

# Dirty Air Pitot Test System



The dirty air pitot (DAP) probe is utilized to measure air velocity, pressure, and temperature within a flow stream that is heavily laden with particulate.

Compared to other pressure-type velocity probes, the design of the DAP reduces the potential for pluggage of the pressure lines, a situation that will yield erroneous results. The DAP probe is generally used to measure the air or gas flow rate in pneumatic conveying systems. These may include piping or duct systems that transport cement, pulverized coal, lime, or food products.

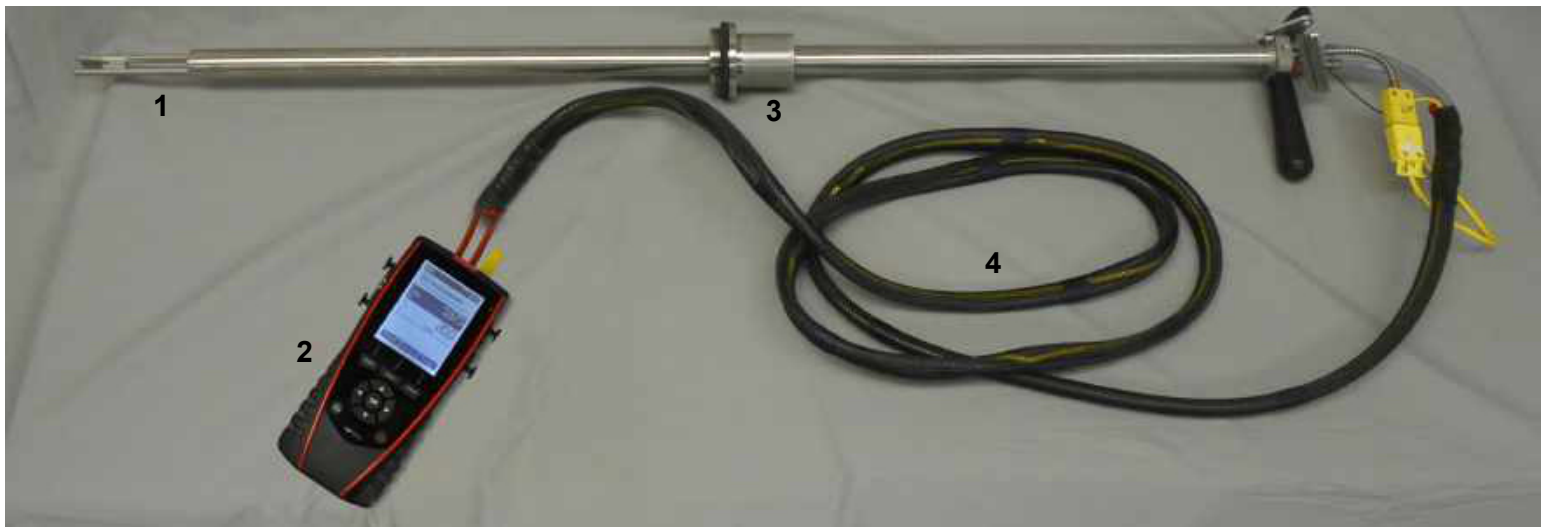
The DAP probe measures the velocity of the transport flow and thus can provide the data necessary to balance flows and avoid dust dropout due to low velocities. Determining the air velocity is necessary if isokinetic particulate flow sampling is desired (i.e., ISO 9931, ASME PTC 4.2, etc.).

The Dirty Air Pitot Test System by Airflow Sciences Equipment, LLC (ASE) provides all the basic equipment needed to measure air velocity, pressure, and temperature.



Velocity testing in a coal piping system

The standard system (ASE part no. DAP-SYSTEM-V2) is shown in the photograph below.

