



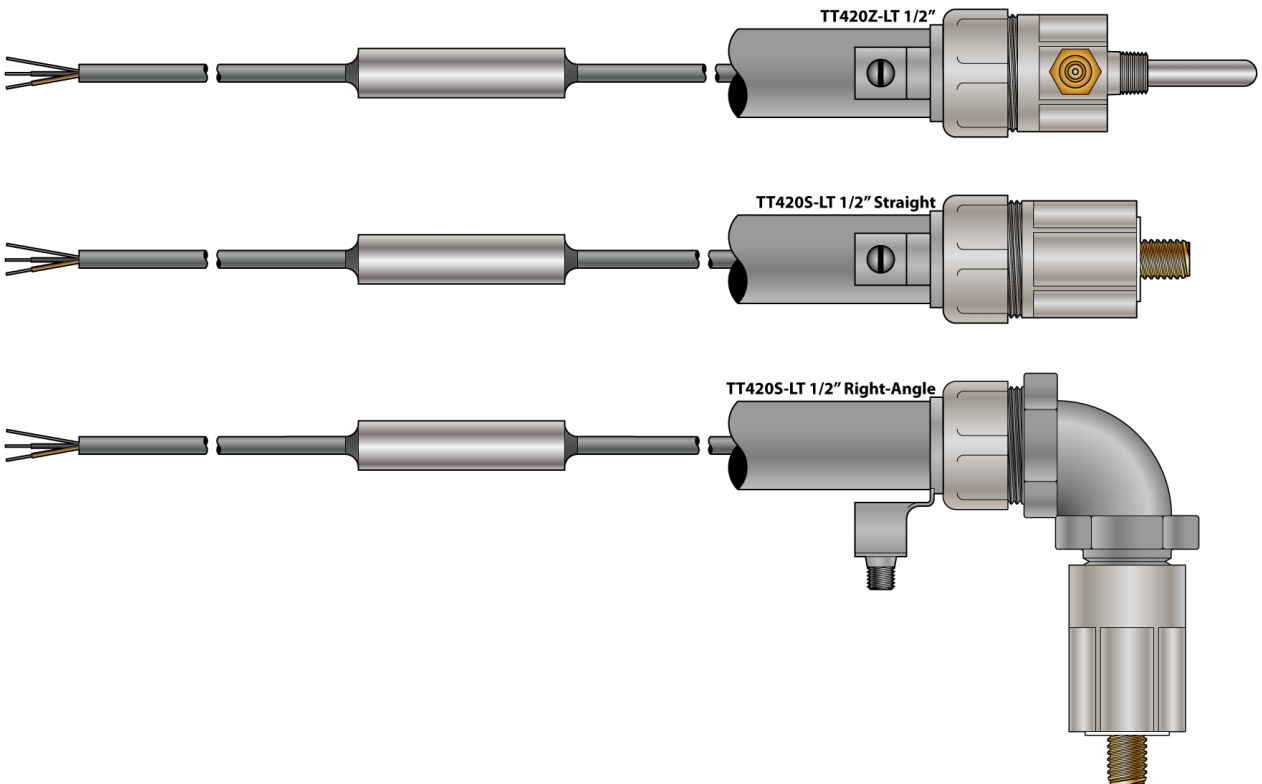
**TT420Z-LT (1/2 in)**

**TT420S-LT (1/2 in)**

**Temperature Sensor/Transmitters  
For Class II and III hazardous locations**

**USERS MANUAL**

**(1/2" flexible liquid-tight conduit models)**



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**990-004003 Rev C**

## Description

TT420Z-LT (½ in) and TT420S-LT (½ in) models combine a temperature sensor, signal conditioner, loop-powered 4-20mA transmitter and a conduit fitting into an integrated package.

All models are compatible with standard 2-wire 4-20mA current loops and analog inputs and are identical with the exception of the measurement probes and fittings.

The measurement probe and fittings options are optimized for grain handling facility shaft bearing (TT420Z-LT) and belt rub-block (TT420S-LT) temperature measurement.

The TT420Z-LT (½ in) screws into a 1/8" NPT grease-fitting (zerk) tap.

The TT420S-LT (½ in) models screw into a brass rub-block with a 3/8-16 tap.

All models have fittings for ½ in flexible liquid-tight conduit.

All models come ready to use, requiring no user calibration.

