DIGESTER GAS MONITOR

Monitor for Gases Produced by Digester Process

Features

- **Corrosion resistant design**
  - Housing designed for extreme environments
  - Internal construction for extreme samples
  - Flow system designed to handle corrosive wet samples
- **Sample system designed to handle high humidity**
- **Accurately measures gases with high levels of H2S present**
- **100 ft. sample range**
- **Up to 4 sensors:**
  - Methane 0-100% Volume
  - CO2 0-50% Volume
  - Oxygen 0-25% Volume
  - H2S 0-1000 PPM (0-3000 or 0-5000 optional)
- **Self draining moisture trap**
- **Automatic backflush of sampling system**
- **Long life air aspirator (no moving parts)**
- **Suitable for inside/outside installations**
- **NEMA 4X enclosure**
- **Uses proven RKI technology**
- **Modular design easy to maintain**
- **Simple to operate**

Industry Applications

- **Wastewater Treatment Digesters**
- **Biogas Methane**
- **Animal Farms**

RKI is proud to introduce our Digester Gas Monitor. Gas from waste digesters contains high levels of methane, CO2, and H2S, with little to no oxygen present. The RKI gas monitor checks for all these gases on a cyclic basis. A powerful air aspirator draws a sample from up to 100 feet away. Since digester gas contains high humidity and high H2S, both of which can cause damage to sampling systems, the RKI Digester Gas Monitor is designed to handle these with no damage to the sampling system or sensors. The sample is passed through a series of dirt, dust, and moisture stopping filters, and these filters are automatically purged 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 15 minute, 1 hour, 4 hours, 8 hours, or 24 hours. A cycle can also be initiated anytime by pressing a button. After each cycle, the sensors and sampling system are flushed with fresh air so as to minimize corrosion caused by the high H2S content. The system is fault tolerant minimizing 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. Flow meters and filters are easily visible for confirmation of correct flows and operation. The RKI Digester Gas 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. The outputs are the readings received from the last cycle taken.

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Monitor for Gases Produced by Digester Process

RKI 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	100 ft.
Cycle Time	Adjustable test cycle times of 15 minutes, 1 hour, 4 hours, 8 hours, or 24 hours.
Target Gases/Detection Ranges	• Methane: 0 – 100 % Volume • Oxygen: 0 – 25% Volume • CO2: 0 – 50% Volume • H2S: 0 – 1000 PPM using internal dilution (0 – 3000 or 0 – 5000 optional)
Sensors	• Methane and CO2: NDIR (non-dispersive infrared) sensors • Oxygen and H2S: Long life electrochemical sensor
Operating Temperature/ Humidity	• 0°C – 40°C (32°F – 104°F) • 0 - 100% Relative Humidity
Alarms	• Visual LED alarms (viewed through window) • Audible buzzer alarm (on housing bottom) • Optional horn/strobe alarm (on housing top)
Outputs	• 4-20 mA for each active sensor • Modbus RTU RS-485
Size	24”H x 24”W x 10”D (61cm H x 61cm W x 25.4cm D)
Wire Entry	Three 3/4” Conduit Hubs on bottom of enclosure
Warranty	1 Year

Specifications subject to change without notice.

Made in the USA

RKI INSTRUMENTS

10000363 UL REGISTERED FIRM ISO 9001

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