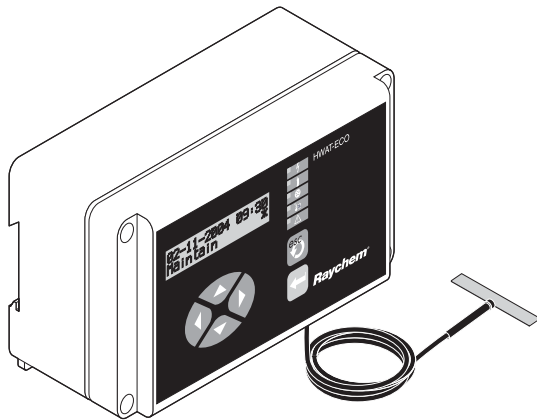


# Raychem HWAT-ECO ELECTRONIC CONTROLLER

For hot water temperature maintenance systems




## PRODUCT OVERVIEW

The Raychem HWAT-ECO controller is designed for operation with the HWAT-R2 self-regulating heating cable.

The HWAT-ECO controller provides the following features:

- Flexible temperature control of hot water temperature maintenance systems.
- Integrated function that lowers the maintain temperature during low use hours to save energy.
- Heat-up cycle function that increases the water temperature of a hot water system that is not in use.
- Building Management System (BMS) interface that receives a DC voltage to determine the desired maintain temperature.
- Alarm relay to signal power, temperature or communication problems.
- Pipe temperature monitoring with high temperature alarm and system shut down.
- Nine predefined programs that can be customized by the user.

## GENERAL

Area of use	Nonhazardous locations
Approvals	 Type 12 <b>Energy Management Equipment</b> (for use with HWAT-R2 only.)
Maintain temperature setpoint	105°F (40°C) to 140°F (60°C)
Controller ambient exposure temperature	40°F (5°C) to 105°F (40°C)
Ambient operating range	60°F (15°C) to 80°F (27°C)
Switching capacity	24 A @ 208/240 Vac maximum SPST
Operating voltage	208/240 (±10%), 60 Hz
Internal power consumption	2.5 W
Circuit protection	Maximum 30 A with 30-mA ground-fault protection required; not provided in HWAT-ECO controller
Internal temperature alarm	150°F (65°C)
BMS control voltage	0 – 10 Vdc
Alarm contacts	Maximum 24 Vdc or 24 Vac, 1 A, SPST, voltage free, NO/NC

