

**Technical Data Sheet**

**F-1000 Series - Digital Paddlewheel Flowmeter with Saddle & Tee Fittings**

**F-1000 Features:**

- Easy to read 6 digit LCD, up to 4 decimal positions.
- Tamper proof.
- Battery operated (2 AAA batteries included).
- 3 model variations:
  - RB = RATE ONLY
  - TB = TOTAL ONLY
  - RT = RATE & TOTALIZER
- Total reset function can be disabled.
- Display update time: Rate 1.5 sec., Total 0.5 sec.
- Factory calibrated - nothing to program.
- Custom calibration units available. Contact the factory.
- Weather resistant ABS enclosure. NEMA 4X
- LCD is not recommended for direct sunlight applications.

**F-1000 Specifications:**

Max. Working Pressure ..... 300 psig (20 bar) @ 70° F (21° C)  
 Max. Fluid Temperature ..... 200° F (93° C) @ 0 PSI (all PVDF saddles and SS Tee fittings)  
 140° F (60° C) @ 0 PSI (all PVC saddles and PVC Tee fittings)  
 Note: Temperature rating of F-1000 only. Actual pipe rating may vary.  
 Full scale accuracy ..... +/- 2%  
 Saddle material..... PVDF (1-1/2", 2", 3", 50mm, 63mm, 90mm sizes)  
 PVC (all other sizes)  
 Sensor/Paddle/Axle material . PVDF  
 O-ring seals: ..... Viton  
 Max. pressure drop: ..... 0 psi (no significant pressure drop)  
 Approximate shipping weight. 2 lb. (.91 kg)



Saddle Mount  
RT-300S8-GPM1



316 Stainless Steel Tee  
RT-100ST-GPM1



PVC Tee  
RT-200AT-GPM1

**Models for Saddle mounting on U.S. IPS Pipe (ASTM 1785)**

**SCHEDULE 40 MODELS**

**SCHEDULE 80 MODELS**

Pipe Size	GPM Flow Range	RATE ONLY			TOTAL ONLY			RATE & TOTAL		
		Model Number	Model Number	Model Number	Model Number	Model Number	Model Number	Model Number	Model Number	
1-1/2"	15 to 150	RB-150S4-GPM1	TB-150S4-GPM1	RT-150S4-GPM1	RB-150S8-GPM1	TB-150S8-GPM1	RT-150S8-GPM1	RB-200S8-GPM1	TB-200S8-GPM1	RT-200S8-GPM1
2"	30 to 300	RB-200S4-GPM1	TB-200S4-GPM1	RT-200S4-GPM1	RB-250S8-GPM1	TB-250S8-GPM1	RT-250S8-GPM1	RB-300S8-GPM1	TB-300S8-GPM1	RT-300S8-GPM1
2-1/2"	40 to 400	RB-250S4-GPM1	TB-250S4-GPM1	RT-250S4-GPM1	RB-400S8-GPM1	TB-400S8-GPM1	RT-400S8-GPM1	RB-600S8-GPM1	TB-600S8-GPM1	RT-600S8-GPM1
3"	60 to 600	RB-300S4-GPM1	TB-300S4-GPM1	RT-300S4-GPM1	RB-800S8-GPM1	TB-800S8-GPM1	RT-800S8-GPM1	RB-1000S8-GPM1	TB-1000S8-GPM1	RT-1000S8-GPM1
4"	100 to 1000	RB-400S4-GPM1	TB-400S4-GPM1	RT-400S4-GPM1	RB-1200S8-GPM1	TB-1200S8-GPM1	RT-1200S8-GPM1			
6"	250 to 2500	RB-600S4-GPM1	TB-600S4-GPM1	RT-600S4-GPM1						
8"	400 to 4000	RB-800S4-GPM1	TB-800S4-GPM1	RT-800S4-GPM1						
10"	600 to 6000	RB-1000S4-GPM1	TB-1000S4-GPM1	RT-1000S4-GPM1						
12"	800 to 8000	RB-1200S4-GPM1	TB-1200S4-GPM1	RT-1200S4-GPM1						

