MONITOR FOR GASES PRODUCED BY DIGESTER PROCESS

LEADERS IN GAS DETECTION

Since 1977

Digester Gas Monitor

Features:

- Corrosion resistant design
  - External construction for extreme environments
  - Internal construction for extreme samples
- Sample system for high humidity
- Accurately measure gas with high levels of H2S present
- 30 meter sample range
- Up to 4 sensors:
  - Methane % Vol.
  - CO2 % Vol.
  - Oxygen % Vol.
  - H2S 0-1,000 ppm (0-3,000 optional)
- Self draining moisture trap
- Back flush for sample line
- Long life air aspirator (no moving parts)
- Inside/outside location options
- NEMA 4X enclosure
- Modular design easy to maintain
- Simple to operate

Applications:

- Digesters
- Biogas methane
- Wastewater

Gas from waste digesters contains high levels of methane, CO2, and H2S, and little to no oxygen present. The Control Equipment digester gas monitor checks for all these gases on a cyclic basis. A powerful air aspirator pulls a sample from up to 30 meters away. Since digester gas contains high humidity and high H2S, both of which can cause damage to sampling systems, the digester gas monitor is designed to handle these with no damage to the sampling system or sensors. The sample is filtered through a series of dirt, dust and moisture stopping filters, and these filters are automatically blown back and cleaned out with fresh air at the end of each cycle.

Measurement time is just 4 minutes, taken at periodic cycles. Cycle time is selectable, with settings for cycle time of 1 hour, 4 hours, 8 hours, 24 hours or 7 days. A cycle can also be initiated anytime by pressing a button. In between cycles the sensors and sampling system are flushed with fresh air so as to minimise corrosion caused by the high H2S content. The system is fault tolerant minimising the possibility of expensive repairs or downtime.

System integrity is maintained at all times using a flow fail monitoring device which provides a fail alarm and relay if there is ever a problem with the flow system, such as a blockage, or if the air aspirator compressed air supply is removed or interrupted.

The system is housed in a wall mounting NEMA 4X enclosure. The gas readings can be viewed through the enclosure door clear window, and also flowmeters and filters are easily visible for confirmation of correct flows and operation. The gas digester monitor contains adjustable alarm levels for each gas, and also programmable alarm relays. In addition, the unit provides 4-20mA signals for each gas concentration for connection to an external DCS, PLC or other site control system. A Modbus output is also available.

OIL & GAS | CONFINED SPACE | HYGIENE | MINING | LABORATORIES | HVAC | DEFENCE | SHIPPING | FUMIGATION

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Specifications — Digester Model

Controller Used	Beacon 410 with special firmware structured to meet product requirements.
Input Power	100/115/220 VAC ± 10%
Enclosure	• NEMA 4X enclosure with a window for viewing the gas readings on an LCD display, flow meter, and any other items which require visibility. • For indoor or outdoor use.
Sampling Method	Air Aspirator (compressed air source is required)
Sample Filtering	• Internal water trap automatically drained after each detection cycle with a 30 second blowback purge. • Internal gas dryer to dry the sample after it leaves the hydrophobic in line filter.
Flow Rate	System flow rate 3 SCFH.
Flow Meters	0 – 5 SCFH Flow meter for total flow. 0 – 0.5 SCFH Flow meter with valve for H2S sample flow. 0 – 2 SCFH Flow meter with valve for H2S dilution flow.
Maximum Inlet / Exhaust Tubing Length	30 metres
Response Time	T90 in 30 seconds when gas applied directly to sample in fitting during test cycle.
Target Gases / Detection Ranges	• Methane: 0 – 100 % Volume • Oxygen: 0 – 25% Volume • CO2: 0 – 50% Volume • H2S: 0 – 1,000 ppm using internal dilution (optional 0 – 3,000 ppm range)
Sensors	• Methane and CO2: NDIR (non-dispersive infrared) sensors • Oxygen and H2S: Long life electrochemical sensor
Operating Temperature / Humidity	• 0°C – 40°C • 0 - 100% Relative Humidity
Alarms	• Visual LED alarms (viewed through window) • Audible buzzer alarm (on housing bottom) • Optional loud horn/strobe alarm (on housing top)
Outputs	• 4-20 mA for each active sensor • Modbus RTU RS-485
Size	61cm H x 61cm W x 25.4cm D
Wire Entry	Three 2cm Conduit Hubs on bottom of enclosure
Warranty	1 Year

Specifications subject to change without notice

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