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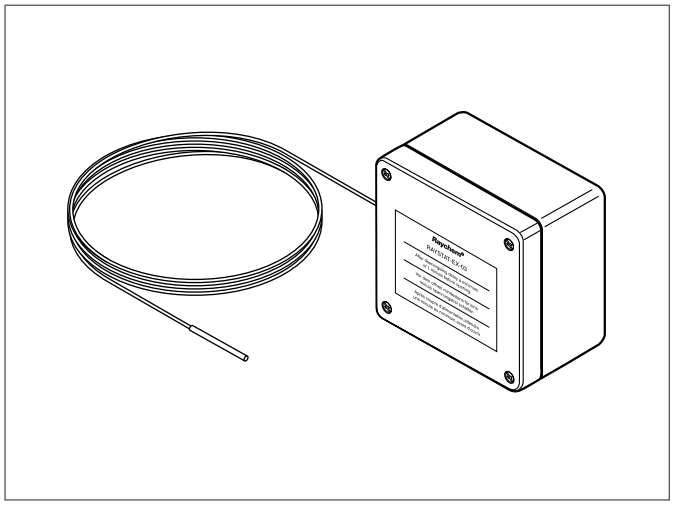
DigiTrace RAYSTAT-EX-03-A

ELECTRONIC LINE-SENSING THERMOSTAT INSTALLATION INSTRUCTIONS



APPROVALS

Hazardous Locations

FM APPROVED

CL I, Zn 1 AEx emia IIC T6
CL I, Zn 1 Ex emia IIC T6
CL I, DIV 2, GPS B, C, D
CL II, DIV 1 & 2, GPS E, F, G
Class III

DESCRIPTION

RAYSTAT-EX-03-A is an electronic line sensing thermostat used to control heating cable cirucits directly or through a suitable contactor.

SPECIFICATIONS

Enclosure	• NEMA 4X; IP66 • Electrostatic-charge-resistant glass-filled engineering polymers, black • Exposed hardware of stainless steel	
Entries	Two 3/4 in conduit through holes (with one hole plugged)	
Ambient operating range	–40°F to 105°F (–40°C to 40°C)	
Setpoint range	32°F to 930°F (0°C to 499°C)	
Switch	DPDT	
Switch capacity	16 A (suitable for heating cables on 20 A circuit breakers)	
Supply voltage	AC 100–277 V, 50/60 Hz	
Accuracy	±1% of set point, minimum 1°C	
Deadband	±1% of set point, minimum 1°C	
Sensor type	100 Ω platinum RTD	
Sensor material	Stainless steel	
Sensor length	6 ft (2 m)	
Connection terminals	Power supply:	12 AWG (4 mm^2)
	Heating cable:	12 AWG (4 mm^2)
	Ground:	10 AWG (6 mm^2)

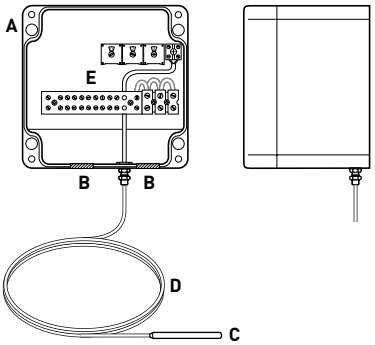
⚠ WARNING:

This component is an electrical device. It must be installed correctly to ensure proper operation and to prevent shock or fire. Read these important warnings and carefully follow all the installation instructions.

Component approvals and performance are based on the use of specified parts only. Do not use substitute parts or vinyl electrical tape to make connections.

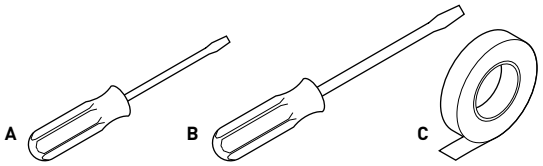
KIT CONTENTS

- **A** Thermostat enclosure
- **B** Conduit entries (2 x 3/4 in through hole)
- **C** Temperature sensing element (RTD)
- **D** Stainless steel sheathed extension cable for sensor (6 ft./2 m)
- **E** Terminal blocks (max. 12 AWG for terminals 1-12, max. 10 AWG for ground terminals).



