ISO 9931 Pulverized Coal Flow Measurement System

The ISO 9931 Measurement System is utilized to sample particulate flow carried within an air stream. By isokinetically extracting the sample, the particulate flow rate can be determined. The sampling probe, the SwivelSampler™, features four (4) nozzles that rotate around the center axis, and thus the probe is ideally suited for use in round pipe flow systems. The nozzles are positioned at different radial positions from the center representing equal areas. The rotation of the probe head allows the nozzles to extract particulate samples over the entire pipe cross section while entering through a single test port. This increases the test accuracy when there is a gradient in the particulate distribution.

The extraction is via a vacuum with the extraction rate set by the operator based on the known average air velocity within the pipe. The rotation of the probe head is performed manually with a uniform sample time used at each rotational set point. A particulate collection system separates the sample, which is weighed after each test to calculate the total pipe particulate flow.

The sampling probe requires a minimum of a 1.5” inner diameter test port. A dustless connector is used during probe insertion to ensure that particulate does not escape when the pressure in the pipe is positive.

The SwivelSampler™ can be manufactured to a variety of specifications. Typical features are listed below, though custom orders are available:

- Pipe diameter – 18” to 32”
- Probe body diameter – 1”
- Level indicator (to ensure proper alignment)
- Material – 304 stainless steel
- Dustless connector – 2” threaded NPT pipe thread
ISO 9931 Test System

The complete ISO 9931 Testing System includes the following items:

- SwivelSampler rotating sample probe with four (4) nozzles, rotational gearing, and level indicator
- Probe support bushing and seal air fitting
- Sample tube bundle (up to 25’ length, grounded)
- Extraction rate control system: vacuum, valve, calibrated flow orifice (requires compressed air at 80 psi and AC power source)
- Particle collection system (cyclone or filter bag)
- Users manual
- Shipping case
- 1 year limited warranty
- Email or telephone technical support (US Eastern time zone business hours)