

Solutions for Efficient Biofuel Process Control

As the world transitions toward cleaner energy, biofuels like biogasoline, biodiesel, bioethanol, and sustainable aviation fuel (SAF) are playing a vital role in reducing carbon emissions and enhancing energy security. These fuels are derived from renewable sources and are essential to decarbonizing transportation, aviation, and industrial sectors. However, producing high-quality biofuels requires precise control over complex measurement processes. That's where Panametrics comes in.

With a portfolio of advanced ultrasonic flowmeters, moisture analyzers, and oxygen analyzers, Panametrics helps optimize performance, ensure safety, and maintain compliance across every stage of biofuel production.



Panametrics Flowmeters: Precision that powers Biofuel Production

Flow measurement is foundational to biofuel production, where accurate control of feedstock, intermediates, and final product flows directly impacts efficiency, safety, and quality. Panametrics flowmeters deliver high-precision, real-time data that enables optimization of critical unit operations such as fermentation, distillation, transesterification, blending, and refining. This data supports mass balance calculations, feedstock ratio control, and throughput monitoring—ensuring consistent product output and efficient resource utilization.

Beyond process optimization, flowmeters play a vital role in operational reliability and safety. Anomalies in flow patterns can signal issues like clogging, leaks, or pump failures, enabling predictive maintenance and minimizing unplanned downtime. Their integration into control systems (DCS/PLC) allows for automated operation, with flow data feeding into PID loops, alarms, and interlocks. In safety-critical environments, Panametrics SIL-certified flowmeters can be connected to emergency shutdown systems (ESD) to ensure safe operations in pressurized or hazardous systems. Whether monitoring steam, water, fuel, or effluent discharge, Panametrics flowmeters help biofuel producers maintain control, compliance, safety and continuity.



Panametrics Moisture & Oxygen Analyzers: Essential for Quality, Safety & Efficiency in Biofuel Production

Moisture composition is a key variable in biofuel production. Excess moisture can lead to catalyst deactivation, corrosion in high-pressure systems, trigger premature reactions, and reduce overall yield and product quality. Clean dry air is a critical utility in production plants and a reliable moisture analyzer provides peace of mind. For non-continuous measurements and for troubleshooting, a versatile portable moisture analyzer is a tool-box must-have.

Oxygen analyzers are indispensable for alarming when unsafe conditions arise due to excess oxygen in storage, venting, and inerting applications.

Panametrics provides rugged, accurate, and reliable analyzers in the configurations needed to meet the exacting requirements of these applications. For moisture measurement, these analyzers are essential for meeting industry standards such as ASTM D6751 for biodiesel. The oxygen analyzer can carry SIL-2 certification for the most exacting oxygen measurement requirements.

Product Spotlights

Flow



PanaFlow LC



PanaFlow HT
SIL & non-SIL



PanaFlow LZ



PanaFlow Z3



XGF868i



PanaFlow FLI



PanaFlow ZxG



XGS868i

Moisture and Oxygen



HygroPro II



HygroPro XP



pro.IQ



PM880



XMO2pro



oxy.IQ