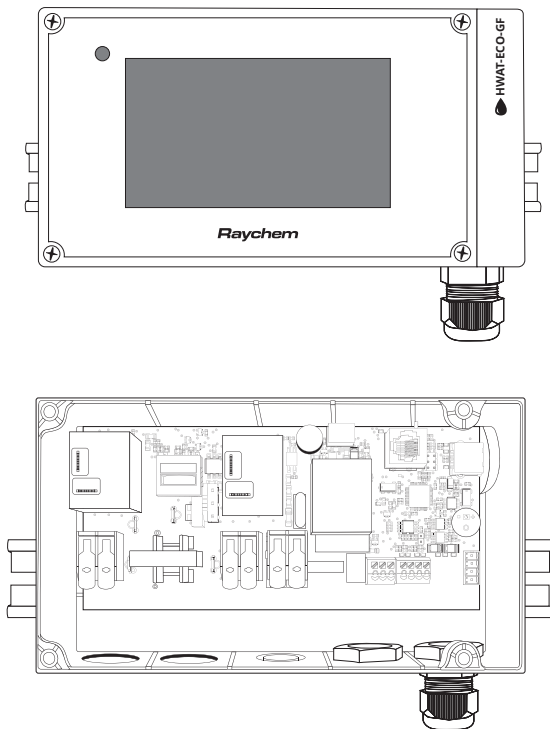


Electronic Controller for hot water temperature maintenance systems

PRODUCT OVERVIEW



The Raychem HWAT-ECO-GF controller is designed for operation with the Raychem HWAT-R2 and HWAT-P1 self-regulating heating cables.

Features


- Equipment rated ground fault protection built-in
- Intuitive set-up and programming, includes a 5" inch color touch screen
- Flexible temperature control of hot water temperature maintenance systems
- Energy savings through an integrated function that lowers the maintain temperature during hours of low water consumption
- Heat-up cycle function that increases the water temperature of the hot water in the pipes
- Alarm relay to signal power, temperature or communication problems
- Hot water storage & pipe temperature monitoring with high and low temperature alarms and automatic system shut down
- Seven pre-defined building timer programs that can be customized by the user
- Program in advance in power-off mode by using external power bank/charger and USB connection

GENERAL

Area of use Non-hazardous locations; for HWAT-R2 and HWAT-P1 heating cables only

APPROVALS

c-UL-us, ROHS, WEEE
Electromagnetic Compatibility (EMC)

 TYPE 12
Energy Management Equipment
(for use with HWAT-R2 and HWAT-P1 only)

Important: A pipe temperature sensor must be used on the least used pipe with HWAT-P1 heating cable.

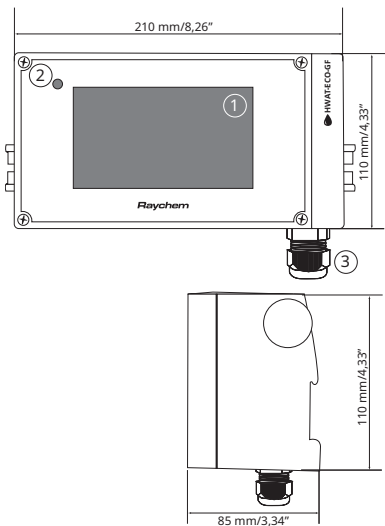
ELECTRICAL PROPERTIES

Supply Voltage	HWAT-R2: 208/240/277 VAC, 60 Hz HWAT-P1: 120 VAC, 60 Hz
Controller ambient exposure temperature	32°F (0°C) to 104°F (40°C)
Ambient operating range	50°F (10°C) to 77°F (25°C)
Output relay switching capacity	24 A @ 120/208/240/277 VAC 60 Hz
Alarm relay	Single pole double throw relay, volt-free; rating 1 A/24 VAC or 24 VDC
Circuit breaker	30 A Max.
Ground fault	30 mA, complies with UL 1053 standard
Real time clock	Automatic daylight saving time and leap year correction
Clock accuracy	+/-10 minutes per year
Keylock	Password protection for parameter settings
USB Port	For pre-setup in power off mode; for firmware upgrades

ENCLOSURE

Dimensions	210 mm x 110 mm x 85 mm / 8.26" x 4.33" x 3.34"
Ingress protection class	TYPE 12 – indoor use only
Enclosure material	Polycarbonate
Mounting option	Mountable DIN RAIL, 35 mm
Conduit entries	Two each-1 in conduit entries
Cable gland	3-hole grommet for temperature sensors maximum cable size -2 wire: 20 AWG (0,5 mm ²)
Storage temperature	-4°F (-20°C) to 105°F (40°C)
Flammability class	DIN EN 60730/VDE 0631-1

