



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).

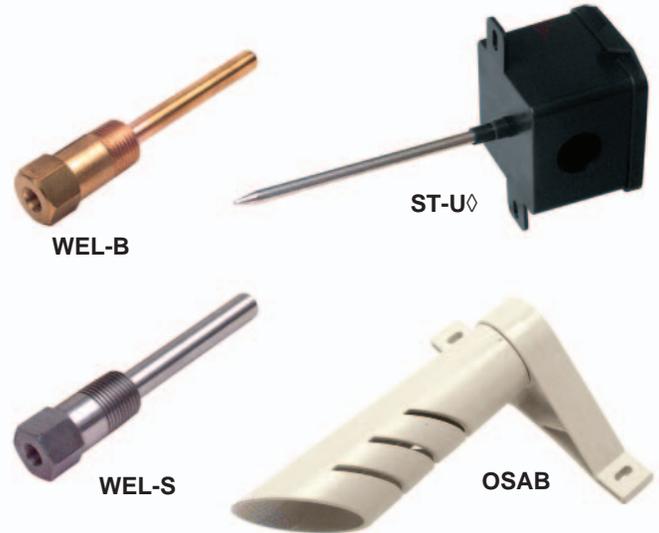
The sensing element is sealed with a thermally conductive compound in a 4-7/8" (12.38 cm) long stainless steel probe and is attached to a 2.5" (6.35 cm) square enclosure. The tabs on the enclosure provide mounting ears for direct duct mounting and are easily removable if they are not needed. This multi-purpose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

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SPECIFICATIONS

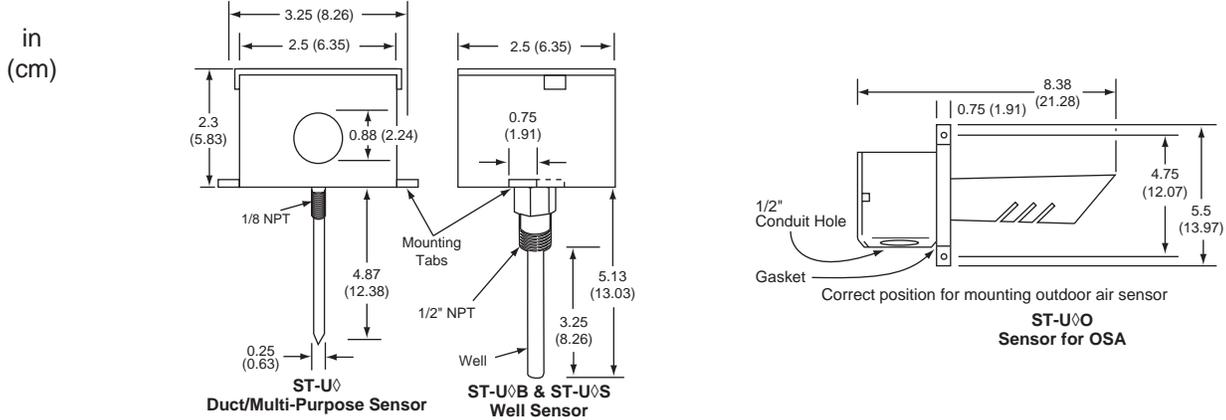
| | | | |
|---|--|----------------------------------|--|
| Sensing element | Thermistor (thermal resistor) | Stability | 0.24°F (0.13°C) over five years |
| Accuracy | $\pm 0.36^{\circ}\text{F}$ (0.2°C) (NIST traceable is optional) | Heat dissipation constant | 2.7 mW/°C (power needed to raise the temperature 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 "Sensor Resistance Chart" in the "Technical Reference" section | | |



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DIMENSIONS

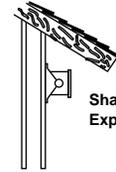


MOUNTING

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 | OSAB | OSA weather shield, gasket, and bracket |
| WEL-S | 304 Stainless steel well | TCC-111 | Thermal conductive compound 111 ml tub |
| F-1000-331 | Nylon bushing for open wiring | | |