

## Model 922 Multi-Gas Analyzer

### Benefits

- Economical, rugged multi-gas analysis (up to 5 species)
- Excellent baseline stability, minimal span drift
- Linearity better than 1% over 4 orders of magnitude
- No interference from H<sub>2</sub>O and CO<sub>2</sub>
- Direct, simultaneous measurement of NO and NO<sub>2</sub>
- Multi-range SO<sub>2</sub>
- Optional O<sub>2</sub> measurement
- Serial communication with plant DCS
- PC-User interface software

### The Need

The Model 922 Multi-Gas Analyzer is a 19-inch, rack-mounted analyzer that can be integrated into CEM systems or used alone for a variety of gas monitoring applications. The Model 922 performs analyses typically performed by two or more separate analyzers, making it an economical alternative when several gases must be monitored. Species typically measured directly by the Model 922 include: SO<sub>2</sub>, NO, NO<sub>2</sub>, H<sub>2</sub>S, COS, CS<sub>2</sub>, NH<sub>3</sub>, and BTX.

The simple and robust design of the Model 922 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. Both analog and digital outputs are available with serial communications via Modbus protocol. An optional paramagnetic oxygen sensor can be included to provide O<sub>2</sub> corrected concentrations. Most combinations of gases with UV absorption spectra can be measured on the Model 922.

When your requirement is for a rugged, multi-gas analyzer, free of interferences from water and CO<sub>2</sub>, the Model 922 is your answer.

### The Measurement

The Western Research® Model 922 uses AMETEK's proprietary high resolution UV technology in a dual beam, multiple wavelength configuration. 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. A six-position filter wheel enables one reference and five measure wavelengths. The dual beam configuration, combined with the reference measurement, ensures low noise performance with minimal baseline and span drift. The five measure wavelengths enable the direct measurement of up to five

species. Therefore, NO and NO<sub>2</sub> can be measured separately and simultaneously without the need for complex sample conditioning and free of quenching effects.

In another configuration, the Model 922 can be configured to measure SO<sub>2</sub> on two different ranges, enabling accuracy better than 1% of reading within the range 100 ppm to 2%. Range switching is performed automatically.

### Applications

- Source testing
- Continuous emissions monitoring, new and retrofit
  - Multi-range SO<sub>2</sub>, SO<sub>2</sub>/NO/NO<sub>2</sub>, H<sub>2</sub>S
- Process monitoring for SO<sub>2</sub> and NOx in dry sample streams
- Manufactured gas QA
  - Calibration, medical and industrial gases
- SCR De-NOx: NOx and ammonia slip
- SRU tail gas clean-up: H<sub>2</sub>S and SO<sub>2</sub>
- Research



# Model 922 Multi-Gas Analyzer

## Performance Specifications

**Methodology:** Multiple wavelength, high resolution, nondispersive UV

Species Measured (see Note 1)	Minimum Full Scale (see Note 2)	Maximum Full Scale
SO <sub>2</sub>	50 ppm	100%
NO	200 ppm	100%
NO <sub>2</sub>	200 ppm	100%
NO <sub>x</sub>	200 ppm	100%
H <sub>2</sub> S	100 ppm	100%

**Note 1:** Other species include: NH<sub>3</sub>, COS, CS<sub>2</sub>, mercaptans.

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

**Optional O<sub>2</sub>:** Integral paramagnetic sensor

**Accuracy:** Typically better than 1% full scale

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

**Linearity:** Typically  $\pm 1\%$  of full scale

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

**Number of Gases:** Up to 5 simultaneously (refer to AMETEK for possible combinations)

**Typical Sample Flow:** 1 to 2 l/min (2.1 to 4.2 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

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

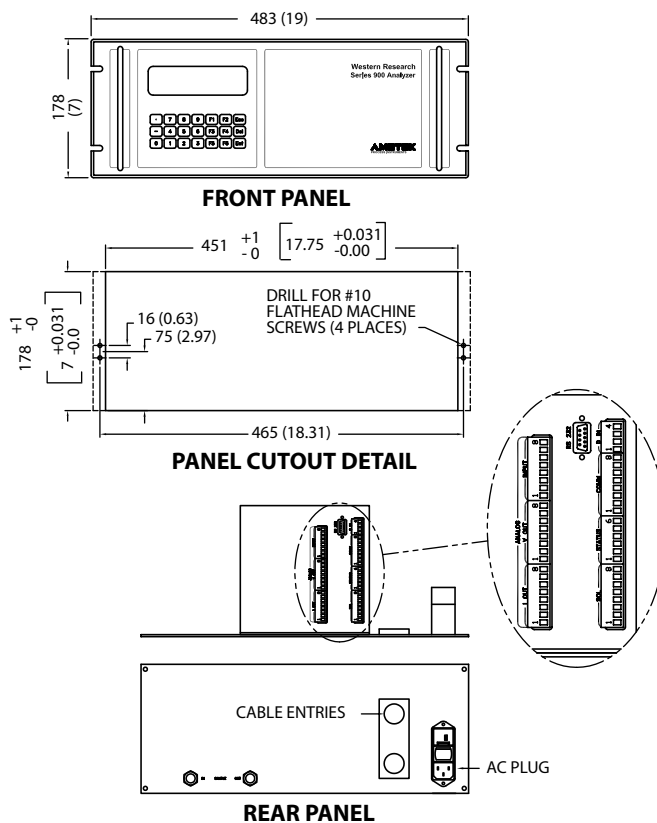
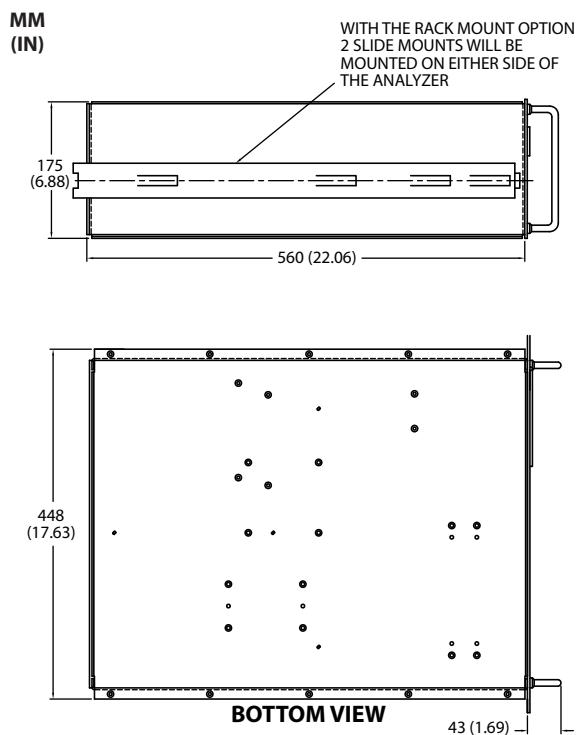
**Analog Outputs:**  
4 x voltage outputs  
Up to four 4-to-20 mA self-powered outputs

**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  
CE  
CSA



**AMETEK**

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Specifications subject to change without notice.

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