



## Three wire Flow Sensor Inserts (004,006)

Some data acquisition and control products require a three wire connection to separate the power supply from the signal input while sharing a common ground. For these applications, CST provides a three wire sensor.

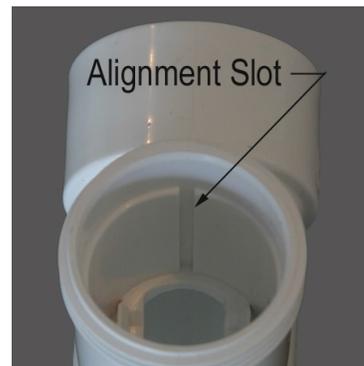
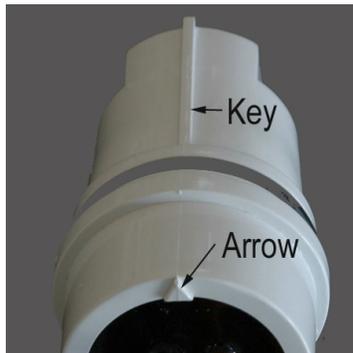
### Mechanical Installation– Replacing sensor insert

1. Remove the flow sensor insert from the tee/saddle by loosening the retaining nut; turn the nut counter-clockwise and pull the insert straight out of the tee.

**Do not pull on the wire leads!**

2. Make sure the insert and tee are clean and free from dirt or debris and the o-ring is in place.

3. Align the arrow on the top of the housing with the downstream direction. This will align the guide key on the housing with the slot inside the tee. Push straight in so that the key enters the slot until the o-ring seals the opening. Slide the retaining nut over the wire leads and tighten by hand by turning clockwise.



### Electrical Installation 3 Wire Sensor Option -004

1. Three conductors are required to connect the flow sensor to the monitor, control or data collection device.

2. The **RED** lead from the sensor is the **+** (**Power**) lead and the **BLACK** lead from the sensor is the **-** (**Ground**) lead. The **WHITE** lead from the sensor is the **SIGNAL** lead. Observe polarity when extending these conductors and connect them to the **Power**, **Ground** and **Signal** leads or terminals of the FLOW SENSOR INPUT of the connected device.

**Do not connect flow sensor to Power or Valve circuits!**



3. Use a shielded Direct Burial cable with at least three twisted conductors. Multiple pair cable may be used. Use #20 AWG or larger stranded copper wire conductors to extend the distance up to 2,000 feet.
4. Waterproof the splices. The preferred method is the 3M brand DBO/B6 direct bury silicon grease splice kits or the 3M Scotchlok 3570 two part epoxy kit. Follow all manufacturer's instructions.
5. Make sure that the flow sensor insert is installed in the tee or the retaining nut is on the wire leads before making the splices.
6. Provide a service loop in the cable to allow the flow sensor housing to be removed from the tee and brought above grade for servicing.

### Calibration Constants

To program the monitor to read flow rate in GPM (gallons per minute).

Model FSI-TXX-004 (Standard calibration sensor)- Open controller FLOW set-up screen and find flow sensor "OTHER". Then, when prompted enter the following:

FSI-B15-001 **K = 0.762** and **Offset = 0.126**

FSI-T10-001 **K = 0.322** and **Offset = 0.20**

FSI-T15-001 **K = 0.650** and **Offset = 0.75**

FSI-T20-001 **K = 1.192** and **Offset = 0.94**

FSI-S30-001 **K = 2.75** and **Offset = 1.58**

FSI-S40-001 **K = 4.53** and **Offset = 1.11**

FSI-S60-001 **K = 10.401** and **Offset = 3.308**