

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



- Low cost of ownership
- Multiple gas capability (O₂, CO, CO₂, NO, SO₂)
- Low maintenance
- Easy integration with other systems
- TÜV Approved

Specification	O ₂	SO ₂	NO	CO Std Sensitivity	CO High Sensitivity	CO ₂
PERFORMANCE						
Technology:	Paramagnetic	Infrared (Gfx) ⁵	Infrared (Gfx) ⁵	Infrared (Gfx) ⁵	Infrared (Gfx) ⁵	Infrared(sbsw) ⁶
Range:	0-25% O ₂	0-200 ² /2500 ppm(v) SO ₂	0-100/1000 ppm(v) NO	0-200/3000 ppm(v) ³ CO	0-50/500 ppm(v) CO	0-25% CO ₂ ³
Intrinsic Error (accuracy):	<0.05% O ₂	5ppm(v) SO ₂ ¹	2ppm(v) NO ¹	2ppm(v) CO ¹	0.5ppm(v) CO ¹	<1% of selected range
Linearity Error:	<0.05% O ₂	5ppm(v) SO ₂ ¹	2ppm(v) NO ¹	2ppm(v) CO ¹	0.5ppm(v) CO ¹	<1% of selected range
Repeatability:	0.05% of reading	5ppm(v) SO ₂ ¹	2ppm(v) NO ¹	2ppm(v) CO ¹	0.5ppm(v) CO ¹	<1% of selected range
Response time (T₉₀) at max. sample flow rate	<15sec	<30sec	<30sec	<30sec	<30sec	<30sec
Zero Drift/week:	<0.05% O ₂	10ppm(v) SO ₂	2ppm(v) NO	4ppm(v) CO	1ppm(v) CO	2% of selected range
Span Drift:	<0.05% O ₂ /week	2% of reading or 10ppm(v) SO ₂ ⁴ /week	2% of reading or 1ppm(v) NO ⁴ /week	2% of reading or 4ppm(v) CO ⁴ /week	2% of reading or 1ppm(v) CO ⁴ /week	1% reading/day
other measurements are available on request						
SIGNAL INPUTS/ OUTPUTS						
Analogue Outputs:	Two Isolated 4-20mA/0-20mA as standard. Additional outputs may be added					
Analogue Inputs:	Two Isolated 4-20mA/0-20mA as standard					
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					
PHYSICAL						
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)					

¹ or <1% of reading, whichever is greater

² TÜV validated range

³ Higher Ranges available, consult Servomex

⁴ whichever is greater

⁵ Gfx = Gas filter correlation infrared technology

⁶ 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

Power Supply

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

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

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

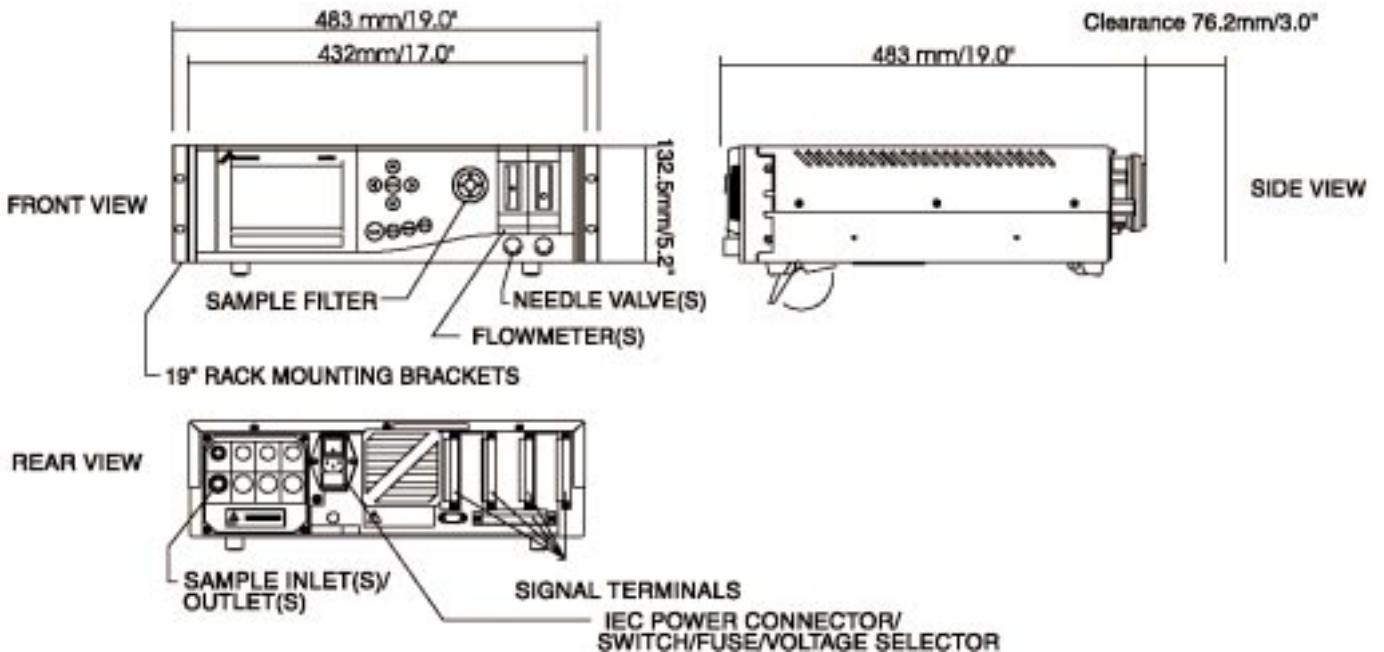
Pressure: Sample Pressure externally regulated to typically <1psig to provide specified flow rate.

