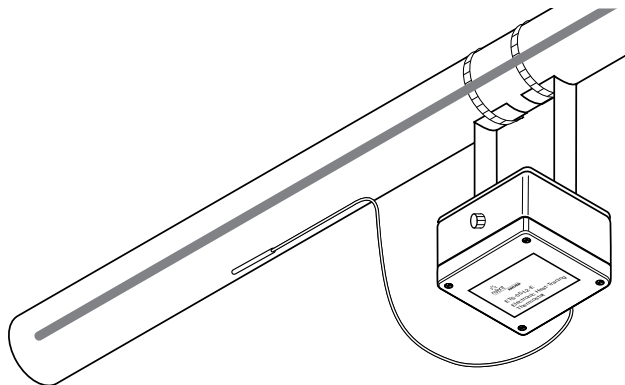# ETS-05

SURFACE AND AMBIENT SENSING ELECTRONIC THERMOSTAT ⟨Ex⟩

PRODUCT OVERVIEW

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

The ETS-05 is available in three 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 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 users requirement.

PRODUCT CHARACTERISTICS

	ETS-05-L2-E (P)	ETS-05-H2-E (P)	ETS-05-A2-E
Application	Surface sensing	Surface sensing	Ambient sensing
Area of use	Hazardous area: Zone 1 or Zone 2 (Gas) or Zone 21 or Zone 22 (Dust) Ordinary		

APPROVALS CERTIFICATION

All units:
⟨Ex⟩ II 2(1)G II 2D
Ex e ia mb (Ga) IIC T5 Gb
Ex tb IIIC T100°C Db IP66
Ta−40 to +60°C Supply = 99-121V (ETS-05-x1-x) or 195-230V (ETS-05-x2-x)
IECEx BAS 13.0071
Baseefa13ATEX0137

ETS-05-L2-E(P)

⟨EAC Ex⟩

TC RU C-BE.ИМ43.В.01764
ООО "ТехИмпорт"
1Ex e ia mb [iaGa] IIC T5 Gb X
Ex tb IIIC T100°C
Db X IP66
Ta -52°C...+60°C

ETS-05-H2-E(P):

⟨EAC Ex⟩

TC RU C-BE.ИМ43.В.01764
ООО "ТехИмпорт"
1Ex e ia mb [iaGa] IIC T5 Gb
Ex tb IIIC T100°C Db IP66
Ta -60°C...+60°C

ETS-05-A2-E
No EAC Ex available yet

PRODUCT SPECIFICATION

No earth plate (standard)	Order ETS-05-L2-E	Order ETS-05-H2-E	Order ETS-05-A2-E
With earth plate (optional)	Order ETS-05-L2-EP	Order ETS-05-H2-EP	
Temperature setpoint range	0°C to 199°C	0°C to 499°C	0°C to 49°C
Temperature measurement range	−55°C to 260°C	−55°C to 585°C	−55°C to 260°C
Maximum sensor lead resistance	20 Ohm	20 Ohm	20 Ohm
Ingress protection	IP66	IP66	IP66
Switching accuracy	±1 K at 5°C	±1 K at 5°C, 2K at 499°C	±1 K at 5°C
Switching differential (Hysteresis)	≈ 3°C	≈ 3°C	≈ 3°C
Output relay	Single Pole change over type (SPST)	Single Pole change over type (SPST)	Single Pole change over type (SPST)
Switching capacity	32 A resistive load	32 A resistive load	32 A resistive load
Ambient temperature range	−40°C to + 60°C	−40°C to + 60°C	−40°C to + 60°C
Supply voltage	230 V +10% / -15% 50/60 Hz	230 V +10% / −15% 50/60 Hz	230 V +10% / −15% 50/60 Hz
Internal power consumption	3 VA	3 VA	3 VA
Terminal size	max. 6 mm^2	max. 6 mm^2	max. 6 mm^2

PRODUCT SPECIFICATION

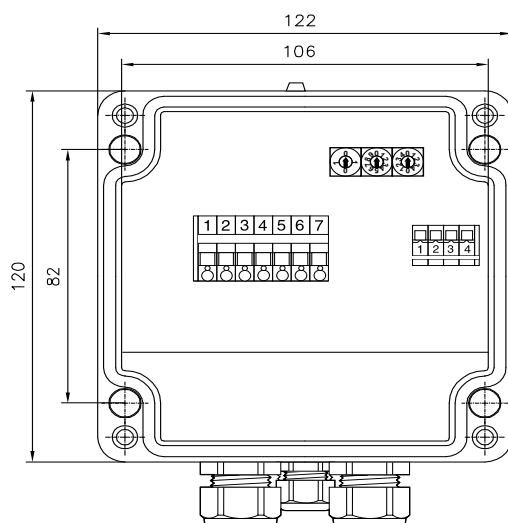|			
Cable entries	2 x M25: 1 x M25 gland for power cable in 1 x M25 rain plug for heating cable out	2 x M25: 1 x M25 gland for power cable in 1 x M25 rain plug for heating cable out	2 x M25: 1 x M25 gland for power cable in 1 x M25 rain plug for heating cable out
Sensor	M16 gland with 3 wire PT100 flexible sensor, 2 m long	M16 gland with 3 wire PT100, stainless steel sensor, 2 m long,	MONI-PT100-EXE-AMB sensor