**Models for mounting on Solvent Weld PVC TEE**

**GPM MODELS**

**LPM MODELS**

Pipe Size	GPM Flow Range	RATE ONLY			TOTAL ONLY			LPM Flow Range	RATE ONLY			TOTAL ONLY			RATE & TOTAL		
		Model Number	Model Number	Model Number	Model Number	Model Number	Model Number		Model Number	Model Number	Model Number	Model Number	Model Number	Model Number	Model Number		
1"	6 to 60	RB-100AT-GPM1	TB-100AT-GPM1	RT-100AT-GPM1			25 to 250	RB-100AT-LPM1	TB-100AT-LPM1	RT-100AT-LPM1							
1-1/2"	15 to 150	RB-150AT-GPM1	TB-150AT-GPM1	RT-150AT-GPM1			60 to 600	RB-150AT-LPM1	TB-150AT-LPM1	RT-150AT-LPM1							
2"	30 to 300	RB-200AT-GPM1	TB-200AT-GPM1	RT-200AT-GPM1			100 to 1000	RB-200AT-LPM1	TB-200AT-LPM1	RT-200AT-LPM1							

**Models for mounting on F/NPT 316 Stainless Steel TEE**

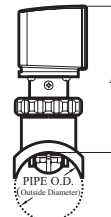
**GPM MODELS**

**LPM MODELS**

Pipe Size	GPM Flow Range	RATE ONLY			TOTAL ONLY			LPM Flow Range	RATE ONLY			TOTAL ONLY			RATE & TOTAL		
		Model Number	Model Number	Model Number	Model Number	Model Number	Model Number		Model Number	Model Number	Model Number	Model Number	Model Number	Model Number			
1"	6 to 60	RB-100ST-GPM1	TB-100ST-GPM1	RT-100ST-GPM1			25 to 250	RB-100ST-LPM1	TB-100ST-LPM1	RT-100ST-LPM1							
1-1/2"	15 to 150	RB-150ST-GPM1	TB-150ST-GPM1	RT-150ST-GPM1			60 to 600	RB-150ST-LPM1	TB-150ST-LPM1	RT-150ST-LPM1							
2"	30 to 300	RB-200ST-GPM1	TB-200ST-GPM1	RT-200ST-GPM1			100 to 1000	RB-200ST-LPM1	TB-200ST-LPM1	RT-200ST-LPM1							

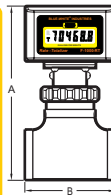
**Saddle Dim.**

PIPE SIZE IN.(MM)	A	B
150(050)	4-5/16"	3-3/16"
200(063)	4-5/16"	3-3/16"
250 (75)	4-5/16"	3-3/16"
300(090)	4-5/16"	3-3/16"
400(110)	4-5/16"	3-3/16"
600(160)	4-1/4"	3-3/16"
800(200)	4-1/4"	3-3/16"
1000(250)	4-1/4"	4-1/2"
1200(315)	4-1/4"	4-1/2"



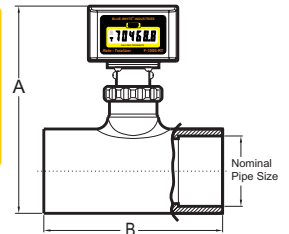
**316 SS Tee Dimensions**

MODEL	A	B
RB-100	5-1/2"	3"
RB-150	6-1/4"	3-13/16"
RB-200	6-3/4"	4-7/16"



**PVC Tee Dimensions**

MODEL	A	B
RB-100	4"	6"
RB-150	4-1/2"	6-5/8"
RB-200	4-3/4"	7-1/8"