Flow Rate: 500-1500ml/min.

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

Sample Wetted Materials

Sample Wetted Materials	Analyser fitted with		
	O ₂ Control Sensor	SO ₂ , NO, CO Trace Sensors	CO ₂ 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			✓
Flowmeter Option			
Borosilicate Glass	✓	✓	✓
Duralumin	✓	✓	✓
Needle Valves Option			
Brass	✓	✓	✓
Fomblin Grease	✓	✓	✓
Flow Alarm Option			
Glass	✓	✓	✓
Nylon	✓	✓	✓
Silicon Rubber	✓	✓	✓
Aluminium	✓	✓	✓
Internal Autocal Option			
Aluminium	✓	✓	✓
PVDF	✓	✓	✓
Internal Filter Option			
Polycarbonate	✓	✓	✓
Glass Fibre	✓	✓	✓



You

Please fill in your details and a brief description of the application for which an analyser is required.

Provide as much information as possible. If there are additional details which you feel may be of use, please include them with your enquiry.

Measurements

The xentra 4900 can be fitted with up to four gas sensor modules. For details of the measurement technologies used by Servomex, please refer to The Principles of Gas Analysis. Your choice of sensor will affect sample wetted materials and chassis size.

Paramagnetic (Pm) Oxygen Sensor

Choose this sensor to measure percent level oxygen.

Occupies one sensor location*

Infrared (Gfx) Carbon Dioxide Sensor

Choose this sensor to measure high ppm(v) or percent level carbon dioxide. Occupies one sensor location.

Infrared (Gfx) Carbon Monoxide Sensor

Choose this sensor to measure carbon monoxide. Two standard versions are available: 0-50/500ppm(v) and 0 - 200/3000 ppm(v). Occupies two sensor locations.

Infrared (Gfx) Nitric Oxide Sensor

Choose this sensor to measure nitric oxide. Standard range 0-100/1000ppm(v). Occupies two sensor locations.

Infrared (Gfx) Sulphur Dioxide Sensor

Choose this sensor to measure sulphur dioxide. Standard range 0-500/2500ppm(v). Occupies two sensor locations.

Other measurements

Other trace and percent level measurements are also available. Please contact Servomex.

Note (for all transducers):

The Analyser can have one or two sample streams. For each measurement, please indicate which stream it is to measure.

* In a short chassis analyser fitted with an infrared (Gfx) sensor, or a long chassis analyser fitted with two infrared (Gfx) sensors each occupying two sensor locations, it is still possible to fit a Paramagnetic Oxygen Sensor. See Module 2 in the panel right.

The analyser is fitted as standard with the following features:

Relay Outputs

Three volt free single pole relays rated at 230Vac /30Vdc at 1.0 Amp.

Serial Output

Single ASCII data logging output (RS232). User configurable, 2400 to 19200 baud.

