Flow Sensors





How To Specify FS - 100 - B B: Brass Pipe Size 100: 1" (25mm) 150: 1 ½" (40mm) 200: 1" (50mm) 300: 1" (50mm) 300: 1" (75mm) 400: 1" (110mm) 350: 1" (75mm) and higher Model FS: Flow Sensor (ImpellerType) UFS: Ultrasonic Flow Sensor 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 Sensing functionality

ULTRASONIC SENSORS

Designed for outdoor and underground applications, Rain Bird Ultrasonic Flow Sensors offer the highest performance in flow sensing. Using internal ultrasonic transducers and acoustical reflectors, the UFS Series reads high and very low flow rates reliably and accurately. The UFS has a special body constructed of Glass Filled Nylon, enabling high pressure ratings, and has no straight pipe requirements, allowing more flexible installation location selection.

IMPELLER SENSORS

Designed for outdoor and underground applications, Rain Bird Ultrasonic Flow Sensors offer the highest performance in flow sensing. Using internal ultrasonic transducers and acoustical reflectors, the UFS Series reads high and very low flow rates reliably and accurately. The UFS has a special body constructed of Glass Filled Nylon, enabling high pressure ratings, and has no straight pipe requirements, allowing more flexible installation location selection.

FEATURES

Use any Rain Bird Flow Sensor with Rain Bird IQ4, Maxicom2 and SiteControl central control systems or in standalone systems using Rain Bird LXIVM, LXD and LXME2PRO controllers to benefit from:

Flo-Watch[™]. Flo-Watch constantly monitors for low or excess flow conditions such as those 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. (Note: SiteControl does not offer low flow detection.)

Learned Flow. The controller automatically learns station flow rates resulting in more accurate flow rates as compared to manually established 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. (Note: Maxicom and SiteControl do not offer Learned Flow.) 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. 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.

IQ4 (Central Control). Add IQ4 to remotely manage your LXIVM, LXD, LXME2PRO controllers. Centrally managing your controllers with IQ4 saves labor and time by eliminating constant monitoring of the site and trips to the controllers. Retrieve alarms or receive alarms via email and SMS message regarding problem areas to dispatch maintenance personnel to check and repair. (Note: In addition to IQ4, Maxicom and SiteControl can also be used to remotely monitor flow from a computer.)

CONFIGURATION

ESP-LXD Two-Wire Controller

The Flow Sensor is installed with a Two-Wire Decoder Sensor Decoder (SD210TURF) connected to the two-wire path (no pulse transmitter required).

ESP-LXIVM SmartValve Two-Wire Controller

The Flow Sensor is installed with an IVM-SEN SmartValve Sensor Decoder connected to the two-wire path (no pulse transmitter required).

LXME2PRO/ LXMEF Traditionally-Wired Controllers

The flow sensor connects to the controller Flow Smart Module (no pulse transmitter, no decoder required). Maximum distance from flow sensor to controller is 2000ft.

Maxicom2 and SiteControl - (Hard Wire) Two-Wire Satellite Systems

The Flow Sensor is installed with a Pulse Transmitter (PT322 or PT5002) and a Rain Bird Pulse Decoder (DECPULLR). (Note: Pulse Decoders can be connected directly to a two wire path.)

Maxicom² - Link Radio Satellite Systems

The Flow Sensor is installed with a Pulse Transmitter (PT322 or PT5002 no decoder required). (Note: Pulse Transmitter connects to the Satellite sensor input.)

SiteControl - Decoder System

Software version 2.X or lower, the flow sensor is installed with a Pulse Transmitter and a Two-Wire Decoder Sensor Decoder (SD210TURF). Software version 3.X or higher, the flow sensor is installed with a Two-Wire Decoder Sensor Decoder (pulse transmitter is optional). (Note: Sensor Decoders can be hooked up directly to a two wire path.)

Surge protection (FSSURGEKIT) is recommended for most systems - One at the Flow Sensor, and if more than 50' of wire run, one at the Pulse Transmitter. FSSURGEKIT is not required for Two- Wire Decoder Systems and not compatible with the ESP-LXMEF Flow Smart Module.

OPERATING SPECIFICATIONS

ULTRASONIC SENSOR

Accuracy

+/- 2% across full flow range

Velocity:

2-20 Feet (0.6-6.1 meters) per second depending on model and system specifications

Pressure

200 PSI Working Pressure

Temperature:

32° - 150° F (0° - °65 C)Working Temperature

IMPELLER SENSORS

Accuracy

Up to 1% variable across full scale of flow range

Velocity

2-20 Feet (0.6-6.1 meters) per second depending on model and system specifications

Pressure

75 psi (5.1 bars) at 110° F (43° C) (max) on metal models; 150 psi (10.3 bars) at 73° F (23° C) (max) on plastic models Temperature: 110° F (43° C) (max) on metal

Temperature

110° F (43° C) (max) on metal models; 140° F (60° C) (max) on plastic models

TRANSMITTERS

Input required

12-30 VDC/VAC on PT322 10.5-26 VAC (12-24 VAC rec.) on PT 1502 12-24 VAC/VDC on PT 3002

Output

Pulse output

Operating Temp

-4° F-158° F (-20° C to 70° C)

MODELS

	ULTRASONIC					
PART NUMBER	MODEL NUMBER	DESCRIPTION	DIMENSIONS (LENGTH X WIDTH X HEIGHT)			
M80132	UFS200	2" (50mm) Ultrasonic Flow Sensor NPT	101/2" x 4 3/4" H = 4 7/8" (267mm x 121mm x 124mm)			
M80131	UFS150	1 1/2" (40mm) Ultrasonic Flow Sensor NPT	101/2" x 4 3/4" H = 4 3/8" (267mm x 121mm x 111mm)			
M80130	UFS100	1" (25mm) Ultrasonic Flow Sensor NPT	10 1/2" x 4 3/4" H = 3 7/8" (267mm x 121mm x 98mm)			
M80135	UFS200BSP	2" (50mm) Ultrasonic Flow Sensor BSP	101/2" x 4 3/4" H = 4 7/8" (267mm x 121mm x 124mm)			
M80134	UFS150BSP	1 1/2" (40mm) Ultrasonic Flow Sensor BSP	101/2" x 4 3/4" H = 4 3/8" (267mm x 121mm x 111mm)			
M80133	UFS100BSP	1" (25mm) Ultrasonic Flow Sensor BSP	10 1/2" x 4 3/4" H = 3 7/8" (267mm x 121mm x 98mm)			

