

# Blue-White<sup>®</sup>

## Industries, Ltd.

### DigiFlo Digital Paddlewheel Meters

#### Engineering and Technical Data

# F-1000

Molded In-line Fitting

Three Model Variations:

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



### Features:

- High accuracy digital paddlewheel technology.
- 3/8", 1/2", 3/4", 1", 1-1/2", and 2" male pipe threads.
- Flow rate from .4 to 200 GPM (1 to 700 LPM).
- Tamper proof factory programming.
- Easy to read 6 digit LCD display, up to 4 decimal places.
- Battery operated (2 AAA batteries included).
- Very low pressure drop.
- Total reset function can be disabled.

### Specifications:

Max. working pressure: .....300 PSI (20 bar) @ 70° F (21° C)

Max. fluid temperature: .....200° F (93° C) @ 0 PSI

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

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

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

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

Maximum pressure drop: .....8 PSI (0.5 bar) (varies per model)

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

### Materials of Construction:

Pipe fitting: .....Polypropylene (options: PVDF)

Sensor, paddlewheel, axle: ..PVDF

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

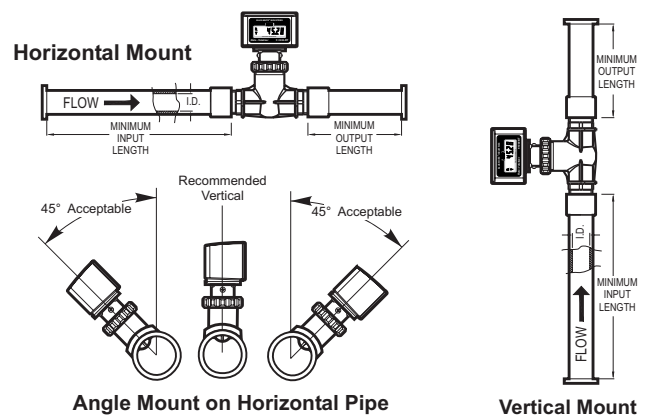
Enclosure: .....ABS

### 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

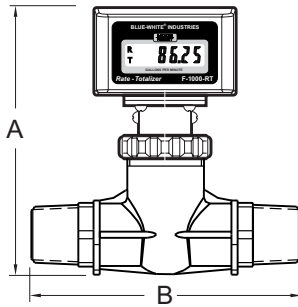
- The meter is designed to withstand outdoor conditions. A cool, dry location, where the unit can be easily serviced is recommended.
- The meter can be mounted on horizontal or vertical runs of pipe. Mounting at the vertical (twelve o'clock) position on horizontal pipe is recommended. Mounting anywhere 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.

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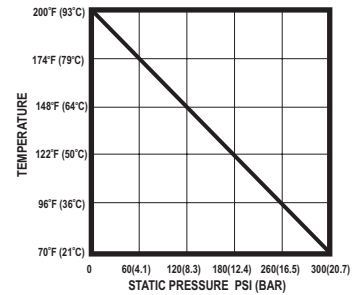
#### Dimensions:



Pipe Size	A	B
3/8"	5-3/8" (137)	4-3/4" (121)
1/2"	5-3/8" (137)	5-1/8" (130)
3/4"	5-5/8" (143)	5-1/4" (133)
1"	5-5/8" (143)	5-5/8" (143)
1-1/2"	6-1/8" (156)	6-1/2" (165)
2"	6-3/8" (162)	6-3/4" (171)

Inches (mm)

Maximum Temperature vs. Pressure



#### Flow Stream Requirements:

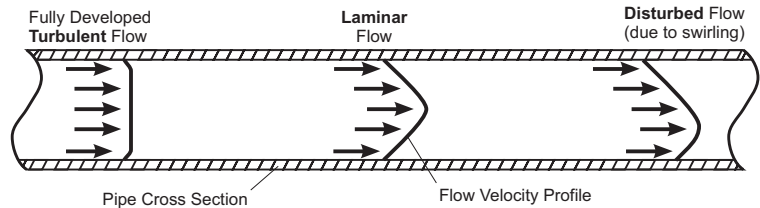
Measuring accuracy requires a fully developed **turbulent** flow profile. Pulsating, swirling and other disruptions in the flow stream will effect accuracy. Flow conditions with a **Reynolds Number** greater than 4000 will result in a fully developed **turbulent** flow. A Reynolds Number less than 2000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

