



TEMPERATURE

ENCAPSULATED THERMISTOR AND RTD SENSORS

KTM*, KTM*R SERIES

DESCRIPTION

Precon **Encapsulated Sensors** provide remote temperature sensing for building automation systems and mechanical equipment room instrumentation. The active sensing element is a highly stable thermistor material or platinum RTD.

The sensor is encapsulated with a low mass, high-conductivity compound for good heat transfer characteristics. It is enclosed in a tough, miniature cylinder, 0.17" (0.43 cm) in diameter, which is small enough to be installed in most HVAC thermostat enclosures.

FEATURES

- **Three-year warranty**
- **Wide selection of thermistor and RTD curves**
- **Adaptable miniature sensor**
- **High heat dissipation constant**
- **Easy to mount with clips**
- **Pre-aged, highly stable thermistor material**

OPTIONS

- **25' (7.6m) of 24 AWG zipcord**
- **Matched sensor pairs**
- **Rugged sensor coating**



KTM*



KTM*R

APPLICATION

KTM*

The **KTM* Series Encapsulated Sensor** (white) is intended for indoor use only, in areas not subject to moisture or condensation. The sensor may be installed under the cover of an existing pneumatic thermostat. Caution should be exercised when applying the sensor to existing electric thermostats. Heat is often generated by anticipators or other electronics that will affect the sensor reading. The sensor operating range is 35° to 140°F (2° to 60°C). Do not use in conditions below 35°F (2°C) or where condensation could occur.

KTM*R

The **KTM*R Series Rugged Encapsulated Sensor** (red) is suitable for temperature extremes and is immune to the effects of moisture and condensation. Precon uses a three-stage, rugged coating process to moistureproof any sensor which is to be used below ambient dewpoint. The sensor operating range is -30° to 230°F (-34° to 110°C). Vibration or wire stress below 32°F (0°C) can cause the rugged coating to crack.

SPECIFICATIONS

Accuracy

Thermistor	±0.50°F (±0.28°C)
RTD	±0.60°F (±0.33°C)

Sensor types

Thermistor @ 77°F	2.252 kΩ, 3 kΩ, 10 kΩ, 20 kΩ, 100kΩ
RTD @ 32°F	Platinum 100Ω, 1000Ω, 385 curve Platinum 1000Ω, 375 curve

Temperature range

Thermistor	-30° to 230°F (-34° to 110°C)
RTD	-68° to 240°F (-55° to 115°C)

Temperature response

Thermistor	Negative temperature coefficient
RTD	Positive temperature coefficient

Stability

Thermistor	0.24°F (0.13°C) over five years
RTD	<0.09°F (0.05°C) over five years

Heat dissipation

2.7 mW/°C (power needed to raise the temperature by 1°C)

Wire

Connections

24 AWG, UL low voltage to 105°C
8' (2.4m) of 24 AWG prestripped pigtails, type 71 & 81 sensors have 18" leads

Mounting

Directly to wall or customer-supplied enclosure using customer-supplied clips

Weight

0.3 lb (0.14 kg)

Warranty

3 year

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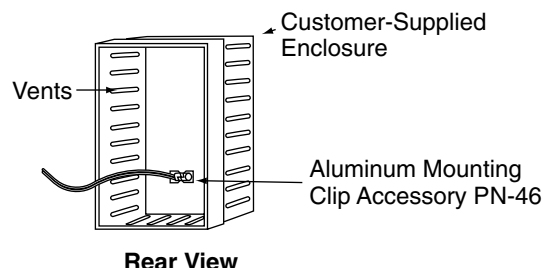
KTM*, KTM*R SERIES



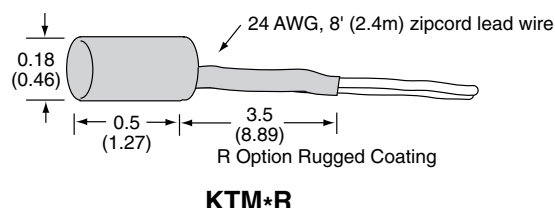
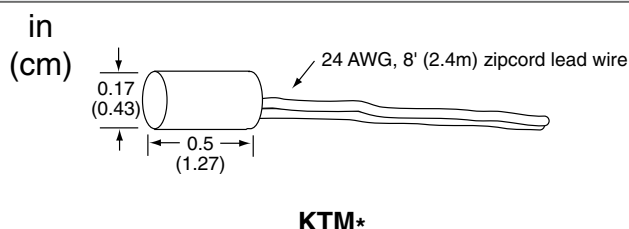
MOUNTING

Mounting

Secure to enclosure or wall using cable ties, clips, or brackets. To obtain optimum performance, the sensor enclosure/assembly must be highly conductive. Any sensor element surrounded by insulating media will not perform properly at all temperatures or with the proper temperature response times. An accurate room sensor must have good ventilation and a high thermal-conducting metal which is in direct contact with the sensor. The enclosure must be insulated from the building mounting surface to limit wall temperature influence on the sensor.



DIMENSIONS



ORDERING INFORMATION

MODEL	DESCRIPTION
KTM3	10,000Ω encapsulated thermistor @ 77°F (25°C), Type III (gray leads)
KTM21	2252Ω encapsulated thermistor @ 77°F (25°C), Type II (green leads)
KTM22	3000Ω encapsulated thermistor @ 77°F (25°C), Type II (blue leads)
KTM24	10,000Ω encapsulated thermistor @ 77°F (25°C), Type II (yellow leads)
KTM27	100,000Ω encapsulated thermistor @ 77°F (25°C), Type II (gray leads)
KTM42	20,000Ω encapsulated thermistor @ 77°F (25°C), Type IV (green leads)
KTM81	100Ω encapsulated RTD @ 32°F (0°C), 385 platinum curve (yellow leads)
KTM85	1000Ω encapsulated RTD @ 32°F (0°C), 385 platinum curve (blue leads)
KTM91	1000Ω encapsulated RTD @ 32°F (0°C), 375 platinum curve (green leads)
OPTIONS (List options in alphabetical order with dashes)	
R	Rugged (3.5" moistureproof coating; adding a # following the R extends the coating in feet)
QD 1/4	25' (7.6m) lead length
R	Rugged moistureproof coating 3.5"
R#	Rugged moistureproof coating. # equals number of feet of the coating
X25	25' (7.6m) lead length 24 AWG
XN	NIST certificate of conformance
XN1	NIST certificate, one reference point 32°F(0°C)
XN2	NIST certificate, two reference points 32°F/158°F(0°C/70°C)
XN3	NIST certificate, three reference points 32°F/77°F/158°F(0°C/25°C/70°C)
XP	Matched sensor pair, matched to ±0.1°F, 0.05°C (must order two sensors)
XZ	Three wire RTD connections (Optional only on Type 81, standard on Type 71)

KTM3 — R — X25

Example: KTM3R-X25 10,000Ω Type III thermistor with 3.5" rugged coating and 25' (7.6m) cable length