



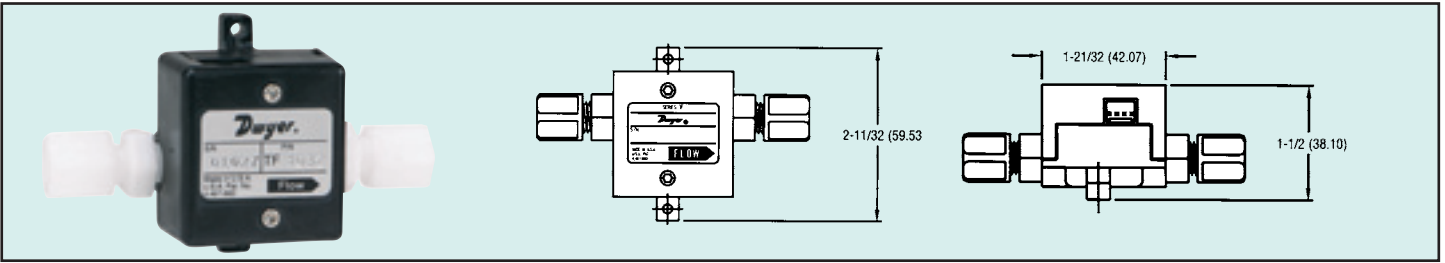
Series  
TF

# Turbine Flow Sensor

0 to 5 VDC Output, Liquid or Gas Models



Flow



Series TF Turbine Flow Sensors are suitable for a wide variety of industrial, commercial and laboratory flow applications. Sensors use a turbine wheel and electro-optical detection to convert flow rates into a linear 0 to 5 VDC signal for recording and datalogging. Models for use with liquids also provide a pulsed output for flow totalizing – see model TM2 below.

**STOCKED MODELS** in bold

| Model Number                    | Range          | Connection |
|---------------------------------|----------------|------------|
| <b>Flow Sensors for liquids</b> |                |            |
| <b>TF1032</b>                   | 0.1 to 2.0 LPM | 1/4" OD    |
| <b>TF1053</b>                   | 1 to 10 LPM    | 3/8" OD    |
| TF1062                          | 1 to 10 GPH    | 3/8" OD    |
| TF1072                          | 4 to 100 GPH   | 3/8" OD    |
| <b>Flow Sensors for gases</b>   |                |            |
| <b>TF2110</b>                   | 2.0 to 10 LPM  | 1/4" OD    |
| <b>TF2120</b>                   | 4.0 to 20 LPM  | 3/8" OD    |
| TF2130                          | 10 to 50 LPM   | 3/8" OD    |
| <b>TF2140</b>                   | 20 to 100 LPM  | 3/8" OD    |

**SPECIFICATIONS**

**Service:** Clean gases or clean low viscosity liquids ( $\leq 10$  centistokes) depending on model.

**Wetted Materials:** 40% glass filled polyphenylene sulfide sensor, Ryton® fittings, sapphire bearing, Viton® O-ring.

**Accuracy:**  $\pm 3\%$  full scale

**Linearity:**  $\pm 3\%$  full scale.

**Repeatability:**  $\pm 0.2\%$  full scale (liquid models),  $\pm 1\%$  full scale (gas models).

**Temperature Limits:** 122°F (50°C). Temperature Sensitivity:  $\pm 0.2\%$  per °C.

**Accessories**

**No. TF01,** 120 VAC, 60 Hz power supply/adaptor for liquid flowmeters.....

**No. TF02,** 240 VAC, 50 Hz power supply/adaptor for liquid flowmeters.....

**No. TF03,** 120 VAC, 60 Hz power supply/adaptor for gas flowmeters.....

**No. TF04,** 240 VAC, 50 Hz power supply/adaptor for gas flowmeters.....

**No. TF05,** Optional connecting cable for liquid flowmeters.....

**No. TF06,** Optional connecting cable for gas flowmeters.....

**Pressure Limits:**

100 psi (6.89 bar) at 20°C (liquid models); 40 psi at 20°C (gas models). Pressure Sensitivity:  $\pm 0.07\%$  per mm Hg (for air at 1 to 3 atm).

**Supply Voltage:** 12.5  $\pm 2$  VDC, 30 mA (connecting cable or cable/adaptor sold separately).

**Output:** 0 to 5 VDC (gas models), 0 to 5 VDC and 7.5 VDC peak pulse output, 0 to 400 pps typical (liquid models).

**Weight:** 1 lb (0.5 kg).

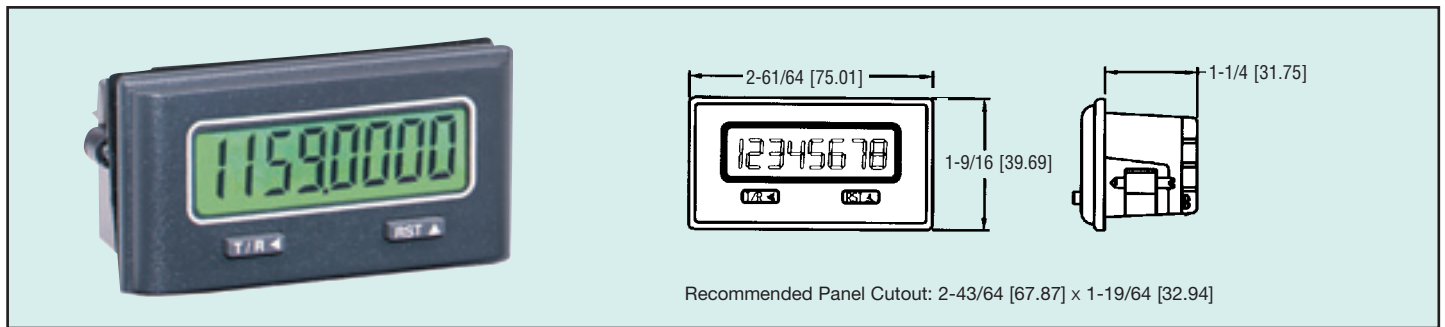
**Agency Approvals:** CE.



Model  
TM2

# Flow Totalizer

Pulse Input, 8-digit LCD Display



Monitor flow rate or total flow with Model TM2 Flow Totalizer. Unit features a four digit flow rate display and an eight digit totalizing display with a programmable, five position decimal point. Easily toggle between rate and total with front-panel push-button. Use scaling factor to define flow rate in engineering units such as ml/hr, l/min, or gal/hr.

**STOCKED MODELS**

- TM2** .....
- Accessory**
- TM25,** Replacement 3V lithium battery .....

**SPECIFICATIONS**

**Input:** 7.5 VDC max. pulse.

**Accuracy:**  $\pm 0.2\%$ .

**Input Impedance:** 27 k  $\Omega$  at 3 VDC.

**Totalizer Type:** UP count.

**Rate Indication Type:** Frequency.

**Count Input Speed:** 10 kHz @ 50% duty cycle.

**Totalizing Range:** 0.0001 to 100.0000 with five position decimal point.

**Rate Indication Range:** 0.001 to 9999 (five position decimal point).

**Update Time:** 0.7 seconds.

**Display:** 8-digit LCD, 7/8" H.

**Temperature Limits:** 32 to 131°F (0 to 55°C).

**Housing Material:** Cyclocac X-17.  
**Power:** One 3V lithium battery (included).

**Average Battery Life:** Approximately 5 years.

**Weight:** 1 lb (0.5 kg).

**Agency Approvals:** CE.