

Introduction

The TTLSO single point strap-on temperature thermostat incorporates a precision thermistor temperature sensor and provides a Form C relay output (NO/NC) with an adjustable setpoint. The sensor is encapsulated to a 38 mm x 38 mm (1.5" x 1.5") aluminum plate and adhered to a 38 mm x 25.4 mm (1.5 x 1") compressible foam. A 254 mm (10") S/S Pipe clamp is provided to secure the assembly to various sizes of pipe. All probes are constructed to provide excellent heat transfer, fast response and are potted to resist moisture penetration.

Before Installation

Read these instructions carefully before installing and commissioning the temperature thermostat. Failure to follow these instructions may result in product damage. Do not use in an explosive or hazardous environment, with combustible or flammable gases, as a safety or emergency stop device or in any other application where failure of the product could result in personal injury. **Take electrostatic discharge precautions during installation and do not exceed the device ratings.**

Mounting (Enclosure A)

The strap-on sensor installs directly onto any pipe where an immersion sensor with thermowell can't be installed.

Once a suitable spot is selected, remove a small block of insulation if present. It is recommended that thermal compound be used to improve heat transfer. Spread a liberal amount on the pipe.

Open the worm gear clamp by swiveling the worm gear away from the clamp and pull the clamp apart, as shown in Figure 1.

Place the sensor plate on the selected mounting area and wrap clamp around the pipe. Re-insert clamp under the worm gear and pull until snug. Lock in place by swiveling the worm gear towards the clamp. Tighten worm gear clamp by using a standard screw driver or hex nut driver as shown in Figure 2.

Using a Phillips screwdriver, remove the (2) screws, as shown in Figure 3.

Remove cover and set aside with screws for re-installing after wiring and set up.

Two 21 mm (0.8125") holes are provided for connection of either 12.77mm (0.5") EMT or a cable gland style connector as shown in Figure 4. Insert the EMT or cable gland connector through the hole and securely fasten using a locknut. If only one connection hole is required, use the included hole cap to cap off the unused one as shown in Figure 5. **Special care must be taken not to damage any internal components during installation.**

Make wire connections as per the "Wiring" illustrations on Page 2.

Once wiring and set up are complete, re-install cover and tighten the (2) screws using a Phillips screwdriver.

