SERVOMEX

SERVOPRO
4900 Multigas

HIGH PERFORMANCE CONTINOUS EMISSIONS (CEMS) ANALYZER, DESIGNED FOR MULTI-GAS MEASUREMENT OF CRITERION POLLUTANTS, GREENHOUSE GASES AND REFERENCE OXYGEN.

SERVOPRO 4900 Multigas

The 4900 Multigas offers high specification multi-gas monitoring designed specifically for the continuous emissions monitoring of flue gas. This sensitive analyzer combines leading edge patented sensing technologies including paramagnetic O_2, non-dispersive infrared (NDIR) techniques of Single Beam Single Wavelength (SBSW), and Gas Filter Correlation (GFx). When used with a suitable sampling system the 4900 Multigas provides unparalleled MCERTS/QUAL1 measurements of criterion pollutants NO, SO_2, and CO, plus O_2, and greenhouse gases CO_2, N_2O, and CH_4. The 4900 Multigas combines this monitoring power with low-cost of ownership, delivering a highly attractive analytical package.

With a compact and robust design, the small footprint of the 4900 Multigas requires minimum cabinet space and can be easily integrated into other systems, helping to reduce installation costs. Low operational requirements, facilitated through long calibration intervals by ultra-stable, high performance measurement technologies and auto-calibration capabilities, make the 4900 Multigas an ideal monitoring solution with an affordability to match its impressive monitoring performance.

Using the same reliable measurement technology as the SERVOPRO 4900, the new 4900 Multigas is backward-compatible with existing installations, providing trusted gas analysis while offering the advanced digital communications that many modern systems require.

FLEXIBLE

- Provides a complete continuous emissions monitoring solution for flue gas analysis
- Ideal for criterion pollutant and greenhouse gas monitoring: % level O_2, CO_2 and CO, plus ppm level SO_2, NO, CO, CH_4 and N_2O

- Continuous multi-gas monitoring
- Digital communications for remote access: RS232/RS485 Modbus, PROFIBUS and Ethernet (Modbus TCP/IP - to follow)

EASY TO USE

- Small and compact: designed for simplified integration into existing systems and easy fit into a cabinet
- Auto-calibration facility

- Intuitive-use icon-driven color touchscreen for easy device interaction and configuration
- USB serial port for data logging and software upgrades

LOW COST OF OWNERSHIP

- Reduced ongoing operational needs facilitated by auto-calibration function

- Extended calibration periods from ultra-stable, industry-leading Paramagnetic and SBSW IR and GFx IR sensing technologies

UNRIVALLED PERFORMANCE

- Non-depleting sensors for ultra-stable, accurate and selective measurements

- Manufactured by Servomex - over 60 years' experience innovating and pioneering gas analysis and thousands of units used in the field every year

BENCHMARK COMPLIANCE

- In compliance with Low Voltage, EMC and applicable EU Directives

- Certified to MCERTS (EN 15627-3) and QAL 1 (EN 14181) - O_2, SO_2, CO and NO

Learn more about the SERVOPRO 4900 Multigas
Visit servomex.com

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SERVOMEX
ANALYZERS
HIGH·PERFORMANCE GAS ANALYSIS

A COMPLETE MONITORING SOLUTION FOR CEMS GAS ANALYSIS

For industries and processes including power generation, petrochemical, refining, waste incineration, iron and steel, pulp and paper, and cement manufacture, continuous emissions monitoring is a regulatory requirement. The solution must be capable of offering the highest sensitivity and accuracy when dealing with multiple measurements for pollutants and greenhouse gases. No matter what your application needs, you'll want a solution that's easy to install and operate , while delivering attractive affordability. And we don't believe you should have to compromise.

A NO COMPROMISE SOLUTION

The 4900 Multigas meets all your CEMS requirements through a specific design and feature set optimized to continuous flue gas emissions monitoring applications. This compact, small-footprint analyzer integrates effortlessly into your established systems and, when used with the correct sampling system, delivers high grade multi-gas monitoring of criterion pollutant and greenhouse gases (% O_2, CO_2 and CO, plus ppm SO_2, NO, CO, CH_4, and N_2O). The 4900 Multigas combines three sensitive and highly stable non-depleting technologies to deliver unsurpassed measurements you can rely on – Paramagnetic, Single Beam Single Wavelength NDIR and Gas Filter Correlation NDIR. In addition to its performance, the 4900 Multigas also comes with analog/serial outputs, with digital communications protocols Serial Modbus, PROFIBUS, and Ethernet (Modbus TCP/IP - to follow) for added flexibility in configuration and set-up. For measurements that need to analyze and speciate NOx, NO and NO_2, a NOx converter can be included.

