

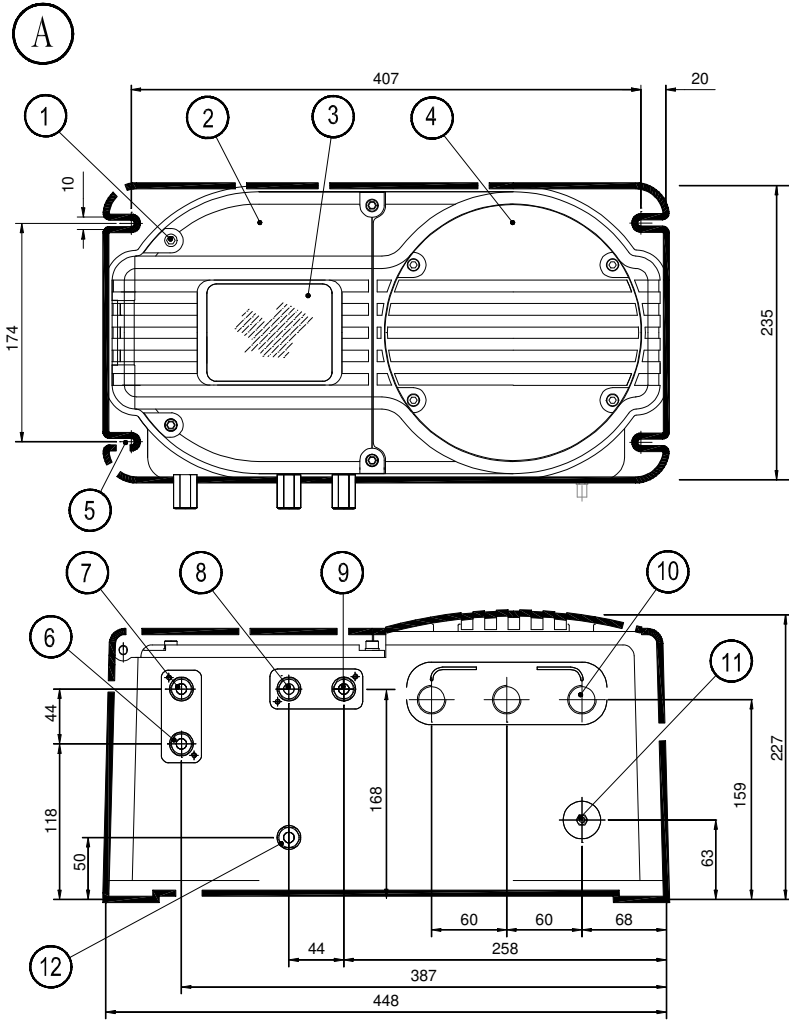
*QuickStart*TM

***1900
Oxygen Analyser
Hazardous Area***

Please record your analyser details below

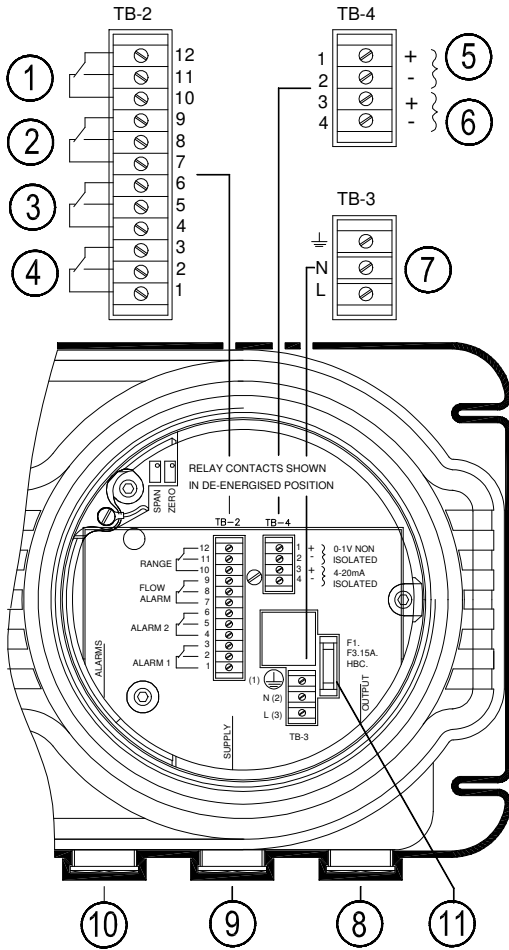
Part Number	
Serial Number	
Tag Number	

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|-----------|-------------------------|--------------------------|
| GB | OPERATING INSTRUCTIONS | <input type="checkbox"/> |
| I | ISTRUZIONI PER L'USO | <input type="checkbox"/> |
| D | BEDIENUNGSANLEITUNG | <input type="checkbox"/> |
| F | MODE D'EMPLOI | <input type="checkbox"/> |
| NL | HANDLEIDING | <input type="checkbox"/> |
| E | MANUAL DE INSTRUCCIONES | <input type="checkbox"/> |
| P | MANUAL DE INSTRUCOES | <input type="checkbox"/> |
| J | 運轉指針 | <input type="checkbox"/> |
| C | 中文 操作指導 | <input type="checkbox"/> |

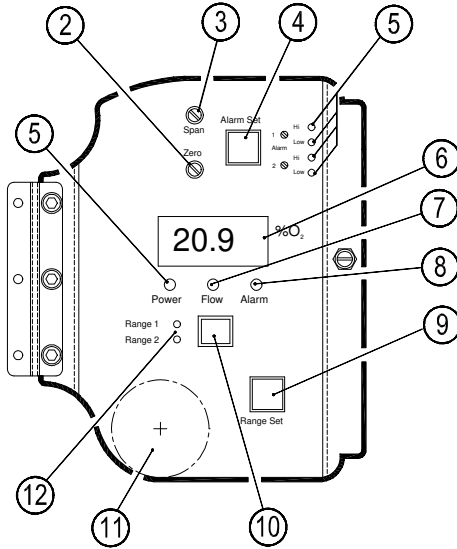


N.B. All dimensions are in millimetres (mm)

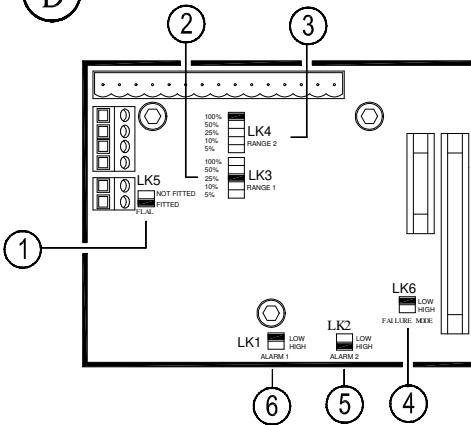
(B)



C



D



Certification

- See enclosed envelope for copies of approvals, certificates and conditions.

Certificazione

- Autorizzazioni, condizioni ed attestati sono riportati nella busta allegata.

Bescheinigungen

- Für Kopien der Zulassungen, Zertifikate und Bedingungen siehe beigefügten Umschlag.

Attestations

- Voir l'enveloppe ci-jointe pour les copies de l'homologation, des certificats et des conditions.

Certificatie

- Zie de bijgesloten envelope voor kopieën van de goedkeuringen, certificaten en condities.

Certificación

- Para las copias de aprobaciones, certificados y condiciones véase el sobre adjunto.

Certificação

- Veja envelope anexo para cópias de autorizações, certificados e condições.

認可

- 承認、認可証、条件のコピーは同封の封筒を参照

證書

- 請參看袋內各種認可證明、證書及條件等文件副本。

Notes

1 INTRODUCTION

1.1 Warnings, Cautions and Notes

This manual includes **WARNINGS**, **CAUTIONS** and **NOTES** which provide information relating to the following:

WARNINGS

Hazards which could result in personal injury or death.

CAUTIONS

Hazards which could result in equipment or property damage.

NOTES

Alert the user to pertinent facts and conditions.

1.2 Scope of this manual

This manual covers installation, normal operation and routine maintenance of the **Servomex** paramagnetic oxygen analyser, xendos 1900 Series

- For latest technical specification refer to the Technical Data Sheet.
- Addresses for technical assistance and spares are given on the rear cover.
- A service manual is available for use by qualified personnel, part number **01800002B**.

