



# Turbine Flow Rate Sensor FT-330 Series - TurboFlow®

Instruction Bulletin No. 227372

## Operating and Installation Instructions

**Prior to installation**, confirm system versus sensor specifications and media compatibility of sensor. The system needs to be filtered to 50 microns prior to the sensor, and pulses/water hammer effects should be minimized to prevent unit damage. Observe arrow on bottom of unit for correct inlet and outlet port. Sensor can be mounted in any horizontal, vertical, or skewed orientation. Correctly installed, the sensor works maintenance-free.

### Installation

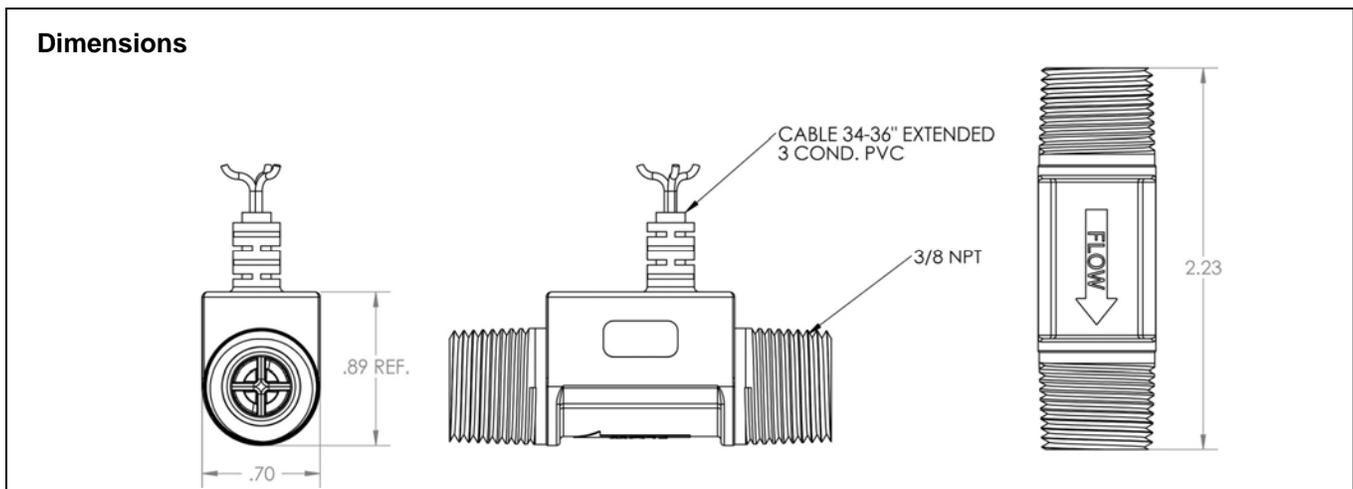
#### 3/8" NPT Units:

Apply a sparse amount of thread sealant (*Permatex "No More Leaks" ®*) or Teflon® tape to male threads. Insure that sealant does not enter into the turbine and bearing internal area. Hand-tighten unit in place. Turn an additional 1/4 turn to provide seal. If seal leaks, turn an additional 1/4 turn until leak stops.

**Do not exceed one additional turn total.**

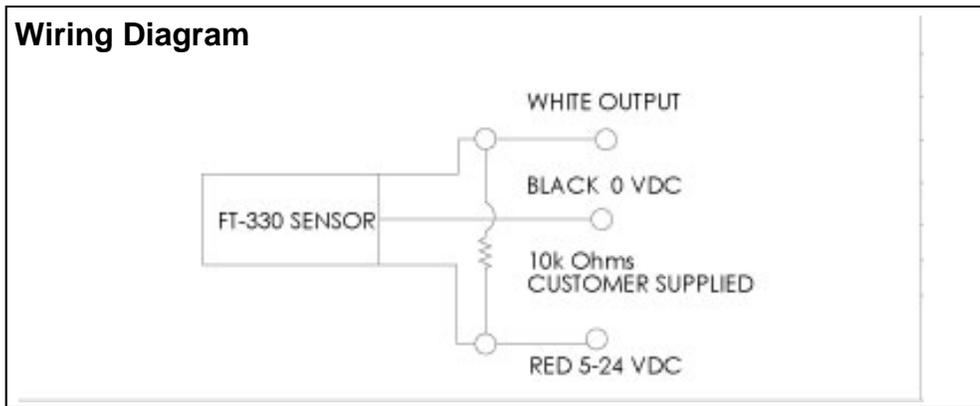
### Specifications

WETTED MATERIALS	TURBINE-PA COMPOSITE WITH 316 SS AXLE BEARING- POM HOUSING- PPE & PS BLEND
OPERATING PRESSURE	200 PSIG
BURST PRESSURE	1000 PSIG
OPERATING TEMPERATURE	-4 F TO 176 F (-20 C TO 80 C)
VISCOSITY	32-81 SSU (1.8- 16 CENTISTOKES)
INPUT POWER	5 TO 24 VDC @8mA
OUTPUT	SINKING OPEN COLLECTOR @ 25mA MAXIMUM
ACCURACY	2% OF READING
REPEATABILITY	1/2 % OF READING
ELECTRICAL CONNECTIONS	3FT PVC JACKET 3 COND. CABLE
INLET/ OUTLET PORTS	3/8" NPT MALE
FILTER	50 MICRONS



## Electrical/Output Signal ( $\square$ )

The output signal is a square wave signal, whose frequency varies linearly with flow rate. An external pull-up resistor (user supplied) is required to insure that the open collector will sink less than 50 mA.



P/N	Thread	Flow Range	Pulses/GAL.	Frequency (Hz)
226000	3/8 NPT	0.2-2 GPM	10200	34-343
226100	3/8 NPT	0.4-4 GPM	—	28-340

The product is designed and manufactured in accordance with Sound Engineering Practice as defined by the Pressure Equipment Directive 97/23/EC. This product must not be used as a “safety accessory” as defined by the Pressure Equipment Directive, Article 1, Paragraph 2.1.3. The presence of a CE Mark on the unit does not relate to the Pressure Equipment Directive.

### Important Points!

Product must be maintained and installed in strict accordance with the National Electrical Code and GEMS technical brochure and instruction bulletin. Failure to observe this warning could result in serious injuries or damages.

Pressure and temperature limitations shown on individual catalog pages and drawings for the specified flow sensors must not be exceeded.

Selection of materials for compatibility with the media is critical to the life and operation of GEMS flow sensors.

Take care in the proper selection of materials of construc-

tion; particularly wetted materials.

Flow sensors have been designed to resist shock and vibration; however, shock and vibration should be minimized.

Liquid media containing particulate and/or debris should be filtered to ensure proper operation of GEMS products.

Flow sensors must not be field repaired.

Physical damage sustained by the product may render it unserviceable.



Gems Sensors & Controls  
One Cowles Road  
Plainville, CT 06062  
U.S.A.  
Tel: 860-747-3000  
Fax: 860.747.4244  
www.GemsSensors.com

Gems Sensors Ltd.  
Lennox Road  
Basingstoke  
Hampshire RG22 4AW  
U.K.  
Tel. +44 (0) 1256.320244  
Fax: +44 (0) 1256.473680

P/N 227372  
Rev.