SIMPLE MAINTENANCE AND REDUCED ONGOING COSTS

Added to its considerable measurement performance and stability, the 4900 Multigas delivers highly attractive cost reductions over product life. Not only is this device optimized for easy set-up and flexible integration, but an auto-calibration function permits easy, low-cost remote calibration. The 4900 Multigas allows diagnostic values to be exported for early detection of problems for preventative, or even predictive maintenance.

ALTERNATIVE PRODUCTS

The Servomex product range features a variety of options designed to meet your application needs.

MiniMP 5200

The MiniMP 5200 is ideal for portable gas analysis of O_2 when EN15267-3 MCERTS approval is required. Optimized for CEMS testing, the MiniMP combines leading-edge gas analysis with simple, intuitive use and reduced ongoing maintenance.

SERVOPRO NOx

The versatile SERVOPRO NOx gas analyzer uses the time-proven chemiluminescence detection method to measure NO or NO/NO_2/NOx concentrations all in one analyzer – perfect for continuous monitoring for industrial stationary sources emissions or ambient air, and fast enough for emissions testing in engines and vehicles.

SERVOPRO SO₂

For industrial applications that require ultra-low emissions monitoring of sulfur dioxide, the SERVOPRO SO_2 is the ideal solution, utilizing ultraviolet (UV) Fluorescent technology to deliver a continuous measurement you can rely on.

KEY APPLICATIONS

- Utility boilers
- Clinical waste incinerators
- Chemical incinerators
- Crematoria
- Mobile labs
- Research into greenhouse gases

SERVOMEX TECHNOLOGIES

ZIRCONIA

GAS FILTER CORRELATION

CALORIMETRY

THERMAL CONDUCTIVITY

UV FLUORESCENCE

ALUMINUM OXIDE

CHEMILUMINESCENCE

PARAMAGNETIC

MONITORING PERFORMANCE

Gas	% O_2	SO_2 (high range)	SO_2 (standard sensitivity)	SO_2 (high sensitivity)	NO (high range)	NO (standard range)	N_2O
Technology	Paramagnetic	Infrared (Gfx)	Infrared (Gfx)	Infrared (Gfx)	Infrared (Gfx)	Infrared (Gfx)	Infrared (Gfx)
Range	0-25%	0-1,000/ 0-10,000 ppm	0-200/ 0-2,500 ppm	0-100 0-1,000 ppm	0-200/ 0-2,000 ppm	0-100/ 0-1,000 ppm	0-50/ 0-500 ppm
Linearity	<0.05% O_2	1% of reading or 20ppm*	1% of reading or 5ppm*	1% of reading or 2ppm*	1% of reading or 3ppm*	1% of reading or 2ppm*	1% of reading or 0.5ppm*
Accuracy (intrinsic error)/Repeatability	< ± 0.1% O_2*	1% of reading or 20ppm*	1% of reading or 5ppm*	1% of reading or 2ppm*	1% of reading or 3ppm*	1% of reading or 2ppm*	1% of reading or 0.5ppm*
Lower Detection Limit (LDL)[†]	0.02% O_2	0.41% of reading or 8.20ppm*	0.41% of reading or 2.10ppm*	0.41% of reading or 0.82ppm*	0.41% of reading or 1.2ppm*	0.41% of reading or 0.82ppm*	0.41% of reading or 0.21ppm*
Output Fluctuation (peak to peak)	± 0.05% O_2	1% of reading or 20ppm*	1% of reading or 5ppm*	1% of reading or 2ppm*	1% of reading or 3ppm*	1% of reading or 2ppm*	1% of reading or 0.5ppm*
Zero drift/week	0.1% O_2	40ppm	10ppm	4ppm	5ppm	2ppm	1ppm
Span drift/week	0.05% O_2	2% of reading or 40ppm*	2% of reading or 10ppm*	2% of reading or 4ppm*	2% of reading or 5ppm*	2% of reading or 2ppm*	2% of reading or 1ppm*
T_{90} in secs @1500ml/min	<15	<30	<30	<30	<30	<30	<30
Interference Effects	n/a	20% CO_2 ~ 5ppm 0.5% H_2O ~ -15ppm		20% CO_2 ~ 2ppm 0.5% H_2O ~ -15ppm	20% CO_2 ~ 2ppm 0.5% H_2O ~ -2ppm		20% CO_2 ~ +3.0ppm 100 ppm CO ~ -2.4ppm 10 ppm CO ~ +0.5ppm 2% H_2O ~ -0.3ppm

