

### Electronic Controller for Pipe Freeze Protection and Temperature Maintenance Systems

#### PRODUCT OVERVIEW



The nVent RAYCHEM Elexant 450c controller is designed for operation with the nVent RAYCHEM heating cables.

#### FEATURES

- Intuitive set-up and programming of the unit with a 4,3" colour touch screen
- Flexible temperature control of pipe freeze protection and temperature maintenance systems
- Controls 2 independent heating circuits
- 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
- DIN rail panel mountable

#### GENERAL

Area of use	Non-hazardous locations; for nVent RAYCHEM heating cables
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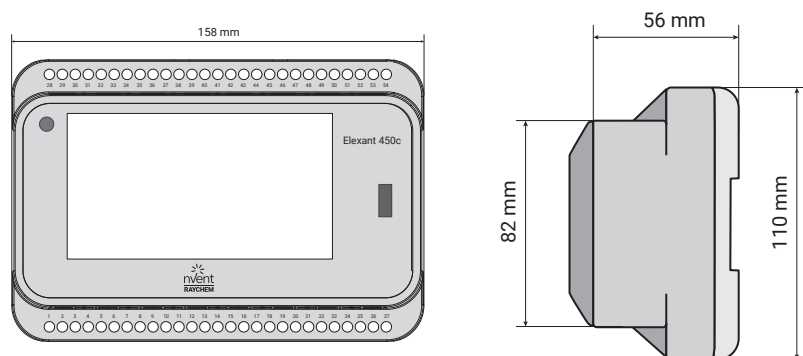
#### ELECTRICAL PROPERTIES

Supply voltage	230 VAC -15/+10%; 50 Hz
Power consumption	4 VA
Output relay / contactor / heating cable	2 x 4 A / 230 VAC
Power supply terminals	3 x 1,5 mm <sup>2</sup>
Heating cables terminals contactor	2 x 2 x 1,5 mm <sup>2</sup>
Alarm terminals	3 x 1,5 mm <sup>2</sup>
Sensor terminals	2 x 2 x 1,5 mm <sup>2</sup>
Modbus terminal	3 x 1,5 mm <sup>2</sup>
Alarm relay	Single pole double throw relay, voltage – free, rating 2A/250 VAC
Real time clock	Automatic summer/winter time and leap year connection
Clock back up	10 days
Clock accuracy	+/- 10 minutes per year
Keylock	Password protection for parameter settings
USB Port	For preset-up in power off mode and firmware upgrade
Settings	All settings are stored in a non-volatile memory
Exposure temperature	0°C to +40°C
Selectable temperature range	0°C to +85°C (when used with SM-PT100-2 up to +250°C)

## ENCLOSURE

Dimensions	158 mm x 110 mm x 56 mm
Ingress protection class	IP20
Material	PPE
Mounting option	DIN-Rail mountable 35 mm, in panel
Storage temperature	-20°C to +50°C
Flammability class	D category ( DIN EN60730/VDE0631-1)
Weight	550 g

## TYPICAL ENCLOSURE DIMENSIONS AND MODULE LAYOUT



1. Touch screen, size 4,3"
2. LED: Flashes green in operation mode  
Error/Warning message

## PROGRAMMING

Selectable Temperature ranges	0°C to +85°C (when used with SM-PT100-2 up to +250°C)
Min and max temperature limit range	-40°C to +85°C (when used with SM-PT100-2 up to +250°C)
Operation modes	Lines sensing, Ambient sensing mode (P.A.S.C. Proportional Ambient Temperature Sensor Control); OFF

## SENSOR

	Standard	With SM-PT100-2 Module	
	(included in box)	HARD-78	MONI-PT100-260/2
Temperature sensor type	NTC 2 KOhm / 25°C, 2-wire	PT100	PT100
Sensor tip dimensions	Ø 5 mm, length 20 mm	Ø 6 mm, length 50 mm	Ø 6 mm, length 50 mm
Sensor cable length	5 m	3 m	2 m
Cable extension	Up to 150 m, cross section extension cable: 2 x 1,5 mm <sup>2</sup>	Up to 150 m, 3 x 1,5 mm <sup>2</sup>	Up to 150 m, 3 x 1,5 mm <sup>2</sup>
Temperature range	-40°C to +90°C	-40°C to +150°C	-50°C to +260°C

## MONITORING

Pipe temperature alarm	High temperature alarm	Adjustable range set temperature to 250°C or OFF
	Low temperature alarm	Adjustable range set temperature to 245°C or OFF
Sensor alarm	Sensor open circuit	
	Sensor short circuit	
Parameter input	Each parameter input and event will be logged	

