

## BSP Flow Sensors

Flow Sensing for SiteControl™, ESP-LX Series Controllers and IQ v2.0.

Rain Bird flow sensors send flow data to central control or stand-alone control systems for precise and accurate flow monitoring. Rain Bird flow sensors enable you to capitalize on the advantages of Flow Management functionality. Use Rain Bird Flow Sensors with Rain Bird SiteControl and IQ v2.0 central control applications or in standalone systems using Rain Bird LXD and LXME controllers equipped with FSM to benefit from:



### Flo-Watch™

Flo-Watch constantly monitors for low flow and excess flow conditions caused by broken lines or heads, automatically quarantines and shuts down the problem area and continues to irrigate non affected areas. Saves water, saves plant material and enables irrigation programs to continue and complete.

### Learned Flow

The controller automatically learns station flow rates resulting in more accurate flow rates. The automatic collection prevents you from having to manually enter data from drawings or physically visiting each valve to collect flow data and manually entering the data into a controller.

### FloManager®

FloManager determines the optimal station irrigating sequence. The system runs at its fullest capacity until programs are complete. The controller automatically selects and runs multiple valves at the same time within hydraulic parameters allowing for shorter water windows. Pressure and flow

rates may be manually measured and entered into the controller to utilize FloManager functionality. Using a flow sensor and learned flow capabilities can help to optimize system performance.

Customers with ESP-LXME units only need to purchase a Flow Smart Module for the ESP-LXME to capitalize on Flo-Watch, Learned Flow and FloManager. Add IQ v2.0 to remotely manage your ESP-LXD, ESP-LXMEF and ESP-LXME controllers. Centrally managing your controllers with IQ v2.0 saves labor and time by eliminating constant monitoring of the site and trips to the controllers. Retrieve alarms or receive alarms via email regarding problem areas to dispatch maintenance personnel to check and repair.

### Configuration

**SiteControl - Decoder System:** Software version 3.X or higher, the flow sensor is installed with a Two-Wire Decoder Sensor Decoder (SD210).

**IQ v2.0 - (Hard Wire) Two-Wire Systems:** The Flow Sensor is installed with a Two-Wire Decoder Sensor Decoder (SD210)

**IQ2 v2.0 - Traditional Wired Systems:** Only the flow sensor is installed (no decoder required).

**LXD - (Hard Wire) Two-Wire Systems:** The Flow Sensor is installed with a Two-Wire Decoder Sensor Decoder (SD210)

**LXME with FSM - Traditional Wired Systems:** Only the flow sensor is installed (no decoder required).

Surge protection (FSSURKIT) is recommended for all systems - One at the Flow Sensor, and if more than 50' of wire run, one at the Pulse Transmitter.

### How to Specify

**IFS-XXX-P-XX**

BSP  
FL (Flanges)

100 = 1" (25mm)  
150 = 1 1/2" (40mm)  
200 = 2" (50mm)  
300 = 3" (75mm)  
400 = 4" (110mm)

## Sensor Features

- Simple six-bladed impeller design
- Designed for outdoor or underground applications
- Available in PVC, brass or stainless steel construction
- Pre-installed in tee or insert versions

## Operating Specifications

- Accuracy:  $\pm 1\%$  (full scale)
- Velocity: 0,15 - 9,2 meters per second, depending on model
- Pressure: 6,9 bars (max)
- Temperature: 60° C (max)

## Models

- FS 100 P BSP : Flow Sensor on 1" (25mm) PVC Tee with Female BSP straight threaded ends.
- FS 150 P BSP : Flow Sensor on 1"1/2 (40mm) PVC Tee with Female BSP straight threaded ends.
- FS 200 P BSP : Flow Sensor on 2" (50mm) PVC Tee with Female BSP straight threaded ends.
- FS 300 P BSP : Flow Sensor on 3" (75mm) PVC Tee with Female BSP straight threaded ends.
- FS 400 P FL : Flow Sensor on 4" (110mm) PVC Tee with DIN Flanged ends.

## Dimensions (Length x Width x Height) in mm

- FS 100 PBSP : 172 x 63.5 x 132
- FS 150 PBSP: 213 x 89 x 145
- FS 200 PBSP: 225 x 89 x 151
- FS 300 PBSP: 248 x 114 x 176
- FS 400 PFL: 340 x 220 x 240

## Rain Bird Flow Sensor K, Offset and Suggested Operating Range

The following tables indicate the suggested flow range for Rain Bird Flow Sensors. Rain Bird Sensors will operate both above and below the indicated flow rates. However, good design practice dictates the use of this range for best performance. Sensors should be sized for flow rather than pipe size.

