ABB’s Sensyflow series of thermal mass flowmeters is the best choice for industrial and test rig applications, where the combination of direct mass flow measurement with high accuracy, short response times, reliability and easy installation is an everyday requirement.

Direct gas mass flowmetering solutions succeed in a variety of environments and are essential for example for burner control, automotive test benches, at key stages across the wastewater process and in the increasingly common measurement of biogas and activation air.

The following list provides an overview of some of the countless applications, ABB’s Sensyflow series has proven to be successful in.

<table>
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<tr>
<th>Application</th>
<th>Application Activities</th>
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<tr>
<td>Aluminum smelters</td>
<td>Natural gas and air flow                        Combustion control for boilers and furnaces</td>
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<td>Chlorine and argon flow</td>
<td>Hastelloy flowmeter monitors the CL2 and AR in the smelting process</td>
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<tr>
<td>Coal fired power plant</td>
<td>Primary and secondary air flow        Monitoring the primary &amp; secondary (reheat) air flow in coal fired utilities for boiler efficiency</td>
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<td></td>
<td>Exhaust flow                        Monitor stack exhaust for environmental compliance</td>
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<tr>
<td>Combustion control</td>
<td>Natural gas, oxygen, air flow          Monitoring and controlling of combustion air oxygen and natural gas ratios are critical for optimal boiler efficiency</td>
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<td>Stoichiometric ratio control</td>
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<tr>
<td>Compressed air monitoring</td>
<td>Perform audits                       Improve overall cost effectiveness of compressed air system</td>
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<td></td>
<td>Detect leaks                         Eliminate waste - Improve efficiency of overall system</td>
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<td></td>
<td>Sub-meter for conservation            Reduce energy expense</td>
</tr>
<tr>
<td>Fiberglass production</td>
<td>Combustion control                   Monitor flow rate of natural gas and oxygen to control air-fuel ratio to optimize burners resulting in higher quality products and greater product yields</td>
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<tr>
<td>Flare gas</td>
<td>Exhaust flow                         Monitor air flow rate in dual channel meters</td>
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<td>Monitor individual flare header pipes</td>
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<tr>
<td>Food process</td>
<td>Hydrogen flow                        Hydrogen flow rate involved in producing vegetable oil</td>
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<td>Nitrogen flow                        Nitrogen flow measurement for food preservation</td>
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<tr>
<td>Fuel cells</td>
<td>Air flow                             Monitor the air flow to control the efficiency of fuel cell power plants</td>
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<tr>
<td></td>
<td>Hydrogen flow                        Monitor the hydrogen generated in the fuel cell process</td>
</tr>
<tr>
<td>Glass manufacturing</td>
<td>Combustion control                   Monitor oxygen and natural gas flow to control burners for optimal glass production</td>
</tr>
<tr>
<td>Heat treating</td>
<td>Air flow                             Monitor air flow in heat treating furnaces to improve quality</td>
</tr>
<tr>
<td>Incineration</td>
<td>Exhaust flow                         Measure exhaust flow in incinerators</td>
</tr>
</tbody>
</table>
Application

Landfill gas
- Methane CO₂ Mix: Monitor gas to engines for electrical power

Leak detection
- Low air flow rate: Measuring small amounts of air flow detects product flaws in many industries, including filter manufacturing

Metals recovery
- Air flow rate: Air flow rate is critical in forming bubbles that capture metals that otherwise are not recoverable

Monitor plant nat, gas consumption
- Plant monitoring: Track billing meter, assess daily flow peaks, determine demand for each shift
- Sub-metering: Monitor department usage, and analyze associated expenses

Natural gas distribution
- 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)

Natural gas furnace
- Natural gas consumption: Measure NG consumption for furnaces that burn NG in a nitrogen environment

Natural gas odorizing
- Scent control: Monitor AR & N₂ flow rate involved in certain plastics production

Nitrogen blanketing
- 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

Nitrogen purge
- Nitrogen flow rate: Numerous processes require a purging of the process to clear out residual gases and contamination

Plastics molding
- Nitrogen flow: Nitrogen flow rate controls the forming of plastic shapes such as gas tanks

Powder painting
- Painting cars with robotics: Monitor air flow, including turbine air, atomizing air and shaping air to control automotive paint quality

Pulp and paper
- Drying air flow: Improve product quality by monitoring drying air flow

Pump manufacturing
- Test pumps: Monitor air flow to test pumps for manufacturing quality control

Remediation
- Air flow: Meter the air intake used to detect contaminated soil

Spray drying
- Uniform air flow: Monitor air flow to uniformly dry components in pharmaceutical, food processing, fertilizer and chemical industries

Steel fabrication
- Argon and nitrogen flow rate: Monitor air control AR & N₂ flow rate for bottom stirring and purification
- Coke/over gas: Monitor the refined end of the coke oven gas process

Testing hydrogen cooled turbines
- Hydrogen leak detection: Measure air flow rate that is analyzed for hydrogen presence

Wastewater treatment
- Aeration flow: Monitor and adjust the air flow bubbling into aeration tanks to control the critical dissolved oxygen lever
- Digester gas: Monitor the flow of CH₄ / CO₂ 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)

Water purification
- Oxygen monitoring: Monitor O₂ flow rate in ozone generator systems that purify municipal water supplies

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