# Aque Smart 7630P LOW WATER CUT-OFF SENSOR Beckett

# **INSTRUCTION SHEET**

#### **Parts List:**

(1) 7630Pxx Low Water Cut-Off (LWCO) Sensor (1) 4582-001 Sensor Retaining Clip

# A WARNING

### **Burn and Scald Hazard**

*Excessive water temperatures could cause explosion, burns, scalding, pressure relief flooding and fitting leaks.* 

- Carefully follow the outlined procedures for temperature sensor installation to ensure accurate water temperature sensing and effective control operation.
- Make sure the plumbing for domestic hot water has anti-scald valve protection.

## **INSTRUCTIONS:**

- A matching Beckett immersion well must be used for the low water cutoff function to operate properly. Make sure the well is clean inside, has no leaks, and no dents that would prevent proper insertion of the new sensor. If unsure of the well condition or if deposit build up is suspected, replace the well. Do not use teflon tape for sealing the threads as it may prevent proper LWCO operations. (See *Table 1* for well options.)
- Remove power from the control. Before inserting the new sensor, use an ohm meter to check the continuity of the LWCO circuit. Attach one of the meter probes to the connector, screw or wire to which the green sensor lead is attached. The second probe should go to metal on the boiler vessel (not the boiler jacket).
- 3. A good connection reading 5 ohms or less should be possible. Check all connections in the LWCO wiring circuit for possible issues. If the reading is above 10 ohms, run a new ground wire from the green screw on the control case to the boiler vessel. If a new wire is used, connect the green lead on the new sensor to the green screw when the new sensor is installed. The LWCO function will not operate properly without a good connection from the green sensor lead back to the boiler vessel.
- 4. With the pushrod on top, grasp the pushrod, sensor cable and green wire, then insert the sensor into the well. *Figure 2*. Use the pushrod to make sure the sensor is fully seated in the well. You will feel a slight resistance when the sensor pin reaches the clip in the well. Continue pushing until the sensor comes to a solid stop. The sensor pin must be fully inserted into the well clip for LWCO operation and proper temperature sensing. *Figure 1*.
- If the sensor is remotely mounted, reinstall the clip (Part No. 4582-001) used to hold the sensor cable securely in place. *Figure 3*.

#### Figure 2 - Pushing Sensor into immersion well







Figure 4 - Sensor Lead/Receptacle Connection





- Plug the main sensor cable into the connector under the display. If additional cable length is needed use the extension cable (Part No. 52120).
  Figure 4.
- 7. Connect the green sensor lead to the bullet/connector, pipe clamp or to the green screw on the AquaSmart 7610A or 7610B control. *Figure 6*.
- 8. On well mounted applications, the pushrod may need to be clipped to allow the control door to fully close. When the pushrod is clipped to the proper length, closing the control door and tightening the door screw will help keep the sensor in the correct position. For Beckett immersion wells, follow the instructions shown in *Table 1*. Choose the disc furthest out on the pushrod that will still allow the door to close completely. **Do not cut or damage the sensor cable.**
- Restore power to the AquaSmart Control. Allow the control to go through the start-up process. It could take up to 30 seconds to clear sensor or low water errors.
- Follow the control checkout procedure to confirm proper operation of the control and limit function. Complete checkout instructions can be found in the AquaSmart manual which can be viewed or downloaded at www. beckettcorp.com. Proper operation of the control and the LWCO must be confirmed before leaving the installation site (see Low Water Cutoff Test Procedure below).

# What to do if Low Water Lockout Occurs with New Sensor

- 1. Turn off power to the control.
- 2. Remove the sensor from the well and disconnect the green sensor wire. Leave the main sensor cable connected to the control.
- Being careful not to allow the sensor tip or the green sensor wire to touch anywhere in the terminal area of the control, restore power to the control. The control will go through the start up process and within 30 seconds should enter into Lockout Low Water.
- 4. Place the end of the green sensor wire (or a metal part of the connector) on the sensor pin. Hold the wire in place. Within 30 seconds, the Lockout Low Water fault on the display should clear. If the fault fails to clear, replace the sensor. If the Lockout Low Water fault clears, the sensor is operating properly. Look for other possible causes for the lockout.

### **Other Possible Causes**

- Poor connections in the LWCO circuit wiring
- Deposit build up on the well or boiler vessel
- Conductivity issues with the water

# Low Water Cutoff Test Procedure

- With power on to the control, use the pushrod to pull the sensor out 1-2 inches. You will feel the clip release the sensor pin. Make sure the sensor pin is not in contact with the side of the well.
- 2. Within 20 seconds, the control should enter low water lockout.
- Use the pushrod to push the sensor back into the clip and make sure the sensor is fully seated in the well. Within 20 seconds, the control should turn off the low water lockout.

Figure 5 - Clip the pushrod as shown





#### When used with Beckett Thermal Wells

Beckett #	Well Size	Cut Behind
7622TW01	2-3/16" insulation, 7/8" insertion	Disc 1
7622TW02	2-3/16" insulation, 1-5/8" insertion	Disc 2
7622TW03	3-1/2" insulation, 1-5/8" insertion	Disc 3
7622TW04	4-3/4" insulation, 1-5/8" insertion	No Cut

- For remote mount applications, cut the push rod at the first disc outside of the well.
- Non-Beckett wells may have different depths, cut pushrod to a length that allows the door to close properly.
- Note: The sensor is not tested or approved for pipe-mount installation. It is for use with immersion wells only.

Figure 6 - Sensor Ground Screw Connection



#### www.beckettcorp.com

USA: **R.W. Beckett Corporation**, 1-800-645-2876 Canada: **R.W. Beckett Canada Ltd**, 1-800-665-6972

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