OEM Mass Flowmeters



...from TSI, a leading supplier of OEM flowmeters to the medical industry for more than 15 years.

TSI's OEM mass flowmeters are optimized for the critical demands of respiratory care devices. They feature high accuracy, high turndown ratio, fast response, and low pressure drop, key characteristics needed for breathing circuit measurements and control. Our thermal flow sensors are based on the technology of TSI Incorporated, a world leader in flow measurement for more than 37 years.

Applications

- Ventilators—Measure mass flow of inspiratory air or oxygen as well as expiratory flow.
- Spirometry—Fast, accurate sensors for use in spirometry systems and instruments.
- Other Cardio-respiratory Instrumentation—Ideal for systems requiring fast, accurate flow measurement.

<u>Features</u>

- Measures mass flow rate of gasses to 300 slpm.
- Measures volume to 99.9 liters.
- Fast, 4 msec response allows accurate, integrated measurements needed for closed loop control systems.
- High accuracy at all flow rates and all points in the breathing cycle; accuracy specified as a percent of reading rather than a percent of full scale.
- Low pressure drop minimizes flow circuit back-pressure.
- Flow output compensated for gas temperature; can be altitude/pressure compensated with user-supplied signal.

• Fast, digital interface for data output and device control; analog output available on Model 4020.

Cost Effective Solutions

With 37 years experience in developing research instruments, TSI has learned to produce custom, laboratorygrade flowmeters in high volume for imbedded instrument applications. We use fully automated, NIST-traceable flow calibration systems, specialized sensor fabrication systems, custom-molded components, and other costreducing techniques.

STANDARD OR CUSTOM OEM DESIGNS

The Models 4010 and 4020 are standard configurations that can be designed directly into many OEM applications. Alternatively, we can develop a custom OEM flowmeter whenever an application requires a special interface, flow specification, or mechanical configuration. TSI also offers mass flowmeters optimized for very low flow ranges for use in anesthesia gas delivery systems as well as neonatal and pediatric ventilators and respiratory systems. Consult TSI for more information.





the following uncertainty. For pressures above 101.3 kPa add 0.015% (0.06%) of reading per kPa. For pressures below 101.3 kPa add 0.022% (0.09%) per kPa. Accuracy stated using dry gas, <10% RH.

Specifications are subject to change without notice.



How it Works

TSI thermal mass flowmeters incorporate two sensors that are exposed to the flow stream. A platinum film sensor measures flow and a thermistor measures gas temperature. The flow sensor is heated and maintained at a constant temperature. The passing flow convects heat from the sensor in relation to the mass flow rate. The temperature sensor is used to compensate for changes in gas temperature.



TSI Incorporated Flowmeter Division 500 Cardigan Road St. Paul, MN 55126 USA Tel: 888 TSI FLOW 888 874 3569 651 490 3849 Fax: 651490 4053 E-mail: flowmeters@tsi.com