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



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

##### Models with Polypropylene Pipe Fitting Material

###### Models With BSPT Threads Display in Imperial Gallons per Minute

Pipe Size	RATE ONLY		TOTAL ONLY		RATE & TOTAL	
	IGM Range	Model Number	Model Number	Model Number	Model Number	Model Number
3/8"	.8 to 8	RB-375MB-IGM1	TB-375MB-IGM1	RT-375MB-IGM1		
3/8"	.4 to 4	RB-375MB-IGM2	TB-375MB-IGM2	RT-375MB-IGM2		
1/2"	2 to 20	RB-500MB-IGM1	TB-500MB-IGM1	RT-500MB-IGM1		
1/2"	.5 to 5	RB-500MB-IGM2	TB-500MB-IGM2	RT-500MB-IGM2		
3/4"	3 to 30	RB-750MB-IGM1	TB-750MB-IGM1	RT-750MB-IGM1		
3/4"	.8 to 8	RB-750MB-IGM2	TB-750MB-IGM2	RT-750MB-IGM2		
1"	5 to 50	RB-100MB-IGM1	TB-100MB-IGM1	RT-100MB-IGM1		
1"	2 to 20	RB-100MB-IGM2	TB-100MB-IGM2	RT-100MB-IGM2		
1-1/2"	4 to 40	RB-150MB-IGM1	TB-150MB-IGM1	RT-150MB-IGM1		
1-1/2"	6 to 60	RB-150MB-IGM2	TB-150MB-IGM2	RT-150MB-IGM2		
1-1/2"	10 to 100	RB-150MB-IGM3	TB-150MB-IGM3	RT-150MB-IGM3		
2"	4 to 40	RB-200MB-IGM1	TB-200MB-IGM1	RT-200MB-IGM1		
2"	6 to 60	RB-200MB-IGM2	TB-200MB-IGM2	RT-200MB-IGM2		
2"	10 to 100	RB-200MB-IGM3	TB-200MB-IGM3	RT-200MB-IGM3		
2"	20 to 200	RB-200MB-IGM4	TB-200MB-IGM4	RT-200MB-IGM4		

###### Models With U.S. NPT Threads Display in Liters per Minute.

Pipe Size	RATE ONLY		TOTAL ONLY		RATE & TOTAL	
	LPM Range	Model Number	Model Number	Model Number	Model Number	Model Number
3/8"	3 to 30	RB-375MI-LPM1	TB-375MI-LPM1	RT-375MI-LPM1		
3/8"	1 to 10	RB-375MI-LPM2	TB-375MI-LPM2	RT-375MI-LPM2		
1/2"	7 to 70	RB-500MI-LPM1	TB-500MI-LPM1	RT-500MI-LPM1		
1/2"	2 to 20	RB-500MI-LPM2	TB-500MI-LPM2	RT-500MI-LPM2		
3/4"	11 to 110	RB-750MI-LPM1	TB-750MI-LPM1	RT-750MI-LPM1		
3/4"	3 to 30	RB-750MI-LPM2	TB-750MI-LPM2	RT-750MI-LPM2		
1"	20 to 200	RB-100MI-LPM1	TB-100MI-LPM1	RT-100MI-LPM1		
1"	7 to 70	RB-100MI-LPM2	TB-100MI-LPM2	RT-100MI-LPM2		
1-1/2"	15 to 150	RB-150MI-LPM1	TB-150MI-LPM1	RT-150MI-LPM1		
1-1/2"	25 to 250	RB-150MI-LPM2	TB-150MI-LPM2	RT-150MI-LPM2		
1-1/2"	40 to 400	RB-150MI-LPM3	TB-150MI-LPM3	RT-150MI-LPM3		
2"	15 to 150	RB-200MI-LPM1	TB-200MI-LPM1	RT-200MI-LPM1		
2"	25 to 250	RB-200MI-LPM2	TB-200MI-LPM2	RT-200MI-LPM2		
2"	40 to 400	RB-200MI-LPM3	TB-200MI-LPM3	RT-200MI-LPM3		
2"	70 to 700	RB-200MI-LPM4	TB-200MI-LPM4	RT-200MI-LPM4		

##### Models with PVDF Pipe Fitting Material

Pipe Size	RATE ONLY		TOTAL ONLY		RATE & TOTAL	
	IGM Range	Model Number	Model Number	Model Number	Model Number	Model Number
3/8"	.8 to 8	RB-38BFI-IGM1	TB-38BFI-IGM1	RT-38BFI-IGM1		
3/8"	.4 to 4	RB-38BFI-IGM2	TB-38BFI-IGM2	RT-38BFI-IGM2		
1/2"	2 to 20	RB-50BFI-IGM1	TB-50BFI-IGM1	RT-50BFI-IGM1		
1/2"	.5 to 5	RB-50BFI-IGM2	TB-50BFI-IGM2	RT-50BFI-IGM2		
3/4"	3 to 30	RB-75BFI-IGM1	TB-75BFI-IGM1	RT-75BFI-IGM1		
3/4"	.8 to 8	RB-75BFI-IGM2	TB-75BFI-IGM2	RT-75BFI-IGM2		
1"	5 to 50	RB-10BFI-IGM1	TB-10BFI-IGM1	RT-10BFI-IGM1		
1"	2 to 20	RB-10BFI-IGM2	TB-10BFI-IGM2	RT-10BFI-IGM2		
1-1/2"	4 to 40	RB-15BFI-IGM1	TB-15BFI-IGM1	RT-15BFI-IGM1		
1-1/2"	6 to 60	RB-15BFI-IGM2	TB-15BFI-IGM2	RT-15BFI-IGM2		
1-1/2"	10 to 100	RB-15BFI-IGM3	TB-15BFI-IGM3	RT-15BFI-IGM3		
2"	4 to 40	RB-20BFI-IGM1	TB-20BFI-IGM1	RT-20BFI-IGM1		
2"	6 to 60	RB-20BFI-IGM2	TB-20BFI-IGM2	RT-20BFI-IGM2		
2"	10 to 100	RB-20BFI-IGM3	TB-20BFI-IGM3	RT-20BFI-IGM3		
2"	20 to 200	RB-20BFI-IGM4	TB-20BFI-IGM4	RT-20BFI-IGM4		

Optional Display Volume Units: U.S. Gallons, U.S. Ounces, Imperial Gallons, Cubic Feet, Cubic Meters.  
Optional Display Time Units: Minutes, Hours, Days.