

TEMPERATURE

UNIVERSAL-MOUNT THERMISTOR SENSOR MODEL ST-U◇



DESCRIPTION

The PreCon **Model ST-U◇ Universal-Mount Thermistor Sensor** provides precision remote temperature sensing in multiple applications such as Duct, OSA, and Immersion installations for building automation systems. The active sensing element is a highly stable precision thermistor material accurate to within $\pm 0.36^{\circ}\text{F}$ (0.2°C).

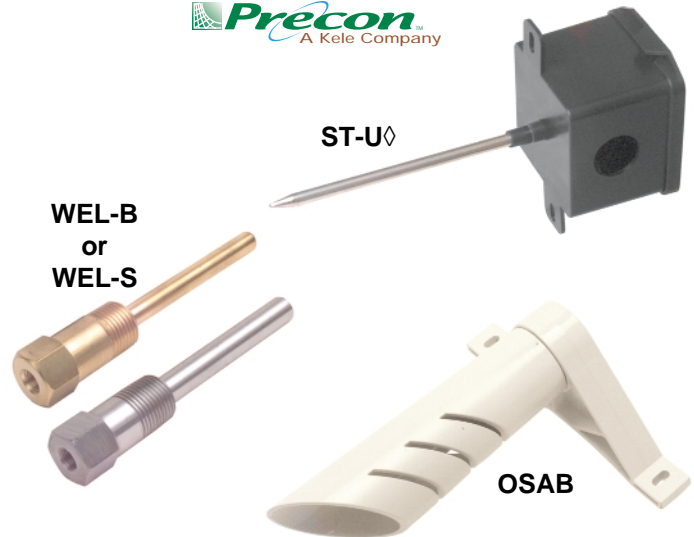
The sensing element is sealed with a thermally conductive compound in a 4-7/8" (12.38 cm) long stainless steel probe and is attached to a 2.5" (6.35 cm) square enclosure. The tabs on the enclosure provide mounting ears for direct duct mounting and are easily removable if they are not needed. This multi-purpose enclosure minimizes the number of stock parts required to handle multiple applications.

FEATURES

- *Five-year warranty*
- $\pm 0.36^{\circ}\text{F}$ (0.2°C) accuracy
- *FR, Plenum rated*
- *Wide selection of thermistor curves*
- *Adaptable with many mounting options*
- *304 stainless steel probe*
- *Easy to mount to duct, well, or wall*
- *Waterproof probe*
- *Paintable plastic*
- *NEMA 3R, IP11*

OPTIONS

- *Probe lengths up to 36" (91.44 cm)*
- *Matched sensor pairs*
- *Dual sensor probes*
- *Weather resistant gasket*
- *25' (7.62m) cable*
- *NIST traceable certificate*



PROBE APPLICATIONS

- The **Duct Temperature** application is designed for direct mounting on sheet metal duct systems. The sensor is point sensitive and comes standard with a 4-7/8" (12.38 cm) insertion depth, and the **XL** option is available for custom lengths up to 36" (91.44 cm).
- The **Immersion Temperature** application is designed to be threaded directly into a 1/8" NPT well. The wells are available in brass or 304 stainless steel and are designed for pipe insertion using a 1/2" threaded saddle (Thredolet®).
- The **Outside Air Temperature** application uses a wall bracket with a vented weather shield to minimize the effect of rain or snow and other weather related influences. This rugged enclosure and bracket will ensure long life even in severe weather conditions.

SPECIFICATIONS			
Sensing element	Thermistor (thermal resistor)	Stability	0.24°F (0.13°C) over five years
Accuracy	$\pm 0.36^{\circ}\text{F}$ (0.2°C) (NIST traceable is optional)	Heat dissipation constant	2.7 mW/°C (power needed to raise the temperature by 1°C)
Sensor types available (ref. in ohms @ 77°F/25°C)	2.252K, 3K, 10K, 20K, 100K	Connection	8' (2.44m) of 24 AWG pigtailed prestripped
Temp range	-30° to 230°F (-34° to 110°C)	Mounting	Directly to duct, immersion well, or OSA wall mount with appropriate bracket
Temp response	Negative temperature coefficient	Enclosure	UL94V-0, plenum rated plastic NEMA 3R, IP11 UV protected with snap off cover
Probe sheath	304 stainless steel		
Sensitivity	See <i>Sensor Resistance Chart</i> in the Technical Reference section		

