

LIGHTSPEED™ FIBER OPTIC PADDLEWHEEL FLOW SENSORS – INHERENTLY SAFE DESIGN

FP9001A



FP9001A Sensor shown with FP9P-T interface.

The FP9001 LIGHTSPEED™ paddlewheel flow sensors are ideal for applications with low viscosity solutions (like water) which are low in suspended solids.

A patented fiber-optic sensing mechanism makes these sensors especially well suited for applications in hazardous environments, where the paddlewheel electronics can be mounted in a non-hazardous location and the near-infrared light signal can be sent down an optic cable to the paddlewheel inside the hazardous location. This non-magnetic design tolerates some rust, often found in iron pipes. FP9001A flow sensors must be used with the companion FP9001A pipe installation fittings.

The high amplitude pulse output from the FP9P opto-electronic interface is ideally suited for hook up to the model INF7 ratemeter/totalizer. For 4 to 20 mA output, connect to OMEGA's FLSC90 Series signal conditioner. (Please specify fitting and calibration range for the 4 to 20 mA output.) The FLSC90 includes the required optical interface for the FP9000 sensor.

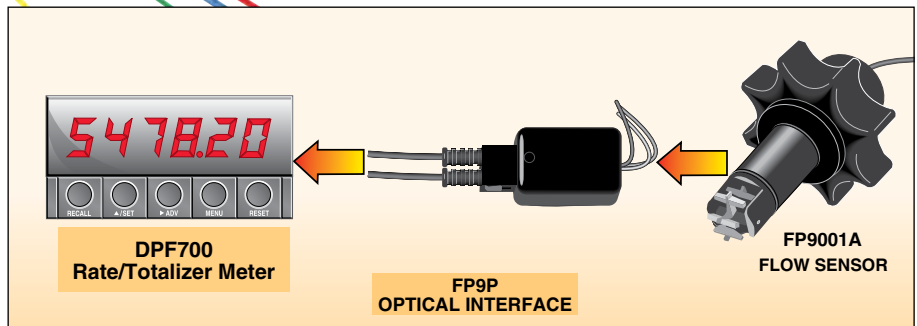
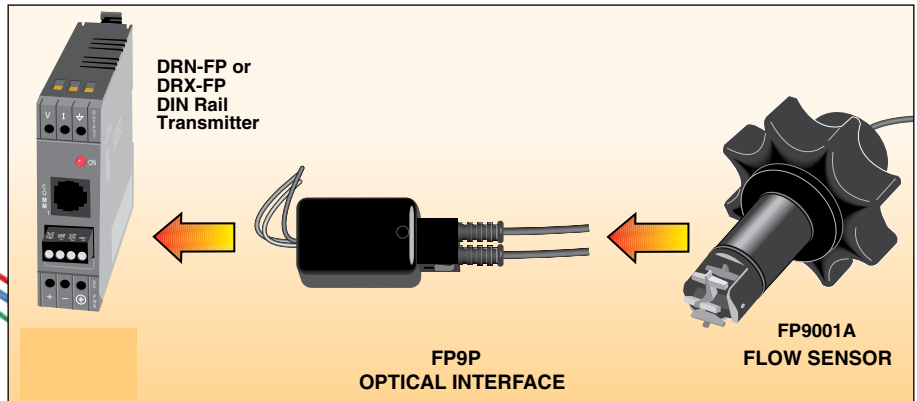
Flow Sensor Specifications

| Pipe Size | Range (gpm) | | Accuracy (% Full Scale) | Repeatability (% of Full Scale) | Nominal K Factor | Nominal Hz @ 1 gpm |
|-----------|-------------|------|-------------------------|---------------------------------|------------------|--------------------|
| | Min. | Max. | | | | |
| 0.5" | 1.0 | 20 | ±2% | ±2% | 938 | 15.6 |
| 0.75" | 2.0 | 30 | ±2% | ±2% | 528 | 8.80 |
| 1.0" | 4.0 | 55 | ±2% | ±2% | 322 | 5.37 |
| 1.25" | 4.5 | 90 | ±2% | ±2% | 161 | 2.68 |
| 1.5" | 8.0 | 125 | ±2% | ±2% | 112 | 1.87 |
| 2.0" | 15.0 | 200 | ±2% | ±2% | 63.6 | 1.06 |
| 2.5" | 20 | 300 | ±2% | ±2% | 48.4 | 0.807 |
| 3.0" | 25 | 500 | ±3% | ±3% | 15.5 | 0.258 |