	BRASS TEES (IMPELLER)					
PART NUMBER	MODEL NUMBER	DESCRIPTION	DIMENSIONS (LENGTH X WIDTH X HEIGHT)			
M80111	FS200B	2" (50mm) Brass Tee Flow Sensor	4.25" x 8.35" x 2.94" (108mm x 212mm x 75mm)			
M80110	FS150B	1 1⁄2" (40mm) Brass Tee Flow Sensor	6.5" x 5.19" x 2.5" (165mm x 132mm x 64mm)			
M80101	FS100B	1" (25mm) Brass Tee Flow Sensor	5.45" x 4.94" x 2.21" (138mm x 126mm x 56mm)			

	PLASTIC TEES (IMPELLER)						
PART NUMBER	MODEL NUMBER	DESCRIPTION	DIMENSIONS (LENGTH X WIDTH X HEIGHT)				
M80107	FS400P	4" (110mm) PVC Tee Flow Sensor	7.38" x 7.83" x 5.38" (187mm x 199mm x 137mm)				
M80104	FS300P	3" (75mm) PVC Tee Flow Sensor	6.50" x 6.83" x 4.23" (165mm x 173mm x 107mm)				
M80103	FS200P	2" (50mm) PVC Tee Flow Sensor	5.63" x 5.64" x 2.88" (143mm x 143mm x 73mm)				
M80102	FS150P	1 1/2" (40mm) PVC Tee Flow Sensor	5.0" x 5.16" x 2.38" (127mm x 131mm x 60mm)				
M80108	FS100P	1" (25mm) PVC Tee Flow Sensor	3.50" x 3.94" x 1.315" (89mm x 100mm x 33mm)				
M80118	IFS400PFL	4" (110mm) PVC Tee ow sensor with DIN Flanged ends	340 mm x 220 mm x 240 mm				
M80117	IFS300PBSP	3" (75mm) PVC Tee ow sensor with Female BSP straight threaded ends	248 mm x 114 mm x 176 mm				
M80116	IFS200PBSP	2" (50mm) PVC Tee ow sensor with Female BSP straight threaded ends	225 mm x 89 mm x 151 mm				
M80115	IFS150PBSP	1 1/2" (40mm) PVC Tee $$ ow sensor with Female BSP straight threaded ends	213 mm x 89 mm x 145 mm				

INSERT (IMPELLER)								
PART NUMBER	MODEL NUMBER	DESCRIPTION	DIMENSIONS (LENGTH X WIDTH X HEIGHT)					
M80105	FS350B	Brass Insert	7.13" x 3"(diameter) (181mm x 76mm (diameter))					

	WIND SENSOR					
PART NUMBER	MODEL NUMBER	DESCRIPTION	DIMENSIONS (LENGTH X WIDTH X HEIGHT)			
M80302	ANEMOMETER	Wind Speed Monitor - Anemometer	22" x 8" x 8" (56cm x 20cm x 20cm)			

	PULSE TRANSMITTERS					
PART NUMBER	MODEL NUMBER	DESCRIPTION	DIMENSIONS (LENGTH X WIDTH X HEIGHT)			
M80201	PT322	Pulse Transmitter, no display	3.65" x 1.75" x 1.0" (93mm x 44m x 25mm)			
M80208	PT5002	PT5002 Flow Monitor Panel Mount	3.07" x 6.22" x 3.50" (78mm x 158mm x 89mm)			
M80210	PT5002 WM	PT5002 Flow Monitor Wall Mount	4.88" x 8.00" x 9.38" (124mm x 203mm x 238 mm)			

	ACCESSORIES			
PART NUMBER	MODEL NUMBER	DESCRIPTION		
M80303	FSTINSERT	Flanged Irrigation PPS Insert Assembly		
M80301	FSSURGEKIT	Flow Sensor Surge Protection Kit		
M13009	SD210TURF	Sensor Decoder for Decoder Systems		
M51200	DECPULLR	Pulse Decoder For Two Wire Satellites		

RAIN BIRD FLOW SENSOR K, OFFSET AND SUGGESTED OPERATING RANGE

K-Factor and Offset are key data points for programming controllers to properly convert pulse output from the Flow Sensor to a Gallon Per Minute reading. Flow Sensors may operate above or below suggested ranges, but in all cases Sensors should be used within these ranges for performance as intended. When sizing a Flow Sensor, consider expected flow rates, rather than solely focusing on pipe sizes.

ULTRASONIC								
MODEL	DESCRIPTION	K-FACTOR	OFFSET	SUGGESTED OPERATING RANGE (GALLONS/MINUTE)	SUGGESTED OPERATING RANGE (LITERS/MINUTE)	SUGGESTED OPERATING RANGE (CUBIC METERS/HOUR)		
UFS200	2" Ultrasonic Flow Sensor NPT	2.849	0.1439	1.0-200	3.8-757	0.23-45.4		
UFS150	1 1/2" Ultrasonic Flow Sensor NPT	1.70	-0.316	0.5-110	1.9-416	0.1-24.9		
UFS100	1" Ultrasonic Flow Sensor NPT	0.714	0.000	0.3-50	1.14-189	0.1-11.3		
UFS200BSP	2" (50mm) Ultrasonic Flow Sensor BSP	2.849	0.1439	1.0-200	3.8-757	0.23-45.4		
UFS150BSP	1 1/2" (40mm) Ultrasonic Flow Sensor BSP	1.70	-0.316	0.5-110	1.9-416	0.1-24.9		
UFS100BSP	1" (25mm) Ultrasonic Flow Sensor BSP	0.714	0.000	0.3-50	1.14-189	0.1-11.3		

BRASS TEES (IMPELLER)								
MODEL	DESCRIPTION	K-FACTOR	OFFSET	SUGGESTED OPERATING RANGE (GALLONS/MINUTE)	SUGGESTED OPERATING RANGE (LITERS/MINUTE)	SUGGESTED OPERATING RANGE (CUBIC METERS/HOUR)		
FS200B	2" Brass Tee Flow Sensor	2.747	0	10 - 100	38 - 380	2.3 - 23		
FS150B	1 1/2" Brass Tee Flow Sensor	1.06526	0.0892	4 - 80	15 - 300	1 - 18		
FS100B	1" Brass Tee Flow Sensor	0.3974	0.2618	2 - 40	7.6 - 150	0.5 - 9		