About this manual

Ref:01900/003B/3
Order as part 01900003B

KEY TO FIGURES

Figure A

Mounting details

- | | |
|----------------------------------|---------------------------|
| 1. M6 bolt (4 off) 5mm allen key | 7. Purge outlet (if used) |
| 2. LH cover (hinged) | 8. Sample outlet |
| 3. Display window | 9. Sample inlet |
| 4. RH cover | 10. Cable entries (3 off) |
| 5. M8 mounting slot (4 off) | 11. M6 earth stud |
| 6. Purge inlet (if used) | 12. Breather |
- (Sample , Purge Inlet / Outlet and Breather Port - ¼"NPT.INT)

Figure B

Electrical connections

- | | |
|---------------------------------------|---|
| 1. Range contacts | 7. Electrical supply terminals |
| 2. Flow Fail alarm contacts | 8. Output cable entry |
| 3. Alarm 2 contacts | 9. Supply cable entry |
| 4. Alarm 1 contacts | 10. Alarm cable entry |
| 5. Linear non isolated Output signals | (Cable entries - ¾"NPT, M20 or Pg13.5) |
| 6. Linear isolated Output signals | 11. Power Supply Fuse (F1) - F3.15A HBC |

Figure C

Control panel (hinged)

- | | |
|--|---|
| 1. Power On LED | 7. Flow Failure LED |
| 2. Set ZERO potentiometer | 8. Alarm LED |
| 3. Set SPAN potentiometer | 9. Range change push button |
| 4. Set ALARM push button | 10. Range label (Slip In) |
| 5. Alarm LEDs | 11. Sample filter (Screws in through control panel) |
| 6. Digital display (0.0 to 100.0% O ₂)
optional (0.00 to 100.00% O ₂) | 12. Range LEDs |

Figure D

Link settings on housekeeping board

- | | |
|---------------------|-----------------------|
| 1. Flow alarm (LK5) | 4. Failure Mode (LK6) |
| 2. Range 1 (LK3) | 5. Alarm 2 (LK2) |
| 3. Range 2 (LK4) | 6. Alarm 1 (LK1) |

EC Directive Compliance

The xendos 1900 complies with the EMC Directive 89/336/EEC (as amended by Directives 92/31/EEC and 93/68/EEC) and the ATEX Directive 94/9/EC.

1.3 Unpacking

WARNING

The xendos 1900 weighs approximately 26kg (57lbs) and care must be taken when handling. It is recommended that it is lifted with the fingers positioned underneath the rear casting.

- Remove the xendos 1900 from its packing and inspect it for damage.
- If damage has occurred, inform **Servomex** or its agent immediately.
- Retain all packing and shipping information for future use.

2. INSTALLATION

WARNING

- Refer to Conditions for Safe Use before installation.
- The Terminal chamber on the right hand side of the analyser should not be opened while energised or within 3 minutes following removal of power.
- Refer servicing to qualified personnel with knowledge of hazardous area requirements.

2.1 Conditions for Safe Use

WARNINGS

Take careful note of the following warning statements

- The installation of the analyser in a hazardous area must comply with any 'Special conditions for safe use' and/or 'Schedules of Limitations' as detailed in the safety certification.
- The xendos 1900 Series analysers are available with the following hazardous area approvals:-

FM Class I, II & III, Division 1
(USA) Groups A, B, C, D, E, F & G
 T4, Ambient Temp. 50°C maximum

CSA Class I, Division 1, Groups A, B, C & D
(Canada) Class II, Division 1, Groups E, F & G
 Class III, Division 1
 Ex ia T4, T.ambient 50°C maximum

TIIS Ex ia d IIC T4X
(Japan)

ATEX Ex II 2G.
(Europe) EEx iad IIC T4
 (-20°C < Ta < 50°C)

- The xendos 1900 Series analysers are not suitable for use with Oxygen enriched atmospheres
- When used in hazardous atmospheres, at least one of the alarms must be configured as a HIGH alarm and be set at not more than 22% Oxygen

ATEX Requirement

- The EEx d compartment of the enclosure is provided with three 3/4" NPT cable entry holes for the accomodation of suitable BASEEFA certified flameproof cable entry devices, with or without the interposition of a suitable BASEEFA certified flameproof thread adaptor. The cabling methods used in service must be closed by means of a suitable BASEEFA certified flameproof stopping plug.
- Personal injury or equipment damage may occur if the xendos 1900 is not installed and operated in accordance with the instructions in this manual.

2.2 Location

Select a location which allows convenient access for installation and maintenance and will minimise ambient temperature fluctuations and vibration.

