

DIGITAL PLASTIC PADDLEWHEEL FLOWMETERS



FP1400 Series



- ✓ Polypropylene or PVDF Models
- ✓ 29 Engineering Units (Including User Defined)
- ✓ Two Programmable Totalizers
- ✓ Programmable Alarms
- ✓ Isolated Analog 0 to 5 Vdc or 4 to 20 mA
- ✓ RS232 Communications Standard
- ✓ Local Key Pad and 2 x 16 Characters LCD Display
- ✓ Free Communication Software with Data Logging Capability



FP1408 shown larger than actual size.

FP1400 Series flowmeters support various functions including; two independently programmable flow totalizers, user programmable low, high or range flow and temperature alarm, two sets of user programmable optically isolated outputs, self diagnostic alarm, and flow pulse output. The flow rate can be displayed in 29 different volumetric or mass flow engineering units. Flowmeter parameters and functions can be programmed locally via optional key pad and LCD or remotely via the RS232/RS485 interface. Local 2 x 16 LCD readout with adjustable backlight provides flow rate, temperature, total volume reading in currently selected engineering units, diagnostic events indication and feature a password protected access to the process parameters to ensure against tampering or resetting.

Liquid flowing through the unit causes the paddlewheel to spin. As the magnets embedded in the paddle spin past the sensor, electrical pulses are produced in which frequency is proportional to the flow rate. The number of pulses per desired time interval and the K-factor (number of pulses/gal) make it possible to calculate the flow rate and volume passing through the unit. On board CPU and signal conditioner circuitry perform accurate flow and total computation, digital communication and analog 0 to 5 Vdc or 4 to 20 mA output signals. Non-volatile memory stores all hardware specific and user programmable variables, including flow linearization table.

SPECIFICATIONS

Viscosity: 1 cSt (water) can be used for liquids up to 50 cSt with field calibration (max flow range may be affected)

Flow Accuracy (Including Linearity): $\pm 1\%$ of FS

Repeatability: $\pm 0.25\%$ of FS

Temperature Measurement Range: 60°C (140°F)

Temperature Accuracy (Including Linearity): $\pm 0.5^\circ\text{C}$

Flow Response Time: Approx 1 sec (above 10% of full scale flow), approx 2 seconds (below 10% of full scale flow)

Maximum Pressure: 10 bar (150 psig)

Maximum Pressure Drop: @ 15 psi for sized units @ 20 psi all other sizes

Ambient Temperature: -10 to 60°C (14 to 140°F)

Output Signals:

Linear 0 to 5 Vdc (3000 Ω minimum load impedance); linear 4 to 20 mA (500 Ω maximum loop resistance). Maximum noise 20 mV peak to peak (for 0 to 5 Vdc output)

Flow Pulse Output: 3.3 Vdc amplitude (3000 Ω min load impedance)

Optically Isolated Outputs: UCE 40 Vdc, ICE 150 mA

Power: 11 to 26 Vdc, 100 mV maximum peak to peak output noise

Consumption: +12 Vdc (150 mA maximum); +24 Vdc (100 mA maximum); circuit board have built-in polarity reversal protection, 300 mA resettable fuse provide power input protection

Communications: RS232 standard, RS485 (optional)



Electrical Connections: Built-in female 12-pin M16, NEMA 4X (IP67) connector. To be mated with 12-pin M16 male EMI shielded NEMA 4X (IP67) connector (sold separately)

Display: Optional local 2 x 16 characters LCD with adjustable backlight (2 lines of text)

Keypad: Optional 4 pushbutton key pad

CE Compliant: EMC Compliance with 89/336/EEC as amended. Emission Standard: EN 55011:1991, Group 1, Class A Immunity Standard: EN 55082-1:1992

Wetted Materials

Polypropylene Models

Body: Polypropylene

LID: Acrylic

Paddlewheel: PVDF

Shaft: Nickel tungsten carbide

Bearings: Sapphire jewels

O-Rings: EPDM

RTD: 316 SS casing

PVDF Models

Body: PVDF

LID: PVDF

Paddle Wheel: PVDF

Shaft: Zirconia ceramic

Bearings: Sapphire jewels

O-RINGS: PTFE

RTD: 316 SS casing

To Order					
Model No.	Description	Model No. with RTD	Ports NPT	Maximum Pressure Drop bar (psi)	Range GPM
FP1402	Polypropylene flowmeter, with display	FP1402-RTD	3/8	1 (15)	0.5 to 5
FP1404	Polypropylene flowmeter, with display	FP1404-RTD	1/2	1.4 (20)	1 to 10
FP1406	Polypropylene flowmeter, with display	FP1406-RTD	3/4	1.4 (20)	2 to 20
FP1408	Polypropylene flowmeter, with display	FP1408-RTD	1	1.4 (20)	3.5 to 35
FP1412	PVDF flowmeter, with display	FP1412-RTD	3/8	1 (15)	0.5 to 5
FP1414	PVDF flowmeter, with display	FP1414-RTD	1/2	1.4 (20)	1 to 10
FP1416	PVDF flowmeter, with display	FP1416-RTD	3/4	1.4 (20)	2 to 20
FP1418	PVDF flowmeter, with display	FP1418-RTD	1	1.4 (20)	3.5 to 35
Accessories					
DPF701	1/8 DIN digital display, 115 Vac 7.5 to 13 Vdc powered				
FP1400-CABLE	12-pin 2 m (6') cable				

Comes complete with operator's manual.

For units with RS485 communications in place of RS232 add suffix "-485" to the model number, no additional charge.

Ordering Example: FP1404, polypropylene flowmeter with display 1 to 10 GPM range, 1/2 NPT connections.