ANALYTICAL PRODUCTS AND SOLUTIONS

ULTRAMAT 23 Gas Analyzer – Unique solution for Biogas applications

Continuous measurements for better process control
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SIEMENS

Compact – Powerful – Reliable and Economical

The well-proven ULTRAMAT 23 gas analyzer measurement provides the perfect, simple and complete solution for analysis in biogas plants.

It is a proven unique solution in hundreds of installations that combines the measurement of infrared active gases CO_2 and CH_4 with oxygen and H_2S sensors in a single unit. Applicable to determine continuous analysis of the gas composition of fermenters for biogas generation, optimization of methane yield from landfills as well as for combustion engine monitoring and optimization.

The ULTRAMAT 23 for biogas applications simultaneously measures 4 gas components: 2 infrared active gases, methane (CH_4) and carbon dioxide (CO_2), and oxygen (O_2) and hydrogen sulfide (H_2S) using electrochemical cells. The measurements of all components are made continuously allowing better process control which results not only in an economically optimized process but also in a better product quality.

The analytics is integrated in the 19" rack mountable or table top design versions of the ULTRAMAT 23 analyzer. The analyzer can also be mounted in a compact IP54 enclosure together with the sample conditioning system for long term stable and repeatable measurement.

The autocalibration feature of the ULTRAMAT 23 and the low drift of the infrared and electrochemical cells enables maximum ease of use and minimum maintenance attention for effective, economic and reliable plant operation.

Applications

- Process control of the fermenter for biogas generation (crude side and clean side)
- Gas engine monitoring (electrical and thermal energy generation) for motor protection
- Optimization of methane yield and feed (biogas power generation from landfills and digesters)
- Quality control of biogas fed into commercial gas distribution network

Measuring Range	CO_2	CH_4	O_2	H_2S
Measuring Range	0-20% / 0-100%	0-20% / 0-100%	0-5% / 0-25%	0-5/50ppm
Drift per month Zero and Span	Negligible with AUTOCAL < 2% of measuring range/ week	Negligible with AUTOCAL < 2% of measuring range/ week	Negligible with AUTOCAL < 2% of measuring range/ week	<1%
Repeatability FS	<+/-1% of current measuring range	<+/-1% of current measuring range	+/-0.05% O_2	<4% of smallest measuring range
T-90 Response Time	Flow Dependent	Flow Dependent	<30sec@1.2L/min	<80 sec@1.2L/m
Sample Flow	1L/m	1L/m	1L/m	1L/m
Permissible	14-27 psi	14-27 psi	14-27 psi	14-27 psi
Ambient Temperature	5....45°C	5....45°C	5....45°C	5....45°C

Your Benefits

- Better process control
- Continuous with measurements of all four gas components including CH_4 and H_2S in one compact analyzer
- Improved durability and process control even under extreme conditions
- Long operating life of the H_2S sensors
- Low maintenance and improved safety – no dilution of the measured gas, no purging of the H_2S sensor
- Improved safety
- Measurement of flammable gases, as found in biogas plants (e.g. 70 % CH_4) is permissible
- Reduced calibration effort and costs
- Minimal drift of the H_2S at the endpoint (< 1 % per month), autocalibration with ambient air
- Simplified process integration for remote operation and control
- Open interface architecture (RS485, RS 232; PROFIBUS PA/DP, SIPROM GA)
- Service information and logbook
- Preventive maintenance
- On-site, quick repair or analyzer exchange assistance for high on-line time and cost saving operation
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