The analyser must be mounted securely to a rigid vertical surface capable of supporting the weight of the analyser, using the four fixing lugs provided or the panel mounting option.

The xendos 1900 must be mounted horizontally with the sample connections and electrical entries on the underside.

The sample conditioning system where required should be located below the analyser to prevent possible carry-over of condensate into the measuring cell and please take careful note of the ambient temperature requirements.

The xendos 1900 is rated in accordance with IEC 644 for:
'INSTALLATION CATEGORY II' Local level power distribution with over voltage withstand up to 2500 Volts.

Ambient Operating Conditions:

Operating Temperature: -10°C to +50°C (+14°F to +122°F)

Storage Temperature: -20°C to +55°C (- 4°F to +131°F)

Atmospheric pressure: 79 to 124 kPaa (11 to 18 psia)
(for operating altitudes to 2000m)

2.3 Panel Mounting

A panel mounting option is available, please consult **Servomex** for further details.

2.4 Electrical installation

WARNINGS

- The installer must be satisfied that the xendos 1900 installation conforms to the relevant safety requirements, National Electrical Code and any other local regulations, and that the installation is safe for any extremes of conditions which may be experienced in the operating environment of the analyser.
- This appliance must be connected to a protective earth.
- The electrical installation must include a means of isolating electrical power by a switch or circuit breaker external to the analyser and within easy reach of the operator. It must be marked as the disconnecting device for the equipment.
- It is essential that only suitably trained and competent personnel are allowed to access hazardous live parts by removing or opening the covers of the analyser.
- To comply with the European Community EMC Directives for industrial environments the interconnecting cables used for the mains supply, relay contact outputs and/or analogue output signals should be screened or provide equivalent protection.

CAUTION

Connections to TB-4, analogue output signal/s terminals should not exceed 30 V RMS (42.4 V peak) or 60 V dc to earth when connected to associated equipment.

- 1 Electrical terminations are suitable for 20 AWG (0.5 mm²) to 14 AWG (2.5 mm²) solid conductors or stranded conductors.
- 2 Gland entry sizes and positions are shown in Figure (A). Two of the three cable entries are fitted with appropriate blanking plugs.
- 3 Do not exceed the maximum current output load impedance of 600 Ohms.

- 4 Electrical power should be supplied at 100 V to 240 Vac \pm 10% - 50 / 60 Hz. No voltage range selection is required. A power on LED is illuminated when power is present at the analyser.
- 5 For compliance with the EMC standards, the external earth / ground connection must always be connected to a local earth / ground. Refer to Figure (A). In addition, the connections to TB2, TB3 and TB4 must always be made using a screened or shielded cable with the earth termination being made at the cable gland. Ensure good EMC practices are observed when making connections.
- 6 All electrical connections are made to the terminal board inside the right hand side of the analyser. Refer to Figure (B) for details and full specifications are given in the following table. To gain access refer to Figure (A). Slacken off the M4 lid locking grub screw with a 2mm allen key, and unscrew the lid with the aid of a metal bar if needed. The lid thread is pre-greased and no additional non-setting sealant, etc is required . After electrical connections are complete, ensure the threads are correctly aligned, screw the lid fully down and re-tighten the lid locking grub screw.

WARNING

If the relay connections to TB2 are used to switch a combination of 240V ac and 28V dc signals, then all parts of the dc relay circuits must be protected to a minimum of IP20

Power Connection		Terminals
Electrical Power, 100V to 240Vac \pm 10%, 50 / 60 Hz, 50VA maximum	Protective Earth Neutral Live	TB3-1 TB3-2 TB3-3
Alarm Connection		Terminals
Alarm 1 250Vac, 3A 28Vdc, 1A	Closes on Alarm 1 or Power Fail Opens on Alarm 1 or Power Fail Common	TB2-1 TB2-2 TB2-3
Alarm 2 250Vac, 3A 28Vdc, 1A	Closes on Alarm 2 or Power Fail Opens on Alarm 2 or Power Fail Common	TB2-4 TB2-5 TB2-6
Flow Fail Alarm 250Vac, 3A 28Vdc, 1A	Closes on Flow Fail Alarm or Power Fail Opens on Flow Fail Alarm or Power Fail Common	TB2-7 TB2-8 TB2-9
Range Selected Output Connection		Terminals
Range 2 selected 250Vac, 3A 28Vdc, 1A	Closes on Range 2 or Power Fail Opens on Range 2 or Power Fail Common	TB2-10 TB2-11 TB2-12
Linear Analogue Output Signal Connection		Terminals
0 to 1Vdc Oxygen output signal, (non isolated), output impedance 470 Ohms typical	+ ve - ve	TB4-1 TB4-2
4 to 20mA Oxygen output signal, (isolated), maximum load impedance 600 Ohms	+ ve - ve	TB4-3 TB4-4
The full scale of the above outputs represents the range selected by the push button Range switch on the front panel.		

