

F-2000

Molded In-line Fitting
Remote Mount Display
Three Display Options:

- Rate & Total Display Only
- Rate, Total, Analog output
- Rate, Total, Process Control



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)
- Rate and total flow display.
- Optional Process Control alarm or batch processing relay.
- Optional 4-20mA or 0-10VDC output.
- Large, 8 digit LCD display, up to 4 decimal places.
- Remote mount display on panel, pipe or wall.
- Very low pressure drop.
- Total reset function can be disabled.
- Front panel security lock-out.
- Field programmable.

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:+/- 1%

Power requirement:16-24VDC

Model RT units only:4 AA batteries or AC/DC transformer

All units: AC/DC transformer

Signal Distance: AC sine wave sensor = 200 ft (60 m)

Optional Hall Effect sensor = 1 mile (1.6 km)

Signal Cable: 3 conductor shielded. Included 25 ft. (7.6 m)

Max pressure drop: 8 PSI (varies per model)

Enclosure: NEMA 4X (IP56)

Approx ship wt: 2 lb. (.91 kg)

Materials of Construction:

Pipe fitting:Polypropylene (options: PVDF)

Sensor, paddlewheel, axle: ..PVDF

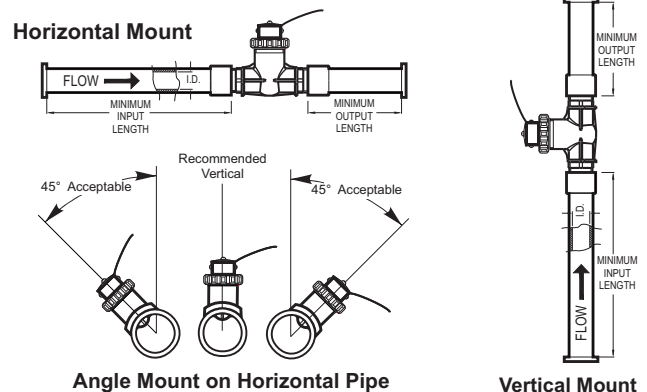
Sensor O-ring seals:Viton[®] (optional EP)

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.

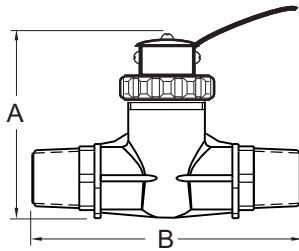
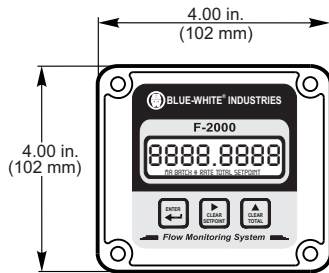
Type Of Disturbance	Minimum Inlet Pipe Length	Minimum Outlet Pipe Length
Flange	10 X Pipe I.D.	5 X Pipe I.D.
Reducer	15 X Pipe I.D.	5 X Pipe I.D.
90° Elbow	20 X Pipe I.D.	5 X Pipe I.D.
Two Elbows -1 Direction	25 X Pipe I.D.	5 X Pipe I.D.
Two Elbows -2 Directions	40 X Pipe I.D.	5 X Pipe I.D.
Pump Or Gate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

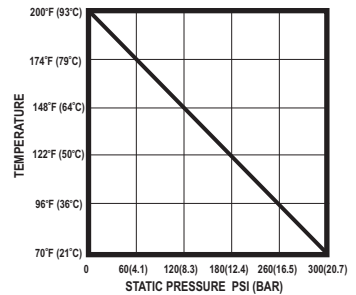
Dimensions:



Pipe Size	A	B
3/8"	3-3/4" (95)	4-3/4" (121)
1/2"	3-3/4" (95)	5-1/8" (130)
3/4"	4" (102)	5-1/4" (133)
1"	4" (102)	5-5/8" (143)
1-1/2"	4-1/2" (114)	6-1/2" (165)
2"	4-3/4" (121)	6-3/4" (171)

Inches (mm)

Maximum Temperature vs. Pressure



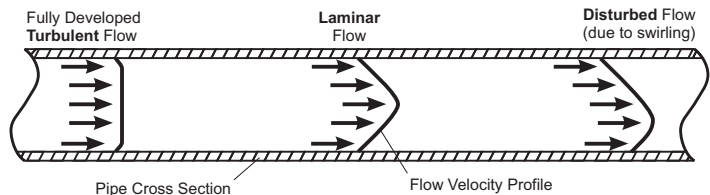
Flow Stream Requirements:

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.