TOOLS REQUIRED

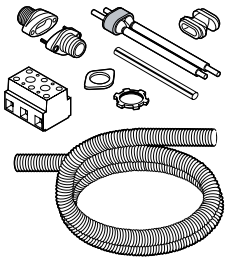
- **A** 3 mm terminal screwdriver
- **B** 1/4 in flat-blade screwdriver
- **C** Glass tape (GT66, GS54 or equivalent)



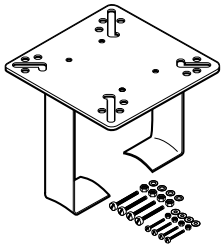
OPTIONAL MATERIALS

- If connecting Raychem's parallel heating cables directly into the RAYSTAT-EX-03-A enclosure, use a C75-100-A connection kit must be used to povide the required sealing and insulating components.
- JB-SB-25 support bracket for pipe mounting.
- Pipe straps (not shown).

C75-100-A

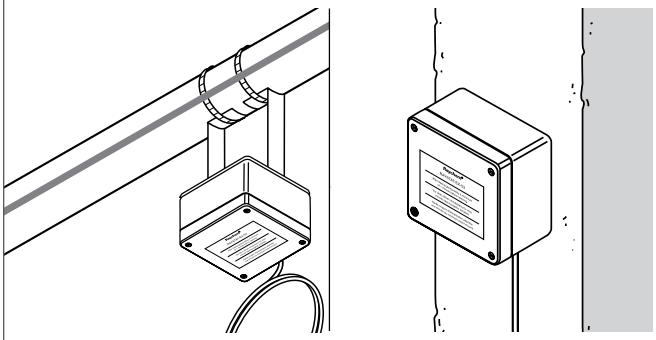


JB-SB-25



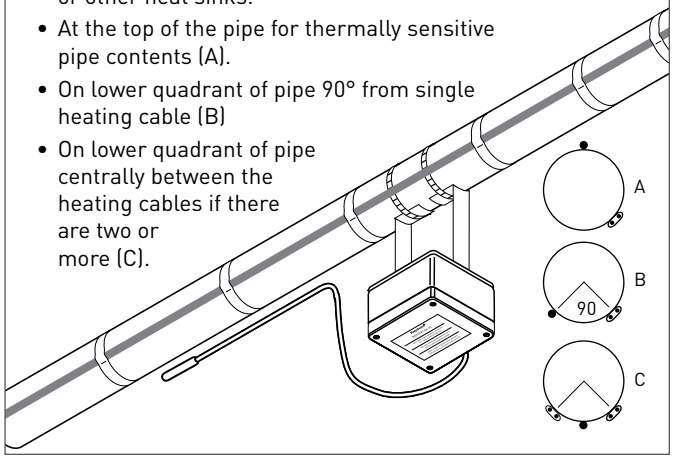
1 Enclosure Mounting

- Mount the RAYSTAT-EX-03-A enclosure either on the pipe using a JB-SB-25 bracket or on a nearby support. For MI heating cables (applications above 482°F (250°C)), do not mount the enclosure on the pipe to avoid damage to the electronics.



2 Locate the RAYSTAT-EX-03-A Sensor

- Away from valves, flanges, supports, pumps or other heat sinks.
- At the top of the pipe for thermally sensitive pipe contents (A).
- On lower quadrant of pipe 90° from single heating cable (B)
- On lower quadrant of pipe centrally between the heating cables if there are two or more (C).

