

# PADDLEWHEEL FLOW AND TEMPERATURE SENSOR

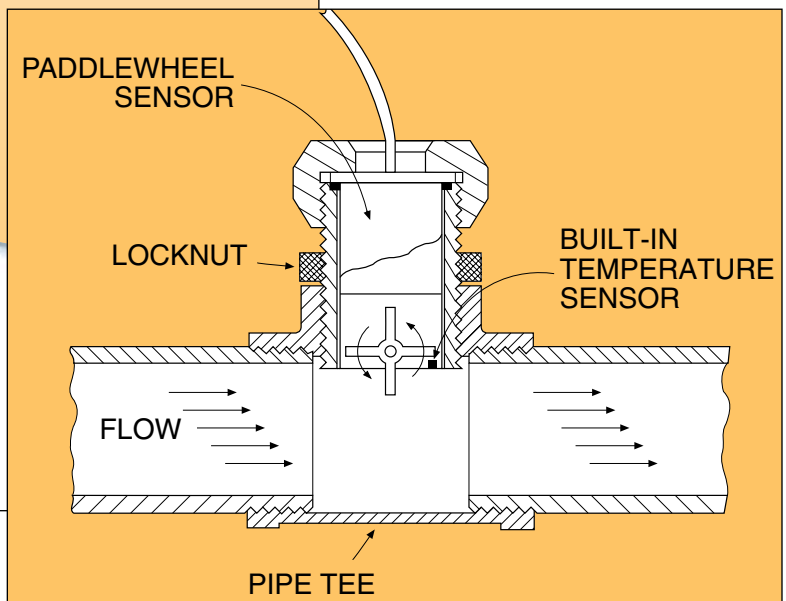
## FP7001A



**FREE Built-In Temperature Sensor with Analog Output!**

- ✓ Measures Both Flow and Temperature Simultaneously
- ✓ Very Economical
- ✓ Wide Chemical Compatibility
- ✓ High Level Pulse Output for Flow—No Amplifier Needed
- ✓ 10mV/°C Analog Temperature Output

FP7001A, with FP7010, installation fitting, shown smaller than actual size.



The OMEGA® FP7001A paddlewheel flow and temperature sensor is ideal for accurate monitoring of typical industrial water flows, hard-to-handle corrosive aqueous solutions, and high purity fluids (see "Wetted Materials" for details). The FP7001A utilizes a paddlewheel-like rotor whose motion is converted into a high-level square wave pulse output by an open collector Hall effect sensor. Pulse amplitudes from 5 to 18 V are possible, depending on input power. The FPW-15 120 Vac converter plugs directly into a wall socket and outputs a regulated 15 Vdc at 400 mA.

The DPF700 Series panel meter supplies power for the flow sensor and provides rate indication, or totalization and batch control (when ordered with the dual relay option). When ordered with the analog output option, the DPF700 can be used to interface the FP7001A flow signal to such items as strip chart recorders, dataloggers, and computer interfaces.

The system consists of the flow sensor, an installing fitting, and the electronics. The PVC tee fittings are supplied with a PVC locking nut,

and the galvanized iron tee fittings are supplied with a brass locking nut to provide secure metal-to-metal mounting to the threaded brass insert.

The FP7001A is not compatible with FP-5300 or FMG-5300 Series installation fittings. When powered by the FPW-5 five Vdc wall socket converter, the FP7001A has a TTL level pulse output which can be used with a variety of pulse input flow indicators, signal conditioners and controllers. It is not compatible with the FPM 5500/5740.



**MEASURES BOTH  
FLOW & TEMPERATURE!**

FP7001A, with  
FP7010-GI shown  
smaller than  
actual size.

**FREE Built-In  
Temperature Sensor with  
Analog Output!**



Available with PVC  
or galvanized iron fittings.  
Please see required installation  
fittings table below.

DPF700 Series compatible indicators, for flowrate, total or batch control, (sold separately); iSeries Indicators for temperature measurement (sold separately).

## SPECIFICATIONS

**Accuracy:** ±2% of full scale

**Repeatability:** ±1% of full scale

**Power:** 5 to 18 Vdc @ 10 mA maximum

**Wetted Materials:** FP7001A sensor: polypropylene body, PVDF paddle, FKM O-ring, 316SS shaft. Galvanized iron tee includes brass insert and locking nut. PVC tee has PVC insert and locking nut.

**Fluid Temperature/Pressure Range:** Do not exceed the maximum ratings of your piping. Depending on the material of the fitting, the operating temperature/pressure may be limited by your piping and not by the sensor. For all PVC tee fittings, do not exceed 150 psig @ 27°C (80°F), 100 psig @ 38°C (100°F), 60 psig @ 49°C (120°F) 30 psig @ 60°C (140°F), due to the insert in the tee.

FP7001A sensor: 0 to 26°C (32 to 80°F) up to 150 psig; max. pressure decreases 1.1 psig per each 0.56°C (1°F) above 27°C (80°F) for a maximum temperature of 93°C (200°F) at 18 psig maximum

**Frequency Output:** Nominal 1 Hz/fps.  
amplitude of open collector pulse =  
Vdc input power

**Cable Length:** 2.4 m (8')

**Weight:**

FP7001A: 0.2 kg (½ lb)

**Maximum Viscosity:** 5 cps

## Temperature Sensor Specifications

**Range:** 2 to 150°C (36 to 302°F)

**Accuracy:** ±1°C

**Output:** 10 mV/°C

**Power:** 5 to 18 Vdc

### To purchase a complete system, order:

- 1) Flow Sensor
- 2) Installation Fitting
- 3) Electronics

### Ordering Example:

FP7001A sensor (polypropylene body/316SS shaft), FP7012 PVC installation fitting, and DPF701 panel meter.

## To Order

Model No.	Description
FP7001A	Polypropylene body/316SS shaft with temp sensor
FLSC-100	Transmitter module for FP7001A
FPW-15	15 Vdc power supply

## Required Installation Fittings (Includes Locking Nut)

PVC, Schedule 40			Galvanized Iron Tee			
Model No.	Lay Length meters (inch)	K Factor	Model No.	Pipe Size NPT	K Factor	Range (GPM)
FP7007	0.53 (21)	108.78	FP7007-GI	¾	159.85	2 to 30
FP7010	0.66 (26)	70.53	FP7010-GI	1	82.94	3 to 50
FP7012	0.79 (31.25)	41.16	FP7012-GI	1¼	48.81	5 to 90
FP7015	0.95 (37.5)	29.46	FP7015-GI	1½	35.52	7 to 125
FP7020	1.27 (50)	15.52	FP7020-GI	2	20.62	11 to 205
FP7025	1.59 (62.5)	11.40	FP7025-GI	2½	12.44	15 to 285
FP7030	1.91 (75)	6.64	FP7030-GI	3	7.22	25 to 460

Each transmitter/fitting system comes factory calibrated with operator's manual.

**Note:** Your transmitter and fitting must be ordered as a system; see examples below.

**Ordering Examples:** FP7001A plus FP7007, paddlewheel sensor and 2 to 30 GPM fitting.  
FP7001A plus FP7010-GI, sensor with 3 to 50 iron tee GPM fitting.