LED STATUS INDICATIONS

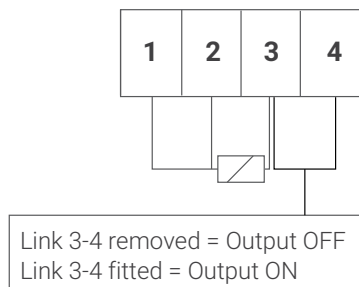|			
	Green: ETS-05 powered on, heat-tracing cable off	Green: ETS-05 powered on, heat-tracing cable off	Green: ETS-05 powered on, heat-tracing cable off
	Yellow: ETS-05 powered on, heat-tracing cable on	Yellow: ETS-05 powered on, heat-tracing cable on	Yellow: ETS-05 powered on, heat-tracing cable on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

DIMENSIONS (IN MM)

Remark: The ETS-05-A2-E has two rotary switches for the temperature set point. Range is between 0°C and 49°C

Power Terminals

1	2	3	4	5	6	7
Line Out	Neutral Out	Neutral Supply	230V Supply	Earth	Earth	Earth

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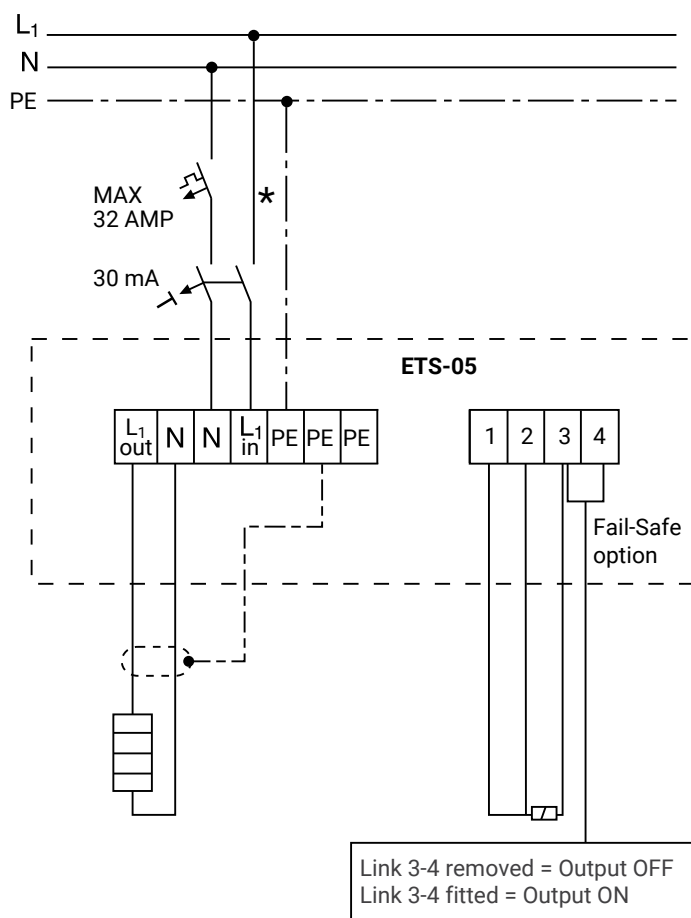
Terminals 5, 6 and 7 are joined electrically

Sensor/Failure Mode Select Terminals

1	2	3	4

Link 3-4 removed = Output OFF
Link 3-4 fitted = Output ON

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

TYPICAL WIRING DIAGRAM FOR DIRECT SWITCHING

L_1
N
PE

MAX 32 AMP

*

30 mA

ETS-05

L_1 out	N	N	L_1 in	PE	PE	PE

1	2	3	4

Fail-Safe option

Link 3-4 removed = Output OFF
Link 3-4 fitted = Output ON

*   Circuit breaker configurations 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 centres	Support bracket SB-100, or SB-101, SB-110, SB-111, SB-130 or surface mounting with 4 fixing holes on 106 x 82 mm centres	To be mounted at representative location for correct ambient temperature measurement.

ORDERING DETAILS

Product Name	ETS-05-L2-E	ETS-05-L2-EP	ETS-05-H2-E	ETS-05-H2-EP	ETS-05-A2-E
Part number	1244-014367	1244-017508	1244-014368	1244-017509	1244-022311

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