

PRODUCT DATA SHEET

9900RM/9900WM Gas Analyzers

Versatile ultraviolet (UV), continuous emissions monitoring (CEM) system and process gas analyzer

The 9900 is a single or multi-component gas analyzer that can be used alone or as an integrated part of a CEM system. It can be configured to measure most gas species that are absorbed in UV.

The wall mount version can maintain an internal cabinet temperature up to 122°F (50°C). This feature allows for transporting a sample gas through the analyzer at an elevated dew point without requiring a sample chiller – a considerable saving in complexity and mechanical equipment.

Powerful data processing capabilities

The simple and robust design of the 9900 is complemented by powerful data processing capabilities. The user-friendly keyboard enables programming of such variables as oxygen (O₂) correction, along with timing and frequency of local zero and span checks. Both analog and digital outputs are available, along with serial communications via Modbus protocol.

High-resolution UV technology

The high-resolution UV enables unparalleled linearity over a wide dynamic range (less than 1% deviation over four to five orders of magnitude) which leads to simple, robust data analysis.

Five measurable wavelengths

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 measurable wavelengths enable the direct measurement of up to five species.



KEY BENEFITS

- Available in wall mount or rack mount versions
- Excellent baseline stability, minimal span drift
- Linearity better than 1% over four orders of magnitude
- No interference from water (H₂O) and carbon dioxide (CO₂)
- Multi-range sulfur dioxide (SO₂) with accuracy better than ±1.0% full scale
- NO_x: Direct measure of nitric oxide (NO) and nitrogen dioxide (NO₂), no converter, no quenching effect
- Optional O₂ measurement
- Optional paramagnetic O₂ or infrared carbon monoxide (CO) and/or CO₂ sensors

APPLICATIONS

- Dry gas CEMS
- Source evaluation, stack testing
- Span gas blending

KEY MARKETS

- Refining
- Petrochemical
- Natural gas processing
- Stack emissions monitoring

PERFORMANCE SPECIFICATIONS

Measurement and scale chart	Species measured	Single species - Min. full scale	Multi species- Min. full scale
	SO ₂	10 ppm	20 ppm
	H ₂ S	25 ppm	100 ppm
	NO	50 ppm	50 ppm
	NO ₂	100 ppm	100 ppm
	NOx	n/a	100 ppm
	For details on other analytes of interest, please contact AMETEK Process Instruments.		
Maximum full scale on all systems	100%		
Methodology	Multiple-wavelength, high-resolution, non-dispersive UV		
Optional O₂	Integral paramagnetic sensor		
Accuracy	Better than 1.0% of standard full-scale range O ₂ : ±0.1%		
Repeatability	±0.5% full-scale of standard ranges O ₂ : ±0.02%		
Linearity	SO ₂ : < ±1.0% full-scale, NO, NO ₂ , NOx, H ₂ S: < ±1.5% full scale, O ₂ : ±0.1%		
Response time	90% in 30 seconds or less		
Number of gases	One (single-species version) up to five (multi-species version)		
Typical sample flow	0.25-5 L/min (0.6-10.5 SCFH)		
Sample gas requirements	Non-corrosive, non-condensing, free from oil and with less than three-micron particulates (0-95%, non-condensing)		
Sample systems limits	40 psig max, 5 psig with optional O ₂ sensor		
Pressure and temperature compensation	Optional		
Flow Indication	Optional 0-5 L/min, 0-10 L/min		
Ambient conditions	Storage: -20 to 60°C (-4 to 140°F); Operating: -20 to +50°C (-4 to 122°F) or 0 to +50°C (32 to 122°F) – analyzers with HMI display or O ₂ sensor only – relative humidity: 95%		
Zero drift	Typically, better than 2% full scale standard ranges in 24 hours		
Utility requirements	Electrical: 120 or 240 VAC ±10%, 50/60 Hz Power Consumption: <200 W maximum start-up (from a cold start) with average power dependent on ambient temperature		
Communications	Modbus RTU RS485 and optional Modbus TCP Fast Ethernet – network connection		
Physical dimensions (W x H x D)	9900RM: 482 x 177 x 602.56 mm (19 x 7 x 23.7 in.). Weight: 18.2 kg (40 lb) 9900WM (304 or mild steel): 610 x 610 x 250 mm (24 x 24 x 10 in.); Weight: 27 kg (60 lb) 9900WM (fiberglass): 610 x 760 x 250 mm (24 x 24 x 10 in.); Weight: 23 kg (51 lb)		
Outputs	Four isolated analog outputs, each configurable to 0-20 mA, 4-20 mA, 0-5V DC, 1-5V DC One configurable relay contact, Form A (SPST), normally open Switching: Maximum 240 V DC, 0.5 A DC, limited to 10 W Carry: Maximum 1.2 A DC		
Inputs	Two isolated dry contact inputs, 0-5 Volts or 0.5 mA.		
Approvals and certifications	CEC/NEC: Class I Division 2 Group ABCD, T4 Ex nA IIC T4 Class I, Zone 2 AEx nA IIC T4; IP20 Pollution Degree 2/Installation Category II IECEX: Ex nA IIC T4 Gc ATEX: II 3G Ex nA IIC T4 Gc EMC: IEC/EN 61326; FCC (47 CFR 15); Industry Canada (ICES-0003) Additional: CE Marking; LVD – 2014/35/EU		

SALES, SERVICE & MANUFACTURING

USA - Pennsylvania

150 Freeport Road
Pittsburgh PA 15238
Tel: +1 412 828 9040
Fax: +1 412 826 0399

USA - Delaware

455 Corporate Blvd.
Newark DE 19702
Tel: +1 302 456 4400
Fax: +1 302 456 4444

Canada - Alberta

2876 Sunridge Way NE
Calgary AB T1Y 7H9
Tel: +1 403 235 8400
Fax: +1 403 248 3550

WORLDWIDE SALES AND SERVICE LOCATIONS

USA

Tel: +1 713 466 4900
Fax: +1 713 849 1924

Brazil

Tel: +55 19 2107 4100

France

Tel: +33 1 30 68 89 20
Fax: +33 1 30 68 89 99

Germany

Tel: +49 2159 9136 0
Fax: +49 2159 9136 39

India

Tel: +91 80 6782 3200
Fax: +91 80 6780 3232

Singapore

Tel: +65 6484 2388
Fax: +65 6481 6588

China

Beijing
Tel: +86 10 8526 2111
Fax: +86 10 8526 2141
Chengdu
Tel: +86 28 8675 8111
Fax: +86 28-8675 8141
Shanghai
Tel: +86 21 5868 5111
Fax: +86 21 5866 0969



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