2.5 Sample and Calibration gas connection

CAUTION

- The sample gas must not be admitted to the analyser until a period of 4 hours has been allowed for warm up, this will prevent condensation of the sample in the measuring cell.
- The inlet pressure and flow rate for the sample or calibration gas must not exceed the limits specified in the following table or damage could occur. Use an external pressure reducing device if necessary.
- When pressurising the sample system for the purpose of leak testing ensure that pressure is increased and decreased slowly. High internal flow rates created when the pressure is changed rapidly will damage the measuring cell.

xendos 1900 Sample Condition Requirements			
Sample	Viton/SS	with AFCD	High-flow cell or bypass
Inlet Pressure	0.04 psig † 0.3kPag min	1 to 5 psig 7 to 35 kPag min	0.05 psig † 0.4 kPag min
Flow Rate	50 to 250 ml/min	1.2 to 3.5 l/min	50 to 70l/hr (60l/hr nom.)
Vent Pressure	11.5 to 18 psia (80.5 to 126 kPaa)		
Dew Point	Non-condensing at ambient temperature		
Temperature	-10°C to +50°C (+14°F to +122°F)		
Particulates	< 3µm (micron)		
Condition	Clean and free from oil and condensate*		
Connection	1/4" NPT Female Inlet / Outlet Connectors		

† - Adjust sample pressure and flow externally to provide sample flow rate

* - For corrosive samples use a solvent resistant cell option

AFCD - Automatic Flow Control Device c/w internal filter

- If the automatic flow control device option is fitted no external flow control is necessary, the sample pressure must be between the limits specified in the previous table and/or the latest Technical Data Sheet.
- If the optional automatic flow control device is not fitted it will be necessary to regulate the sample pressure / flow within the limits specified in the previous table to ensure stable operation and to prevent damage to the measuring cell.
- If an external sample pump is used it may be necessary to reduce pressure pulsing with a reservoir.
- The sample exhaust from the analyser should be vented freely to atmosphere. See **WARNING** below for safety details.

WARNING

- Verify that connections are leak free at full operating pressure before applying sample or calibration gases. These gases may be toxic or asphyxiant.
- Consideration should be given to the toxicity, corrosiveness, asphyxiant and flammable nature of the sample and enclosure purging gas when selecting a vent location.

2.6 Enclosure purge connection

WARNING

If the sample gas is of a toxic, corrosive and/or flammable nature it is recommended that an enclosure purge option is fitted. If fitted the enclosure purge must be operational before removing any covers.

The enclosure purge inlet and outlet connection sizes and location are shown in Figure (A). Supply air or inert gas at 100 to 200 ml/minute. Vent the outlet freely to atmosphere.

2.7 Shut down procedure

Before removing power from the analyser disconnect the sample gas and flush the analyser sample pipework with dry nitrogen or good quality instrument air for 10 minutes.

3 SETTING UP

3.1 Configuration

WARNING

To maintain the ingress protection (IP20) required by hazardous area approval requirements the user must not open the internal hinged control panel to make changes to the configuration with the power on to the analyser.

The analyser is supplied configured as follows:

Link	Parameter	Setting	Link	Parameter	Setting
LK 1	Alarm 1	Low = 0.0% O ₂	LK 4	Range 2	0 - 25% O ₂
LK 2	Alarm 2	High = 21.0% O ₂	LK 5	Flow Alarm	"Fitted" if option included
LK 3	Range 1	0 - 10% O ₂	LK 6	Failure Mode*	Low on Fault

* Failure Mode - If the sample flow fail alarm option is fitted and a low sample flow condition is detected then the isolated 4-20mA output signal (depending on the link setting selected) will go to either 0mA (default) or >20mA to indicate that this fault is present. ***Note:** Transducer failure will produce a 'Low on Fault' condition.

