

# APPLICATIONS

## COMMON APPLICATIONS FOR SAGE THERMAL MASS FLOW METERS

<b>Compressed Air Monitoring</b>	Perform Audits	Improve overall cost effectiveness of compressed air system
	Detect Leaks	Eliminate waste – Improve efficiency of overall system
	Sub-Meter for Conservation	Reduce energy expense
<b>Monitor Plant Nat. Gas Consumption</b>	Plant Monitoring	Track billing meter, assess daily flow peaks, determine demand for each shift
	Sub-Metering	Monitor department usage, and analyze associated expenses
<b>Natural Gas Distribution</b>	Check Meters	Natural gas distribution lines require “check” meters to measure usage (downstream of gate valves)
	Source Control	Monitor NG exhaust (Dual Channel Meters—Low Flow and High Flow)
<b>Specialty Gas Monitoring</b>	Nitrogen and Argon Plant Metering	Monitor flow rate and consumption of N <sub>2</sub> , AR and other specialty gases in a plant’s gas distribution system
	Nitrogen and Argon Sub-Metering	Sub-Meter N <sub>2</sub> , AR, etc. by department to determine cost savings
	Nitrogen, Argon & Hydrogen Consumption	Totalize mass flow for customer billing
<b>Flare Gas</b>	Exhaust Flow	Monitor normal and upset condition (Dual Channel Meters) Monitor individual flare header pipes
<b>Wastewater Treatment</b>	Aeration Flow	Monitor and adjust the air flow bubbling into aeration tanks to control the critical dissolved oxygen level
	Digester Gas	Monitor the flow of CH <sub>4</sub> /CO <sub>2</sub> mix in the digesters to facilitate the sewage treatment
	Biogas	Measure the excess gas for storage as backup fuel, and monitor emissions
	Odorizing	Monitor Oxygen flow in odorizing (fragrancing)
<b>Water Purification</b>	Oxygen Monitoring	Monitor O <sub>2</sub> flow rate in ozone generator systems that purify municipal water supplies
<b>Incineration</b>	Exhaust Flow	Measure exhaust flow in incinerators
<b>Combustion Control</b>	Natural Gas, Oxygen, Air Flow	Monitoring and controlling of combustion air or oxygen and natural gas ratios are critical for optimal boiler efficiency Stoichiometric ratio control
<b>Tablet and Pill Coating</b>	Monitor Atomizing Gas	Monitor the atomizing air or nitrogen flow rate in the pharmaceutical pill coating process
	Monitor Exhaust Gas	Monitor the flow rate of the downstream side of the pill coating process to determine the by-product emission
<b>Nitrogen Blanketing</b>	Tank Blanketing	Measure the nitrogen flow layering over the contents of the tank to “insulate” the product
	Surface Blanketing	Move product, such as pills, along a layer of nitrogen on a conveyer. Fluidized beds
<b>Fuel Cells</b>	Air Flow	Monitor the air flow to control the efficiency of fuel cell power plants
	Hydrogen Flow	Monitor the hydrogen generated in the fuel cell process
<b>Landfill Gas</b>	Methane CO <sub>2</sub> Mix	Monitor gas to engines for electrical power
<b>Testing Hydrogen Cooled Turbines</b>	Hydrogen Leak Detection	Measure air flow rate that is analyzed for hydrogen presence
<b>Natural Gas Odorizing</b>	Scent Control	Monitor NG flow to control ratio of liquid scent injection
<b>Plastic Production</b>	Argon, Nitrogen Flow	Monitor AR & N <sub>2</sub> flow rate involved in certain plastics production
<b>Fiberglass Production</b>	Combustion Control	Monitor flow rate of natural gas and oxygen to control air-fuel ratio to optimize burners resulting in higher quality product and greater product yields
<b>Pump Manufacturing</b>	Test Pumps	Monitor air flow to test pumps for manufacturing quality control
<b>Natural Gas Furnace</b>	Natural Gas Consumption	Measure NG consumption for furnaces that burn NG in a nitrogen environment
<b>Steel Fabrication</b>	Argon and Nitrogen Flow Rate	Monitor and control AR & N <sub>2</sub> flow rate for bottom stirring and purification
	Coke/Oven Gas	Monitor the refined end of the coke oven gas process
<b>Metals Recovery</b>	Air Flow Rate	Air flow rate is critical in forming bubbles that capture precious metals that otherwise are not recoverable
<b>Plastics Molding</b>	Nitrogen Flow	Nitrogen flow rate controls the forming of plastic shapes such as gas tanks
<b>Spray Drying</b>	Uniform Air Flow	Monitor air flow to uniformly dry components in pharmaceutical, food processing, fertilizer and chemical industries
<b>Aluminum Smelters</b>	Natural Gas and Air Flow	Combustion control for boilers and furnaces
	Chlorine and Argon Flow	Hastelloy flow meter monitors the CL <sub>2</sub> and AR in the smelting process
<b>Remediation</b>	Air Flow	Meter the air intake used to detect contaminated soil
<b>Powder Painting</b>	Painting Cars with Robotics	Monitor air flow, including turbine air, atomizing air and shaping air to control automotive paint quality
<b>Heat Treating</b>	Air Flow	Monitor air flow in heat treating furnaces to improve quality
<b>Glass Manufacturing</b>	Combustion Control	Monitor oxygen and natural gas flow to control burners for optimal glass production
<b>Pulp and Paper</b>	Drying Air Flow	Improve product quality by monitoring drying air flow
<b>Food Process</b>	Hydrogen Flow	Hydrogen flow rate involved in producing vegetable oil
	Nitrogen Flow	Nitrogen flow measurement for food preservation
<b>Coal Fired Power Plant</b>	Primary and Secondary Air Flow	Monitoring the primary & secondary (reheat) air flow in coal fired utilities for boiler efficiency
	Exhaust Flow	Monitor stack exhaust for environmental compliance
<b>Nitrogen Purge</b>	Nitrogen Flow Rate	Numerous processes require a purging of the process to clear out residual gases and contamination.
<b>Leak Detection</b>	Low Air Flow Rate	Measuring small amounts of air flow detects product flaws in many industries, including filter manufacturing