

RAYSTAT V5

ELECTRONIC CONTROLLER FOR PIPE FREEZE PROTECTION SYSTEMS



PRODUCT OVERVIEW

The nVent RAYCHEM RAYSTAT V5 controller is designed for operation with the nVent RAYCHEM XL-TRACE, FS and ETL self-regulating heating cables.

FEATURES

- Easy set-up and programming of the unit
- Flexible temperature control of pipe freeze protection and temperature maintenance systems
- Line sensing and/or ambient sensing
- Proportional Ambient Sensing Control (PASC) algorithm for enhanced energy savings in ambient sensing mode
- Alarm relay with change over contact to signal power, temperature or communication problems
- Pipe temperature monitoring with high and low temperature alarm
- Offsite configurable - can be set up prior to final installation
- On wall mountable for outdoor location

GENERAL

Area of use	Non-hazardous locations; for nVent RAYCHEM XL-TRACE; FS-C10-2X; Frostop Black and ETL heating cables
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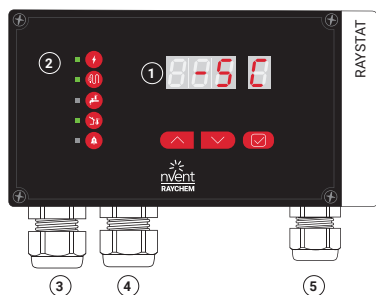
ELECTRICAL PROPERTIES

Supply voltage	180-253 VAC; 50/60Hz
Operating temperature	−40°C to +40°C ambient
Power consumption	Max. 3,5 VA
Switching capacity output relay	25 A 230 VAC
Size power supply terminals	3 x 6 mm ² max.
Size heating cable terminals	3 x 6 mm ² max.
Size alarm terminals	3 x 1,5 mm ² max.
Size pipe sensor terminals	2 x 1,5 mm ² max.
Alarm relay	Single pole double throw relay, volt-free; Max. switching capacity (resistive load only) 1 A/30 VDC 0.5 A/125 VAC, Max.: 60 VDC/125 VAC
Circuit breaker	Max. C 20 A
Keylock	Password protection for parameter settings
USB port	For pre-setup in power off mode; for firmware upgrades

ENCLOSURE

Dimensions	210 mm x 90 mm x 85 mm
Ingress protection class	IP65
Enclosure material	Polycarbonate
Mounting option	On wall; mountable DIN rail 35 mm
Cable entries	2 x M25 and 2 x M20 (1 Blanking plug for 2nd. M20)
Storage temperature	−40°C to +50°C
Flammability class	DIN EN 60730/VDE 0631-1
Weight	990 g

MODULE LAYOUT



1. LED Screen
2. LED Green:
 - a - Power to the unit
 - b - Power to the heating cable
 - c - Line sensor connected
 - d - Ambient sensor connected
 - e - Alarm/Error info
3. M25 Gland: Power cable
4. M25 Gland: Heating cable
5. M20 Gland: Sensor/Sensor pipe/External alarm

PROGRAMMING

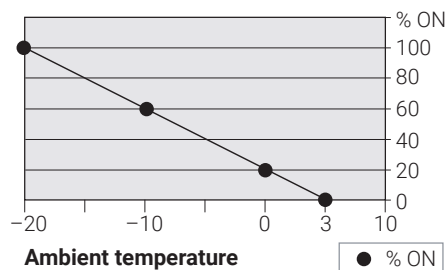
Selectable set temperatures	0°C to +90°C (line sensing) and 0°C to +30°C (ambient sensing)
Parameter	Operation modes, high and low temperature alarm, hysteresis

ENERGY SAVING WITH PROPORTIONAL AMBIENT SENSING CONTROL (PASC)

Duty cycle (power to heater on) depends on the ambient temperature. For example:
If minimum temperature= −20°C and if maintain temperature (set point)= +5°C

ambient t°	% ON	
−20	100	
−10	60	Min. Ambient
0	20	
3	0	Set point

Result: At ambient temperature of −10°C, 50% energy is saved



SENSOR

Temperature sensor type	NTC 2 KOhm / 25°C, 2-wire
Sensor tip dimensions	Ø 5 mm; length 20 mm
Sensor cable length	5 m; cable extension up to 150 m, cross section extension cable: 2 x1,5 mm²
Temperature range	−40°C to +90°C

MONITORING

Temperature alarm	High temperature alarm	Adjustable range: maintain temperature to +2°C to +90°C, OFF
	Low temperature alarm	Adjustable range: maintain temperature to −40°C to +65°C, OFF
Sensor alarm	Sensor open circuit Sensor short circuit	
Heating cable connection	Heating cable open circuit	

MEMORY

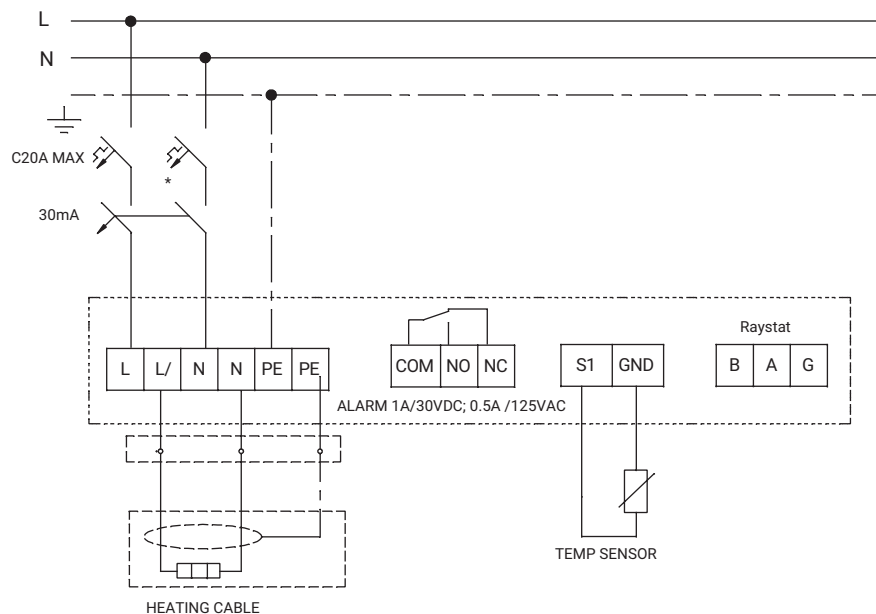
Parameters All parameters are stored in nonvolatile memory

APPROVALS

Approvals CE, ROHS, WEEE

Electromagnetic Compatibility (EMC) EN 61000-6-1: 2007; EN 61000-6-3:2007 + A1:2011

ELECTRICAL SCHEME



*Depending on national/local regulations

ORDERING DETAILS

Catalog number	RAYSTAT V5
Part number	1244-022440
Weight	990 g
In package	Control unit, Din-rail, 1 Line sensor

ACCESSORY

Catalogue description	NTC Pipe sensor	Sensor Module for PT-100 (up to +180°C) SM-PT-100-1	PT-100 Sensor Hard-78	Power bank
Part number	1244-015847	1244-022441	213430-000	1244-020365

Important: The nVent RAYCHEM RAYSTAT controller is for use with the nVent RAYCHEM heating cables only. The warranty and system listing will be invalidated if the RAYSTAT controller is used with other heating cables.

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