	PLASTIC TEES (IMPELLER)						
MODEL	DESCRIPTION	K-FACTOR	OFFSET	SUGGESTED OPERATING RANGE (GALLONS/MINUTE)	SUGGESTED OPERATING RANGE (LITERS/MINUTE)	SUGGESTED OPERATING RANGE (CUBIC METERS/HOUR)	
FS400P	4" PVC Tee Flow Sensor	13.7424	0.2307	40 - 500	150 - 1900	9 - 110	_
FS300P	3" PVC Tee Flow Sensor	8.309	0.227	20 - 300	75 - 1130	4.5 - 70	
FS200P	2" PVC Tee Flow Sensor	2.8429	0.1435	10 - 200	40 - 750	2.3 - 45	
FS150P	1 1/2" PVC Tee Flow Sensor	1.697	-0.316	5 - 100	19 - 380	1.1 - 23	
FS100P	1" PVC Tee Flow Sensor	0.2611	1.2	5.4 - 54	20 - 200	1.2 - 12	
IFS150PBSP	1 1/2" (40mm) PVC Tee flow sensor with Female BSP straight threaded ends	1.697	-0.316	5 - 100	18 - 378	1.1 - 22.7	
IFS200PBSP	2" (50mm) PVC Tee flow sensor with Female BSP straight threaded ends	2.8429	0.1435	10 - 200	36 - 756	2.3 - 45.4	
IFS300PBSP	3" (75mm) PVC Tee flow sensor with Female BSP straight threaded ends	8.309	0.227	20 - 300	78 - 1134	4.5 - 68.1	
IFS400PFL	4" (110mm) PVC Tee flow sensor with DIN Flanged ends	13.7424	0.23707	40 - 500	150 - 1890	9.1 - 113.6	
FS075P	3/4" PVC Tee Flow Sensor	0.1563	0.9	3.3 - 33.2	12.6 - 125.8	0.75 - 7.5	*
FS050P	1/2" PVC Tee Flow Sensor	0.078	0.9	1.9 - 18.9	7.2 - 71.7	0.43 - 4.3	*
IFS100PBSP	1" (25mm) PVC Tee flow sensor with Female BSP straight threaded ends	0.26112	1.2	5.4 - 53.9	20.4 - 204	1.2 - 12.2	*
IFS075PBSP	¾" (20mm) PVC Tee flow sensor with Female BSP straight threaded ends	0.1563	0.9	3.3 - 33.2	12.6 - 125.8	0.75 - 7.5	*
IFS050PBSP	½" (12mm) PVC Tee flow sensor with Female BSP straight threaded ends	0.078	0.9	1.9 - 18.9	7.2 - 71.7	0.43 - 4.3	*

	INSERTS				
MODEL	DESCRIPTION	K-FACTOR OFFSET			
FS350B	Brass Insert Flow Sensor	Depends on Pipe Type and Size - See Chart below			
FS350SS	Stainless Steel Insert Flow Sensor	Depends on Pipe Type and Size - See Chart below	*		

* Discontinued models

	FS350B AND	FS350SS	: K VALUE, OFF	SET AND SU	GGESTED OPER		
PIPE SIZE	PIPE O.D.	PIPE I.D.	K-FACTOR	OFFSET	SUGGESTED OPERATING RANGE (GALLONS/MINUTE)	SUGGESTED OPERATING RANGE (LITERS/MINUTE)	SUGGESTED OPERATING RANGE (CUBIC METERS/HOUR)
3 inch Sch 10S	3.500"	3.260"	5.009	0.09	12-400	50-1500	1-90
Std. Wt., Sch 40	3.5"	3.068"	4.362	0.063	12-400	50-1500	1-90
Extra Strong, Sch 80	3.5"	2.900"	3.858	0.043	12-400	50-1500	1-90
PVC Class 125	3.5"	3.284"	5.094	0.093	12-400	50-1500	1-90
PVC Class 160	3.5"	3.230"	4.902	0.085	12-400	50-1500	1-90
PVC Class 200	3.5"	3.166"	4.682	0.076	12-400	50-1500	1-90
4 inch Sch 10S	4.5"	4.260"	9.597	0.241	20-600	80-2300	1-140
Std. Wt., Sch 40	4.5"	4.026"	8.34	0.229	20-600	80-2300	1-140
Extra Strong, Sch 80	4.5"	3.826"	7.354	0.188	20-600	80-2300	1-140
PVC Class 125	4.5"	4.224"	9.396	0.24	20-600	80-2300	1-140
PVC Class 160	4.5"	4.154"	9.013	0.24	20-600	80-2300	1-140
PVC Class 200	4.5"	4.072"	8.578	0.239	20-600	80-2300	1-140
5 inch Sch 10S	5.563"	5.295"	16.305	0.25	30-900	110-3400	10-200
Std. Wt., Sch 40	5.50"	5.047"	14.674	0.248	30-900	110-3400	10-200
Extra Strong, Sch 80	5.50"	4.813"	13.165	0.246	30-900	110-3400	10-200
6 inch Sch 10S	6.625"	6.357"	24.089	0.26	50-1,500	190-5700	10-340
Std. Wt., Sch 40	6.5"	6.065"	21.574	0.257	50-1,500	190-5700	10-340
Extra Strong, Sch 80	6.5"	5.761"	19.457	0.254	50-1,500	190-5700	10-340
PVC Class 125	6.625"	6.217"	22.853	0.258	50-1,500	190-5700	10-340
PVC Class 160	6.625"	6.115"	21.968	0.257	50-1,500	190-5700	10-340
PVC Class 200	6.625"	5.993"	21.068	0.256	50-1,500	190-5700	10-340
8 inch Sch 10S	8.625"	8.329"	43.914	0.286	80-2,500	300-9500	20-570
Sch 20	8.625"	8.125"	41.653	0.283	80-2,500	300-9500	20-570
Sch 30	8.625"	8.071"	41.063	0.283	80-2,500	300-9500	20-570
Std. Wt., Sch 40	8.625"	7.981"	40.086	0.281	80-2,500	300-9500	20-570
Sch 60	8.625"	7.813"	38.288	0.279	80-2,500	300-9500	20-570
Extra Strong, Sch 80	8.625"	7.625"	36.315	0.276	80-2,500	300-9500	20-570
PVC Class 125	8.625"	8.095"	41.324	0.283	80-2,500	300-9500	20-570
PVC Class 160	8.625"	7.961"	39.869	0.281	80-2,500	300-9500	20-570
PVC Class 200	8.625"	7.805"	38.203	0.279	80-2,500	300-9500	20-570
10 inch Sch 10S	10.75"	10.420"	70.195	0.321	125-4,000	470-15100	30-910
Sch 20	10.75"	10.250"	67.668	0.318	125-4,000	470-15100	30-910
Sch 30	10.75"	10.136"	66.069	0.316	125-4,000	470-15100	30-910
Sch 40, Std.Wt.	10.75"	10.020"	64.532	0.314	125-4,000	470-15100	30-910
Extra Strong, Sch 60	10.75"	9.750"	61.016	0.309	125-4,000	470-15100	30-910
Sch 80	10.75"	9.564"	58.644	0.306	125-4,000	470-15100	30-910
PVC Class 125	10.75"	10.088"	65.431	0.315	125-4,000	470-15100	30-910
PVC Class 160	10.75"	9.924"	63.272	0.312	125-4,000	470-15100	30-910
PVC Class 200	10.75"	9.728"	60.733	0.309	125-4,000	470-15100	30-910
12 inch Sch 10S	12.75"	12.390"	104.636	0.367	175-5,000	660-18900	40-1140
Sch 20	12.75"	12.250"	102.553	0.364	175-5,000	660-18900	40-1140
Sch 30	12.75"	12.090"	99.347	0.36	175-5,000	660-18900	40-1140
Std. Wt., Sch 40S	12.75"	12.000"	97.576	0.358	175-5,000	660-18900	40-1140
Sch 40	12.75"	11.938"	96.369	0.356	175-5,000	660-18900	40-1140
Sch 60	12.75"	11.625"	90.441	0.348	175-5,000	660-18900	40-1140
Extra Strong	12.75"	11.750"	92.775	0.351	175-5,000	660-18900	40-1140
Sch 80	12.74"	11.376"	85.922	0.342	175-5,000	660-18900	40-1140
PVC Class 125	12.75"	11.966"	96.912	0.357	175-5,000	660-18900	40-1140