Analogue Outputs

Two isolated 4-20mA/0-20mA outputs with full zero and span adjustment. Two ranges can be assigned to each output, the second range activated by external contact closure. Maximum impedance for each mA output is 1k Ω .

Analogue Inputs

Two floating 4-20mA/0-20mA linear inputs from user set zero and span. Digital input per channel indicating data validity.

Flowmeters

A 2500ml/min sample flowmeter with or without a needle valve can be fitted to each stream.

Sample Filter

It is necessary to filter the sample gas to remove particulates above 1.0 μ m. The

analyser can be fitted with a single 0.6 μ m filter, on either stream one or stream 2

Flow Alarm

A low Flow alarm can be fitted to one stream only. Low Flow is shown as a fault

on the display. A signal may also be assigned to the analyser outputs.

Autocalibration

External autocalibration is provided as standard. The user is required to use the RS232 output or two relays per autocal group. Two extra relays for use with external autocal can be provided on an

internal PCB which provides relay contacts rated 230Vac/30Vdc at 1.0A to drive external solenoid valves (not supplied).

Internal autocalibration valves are available for a single stream analyser. A manifold allows low and high calibration gases to be plumbed directly to the analyser.

Extra Outputs

Two isolated 4-20mA/0-20mA outputs and three alarm relays are fitted as standard.

A maximum of nine additional relays and six additional mA outputs can be fitted to an analyser.

Mounting

The xentra 4900 is available in three mounting configurations:

Benchtop:

For mounting free standing on a bench or other suitable surface.

19" rack ears only:

For mounting in a rack or panel with easy access to the rear (no slides are supplied). Additional rear support will be required.

19" rack ears & slides:

For mounting in a rack with access only from the front. Available in 600mm or 900mm versions, the 900mm version is required if the four sensor location chassis is used.

Power Lead/Cord & Voltage

The xentra 4900 can accept different power supply voltages and is supplied with a choice of power lead. Choose from the following:

UK Lead, 170-264Vac

USA Lead, 85-132Vac

EUR Lead, 170-264Vac

EUR Lead, 85-132Vac

Installation and QuickStart™ Manual

The xentra 4900 is supplied with installation and QuickStart™ manuals.

Service Manual

A service manual is available containing technical descriptions, fault diagnosis

information, parts removal, refitting and test instructions, tool and test equipment lists

and electrical drawings. It is intended for use by Servomex trained service personnel.

Enquiry & Ordering Information

Name:	<input style="width: 95%;" type="text"/>	Telephone:	<input style="width: 95%;" type="text"/>	Fax:	<input style="width: 95%;" type="text"/>
Company:	<input style="width: 95%;" type="text"/>	email:	<input style="width: 95%;" type="text"/>		
Address:	<input style="width: 95%;" type="text"/>				
	Project/ Application: <input style="width: 95%;" type="text"/>				

Measurement(s)

<p>Module 1 - choose one measurement.</p> <p>Will this measurement be Stream 1 <input type="checkbox"/> or Stream 2 <input type="checkbox"/>?</p> <p>O2 control <input type="checkbox"/></p> <p>CO2 % 25 <input type="checkbox"/></p> <hr/> <p>CO 200/3000ppm(v) <input type="checkbox"/> 50/500ppm(v) <input type="checkbox"/></p> <p>NO 100/1000ppm(v) <input type="checkbox"/></p> <p>SO2 200/2500ppm(v) <input type="checkbox"/></p>	<p>Module 2 - choose one measurement if required and available.</p> <p>Will this measurement be Stream 1 <input type="checkbox"/> or Stream 2 <input type="checkbox"/>?</p> <p>O2 control <input type="checkbox"/></p> <p>CO2 % 25 <input type="checkbox"/></p> <hr/> <p>These transducers take up two bays in the analyser. If you choose them module 2 will be generally unavailable. It is possible however to fit one additional oxygen transducer.</p> <p>O2 control <input type="checkbox"/></p> <p>None <input type="checkbox"/></p>
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If only modules 1 and/or 2 above are used, please choose a long or short chassis.
If you choose a measurement from modules 3 or 4 below, a long chassis will be supplied. long short

