

FCI's MT100 Multipoint Flow Meters Optimize Boiler Air-Gas Combustion Efficiency To Reduce Fuel Costs

Designed for Oil/Gas Refining, Chemical Production, Power Generation and Other Industrial Boiler Steam or Heat Process Applications

San Marcos, CA — Oil/gas refinery and other process engineers will find the [MT100 Series Multipoint Mass Flow Meter](#) from [Fluid Components International \(FCI\)](#) provides the accurate air/gas flow measurements needed to optimize boiler performance in order to reduce expensive fuel gas consumption costs and polluting greenhouse waste gases.

For example to operate a refinery boiler at optimum efficiency while also maintaining a safe operating environment, critical flow measurements such as combustion air and fuel gas recirculation are commonly used. These applications can be challenging due to the large size of the ducts and limited amount of straight run.

Determining the location of the MT100 Flow Meter's multiple air/gas flow sensors in boiler piping and duct systems is essential for proper measurement, but it is also challenging when considering access and clearances for installation and maintenance of the instruments. The MT100 offers both mast type and single-point flow elements in order to optimize the flow measurement solution.

FCI's versatile MT100 Series Multipoint Mass Flow Meters feature proven precision, repeatable and compact thermal dispersion flow sensor technology. They accurately monitor and report the flow rate and/or the totalized flow of air and fuel gases in order to achieve the precise combustion ratio necessary for optimum boiler performance that produces the steam for cracking and other high-heat refinery and other petrochemical production processes.

MT100 Flow Meters combine state-of-the-art electronics technology with application-specific precision multipoint flow sensors in a rugged package designed for demanding operating environments. These meters provide temperature-compensated direct mass flow measurement of air and fuel gases. They come with one to eight flow rate sensing points. The sensors are inserted at multiple locations along the boiler burner piping assembly and their outputs are multiplexed and averaged to measure the air and gas flow rates and totalized flows.

The MT100 meter's sensors also can be installed at multiple points in other air or gas process lines in a single plane or across a large mast for stack gas waste measurement. These rugged, long-life, nearly-zero maintenance instruments excel in dirty, hot or humid environments because there are no moving parts, orifices or glass windows to foul or clog.



The rugged MT100 Multipoint Flow Meters with their temperature-compensated sensors measure air, natural gas, process gases or flue waste gasses operating at up to 454°C (850°F). They measure flow rates over a wide range from 0,07 to 305 NMPS (0.25 to 1000 SFPS) with 100:1 turndown and with excellent accuracy of $\pm 1.75\%$ of reading, $\pm 0.5\%$ of full scale.

In demanding industries, such as oil/gas refineries, chemical, electric power generation and others, various sized diameter pipes and ducts present unique challenges to achieve successful flow meter installation and performance. Hot, moist and/or dirty gases along with a lack of pipe straight-run, distorted flow profiles, low flow rates and wide turndowns rates are common issues.

The MT100's transmitter is both full-featured and rugged to meet these operating challenges. It's all stainless steel enclosure is NEMA4X/IP66 rated to ensure long service life in outdoor installations. Its electronics comes with an extensive choice of output options to interface with virtually any DCS, PLC, SCADA, or recorder. High resolution, 16 bit, dual 4-20mA analog outputs with NAMUR 43 compliance, HART I/O, and Modbus RS485 RTU/ASCII are all standard. Optionally available are Profibus-PA or Foundation Fieldbus communications

The MT100's large color touch-screen LCD readout provides comprehensive process information to users with both analog and digital displays of flow rate, temperature and totalized flow, a user time-base selectable strip-chart of flow rate and sensor status diagnostics. MT100 electronics also include a user programmable data logger to which flow rate, temperature and totalized flow as well as fault codes can be recorded on a removable, 8 GB microSD card.

All MT100 Meters have been independently tested and verified to meet and comply with IEC safety directives for EMC and LVD, and carry the CE marking. Optionally available for process installations with hazardous, potentially explosive gases and/or dust, MT100 meters can be ordered with ATEX or IECEx or FM/FMc agency approvals for Division II/Zone 2. The highly repeatable and reliable MT100 Series Multipoint Mass Flow Meter are TÜV-certified as AMS compliant with EN15267-3 with QAL1 and EN14181, and also meets USA EPA CEMS 40 CFR 60 and 40 CFR 75 compliance.

FCI solves flow and level measurement applications with advanced thermal dispersion technologies. With 60 years' experience and the largest installed base of thermal flow meters, flow switches and level switches, count on FCI to know your application and have the solutions.