PH EXE PHE EX. PHE IX. FAATOR OPERT BMSRITTO AND CONSTRUMENTS DMSRITTO A	FS	350B AND	FS350SS:	K VALUE, OFF	SET AND SU	GGESTED OPER	ATING RANGE		
PVC Class 180 12.75' 11.730' 93.152 0.352 175.5.00 860.1800 40.1140 PVC Class 200 12.75' 11.33 88.42 0.341 204.6.00 760.22700 60.1360 Sch 20 14.00'' 13.260'' 122.307 0.381 204.6.00 760.22700 60.1360 Sch 40 14.00'' 13.127'' 116.966 0.382 204.6.00 760.22700 60.1360 Sch 40 14.00'' 12.814'' 111.4098 0.382 206.6.00 760.22700 60.1360 Sch 40 14.00'' 12.814'' 111.4098 0.382 204.6.00 760.22700 60.1360 Sch 30 14.00'' 15.50'' 156.72 0.433 309.9.00 1140.54100 70.2440 Sch 30 16.00'' 15.80'' 164.27'' 0.433 309.9.00 1140.54100 70.2440 Sch 40 16.00'' 15.80''' 164.27'' 0.433 309.9.00 1140.54100 70.2440 Sch 40 16.00''' <td></td> <td></td> <td></td> <td></td> <td></td> <td>SUGGESTED OPERATING RANGE</td> <td>SUGGESTED OPERATING RANGE</td> <td colspan="2">OPERATING RANGE</td>						SUGGESTED OPERATING RANGE	SUGGESTED OPERATING RANGE	OPERATING RANGE	
PVC Class 200 12.75* 11.33* 88.842 0.346 176.5.000 660.18900 401140 14 Inor Sch 10S 14.00* 13.30* 122.30* 0.338 200.6.000 760.22700 60.1380 Sik W, Sin 30 14.00* 13.37* 122.16* 0.388 200.6.000 760.22700 60.1380 Sik M, Sin 30 14.00* 13.12* 118.098 0.33 200.6.000 760.22700 60.1380 Sik M 14.00* 13.04* 114.088 0.33 200.6.000 760.22700 60.1380 Sik M 16.00* 15.50* 158.74 0.44 300.4000 140.34100 70.2404 Sik M 16.00* 16.20* 164.22* 0.43 300.900 1140-34100 70.2404 Sik M 16.00* 16.20* 164.27* 0.438 300.900 1140-34100 70.2404 Sik M 16.00* 17.35* 198.54 0.448 350-10.000 1320.37900 80.2270 Sik M 16.00*	RVC Class 160	10 75"	11 770"	02 152	0.252				
14 inch Sch 10814.00"13.50"122.3070.391200-6.000760-2270050-1360Sin 2014.00"13.260"116.1510.385200-6.000760-2270050-1360Sin 4014.00"12.14"116.1960.382200-6.000760-2270050-1360Sin 4014.00"12.14"111.1480.372200-6.000760-2270050-1360Sin 4014.00"12.14"111.1490.372200-6.000760-2270050-1360Sin 5014.00"15.00"156.720.348200-6.000140-3410070-2440Sin 5016.00"15.520"154.720.433300-5.0001140-3410070-2440Sin 4016.00"15.20"154.720.433300-5.0001140-3410070-2440Sin 4016.00"14.93"138.5480.42300-6.0001140-3410070-2440Sin 4016.00"14.93"138.5480.44300-6.0001140-3410070-2440Sin 5018.00"17.20"138.5480.44300-6.0001140-3410070-2440Sin 6018.00"17.20"198.280.448300-10.0001320-3790040-2270Sin 6018.00"17.20"199.280.448360-10.0001320-3790040-2270Sin 6018.00"17.20"199.280.448360-10.0001320-3790040-2270Sin 6018.00"17.20"199.280.448360-10.0011320-379004									
Sch 20 14 00" 13.375" 120.216 0.388 200-6.000 780-22700 50-1360 Sch 40 14.00" 13.124" 116.086 0.382 200-6.000 780-22700 50-1360 Sch 40 14.00" 13.124" 111.484 0.376 200-6.000 780-22700 50-1360 Sch 40 14.00" 13.00" 114.08 0.332 200-6.000 780-22700 50-1360 Sch 50 14.00" 15.50" 156.242 0.448 300-0.000 1140-34100 70-2440 Sch 50 15.50" 156.742 0.438 300-9.000 1140-34100 70-2440 Sch 50 15.20" 154.36" 0.418 300-9.000 1140-34100 70-2440 Sch 70 15.00" 15.20" 149.3410 70-2440 80-270 Sch 30 16.00" 15.20" 159.32" 0.48 350-10.000 1320-37900 80-2270 Sch 30 18.00" 77.35" 199.428 0.410.00 1320-37900 80-2						,			
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16 Inch Sch 10S 16.00" 15.50" 159.243 0.44 300-9.000 1140-34100 70-2040 Sch 20 16.00" 15.375" 156.742 0.435 300-9.000 1140-34100 70-2040 Sch 60 16.00" 14.285" 143.456 0.413 300-9.000 1140-34100 70-2040 Extra Strong, Sch 40 16.00" 14.314" 136.548 0.41 300-9.000 1140-34100 70-2040 Sch 80 16.00" 14.314" 136.548 0.41 300-9.000 1140-34100 70-2040 Sch 80 18.00" 17.50" 202.739 0.498 350-10.000 1320-37900 80-2270 Sch 80 18.00" 17.75" 198.928 0.494 350-10.000 1320-37900 80-2270 Sch 40 18.00" 16.70" 188.44 0.479 350-10.000 1320-37900 80-2270 Sch 40 18.00" 16.126" 172.152 0.467 350-10.000 1320-37900 80-2270 Sch 40 18.00" 18.01" 191-4540 90-2730 80-2270 1514-4400 <td< td=""><td>Extra Strong</td><td>14.00"</td><td>13.00"</td><td>114.098</td><td>0.33</td><td>200-6,000</td><td>760-22700</td><td>50-1360</td></td<>	Extra Strong	14.00"	13.00"	114.098	0.33	200-6,000	760-22700	50-1360	
Sch 20 16.0° 15.375° 156.742 0.436 300-9.000 1140-34100 70-2040 Std. W1, Sch 30 16.0° 15.250° 154.257 0.433 300-9.000 1140-34100 70-2040 Sch 80 16.00° 14.688° 143.456 0.419 300-9.000 1140-34100 70-2040 Sch 80 16.00° 14.314° 136.548 0.41 300-9.000 1140-34100 70-2040 Sch 80 16.00° 14.314° 136.548 0.41 300-9.000 1140-34100 70-2040 Sch 80 18.00° 17.350° 20.2739 0.498 350-10.000 1320-37900 80-2270 Sch 30 18.00° 16.50° 180.171 0.469 350-10.000 1320-37900 80-2270 Sch 40 18.00° 16.26° 191.25 0.482 350-10.000 1320-37900 80-2270 Sch 80 18.00° 18.02° 24.617 0.55 400-12.000 1510-45400 90-2730 Sch 40 20.0°	Sch 80	14.00"	12.50"	106.299	0.369	200-6,000	760-22700	50-1360	
Shit, Wi, Sch 30 16.0° 15.25° 154.267 0.433 300-9.000 1140-34100 70-2040 Sch 60 16.0° 14.688* 143.456 0.419 300-9.000 1140-34100 70-2040 Extra Strong, Sch 40 16.0° 14.314* 136.54 0.41 300-9.000 1140-34100 70-2040 18 inch Sch 10S 18.0° 17.50° 202.739 0.498 350-10.000 1320-37900 80-2270 Sch 30 18.0° 17.125° 196.943 0.494 350-10.000 1320-37900 80-2270 Sch 40 18.0° 16.80° 188.44 0.479 350-10.000 1320-37900 80-2270 Sch 40 18.0° 16.0° 191.25 0.462 350-10.000 1320-37900 80-2270 Sch 40 18.0° 18.0° 191.25 0.457 350-10.000 1320-37900 80-270 Sch 40 18.0° 17.0° 191.55 0.457 450-12.000 1510-45400 90-2730 Sch 40 20.0°	16 inch Sch 10S	16.00"	15.500"	159.243	0.44	300-9,000	1140-34100	70-2040	
Sch 80 16.0° 14.888° 143.456 0.419 300-9.000 1140-34100 70.2040 Extra Strong, Sch 40 16.0° 15.00° 149.394 0.427 300-9.000 1140-34100 70.2040 Sch 80 16.0° 14.314° 136.548 0.41 300-9.000 1320-37800 80-2270 Sch 20 18.0° 17.75° 198.428 0.494 350-10.000 1320-37800 80-2270 Sch 40 18.0° 17.26° 198.644 0.479 350-10.000 1320-37800 80-2270 Sch 40 18.0° 16.876° 188.464 0.479 350-10.000 1320-37800 80-2270 Sch 40 18.0° 16.50° 180.171 0.499 350-10.000 1320-37800 80-2270 Sch 40 18.0° 18.2° 172.1° 0.487 350-10.000 1320-37800 80-2270 Sch 40 18.0° 19.25° 0.462 350-10.000 1320-37800 80-270 Sch 40 18.0° 18.2° <	Sch 20	16.00"	15.375"	156.742	0.436	300-9,000	1140-34100	70-2040	
Extra Strong, Sch 4016.00"15.00"149.3940.427300-9.0001140-3410070-2040Sch 8016.00"14.314"136.5480.41300-9.0001140-3410070-204018 inch Sch 10S18.00"17.350"202.7390.498350-10.0001320-3790080-2270Sch 2018.00"17.124"194.0610.466350-10.0001320-3790080-2270Sch 3018.00"17.250"196.9430.49350-10.0001320-3790080-2270Sch 4018.00"16.676"180.1710.466350-10.0001320-3790080-2270Sch 6018.00"16.126"172.1520.442350-10.0001320-3790080-2270Sch 6018.00"16.126"172.1520.442350-10.0001320-3790080-2270Sch 4018.00"16.126"172.1520.457350-10.0001320-3790080-227020 inch Std, Wt, Sch 2020.00"18.92"246.1790.555400-12.0001510-4540090-273020 inch Std, Wt, Sch 2020.00"18.90"239.6660.547400-12.0001510-4540090-273021 inch Std, Wt, Sch 2020.00"19.00"239.6660.547400-12.0001510-4540090-273021 inch Std, Wt, Sch 2020.00"19.00"239.6660.547400-12.0001510-4540090-273022 inch Std, Wt, Sch 2020.00"19.00"239.6660.547400-12.0001510-4540090-2730 <td>Std. Wt., Sch 30</td> <td>16.00"</td> <td>15.250"</td> <td>154.267</td> <td>0.433</td> <td>300-9,000</td> <td>1140-34100</td> <td>70-2040</td>	Std. Wt., Sch 30	16.00"	15.250"	154.267	0.433	300-9,000	1140-34100	70-2040	