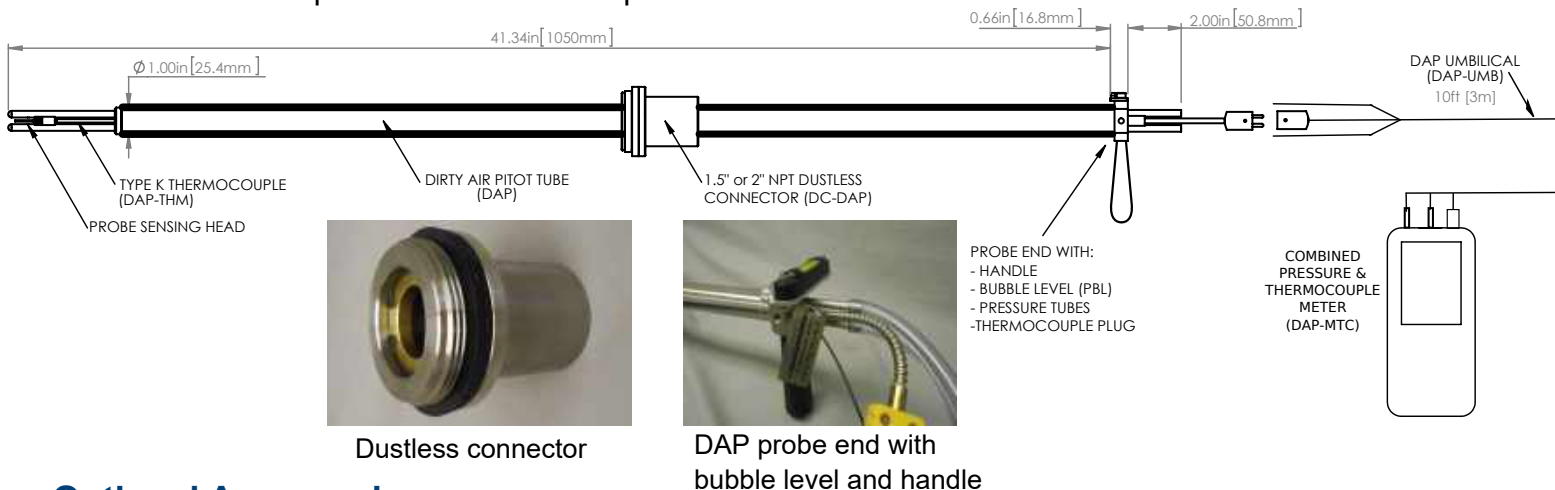


## Components:

- 1 – Dirty air pitot velocity measurement probe with thermocouple (Part no. DAP)
- 2 – Combined pressure and thermocouple meter (DAP-MTC)
- 3 – Dustless connector (DC-DAP)
- 4 – Tube umbilical, 10' [3 m] length  
(contains pressure and thermocouple lines) (DAP-UMB)
- Users manual, Certificates of Calibration, Calculations Spreadsheet (not shown)

## Dirty Air Pitot Test System Details and Specifications

The DAP probe from Airflow Sciences Equipment can be manufactured to fit a variety of testing needs. Construction is 304 stainless steel. Typical dimensions are shown below, though custom size probes are available. Photos provide details of component construction.

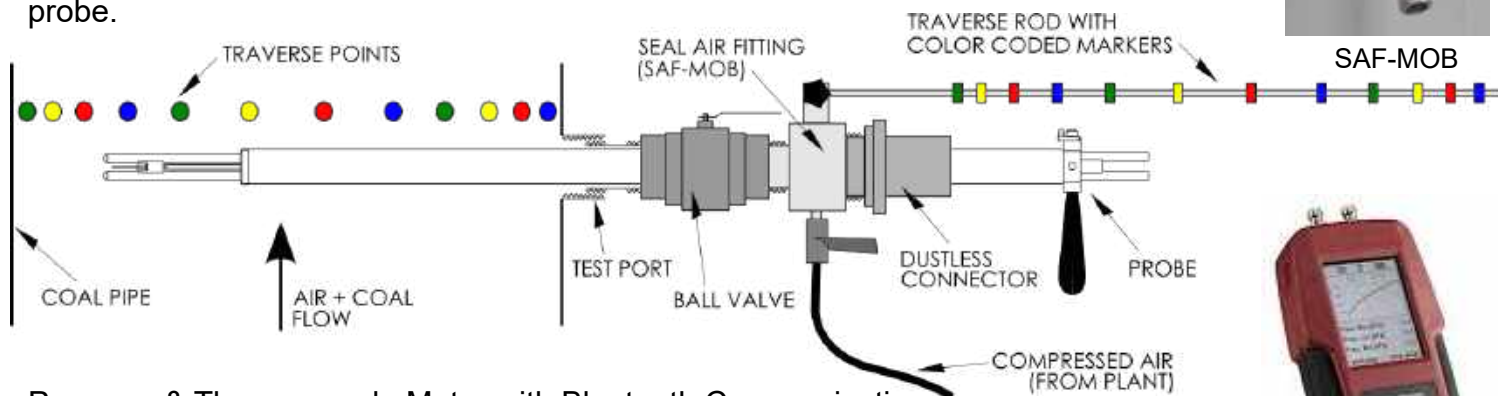


## Optional Accessories

### Seal Air Fitting with Traverse Rod

ASE's Mobile Seal Air Fitting (part no. SAF-MOB) greatly improves the accuracy, speed, and safety of a test. When testing flows with high positive static pressure, the SAF keeps the air and particulate from leaking out of the pipe when the test port is open to insert the probe. The SAF blows plant compressed air into the test port, allowing safe access and making for a much cleaner test.

The SAF-MOB has an integrated Traverse Rod with color-coded markings corresponding to the probe insertion depths for the DAP probe traverse. This makes it easy for the operator to accurately and quickly position the probe at each test point for the coal flow sampling. The Traverse Rod eliminates the need to manually mark the probe.



### Pressure & Thermocouple Meter with Bluetooth Communication

As an upgrade in both accuracy and usability for the DAP system, the standard meters can be replaced with a single, advanced meter (part no. DAP-MTC-BT2). This meter is programmable, logs data, takes time averages, and communicates with laptops via Bluetooth.



Bluetooth meter

### Fast-Lock Dustless Connector and Seal Air Fitting

An upgrade from the standard Dustless Connector and Mobile Seal Air Fitting is the Fast-Lock system. In addition to providing seal air and a Traverse Rod, the Fast-Lock system speeds the testing process by allowing a quick connection to the Dustless Connector. A short turn of the Fast-Lock handles automatically connects and aligns the probe. The Fast-Lock system is optional on the DAP (part no. DAP-FL), but is standard equipment on ASE's automated and motorized coal sampling probe, the ISO9931-APA.



DAP with Fast-Lock