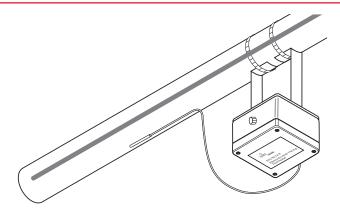


# **CONNECT AND PROTECT**

# Surface and ambient sensing electronic thermostat (Ex)

### **PRODUCT OVERVIEW**



nVent RAYCHEM ETS-05 electronic surface and ambient sensing thermostat provides accurate temperature control for heating cables.

The ETS-05 is available in many versions. The ETS-05-L2-E is for temperatures up to 199°C, while the ETS-05-H2-E can be used for temperatures up to 499°C. The ETS-05-A2-E is an ambient sensing thermostat with a temperature setpoint in the range of 0°C to +49°C.

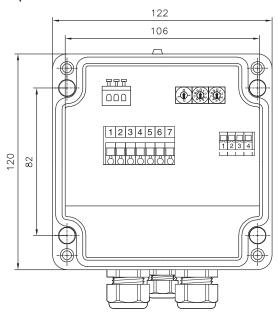
The maximum nominal load is 32 A for the thermostats. Temperature setting is accurate via digital rotary switches inside the enclosure.

The ETS-05 is available with an alarm relay for remote monitoring.

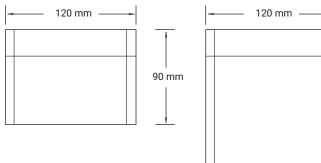
The ETS-05 has a LED indicator which indicates the status of the thermostat (powered on/off), the status of the heat-tracing cable (powered on/off) and the status of the sensor. In case of sensor failure, the thermostat can switch to an on or off state, depending upon the user's requirement.

## Dimensions (in mm)

### Top view



# Side view



ETS-05 versions without alarming, without extended voltage range

ETS-05 versions with extended voltage range and/or alarm relay

150 mm

### **PRODUCT SPECIFICATIONS**

| The following table shows the general information applicable for all versions of the ETS-05. |   |  |  |
|--|---|--|--|
| Maximum sensor lead resistance   | 20 Ohm  |  |  |
| Ingress protection   | IP66  |  |  |
| Switching accuracy   | ±1 K at 5°C, 2 K at 499°C   |  |  |
| Switching differential (Hysteresis)  | ≈ 3°C   |  |  |
| Output relay   | Single pole change over type (SPST)   |  |  |
| Switching capacity   | 32 A resistive load   |  |  |
| Ambient temperature range  | -40°C to +60°C (ATEX / IECEx)<br>-60°C to +60°C (EAC Ex)  |  |  |
| Internal power consumption   | 3 VA  |  |  |
| Terminal size  | max. 6 mm <sup>2</sup>  |  |  |
| Cable gland entries  | 2 x M25: 1 x M25 gland for power cable in 1 x M25 rain plug for heating cable out 1 x M20 gland for alarm wire (when alarm relay is available in unit)    |  |  |
| Sensor   | The ETS-05 for ATEX/IECEx countries includes a sensor. The ETS-05 for EAC countries does not include a sensor. The sensor needs to be ordered separately. |  |  |
| Alarm light  | Green: ETS-05 powered on, heat-tracing cable off  |  |  |

Yellow: ETS-05 powered on, heat-tracing cable on Red flashing: Sensor failure, controller in fail-safe mode

Fail safe "On" and Fail Safe "Off" configurable

ETS-05 with Alarm Relay 2.38 kg

Other versions: 1.64 kg

#### **Versions**

Fail safe Weight

The ETS-05 is available in different versions. These are:

### ETS-05-AB-CD-E

Letters ABCDE described in table below

| Type description ETS-05  |  |                                    |  |  |  |
|--|--|------------------------------------|--|--|--|
| "A":   | Setpoint range                           | Temperature measurement range      |  |  |  |
| A: Ambient Sensing   | 0°C to +49°C                             | -65°C to +260°C                    |  |  |  |
| L: Line Sensing, Low Temp.   | 0°C to +199°C                            | -65°C to +260°C<br>-65°C to +585°C |  |  |  |
| H: Line Sensing, High Temp.  | 0°C to +499°C                            |                                    |  |  |  |
| "B"  | Voltage range                            |                                    |  |  |  |
| <b>1: 110 Vac</b> 99-121 Vac   |  |                                    |  |  |  |
| 1R: 110 Vac  | 99-132 Vac                               |                                    |  |  |  |
| 2: 230 Vac   | 195-230 Vac +10%                         |                                    |  |  |  |
| 2R: 277 Vac  | 195-277 Vac +3%                          |                                    |  |  |  |
| "C"  |  |                                    |  |  |  |
| E: ATEX / IECEx approved (IEC countries  | E: ATEX / IECEx approved (IEC countries) |                                    |  |  |  |
| J: ATEX / IECEx approved (for Japan)   | J: ATEX / IECEx approved (for Japan)     |                                    |  |  |  |
| "D"  |  |                                    |  |  |  |
| P: Earth Plate   |  |                                    |  |  |  |
| "E"  |  |                                    |  |  |  |
| A: Alarm Relay   | NO and NC contacts                       | 275 Vac, 3 A resistive load max    |  |  |  |
| (EAC) in the product name indicates that the product has a Russian language label on it for Eurasian Customs Union countries.  |  |                                    |  |  |  |
| Examples:  |  |                                    |  |  |  |
| ETS-05-L2-EP: ETS-05 thermostat, setpoint range 0-199°C, 195-230 Vac, ATEX/IECEx approved, Earth Plate ETS-05-H2R-EP-A: ETS-05 thermostat, setpoint range 0-499°C, 195-277 Vac, ATEX/IECEx, Earth Plate, Alarm Relay |  |                                    |  |  |  |

