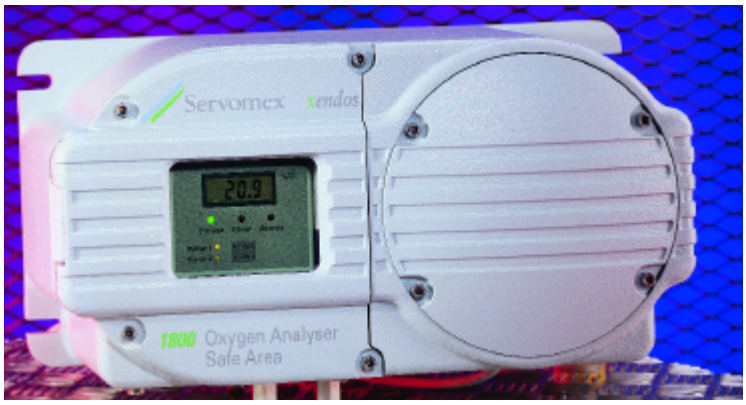
1800 Oxygen Analyser

The Servomex 1800 analyser is a stable, accurate and highly specific oxygen analyser for safe areas.



- Designed for safe area oxygen analysis
- Low maintenance and re-calibration requirements
- Range of alarm outputs to aid integration with other systems
- Easy to set up and operate
- Special versions for solvent bearing samples
- Special high flow rate cell option

Specification	
Gases Measured:	**O_2**
PERFORMANCE	
Technology:	Paramagnetic transducer
Range:	0-100% O_2
Intrinsic Error (accuracy):	<0.2% of reading or 0.05% O_2 [1]
Linearity:	<0.05% O_2 [2]
Repeatability:	<0.1% of reading or 0.05% O_2 [1]
Response time (T_{90})	4 to 8 seconds [3]
Zero drift/ week:	<0.05% O_2
Span drift/ week:	<1% of reading or 0.05% O_2 [1]
SIGNAL OUTPUTS	
Analogue:	One 4-20 mA, isolated & one 0-1V dc, non-isolated. Ranges selectable from 0 - 2.5, 5, 10, 25 and 100% O_2
Alarms: Concentration	Two volt free changeover relays rated 250Vac/3A or 28Vdc (non inductive) maximum and 5V/10mA ac/dc minimum
Sample flow fail	One volt free changeover relay rated 250Vac/3A or 28Vdc (non inductive) maximum and 5V/10mA ac/dc minimum
PHYSICAL	
Dimensions:(W x D x H)	448mm x 229mm x 235 mm / 17.6” x 9” x 9.25”
Weight:	26 kg / 57 lbs
Hazardous area Classification:	Non-Hazardous Areas only
Ingress Protection:	IP 66 / NEMA 4X
Mounting:	Wall or Panel

[1] whichever is the greater
[2] inherently linear, value dependant on calibration gases
[3] dependant on configuration

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Ambient Conditions

Temperature:

Operating: -10°C to 50°C/14°F to 122°F

Storage: -20°C to 55°C/-4°F to 131°F

Atmospheric Pressure:

79 to 124 kPaa/11 to 18psia

(for operation up to 2000m altitude.)

Warm Up Time

4 hours at an ambient temperature of 20°C (68°F)

Power Supply

100 to 240V ac ±10% - 50/60Hz -50VA max.
Note: The internal pumps are AC voltage dependant and are supplied as 110Vac 50, 110Vac 60Hz, or 230Vac 50Hz. Ensure that the correct AC input voltage is supplied to an analyser fitted with a sample pump.