To change the above configuration:

1. Switch off the analyser.
2. Open the hinged front left cover by undoing the four M6 bolts using a 5mm allen key.
3. Open the hinged control panel with the screw situated in the middle of the right hand side.
4. Set the links on the **housekeeping** board to the required position with reference to Figure (D). The links should be removed and replaced using a pair of snipe nose pliers.
5. Spare range labels are provided with the analyser that slip into the side of the front panel to indicate the new ranges selected.
6. Switch on the analyser, a LED indicator on the front panel will show whether Range 1 or Range 2 has been selected, see Figure (C).

3.2 Alarm Set Point Adjustment

WARNING

When used in hazardous atmospheres, at least one of the alarms must be configured as a HIGH alarm and be set at not more than 22% Oxygen.

The alarm setpoint range is equal to the full scale range of the analyser and its digital display (0-100% O₂). The alarm level is set as an Oxygen concentration value. It is independent of the scaling selected for the analogue outputs. Changing the ranges of the output signals with the Range Change push button switch on the front panel does not effect the alarm setpoints. Adjusting the alarm setpoint does not effect the current or voltage output signals.

1. Open the hinged front left cover by undoing the four M6 bolts using a 5mm allen key.
2. Press the 'Alarm set' button; one of the LED indicators will be illuminated. The setpoint for this alarm will be shown on the display. Adjust the alarm setpoint control adjacent to the illuminated indicator to achieve the desired alarm setpoint.
3. Press the 'Alarm set' button again, a LED indicator for the other alarm will now illuminate. Adjust the alarm setpoint displayed to the desired level.

The LED indicators also indicate whether the alarm is configured to be a High or Low alarm and will flash if an alarm is present. Refer Figure (C).

4. CALIBRATION

4.1 Zero and Span adjustment

CAUTION

The pressure and flow rates of the zero and span gases used to calibrate the xendos analysers must not exceed the values detailed in **Section 2.5 Sample Gas Connection**.

The analyser should have been running for at least four hours before carrying out calibration. It is recommended that the sample outlet from the xendos analyser be vented directly to atmosphere.

The zero and span calibration gas can be introduced into the analyser via a 3 way valve fitted into the sample inlet pipework or directly into the analyser sample inlet by disconnecting the sample pipework and isolating the sample flow elsewhere.

1. Open the hinged front left cover using a 5mm allen key.
2. To set the zero, introduce zero calibration gas, this should be high purity nitrogen (99.9% min). Once the reading has stabilised, adjust the zero control so that the display reads 0.0 % oxygen.*
3. To set the span, introduce span calibration gas, normally this can be good quality clean dry instrument air (nominally 20.95% oxygen). Once the reading has stabilised, adjust the span control so that the display reads 20.9 % oxygen* or the actual level of oxygen in the calibration gas cylinder.

* with the optional 4.5 digit display board, zero can be set to 0.00 % and span to 20.95 %.

The calibration should be checked either weekly, monthly or 3 monthly depending on application.

4.2 Zero and Span adjustment of the Isolated 4-20mA analogue output

Located in the top left hand corner of the terminal compartment of the enclosure are two potentiometers for the Zero and Span adjustment of the isolated current output signal.

1. Connect a current meter with the range set to 0 to 100mA between Pin 3 (+ve) of TB4 and Pin 4 (-ve) of TB4.
2. Connect a voltage meter with the range set to 0 to 2Vdc between Pin 1 (+ve) of TB4 and Pin 2 (-ve) of TB4.
3. Set the output measurement range to 0 to 25 % O₂.
4. Apply Nitrogen to the inlet of the analyser at the correct pressure and flow rate. When the analyser reading has stabilised adjust the Zero potentiometer on the analyser front panel so that the voltage output reads 0.000Vdc.
5. Then adjust the 4-20mA Zero potentiometer located in the terminal compartment to give an output current of 4.00mA. Then apply high quality clean instrument air (ie 20.95 % O₂) to the inlet of the analyser at the correct pressure and flow rate.
6. When the analyser reading has stabilised adjust the Span potentiometer on the analyser front panel so that the voltage output reads 0.838Vdc.
7. Then adjust the 4-20mA Span potentiometer located in the terminal compartment to give an output current of 17.41mA.

