

The Servomex 4900 analyser is a cost effective, high performance solution for Continuous Emission Monitoring applications



- Low cost of ownership
- Multiple gas capability (O<sub>2</sub>, CO, CO<sub>2</sub>, NO, SO<sub>2</sub>)
- Low maintenance
- Easy integration with other systems
- TÜV Approved

Specification	O <sub>2</sub>	SO <sub>2</sub>	NO	CO Std Sensitivity	CO High Sensitivity	CO <sub>2</sub>
<b>PERFORMANCE</b>						
Technology:	Paramagnetic	Infrared (Gfx) <sup>5</sup>	Infrared (Gfx) <sup>5</sup>	Infrared (Gfx) <sup>5</sup>	Infrared (Gfx) <sup>5</sup>	Infrared(sbsw) <sup>6</sup>
Range:	0-25% O <sub>2</sub>	0-200 <sup>2</sup> /2500 ppm(v) SO <sub>2</sub>	0-100/1000 ppm(v) NO	0-200/3000 ppm(v) <sup>3</sup> CO	0-50/500 ppm(v) CO	0-25% CO <sub>2</sub> <sup>3</sup>
Intrinsic Error (accuracy):	<0.05% O <sub>2</sub>	5ppm(v) SO <sub>2</sub> <sup>1</sup>	2ppm(v) NO <sup>1</sup>	2ppm(v) CO <sup>1</sup>	0.5ppm(v) CO <sup>1</sup>	<1% of selected range
Linearity Error:	<0.05% O <sub>2</sub>	5ppm(v) SO <sub>2</sub> <sup>1</sup>	2ppm(v) NO <sup>1</sup>	2ppm(v) CO <sup>1</sup>	0.5ppm(v) CO <sup>1</sup>	<1% of selected range
Repeatability:	0.05% of reading	5ppm(v) SO <sub>2</sub> <sup>1</sup>	2ppm(v) NO <sup>1</sup>	2ppm(v) CO <sup>1</sup>	0.5ppm(v) CO <sup>1</sup>	<1% of selected range
Response time (T <sub>90</sub> ) at max. sample flow rate	<15sec	<30sec	<30sec	<30sec	<30sec	<30sec
Zero Drift/week:	<0.05% O <sub>2</sub>	10ppm(v) SO <sub>2</sub>	2ppm(v) NO	4ppm(v) CO	1ppm(v) CO	2% of selected range
Span Drift:	<0.05% O <sub>2</sub> /week	2% of reading or 10ppm(v) SO <sub>2</sub> <sup>4</sup> /week	2% of reading or 1ppm(v) NO <sup>4</sup> /week	2% of reading or 4ppm(v) CO <sup>4</sup> /week	2% of reading or 1ppm(v) CO <sup>4</sup> /week	1% reading/day
other measurements are available on request						
<b>SIGNAL INPUTS/ OUTPUTS</b>						
Analogue Outputs:	Two Isolated 4-20mA/0-20mA as standard. Additional outputs may be added					
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Analogue output range:	Freely selectable over the measurement range					
Alarms:	Three volt free single pole relays (264Vac or 30Vdc at 1.0A). Additional relays may be added					
Serial Outputs:	Single ASCII data logging output (RS232). User configurable, 2400 to 19200 baud					
<b>PHYSICAL</b>						
Dimensions (W x D x H):	482.6mm (19") x 478mm (18.8") Short Chassis depth or 608mm (23.9") Long Chassis depth x 132.5mm (3U) nominal					
Weight:	Typical 22Kg (48.4lb)					

<sup>1</sup> or <1% of reading, whichever is greater

<sup>2</sup> TÜV validated range

<sup>3</sup> Higher Ranges available, consult Servomex

<sup>4</sup> whichever is greater

<sup>5</sup> Gfx = Gas filter correlation infrared technology

<sup>6</sup> sbsw = Single beam single wavelength infrared technology



## Operating Environment

Temperature:

Operating: 5°C to 45°C/41°F to 113°F

Storage: -20°C to 60°C/-4°F to 140°F

Atmospheric Pressure:

11 to 18psia/79 to 124 kPaa

(for operation up to 2000m altitude.)