## Installation

### TT420Z-LT (½ in)

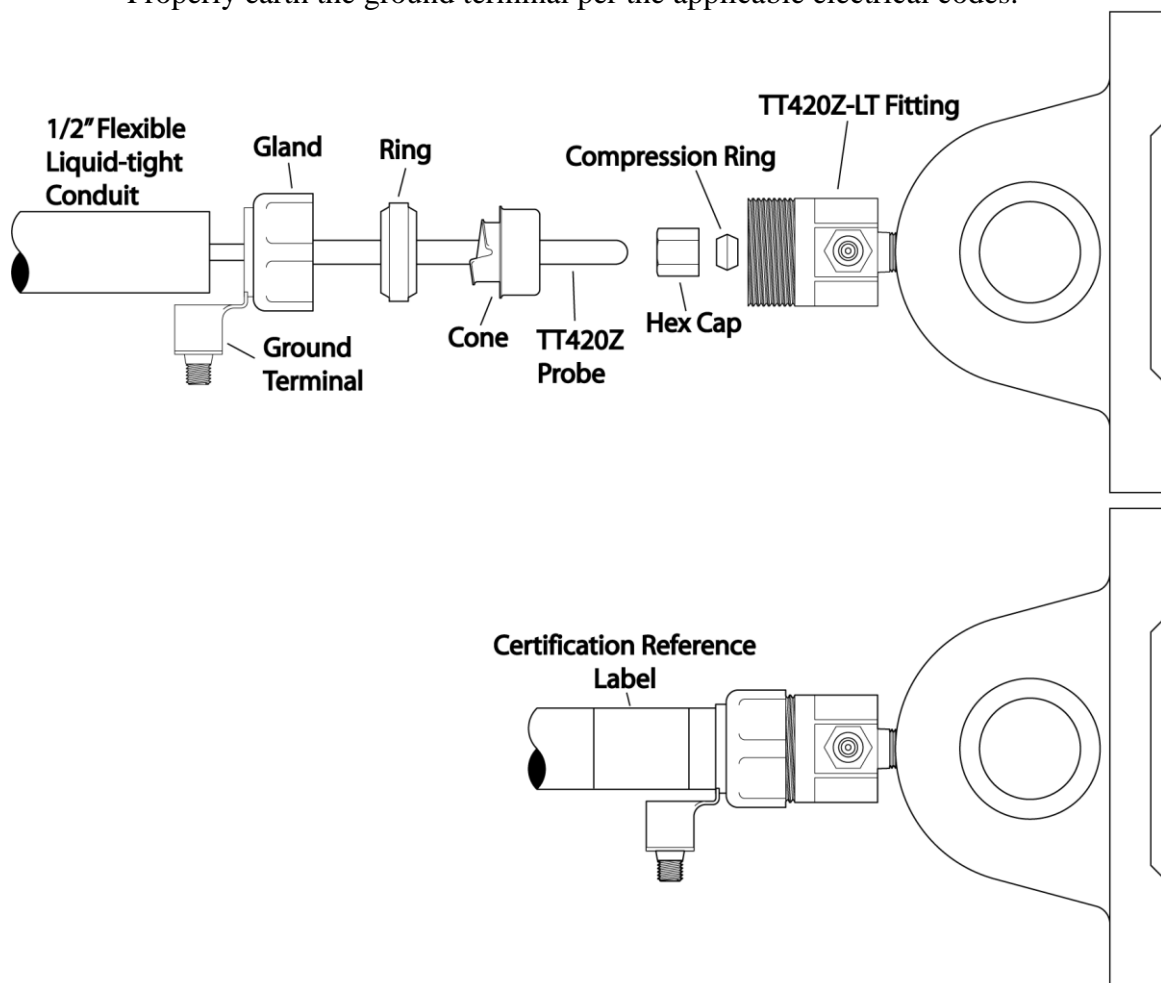
Unscrew the existing zerk grease nipple from the bearing housing and replace it with the TT420Z-LT (½ in) fitting. Tighten enough to seal – do not over-tighten.

Assemble the TT420Z probe through the hex cap, brass compression ring and fitting as shown. Before tightening the hex cap, set the probe depth 1/8 in short of bottoming-out inside the bearing housing (all the way to touching, then back out 1/8 in). The installed probe tip should not be bottomed-out. Tighten the hex cap enough to seal and firmly hold the probe in position - do not over-tighten.

Slide the gland (with ground terminal) and ring over the end of the conduit and screw the cone into (and over) the end of the conduit. Install the conduit over the cable and secure it to the TT420Z-LT (½ in) fitting by tightening the gland. Tighten enough to seal – do not over-tighten.

Apply the Certification Reference Label to the installed conduit as shown.

Properly earth the ground terminal per the applicable electrical codes.



