

Model 932 Multi-Gas Analyzer

Benefits

- Multiple technologies in one analyzer (UV/VIS, thermal conductivity)
- Measures up to five species simultaneously
- More cost efficient installation and maintenance
- Closed sample loop return sample to process (with HAG probe option)
- Minimal sample conditioning required
- Suitable for Class I, Div. 1 and ATEX II 2 G areas without purging

The Need

The control of many petrochemical and chemical processes requires monitoring of multiple chemical species within your process's feed, reaction, or effluent gases. Unfortunately, multiple technologies are often required to monitor all of the required species. AMETEK Process Instruments has responded to industry's need for a rugged, multi-component, multi-technology gas analyzer in an explosion-proof package.

The Western Research® Model 932 is designed for a variety of gas monitoring and process control applications. Whether it's reliable H₂S and NH₃ analysis for feed-forward control of modern SRU plants, monitoring of H₂S and COS for the control of amine-based SRU tail gas treating plants, or any one of hundreds of other applications, the 932 analyzer is the best choice for reliable, field-proven, and rugged on-line analysis.

For those applications where sample condensation may occur, the Model 932 analyzer system is available with a heated cell option.

The fully integrated AMETEK Process Instruments heated cell ensures reliable dew point control without running the risk of plugging, contaminating, or flooding the analyzer.

A flexible sampling system, which includes an optional integrated electrically heated acid gas sampling probe (HAG) for safe, reliable acid gas sampling, as well as optional on-board sample switching hardware and software, makes the Model 932 one of the most flexible, explosion-proof, multi-component analyzers available on the market.

Many process applications also require the detection of non-UV absorbing species, such as H₂ (for H₂S/COS/H₂ measurement in amine-based tail gas treating contactor overhead applications). The sensor required for the measurement of H₂ can be incorporated into the Model 932 thereby eliminating the need for additional process analyzers in some applications.

No matter what your needs are, this flexible, low-maintenance analyzer design will be the answer to many of your complex process control requirements.

The Measurement

The Western Research® Model 932 uses AMETEK's proprietary high-resolution UV technology in a dual-beam, dual-wavelength configuration with pulsed UV lamps to ensure optimal performance with low noise and minimal baseline and span drift.

Analysis linearity and measurement stability is maximized by using high-intensity, low-energy hollow cathode UV source lamps that provide a resolution that is better than 0.02nm. This high resolution design enables unparalleled linearity over a wide dynamic range (less than 1% deviation over 3 to

4 orders of magnitude), which leads to simple, robust data analysis. Cathode construction of the UV lamp determines the wavelengths available for analysis, making it possible to configure the Model 932 to measure many components that absorb UV/VIS energy.

The Model 932 uses only AMETEK-engineered, purpose-built electronics to ensure reliable performance under the harsh environmental conditions common in chemical and petrochemical facilities. These electronics provide concentration calculations, data processing, temperature control, calibration and sophisticated self-diagnostics.

Applications

- SRU feed gas analysis
- Sulfuric acid production
- Amine-based tail gas treating
- Chemical reaction monitoring



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Performance Specifications

Methodology: Multiple wavelength, high resolution, non-dispersive UV/VIS

Full Scale Ranges: ppm and % vol are standard, other ranges are available (please consult AMETEK)

Accuracy: Better than $\pm 1\%$ of full scale range*

Repeatability: Better than $\pm 0.5\%$ of full scale range*

Linearity: Better than $\pm 1\%$ of reading*

Zero Drift: Better than 2% of full scale range, with auto zero disabled, over 24 hour period

Speed of Response: typically less than 30s to T90 (excluding sample system)

Number of Gases: up to 5

Zero gas:

Gas: Nitrogen, Instrument Air

Liquid: Application Specific

Typical Sample Flow:

Gas: 2.5 L/min (5 SCFH)

Liquid: Application Specific

Sample Transport: Application specific (options include aspiration, pump etc)

