

Model 921 Single Gas Analyzer

Benefits

- No moving parts
 - Reduced noise levels and maintenance
- Accuracy better than 0.25 ppm SO₂
- Excellent baseline stability, minimal span drift
- Linearity better than 1% over 4 orders of magnitude
- No interference from H₂O and CO₂
- Optional O₂ measurement
- Serial communication with plant DCS
- PC-User interface software

The Need

The Model 921 is a rugged single gas analyzer housed in a single 19-inch, rack-mounted unit which can be integrated into CEM systems or used alone for a variety of gas monitoring applications. The Model 921's no-moving-parts design was specifically developed to enable the high sensitivity, low concentration measurements required by the latest environmental regulations.

The Model 921 can be configured to measure most gas species that absorb in the UV. The optional low range white cell provides longer path length for measuring lower concentrations. For example, the minimum full scale for SO₂ is 25 ppm, with an accuracy of 1% of full scale.

The simple and robust design of the Model 921 is complemented by powerful data processing capabilities. The user-friendly keyboard enables programming of such variables as timing and

frequency of local zero and span checks and calibration gas values. A serial communications interface enables direct interfacing with data acquisition and control systems using Modbus protocol.

When your requirement is for a rugged, low concentration, gas analyzer, free of interferences from water and CO₂, the Model 921 is your answer.

The Measurement

The Western Research® Model 921 uses our proprietary high resolution UV technology in a dual beam, dual wavelength configuration. The major innovation in the Model 921 is that it is a true dual beam, dual wavelength analyzer with no moving parts. Instead of using a filter/chopper wheel to alternate between measure and reference wavelengths, the Model 921 uses a fixed optical configuration and pulsed UV lamps. This leads to increased light throughput, reduced noise levels, and reduced maintenance. The dual beam configuration combined with the

reference measurement ensures low noise performance with minimal baseline and span drift.

Resolution better than 0.02 nm is provided by high intensity, line source lamps. These sources emit at a fixed wavelength, providing great measurement stability, and emit low total power, removing the potential for sample photolysis. The high resolution enables unparalleled linearity over a wide dynamic range (less than 1% deviation over 4 to 5 orders of magnitude) which, in turn, leads to simple, robust data analysis.

Applications

- Source testing
- Continuous emissions monitoring, new and retrofit
 - Low range SO₂
- Manufactured gas QA
 - Calibration, medical, and industrial gases
- SRU tail gas clean-up
 - H₂S and SO₂
- Research



Model 921 Single Gas Analyzer

Performance Specifications

Methodology: Dual wavelength, high resolution, nondispersive UV

Species Measured (see Note 1)	Minimum Full Scale (see Note 2)	Maximum Full Scale
SO ₂	25 ppm	100%
NO	25 ppm	100%
NO ₂	50 ppm	100%
H ₂ S	50 ppm	100%

Note 1: Other species include: NH₃, COS, CS₂, mercaptans.

Note 2: Minimum full scale is based on $\pm 1\%$ full scale accuracy over 24 hours with auto zero disabled.

Optional O₂: Integral paramagnetic sensor

Accuracy: Typically better than 1% full scale

Repeatability: Typically $\pm 0.5\%$ of full scale

Linearity: Typically better than $\pm 1\%$ of full scale

Response Time: Typically less than 30s to T90 (excluding sample system)

Number of Gases: Single gas analyzer

Typical Sample Flow: 1 to 2 l/min (2 to 4 SCFH)

Sample Gas Temperature: Ambient

Pressure and Temperature Compensation: Optional

Ambient Conditions: 5° to 40°C (41° to 104°F); 5 to 95% relative humidity, non-condensing

Zero Drift: 2% full scale standard ranges in 24 hours

Power: 120 VAC $\pm 10\%$, 47 to 63 Hz or 240 VAC $\pm 10\%$, 47 to 63 Hz 90 W

Analog Outputs:

4 x voltage outputs
Up to four 4-to-20 mA self-powered outputs

Communications:

RS232 and RS422 ports
PC User interface optional
Modbus protocol optional

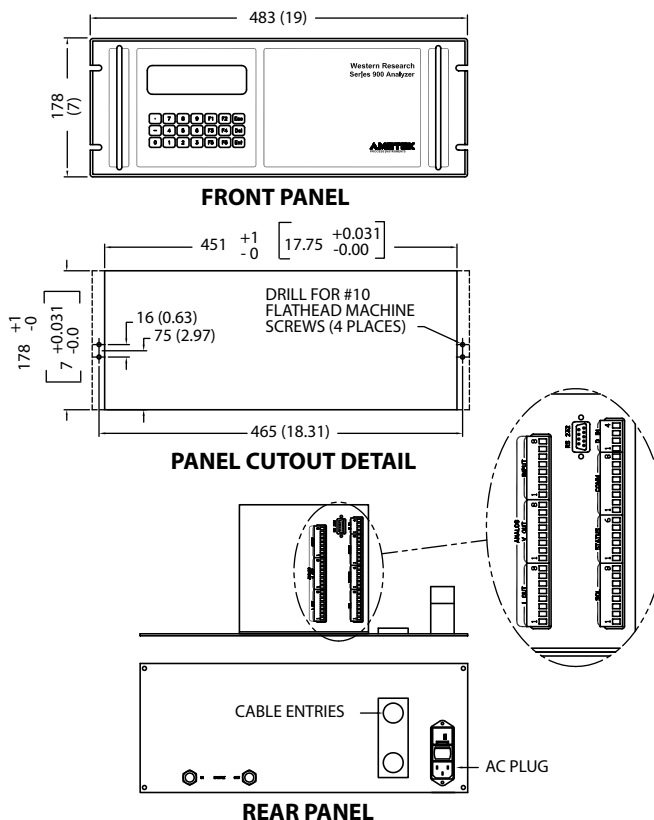
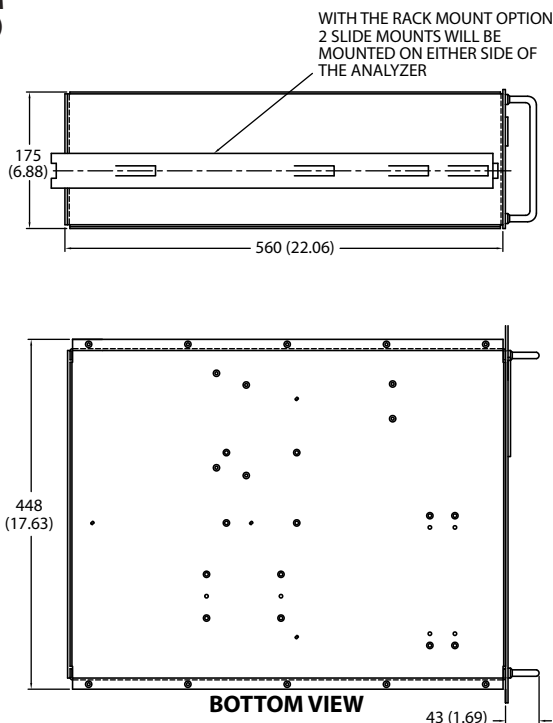
Physical Dimensions: 178 x 483 x 603 mm (7 x 19 x 23.75 in.)

Weight: Approximately 18.2 kg (40 lbs.)

Approvals and Certifications:

General purpose (non-hazardous)
CE
CSA

MM
(IN)



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

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