

# SERVOTOUGH

## Oxy 1900

### LEADING-EDGE, SAFETY-ENHANCED OXYGEN GAS ANALYSIS FOR THE MOST HAZARDOUS AND CHALLENGING APPLICATIONS



#### SERVOTOUGH Oxy 1900

The award-winning Oxy sets the standard for O<sub>2</sub> gas analysis, delivering an intelligent, feature-rich solution designed to meet the monitoring needs of even the most challenging applications.

At the heart of the Oxy is Servomex's patent Paramagnetic oxygen sensor. Providing highly reliable, accurate and stable percentage measurements of oxygen. The non-depleting technology requires minimal calibration and never needs replacing - ensuring a long lifetime of ownership with low maintenance costs.

This analyzer combines enhanced-safety design aspects with ease of use and installation, creating an analytical solution that can reduce costs dramatically over product life. With clever, value-added features including a heated sample compartment for unrivalled measurement stability and simplified sampling, the Oxy leads the market and sets the standard for hazardous area O<sub>2</sub> monitoring.

#### FLEXIBLE

- Can be used in Safe Area to Zone 1/Division 1 hazard rated locations
- Intelligent diagnostics and flow sensing
- Optimized for hazardous applications like safety critical oxidation, feedstock clean up, blanket inerting and flare stack analysis

#### EASY TO USE

- Intuitive, engineer-friendly use and interaction
- No need for a sample conditioning system for samples with a dew point of <50°C/122°F
- Unique FlowCube sensor technology provides unrivalled reliability and accuracy
- Intelligent pressure compensation for barometric and sample vent back pressure variations

#### LOW COST OF OWNERSHIP

- No need for reference gases/purge gases during operation including use with flammable samples
- Long calibration intervals and cell life
- Auto-validation reduces hands-on maintenance needs

#### UNRIVALLED PERFORMANCE

- Uses industry-leading patented Paramagnetic technology for stable, non-depleting measurement
- Manufactured by Servomex - over 60 years' experience innovating and pioneering gas analysis, and thousands of units used in the field every year

#### BENCHMARK COMPLIANCE

- IECEx / ATEX: Ex ia d IIC T4 Gb for Zone 1, and cCSA<sub>us</sub> C1, D2 Groups A, B, C, D T4
- SIL2 hardware compliance, without compromising reliability (functional safety manual available)

Learn more about the SERVOTOUGH Oxy 1900  
VISIT [SERVOMEX.COM](http://SERVOMEX.COM)



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# PRODUCT OVERVIEW: Oxy 1900

## TOTAL SAFETY IN THE MOST DANGEROUS LOCATIONS

When you work with potentially dangerous, hazardous area applications, you need an O<sub>2</sub> analytical solution that delivers benchmark safety compliance and complete reliability without question; product quality and plant safety depend on the equipment you integrate.

The Oxy has ATEX Cat. 2, IECEx Zone 1 and cCSA<sub>us</sub> Class 1, Div. 1 certification and is SIL2 compliant, ensuring it offers solid, trusted reliability in hazardous areas.

## LOW MAINTENANCE, LOW COST OF OWNERSHIP

By utilizing patent Paramagnetic sensing technology, the Oxy benefits from a stable, accurate measurement that requires minimal calibration. Remote device interaction via digital communication options help to further reduce operational costs.

## HIGH PERFORMANCE MONITORING WITH UNIQUE FEATURES

The Oxy introduces three unique options that offer unrivaled flexibility, operational performance and reduced costs. An innovative heated sample bulkhead, when coupled with the fully heated sample compartment, can remove the requirement for a sample conditioning system on samples with a dew point of up to 50°C/122°F and also offers excellent measurement stability; a unique FlowCube sensor which guarantees low flow indication during normal operation; and an integrated pressure compensation system compensates for sample pressure variation, enabling tighter process control.

## ALTERNATIVE PRODUCTS

The SERVOTOUGH and DF range offer alternative options for oxygen analysis, including:

### OxyExact 2200



When you need ultra-sensitive O<sub>2</sub> monitoring of flammable gases, choose the OxyExact; this device features three enclosure systems allowing sampling from 0-1% to 0-100% O<sub>2</sub> with pressures of up to 30psi in hazardous area locations.

### DF-300



When trace and ultra-trace O<sub>2</sub> analysis is needed, the DF-300 series provides a feature-rich solution in an intelligent digital format. This device's coulometric E-sensor provides no drift or false low readings, helping to extend calibration periods.

## KEY APPLICATIONS

- Process control
- Safety critical oxidation, such as ethylene oxide and propylene oxide purity
- Feedstock clean up
- Inerting/blanketing
- Flare stack analysis
- Vapor recovery



# PRODUCT DATA: Oxy 1900

OPTIONS	DESCRIPTION	SPECIFICATION
Analog output	1 x isolated mA output	One isolated 4-20mA/0-20mA supplied as standard (min. range 0-1% O <sub>2</sub> ), user selectable over the measurement range
Alarms	2 x volt free single pole double throw relays	30V dc 1A, user configurable
Status signals	4 x volt free single pole double throw relays	30V dc 1A, instrument fault, maintenance required, service in progress and mA range indication
Sample connection heating	Unheated and heated	Unheated: a minimum dew point 5°C/41°F below ambient temp. Heated: max. sample dew point of 50°C/122°F
Sample connection	2 x options	¼" NPT female, 6mm tube or ¼" tube
Digital communications	Remote monitoring capabilities	Modbus RTU (RS485) or Modbus TCP
Enclosure	Breather and corrosive purge options (protects against internal sample leaks and maintains hazardous area approvals)	IP66 rated breather fitted as standard. ¼" NPT female inert gas fitting to prevent corrosive gas build-up
Power supply	Options for use	100-120 or 220-240V ac, 50/60Hz, 50 VA
Functional safety (SIL)	Manual with instructions on implementing SIS	Demonstrates analyzer's hardware compliance to SIL2 (IEC 61508)