MONITORING PERFORMANCE

Gas	CH_4 (high range)	CH_4 (standard range)	CO (high range)	CO (standard sensitivity)	CO (mid sensitivity)	CO (high sensitivity)	%CO_2 and %CO
Technology	Infrared (Gfx)	Infrared (Gfx)	Infrared (Gfx)	Infrared (Gfx)	Infrared (Gfx)	Infrared (Gfx)	Infrared (SBSW)
Range	0-100/ 0-1,000 ppm	0-50/ 0-500 ppm	0-500/ 0-5,000 ppm	0-200/ 0-3,000 ppm	0-100/ 0-1,000 ppm	0-50/ 0-500 ppm	Various
Accuracy (intrinsic error)/ Linearity/Repeatability	1% of reading or 1ppm*	1% of reading or 0.5ppm*	1% of reading or 5ppm*	1% of reading or 2ppm*	1% of reading or 1ppm*	1% of reading or 0.5ppm*	<1% FS
Lower Detection Limit (LDL)[†]	0.41% of reading or 0.41ppm*	0.41% of reading or 0.21ppm*	0.41% of reading or 2.1ppm*	0.41% of reading or 0.82ppm*	0.41% of reading or 0.41ppm*	0.41% of reading or 0.21ppm*	0.21% of range or 0.41% of reading*
Output Fluctuation (peak to peak)	1% of reading or 1ppm*	1% of reading or 0.5ppm*	1% of reading or 5ppm*	1% of reading or 2ppm*	1% of reading or 1ppm*	1% of reading or 0.5ppm*	0.5% of range or 1% or reading*
Zero drift/week	2ppm	1ppm	10ppm	4ppm	2ppm	1ppm	<2% FS
Span drift/week	2% of reading or 2ppm*	2% of reading or 1ppm*	2% of reading or 10ppm*	2% of reading or 4ppm*	2% of reading or 2ppm*	2% of reading or 1ppm*	1% FS per day
T_{90} in secs @1500ml/min	<30	<30	<30	<30	<30	<30	<30
Interference Effects	10% CO_2 ~ +1.2ppm 0.2% CO ~ +0.5ppm 0.5% H_2O ~ <1ppm		20% CO_2 ~ 2ppm 2% H_2O ~ 0.5ppm			20% CO_2 ~ 1ppm 2% H_2O ~ 0.5ppm	n/a

*Whichever is the greater.
[†]Stated at a confidence interval of 95%

INFRARED

TUNABLE DIODE LASER

FLAME IONIZATION DETECTOR

GAS CHROMATOGRAPHY

PLASMA

LASER MOISTURE

COULOMETRIC

SPECTROSCOPIC

SERVOMEX TECHNOLOGIES

FEATURES

Analog output	Per measurement: 1 x 4-20mA (standard), 1 x 0-10V (optional)
Analog input	Up to 4 x 4-20mA inputs
Digital Input	Up to 8 digital inputs
Relays	4 relays as standard, up to 32 relays, 30V (dc or ac) /1A
Alarms	2 alarms as standard, up to 32 alarms
Digital communications	RS232/RS485 Modbus and PROFIBUS (Ethernet Modbus TCP/IP - to follow)
Sample system	500 - 2000ml/min, single or dual stream (second stream for NO after NOx converter)

DEVICE SPECIFICATION

Size:

- 132.5mm (5.2") high
  481.6mm (19") wide
  544.2mm (21.4") deep
- With expansion chassis, height is 265.5mm (10.5")

Weight:

- Main unit: approx 14kg (30.9lb)
- Expansion chassis: approx 13.7kg (30.2lb) (dependent on number and type of sensors used)

Operating Temperature:

- $5^{o}C$ - $45^{o}C$ ($41^{o}F$ - $113^{o}F$)

Warm Up Time:

- Warm up time is typically 24 hours from cold start at $20^{o}C$ ($68^{o}F$), may be longer for the higher sensitivity measurements.

Power Requirements:

- 100-240V ac, 50-60 Hz (± 10% maximum fluctuation)

Sample Gas Connections:

- Sample inlet is 1/8" NPT female
- Sample outlet is 1/4" NPT female

Certifications:

- EN 61010-1: Safety requirements for electrical equipment for measurement, control and laboratory use
- Complies with BS EN 61326-1:2013, Class A: Safety requirements for electrical equipment for measurement, control and laboratory use. The analyser is not intended for use in domestic applications as it does not meet CISPR 11 class B emission limits for residential locations, which are directly connected to low voltage power supply networks
- Certified to MCERTS (EN 15627-3) and QAL 1 (EN 14181) - O_2, SO_2, CO and NO

Please note: *Whilst every effort has been made to ensure accuracy, no responsibility can be accepted for errors or omissions. Data may change, as well as legislation, and you are strongly advised to obtain copies of the most recently issued regulations, standards and guidelines. This document is not intended to form the basis of a contract.*

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