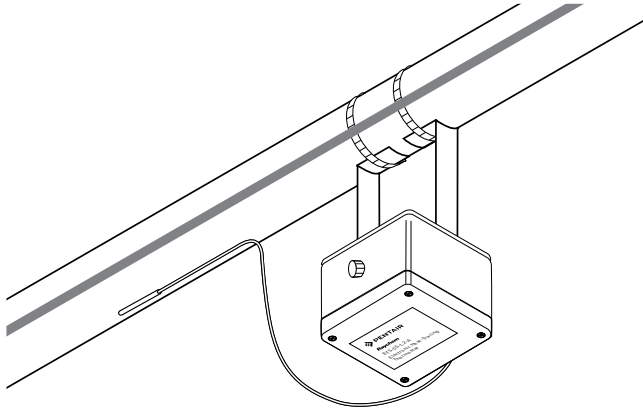# Raychem ETS-05-XX-A

SURFACE SENSING ELECTRONIC THERMOSTAT

PRODUCT OVERVIEW

The Raychem ETS-05-XX-A electronic surface sensing thermostat provides accurate temperature control for heating cables.

The ETS-05-XX-A is available in two versions. The ETS-05-L2-A is for temperatures up to 199°C (390°F), while the ETS-05-H2-A can be used for temperatures up to 499°C (930°F). The maximum nominal load is 24 A for both thermostats. Temperature setting is accurate via digital rotary switches inside the enclosure.

The ETS-05-XX-A 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-L1-A-KIT ETS-05-L2-A-KIT	ETS-05-H1-A ETS-05-H2-A
Application	Surface sensing-Pipe Mount	Surface sensing-Wall Mount
Area of use	Hazardous area: Zone 1 or Zone 2 (Gas) or Zone 21 (Dust) CL I, DIV 2 Ordinary Locations	

APPROVALS/CERTIFICATION

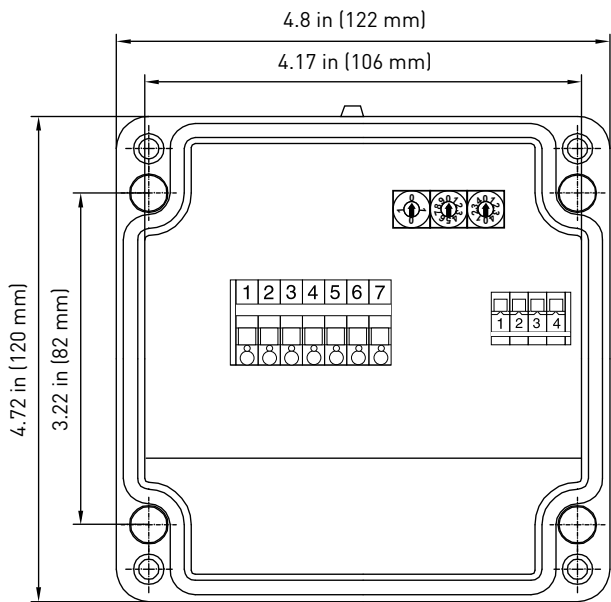| FM APPROVED **Hazardous Locations**	In Combination with Pipe Stand: CL I, ZN1 AEx e ia mb IIC T5..T3 Gb ZN 21 AEx tb IIIC T100°C..T150°C Ex e ia mb IIC T5..T3 Gb Ex tb IIIC T100°C..T150°C Db CLI, DIV 2, Groups B, C, D CL II, DIV 2, Groups E, F, G Class III TYPE 4X, IP66	When Used without Pipe Stand: CL I, ZN 1 AEx e ia mb IIC T5 Gb ZN 21 AEx tb IIIC T100°C Ex e ia mb IIC T5 Gb Ex tb IIIC T100°C Db CL I, DIV 2, Groups B, C, D CL II, DIV 2, Groups E, F, G Class III TYPE 4X, IP66