Figure 1

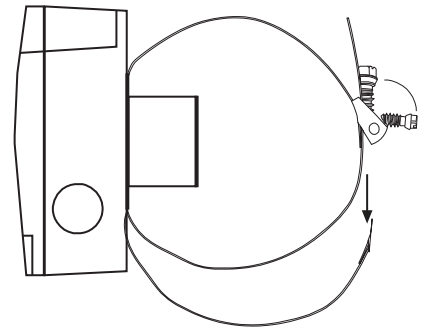


Figure 2

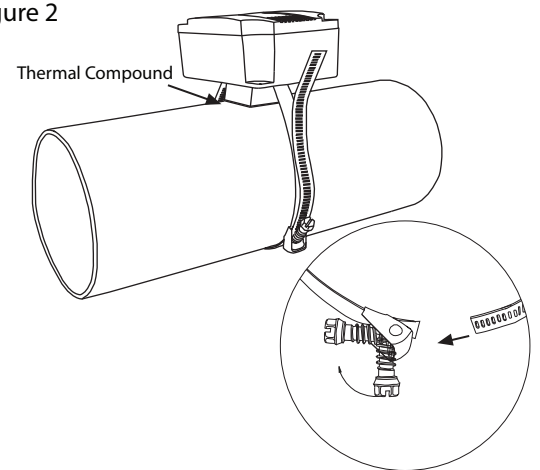


Figure 3

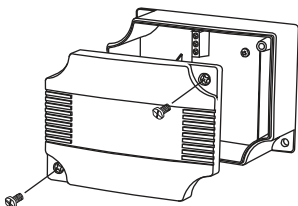


Figure 4

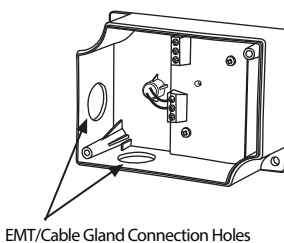
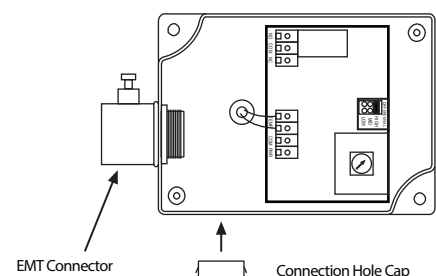
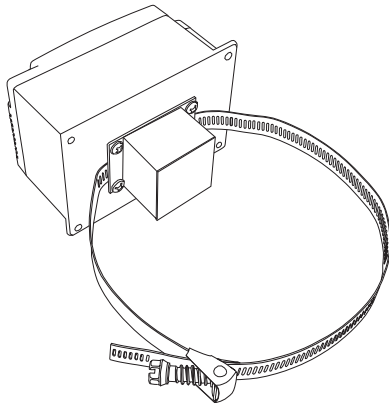


Figure 5





Mounting (Enclosure D)

The strap-on sensor installs directly onto any pipe where an immersion sensor with thermowell can't be installed.

Once a suitable spot is selected, remove a small block of insulation, if present. It is recommended that thermal compound be used to improve heat transfer. Spread a liberal amount on the pipe.

Open the worm gear clamp by swiveling the worm gear away from the clamp and pull the clamp apart, as shown in Figure 1.

Place the sensor plate on the selected mounting area and wrap clamp around the pipe. Re-insert clamp under the worm gear and pull until snug. Lock in place by swiveling the worm gear towards the clamp. Tighten worm gear clamp by using a standard screw driver or hex nut driver as shown in Figure 2.

The enclosure has a hinged cover with latch. Open cover by pulling slightly on the latch on the right side of the enclosure. At the same time pulling on the cover, as illustrated in Figure 8.

Feed conduit through the provided hole in bottom of enclosure and secure with a lock nut as show in Figure 9. It is recommended that weatherproof conduit or cable gland fittings be used.

Make wiring connections as per the "Wiring" illustrations on Page 2.

Swing door closed until securely latched. For added security, 2 screws are provided that may be installed in the integrated screw tabs. See Figure 10.

