FTI FLOW TECHNOLOGY™

Visit us on the web at: www.ftimeters.com

Hostile Environments. Crucial Fluids.

For Your Challenging Aerospace Applications...

Rely On THE FLOW MEASUREMENT Resource.

A E R O S P A C E

In the aerospace industry, measuring the flow of fluids used onboard aircraft or in component test stands demands superior instrument performance. From measuring the fuel consumption of rotary and fixed-wing aircraft, missiles and torpedoes, to evaluating the performance of hydraulic fluid and lubricants, aerospace applications present difficult flow metering challenges.

When Reliability Counts, Turn To Flow Technology

On critical aerospace and defense/military projects, Flow Technology's flow measurement systems meet — and exceed — the highest expectations. With proven reliability, superior accuracy and a low cost-of-ownership, they provide unsurpassed total performance.

Our precision turbine flowmeters can be used to measure the flow of fuel, hydraulic fluid, cryogenic fluid, lubricants, coolants and other fluids crucial to aircraft performance. In these applications, our flow metering systems are designed to withstand a variety of environmental conditions as specified by TSO C44a, RTCA/DO-160 and a host of military specifications.

Installed With Confidence Around The World

From classified military test ranges to the R&D labs of the world's leading aircraft manufacturers, major aerospace customers rely on Flow Technology — *The Flow Resource* — to meet their most critical flow measurement requirements. Our flight-qualified and TSO-approved flow metering solutions are utilized on the following platforms:

Ground Support

- Engine Test Cells
- Component Test Stands
- Hydraulic Mules

Flight Applications

- Experimental Aircraft
- Fighters
- Reconnaissance Aircraft
- Search & Rescue
- Cargo Planes
- Tilt-Rotors
- Helicopters
- Missiles & Torpedoes
- UAVs & Drones
- APUs
- Turboprops & Piston Engines

Proven Performance Across the Flight Envelope

Look for any flow measurement environment with extreme conditions and demanding performance requirements, and you'll find Flow Technology. Typical aerospace applications for our flow metering systems include:

Fuel Management Systems

Aerospace companies throughout the world rely on Flow Technology fuel flow transducers to provide accurate, instantaneous fuel flow rate and consumption data. Paired with cockpit displays from leading manufacturers, including J.P. Instruments, Electronics International and Shadin, our flowmeters provide easy installation and high reliability.

Constructed entirely of stainless steel, Flow Technology fuel flow transducers do not require any special enclosures to meet fire resistance requirements. They can be installed in any orientation and can withstand pressures to 3,000 PSI and beyond. Models are available for almost any size aircraft, with flow rates as low as 1 PPH or as high as 100,000 PPH.

Remote or integral signal conditioners can provide viscosity and density correction, as well as outputs proportional to the volumetric or mass flow rate.

Flight Test

Whether flight test envelopes are routine or extreme, major aerospace manufacturers turn to Flow Technology. From piston engine aircraft to the latest military fighter jets, our flow measurement equipment is a key component of systems that monitor critical fluid flow onboard today's advanced aircraft.

Flight test applications for our turbine flowmeters and related electronics are both diverse and demanding. They include: fuel flow (AvGas, Jet-A, JP-4, JP-5, JP-8, JP-10, etc.), coolants and refrigerants (water, glycol, PAO, R134a, etc.) and more. In these applications, our intelligent flow metering devices provide temperature compensation for changes in viscosity and density, as well as scaled frequency, voltage or current outputs for use by fuel management systems and other controls.

We also provide rugged "high shock" flowmeters designed for use in environments with high line pressures, hydraulic shock loads and other extreme conditions. High shock meters are able to withstand severe pressure spikes when performing critical hydraulic fluid measurements.

Test Stands, Test Cells and Hydraulic Carts

Aircraft component manufacturers and OEMs seeking state-of-the-art flow instrumentation for use in engine and component test environments have to go no further than Flow Technology. Our turbine flowmeters set the standard others follow.