Sch 80 16.00* 14.314* 136.548 0.41 300-8,000 1140-34100 70-2040 18 inch Sch 10S 18.00* 17.500* 202.739 0.488 350-10,000 1320-37900 80-2270 Sch 20 18.00* 17.375* 199.828 0.494 350-10,000 1320-37900 80-2270 Sch 30 18.00* 17.26* 199.848 0.49 350-10,000 1320-37900 80-2270 Sch 40 18.00* 16.876* 189.464 0.479 350-10,000 1320-37900 80-2270 Sch 40 18.00* 16.02* 191.25 0.482 350-10,000 1320-37900 80-2270 Sch 40 18.00* 16.02* 172.152 0.482 350-10,000 1320-37900 80-2270 Sch 40 20.00* 18.812* 234.836 0.544 400-12,000 1510-45400 90-2730 Sch 40 20.00* 17.93* 21.14 0.511 400-12,000 1510-45400 90-2730 Sch 40 20.00*	Sch 60	16.00"	14.688"	143.456	0.419	300-9,000	1140-34100	70-2040	
18 lanch Sch 10S 18.00" 17.500" 202.739 0.498 350-10.000 1320-37900 80-2270 Sch 20 18.00" 17.375" 199.828 0.494 350-10.000 1320-37900 80-2270 Sch 30 18.00" 17.124" 194.061 0.486 350-10.000 1320-37900 80-2270 Sch 40 18.00" 16.676" 188.464 0.479 350-10.000 1320-37900 80-2270 Sch 40 18.00" 16.676" 180.171 0.469 350-10.000 1320-37900 80-2270 Sch 40 18.00" 16.267" 172.152 0.457 350-10.000 1320-37900 80-2270 Sch 40 18.00" 19.25" 246.179 0.555 400-12.000 1510-45400 90-2730 Sch 40 20.00" 18.812" 238.66 0.544 400-12.000 1510-45400 90-2730 Sch 80 20.00" 19.25" 246.179 0.515 400-12.000 1510-45400 90-2730 Sch 80 20.00" 19.25" 230.666 0.544 400-12.000 1510-45400 9	Extra Strong, Sch 40	16.00"	15.000"	149.394	0.427	300-9,000	1140-34100	70-2040	
Sch 20 18.00* 17.375* 199.828 0.494 350-10.000 1320-37900 80-2270 Sch 30 18.00* 17.124* 194.061 0.486 360-10.000 1320-37900 80-2270 Sch 40 18.00* 17.250* 196.943 0.49 350-10.000 1320-37900 80-2270 Sch 40 18.00* 16.800* 188.146 0.479 350-10.000 1320-37900 80-2270 Sch 40 18.00* 16.128* 172.152 0.482 350-10.000 1320-37900 80-2270 Sch 40 18.00* 16.128* 172.152 0.457 350-10.000 1320-37900 80-2270 Sch 40 20.00* 19.25* 246.179 0.555 400-12.000 1510-45400 90-2730 Sch 40 20.00* 19.00* 23.9666 0.547 400-12.000 1510-45400 90-2730 Sch 80 20.00* 17.938* 213.14 0.511 400-12.000 1510-45400 90-2730 Sch 80 22.00*	Sch 80	16.00"	14.314"	136.548	0.41	300-9,000	1140-34100	70-2040	
Sch 30 18.00" 17.124" 194.061 0.486 350-10.000 1320-37900 80-2270 Std. Wt. 18.00" 17.250" 196.943 0.49 350-10.000 1320-37900 80-2270 Sch 40 18.00" 16.500" 180.171 0.469 350-10.000 1320-37900 80-2270 Sch 60 18.00" 16.000" 191.25 0.462 350-10.000 1320-37900 80-2270 Sch 80 18.00" 16.126" 172.152 0.457 350-10.000 1320-37900 80-2270 Sch 80 18.00" 18.12" 24.836 0.54 400-12.000 1510-45400 90-2730 Sch 80 20.00" 19.802" 239.666 0.547 400-12.000 1510-45400 90-2730 Sch 80 20.00" 19.000" 292.6513 0.511 400-12.000 1510-45400 90-2730 Sch 80 21.00" 21.65" 301.975 0.621 500-15.000 1890-56800 110-3410 Sch 80 22.00"	18 inch Sch 10S	18.00"	17.500"	202.739	0.498	350-10,000	1320-37900	80-2270	
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Sch 40 18.00" 16.876" 188.464 0.479 350-10,000 1320-37900 80-2270 Sch 60 18.00" 16.500" 180.171 0.469 350-10,000 1320-37900 80-2270 Extra Strong 18.00" 16.126" 172.152 0.457 350-10,000 1320-37900 80-2270 Sch 80 18.00" 16.126" 172.152 0.457 350-10,000 1510-45400 90-2730 Sch 40 20.00" 18.812" 234.836 0.547 400-12,000 1510-45400 90-2730 Sch 80 20.00" 17.938" 213.14 0.511 400-12,000 1610-45400 90-2730 Sch 80 20.00" 17.938" 213.14 0.511 400-12,000 1690-56800 110-3410 Extra Strong, Sch 30 22.00" 21.05" 301.975 0.621 600-15,000 1890-56800 110-3410 Extra Strong 24.00" 23.25" 364.331 0.666 600-18,000 2270-68100 140-4090 Sch 40 <td>Sch 30</td> <td>18.00"</td> <td>17.124"</td> <td>194.061</td> <td>0.486</td> <td>350-10,000</td> <td>1320-37900</td> <td>80-2270</td>	Sch 30	18.00"	17.124"	194.061	0.486	350-10,000	1320-37900	80-2270	
Sch 60 18.0° 16.50° 180.171 0.469 350-10,000 1320-37900 80-2270 Extra Strong 18.0° 17.00° 191.25 0.482 350-10,000 1320-37900 80-2270 Sch 80 18.0° 16.126° 172.152 0.457 350-10,000 1320-37900 80-2270 20 inch Std. W1, Sch 20 20.0° 19.25° 246.179 0.555 400-12,000 1510-45400 90-2730 Sch 40 20.0° 18.812° 238.666 0.547 400-12,000 1510-45400 90-2730 Sch 80 20.0° 17.938° 213.14 0.511 400-12,000 180-56800 110-3410 Extra Strong, Sch 30 22.0° 21.0° 294.642 0.616 500-15,000 1890-56800 110-3410 Extra Strong 24.00° 23.25° 364.31 0.666 600-18,000 2270-68100 140-4090 Extra Strong 24.00° 23.25° 343.31 0.662 600-18,000 2270-68100 140-4090	Std. Wt.	18.00"	17.250"	196.943	0.49	350-10,000	1320-37900	80-2270	
Extra Strong18.0°17.00°191.250.482350-10,0001320-3790080-2270Sch 8018.0°16.126°172.1520.457350-10,0001320-3790080-227020 inch Std. W1, Sch 2020.0°19.25°246.1790.555400-12,0001510-4540090-2730Sch 4020.0°18.12°234.8360.547400-12,0001510-4540090-2730Extra Strong, Sch 3020.0°17.938°213.140.511400-12,0001810-4540090-273022 inch Std. W1, Sch 2022.0°21.25°301.9750.621500-15,0001890-56800110-3410Extra Strong, Sch 3022.0°21.0°294.6420.616500-15,0001890-56800110-3410Sch 8022.0°19.75°259.5130.573500-15,0001890-56800110-3410Sch 8022.0°19.75°259.5130.561600-18,0002270-68100140-4090Sch 4024.00°23.25°364.3310.666600-18,0002270-68100140-4090Sch 4024.00°22.624°344.1090.652600-18,0002270-68100140-4090Sch 8024.00°23.56°311.2710.628600-18,0002270-68100140-4090Sch 4026.00°25.55°433.2470.716700-21,0002650-79500160-4770Sch 8027.0°26.0°27.0°150.6780.77900-23,0003410-87100200-5220Sch 4028.0	Sch 40	18.00"	16.876"	188.464	0.479	350-10,000	1320-37900	80-2270	
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Sch 80 18.00" 16.126" 172.152 0.457 350-10.000 1320-37900 80-2270 20 inch Std. WL, Sch 20 20.00" 19.25" 246.179 0.555 400-12.000 1510-45400 90-2730 Sch 40 20.00" 18.812" 234.836 0.54 400-12.000 1510-45400 90-2730 Sch 80 20.00" 17.938" 213.14 0.511 400-12.000 1510-45400 90-2730 Sch 80 20.00" 21.25" 301.975 0.621 500-15.000 1890-56800 110-3410 Extra Strong, Sch 30 22.00" 21.05" 259.513 0.573 500-15.000 1890-56800 110-3410 Sch 80 24.00" 23.25" 364.331 0.666 600-18.000 2270-68100 140-4090 Extra Strong 24.00" 22.624" 344.109 0.652 600-18.000 2270-68100 140-4090 Sch 40 24.00" 25.57" 433.247 0.716 700-21.000 2650-79500 160-4770 <td< td=""><td>Extra Strong</td><td>18.00"</td><td>17.000"</td><td>191.25</td><td>0.482</td><td>350-10,000</td><td>1320-37900</td><td>80-2270</td></td<>	Extra Strong	18.00"	17.000"	191.25	0.482	350-10,000	1320-37900	80-2270	
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Sch 40 32.00" 30.624" 650.919 0.873 1,200-35,000 4540-132500 270-7950 34 inch Sch 10 34.00" 33.312" 777.566 0.964 1,300-40,000 4920-151400 300-9080	Std. Wt.	32.00"	31.25"	679.355	0.893	1,200-35,000	4540-132500	270-7950	
34 inch Sch 10 34.00" 33.312" 777.566 0.964 1,300-40,000 4920-151400 300-9080	Sch 20, Extra Strong	32.00"	31.00"	667.922	0.885	1,200-35,000	4540-132500	270-7950	
	Sch 40	32.00"	30.624"	650.919	0.873	1,200-35,000	4540-132500	270-7950	
Std. Wt. 34.00" 33.25" 774.511 0.962 1,300-40,000 4920-151400 300-9080	34 inch Sch 10	34.00"	33.312"	777.566	0.964	1,300-40,000	4920-151400	300-9080	
	Std. Wt.	34.00"	33.25"	774.511	0.962	1,300-40,000	4920-151400	300-9080	