PRODUCT SPECIFICATION

Temperature setpoint range	0°C to 199°C (32°F to 390°F)	0°C to 499°C (32°F to 930°F)
Temperature measurement range	−55°C to 260°C (−67°F to 500°F)	−55°C to 585°C (−67°F to1085°F)
Sensor type	100 Ohm RTD, included in ETS-05-Lx-A-KIT (part of the pipe stand)	100 Ohm RTD (not included with thermostat)
Maximum sensor lead resistance	20 Ohm	20 Ohm
Ingress protection	IP66	IP66
Switching accuracy	±1 K at 5°C (41°F)	±1 K at 5°C (41°F), 2°C at 499°C (930°F)
Switching differential (Hysteresis)	≈ 3°C (5°F)	≈ 3°C (5°F)
Output relay	Single Pole change over type (SPST)	Single Pole change over type (SPST)
Switching capacity	24 A resistive load	24 A resistive load
Ambient temperature range	−40°C to + 60°C (−40°F to + 140°F)	−40°C to + 60°C (−40°F to + 140°F)
Supply voltage	L1-A: 99-132 VAC -10% L2-A: 195-277 VAC -2.5%	H1-A: 99-132 VAC -10% H2-A: 195-277 VAC -2.5%
Internal power consumption	3 VA	3 VA
Terminal size	max. 6 mm^2 (10AWG)	max. 6 mm^2 (10AWG)
Cable entries	2 x 3/4" 1 x Pipe stand	2 x 3/4" 1 x 3/4" Gland for power cable in
Mounting Method	JB-RTD-STAND (included in kit)	Wall-Mount

ETS-05

LED STATUS INDICATIONS

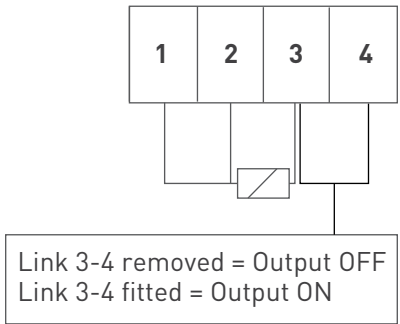|	Green: ETS-05 powered on, heat-tracing cable off	Green: ETS-05 powered on, heat-tracing cable off
	Yellow: ETS-05 powered on, heat-tracing cable on	Yellow: ETS-05 powered on, heat-tracing cable on
	Red flashing: Sensor failure - controller in fail safe mode	Red flashing: Sensor failure - controller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

DIMENSIONS (IN MM)

Power Terminals

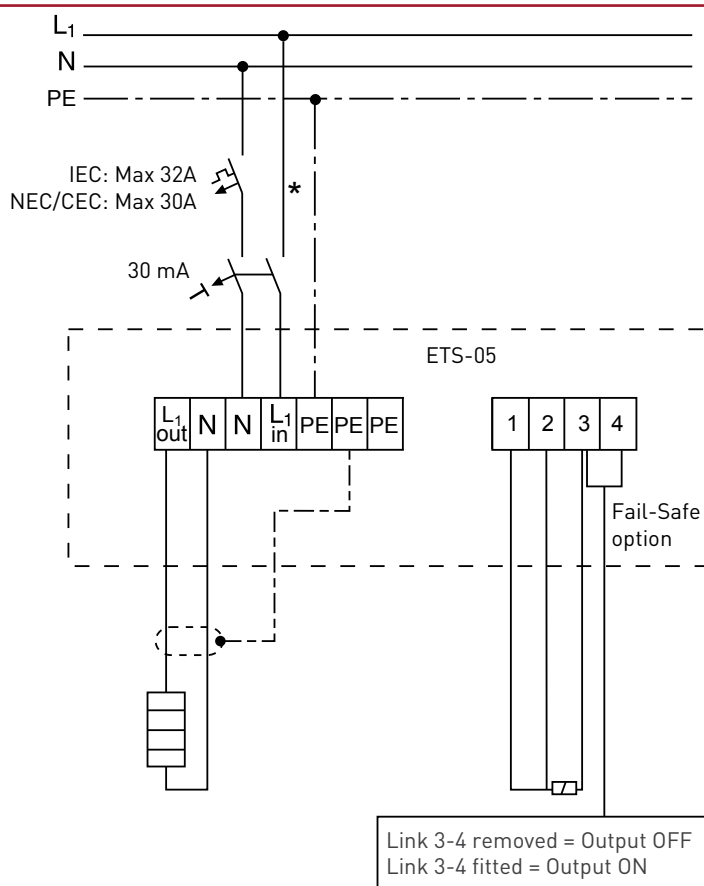| 1	2	3	4	5	6	7
Line Out	Neutral Out	Neutral Supply	Line Supply	Earth	Earth	Earth

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.
With a link fitted the heating will turn ON if a sensor error is detected (default).

TYPICAL WIRING DIAGRAM FOR DIRECT SWITCHING

* Circuit breaker configurations may vary
according to local standards/requirements

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

MOUNTING METHOD

JB-RTD-STAND: P000001997	SB-101: 990944-000

ORDERING DETAILS

ETS-05 Thermostats (Thermostat Only)		ETS-05-H1-A: 1244-015664
		ETS-05-H2-A: 1244-015665
ETS-05 Thermostat Kits (Includes Pipe Stand)	ETS-05-L1-A KIT: 1244-017701	
	ETS-05-L2-A KIT: 1244-017702	

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