## MEMORY

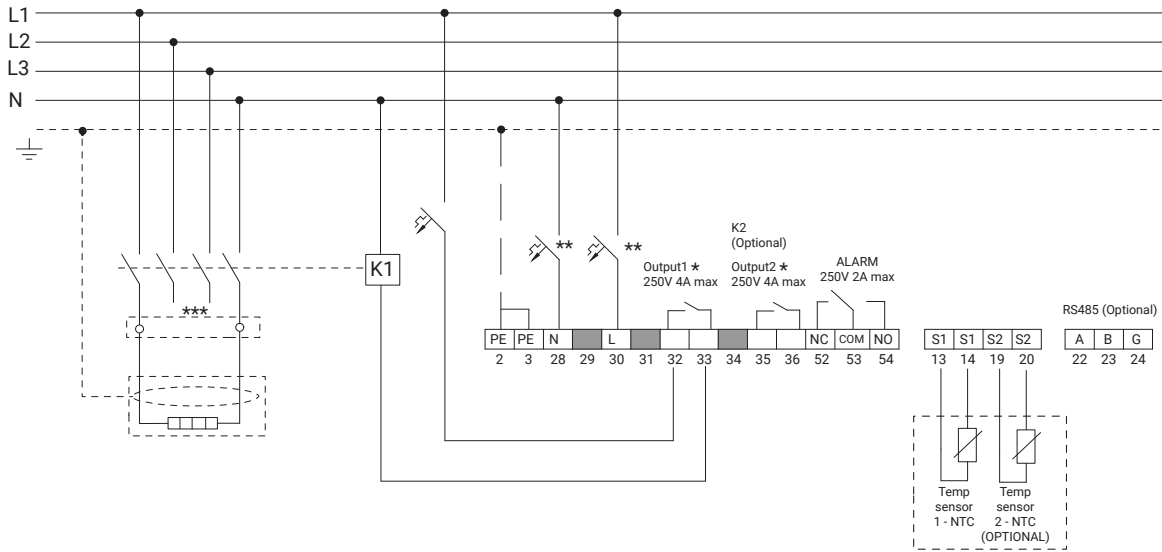
Parameters	All parameters are stored in nonvolatile memory, except date and time
Clock back up	10 days

## APPROVAL

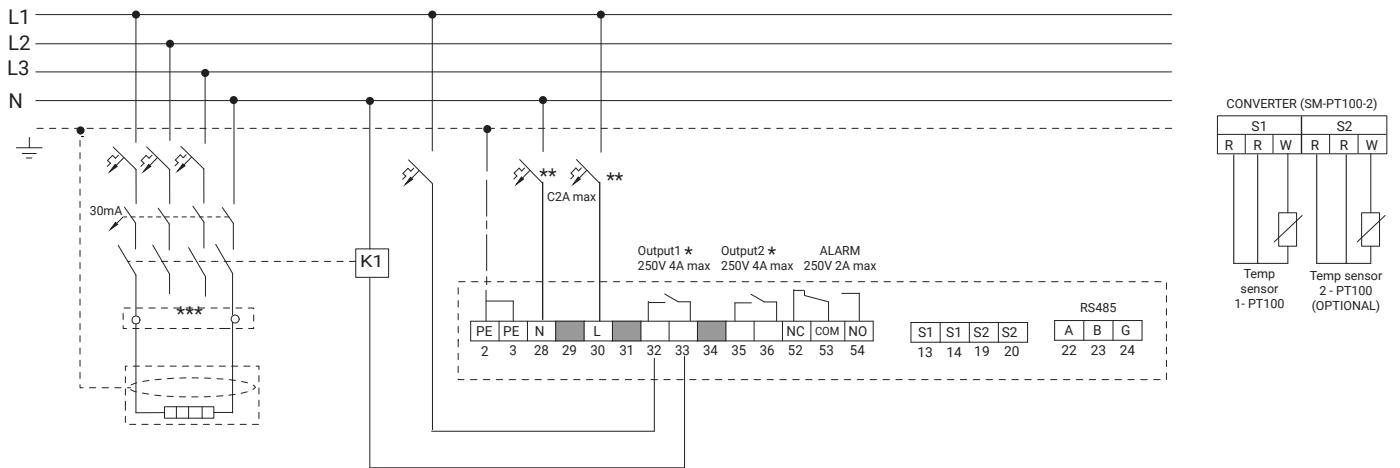
CE	CE, VDE (pending), ROHS, WEEE
Electromagnetic Compatibility (EMC)	Complies to EMC: EN 61000-6-3, EN 61000-6-2

# ELECTRICAL SCHEME

## Standard: NTC Sensor



## Option: PT100 Sensor



- \* Output1 and output 2 can be used separately.
- \*\* Electrical protection by circuit breaker may be needed for local circumstances, standards and regulations.
- \*\*\* Depending on the application, one or three- pole circuit breakers or contactors maybe used.

## ORDERING DETAILS

Catalog description	ELEXANT 450c
Part number	1244-021970
EAN code	5414506021356
Weight	550 g
In package	1 control unit Din rail, 1 line Sensor 5 m

## ACCESSORY

Product description	PCN number
SENSOR-NTC-10M (-40°C ... +90°C)	1244-015847
Sensor Module for PT 100 (up to +250°C) SM-PT100-2	1244-022442
PT-100 Sensor HARD-78 (-40°C ... +150°C)	213430-000
PT-100 Sensor MONI-PT100-260/2 (-50°C ... +260°C)	1244-006615
GM-TA-AS NTC-Sensor / Ambient sensor in enclosure	1244-017965
nVent RAYCHEM PB-POWERBANK	1244-020365

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

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