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	FS350B AND	FS350SS	K VALUE, OFF	SET AND SU	GGESTED OPER	ATING RANGE	
PIPE SIZE	PIPE O.D.	PIPE I.D.	K-FACTOR	OFFSET	SUGGESTED OPERATING RANGE (GALLONS/MINUTE)	SUGGESTED OPERATING RANGE (LITERS/MINUTE)	SUGGESTED OPERATING RANGE (CUBIC METERS/HOUR)
Extra Strong, Sch 20	34.00"	33.00"	762.258	0.953	1,300-40,000	4920-151400	300-9080
Sch 40	34.00"	32.624"	744.022	0.94	1,300-40,000	4920-151400	300-9080
36 inch Sch 10	36.00"	35.376"	882.855	1.04	1,500-45,000	5680-170300	340-10220
Std. Wt.	36.00"	35.25"	876.227	1.035	1,500-45,000	5680-170300	340-10220
Sch 20, Extra Strong	36.00"	35.00"	863.154	1.025	1,500-45,000	5680-170300	340-10220
Sch 40	36.00"	34.50"	837.315	1.007	1,500-45,000	5680-170300	340-10220

UFS SERIES PRESSURE LOSS: GALLONS PER MINUTE																	
PART NUMBER	0.25	0.5	1	5	10	15	20	30	40	50	60	75	100	125	150	175	200
UFS100	0	0	0	0.06	0.25	0.56	0.99	2.23	3.96	6.18							
UFS150		0	0	0.01	0.04	0.09	0.15	0.34	0.61	0.95	1.37	2.14	3.8				
UFS200		0	0	0.01	0.02	0.05	0.08	0.18	0.33	0.51	0.73	1.14	2.03	3.17	4.57	6.22	8.13