Sample Wetted Materials

Material Of Construction	Basic Analyser	Standard Cell + Flow Alarm	Standard Cell + AFCD	Standard Cell + Sample Pump	Standard Cell + BPR	High Flow rate cell / Stainless Steel Pipework	Solvent Reistant Cell + Stainless Steel Pipework	Solvent Resistant Cell +Hastelloy pipework
Beryllium-Copper					✔			
Borosilicate Glass	✔	✔	✔	✔	✔	✔	✔	✔
Bonded Borosilicate Glass Fibre			✔					
Brass		✔						
Phospher Bronze		✔						
Fluorocarbon Rubber	✔	✔	✔	✔	✔			
Hastelloy C-276								✔
Nickel (electroless)	✔	✔	✔	✔	✔	✔	✔	✔
Neoprene Rubber		✔						
Glass Filled Nylon 12		✔						
Polysulphone		✔						
Platinum	✔	✔	✔	✔	✔	✔	✔	✔
Platinum / Iridium alloy	✔	✔	✔	✔	✔	✔	✔	✔
Glass Filled Polypropylene			✔					
Polypropylene	✔	✔	✔	✔	✔			
PVC					✔			
PVDF				✔	✔			
Gold Plated Silver		✔						
302 / EN58A SSteel			✔					
303 Stainless Steel	✔	✔	✔	✔	✔			
316 Stainless Steel	✔	✔	✔	✔	✔	✔	✔	✔
Viton (325 cell)	✔	✔	✔	✔	✔	✔		
Viton - A			✔					
Chemraz (364 cell)							✔	✔
PTFE							✔	✔

Sample Gas Conditions

Configuration	Basic Analyser	with AFCD	with AFCD and Sample Pump	with AFCD and BPR	S.Steel or Hastelloy/PFA High Flow cell or bypass
Inlet Pressure	0.04 psig/ † 0.3 kPag minimum	1 to 5 psig/ 7 to 35 kPag	-0.03 to 1 psig/ -0.2 to 7kPag	17 to 22 psia/† 119 to 154 kPaa	0.05 psig/† 0.4 kPag minimum
Flow Rate	50 to 250ml/min	1.2 to 3.5 l/min	1.6 to 1.8 l/min	1.0 to 2.0 l/min	50 to 70 l/hour (60 l/hour nominal)
Vent Pressure	11.5 to 18.0 psia (80.5 to 126kPaa) - DO NOT RESTRICT ANALYSER VENT				
Dew Point	5°C below ambient temperature				
Temperature	Sample gas not above ambient				
Particulates	<3µm (micron)				
Condition	Clean, non-flammable * and free from oil/condensate**				
Connections	¼" NPT. INT Inlet/Outlet Connectors (Female). (6mm option available)				

† Adjust pressure and sample flow externally to provide sample flow rate
* For Flammable samples use the Servomex 1900 analyser
** For Corrosive samples use a solvent resistant cell option

AFCD - Automatic Flow Control Device BPR - Back Pressure Regulator

Front View

448mm / 17.6"

Weight
26 kgs/57 lbs

407mm / 16"

174.2mm
/ 6.86"

4 off Slots for M5 mounting Bolts / Studs

Sample Outlet 1/4" NPT

Sample Inlet 1/4" NPT

3 x 3/4" NPT Electrical Threads

Side View

229mm / 9"

Door open 410mm/16.3"

235mm
/ 9.25"

M6 Earth Stud

Purge Outlet 1/4" NPT

Purge Inlet 1/4" NPT

Performance Approval

The 1800 complies with EN50104:1999 “Electrical apparatus for the detection and measurement of oxygen”.

Certificates of Compliance

CSA (Canada) Safety Requirements for Electrical Equipment for Measurements, Control and Laboratory Use: Part 1: General Requirements

EC Directive Compliance

The 1800 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 50081-1: Generic emission standard

EN 50082-2: Generic immunity standard

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

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

Configuration	Units	Base Analyser	with AFCD	with AFCD and Sample Pump	with AFCD and BPR	High Flow Transducers, Standard or Solvent resistant
Response time (T_{90})	Seconds (200ml/min)	<4	<7	<8	<7.5	<5 (60 l/hour)
Noise (peak to peak)	% O_2	<0.04	<0.05	<0.05	<0.04	<0.04
Ambient Pressure Coefficient	% of reading for a 1% change in ambient pressure	1	1	1	<0.13	1
Sample Flow Rate Effect	% O_2 over 50 to 250ml/min	<0.1	N/A	N/A	N/A	<0.2 (over 50 to 70 liters/hour)
Ambient Temperature Coefficient	/10°C	0.2 % O_2 ±0.5% of reading				

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._____Q05166
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