<p>Module 3 - choose one measurement if required.</p> <p>Will this measurement be Stream 1 <input type="checkbox"/> or Stream 2 <input type="checkbox"/>?</p> <p>O2 control <input type="checkbox"/></p> <p>CO2 % 25 <input type="checkbox"/></p> <hr/> <p>CO 200/3000ppm(v) <input type="checkbox"/> 50/500ppm(v) <input type="checkbox"/></p> <p>NO 100/1000ppm(v) <input type="checkbox"/></p> <p>SO2 200/2500ppm(v) <input type="checkbox"/></p> <p>None <input type="checkbox"/></p>	<p>Module 4 - choose one measurement if required and available.</p> <p>Will this measurement be Stream 1 <input type="checkbox"/> or Stream 2 <input type="checkbox"/>?</p> <p>O2 control <input type="checkbox"/></p> <p>CO2 % 25 <input type="checkbox"/></p> <hr/> <p>These transducers take up two bays in the analyser. If you choose them module 4 will be unavailable.</p> <p>None <input type="checkbox"/></p>
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Flowmeters 9

Left - Stream 1 - choose one flowmeter.

2500ml/min sample flowmeter (C)

2500ml/min sample flowmeter with needle valve (D)

None (X)

Flowmeters 10

Right - Stream 2 - choose one flowmeter.

2500ml/min sample flowmeter (C)

2500ml/min sample flowmeter with needle valve (D)

None (X)

Internal Sample Filter 11

Internal Sample Filter Fitted on Stream 1 (1) 2 (2)

None (X)

Flow Alarm 12

Flow Alarm Fitted to Stream 1 (A) 2 (B)

None (0)

Autocalibration 13

Single Stream, no extra hardware required: (1)

Dual Stream, no extra hardware required: (2)

Single Stream, with internal valves (3)

Single Stream, 2 extra relay contacts fitted (4)

Dual Stream, 2 extra relay contacts fitted (5)

Extra Outputs 14

3 extra relays and 2 extra mA outputs (1)

6 extra relays and 4 extra mA outputs (2)

9 extra relays and 6 extra mA outputs (3)

None (0)

Mounting 15

Bench (1)

19" rack ears only (2)

19" rack ears and slides for 600mm rack (3)

19" rack ears and slides for 900mm rack (4)

Power Lead/Cord and Voltage 16

UK, 170 - 264 Vac: (1)

USA, 85 - 132 Vac: (2)

EUR, 170 - 264 Vac: (3)

EUR, 85 - 132 Vac: (4)

Installation and Quickstart Manuals 17

English: (1)

French: (2)

German: (3)

Service Manual 18

English: (1)

None (0)

EC Directive Compliance

The xentra 4900 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 ₂	SO ₂	NO	CO Std. Sensitivity	CO High Sensitivity	CO ₂
Recommended minimum output range:	0-5% O ₂	0-500ppm(v) SO ₂	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 ₂	1% of reading or 5ppm(v) SO ₂ ¹	1% of reading or 2ppm(v) NO ¹	1% of reading or 2ppm(v) CO ¹	1% of reading or 0.5ppm(v) CO ¹	1% of reading or 0.5% of selected range
Cross sensitivity ^{2, 4} : (zero on nitrogen)	20% CO ₂ will have an effect of 0.06% O ₂	20% CO ₂ will have an effect of 5ppm(v) SO ₂ 0.5% H ₂ O will have an effect of -15ppm(v) SO ₂	20% CO ₂ will have an effect of 2ppm(v) NO 0.5% H ₂ O will have an effect of -2ppm(v) NO	20% CO ₂ will have an effect of 2ppm(v) CO 2% H ₂ O will have an effect of 0.5ppm(v) CO	20% CO ₂ will have an effect of 1ppm(v) CO 2% H ₂ 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 ₂ ¹	3% of reading or 15ppm(v) SO ₂ ¹	3% of reading or 3 ppm(v) NO ¹	3% of reading or 4 ppm(v) CO ¹	3% of reading or 1 ppm(v) CO ¹	2% of reading or 1% of selected range ¹
Sample flow effect: for analyser flow rate 500-1500ml/min	<1% of reading or 0.1% O ₂ ¹	<1% of reading or 5 ppm(v) SO ₂	<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 ¹

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

³ per 1% change in analyser vent pressure. ⁴ 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 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. 005166
BS EN ISO 9001



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