Warm Up Time

typically 1 hour from ambient (20°C)

Relative Humidity:

10-90% RH, non-condensing

## Sample Gas

Maximum Temperature: 60°C

Dew Point: 5°C/9°F below minimum ambient

Condition: Oil free, non-corrosive, non-condensing, non-flammable

Particulates: <1µm

Pressure: Sample Pressure externally regulated to typically <1psig to provide specified flow rate.

Flow Rate: 500-1500ml/min.

Gas Connection: Inlet 1/8" NPT female  
Outlet 1/4" NPT female

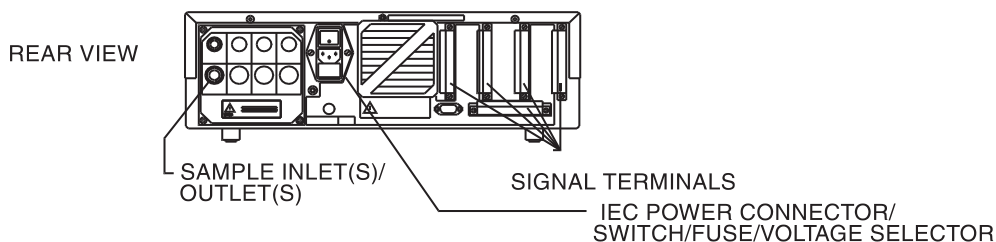
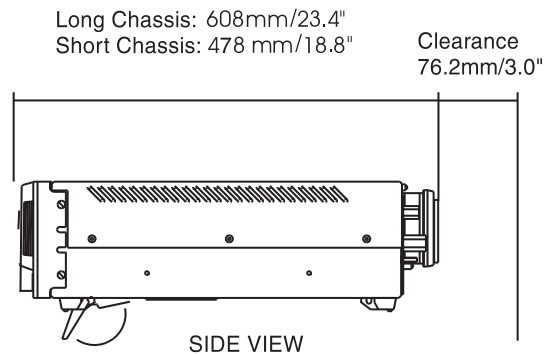
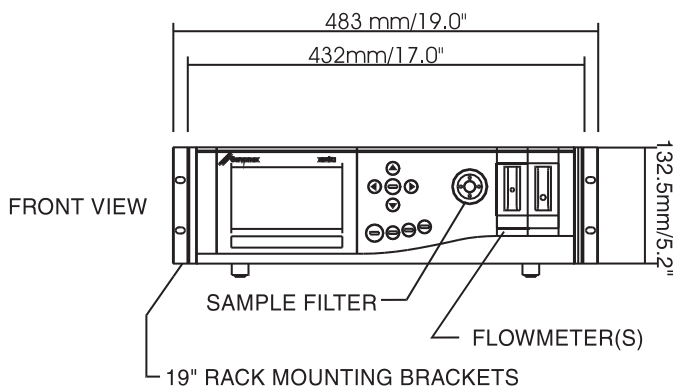
## Power Supply

85 to 132Vac, 47 to 62Hz (350VA) maximum

170 to 264Vac, 47 to 62Hz (350VA) maximum

## Sample Wetted Materials

Sample Wetted Materials	Analyser fitted with		
	O <sub>2</sub> Control Sensor	SO <sub>2</sub> , NO, CO Trace Sensors	CO <sub>2</sub> percent Sensor
Stainless Steel 303	✓	✓	✓
Stainless Steel 316	✓	✓	✓
Viton	✓	✓	✓
Polypropylene	✓	✓	✓
Borosilicate Glass	✓		
Platinum	✓		
Platinum Iridium Alloy	✓		
Electroless Nickel	✓		
Gold		✓	
Calcium Fluoride		✓	
Nickel		✓	
Sapphire			✓
Epoxy Resin			✓
Nylon			✓
<b>Flowmeter Option</b>			
Borosilicate Glass	✓	✓	✓
Duralumin	✓	✓	✓
<b>Needle Valves Option</b>			
Brass	✓	✓	✓
Fomblin Grease	✓	✓	✓
<b>Flow Alarm Option</b>			
Glass	✓	✓	✓
Nylon	✓	✓	✓
Silicon Rubber	✓	✓	✓
Aluminium	✓	✓	✓
<b>Internal Autocal Option</b>			
Aluminium	✓	✓	✓
PVDF	✓	✓	✓
<b>Internal Filter Option</b>			
Polycarbonate	✓	✓	✓
Glass Fibre	✓	✓	✓



## EC Directive Compliance

The 4900 analyser complies with the Low Voltage Directive 73/23/EEC and the EMC Directive 89/336/EEC (as amended by Directive 92/31/EEC), both as amended by Directive 93/68/EEC.

