINGS: 5.8 FLA, 34.8 LRA
SWITCH CONTACTS: SPDT
ALARM CIRCUIT: 125 VA @ 120 VAC Pilot Duty

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