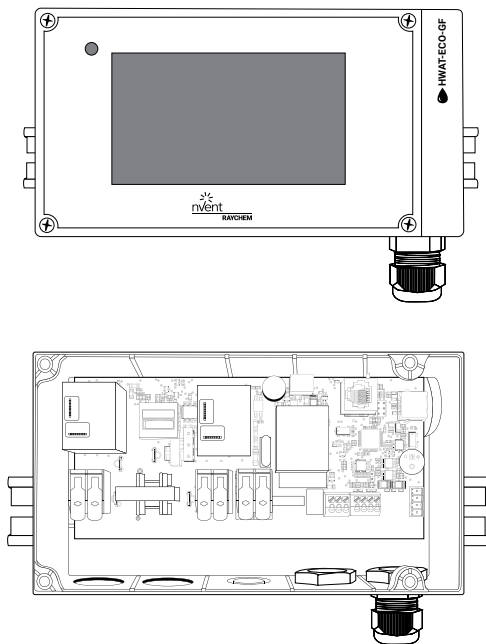


# HWAT-ECO-GF

## CONNECT AND PROTECT

### Electronic Controller for hot water temperature maintenance systems

#### PRODUCT OVERVIEW



The nVent RAYCHEM HWAT-ECO-GF controller is designed for operation with the nVent 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)

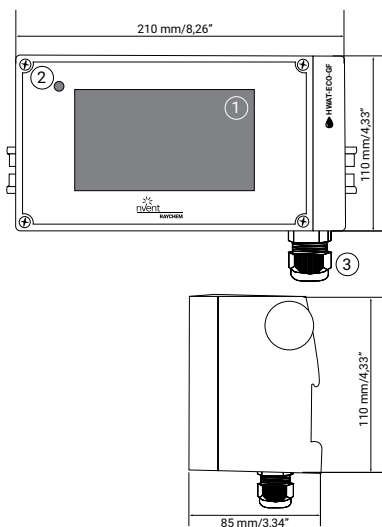
## ELECTRICAL PROPERTIES

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 <sup>2</sup> )
Storage temperature	-4°F (-20°C) to 105°F (40°C)
Flammability class	DIN EN 60730/VDE 0631-1

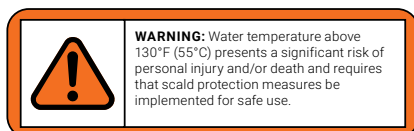
## TYPICAL ENCLOSURE DIMENSIONS AND MODULE LAYOUT



1. Touch Screen Size: 5" resistive
2. LED Blinking Power to heating cable  
(60 flashes/min):  
LED Blinking Fast Error/warning message  
(90 flashes/min):
3. 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)

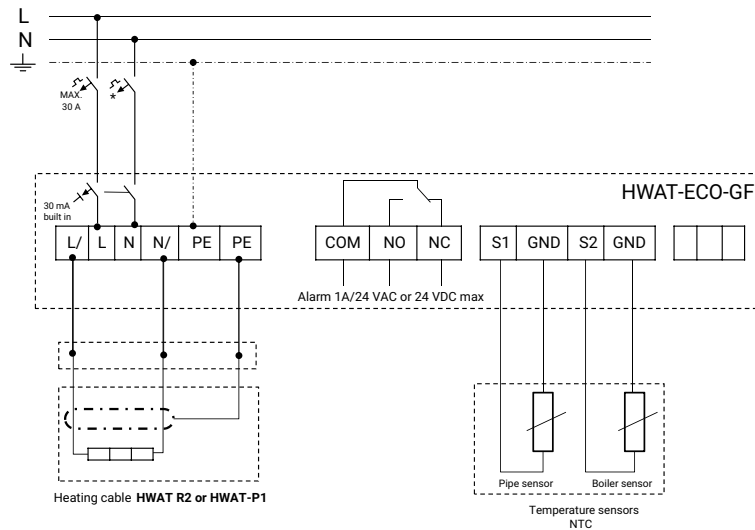
## MONITORING

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

## ORDERING DETAILS

Description	Catalog	Part Number	Weight
Controller with 10ft/3m sensor and din-rail	HWAT-ECO-GF	P000002274	2.3 lbs/1050 g
<b>Spare Parts and Accessories</b>			
Replacement Pipe Sensor	SENSOR-NTC-10M	1244-015847	0.33 lbs/150 g
Power Bank	R-PB-Powersmart	1244-020365	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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