Where required the Display board has the facility to change the range of the Span adjustment for local altitudes or sample pressures. Adjust as follows:

1. Open the sample compartment hinged cover and open the hinged display panel. The coarse span adjustment potentiometer (RV3) is accessible from the side of the display board just above the display panel latch.
2. Apply high quality clean instrument air to the analyser and set the front panel Span control to maximum (fully clockwise).
Adjust the coarse span potentiometer on the display board until the display reading is approximately 24 % oxygen.
3. Reset the front panel Span control to calibrate the analyser as in part 6 above .

5 ROUTINE MAINTENANCE

5.1 Filter Replacement

If the automatic flow control option is fitted, replace the filter element, located protruding through the front panel, Reference Figure C at 3 month intervals. This period may be extended for clean samples. The analyser must be isolated from the sample or calibration gas while the filter element is being changed. The filter element is removed by unscrewing the large filter cap on the front panel. The old element must be disposed of safely. If the element is wet or very dirty check that the sample conditioning is adequate. Once the filter cap is replaced the filter seal should be checked for leaks. The analyser must not be operated without the filter element in place as dust and other particulates may permanently damage the measuring cells.

5.2 Cleaning

The exterior of the analyser may be cleaned using a slightly damp cloth. Do not use solvents or abrasive cleansers to clean the analyser.

6 SPARES

WARNING

xendos 1900 Series spares must be supplied by **Servomex** to comply with hazardous area approvals.

The following spares are required to maintain normal operation of the analyser.

Part Number	Description - xendos 1900 Series	Quantity
S1800986	Enclosure seals kit (10 off)	1 pkt.
S1800987	Fuse kit (F3.15A HBC) (10 off)	1 pkt.
	with AFCD fitted	
S1800985	AFCD filter element kit (10 off)	1 pkt.

The following spare items are also available for the analyser.

Part Number	Description - xendos 1900 common parts	Quantity
S1800911	Housekeeping pcb complete	1 off
S1800902A	3.5 digit display pcb complete	1 off
S1800912A	4.5 digit display pcb complete	1 off
S1800913C	Terminals pcb complete	1 off
S1900995	IS Protection Block Module	1 off
2822-2028	Switch mode power supply module	1 off
3950-6087	Anti-static glass window	1 off

Part Number	Description - xendos 1900 sample option - standard	Quantity
S1800966	Sample Inlet & Outlet Tubes (SS316) Kit	1 off
S1800980	Sample Flow Alarm (xendos 1900)	1 off
S1800989B	Standard O ₂ Transducer Assy.	1 off
00570915	AFCD for analysers without optional flow alarm	1 off
S1420935	AFCD for analysers fitted with optional flow alarm	1 off

Part Number	Description - xendos 1900 sample option - solvent resistant/high-flow cell	Quantity
S1802966	Sample Inlet & Outlet Tubes (Hastelloy C-276) Kit	1 off
S1802989B	solvent resistant O ₂ Transducer Assy.	1 off
S1804989B	high-flow O ₂ Transducer Assy.	1 off
S1806989B	solvent resistant high-flow O ₂ Transducer Assy.	1 off

7 TECHNICAL SPECIFICATION - xendos 1900 Series

7.1 Analyser Performance

	Base Analyser	AFCD	High Flow Transducers: Standard or Solvent Resistant
Intrinsic Error (accuracy)	0.05% O ₂		
Linearity Error	<0.05% O ₂ #		
Repeatability	0.05% O ₂		
Noise (peak to peak) / %O ₂	< 0.04	< 0.05	< 0.04
Zero Drift	< 0.05% O ₂ per week		
Span Drift	< 0.05% O ₂ per week		
Response Time (T ₉₀)	< 4	< 7	< 5
Ambient Temperature Coefficient per 10°C	0.2% O ₂ ± 0.5% of reading		
Ambient Pressure Coefficient	1% of reading for a 1% change in ambient pressure		
Sample Flow Rate Effect	< 0.1% O ₂ over 50 to 250 mls / min	N/A	< 0.2% O ₂ over 50 to 70 litres / hour

Inherently linear, value dependent on calibration gases

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

Measurement Range: 0 - 25% of Oxygen (O₂)

Analogue Output ranges:

Two user configurable analogue output ranges selectable from:-
0 - 2.5%, 5%, 10% and 25% O₂

Analyser Outputs:

