

PADDLEWHEEL FLOW SENSOR

FPB100 Series



- ✓ 4 to 20 mA, Switch, or Pulse Divider Output
- ✓ Low Flow Capabilities from 0.1m/s (0.3 ft/s)
- ✓ Polypropylene or PVDF Material
- ✓ Installs into Pipe Sizes DN 15 to DN 200 (0.5 to 8")
- ✓ Built-In User Interface for On-Site Configuration
- ✓ Low Power and High Resolution

The OMEGA® FPB100 Series flow sensor is the next generation in fluid measurement technology. This new sensor is an improvement on what is already an industry standard. It has the added functionality of various output options including flow switch, multi-functional pulse divider or 4 to 20 mA. Additionally, it offers low flow, low power and high resolution and can be configured onsite directly through the built-in user interface. Installation is simple because the OMEGA FPB100 Series utilizes the same fittings as the popular OMEGA FP5000 and FP8500 Series paddlewheel sensors and fits into pipe sizes ranging from DN15 to DN200 (0.5 to 8"). Available in polypropylene and PVDF, it is ideal for a variety of applications including chemical processing, water and wastewater monitoring and scrubber control.

SPECIFICATIONS

General

Input Frequency Range: 1 to 1000 Hz
Operating Range: 0.1 m/s to 6 m/s (0.3 ft/s to 20 ft/s)
Linearity: ±1% of max range at 25°C (77°F)
Repeatability: ±0.5% of max range at 25°C (77°F)
System Response: 100 ms update rate nominal

Wetted Materials

Sensor Body: Polypropylene or PVDF (depending on model)
O-Ring: FPM

Rotor Pin:

Titanium: Polypropylene models
PVDF: PVDF models

Rotor:

Black PVDF: Polypropylene models
Natural PVDF: PVDF models

Electrical

Pulse, Flow Switch

With Dry-Contact Relay: 24 Vdc nominal (21.6 Vdc min to 26.4 Vdc max) 30 mA max current

With Solid-State Relay: 5 to 24 Vdc nominal (5.0 Vdc min to 26.4 Vdc max) 30 mA max current

4 to 20 mA: 12 Vdc to 32 Vdc nominal (10.8 Vdc min to 35.2 Vdc max) 21 mA max current

Reverse Polarity and Short

Circuit Protection: Up to 40V, 1 hour

Over-Voltage Protection:

>40 Vdc over 1 hour

Output Specifications

Signal Averaging: Programmable 0 to 100 seconds

Sensitivity Response: Programmable 0 to 9 scale

Pulse Divider/Total Pulse Output

Pulse Divider Setting:

1.0000 to 99999

Maximum Pulse Rate: 300 Hz

Maximum Pulse Width: 50 ms

Flow Switch Output

Relay Modes: Low, high

Time Delay: 0.0 to 6400.0 seconds

Hysteresis: Adjustable in engineering units

Relay Specifications

Mechanical SPDT: 5 A at 30 Vdc, 5 A @ 250 Vac

Solid-State Relay: 100 mA at 40 Vdc, 70 mA @ 33 Vac



FPB111 shown smaller than actual size.

Current Output (Passive 4 to 20 mA)

Loop Accuracy: ±32 µA (at 25°C at 24 Vdc)

Loop Resolution: 5 µA

Temp. Drift: ±1 µA per °C max

Power Supply Rejection: ±1 µA per V

Max Cable: 300 m (1000')

Maximum Loop Resistance: 600 Ω @ 24 Vdc 1K Ω @ 32 Vdc

Max Temperature/Pressure Rating

Storage Temperature: -10 to 75°C (14 to 167°F)

Operating Temperature: 0 to 65°C (32 to 149°F)

Relative Humidity: 0 to 90% RH, non-condensing

Flow Sensor

PP: 12.5 bar @ 20°C, 1.7 bar @ 85°C (180 psi @ 68°F, 25 psi @ 185°F)

PVDF: 14 bar @ 20°C, 1.7 bar @ 85°C (200 psi @ 68°F, 25 psi @ 185°F)

Operating Temperature:

PP: -18 to 85°C (0 to 185°F)

PVDF: -18 to 85°C (0 to 185°F)

