**Summary**

In wastewater treatment aerobic digestion enables plants to increase their capacity at economical costs 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, either the Oxygen flow rate must be increased, or the wastewater flow must be decreased.

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 CO$_2$ (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 to insure proper wastewater treatment and the survival of microorganisms that decompose the waste. Oxygen concentration indicates how efficient the process is functioning. Panametrics XMO2 thermoparamagnetic oxygen transmitter is ideal for this application. The transmitter is assembled with a turnkey sample conditioning system and provides a 4–20mA signal to the plants data acquisition and control system. The XMO2 is reliable and time proven. It has no moving parts and the cost effectiveness make it the oxygen transmitter of choice.