Digital display - 3.5 digit backlit LCD (0.0 to 25.0% O₂)

Optional 4.5 digit LCD (0.00 to 25.00% O₂)

Display resolution - 0.1% O₂ (or optional 0.01% O₂)

Current output - 4-20mA, isolated, maximum 600 Ohms
< 22mA maximum

Fault states (flow fail) - High on Fault = >20mA. Low on Fault = 0mA

Voltage output - 0-1Vdc, non-isolated,
output impedance 470 Ohms typical

Fault states (flow fail) - High on Fault = +1.2V. Low on Fault =
1.2V

Range indication - Volt free relay outputs and LED

Alarms:

WARNING

When used in hazardous atmospheres, at least one of the alarms must be configured as a HIGH alarm and be set at not more than 22% Oxygen.

Concentration alarms - Two volt free relay outputs and LED
User configurable as High or Low
Set point field adjustable over range 0-22% O₂

Concentration alarm hysteresis - 0.2 to 0.3% O₂

Sample flow fail alarm - Volt free relay output and LED

Alarm relay contact rating - 250V a.c / 3A or 28V d.c / 1A (non-inductive)
maximum and 5V / 10mA a.c/d.c minimum.

Transducer Fault - current and voltage outputs go to Low on Fault state. (see above)

Physical:

Size -	448mm W x 235mm H x 229mm D (17 ³ / ₄ " W x 9 ¹ / ₄ " H x 9" D approx.)
Weight -	26kg (57lbs)
Power Supply -	100 to 240Vac ±10%, 50/60Hz, 50VA maximum

Materials in contact with the sample -

	Basic Analyser	Standard Cell + Flow Alarm	Standard Cell + AFCD	High Flow Rate Cell / Stainless Steel Pipework	Solvent resistant Cell + Stainless Steel Pipework	Solvent Resistant Cell + Hastelloy Pipework
Borosilicate Glass	✓	✓	✓	✓	✓	✓
Bonded Borosilicate Glass Fibre			✓			
Brass		✓				
Phosphor Bronze		✓				
Flouorocarbon Rubber	✓	✓	✓			
Hastelloy C-276						✓
Nickel (electroless)	✓	✓	✓	✓	✓	✓
Neoprene Rubber		✓				
Glass Filled Nylon 12		✓				
Polysulphone		✓				
Platinum	✓	✓	✓	✓	✓	✓
Platinum / Iridium Alloy	✓	✓	✓	✓	✓	✓
Glass Filled Polypropylene			✓			
Polypropylene	✓	✓	✓			
Gold Plated Silver		✓				
302 / EN58A Stainless Steel			✓			
303 Stainless Steel	✓	✓	✓			
316 Stainless Steel	✓	✓	✓	✓	✓	
Viton (325 Cell)	✓	✓	✓	✓		✓
Viton - A			✓			
Chemraz (364 Cell)					✓	✓
PTFE (364 Cell)					✓	✓

Installation category - Category II. Local level power distribution with over voltage withstand up to 2500Volts. In accordance with IEC 664.

Ingress protection - IP 66 to IEC 529:1989 and BS EN60529 (1992) NEMA 4X to NEMA standards publication No. 250

Hazardous area approvals

(Not suitable for use with O₂ enriched samples)

xendos 1900 Series

FM - (USA)	Class I, II & III, Division 1 Groups A, B, C, D, E, F & G T4, Ambient Temp. 50°C maximum
CSA - (Canada)	Class I, Division 1, Groups A, B, C & D Class II, Division 1, Groups E, F & G Class III, Division 1 Ex ia T4, T.ambient 50°C maximum
TIIS - (Japan)	Ex ia d IIC T4X TIIS Approval No. C13088
ATEX (Europe)	Ex II 2 G EEx iad IIC T4 (-20°C < Ta < 50°C) EN50014, EN50018 & EN50020 BAS99ATEX2024 BASEEFA No.Ex96D2122

Design standards

Conforms to the following normalised European and International standards for product safety and electromagnetic compatibility for use in domestic, commercial and industrial environments

Emission	EN50081-1:1992
Immunity	EN50082-2:1995
Electrical safety -	EN61010-1:1993 IEC 1010-1:Amendment 1:1992

Hazardous Area Approval Certificates

All hazardous area approval certificates are included with this manual. Please select the correct certificate for the approval version ordered and supplied.

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