SPECIFICATIONS

Model UFS100, UFS150, or UFS200 Ultrasonic Flow Sensor

The flow sensor shall be an in-line type with Ultrasonic transducers and acoustical reflectors, and no moving parts. The body material shall be Glass Filled Nylon (GFN). The upper electronics housing shall be Poly Phenyl Oxide (PPO). The flow sensor shall be rated for IP 68 and/or NEMA 4X, suitable for pollution degree 4 environments, outdoor use below grade, and submerged installations <3 feet of water. Electrical connections shall be 4 feet of 2-conductor AWG 18 UL PTLC drain wire provided for connection to irrigation controller. Rated to 221° F. May be extended to a maximum of 2000 feet with 20 AWG (or larger) shielded flow sensing cable (Paige Electric P7162D or equal) suitable for direct burial, or appropriate for installation. The sensor shall be capable of operating in line pressure up to 200 psi (13.7 bars) and liquid temperatures ranging 32° F (0° C) to 150° F (65° C). Flow measurement shall be 0.3 to 50 GPM (gallons per minute) for 1" pipe diameters, 0.5 to 110 GPM for 1.5" pipe diameters, and 1.0 to 200 GPM for 2" pipe diameters. Measurement shall have accuracy of ±2% and repeatability of ±2%. The flow sensor shall be available in 1". 1.5", and 2" (25 MM, 40 MM 50 MM) with socket end connections This flow sensor shall be Rain Bird Model UFS100, UFS150, or UFS200.