## Installation Guidelines

# F-1000 Series - Digital Paddlewheel Flowmeter with Saddle & Tee Fittings

### Fluid Flow Stream Requirements

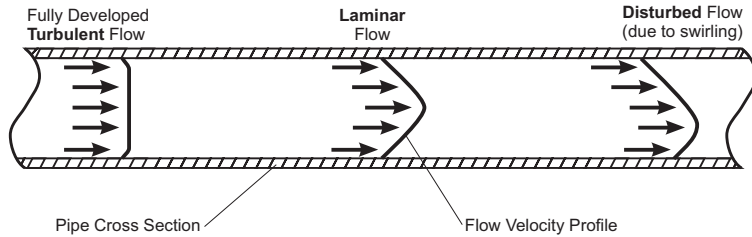
Measuring accuracy requires a fully developed **turbulent** flow profile. Pulsating, swirling and other disruptions in the flow stream will effect accuracy. Flow conditions with a **Reynolds Number** greater than 4000 will result in a fully developed **turbulent** flow. A Reynolds Number less than 2000 is **laminar** flow and may result in inaccurate readings.

REYNOLDS NUMBER EQUATION:

$$\text{REYNOLDS NUMBER} = \frac{3160 \times Q \times G}{D \times V}$$

Where:

Flow rate of the fluid in GPM = Q  
Specific gravity of the fluid = G  
Pipe inside diameter in inches = D  
Fluid viscosity in centipoise = V



### Minimum Straight Pipe Length Requirements

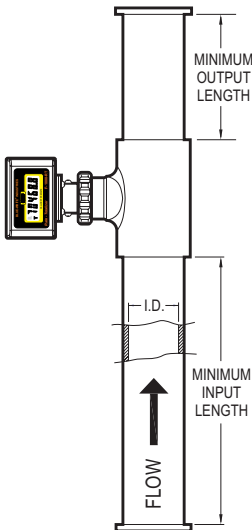
The meter's accuracy is affected by disturbances such as pumps, elbows, tees, valves, etc., in the flow stream. Install the meter in a straight run of pipe **as far as possible** from any disturbances. The distance required for accuracy will depend on the type of disturbance.

Type Of Disturbance	Minimum Inlet Pipe Length	Minimum Outlet Pipe Length
Flange	10 X Pipe Inside Diameter	5 X Pipe Inside Diameter
Reducer	15 X Pipe Inside Diameter	5 X Pipe Inside Diameter
90° Elbow	20 X Pipe Inside Diameter	5 X Pipe Inside Diameter
Two 90° Elbows -1 Direction	25 X Pipe Inside Diameter	5 X Pipe Inside Diameter
Two 90° Elbows -2 Directions	40 X Pipe Inside Diameter	5 X Pipe Inside Diameter
Pump Or Gate Valves	50 X Pipe Inside Diameter	5 X Pipe Inside Diameter

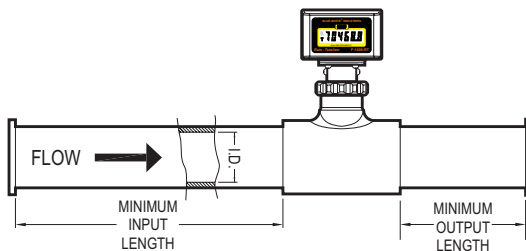
### Mounting location and pressure/temperature requirements

- The meter is designed to withstand outdoor conditions. A cool, dry location, where the unit can be easily serviced is recommended.
- The meter can be mounted on horizontal or vertical runs of pipe. Mounting at the vertical (twelve o'clock) position on horizontal pipe is recommended. Mounting anywhere around the diameter of vertical pipe is acceptable, however, the pipe must be completely full of water at all times. Back pressure is essential on downward flows. See the minimum straight length of pipe requirement chart above.
- The meter can accurately measure flow from either direction.

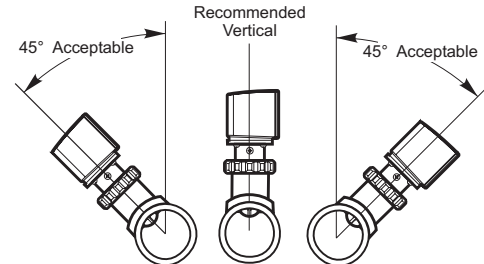
#### Vertical Mount



#### Horizontal Mount



#### Angle Mount on Horizontal Pipe



### Maximum Temperature vs. Pressure