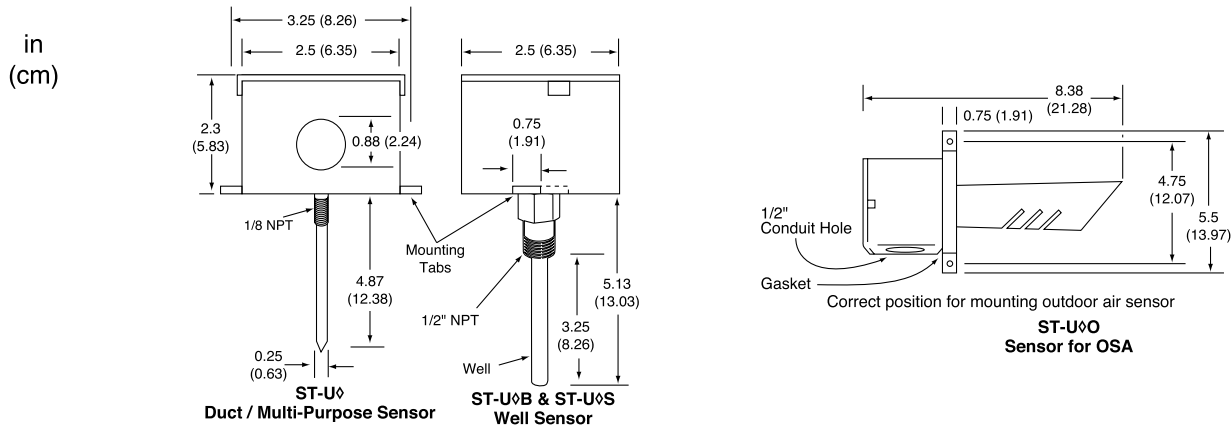
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UNIVERSAL-MOUNT THERMISTOR SENSOR

MODEL ST-U◇

DIMENSIONS



MOUNTING

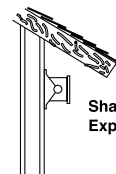
Duct: Drill a 9/16" (1.43 cm) hole for insertion into the duct. Attach probe snug to the duct with self tapping screws.

Well Insertion: Install the well into the customer supplied 1/2" saddle (Thredolet®), then thread the sensor into the well. For better heat transfer you may apply thermal compound to the tip of the sensor before insertion. Mounting tabs may be removed.

OSA: Insert the shield into the bracket and thread the **ST-U◇** through the gasket to the shield. Secure the assembly to the wall using the appropriate hardware for the wall surface. The ideal orientation of the sensor is horizontal with the knockout facing down and located on an outside wall with a shaded exposure. Mounting tabs may be removed. The sensor and shield may be painted to the architect's specifications.



Do Not mount sensor in vertical position with the weather shield pointing up.



Shaded Exposure

When choosing location for any outdoor air temperature sensors:

1. Do not mount above building openings (windows, doors)
2. Keep sensor out of direct sunlight

ORDERING INFORMATION

MODEL	DESCRIPTION
ST-U3	10,000Ω Universal-Mount Thermistor @ 77°F (25°C) Type III Material (gray leads)
ST-U21	2252Ω Universal-Mount Thermistor @ 77°F (25°C) Type II Material (green leads)
ST-U22	3000Ω Universal-Mount Thermistor @ 77°F (25°C) Type II Material (blue leads)
ST-U24	10,000Ω Universal-Mount Thermistor @ 77°F (25°C) Type II Material (yellow leads)
ST-U27	100,000Ω Universal-Mount Thermistor @ 77°F (25°C) Type II Material (gray leads)
ST-U42	20,000Ω Universal-Mount Thermistor @ 77°F (25°C) Type IV Material (green leads)
OPTIONS	
B	Kit with WEL-B brass well for immersion mounting
S	Kit with WEL-S 304 SS well for immersion mounting
O	Kit with OSAB weather shield, gasket, and bracket for wall mount
XD	Dual sensor in one probe
XL	Custom length 2" to 60" (5 to 152 cm), specify length
XN1	NIST certificate, 1 reference point 32°F (0°C)
XN2	NIST certificate, 2 reference points 32°/160°F (0°/77°C)
XP	Matched sensor pairs matched to ±0.1°F, 0.055°C
X25	25' (7.62m) 24 AWG twin lead
XC25	25' (7.62m) jacketed cable

ST-U3

B

Example: ST-U3B 10 kΩ Type III immersion sensor with brass well

Universal Mount Sensor Accessories

WEL-B Brass well

WEL-S 304 Stainless steel well

F-1000-331 Nylon bushing for open wiring

OSAB OSA weather shield, gasket, and bracket

TCC-111 Thermal conductive compound 111 ml tub