

ISO 9931 Measurement System with Automated Probe Actuation



The ISO 9931 Measurement System with Automatic Probe Actuation (APA) 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 automatic 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 operator uses a touch-screen PLC interface to perform the test. The vacuum extraction rate is automatically calculated based on the velocity measurement from a Dirty Air Pitot (DAP). A servo motor performs the rotation of the probe, requiring no manual effort from the operator. A particulate collection system separates the sample, which is weighed after each test on the integrated weigh scale.



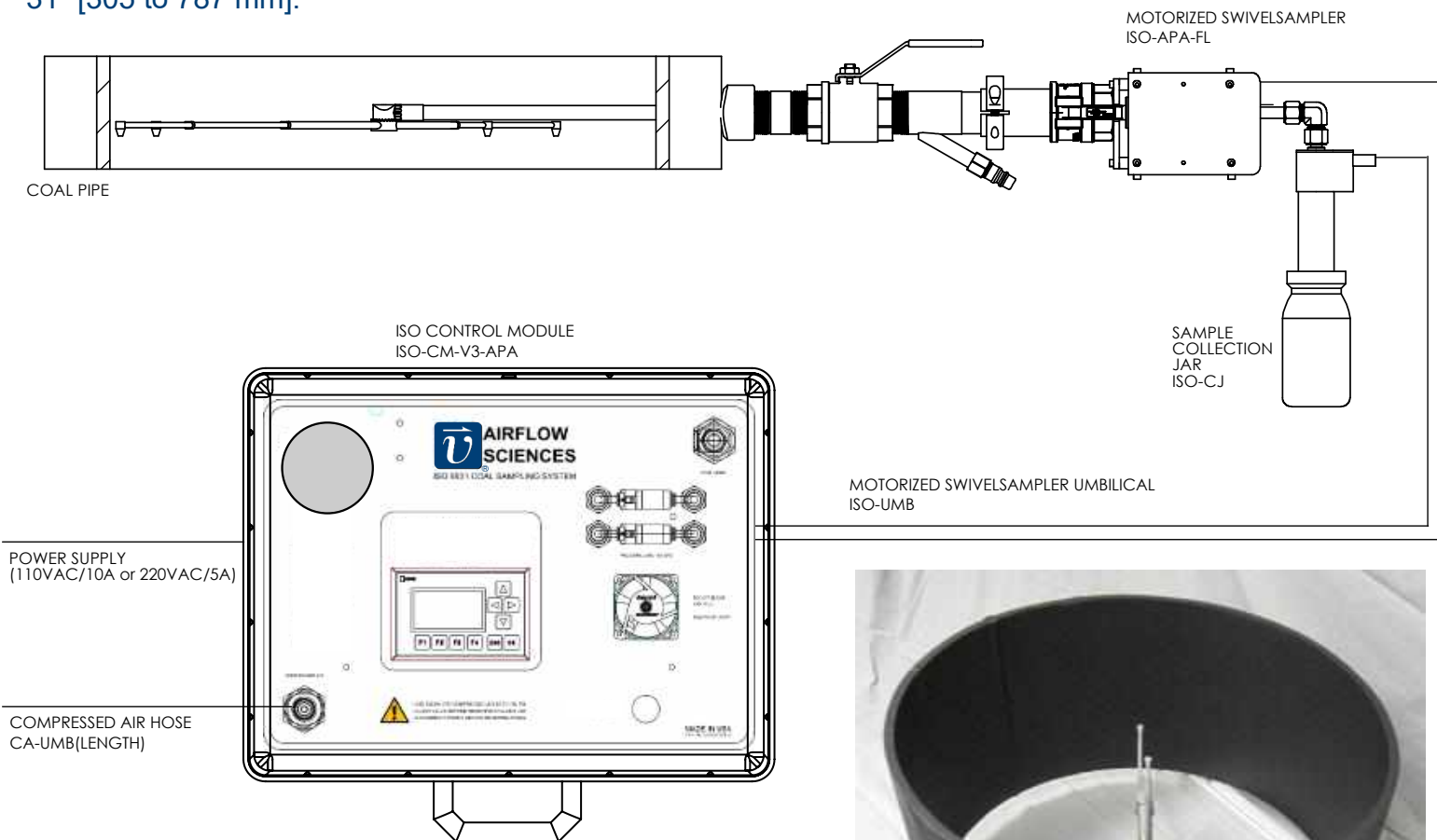
The system includes:

- Control module with color touch screen PLC interface and automatic logging of data.
- Electric servo motor that controls the SwivelSampler rotation. The motor assembly allows the test to be performed with no manual rotation by the operator. The motor communicates with the start/stop buttons on the control module.
- Cyclone separator and particulate capture sample jar.
- Integrated weigh scale with direct data transfer to control module.
- Fast-Lock Dustless Connector quickly connects and aligns the sampling probe to the coal pipe (Fast-Lock Seal Air Fitting (SAF-FL), mounted on each pipe, is sold separately).
- Immediate export of test data to a spreadsheet format test report.
- Ability to obtain velocity traverse data using the DAP.
- Secondary filter that captures 99.99% of coal dust for safer, cleaner testing.

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Details and Specifications

The system can be manufactured to a variety of specifications. Typical pipe diameter range is from 12" to 31" [305 to 787 mm].



Motorized SwivelSampler, cyclone separator, sample jar, and umbilical



Motorized SwivelSampler mounted on demonstration coal pipe