Model FS100B & FS150B Impeller Flow Sensor

The flow sensor shall be an in line type with a nonmagnetic, 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, ethylenepropylene 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 18 AWG leads 48 inches (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 pressures up to 400 psi (27,5 bars) and liquid temperatures up to 220° F (105°C), and operating in flows of 1/2 foot (0,15 meters) per second to 15 feet (4,5 meters) per second with linearity of ±1% and repeatability of ±1%. The meter body shall be cast 85-5-5-5 bronze, in 1" (25 mm) and 11/2" (40 mm) , female iron pipe thread sizes. This flow sensor shall be Rain Bird Model FS100B or FS150B.

Model FS200B Impeller Flow Sensor

The flow sensor shall be an insertion type with a nonmagnetic, spinning impeller (paddle wheel) as the only moving part. The sensor sleeve shall be bronze, with the sensor housing being PPS. The sensor shall be mounted in a 2" malleable bronze tee. The sensor shall be a nonmagnetic, spinning impeller (paddle wheel) as the only moving part. The impeller shall be glass-filled nylon with a UHMWPE sleeve bearing. The shaft material shall be tungsten carbide. The sensor electronics will be potted in an epoxy compound designed for prolonged immersion. Electrical connections shall be 2 single conductor 18 AWG leads 48 inches long, U.L Style type PTLC wire. The sensor shall operate in line pressures up to 200 psi and liquid temperatures up to 100° F, and operate in flows of $\frac{1}{2}$ foot per second to 30 feet per second with accuracy of ± 1% of full scale and repeatability of ± 0.3%. This flow sensor shall be Rain Bird Model FS200B.

Model FS100P Flow Sensor

The flow sensor shall be an in line type with a nonmagnetic, 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, 18AWG solid copper wire leads extending from the top of the sensor. The sensor shall operate in line pressures up to 150 psi at liquid temperatures up to 73° F, or up to 75 PSIG at liquid temperatures up to 110° F. The sensor shall operate in flows of 2 foot per second to 20 feet per second with linearity of ± 3% and repeatability of ± 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 in 1/2", 3/4", and 1" (12mm, 20mm, and 25mm) solvent weld socket end connections. This flow sensor shall be Rain Bird Model FS100P.

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Model FS150P, FS200P, FS300P or FS400P Impeller Flow Sensor

The flow sensor shall be an in-line type with a nonmagnetic, 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, ethylenepropylene O-Rings and shall be easily removed from the meter body. The sensor electronics will be potted in an epoxy compound designed for prolongs immersion. Electrical connections shall be 2 single conductor 18 AWG leads 48 inches (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 100 psi (6.9 bars) and liquid temperatures up to 140°F (60° C), and operating in flows of 1/2 foot (0,15 meters) per second to 30 feet (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 11/2", 2", 3", and 4" (40mm, 50mm, 75mm, and 110mm) with socket end connections. This flow sensor shall be Rain Bird Model FS150P. FS200P, FS300P or FS400P.

Model IFS150PBSP, IFS200PBSP, or IF-S300PBSP

The flow sensor shall be an in-line type with a nonmagnetic, 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 18 AWG leads 48 inches (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 100 psi (6.9 bars) and liquid temperatures up to 140° F (60° C), and operating in flows of 12 foot (0.15 meters) per second to 30 feet (9.2 meters) per second with linearity of ±1% and repeatability of ±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 nonmagnetic, 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 18 AWG leads 48 inches (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 100 psi (6.9 bars) and liquid temperatures up to 140° F (60° C), and operating in flows of 1/2 foot (0.15 meters) per second to 30 feet (9.2 meters) per second with linearity of ±1% and repeatability of ±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.

Model FS350B Impeller Flow Sensors

The flow sensor shall be an insertion type with a nonmagnetic, spinning impeller

(paddle wheel) as the only moving part. The sensor sleeve will be brass with the sensor housing being PPS.

The impeller shall be glassfilled nylon or Tefzel with a UHMPWE or Tefzel sleeve. The shaft material shall be tungsten carbide. The sensor will be supplied with a 2" (50mm) NPT adapter for installation into any commercially available weld-on fitting or pipe saddle. The adapter shall have two, ethylenepropylene O-Rings. The sensor electronics will be potted in an epoxy compound designed for prolonged immersion. Electrical connections shall be 2 single conductor 18AWG leads 48 inches (1,2 meters) long. Insulation shall be direct burial "UF" type colored red for the positive lead and black for the negative lead. Insertion of the sensor into any pipe size shall be 11/2" (40mm) from the inside wall to the end of the sensor housing. The sensor shall be capable of operating in line pressures up to 400 psi (27,5 bars) and liquid temperatures up to 220° F (105°C), and operating in flows of 1/2 foot (0,15 meters) per second to 30 feet (9,2 meters) per second. This flow sensor shall be Rain Bird Model FS350B.

Model PT322 Pulse Output Transmitter

The Pulse Output Transmitter shall receive signals for any Rain Bird flow sensor and produce a dry contract closure in units of measure that can be defined by the user. Calibration shall be achieved by connecting to a computer with Rain Bird PT322SW software. All information set in the software is sent to the PT322 via a supplied cable. The PT322 shall feature two diagnostic LED's, one corresponding to the input signal and one corresponding to the output signal. Model PT322 transmitter shall operate on 12-30 VDC/VAC power (using PTPWRSUPP Power Supply.) Models shall be provided in epoxy filled enclosures. The Pulse Output Transmitter shall be Rain Bird Model PT322.

*Tefzel® is a registered trademark of DuPont.

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