

APPLICATIONS

COMMON APPLICATIONS FOR SAGE THERMAL MASS FLOW METERS

1	Natural Gas	Industrial Plant	Monitor main header to track billing, assess daily flow peaks, determine shift demand
			Sub-meter branches to monitor department usage, analyze cost, promote conservation
2	Natural Gas	Building Automation	Monitor natural gas demand and consumption for entire building to reduce energy
			Monitor natural gas at individual zones to help promote energy conservation
3	Natural Gas	Commercial	Monitor natural gas usage for individual tenants
			Encourage conservation by monitoring individual branches
4	Natural Gas	Schools and Colleges	Monitor usage in dorms and residence halls
			Check boilers and furnaces for efficiency
5	Natural Gas	Boilers, Furnaces	Check industrial boiler and furnace efficiency
			Monitor natural gas (along with air) for optimal air/fuel ratio for combustion control
6	Natural Gas	Federal Government	Monitor natural gas at federal buildings to comply with energy reduction initiatives
			Federal Building initiative is based on Sec. 434 of National Conservation Policy Act
7	Natural Gas	Federal Government	Monitor natural gas to assess whether government heating systems need replacement
			Common government facilities to be monitored include the VA Hospitals and Post Offices
8	Natural Gas	Transmission	Thermal MFMs <i>not</i> appropriate, except as “check meters” downstream of check valves
			Check for leaks in the low pressure natural gas to compressor stations (also for “upset” conditions)
9	Natural Gas	LEED Buildings	Obtain LEED points in new construction or renovation of “Green” buildings
			Install natural gas meters to measure energy usage in zones (1 LEED point)
10	Natural Gas	Regulatory	Measure natural gas to industrial boilers and process heaters for municipal compliance
			Reduce emissions from large industrial boilers and furnaces by adjusting air/ fuel ratio
11	Digester Gas	Livestock	Measure the digester gas off of livestock waste (pig farms, dairies) for Carbon Credits
			The digester gas contains ~65% CH4/ 35% CO2. Destroy the CH4 by flaring or Co-gen
12	Digester Gas	Kyoto Accord	Reduce collective greenhouse gas emissions (GHG) through methane destruction
			Monitor the digester gas on large projects, such as digesters on pig farms for credits
13	Digester Gas	CCX Credits	The Chicago Climate Exchange (CCX) offers mechanism to reduce global warming
			Eligible projects for the above include livestock operations. Digester gas is measured
14	Digester Gas	Municipal	Monitor the flow of digester gas to facilitate sewage treatment
			Measure the flow of digester gas to engines or flares, or totalized flow for storage
15	Landfill Gas	Municipal	Measure landfill gas (LFG) (~ 55% CH4/ 45% CO2) after the moisture knock-out
			The measurement provides a means to balance the well heads & optimize effectiveness
16	Landfill Gas	Municipal	Measure landfill gas flow to the flare for reporting to environmental agencies
			Measure landfill gas to engines in Co-generation and/ or for Carbon Credit programs
17	Biogas	Organic Wastes	Organic industrial waste from food processing can be broken down to produce energy
			Organic wastes from livestock, energy crops. Sensitive flow metering required
18	Flare Gas	Petrochemical	Waste gas from petrochemical and chemical processes needs to be burned off
			Sensitive flow measurement needed to detect normal leaks, as well as high flow upsets
19	Flare Gas	Combustion Process	Measure the byproducts of combustion in pipes, stacks, ducts or chimneys
			Venting from boilers, furnaces, steam generators & ovens require sensitive measurement
20	Methane	Coal Mines	Methane (mixed with air/ CO2) that is recovered from coal mines can be measured
			Methane can also be measured in gas fields (as long as the fields are dry)
21	Air/ Fuel	Ethanol Distillation	The air and fuel going into ethanol distillation tanks needs to be measured
			In addition, the CO2 leaving the fermentation process, also needs to be monitored
22	Air/ Fuel	Combustion Control	Monitoring and controlling of combustion air or oxygen and natural gas is critical
			By maintaining the proper air/ fuel ratio, optimized combustion control is attained
23	Air	Compressed Air	Monitor compressed air lines to detect leaks, improve efficiency, reduce energy costs
			Also, assess when new compressors are required, or when excessive air is being wasted
24	Air	Vent Air/ Other	Measure supply air & exhaust air in incineration, vent air for environmental compliance
			Exhaust flow in stacks, test pumps for leaks, air flow to heat treating furnaces, drying
25	Other Gases	Various	CO2 for beer production, N2 for purging, blanketing & food preservation, H2 (cooling)
			AR for steel purification and heat treating & plastics, CL2 or O3 for water treatment