

# AquaSmart™

Model 7600 Boiler Control



## Features & Benefits

- Beckett HeatManager™ dynamic temperature reset
- Energy saving through circulator-off delay
- Priority override for domestic hot water
- Freeze resistance
- 2N1 self checking sensor w/ Low Water Cut-off
- Cycle history diagnostic information
- Reduce inventory through universal design
- Backlit LCD screen with programming touch pad
- Built-in power disconnect switch (optional)
- Oil and gas offerings available
- Cold-Start compatible

**HeatManager™**  
Inside



2N1  
Sensor

## Description

The Beckett AquaSmart™ is a patent-pending, advanced boiler control designed for use on residential and light commercial boiler systems. The control includes a backlit LCD digital display with touch pad to easily program temperature limits, differentials, and other advanced options. The AquaSmart™ also has memory storage of system history for help with diagnostics and troubleshooting. All models include the option of enabling Beckett HeatManager™ dynamic temperature reset that, when selected, provides up to 20% fuel consumption savings.

## HeatManager™ Functionality

The HeatManager™ contains a Department of Energy (DOE) 2012 compliant load-matching energy saving algorithm. This feature saves fuel by dynamically changing the temperature high operating limit to the minimum temperature necessary to meet the heating demand. The qualified service technician can adjust the HeatManager™ algorithm to align comfort and energy savings.

## Example of LCD display screen



### **Ordering Information: Contact Customer Service at 1-800-645-2876**

Part Number	Description
7600A0001U	AquaSmart Boiler Temperature Control - 120Vac - Oil with Temperature ONLY Sensor
7600B0001U	AquaSmart Boiler Temperature Control - 120Vac - Gas with Temperature ONLY Sensor
7600A000LU	AquaSmart Boiler Temperature Control - 120Vac - Oil LESS Sensor
7600B000LU	AquaSmart Boiler Temperature Control - 120Vac - Gas LESS Sensor
76002N1S01U	AquaSmart 2N1 Temperature & LWCO Sensor Package - 1-1/2" Insulation Depth and 1-5/8" Insertion Depth
76002N1S02U	AquaSmart 2N1 Temperature & LWCO Sensor Package - 3-1/2" Insulation Depth and 1-5/8" Insertion Depth
76002N1S05U	AquaSmart 2N1 Temperature & LWCO Sensor Package - 4-3/4" Insulation Depth and 1-5/8" Insertion Depth
76002N1S06U	AquaSmart 2N1 Temperature & LWCO Sensor Package - 1-1/2" Insulation Depth and 7/8" Insertion Depth
	* All 2N1 Sensor Packages includes sensor, clamp and ground wire
7600RMU	48" AquaSmart Remote Mount Kit
	7600TSU Replacement Temperature Only Sensor Unit Pack

