



**FCI** FLUID COMPONENTS  
INTERNATIONAL LLC

## Leading-Edge AS-FS Dual Output Flow Sensor/Switch Is Fully Redundant With Separate Outputs

*Ideal for Monitoring Hydraulic Fluid, Lubricating Oil, Liquid Cooling Systems  
PACK Air and Bleed Air Systems, Fuel Transfer and Refueling*



**San Marcos, CA** — The breakthrough dual output **AS-FS Flow Switch** from **FCI Aerospace** features a next-generation, zero maintenance design that is flight qualified and ideal for a wide range of liquid or air/gas measurement requirements in commercial and military mission-critical rotorcraft and fixed-wing aircraft applications.

FCI's Dual Output flow/level sensor provides fully redundant and separate outputs in the same envelope dimension. The dual output assures continued operation in spite of a single-channel failure, reducing the probability of an erroneous low flow or dry signal caused by a single sensor failure. Sensor failures may cause false warnings, resulting in unnecessary and costly mission aborts. Built-in redundancy helps prevent false positive indication of critical flow sensing in a single sensor, reducing weight and power consumption.

The AS-FS Dual Output Flow Switch/Sensor features a switch point range of 0.25 to 1000 SFPS (0.07 to 305 MPS) in air, and up to 10 SFPS (3 MPS) in liquids. Repeatability is  $\pm 2\%$  of full signal range. Response time is 1 to 10 seconds typical, depending on media conditions and switch point setting.

Designed for demanding commercial and military operating conditions, the AS-FS Dual Output Flow Sensor/Switch functions over a wide operating temperature range and is temperature-compensated for accuracy in extreme temperature conditions. The flow element is specified for service from  $-65$  to  $500^{\circ}\text{F}$  ( $-54$  to  $260^{\circ}\text{C}$ ). The electronics are suitable for service from  $-40$  to  $257^{\circ}\text{F}$  ( $-40$  to  $125^{\circ}\text{C}$ ).

Built for rugged service and zero maintenance, life-of-acquisition costs are very low. The AS-FS Dual Output Flow Sensor/Switch features a no-moving parts design. The mean-time between failure (MTBF) rate is 100,000 hours of service for superior dependability.

**-More-**

The AS-FS electronics package features an all-welded, hermetically sealed enclosure. Power input is 19-32 Vdc per MIL-STD-704. Standard outputs include an open collector, (sink) or a filtered, buffered op-amp (source) (< 1VDC [low flow] or > 17 VDC [high flow]).

Electronic hysteresis functionality is included with the AS-FS Sensor/Switch to prevent undesired switching when flow rates are in the vicinity of the set point. Because the flow induced heat dissipation effect is a logarithm function, FCI mass flow switches can perform over a remarkably wide flow range with exceptional low-flow sensitivity.

The AS-FS meets a wide range of performance and reliability standards. It includes qualifications to MIL-STD-810 and RTCA/DO-160, EMI protection meeting MIL-STD-461 and RTCA/DO-160, and quality systems approval to ISO 9001 and AS9100.

FCI's world-class, fully NIST traceable flow calibration laboratories test and calibrate all FCI products to ensure instrument accuracy with the customers' actual fluid and process conditions. FCI's calibration laboratories are ISO9001:2008 certified and AS9100 compliant. The laboratories also meet MIL-STD-45662A and ANSI/NCSSL-Z-540 requirements. The company's advanced technologies also include mechanical design, advanced materials, metallurgy, electronics, communications and more.

### **FCI Aerospace**

FCI Aerospace is a business unit of Fluid Components International. It is a world leading manufacturer of built-to-specification flow, level, temperature and pressure sensors designed for mission-critical performance and reliability. Whether military or civilian fixed-wing or rotary aircraft, FCI Aerospace has for nearly 30 years designed and manufactured qualified, flight-worthy sensor systems to meet a broad range of military and commercial applications.

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