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Covered by U.S. and International patents and pending applications

- ✓ Unique Fiber-Optic Design for Hazardous Areas
- ✓ Fiber-Optic Signal—Insensitive to Electrical Interference
- ✓ Non-Magnetic Design Resists Fouling from Rust
- ✓ Optical Interface





FP9001A Sensor with FP9P-T interface.

Model FP9001A Sensor
Wetted Parts: Polypropylene body and impeller, Hastelloy C shaft, Viton® O-rings, acrylic fiber-optic cable
Maximum Fluid Viscosity: 1 centipoise
Temperature/Pressure: ½" PVC fitting: 100 psi @ 23°C (73°F), 50 psi @ 60°C (140°F); ¾ through 1½": 200 psi @ 23°C (73°F), 100 psi @ 60°C (140°F); 2 through 3": 200 psi @ 23°C (73°F), 50 psi @ 60°C (140°F)
Fiber-Optic Cable Length: 2.7 m (9')
Sensor Weight: 0.45 kg (1 lb)

Flow Sensor Ordering Guide

| To Order | |
|-----------|--------------------------------------|
| Model No. | Description |
| FP9001A* | Paddlewheel sensor for pipes ½ to 3" |

*Must be used with FP9P-T, FP9010, or FLSC90-A optical interface. Please order separately below. Comes complete with operator's manual.

Works With:



DP41-U Universal Panel Meter
 For DP41-U visit us online.

iDRN-FP/iDRX-FP Signal Conditioners.
 For iDRN-FP/iDRX-FP visit us online.



FLSC-90A Signal Conditioner. Visit us online for more details.



DPF403 Digital Flowmeter.



DPF701 Digital Flowmeter. Visit us online.

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PVC Tee Fitting, for Pipes ½ Through 1½"

Installation Fittings* PVC Schedule 80

| Model No. | Pipe Size | Flow Range (gpm) |
|-----------|-----------|------------------|
| FP9005 | ½" | 1.0 to 20 |
| FP9007 | ¾" | 2.0 to 30 |
| FP9010 | 1" | 4.0 to 55 |
| FP9012 | 1¼" | 4.5 to 90 |
| FP9015 | 1½" | 8.0 to 125 |
| FP9020 | 2" | 15.0 to 200 |
| FP9025 | 2½" | 20 to 300 |
| FP9030 | 3" | 25 to 500 |

*Note: PVC fittings from ½ through 1½" are tee-style; those from 2 to 3" are saddle-type.

FP9P-T OPTO-ELECTRONIC INTERFACE

Power Input: 12 to 28 Vdc @ 25 mA maximum
Pulse Output: TTL level output versions
Dimensions: 41 L x 17 W x 15.9 mm H (1½ x 1⅜ x ⅝")
Weight: 170 g (6 oz)
Operating Temp. Range: 0 to 60°C (32 to 140°F)



| Model No. | Description |
|-----------|--|
| FP9P-T | Optical-to-TTL pulse interface |
| PSU-93 | Wall socket plug-in transformer, 115 Vac in, 24 Vdc out on screw terminals |
| TX4-100 | 4-wire shielded cable, 30 m (100') |

Ordering Example

| Qty | Description |
|-----|--|
| 1 | FP9001A, sensor |
| 1 | FP9010, fitting for 1" pipe |
| 1 | FP9P-T, DPF701, DPF700-A optical pulse interface |
| 1 | TX4-100 4-wire shielded cable, 30 m (100') |

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