Outputs: Up to 4 isolated 4-to-20 mA, loop or self-powered; 4 non-isolated 1 to 5 VDC; 5 independent sets of SPDT, Form C, potential free alarm relay contacts, 2 A at 240 VAC

Digital Communication: RS485 Modbus port; RS232/RS485 service port

Utility Requirements: 120 VAC (104 to 132 VAC), 47 to 63 Hz, <3A; 240 VAC (207 to 264 VAC), 47 to 63 Hz, <2A

Power Consumption: 500 W maximum (with heated cell and probe), sample lines or additional heated sample components not included

Ambient Temperature: 0°C to 50°C (32°F to 122°F)

Some Options Include:

- Fully integrated, heated probe assembly with heated aspirator and integrated sample and vent valves (for gas applications, also see AMETEK Heated Acid Gas Brochure for details)
- Pressure compensation
- Heated cell for high water or acid dew point sampling
- Proprietary membrane/coalescer filter assembly (for sweet or sour natural gas sampling)
- Heated and unheated pressure reduction
- Complete system integration (enclosures) for any hazardous location and corrosive environment
- Stream switching capability

Physical Dimensions: 1185 x 780 x 254 mm (46.65 x 30.7 x 9.97 in.)

Weight: Approximately 145 kg (320 lbs)

Approvals and Certifications:

CEC Class I, Division 1, Groups C & D; Ex d IIB T3

NEC Class I, Division 1, Groups C & D; AEx d IIB T3

ATEX II 2 G EExd IIB T3

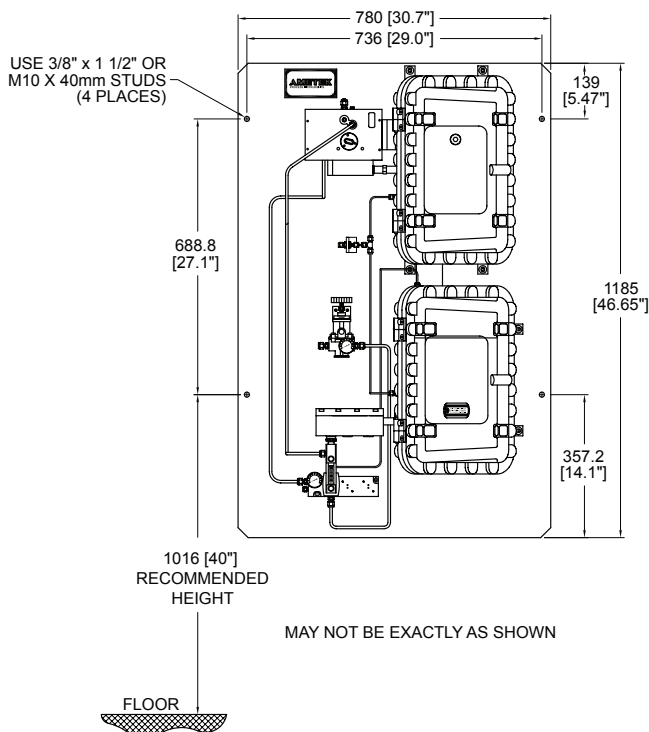
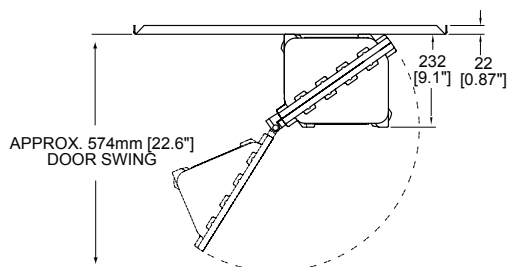
Russian Ex Proof Certification; 1ExdIIBT3 X

Russian Gosstandart Pattern Approval

Complies with all relevant European directives

Consult AMETEK Process Instruments for additional features and options available for the Model 932 Multi-Gas Analyzer.

* Typical for most applications



AMETEK

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REGISTERED
ISO 9001 CE
MANAGEMENT SYSTEM

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932 (05/02/07)

One of a family of innovative process analyzer solutions from AMETEK Process Instruments.
Specifications subject to change without notice.

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