## ACCESSORIES

**ACCESSORIES AVAILABLE FOR SPECIFIC APPLICATIONS  
- CONTACT YOUR LOCAL SERVOMEX BUSINESS CENTER**

## MEASUREMENT PERFORMANCE

Gas	O <sub>2</sub>
Technology	Paramagnetic
Range	0-25% O <sub>2</sub> *
Accuracy (intrinsic error)	<±0.05% O <sub>2</sub>
Lower detection limit	<±50ppm O <sub>2</sub>
Repeatability	0.02% O <sub>2</sub>
Zero drift/week	<0.05% O <sub>2</sub>
T <sub>90</sub> response time	<6s
Operating Temp.	-10 to +55°C (14 to 131°F)

\*Oxy not suitable for O<sub>2</sub> enriched samples.

TUNABLE  
DIODE LASER



FLAME IONISATION  
DETECTOR



GAS  
CHROMATOGRAPHY



PLASMA



LASER MOISTURE



COULOMETRIC



SPECTROSCOPIC



# PRODUCT DATA: Oxy 1900

## SAMPLE FOR MEASUREMENTS

<b>Sample gas</b>	The sample gas must be clean, non-corrosive and free from oil and condensates	
<b>Flow control</b>	Standard: 50 – 250ml/min (200ml/min recommended). Optional high flow internal bypass: 50-70l/h (60l/h recommended)	
<b>Sample inlet connection</b>	¼" NPT female, 6mm tube or ¼" tube	
<b>Sample wetted material</b>	Standard: 304SS, 316SS, borosilicate glass, platinum, platinum/iridium alloy, electroless nickel, Viton®. Solvent resistant: 304SS, 316SS, borosilicate glass, platinum, platinum/iridium alloy, electroless nickel, Chemraz® 555, PTFE	
<b>Sample vent pressure</b>	Standard flow – 124kPa absolute (18psi absolute) High flow – 122.8kPa (17.8psi absolute)	
<b>Maximum inlet pressure</b>	Standard flow – 0.2kPa (0.03psi)* High flow – 1.4kPa (0.2psi)*	*relative to sample vent pressure

## DEVICE SPECIFICATION

### Size:

- 448mm (17.6") Width x 235mm (9.2") High x 227mm (8.9") Deep

### Weight:

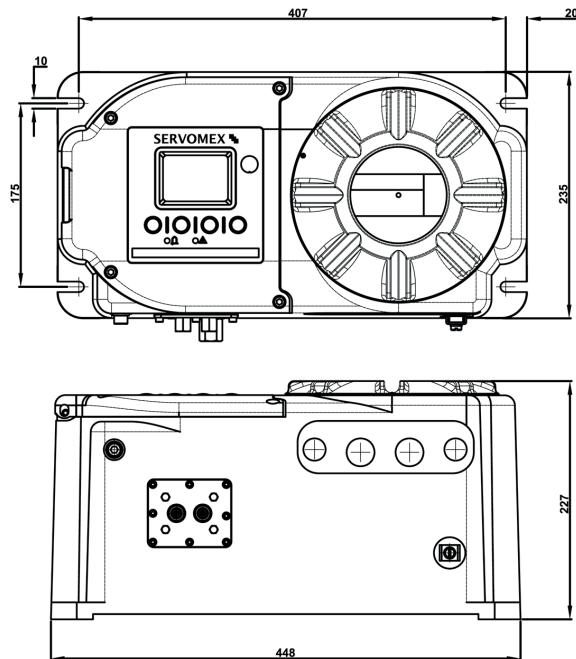
- 26kg (57lbs) nominal

### Certifications:

- ATEX/IECEX: Ex ia d IIC T4 Gb (-10°C ≤ Ta ≤ +60°C)\*  
Ex tb IIIC T90°C Db (-10°C ≤ Ta ≤ +60°C)\*
- Class 1, Division 1, Groups A,B,C,D T4 (-10°C ≤ Ta ≤ +60°C)\*
- Class II, Division 1, Groups E,F,G (-10°C ≤ Ta ≤ +60°C)\*
- TIS Zone 1 Ex ia d IIC T4 X (-10°C ≤ Ta ≤ +50°C)\*\*
- All variants comply with BS EN 61010  
\*(+14°F ≤ Ta ≤ +140°F)  
\*\*(+14°F ≤ Ta ≤ +122°F).

*These analyzers are not intended for any form of use on humans and are not medical devices as described in the Medical Devices Directive 93/42EEC.*

## DEVICE SCHEMATIC



**Please note:** This document was updated in August 2014. While 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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AMERICAS BUSINESS CENTER  
Tel: +1 281 295 5800  
Email: americas\_sales@servomex.com

ASIA PACIFIC BUSINESS CENTRE  
Tel: +86 (0)21 6489 7570  
Email: asia\_sales@servomex.com

EUROPEAN BUSINESS CENTRE  
Tel: +31 (0) 79 330 1580  
Email: europe\_sales@servomex.com

INDIA BUSINESS CENTRE  
Tel: +91 22 3934 2700  
Email: MEI\_sales@servomex.com

MIDDLE EAST BUSINESS CENTRE  
Tel: +971 6552 8073  
Email: MEI\_sales@servomex.com

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