A Flow Technology turbine meter, paired with a flow computer or smart transmitter, can perform precise metering of fuel flow in engine test cells, fuel and hydraulic fluid flow in component test stands, and hydraulic fluid flow in hydraulic mules. The accuracy of these measurements improves the overall performance of test regimens, and reduces the chance of rejecting a compliant component.

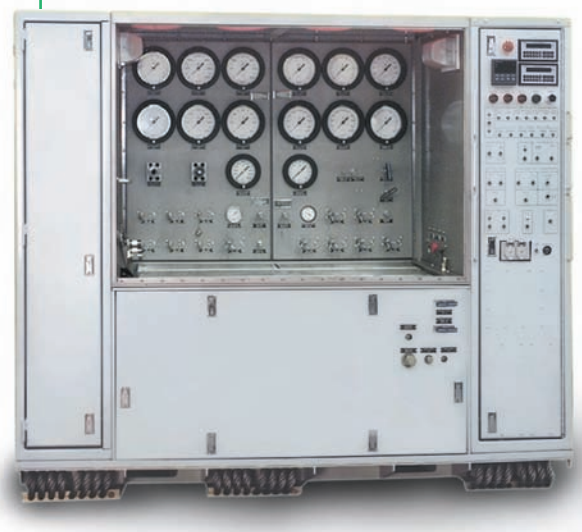
Available in both standard and ultra low-flow designs, Flow Technology turbine meters utilize a proven flow measurement technology to provide exceptionally reliable digital outputs. This capability, combined with response times as short as 10 mS, allows for precise monitoring of transient responses during tests.

UAVs, Drones, Missiles and Torpedoes

Today's "smart" military and government platforms, including UAVs, drones, missiles and torpedoes, are frequently called upon to stay in flight for extended periods of time, or even loiter over an area. Such demanding requirements make fuel totalization a mission-critical task.

Aerospace industry designers developing these and other advanced platforms seek instantaneous fuel flow rate data that can be used as feedback to control engine performance. Flow Technology meets this need with its accurate, highly reliable FT Series turbine flowmeters.

A TSO-approved fuel flow transducer, the FT Series offers a high turndown capability, as well as exceptional repeatability and speed-of-response. The meters can be employed to measure precise amounts of fuel and oxidizer throughout the flight envelope.



Hydraulic Fluid Measurement

Measuring hydraulic fluid during a flight test requires a flowmeter that is compact and rugged. Flow Technology answers the size, safety and durability concerns of flight test engineers with a line of turbine flowmeters featuring flared tube or beam seal fittings, positive retention of internal parts, and reinforced rotors. Subjected to vibration, shock and pressure impulse tests, the meters are suitable for the most difficult environments.

A E R O S P A C E

FTI FLOW TECHNOLOGY™

Turbine Flowmeter Operation

Flow Technology's turbine flowmeters employ a proven, high-precision measurement technology which provides exceptionally reliable digital outputs. The meters incorporate a freely-suspended turbine, or rotor, rotated by the flow of the fluid (liquid or gas) through the meter body. Since the flow passage is fixed, the rotor's rotational speed is a true representation of the volumetric flow rate. The rotation produces a train of electrical pulses which are sensed by an external pickoff mounted on the surface directly above the rotor. The frequency of the pulses can be converted to an analog current or voltage, or can be displayed as gallons per minute, pounds per hour, cubic feet per minute, or in other engineering units.

Flight-qualified Fuel Flow Transducers

Flow Technology's IM-2000A has been flight-qualified in accordance with RTCA/DO-160D. An integral temperature sensor and smart signal conditioner provide viscosity and density corrections over wide flow and temperature ranges. Variations are available with frequency, voltage and serial outputs scaled to volumetric, corrected volume or mass flow rate.

Custom Flowmeters

Flow Technology is recognized throughout the aerospace industry for its ability to develop custom-engineered flow measurement solutions to meet the most demanding application requirements.

