

## FCI AS-CED Cooling Effect Detector Supports Aircraft Air Management Systems and Environmental Cooling Systems

*Designed for Mission-Critical Rugged Operating and High-Reliability Requirements*

**San Marcos, CA** — Engineers responsible for aircraft air management and environmental cooling systems will find the precision [Model AS-CED Cooling Effect Detector](#) from [FCI Aerospace](#) helps them ensure their safe, reliable operation, which is vital to pilot and passenger comfort, proper cooling of today's high-power electronics and ensuring critical subsystems such as bleed air and anti-icing operate as designed.



Accurate flow and temperature data are critical to optimize the performance of these complex aircraft systems. Low air flow detection in these conditioned air applications is especially a challenge because it varies with the cooling air temperature. Conventional mechanical and electronic flow switches, however, do not provide a single, calibrated integrated flow and temperature output to meet these requirements.

Other flow sensing technologies often used in these applications, such as Venturi flow meters, inherently require a pressure drop that impacts system performance and efficiency. Mechanical flow switches, with their moving parts, also require routine maintenance and come with a very low mean time between failure rate (MTBF) that is undesirable.

In comparison, the precision Model AS-CED Cooling Effect Detector is designed specifically for demanding commercial and military aircraft applications. It provides a unique set of performance features that are unavailable in other flow sensors, which integrates FCI's thermal dispersion technology mass flow measurement with an accurate temperature sensing capability in a single detector to reliably measure the cooling effect of air flow in aircraft ducting sized from 1 to 10 inches (25 to 250 millimeters).

The Model AS-CED features advanced electronics, which are calibrated with the sensor element in FCI's own National Institute of Standards Technology (NIST) traceable laboratory. The sensor's design and the calibration process provide a single alarm point over a customer's specified cooling effect curve that meets their program specific requirements.

The wetted portion of the AS-CED probe is hermetically sealed for rugged environments and is made of all welded stainless-steel parts. The sensor element construction provides corrosion resistance and withstands service line pressures up to 2000 psig [138 bar [g]]. The versatile Model AS-CED is suitable for wide-ranging media temperature service from -55 to +350°F (-48 to +177°C). It is available with a flanged mounting connection and can be provided with a variety of commercial or military electrical connectors. The Model AS-CED's electronics are environmentally sealed in an integral nickel-plated aluminum enclosure. Power input is 19 to 32 Vdc per MIL-STD-704. Standard outputs include an open collector (sink/open). Outputs can be specified with a "closed" condition for either low cooling effect or with a high cooling effect to suit customer signal input requirements.

Electronic hysteresis is included with the Model AS-CED to prevent undesired switching when air duct cooling effect rates are close to the value of the set point. In consideration of the fact that the cooling induced heat dissipation effect is a logarithmic function, FCI's Model AS-CED performs accurately over a remarkably wide cooling effect range with exceptional low cooling effect sensitivity.

The Model AS-CED's thermal sensor features a no-moving parts design that is virtually maintenance free over a long life. It comes with full commercial and aircraft qualifications including DO-160G, MIL-STD-810, MIL-STD-461 and MIL-STD-704. This highly reliable detector features proven reliability of 50,000+ hours MTBF. The FCI quality management system is certified to ISO9001 and AS9100.

FCI Aerospace is a world leading manufacturer of commercial off the shelf (COTS) and built-to-specification flow, level, temperature and pressure sensors. Whether rotary or fixed-wing aircraft, FCI has designed and manufactured qualified, flight-worthy sensor system instrumentation. Their wide range of applications include monitoring fuel systems, engine gearbox, oil and coolants, hydraulics, cockpit ventilation, thermal management/cooling systems and more.

Many prime and sub-system providers of commercial, business, defense and military aircraft worldwide have specified and installed FCI sensors with confidence for over 40 years. FCI's design, manufacturing and calibration systems, processes and facilities are continuously reviewed and audited by all major contractors and airframe manufacturers, enabling FCI to provide proposals directly to system suppliers and contractors alike. FCI products are proudly manufactured in the USA at FCI's facilities in San Marcos, California.