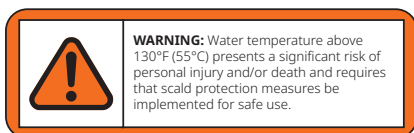
TYPICAL ENCLOSURE DIMENSIONS AND MODULE LAYOUT



- Touch Screen Size: 5" resistive
- Any error message is present (red triangle drawn in display) 0.2 second on / 1.8 seconds off
Normal operation, heater on 1.5 seconds on / 0.5 second off
Normal operation, heater off 1.0 second on / 1.0 second off
- M20 Gland: Sensor hot water storage/sensor pipe/ external alarm

PROGRAMMING

Maintain temperatures setpoint	99°F (37°C) to 149°F (65°C) in 24 blocks of 1 hour per day
Default programs	7 built-in building specific programs, editable
Timer	Program can be modified in steps of one hour; following operation modes are selectable: OFF, ECONOMY, MAINTAIN and HEAT-UP CYCLE



SENSOR

Temperature sensor type	Thermistor 2 KOhm / 77°F (25°C), 2-wire
Sensor tip dimensions	Ø 0.2" (5 mm); length 0.8" (20 mm)
Sensor cable length	10 ft (3 m) cable extension up to 328 ft (100 m) / 2 x 16 AWG
Sensor temperature range	32°F (0°C) to 194°F (90°C)

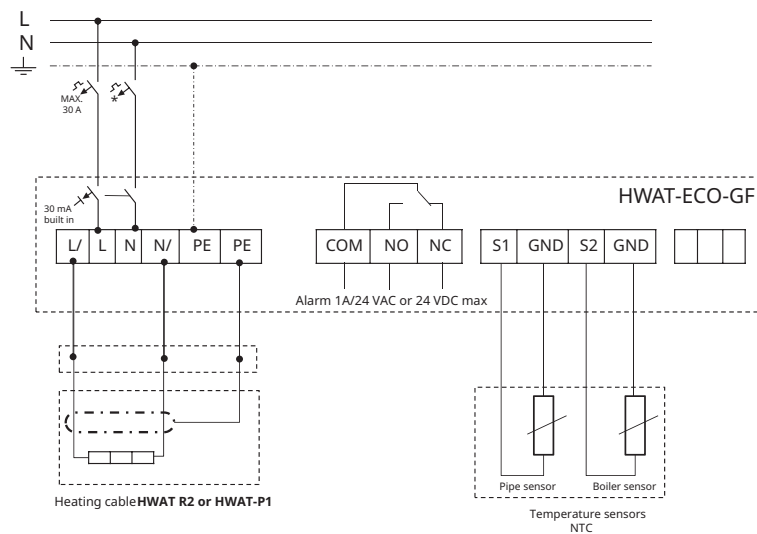
MONITORING

Boiler temperature alarm	High temperature alarm/cut-out Adjustable range: maintain temperature to 150°F/66°C or OFF Low temperature alarm Adjustable range: maintain temperature to 100°F/37°C or OFF
Pipe temperature alarm	High temperature alarm/cut-out Adjustable range: maintain temperature to 150°F/66°C or OFF Low temperature alarm Adjustable range: maintain temperature to 100°F/37°C or OFF
Sensor alarm	Sensor open circuit Sensor short circuit
Heating cable connection	Heating cable open circuit

MEMORY

Parameters	All parameters are stored in nonvolatile memory, except date and time
Clock back-up time	10 days

ELECTRICAL SCHEME



Size Power supply terminals	3 x 6 mm ² max./10 AWG
Size Heating cable terminals	3 x 6 mm ² max./10 AWG
Size Alarm terminals	3 x 1,5 mm ² max./16 AWG
Size Sensor terminal - Boiler	2 x 1,5 mm ² max./16 AWG
Size Sensor terminal - Pipe	2 x 1,5 mm ² max./16 AWG

ORDERING DETAILS

Description	Catalog	Part Number	Weight
Controller with 10 ft/3 m sensor and din-rail	HWAT-ECO-GF	P000002274	2.3 lbs/1050 g
Spare Parts and Accessories			
Replacement Pipe Sensor	SENSOR-NTC-10M	1244-015847	0.33 lbs/150 g

Important: The HWAT-ECO-GF controller is for use with the HWAT-R2 and HWAT-P1 heating cables only. The warranty and system listing will be invalidated if the HWAT-ECO-GF controller is used with other heating cables.

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Raychem Tracer Pyrotenax Nuheat