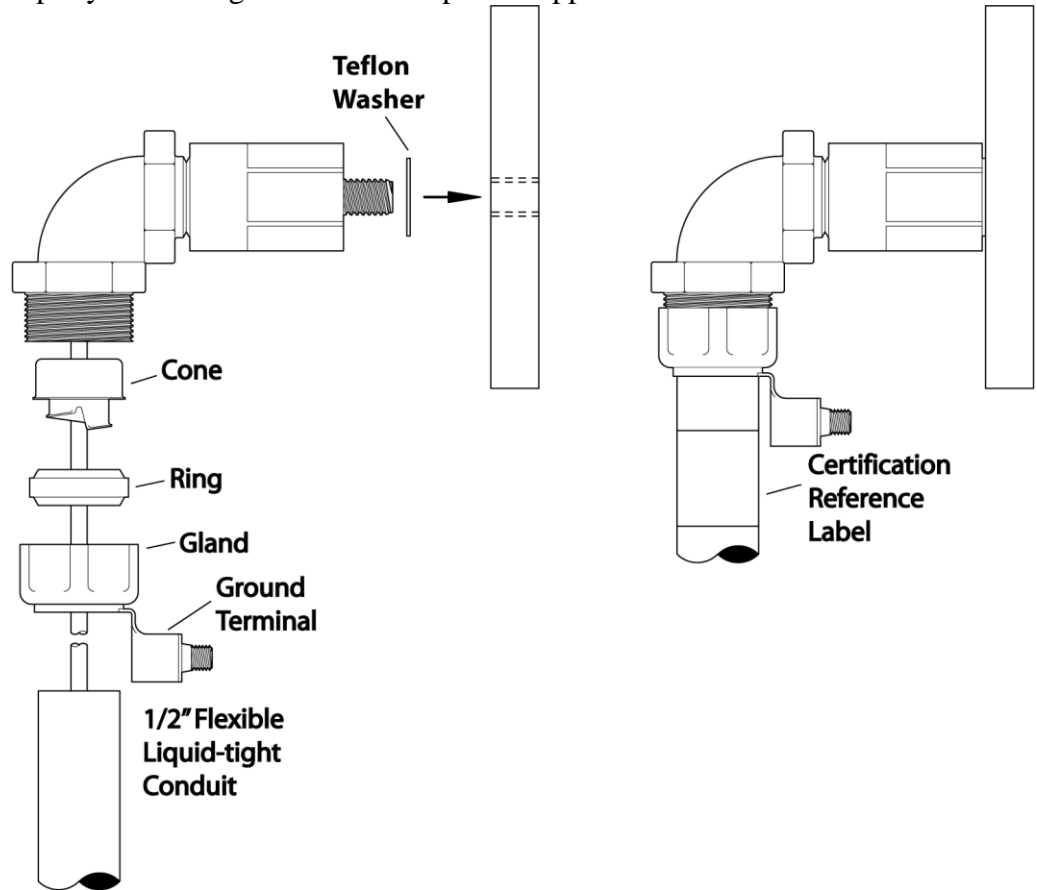
TT420Z-LT (½ in) installation

**Installation (cont.) TT420S-LT (1/2 in, right-angle and straight)**

With the teflon washer installed over the brass threaded post, screw the TT420S-LT (1/2 in) into a 3/8-16 threaded tap (e.g. in a brass rub-block) as shown. Do not over-tighten. Slide the gland (with ground terminal) and ring over the end of the conduit and screw the cone into (and over) the end of the conduit. Install the conduit over the cable and secure it to the TT420S-LT (1/2 in) fitting by tightening the gland. Tighten enough to seal – do not over-tighten.

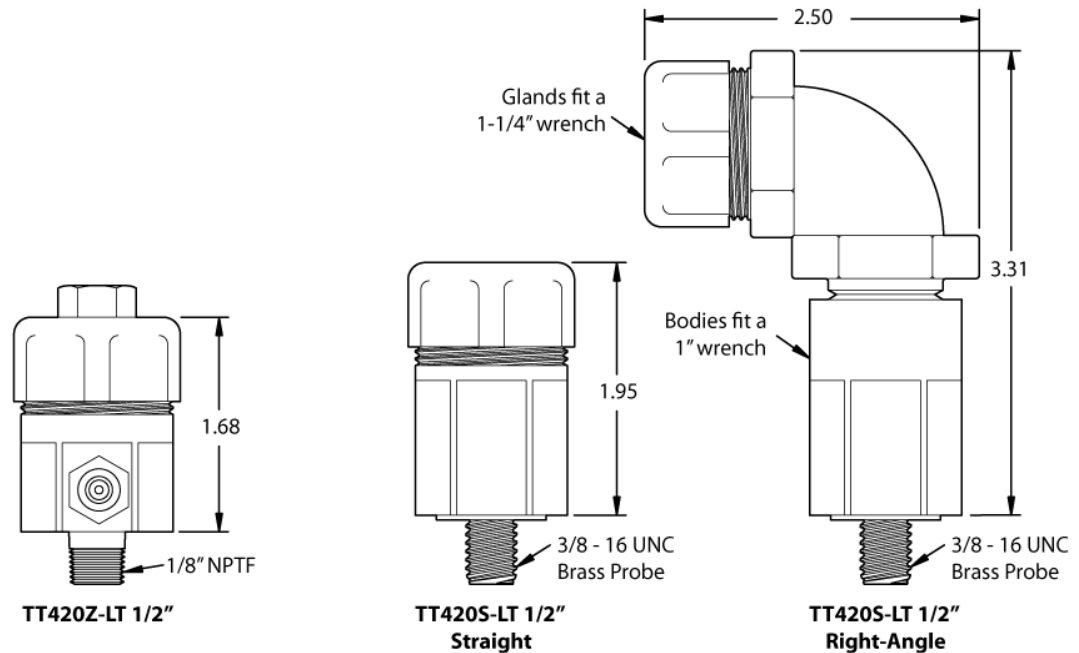
Apply the Certification Reference Label to the installed conduit as shown.