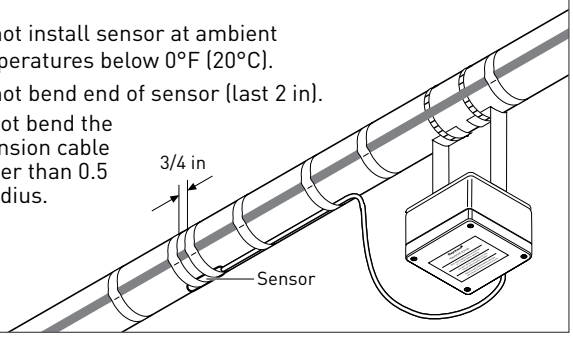


3 Attaching the Sensor

- Fix sensor firmly on surface with adequate glass tape in two places.
- Fix sensor parallel to pipe.
- Route extention cable to avoid damage in use. Fix to pipe with glass tape where appropriate.

Note:

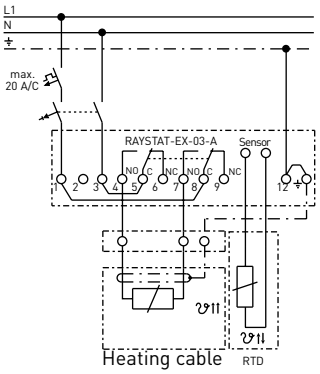
- Do not install sensor at ambient temperatures below 0°F (20°C).
- Do not bend end of sensor (last 2 in).
- Do not bend the extension cable tighter than 0.5 in radius.



4 Making Electrical Connection

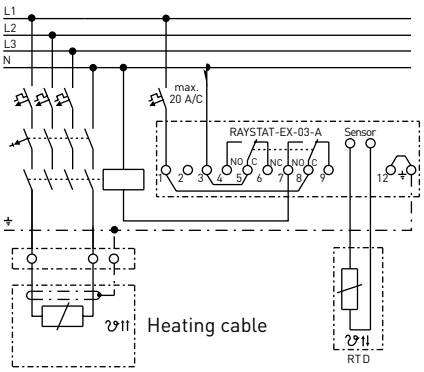
- For 100–132 V supply, connect to terminals 2 and 3, and move jumper from terminal 1 to terminal 2.
- For 208–277 V supply, connect to terminals 1 and 3.
- Remove jumpers 1-8 and 3-5 if powering heating cable from separate supply.

Direct connection



Note: Jumpers are installed at the factory.

Contactor

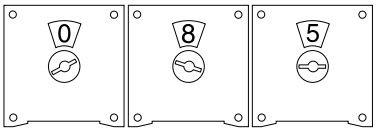


Note: Jumpers are installed at the factory.

5 Setpoint Temperature

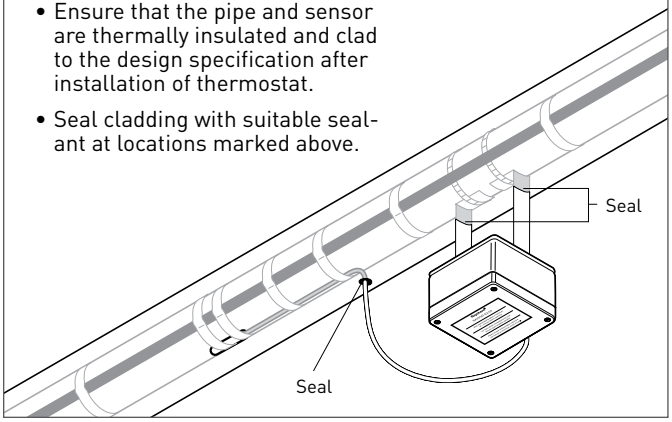
Note: Temperature setpoint is in °C

- Adjust digital switches to setpoint temperature (°C)
- See table inside lid to convert from °F to °C.
- Install lid and tighten screws.



6 Complete Installation

- Ensure that the pipe and sensor are thermally insulated and clad to the design specification after installation of thermostat.
- Seal cladding with suitable sealant at locations marked above.



7 Testing

Check:

- ❑ Mounting is firm.
- ❑ Exposed extension cable is not damaged.
- ❑ Conduit and gland entries are tightened firmly.
- ❑ Thermostat operation is correct.
- ❑ Thermostat setting suits application.
- ❑ Lid is closed firmly.
- ❑ Retain this instruction for future use.

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