



Application note

Oxygen content in wastewater digester gas

Specifications:

Range	0–100% O ₂ in N ₂ /CO ₂
Temperature	Ambient
Pressure	Atmospheric
Enclosure	Weatherproof (Stainless Steel optional)

Benefits:

- Years of reliable service
- No moving parts
- Non-Depleting sensor
- Turnkey analyzer
+ sampling system



Summary

In wastewater treatment, aerobic digestion enables plants to increase their capacity by injecting oxygen into the wastewater head space. This results in up to a five time increase in the treatment capacity.

Application

Oxygen concentration is critical to the treatment process. If the oxygen concentration is too high, it is an indication that the active population of microorganisms have died off and need to be replenished. If the oxygen concentration is too low, the oxygen flow rate must be increased.

The process involves a four-stage reaction chamber. Pure oxygen is injected in the head above the liquid wastewater. Microorganisms in the water digest the waste, while consuming oxygen and producing CO₂ (carbon dioxide). The oxygen level in the fourth stage is measured by the XMO2. The transmitter is used control the flow of oxygen and wastewater on demand to enable optimal digestion.

Solution

The process requires monitoring of the oxygen content, to insure proper wastewater treatment and the survival of microorganisms that decompose the waste. Oxygen concentration indicates process efficiency. Panametrics XMO2 thermoparamagnetic oxygen transmitter is ideal for this application. The transmitter is installed in a turnkey sample conditioning system and provides an output to the plants data acquisition and control system. The XMO2 is reliable and time proven. It has no moving parts and its cost effectiveness make it the oxygen transmitter of choice.

Panametrics, a Baker Hughes business, provides solutions in the toughest applications and environments for moisture, oxygen, liquid and gas flow measurement.

Experts in flare management, Panametrics technology also reduces flare emissions and optimizes performance.

With a reach that extends across the globe, Panametrics' critical measurement solutions and flare emissions management are enabling customers to drive efficiency and achieve carbon reduction targets across critical industries including: Oil & Gas; Energy; Healthcare; Water and Wastewater; Chemical Processing; Food & Beverage and many others.

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