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

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:

Display Function		Display Mount / Sensor Type		Power		Pipe Size		Pipe Fitting type and Material		Calibration Flow Range		Calibration Units	
RT	Rate and Total flow	P	Display remote mount, AC coil sensor	B	Battery holder with 4 AA cells	38	3/8 inch	MB1	PP body British BSPT, range #1	1	Range 1 (see pipe data)	GM	U.S. Gal per min
AO	Rate, Total, 4-20mA	S	Display mounted on AC coil sensor	1	U.S. Transformer, AC 115V60Hz/15Vdc, NEMA5/15 plug	50	1/2 inch	MB2	PP body British BSPT, range #2	2	Range 2 (see pipe data)	GH	U.S. Gal per hour
PC	Rate, Total, Relay	H	Display remote mount, Hall Effect sensor	2	Europe Transformer, AC 230V50Hz/15Vdc, CEE 7/VII plug	75	3/4 inch	MB3	PP body British BSPT, range #3	3	Range 3 (see pipe data)	OM	U.S. Oz per min
AP	Rate, Total, 4-20mA, relay			3	U.S. Transformer, AC 230V60Hz/15Vdc, NEMA 5/15 plug	10	1 inch	MB4	PP body British BSPT, range #4	4	Range 4 (see pipe data)	FM	Cubic Ft per min
				4	U.S. Transformer, 115V60Hz and Battery back-up	15	1-1/2 inch	FB1	PVDF body British BSPT, range #1	5	Range 5 (see pipe data)	AD	Acre Ft per day
				5	Europe Transformer, 230V50Hz and Battery back-up	20	2 inch	FB2	PVDF body British BSPT, range #2	6	Range 6 (see pipe data)	LH	Liters per min
				6	U.S. Transformer, 230V60Hz and Battery back-up			FB3	PVDF body British BSPT, range #3			MH	Cubic Mtr per hour
				X	No Selection (Customer must supply power)			FB4	PVDF body British BSPT, range #4			IM	Imperial Gal per min
								M1	PP body U.S. NPT, range #1			IH	Imperial Gal per hour
								M2	PP body U.S. NPT, range #2				
								M3	PP body U.S. NPT, range #3				
								M4	PP body U.S. NPT, range #4				
								F1	PVDF body U.S. NPT, range #1				
								F2	PVDF body U.S. NPT, range #2				
								F3	PVDF body U.S. NPT, range #3				
								F4	PVDF body U.S. NPT, range #4				

Pipe Size, Flow Range and Display Model Options:

230V50HZ AC Models with Polypropylene Pipe Fitting

Pipe Size M/NPT	IGM flow Range	LPM flow Range	M3/HR flow Range	OZ/M flow Range	RATE & TOTAL DISPLAY		ANALOG OUTPUT		PROCESS CONTROL	
					Model Number	Model Number	Model Number	Model Number		
3/8"	.8 to 8	3 to 30	.2 to 1.8	106 to 1058	RTP238MB1*1	AOP238MB1*1	PCP238MB1*1			
3/8"	.4 to 4	1 to 10	.1 to 0.6	35 to 353	RTP238MB2*2	AOP238MB2*2	PCP238MB2*2			
1/2"	2 to 20	7 to 70	.4 to 4.2	247 to 2469	RTP250MB1*1	AOP250MB1*1	PCP250MB1*1			
1/2"	.5 to 5	2 to 20	.1 to 1.2	71 to 705	RTP250MB2*2	AOP250MB2*2	PCP250MB2*2			
3/4"	3 to 30	11 to 110	.7 to 6.6	388 to 3880	RTP275MB1*1	AOP275MB1*1	PCP275MB1*1			
3/4"	.8 to 8	3 to 30	.2 to 1.8	106 to 1058	RTP275MB2*2	AOP275MB2*2	PCP275MB2*2			
1"	5 to 50	20 to 200	1.2 to 12	705 to 7054	RTP210MB1*1	AOP210MB1*1	PCP210MB1*1			
1"	2 to 20	7 to 70	.4 to 4.2	247 to 2469	RTP210MB2*2	AOP210MB2*2	PCP210MB2*2			
1-1/2"	4 to 40	15 to 150	.9 to 9.0	529 to 5291	RTP215MB1*1	AOP215MB1*1	PCP215MB1*1			
1-1/2"	6 to 60	25 to 250	1.5 to 15	882 to 8818	RTP215MB2*2	AOP215MB2*2	PCP215MB2*2			
1-1/2"	10 to 100	40 to 400	2.4 to 24	1411 to 14108	RTP215MB3*3	AOP215MB3*3	PCP215MB3*3			
2"	4 to 40	15 to 150	.9 to 9.0	529 to 5291	RTP220MB1*1	AOP220MB1*1	PCP220MB1*1			
2"	6 to 60	25 to 250	1.5 to 15	882 to 8818	RTP220MB2*2	AOP220MB2*2	PCP220MB2*2			
2"	10 to 100	40 to 400	2.4 to 24	1411 to 14108	RTP220MB3*3	AOP220MB3*3	PCP220MB3*3			
2"	20 to 200	70 to 700	4.2 to 42	2469 to 24689	RTP220MB4*4	AOP220MB4*4	PCP220MB4*4			

* calibration units