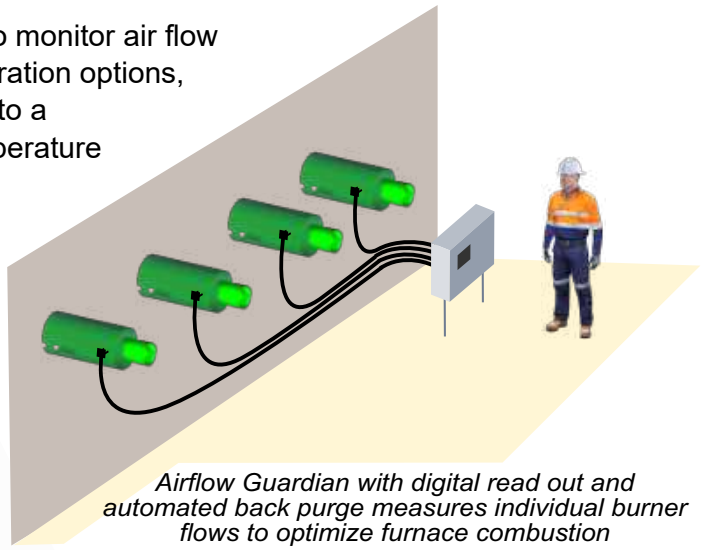
Airflow Guardian™
for Accurate Online Flow Measurement and Monitoring

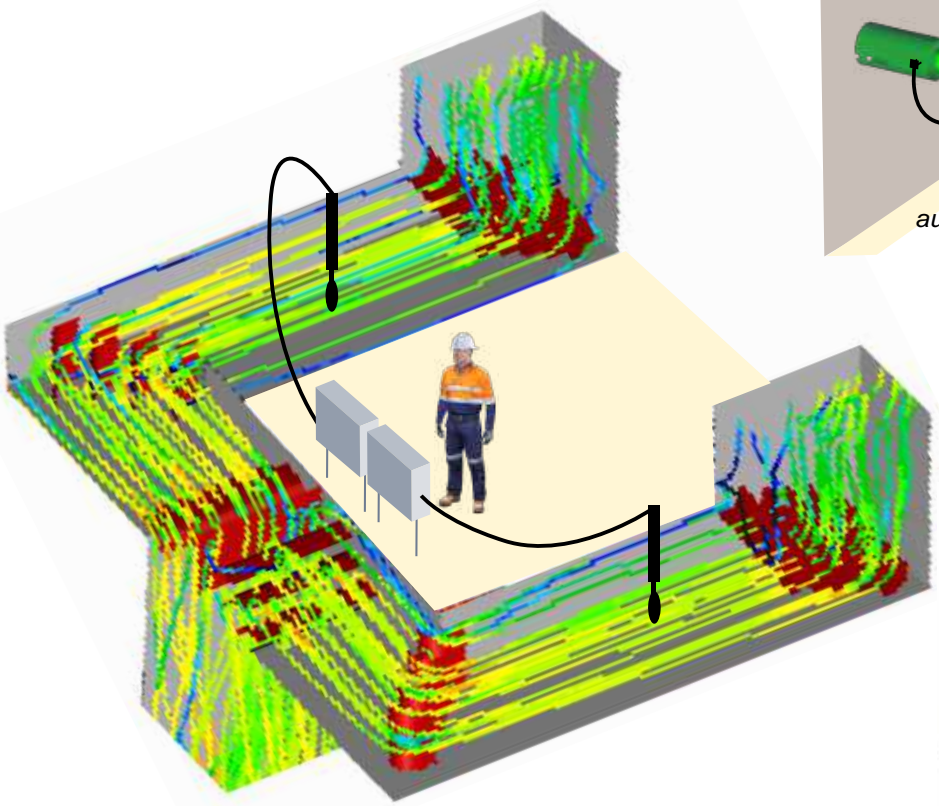
The Airflow Guardian provides real-time, online measurement of duct air flow rates. The system is quite versatile and can be fitted with a variety of sensors to monitor the flow velocity, temperature and mass flow rate. Pressure or thermal probes can be connected to the Airflow Guardian, providing an accurate flow measurement that can be used for online plant control or for performance optimization.

The Airflow Guardian can be used in any shape ductwork (round, square, rectangular), and can handle light particulate loading without plugging. Either a manual or automated back purging system is available for heavier particulate loading. The choice of flow sensor is based on the overall flow conditions at the measurement location, including velocity profile and directionality. Probes are wind tunnel calibrated to ensure accuracy. Design of the system often incorporates CFD flow modeling to ensure optimal positioning of the sensors.

