

# F-1000

Saddle Mount Fitting

Three Model Variations:

- Rate of flow display
- Total flow display
- Rate & Total display



## Features:

- High accuracy digital paddlewheel technology.
- 1-1/2" through 12" and 50mm through 315mm pipe sizes.
- Flow rate from 15 to 8000 GPM ( 70 to 27000 LPM).
- Mounts vertically or horizontally.
- NEMA 4X (IP56) enclosure (not for direct sunlight).
- Easy to read 6 digit LCD display, up to 4 decimal places.
- Tamper proof factory programming.
- Battery operated (2 AAA batteries included).
- Very low pressure drop.
- Total reset function can be disabled.

## Specifications:

### Pipe Requirements:

(Inch dimensions) .....IPS pipe size (ASTM-D-1785)

(Metric dimensions) .....Metric pipe size (DIN 8062)

**Max. Psi (bar):** .....300 PSI (20 bar) @ 70° F (21° C)

**Max. fluid temp.:** .....PVDF saddle, 200° F (93° C) @ 0 PSI

.....PVC saddle, 140° F (60° C) @ 0 PSI

**Full scale accuracy:** .....+/- 2%

**Max. ambient temp.:** .....14° to 110° F/ -10° to 43° C

*Note: Temperature & Pressure ratings of meter only. Actual pipe rating may vary.*

**Max pressure drop:** .....0 PSI (No significant pressure drop)

**Power requirement:** .....2 AAA batteries (included)

**Enclosure:** .....NEMA 4X (IP56)

**Approximate shipping wt:** ...2 lb. (.91 kg)

## Materials of Construction:

**Saddle:**.....PVDF or PVC

**Sensor, paddlewheel, axle:** .....PVDF

**Sensor & saddle O-ring seals:** .....Viton<sup>®</sup> (optional EP)

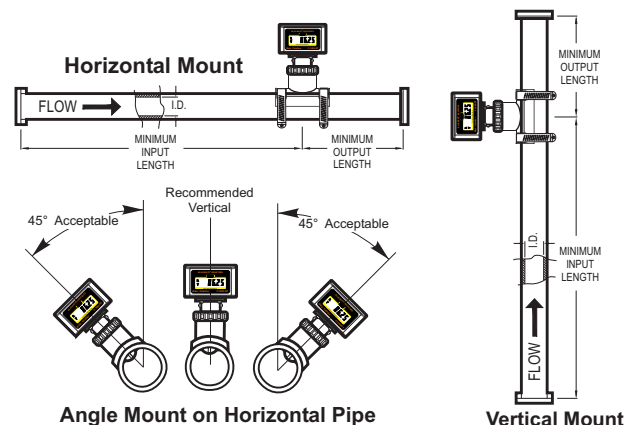
**Pipe Clamp:** .....300 series Stainless Steel

## Installation Requirements:

### 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.

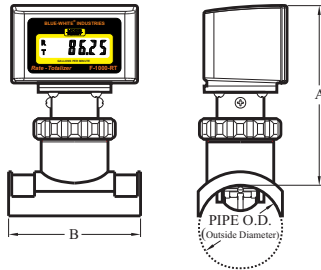
Type Of Disturbance	Minimum Inlet Pipe Length	Minimum Outlet Pipe Length
Flange	10 X Pipe I.D.	5 X Pipe I.D.
Reducer	15 X Pipe I.D.	5 X Pipe I.D.
90° Elbow	20 X Pipe I.D.	5 X Pipe I.D.
Two Elbows -1 Direction	25 X Pipe I.D.	5 X Pipe I.D.
Two Elbows -2 Directions	40 X Pipe I.D.	5 X Pipe I.D.
Pump Or Gate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



### Mounting location

- 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.

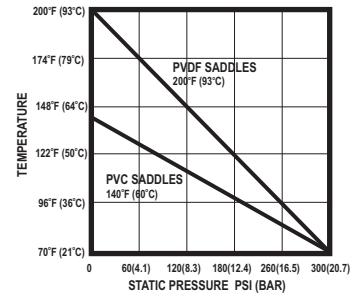
### Dimensions:



Pipe Size	A	B
1-1/2" (50mm)	4-5/16" (110)	3-3/16" (81)
2" (63mm)	4-5/16" (110)	3-3/16" (81)
2-1/2" (75mm)	4-5/16" (110)	3-3/16" (81)
3" (90mm)	4-5/16" (110)	3-3/16" (81)
4" (110mm)	4-5/16" (110)	3-3/16" (81)
6" (160mm)	4-1/4" (108)	3-3/16" (81)
8" (200mm)	4-1/4" (108)	3-3/16" (81)
10" (250mm)	4-1/4" (108)	4-1/2" (114)
12" (315mm)	4-1/4" (108)	4-1/2" (114)

