Aerodyne® GPC Cyclone Airflow Meter

Aerodyne developed the GPC Cyclone Airflow Meter to allow operators to know real-time airflow measurements through their GPC Cyclone. The GPC Cyclone Airflow Meter measures the pressure drop through the GPC cyclone and displays the airflow corresponding to the cyclone size. It is designed so that one size fits all. During setup, you select the proper GPC model and units of measurement (Imperial or metric) and it does all the rest. The basic premise of the airflow meter is that if you check it regularly and notice it change (increase or decrease) significantly from normal operation, something is wrong with the system and it should be investigated.

Benefits of knowing the airflow:

1. Helps provide early warning of
   a. Dust buildup in ductwork
   b. Dirty filters
   c. Leaking ductwork
   d. Open/closed dampers
   e. Inoperative or missing airlocks

- **Includes two (2) pressure fittings**
- **120V power**
- **1% FS accuracy**
- **10’ of tubing**
- **NEMA 4 Construction**

2. Provides an actual value that can be used to evaluate the system operation. See other side for additional information.
3. Provides real time measurement without having to manually measure air velocities, thereby saving time (pitot tube airflow measurements may be required).
4. Works great as an EPA/OSHA system indicator for proper system operation.

* To identify a specific issue in the system, airflow measurements might have to be done at various parts of the system. Thereby pitot tube airflow may be required.

Shown with optional power cord.

Aerodyne® ENVIRONMENTAL

17387 Munn Road • Chagrin Falls, OH 44023
(440) 543-7400 • FAX: (440) 543-7404
www.DustCollectorHQ.com

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Pressure Drop

It is relatively easy to measure pressure drops in an airflow. A simple differential pressure gage will provide you with the pressure drop, which is basically the resistance the airflow has over a certain distance. This resistance will change as the airflow is increased or decreased in a piece of ductwork. However, depending on the ductwork size, construction, etc., the resistance may not be consistent from system to system. Any dust buildup in the ductwork will cause a change in resistance (pressure drop and airflow).

The pressure drop is also often measured across a filter. And while this pressure drop is dependent on airflow, it is also very dependent on the amount of dust on the filters. So as the dust builds up on the filters, the pressure drop increases, which usually decreases the airflow through the filters.

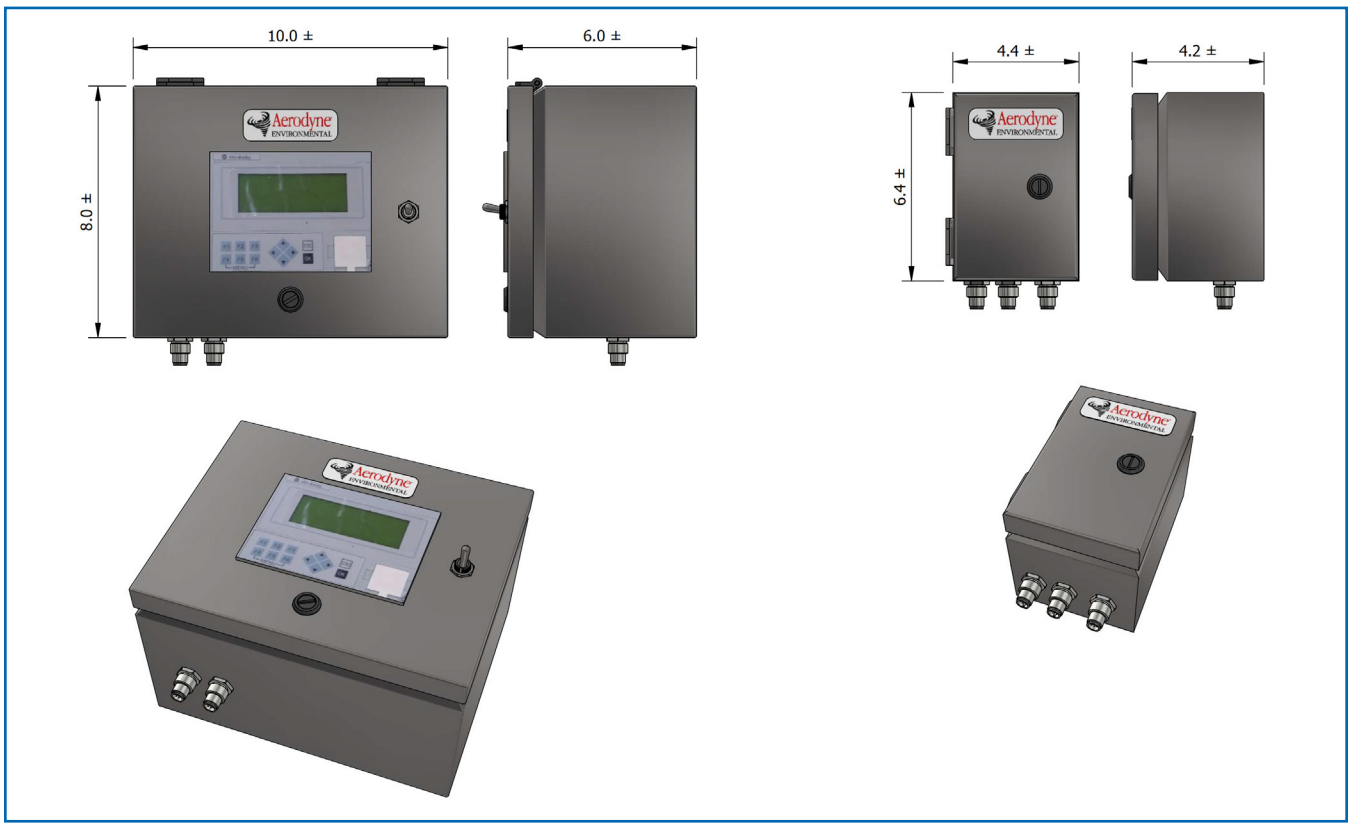
However, a cyclone pressure drop is proportional to its airflow. So if you measure the pressure drop of the cyclone you have a very good idea of the airflow. And unlike ductwork, where the resistance can change with dust buildup, the cyclone is designed to remove dust; thereby not allowing dust buildup to affect its measurement.

What We Learn from Airflow

Airflow is a measurement of the amount of air moving through a system. This air is what actually captures the dust at the pickup points and moves it away from the equipment and personnel. The greater the airflow through a system, the greater the amount of dust collected and the greater the amount of area dust can be collected from. A system is designed to pull a certain amount of airflow from each pickup point. Having a visual reading of the overall airflow tells you if the system is operating as designed. This gives you a real-time indication if the system is not operating as it should. The operator may have to do further investigation on the cause of the issue, such as filters are plugging up, fan is failing, etc.

Airflow vs. Static Pressure

Exhaust fans will provide a specific airflow at a certain static pressure (pressure drop) based on their performance curve. As the pressure drop in the system changes, the airflow will adjust according to the fan curve. So if dust builds up on the filters or in the ductwork, or a hole develops in the system, the airflow through the system will adjust according to the fan curve. This means that the airflow through your system may change without you knowing it.



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