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## Cross-Reference Guide

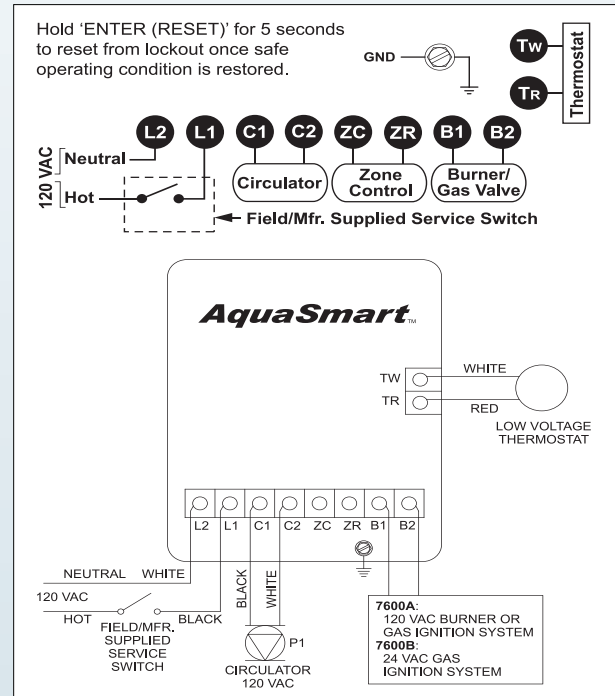
Table 1a - Direct Replacements

Beckett Replacement	Honeywell	
<b>7600A</b> (Oil - 120 Vac Output)	<ul style="list-style-type: none"> <li>L7124 A,C (All)</li> <li>L7224 A,C,U (All)</li> <li>L7248 A,C (All)</li> <li>L7148 A (All)</li> </ul>	<ul style="list-style-type: none"> <li>L8124 A,C, M (All)</li> <li>L8148 A (All)</li> <li>L8151 A</li> </ul>
	<b>Hydrolevel</b>	
	<ul style="list-style-type: none"> <li>3250</li> <li>3150</li> </ul>	
	<b>Carlin</b>	
	<ul style="list-style-type: none"> <li>90524A</li> </ul>	
<b>White Rodgers</b>		
<ul style="list-style-type: none"> <li>8B48A-217</li> <li>11B54-4</li> <li>11C15-11</li> <li>11C30-3</li> <li>11C61-12</li> </ul>		
<b>7600B</b> (Gas - 24 Vac Output)	<b>Honeywell</b>	
	<ul style="list-style-type: none"> <li>L8148E1265</li> <li>L8124E1016</li> </ul>	
	<b>Hydrolevel</b>	
	<ul style="list-style-type: none"> <li>3200</li> <li>3100</li> </ul>	
	<b>White Rodgers</b>	
<ul style="list-style-type: none"> <li>8B43A-601</li> <li>8F48A-351</li> </ul>		

Table 1b - Advanced Wiring Needed

Beckett Replacement	Honeywell		
<b>7600A or 7600B</b> (Based on system requirements)	<ul style="list-style-type: none"> <li>L4006A (All)</li> <li>L4006G 1022</li> <li>L4006H 1004</li> <li>L4008A (All)</li> <li>L4006E (All)</li> <li>L4008E (All)</li> <li>L4080B,D</li> <li>L4080F,G</li> </ul>	<ul style="list-style-type: none"> <li>L4081A,B</li> <li>L6081A,C</li> <li>L6006A (All)</li> <li>L6006C 1018</li> <li>L6008A 1192</li> <li>L6008A 1242</li> <li>L8124B 1039</li> <li>L8148J 1009</li> </ul>	
	<b>Carlin</b>		
	<ul style="list-style-type: none"> <li>90200A</li> <li>90000 (All)</li> <li>90200E</li> <li>90200EL</li> <li>90300B</li> <li>90200D</li> </ul>		
	<b>White Rodgers</b>		
	<ul style="list-style-type: none"> <li>11B06-1</li> <li>11D18-1</li> <li>11B18-101</li> <li>11B30-104</li> <li>11B02-1</li> <li>1145-33</li> <li>11B06-46</li> <li>11B95-31</li> <li>11B18-153</li> <li>11D82-1</li> <li>11D31-1</li> <li>1131-102</li> <li>1127-2</li> <li>11A79-2</li> <li>1127-9</li> <li>11B27-9</li> <li>8J48A-209</li> </ul>		
	<b>7600B</b> (Gas - 24 Vac Output)	<b>Honeywell</b>	
		<ul style="list-style-type: none"> <li>L7148F (All)</li> <li>L8148E (All)</li> </ul>	

## Wiring



Refer to the 2N1 sensor installation instructions for additional grounding and wiring procedures.

## Product Specifications

### Electrical Ratings

- Input Voltage: 120 Vac - 50/60 Hz.
- Input Current: 0.1 A + B1 + C1 + ZC
- MAX Input Current: 20A (Reduce to 15A if optional power switch is used)
- 24 Vac thermostat anticipator current: 0.1 Amp.
- Burner Current Rating (B1):  
 7600A: 7.4 A at 120 Vac FLA; 44.4 A inrush LRA.  
 7600B: 1.25 A at 24 Vac; 30 VA (total load).
- Circulator Current Rating (C1): 7.4 A at 120 Vac FLA; 44.4 A inrush LRA.
- Zone Control Current Rating (ZC): 7.4 A at 120 Vac FLA; 44.4 A inrush LRA.

### Temperature Ranges and Differentials

- High Limit Setting Range: 100 to 240°F (37 to 115°C)
- High Limit Differential Range: 5 to 45°F (2 to 25°C)
- Low Limit Setting Range: 100 to 220°F (37 to 104°C)
- Low Limit Differential Range: 10 to 45°F (5 to 25°C)
- Factory Range Stops available - consult factory

### Environmental Ratings

- Storage Temperature: -40 to +150 °F (-40 to +65 °C)
- Operating Temperature: -4 to +150 °F (-20 to +65 °C)
- 7600B at 50Hz: -4 to +140 °F (-20 to +60 °C)
- Relative Humidity: 5 to 85% RH, non-condensing and non-crystallizing



Approvals: Underwriters Laboratories Listed to UL353, UL1998 for U.S. and Canada, CSA C22.2 No. 24