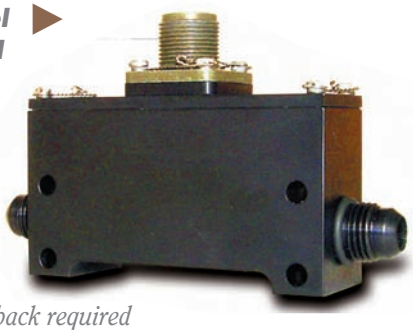
TSO'd Fuel Flow Transducers

Flow Technology's FT Series turbine flowmeters, which comply with FAA TSO C44a, set the industry standard for accuracy and repeatability. These rugged, all-stainless steel, high-precision meters are available in a variety of sizes ranging from 6 to 3,600 GPH.

Linear Link®

The innovative Linear Link®, with its advanced "blade averaging" capability, has redefined the method for optimum turbine flowmeter linearization. Meters equipped with this high-performance unit can achieve excellent accuracy over a 100:1 flow range. The simultaneous frequency and analog outputs provide flexibility for any data acquisition system.

Real-time Fuel Flow Control



Flow Technology's HR Series provides an output of up to 200,000 pulses per gallon. This high-resolution signal enables real-time feedback required by automatic fuel control systems. A small, rugged meter package is available with a single rotor, or two independent rotors and signal conditioners, for total redundancy.

An Unmatched Flow Measurement Resource For *Your* Industry.

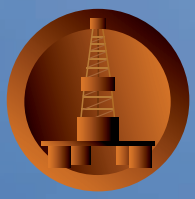
AEROSPACE
Cryogenic Fluid Metering
Flight Testing
Fuel Metering
Hydraulic Fluid Flow
OEM Components

AUTOMOTIVE
R&D
Production Fluid Fill
Adhesive Dispensing
Paint Mix & Recirc
Coolant & Refrigerant
Fuel & Lubricants
Hydraulic/Trans./
Power Steering Fluids
Emissions Measurement

INDUSTRIAL
Additive Batching
Chemical Dispensing
Feedback Controls
Fuel Oil Systems
Skid Packages
Turbine Generators/
Fuel/NOx Water

METROLOGY
Primary Standard Liquid &
Gas Calibration Systems
Flow Transfer Standards
Flowmeter Calibrations
Service & Repair Programs

OIL & GAS
Chemical Injection
Subsea Hydraulics
Fuel Measurement
High Pressure Fluids
Ultra-low Flow Rates
Custom Solutions



SANITARY
Batching
Continuous Blending
DI Water
Loading/Unloading
Mixing
Water Filtration

FUEL METERING
Aircraft
Automobiles
Diesel Engines
Gas Turbines
Power
Additives

OEM
Blow-out Preventors (BOPs)
Dispensing Systems
Fuel Management Systems
Hydraulic Test Stands
Skid Packages
Subsea Control Pods
Well Injection Systems
YOUR System

For solutions to demanding flow measurement applications, there's only one place to go — Flow Technology. With more than 50 years of experience, and one of the widest selections of products and services, we offer an unmatched flow measurement resource for *your* industry.

A complete selection of flow measurement products

- *Precision turbine flowmeters*
- *High accuracy positive displacement flowmeters*
- *Advanced flow controls and electronics*
- *Primary standard flow calibrators*
- *EPA-approved vehicle emissions measurement systems*

Custom-designed systems for your metering requirements

- *Knowledgeable sales engineering staff*
- *Custom meter electronics & packaging*
- *Specialized flow measurement systems*
- *Solutions for unique OEM applications*

Primary standard calibrations for all types of flowmeters

- *One of the world's largest flow calibration labs*
- *More than 20 primary standard calibrators*
- *NIST-traceable calibrations for most flowmeter designs*
- *Choice of calibration, service and repair programs*

At Flow Technology, quality isn't just a slogan — it's our way of doing business.

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