

Panametrics

Power Generation

In the power generation industry, accurate measurement of moisture, hydrogen and other gases is essential for maintaining safety, efficiency, and equipment reliability. From applications in hydrogen-cooled generators to oil-filled transformers, numerous processes around the power plant rely on Panametrics analyzer solutions for optimal operation.

Applications in power plants

Compressed Air Systems

Compressed air is used for instrumentation, control systems including valves and actuators, and pneumatic tools. Moisture in compressed air can cause corrosion in pipes and instruments and malfunction of safety control valves and actuators.

Hydrogen-Cooled Generators

Hydrogen purity is critical for generator efficiency and safety. Low hydrogen purity levels increase the windage losses in the generator and increase the risk of explosion. High moisture levels in the hydrogen gas increases the risk of corrosion and reduces its cooling capacity.

Carbon Dioxide Gas

Moisture is measured in carbon dioxide as part of a leak detection system in carbon dioxide annulus gas systems, and as a general gas quality requirement for carbon dioxide cooled reactors, in nuclear power plants.

Gas Turbine Intake Air

Moisture measurement and control of the gas turbine inlet air is critical to ensure proper moisture content while preventing ice formation inside the air-fuel mixing chamber, ensuring maximum power output and minimal emissions.

Natural Gas Quality

Moisture measurement in the turbine natural gas feed is essential to prevent corrosion and ice or hydrate formation and ensuring the fuel meets the required heating value and specifications.

Transformers

Moisture in transformer oil can reduce its dielectric strength and increase degradation of the transformer insulation, thereby leading to a higher risk of short circuits and ultimately transformer failure.

Circuit Breakers (Sulfur Hexafluoride Systems)

High-voltage circuit breakers often use sulfur hexafluoride gas for insulation and arc quenching. Moisture in sulfur hexafluoride degrades its insulating properties and can form corrosive byproducts. Oxygen can react with sulfur hexafluoride during arcing, producing toxic compounds. Gas purity monitoring is essential to maintain dielectric strength and ensure safe operation.actuators.

Key products highlighted

Moisture



dew.IQ
Single-channel hygrometer that delivers quick response, stability, and overall performance.



HygroPro^{II}
Intrinsically safe, compact, loop-powered display transmitter designed specifically to meet the demands of rugged industrial.



MMY30
Transmitter analyzes moisture content in desiccant air dryers, pipeline natural gas, and industrial gases.



PM880
Panametrics' PM880 moisture analyzer measures the moisture and humidity content of industrial gases and liquids.



OptiSonde
Hygrometer precisely analyzes humidity and temperature using chilled mirror sensing technology.



air.IQ
Single-channel hygrometer that delivers quick response, stability, and first-rate performance.

Oxygen and Gas



XMTCpro
Compact, rugged, online thermal conductivity transmitter that measures the concentration of binary gas mixtures including hydrogen, carbon dioxide, methane, helium and many others.



XMO2pro
The ultimate choice for highly accurate oxygen measurements in harsh environment industrial and oil & gas applications.



oxy.IQ
The oxy.IQ is a highly reliable and cost-effective two-wire, loop-powered transmitter with a linearized 4 to 20 mA output. It measures oxygen in ten ppm ranges and six percentage ranges.