Air Data Probes

- Pitot probes
- Pitot-static probes
- Multi-function probes
- Flight test booms

U.S. Navy photo by Airman Angel G. Hilbrands

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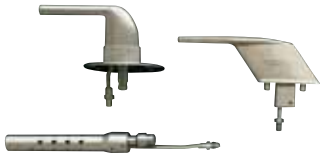
UTC Aerospace Systems

Air Data Probes



Model 0851 Pitot Probes

Model 0851 Pitot probes are available in many custom configurations to meet interface needs on a particular aircraft. Models can be provided for mounting on the fuselage side, tail fin, nose boom or engine inlet. De-icing heaters are provided for 28 VDC or 115 VAC. Qualified to FAA TSO-C16, AS 390 and AS 5562 icing requirements; MIL-STD also available. Shielded type Pitot probes are available for both flight test and production applications. Sheilding allows the Pitot probe to retain high accuracy to flow angles of ±50°.

Model 0850 / 0852 Pitot-Static Probes

Standard product Pitot-static probes are available for boom-mounting on the fuselage nose, wing leading edge or fin leading edge. Each probe provides an output for Pitot and local static pressure at the mounting location. High repeatability is guaranteed through aerodynamic testing of each unit prior to shipment. Model 0850 has a 28 VDC heating element and model 0852 has a 115 VAC heating element. Model 0850 / 0852 Pitot-static probes are used for flight test applications and for subsonic and supersonic production use on military aircraft, unmanned vehicles, helicopters and other aircraft.

Model 0855 Aerodynamically Compensated Pitot-Static Probes

Boom style model 0855 Pitot-static probes are designed for mounting on the fuselage nose, wing leading edge or fin leading edge. Each model 0855 is aerodynamically compensated for a specific aircraft and a specific mounting location. Our engineers work closely with each customer to determine the aerodynamic characteristics at the location of interest and customize a probe for that application. Each Pitot-static probe typically provides one Pitot output and one aerodynamically compensated static pressure output. Special configurations are available providing multiple outputs of either or both parameters. Either 28 VDC or 115 VAC de-icing heaters can be provided. Typical qualification specifications are found in MIL-P-83207B. Model 0855 Pitot-static probes are used on both subsonic and supersonic military tactical and trainer aircraft and unmanned vehicles.

Model 0856 Aerodynamically Compensated Fuselage Side-Mounted Pitot-Static Probes

Model 0856 Pitot-static probes are L-shaped for mounting to the side of the aircraft fuselage and are aerodynamically compensated to correct for local static pressure errors at that location. Each model 0856 is customized for a specific application to provide one or two aerodynamically compensated static pressures. Our engineers work closely with each customer to determine the aerodynamic characteristics at the location of interest and customize a probe for that location. Many different sizes and configurations are available to meet the aerodynamic and interface needs of a specific application. Either 28 VDC or 115 VAC heaters can be provided. Typical qualifications include MIL-P-83206B and FAA TSO-C16. Model 0856 Pitot-static probes are used on all types of aircraft for both subsonic and supersonic military and commercial applications, fixed and rotor wing.

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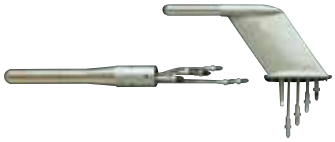

Model 0857 Multi-Function Probes

Model 0857 multi-function probes are similar to model 0855 and model 0856 Pitot-static probes but have added capability for pneumatic low angle measurement. Both boom type and L-shaped versions are available with 28 VDC or 115 VAC heaters. Model 0857 multi-function probes are used in conjunction with our pressure transducers to output Pitot pressure, aerodynamically compensated static pressure and local flow angle. Each model 0857 is customized to a specific application in the same manner described for model 0855 and model 0856 Pitot-static probes. Typical qualification specifications are found in MIL-P-83206B. Model 0857 multi-function probes are used on high performance military and transport type aircraft.

Model 0858 Hemispherical Head Multi-Function Probes

Model 0858 multi-function probes are available as standard products for boom mounting or fuselage side mounting. Either 28 VDC or 115 VAC de-icing heaters are available. When used with our transducers, model 0858 probes can provide Pitot and local static pressure, angle of attack and angle of sideslip from one probe. MIL-STD qualification is available on some versions. Typical applications include flight test on all types of subsonic and supersonic vehicles and production use on military aircraft.

Enhanced Anti-icing Capability

Accurate pressure measurement in all environmental conditions is important to maintain performance and safety. Aircraft certification minimum performance standards for Pitot and Pitot-static probes now include severe ice crystal conditions from SAE AS 5562, commonly referred to as Appendix D from FAR 33. Patented air data probe technology has been developed to effectively manage all types of moisture content without impacting sensing capability. Total pressure can be sensed throughout the flight envelope without increasing power consumption or sacrificing heater reliability. New fixed wing platforms and those seeking increased robustness in icing conditions can greatly benefit from this capability.

Flight Test Products

We offer a wide variety of flight test air data probes. For a Pitot measurement, the shielded version of model 0851 Pitot probe is favored for its high accuracy at high local flow angles and full de-icing capability. Model 0850 and 0852 Pitot-static probes are available as standard products for measuring Pitot and local static pressures. High repeatability allows calibration of these probes for use as a flight test reference. Model 0858 multi-function probes allow pneumatic measurement of Pitot, local static, angle of attack and angle of sideslip for one probe. These units can be used in subsonic and supersonic applications and are available with de-icing heaters.

Also available is model 0092 flight test boom which has a model 0850 / 0852 Pitot-static probe mounted to a boom with vanes for measuring angle of attack and sideslip. Total temperature measurement is also available on the model 0092 product. These flight test booms have seen use on all types of aircraft.

Air Data Probes

UTC Aerospace Systems is continually expanding our air data measurement capabilities, becoming a single source for entire systems. We currently offer a wide range of products for pneumatic measurements of air data parameters, each designed to meet a particular need, including Pitot probes, Pitot-static probes, multi-function probes with flow angle measurement, and various flight test products. These products provide the capability to optimally configure the air data system for any type of aircraft.

Features & Benefits

- Simplified system design
- Reduced weight and pneumatic lag
- Ease of installation and replacement
- Improved accuracy and repeatability on all types of aircraft

State-of-the-Art Testing Capabilities

UTC Aerospace Systems has one of the most capable icing wind tunnels in the world. Aerodynamic and icing testing is essential to analyze the effectiveness of air data products. The new icing wind tunnel allows UTC Aerospace Systems to meet the new, stringent icing requirements for air data probes set forth by the world's aviation regulatory agencies. It offers significantly increased capabilities, such as colder temperatures and higher altitudes, and is capable of producing both solid ice particles and supercooled liquid water droplets in high concentrations. Extensive wind tunnel testing allows us to optimize the design for performance throughout the flight envelope and environmental conditions experienced in flight.

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