

# On-The-Fly! Air Data System

## Complete Air Data Solutions

Building on 15 years of experience, tens of thousands of hours of wind tunnel testing and countless hours of on-vehicle air data logged, Aeroprobe is setting a new standard for in-flight air data with its *On-The-Fly!* system. *On-The-Fly!* (OTF!) incorporates Aeroprobe's industry-leading air-data reduction algorithms into a compact, light-weight air data computer which streams and/or logs air data at rates up to 100Hz. Aeroprobe continues to be the leader in custom air data probes for UAVs, motor sports, and wind turbines.

Streaming air-data from the OTF! to your flight controller gives you the option of closed loop control of your air frame's alpha and beta. Due to its compact size, the air data computer can be mounted in close proximity to the air data probe which can be fuselage, wing or boom mounted. The system offers compact size, a simple interface and allows for complete system redundancy.

## Features

- Real time-streaming of AOA, AOS, air speed, and altitude
- Less than 1° error in angular measurements
- Less than 1% error in altitude and air speed
- Standard and customized probes
- COTS and OEM versions available
- Heated probes available for de-icing
- Multiple sensor ranges available for a wide range of air speeds

## General Specifications

### System:

|                  |              |
|------------------|--------------|
| Velocity Range   | Up to 63 m/s |
| Flow Angle Range | ±20°         |

### Electrical:

|                           |               |
|---------------------------|---------------|
| Air-data computer voltage | 9-15 VDC      |
| Air-data computer power   | < 2 Watts Max |
| Communication protocol:   | RS-232        |

### Weight:

|                                     |       |
|-------------------------------------|-------|
| COTS air-data computer packaging    | 83 g  |
| OEM air-data computer packaging     | 16 g  |
| Air data probe (¼" OD; SS; 6" len.) | 6.3 g |

### Dimensions:

|                         |                   |
|-------------------------|-------------------|
| COTS air-data computer  | 1.62"x3.07"x1.92" |
| OEM air-data computer   | 1.5"x2.95"x0.80"  |
| Air data probe diameter | 1/8 in. OD (min)  |



Air data computer and carbon fiber air data probe

Aeroprobe is setting a new standard for in-flight air data with its *On-The-Fly!* system.

## Operational Principle

Unlike traditional air data booms, the *On-The-Fly!* system has no moving parts. An air data probe extends into the free stream flow where pressure is developed on the tip ports and on the static ring. An embedded system implementing Aeroprobe's air-data reduction algorithms then calculates AoA, AoS, flow velocity and altitude. The calculated air data is streamed in real-time to a flight controller or logged to the on-board data storage.

## For additional information

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