



## IRRIGATION

### PART 1 - PRODUCTS

#### 1.1 FLOW SENSOR

- A. The Saddle Type PVC Flow Sensor shall be FSI Series manufactured by Creative Sensor Technology, Incorporated of Rochester, Massachusetts for Weathermatic Sprinkler Division of Telsco Industries. The Model number shall include the Series designation followed by a three character group beginning with S and followed by a two digit code referencing line size. Therefore, the model number for a one inch size flow sensor with standard electronics would be written as: SLFSI-S30. The flow sensor shall consist of a custom molded tee shaped body with socket ends conforming to PVC pipe dimensions, a flow sensor housing containing the electronic circuitry and carrying the spinning impeller and a retaining nut.
- B. The meter body shall be a saddle mounted in line type available in 3", 4" and 6" pipe sizes, molded from Rigid Polyvinyl Chloride material – color white - conforming to ASTM D-1784, Cell Class 12454.
- C. The 4 blade impeller (paddle wheel) shall be the only moving part.
- D. The impeller shall be molded of HDPE (High Density Polyethylene) incorporating an integral bearing. The shaft material shall be tungsten carbide. These two items are considered wear items and shall be replaceable in the field without special tools.
- E. The electronics housing shall be held in place with a single ACME threaded PVC retaining nut held captive by the wire leads. The housing will be sealed with one BUNA N O-Ring and shall be easily removed from the meter body. The electronics housing and saddle shall feature direction of flow arrows to assist in assembly.
- F. The sensor electronics will be epoxy-sealed and fitted with 2 single conductors solid copper U.L. listed #18 AWG leads with direct burial insulation 48 inch in length extending from the top of the sensor. The positive (+) lead shall have red insulation and the negative (-) lead shall have black insulation.
- G. The housing and mounting saddle are custom molded to form an integrated measurement chamber resulting in highly accurate, repeatable flow measurements through a wide range of velocities.
- H. The flow sensor shall be designed to schedule 40 specifications and have a tested working pressure of 240 psi @ 73°F (23°C). Maximum working temperature is 140°F (60°C). rev b031810.
- I. The sensor flow range shall be 0.25 to 15 FPS.
- J. The Product Serial Number shall be printed on shrink tubing and attached to the wire leads as they exit the top of the electronics housing.
- K. The Product Model Number shall be printed on shrink tubing and attached to the wire leads above the Product Serial Number.

#### 1.2 WIRING and INSTALLATION

- A. The flow sensor shall be installed with a minimum of 10 diameters of straight pipe upstream, and a minimum of 5 diameters of straight pipe downstream to eliminate irregular flow profiles caused by valves, fittings or pipe bends.
- B. The flow sensor shall be installed a valve box or meter pit of sufficient size to provide access to the flow sensor for service.
- C. The installed sensor shall require a minimum clearance of approximately 4 inches (100 mm) above sensor for removal of the electronics housing.
- D. Watertight Wire connections shall be made in the valve box using industry accepted methods and sealing products.
- E. The maximum wire run between flow sensor and the controller shall be 2,000 feet if a 20/2 twisted pair shielded cable is used.
- F. The flow sensor electronics shall carry a two-year exchange warranty.

#### 1.3 ELECTRICAL SPECIFICATIONS

- A. The flow sensor shall have an output Frequency Range of 0.3 Hz to 200 Hz.



- B. The flow sensor shall output a minimum of a 5-millisecond low pulse at low frequencies and reverts to approximately a square wave above 100 Hz.
- C. Quiescent current 600  $\mu$ A@8 VDC to 35 VDC max.
- D. On State (VLow)= Max. 1.2 VDC@50mA max.