AMETEK®
PROCESS INSTRUMENTS

MEASURES: H_2S, SO_2, NO, NO_2, NOx, COS, CS_2, NH_3, Cl_2, H_2, CO_2, and other analytes

PRODUCT DATA SHEET

993X Gas Analyzer

Innovative photometric analyzer designed to measure gas species using ultraviolet (UV) spectroscopy, while also supporting the addition of other measurement technologies.

The 993X is a versatile gas analyzer, capable of continuously measuring up to seven components utilizing multiple measurement technologies, without consumables.

UV measurements of H_2S, SO_2, NO, NO_2, NOx, COS, CS_2, NH_3 and Cl_2 utilize AMETEK optical bench configurations that have been proven in challenging applications for decades. Drift and noise are minimized through the use of highly focused emission lines and temperature-controlled optical bench, that provide stability when ambient temperatures fluctuate.

Designed for outdoor installation

Designed for installation inside or outside of a temperature-controlled enclosure, the 993X has an ingress protection (IP) rating of IP66 and NEMA 4X, protecting against harsh operating environments.

Wall Mountable

The analyzer is wall mountable, with an integrated heater – capable of maintaining sample temperatures of up to 165°C to prevent the formation of liquids – and integrated sample conditioning system, and is designed to operate unattended.

Versatile measurement capabilities

The 993X is also capable of measuring components that do not absorb UV light, such as CO_2 and H_2, as it supports the use of an infrared (IR) sensor and thermal conductivity detector (TCD).

KEY BENEFITS

- Parts per million (PPM) to Percent (%) level ranges
- Integrated sample system
- Continuous measurement
- No consumables or reagents
- Additional measurement technologies supported
- Local touch screen display, with web browser interface available for remote access

APPLICATIONS

- Sulfur Recovery Units (SRUs)
  - Tail gas treater quench tower inlet
  - Tail gas treater – absorber and quench tower outlets
- Amine treatment inlet
- Acid/Sour gas
- Chemical processes

KEY MARKETS

- Sulfur Recovery
- Refining and Petrochemical
- Natural gas
- Sulfuric Acid production

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PRODUCT DATA SHEET

PERFORMANCE SPECIFICATIONS

Methodology	Multiple-wavelength, high-resolution, non-dispersive UV/VIS, with IR and TCD sensors supported
Units and Full scale range	ppm and % vol are standard with range application dependent; other units are available
Accuracy	±1.0% full-scale of range (typical, but application dependent)
Repeatability	Better than ±0.5% of full-scale range (typical, but application dependent)
Linearity	Better than ±1% of reading (typical, but application dependent)
Zero drift	Better than 2% of full-scale range, with auto zero disabled, over 24-hour period (typical, but application dependent)
Speed of response	Typically less than 30s to T90 (excluding sample system)
Number of analyzed components	Up to seven
Maximum sample cell pressure	Application dependent
Maximum sample gas temperature	165°C (329°F)
Zero Gas	Nitrogen or instrument air
Typical sample flow	2.5 L/min (5 SCFH)
Sample transport	Heated probe and samples lines are typically required
Outputs	Up to four isolated 4-20 mA, self-powered; Five Relay Contacts, Form A (SPST), Normally Open
Data communication	(1) RJ-45 Ethernet Modbus-TCP port (), (1) RS485 Modbus-RTU port
Utility requirements	120 VAC (+/- 10%), 50/60 Hz; 240 VAC (+/- 10%), 50/60 Hz; <440VA (standard temperature oven), <550VA (high temperature oven)
Ingress Protection	IP66 and NEMA 4X
Ambient temperature	-20 to 50°C (-4 to 122°F)
Physical dimensions (W x H x D)	839 x 1169 x 318 mm (33 x 46 x 12.5 in.) standard
Weight	Approximately 100 kg (220 lb)
Approvals and certifications	ATEX, IECEx and UKEx Zone 2, ATEX/IECEx Zone 1 (purged version), cETLus Class I Division 2 Groups A,B,C,D

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

ISO 9001 CE