

# 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 TRODEKS® 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 TRODEKS FPB100 Series utilizes the same fittings as the popular TRODEKS 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:**  $\pm 1\%$  of max range at 25°C (77°F)

**Repeatability:**  $\pm 0.5\%$  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:**  $\pm 32 \mu\text{A}$  (at 25°C at 24 Vdc)

**Loop Resolution:** 5  $\mu\text{A}$

**Temp. Drift:**  $\pm 1 \mu\text{A}$  per °C max

**Power Supply Rejection:**  $\pm 1 \mu\text{A}$  per V

**Max Cable:** 300 m (1000')

#### Maximum Loop Resistance:

600  $\Omega$  @ 24 Vdc 1K  $\Omega$  @ 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:

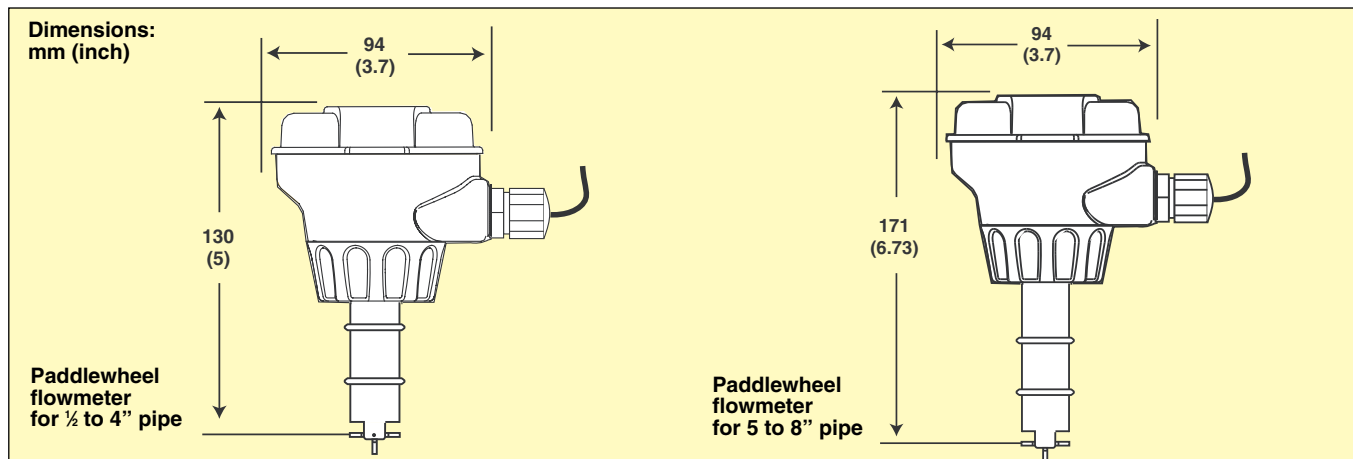
**PP:** -18 to 85°C (0 to 185°F)

**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



## To Order

Model No.	Material	Pipe Size, mm (inch)	Range
FPB111	Polypropylene	12.7 to 102 (½ to 4)	pulse divider, SPDT relay
FPB112	Polypropylene	127 to 203 (5 to 8)	pulse divider, SPDT relay
FPB113	PVDF	12.7 to 102 (½ to 4)	pulse divider, SPDT relay
FPB121	Polypropylene	12.7 to 102 (½ to 4)	pulse divider, SSR
FPB122	Polypropylene	127 to 203 (5 to 8)	pulse divider, SSR
FPB123	PVDF	12.7 to 102 (½ to 4)	pulse divider, SSR
FPB131	Polypropylene	12.7 to 102 (½ to 4)	switch, SPDT relay
FPB132	Polypropylene	127 to 203 (5 to 8)	switch, SPDT relay
FPB141	Polypropylene	12.7 to 102 (½ to 4)	switch, SSR
FPB142	Polypropylene	127 to 203 (5 to 8)	switch, SSR
FPB151	Polypropylene	12.7 to 102 (½ to 4)	4 to 20 mA
FPB152	Polypropylene	127 to 203 (5 to 8)	4 to 20 mA
FPB153	PVDF	12.7 to 102 (½ to 4)	4 to 20 mA

## Accessories

Model No.	Description
FP-5310M	1" PVC SCH 40 installation fitting
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.