

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 |
|-------------|---|

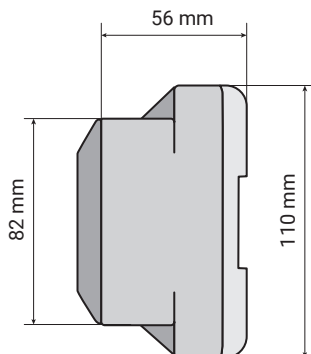
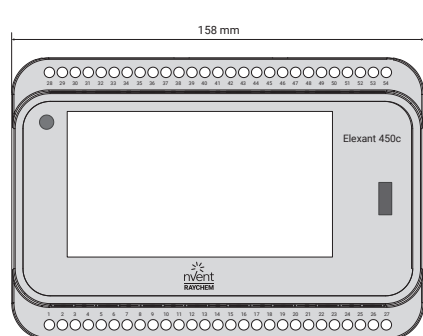
ELECTRICAL PROPERTIES

| | |
|--|---|
| 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 ² |
| Heating cables terminals contactor | 2 x 2 x 1,5 mm ² |
| Alarm terminals | 3 x 1,5 mm ² |
| Sensor terminals | 2 x 2 x 1,5 mm ² |
| Modbus terminal | 3 x 1,5 mm ² |
| 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 ² | Up to 150 m, 3 x 1,5 mm ² | Up to 150 m, 3 x 1,5 mm ² |
| 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

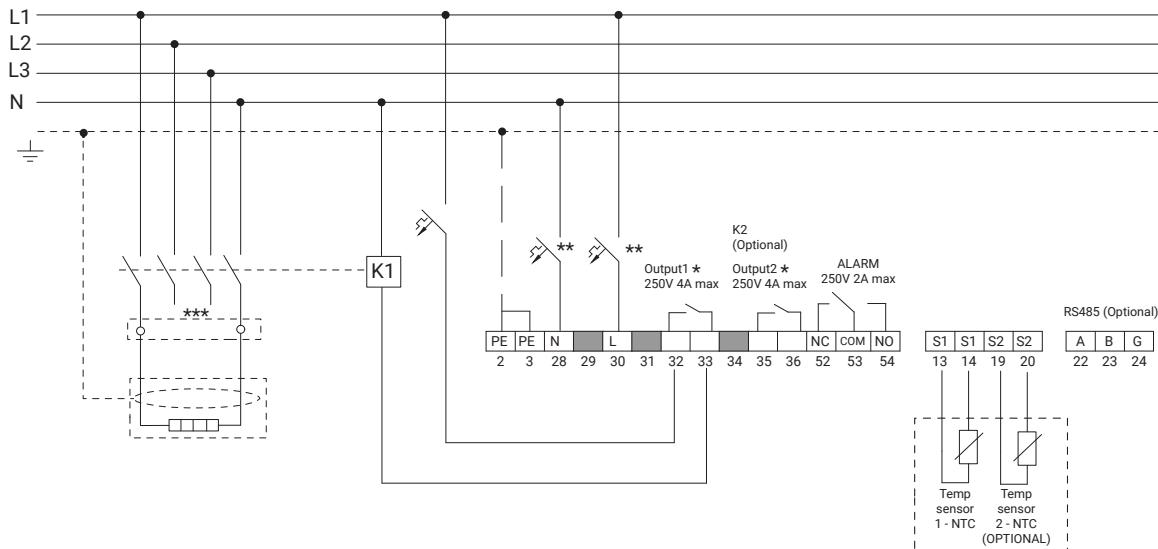
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|---------------|---|
| Parameters | All parameters are stored in nonvolatile memory, except date and time |
| Clock back up | 10 days |

APPROVAL

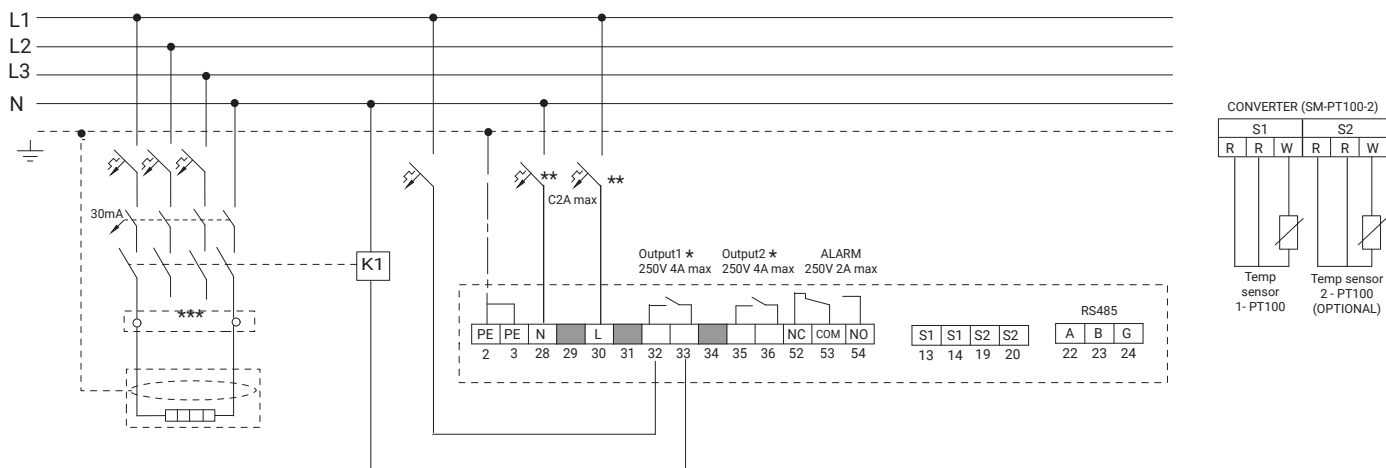
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|-------------------------------------|---|
| CE | CE, VDE (pending), ROHS, WEEE |
| Electromagnetic Compatibility (EMC) | Complies to EMC: EN 61000-6-3, EN 61000-6-2 |

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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