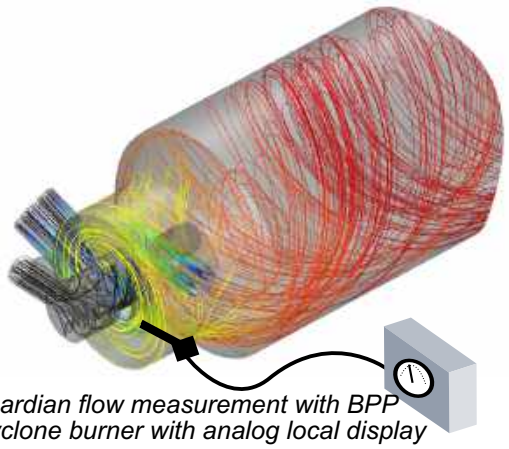
The Airflow Guardian provides all the equipment needed to monitor air flow rate within the flow stream. The system has many configuration options, allowing local display of flow parameters, an output signal to a plant control system or DCS, manual or auto purging, temperature measurement, environmental control, etc.



Airflow Guardian with digital read out and automated back purge measures individual burner flows to optimize furnace combustion



Airflow Guardian measures combustion air with DAP probe in a branching duct system



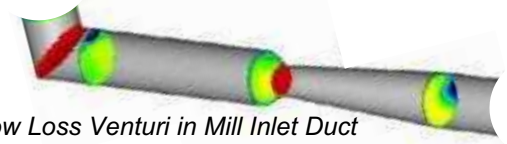
Airflow Guardian flow measurement with BPP probe in a cyclone burner with analog local display

Airflow Guardian™ Options

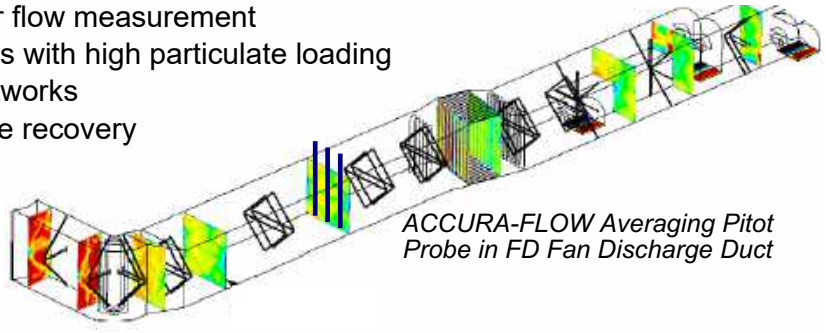
The Airflow Guardian can be manufactured to fit a variety of configurations.

Probe Sensor options

- ACCURA-FLOW averaging pitot probe for standard duct air flow measurement
- Burner Pitot Probe (BPP) for individual burner flow measurement
- Dirty Air Pitot (DAP) to avoid pluggage in flows with high particulate loading
- Duct airfoils for large ducts and branching networks
- Calibrated venturi for large ducts and pressure recovery



Low Loss Venturi in Mill Inlet Duct



ACCURA-FLOW Averaging Pitot Probe in FD Fan Discharge Duct

Instrumentation options

- Analog pressure gage for local display only
- Flow transmitter / flow computer with 4-20mA signal output

Compressed Air Back Purge options

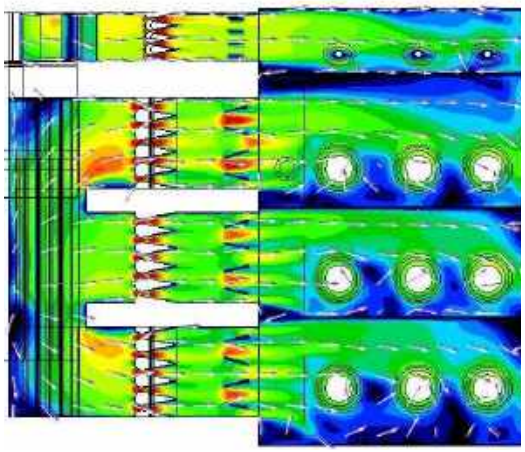
- Manual valving for maintenance personnel periodic purging
- Automated purging via PLC/relay timer at user-set interval

Enclosure options

- NEMA 4 / IEC IP66 painted aluminum
- NEMA 4X stainless steel for corrosive environments

Internal Materials options

- Brass / copper standard components
- Stainless steel components for corrosive environments



Duct Airfoils for Overfire Air and Secondary Air to Windbox

Enclosure Climate Control options

- Electric heater with set point for cold environments (<50°F / 30°C)
- Vortex cooler for hot environments (>135°F / 60°C)

Specifications

System Parameters

Size:	varies based on duct size
Weight:	varies based on options
Electrical:	120 or 240 VAC
Compressed Air:	90 PSI, 5 CFM
Enclosure:	IEC IP 66, NEMA 4, NEMA 4X
Environment:	50°F to 135°F / 30°C to 60°C
Heating / cooling:	optional

Measurement Ranges

Air Velocity:	20 ft/sec to 160 ft/sec 6 m/s to 50 m/s
Static Pressure:	-65 IWC to +65 IWC -16 kPa to +16 kPa
Temperature:	32°F to 700°F 0°C to 370°C