Properly earth the ground terminal per the applicable electrical codes.



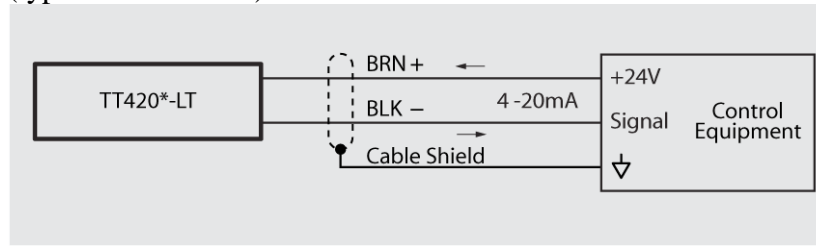
**TT420S-LT installation (1/2 in right-angle shown)**

**Dimensions (in)**



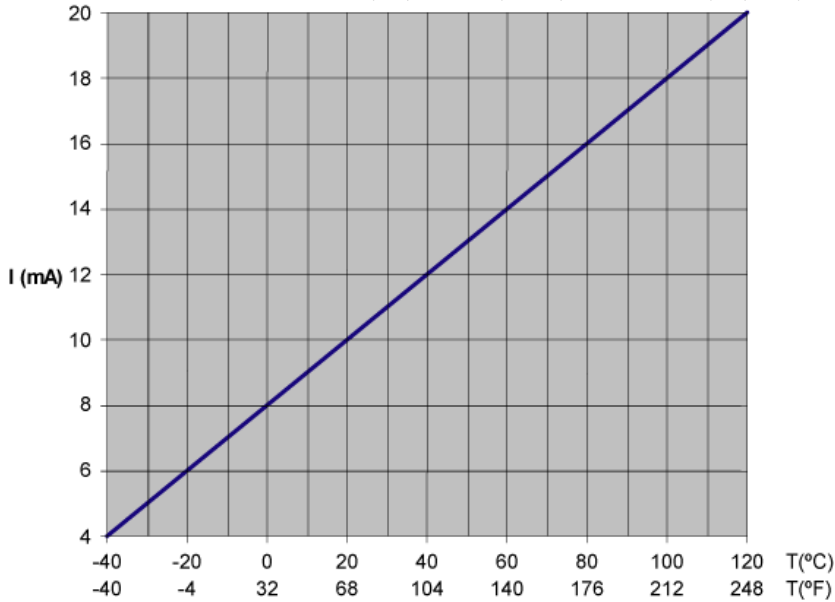
## Wiring diagram

(typical installation)



## I(mA) / T Relationships

**Celsius**  $I = T(^{\circ}\text{C})/10 + 8\text{mA}$   $T(^{\circ}\text{C}) = (I - 8\text{mA}) * 10$   
**Fahrenheit**  $I = T(^{\circ}\text{F})/18 + (56/9)\text{mA}$   $T(^{\circ}\text{F}) = (I - 56/9\text{mA}) * 18$



## Specifications

$V_{in}$  (min → max) 8 → 30 Vdc (Class 2 power supply required)  
 $P_d$  (max) 0.6 W  
 Operating Temp -40 → 120 °C (measurement probe)  
 Accuracy ±1 °C (at 25 °C)  
 ±3 °C (at -40 °C, 120 °C)

## Cable

24AWG, 2 cond. (shielded), Brown (V+), Black (V-) - reverse wiring protected

## Certification/ Ratings

Dust Ignition-proof for use in Class II and III, Div 1 and 2, Group E, F, G when installed using Class II rated ½ in flexible liquid-tight conduit.

T5  $T_a \leq 80^{\circ}\text{C}$  Enclosure Type 4



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## Model numbers

**TT420a-LT** (½ in, c ft, d)

a: Z or S  
 c: cable length in feet (10 ft. standard)  
 d: Z models: probe length in inches (4, 6 ...)  
 S models: housing (straight or R-angle)

Examples: TT420Z-LT (½ in, 10 ft, 4 in)  
 TT420S-LT (½ in, 10 ft, R-angle), TT420S-LT (½ in, 10 ft, straight)