RAYCHEM-DS-EU1429-ETS05-EN-2212 nVent.com/RAYCHEM | 2

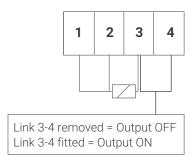
#### **Terminals**

#### Power terminals

| 1           | 2              | 3                 | 4            | 5     | 6     | 7     |
|-------------|----------------|-------------------|--------------|-------|-------|-------|
| Line<br>Out | Neutral<br>Out | Neutral<br>Supply | 230 V Supply | Earth | Earth | Earth |

Terminals 2 and 3 are joined electrically Terminals 5, 6 and 7 are joined electrically

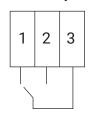
#### Sensor/Failure mode select terminals



Terminals 1 to 3 allow for the connection of a three wire PT100 sensor.

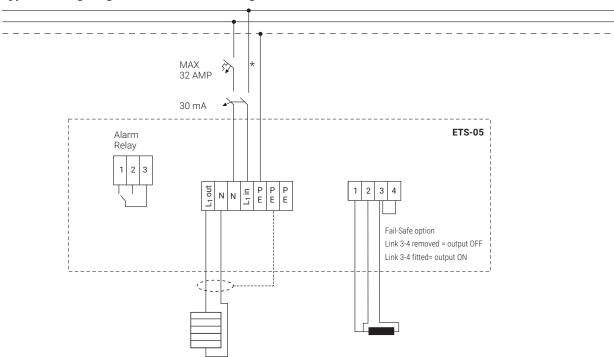
Terminals 3 to 4 allow the user to select the default heating status on sensor error. Without a link fitted the heating will turn OFF if a sensor error is detected (default). With a link fitted the heating will turn ON if a sensor error is detected

#### Alarm relay



Healthy situation: 1-3 is closed, 2-3 is open Alarm situation: 1-3 is open, 2-3 is closed

### Typical wiring diagram for direct switching



 $<sup>\</sup>mbox{\ensuremath{^{\star}}}$  Circuit breaker configuration may vary according to local standards / requirements

# **Mounting method**

Support bracket SB-100, SB-101, SB-110, SB-111, SB-130 or surface mounting with 4 fixing holes on 106 x 82 mm centers

# **APPROVALS**

For use in ordinary and hazardous area Zone 1 and Zone 2 (Gas), Zone 21 and Zone 22 (Dust)

#### **Temperature classification**

T5

#### **Product certification**









More details about product certification, approvals and conditions of safe use are available in the installation manual at www.nVent.com/RAYCHEM.

#### **ORDERING DETAILS**

| Product Name    | Part Number |
|-----------------|-------------|
| ETS-05-L2-E     | 1244-014367 |
| ETS-05-H2-E     | 1244-014368 |
| ETS-05-A2-E     | 1244-022311 |
| ETS-05-L2-EP    | 1244-017508 |
| ETS-05-H2-EP    | 1244-017509 |
| ETS-05-A2-E-A   | 1244-022663 |
| ETS-05-L2-EP-A  | 1244-022669 |
| ETS-05-H2-EP-A  | 1244-022670 |
| ETS-05-H2R-EP-A | 1244-022680 |

| Product Name          | Part Number |
|-----------------------|-------------|
| ETS-05-L2-E (EAC)     | 1244-022701 |
| ETS-05-H2-E (EAC)     | 1244-022702 |
| ETS-05-A2-E (EAC)     | 1244-022700 |
| ETS-05-L2-EP (EAC)    | 1244-022703 |
| ETS-05-H2-EP (EAC)    | 1244-022704 |
| ETS-05-A2-E-A (EAC)   | 1244-022710 |
| ETS-05-L2-EP-A (EAC)  | 1244-022713 |
| ETS-05-H2-EP-A (EAC)  | 1244-022714 |
| ETS-05-H2R-EP-A (EAC) | 1244-022719 |

(EAC) in the product name indicates that the product has a Russian language label on it for Eurasian Customs Union countries.

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