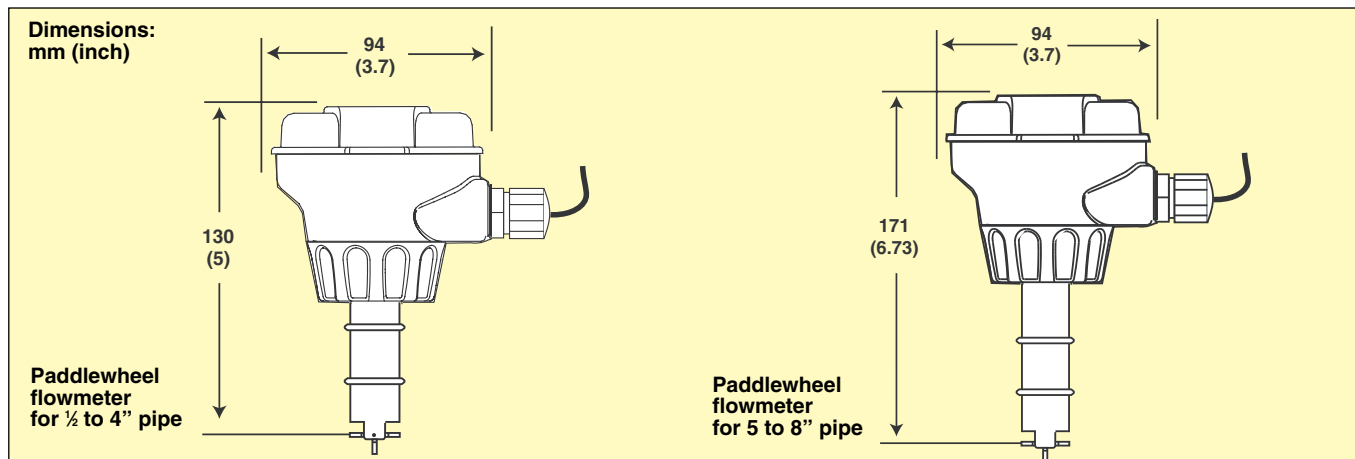
Standards and Approvals: NEMA 4X (IP65) enclosure; CE approval



All models shown smaller than actual size



See omega.com/fp_fittings for complete list of installation fittings.



To Order Visit omega.com/fpb100 for Pricing and Details

Model No.	Material	Pipe Size, mm (inch)	Range
FPB111	Polypropylene	12.7 to 102 (1/2 to 4)	pulse divider, SPDT relay
FPB112	Polypropylene	127 to 203 (5 to 8)	pulse divider, SPDT relay
FPB113	PVDF	12.7 to 102 (1/2 to 4)	pulse divider, SPDT relay
FPB121	Polypropylene	12.7 to 102 (1/2 to 4)	pulse divider, SSR
FPB122	Polypropylene	127 to 203 (5 to 8)	pulse divider, SSR
FPB123	PVDF	12.7 to 102 (1/2 to 4)	pulse divider, SSR
FPB131	Polypropylene	12.7 to 102 (1/2 to 4)	switch, SPDT relay
FPB132	Polypropylene	127 to 203 (5 to 8)	switch, SPDT relay
FPB141	Polypropylene	12.7 to 102 (1/2 to 4)	switch, SSR
FPB142	Polypropylene	127 to 203 (5 to 8)	switch, SSR
FPB151	Polypropylene	12.7 to 102 (1/2 to 4)	4 to 20 mA
FPB152	Polypropylene	127 to 203 (5 to 8)	4 to 20 mA
FPB153	PVDF	12.7 to 102 (1/2 to 4)	4 to 20 mA

Accessories

Model No.	Description
FP-5310M	1" PVC SCH 40 installation fitting; see omega.com/fp_fittings for additional fittings available
PSU-93	24 Vdc power supply
TX4-100	4-conductor shielded cable, 30 m (100')

Comes complete with operator's manual. Installation fittings sold separately.

Ordering Examples: **FPB111**, flow sensor with pulse divider output, with **FP-5310M**, 1" PVC installation fitting, **PSU-93**, 24 Vdc power supply, and **TX4-100**, multi-conductor hook-up wire.

FPB131, sensor with switch, SPDT, mechanical relay, **FP-5320GI** galvanized iron fitting, **PSU-93** power supply.