Inches (mm)

Maximum Temperature vs. Pressure



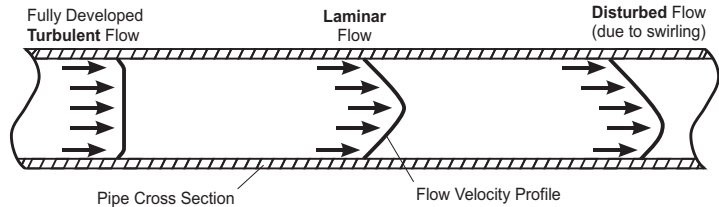
### Flow Stream Requirements:

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.

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

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



### Model Number Matrix:

RT - 150 S4 - GPM 1

Display Function
RB = Rate of flow only
TB = Total flow amount only
RT = Rate and Total flow

Pipe Size	
150 = 1.5"	050 = 50mm
200 = 2"	063 = 63mm
250 = 2.5"	075 = 75mm
300 = 3"	090 = 90mm
400 = 4"	110 = 110mm
600 = 6"	160 = 160mm
800 = 8"	200 = 200mm
1000 = 10"	250 = 250mm
1200 = 12"	315 = 315mm

Pipe size, type and saddle material
<b>IPS SCH40 PIPE</b>
S4 = 1.5", 2", 3" PVDF
2.5", 4", 6", 8", 10", 12" PVC
<b>IPS SCH80 PIPE</b>
S8 = 1.5", 2", 3" PVDF
2.5", 4", 6", 8", 10", 12" PVC
<b>METRIC PN 10 PIPE</b>
P0 = 50, 63, 90mm PVDF
75, 110, 160, 200, 250, 315mm PVC
<b>METRIC PN 16 PIPE</b>
P6 = 50, 63, 90mm PVDF
75, 110, 160, 200mm PVC

Calibration Flow Range
1 = Range 1
(Saddle units are offered in only one range)

Calibration Units
GPM = U.S. Gal per min
GPH = U.S. Gal per hour
OZM = U.S. Oz per min
CFM = Cubic Ft per min
AFD = Acre Ft per day
LPM = Liters per min
LPH = Liters per hour
M3H = Cubic Mtr per hour
IGM = Imperial Gal per min
IGH = Imperial Gal per hour

### Pipe Size, Flow Range and Display Model Options:

#### Models for U.S. IPS Sch40 Pipe (ASTM 1785)

Display in U.S. Gallons per Minute

Pipe Size	GPM Flow Range	RATE ONLY Model Number	TOTAL ONLY Model Number	RATE & TOTAL Model Number
1.5"	15 to 150	RB-150S4-GPM1	TB-150S4-GPM1	RT-150S4-GPM1
2"	30 to 300	RB-200S4-GPM1	TB-200S4-GPM1	RT-200S4-GPM1
2.5"	40 to 400	RB-250S4-GPM1	TB-250S4-GPM1	RT-250S4-GPM1
3"	60 to 600	RB-300S4-GPM1	TB-300S4-GPM1	RT-300S4-GPM1
4"	100 to 1000	RB-400S4-GPM1	TB-400S4-GPM1	RT-400S4-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 METRIC PN10 Pipe (DIN 8062)

Display in Liters per Minute.

Pipe Size	LPM Flow Range	RATE ONLY Model Number	TOTAL ONLY Model Number	RATE & TOTAL Model Number
50mm	70 to 700	RB-050P0-LPM1	TB-050P0-LPM1	RT-050P0-LPM1
63mm	110 to 1100	RB-063P0-LPM1	TB-063P0-LPM1	RT-063P0-LPM1
75mm	150 to 1500	RB-075P0-LPM1	TB-075P0-LPM1	RT-075P0-LPM1
90mm	230 to 2300	RB-090P0-LPM1	TB-090P0-LPM1	RT-090P0-LPM1
110mm	350 to 3500	RB-110P0-LPM1	TB-110P0-LPM1	RT-110P0-LPM1
160mm	720 to 7200	RB-160P0-LPM1	TB-160P0-LPM1	RT-160P0-LPM1
200mm	1150 to 11500	RB-200P0-LPM1	TB-200P0-LPM1	RT-200P0-LPM1
250mm	1700 to 17000	RB-250P0-LPM1	TB-250P0-LPM1	RT-250P0-LPM1
315mm	2700 to 27000	RB-315P0-LPM1	TB-315P0-LPM1	RT-315P0-LPM1