# HWAT-ECO

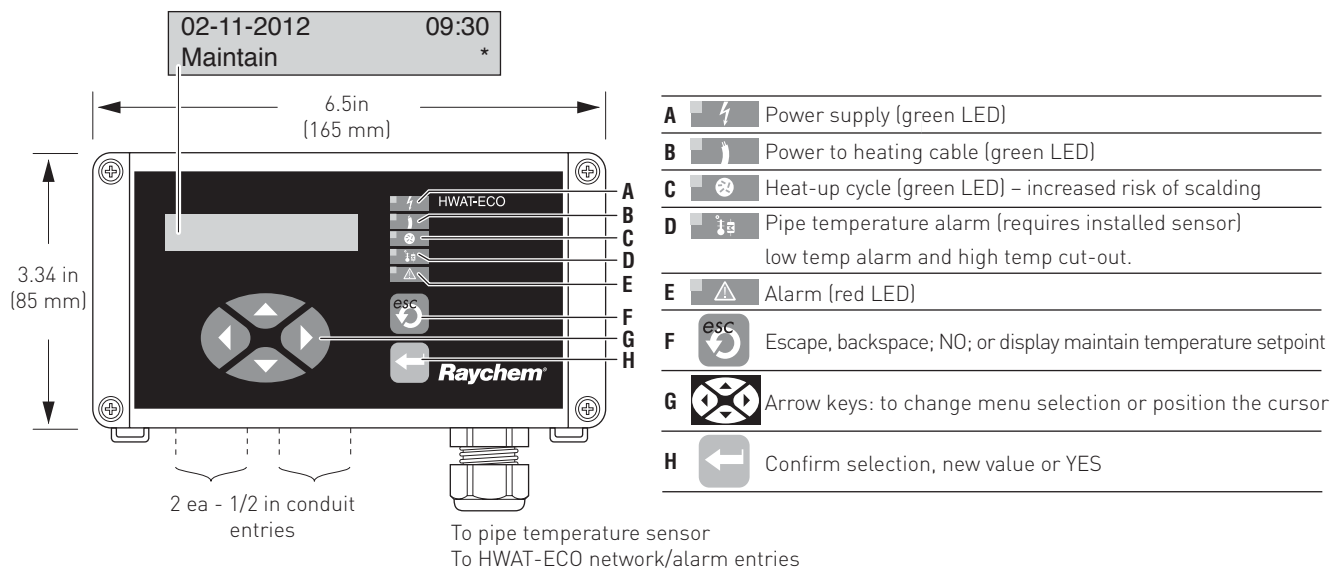
## GENERAL

Alarm events	<ul style="list-style-type: none"> <li>• Loss of power</li> <li>• Controller reinitialized</li> <li>• Internal controller temperature too high</li> <li>• Water heater temperature too high (cut-out)</li> <li>• Water heater temperature too low</li> <li>• Network error</li> </ul>
Power correction factor	To increase or decrease your actual pipe maintain temperature or adjust for hot water systems with rigid plastic pipes
Pipe temperature sensor	Thermistor with 13 ft 3 in (4 m) lead. A PT100 RTD may optionally be used. Maximum length 328 ft. (100 m)
Electromagnetic Compatibility (EMC)	Complies to EN 5014-1 for emission and EN 50730-1 for immunity
Real time clock	Leap year correction
Clock accuracy	±10 minutes per year

## ENCLOSURE

Enclosure rating	NEMA 12 (IP54) – indoor use only
Enclosure material	ABS
Mounting	Wall mount with two screws or optional DIN rail
Conduit entries	Two each – 1/2 in conduit entries
Cable gland	3-hole grommet Maximum cable size: <ul style="list-style-type: none"> <li>• 2-wire: 20 AWG (0.5 mm<sup>2</sup>)</li> <li>• 4-wire: 24 AWG (0.2 mm<sup>2</sup>)</li> </ul>

## TYPICAL ENCLOSURE DIMENSIONS AND MODULE LAYOUT



## PROGRAMMING

Default programs	Nine predefined programs that can be customized by the user
Program settings	There are 48 1/2-hour time blocks of the following program settings: Off, Economy, Maintain, and Heat-up cycle

**NETWORKING**


---

Master/slave	Master is selectable in the controller, up to eight slaves can be connected
Master/slave cable	2-wire, 300 V, minimum 24 AWG twisted pair (328 ft (100 m) maximum)

**MEMORY**


---

Parameters stored in memory	All parameters are stored in nonvolatile memory, except date and time
Clock back-up time	Retain time and date for up to 30 days after power loss with rechargeable lithium battery.

**GROUND-FAULT PROTECTION**


---

To minimize the danger of fire from sustained electrical arcing if the heating cable is damaged or improperly installed, and to comply with the requirements of approval agencies, Pentair Thermal Management and national and local electrical codes, you must use 30-mA ground-fault equipment protection on each heating cable branch circuit. Arcing may not be stopped by conventional circuit protection. The HWAT-ECO does not include ground-fault protection.

**ORDERING DETAILS**


---

Catalog number	HWAT-ECO
Part number	P000000121
Weight	2 lb (1 kg)

---

**Important:** The Raychem HWAT-ECO controller is c-UL-us Listed for use with the Raychem HWAT-R2 heating cable only. The warranty and system listing will be invalidated if the HWAT-ECO controller is used with other heating cables.



[WWW.PENTAIRTHERMAL.COM](http://WWW.PENTAIRTHERMAL.COM)

**NORTH AMERICA**

Tel: +1.800.545.6258  
Fax: +1.800.527.5703  
Tel: +1.650.216.1526  
Fax: +1.650.474.7711  
[thermal.info@pentair.com](mailto:thermal.info@pentair.com)

**EUROPE, MIDDLE EAST, AFRICA**

Tel: +32.16.213.511  
Fax: +32.16.213.603  
[thermal.info@pentair.com](mailto:thermal.info@pentair.com)

**ASIA PACIFIC**

Tel: +86.21.2412.1688  
Fax: +86.21.5426.2917  
[cn.thermal.info@pentair.com](mailto:cn.thermal.info@pentair.com)

**LATIN AMERICA**

Tel: +1.713.868.4800  
Fax: +1.713.868.2333  
[thermal.info@pentair.com](mailto:thermal.info@pentair.com)

Pentair and HWAT are owned by Pentair or its global affiliates. All other trademarks are the property of their respective owners. Pentair reserves the right to change specifications without prior notice.

© 2004–2013 Pentair.