Flow Sensors					
Part Number	Model	Description	K Value	Offset	Suggested Operating range (m <sup>3</sup> /h)
IFS100PBSP	M80114	1" (25mm) PVC Tee Flow Sensor with Female BSP straight threaded ends	0.261	1.2	1.2 - 12.2
IFS150PBSP	M80115	1"1/2 (40mm) PVC Tee Flow Sensor with Female BSP straight threaded ends	1.697	-0.316	1.1 – 22.7
IFS200PBSP	M80116	2" (50mm) PVC Tee Flow Sensor with Female BSP straight threaded ends	2.843	0.143	2.3 – 45.4
IFS300PBSP	M80117	3" (75mm) PVC Tee Flow Sensor with Female BSP straight threaded ends	8.309	0.227	4.5 – 68.1
IFS400PFL	M80118	4" (110mm) PVC Tee Flow Sensor with DIN Flanges ends.	13.742	0.237	9.1 – 113.6

## Specifications

### **Model IFS100PBSP Flow Sensor**

The flow sensor shall be an in line type with a non magnetic, spinning impeller (paddle wheel) as the only moving part. The impeller shall be made of 300SST with a UHMWPE sleeve bearing. The shaft material shall be tungsten carbide. The electronics housing shall be made of PPS. The electronics housing shall have two EPDM O-Rings and shall be easily removed from the meter body. The sensor electronics will be potted in an epoxy compound designed for prolonged immersion with 2-conductor, 1mm<sup>2</sup> solid copper wire leads extending from the top of the sensor. The sensor shall operate in line pressures up to 10 bars at liquid temperatures up to 23° C, or up to 5bars at liquid temperatures up to 43° C. The sensor shall operate in flows of 0.6m/s to 6m/s with linearity of  $\pm 3\%$  and repeatability of  $\pm 1.5\%$ . The flow sensor shall generate a frequency which is proportional to flow rate. The meter body shall be fabricated from Schedule 40 PVC Tees, Type 1, white, available 25mm (1" ) Female BSP straight threaded end connections. This flow sensor shall be Rain Bird Model IFS100PBSP.

### **Model IFS150PBSP, IFS200PBSP, or IFS300PBSP Flow Sensor**

The flow sensor shall be an in-line type with a non-magnetic, spinning impeller (paddle wheel) as the only moving part. The electronics housing shall be glass-filled PPS. The impeller shall be glass-filled nylon or Tefzel with a UHMWPE or Tefzel sleeve bearing. The shaft material shall be tungsten carbide. The electronics housing shall have two, ethylene propylene O-Rings and shall be easily removed from the meter body. The sensor electronics will be potted in an epoxy compound designed for prolonged immersion. Electrical connections shall be 2 single conductor 1mm<sup>2</sup> leads 1,2 meters long. Insulation shall be direct burial "UF" type colored red for the positive lead and black for the negative lead. The sensor shall be capable of operating in line pressure up to 6.9 bars and liquid temperatures up to 60° C, and operating in flows of 0,15 meters per second to 9,2 meters per second with linearity of  $\pm 1\%$  and repeatability of  $\pm 1\%$ . The meter body shall be fabricated from Schedule 80 PVC Tees, available in 40mm (1 1/2"), 50mm (2") and 75mm (3") with Female BSP straight threaded end connections. This flow sensor shall be Rain Bird Model IFS150PBSP, IFS200PBSP, or IFS300PBSP.

### **Model IFS400PFL Flow Sensor**

The flow sensor shall be an in-line type with a non-magnetic, spinning impeller (paddle wheel) as the only moving part. The electronics housing shall be glass-filled PPS. The impeller shall be glass-filled nylon or Tefzel with a UHMWPE or Tefzel sleeve bearing. The shaft material shall be tungsten carbide. The electronics housing shall have two, ethylene propylene O-Rings and shall be easily removed from the meter body. The sensor electronics will be potted in an epoxy compound designed for pro-longs immersion. Electrical connections shall be 2 single conductor 1mm<sup>2</sup> leads 1,2 meters long. Insulation shall be direct burial "UF" type colored red for the positive lead and black for the negative lead. The sensor shall be capable of operating in line pressure up to 6.9 bars and liquid temperatures up to 60° C, and operating in flows of 0,15 meters per second to 9,2 meters per second with linearity of  $\pm 1\%$  and repeatability of  $\pm 1\%$ . The meter body shall be fabricated from Schedule 80 PVC Tees, available in 110mm (4") with DIN Flanged end connections. This flow sensor shall be Rain Bird Model IFS400PFL.

*Tefzel® is a registered trademark of DuPont.*

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