Figure 6

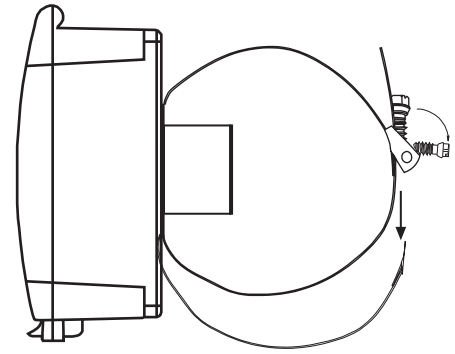


Figure 7

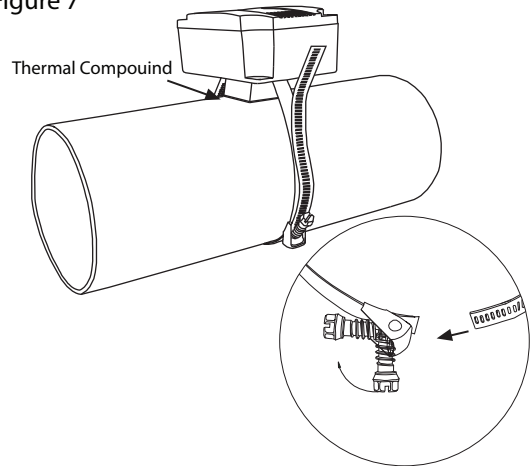


Figure 8

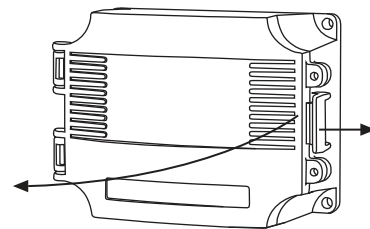


Figure 9

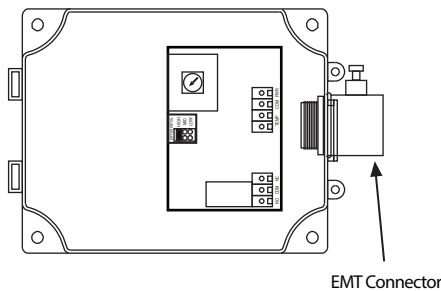
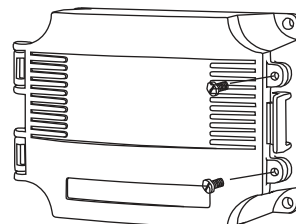
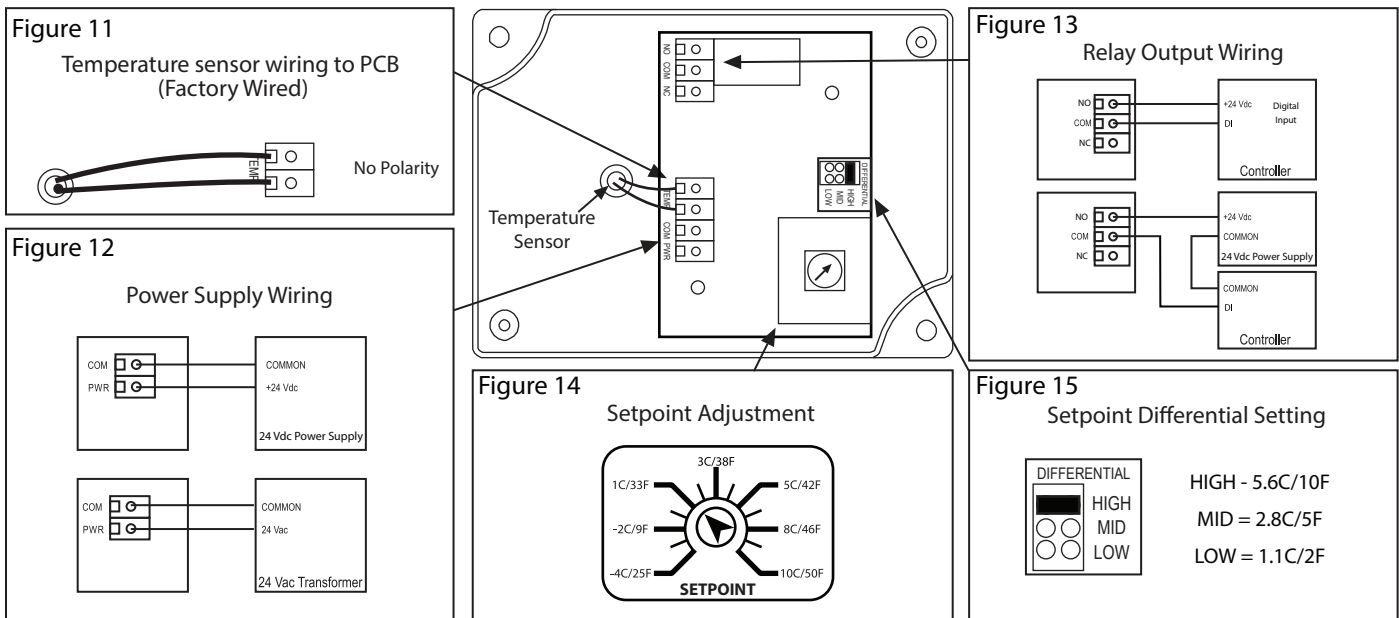