It conforms to the following harmonised European standards for product safety and electromagnetic compatibility:

EN 61010-1: Safety requirements for electrical equipment for measurement, control and laboratory use.

EN 61326-1: Electrical equipment for measurement, control and laboratory use - EMC requirements (All induced errors are less than the intrinsic error).

This product is rated for "Installation Category II" in accordance with IEC 664.

This product is rated for "Pollution Degree 2" in accordance with IEC 664.

Performance Specification Continued						
Gases Measured:	O <sub>2</sub>	SO <sub>2</sub>	NO	CO Std. Sensitivity	CO High Sensitivity	CO <sub>2</sub>
Recommended minimum output range:	0-5% O <sub>2</sub>	0-500ppm(v) SO <sub>2</sub>	0-100ppm(v) NO	0-200ppm(v) CO	0-50ppm(v) CO	80% of selected range
Output fluctuation: (peak to peak noise)	<0.01% O <sub>2</sub>	1% of reading or 5ppm(v) SO <sub>2</sub> <sup>1</sup>	1% of reading or 2ppm(v) NO <sup>1</sup>	1% of reading or 2ppm(v) CO <sup>1</sup>	1% of reading or 0.5ppm(v) CO <sup>1</sup>	1% of reading or 0.5% of selected range
Cross sensitivity <sup>2, 4</sup> : (zero on nitrogen)	20% CO <sub>2</sub> will have an effect of 0.06% O <sub>2</sub>	20% CO <sub>2</sub> will have an effect of 5ppm(v) SO <sub>2</sub> 0.5% H <sub>2</sub> O will have an effect of -15ppm(v) SO <sub>2</sub>	20% CO <sub>2</sub> will have an effect of 2ppm(v) NO 0.5% H <sub>2</sub> O will have an effect of -2ppm(v) NO	20% CO <sub>2</sub> will have an effect of 2ppm(v) CO 2% H <sub>2</sub> O will have an effect of 0.5ppm(v) CO	20% CO <sub>2</sub> will have an effect of 1ppm(v) CO 2% H <sub>2</sub> O will have an effect of 0.5ppm(v) CO	No effects
Ambient pressure: coefficient (per 1% change in vent pressure)	1% of reading	0.75% of reading	0.3% of reading	0.25% of reading	0.25% of reading	<2% of reading
Ambient temperature coefficient (per 10°C/18°F)	1% of reading or 0.1% O <sub>2</sub> <sup>1</sup>	3% of reading or 15ppm(v) SO <sub>2</sub> <sup>1</sup>	3% of reading or 3 ppm(v) NO <sup>1</sup>	3% of reading or 4 ppm(v) CO <sup>1</sup>	3% of reading or 1 ppm(v) CO <sup>1</sup>	2% of reading or 1% of selected range <sup>1</sup>
Sample flow effect: for analyser flow rate 500-1500ml/min	<1% of reading or 0.1% O <sub>2</sub> <sup>1</sup>	<1% of reading or 5 ppm(v) SO <sub>2</sub>	<1% of reading or 2 ppm(v) NO	<1% of reading or 2 ppm(v) CO	<1% of reading or 0.5 ppm(v) CO	<3% of reading or 1.5% of selected range <sup>1</sup>

<sup>1</sup>whichever is the larger    <sup>2</sup> normal sign shown, effects can be positive or negative (same magnitude)

<sup>3</sup> per 1% change in analyser vent pressure.    <sup>4</sup> Data quoted for flue gas applications. For other applications refer to Servomex.

The performance specification has been written, and verified, in accordance with the International standard IEC 1207-1:1994 "Expression of performance of gas analysers".

Servomex companies, agents and representatives are located throughout the world. Your nearest contact is:



Visit [www.servomex.com](http://www.servomex.com) for technical data sheets, application and technology information for all Servomex analysers.

Servomex has a policy of constant product improvement and therefore reserves the right to change specifications without notice.



Certificate No. Q05166  
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