Figure 10



Wiring

- Deactivate the 24 Vac/dc power supply until all connections are made to the device to prevent electrical shock or equipment damage.
- Use 14-22 AWG shielded wiring for all connections and do not locate the device wires in the same conduit with wiring used to supply inductive loads such as motors. Make all connections in accordance with national and local codes.
- The temperature thermostat comes with the temperature sensor pre-wired to the PCB. If removal is required for installation then it may be re-wired as shown in Figure 11.
- Pull at least six inches of control wire into the enclosure, then complete the wiring connection according to the wire diagram for the applicable power supply as shown in Figure 12.
- Connect the DC positive or the AC voltage hot side to the PWR terminal. The supply common is connected to the COM terminal. See Figure 12.
- The relay has both Normally Open (NO) and Normally Closed (NC) contacts available. The relay output is available on the NO/COM/NC terminal. Make connections before applying power as shown in Figure 13.
- The setpoint differential has 3 jumper selectable settings (Low/Mid/High) Set jumper to desired differential as shown in Figure 14.
- To set the switching setpoint, turn the setpoint potentiometer to the desired temperature setting as shown in Figure 15.
- Once all connections settings are made and checked, power can be applied.



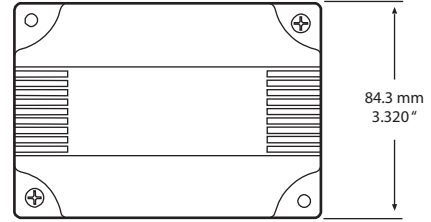
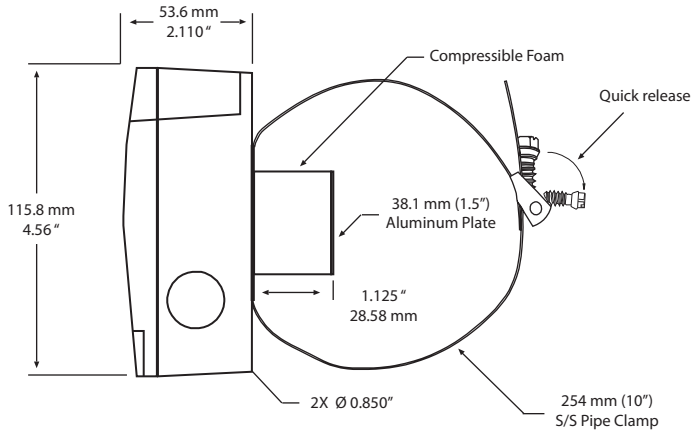
Specification:

Power Supply.....12 to 28 Vac/dc
 Consumption.....50 mA max
 Relay Contacts.....SPDT, Form C contacts (N.O. and N.C.)
 5 Amps @ 30 Vdc/250 Vac resistive
 1.5 Amps @ 30 Vdc/250 Vac inductive
 Relay Action.....Activates on temperature fall
 Setpoint Operation.....Single-turn knob-pot on pcb
 Adjustable Setpoint.....-4 to 10°C (25 to 50°F)
 Setpoint TemperatureLow/Mid/High jumper selectable
 Differential1.1/2.8/5.6 °C (2/5/10 °F)
 Temperature Sensor.....10K ohm curve matched
 precision thermistor
 Sensor Accuracy.....±0.2°C, 0 to 70°C (±0.36°F, 32 to 158°F)

Probe Sensing Range-20 to 105 °C (-4 to 221 °F)
 Probe MaterialAluminum plate
 w/ compressible foam backing
 Probe Diameter.....38 mm (1.5") square
 Wire Material.....PVC insulated, parallel bonded
 Operating Conditions.....-10 to 50°C (14 to 122°F),
 5 to 95% RH non-condensing
 Storage Conditions.....-30 to 70°C (-22 to 158°F),
 5 to 95%RH, non-condensing
 Enclosure.....(A) ABS, UL94-5VB, IP61 (NEMA 2)
 (D)-ABS, UL94-5VB, IP65 (NEMA 4X)
 Wiring Connections.....Screw terminal block
 (14 to 22 AWG)

Dimensions:

Enclosure A



Enclosure D

