

# SERVOTOUGH OxyExact 2200

**FLEXIBLE, AFFORDABLE, HIGH SPECIFICATION OXYGEN GAS ANALYSIS DESIGNED FOR DEMANDING HAZARDOUS AREA PROCESS CONTROL APPLICATIONS**



## SERVOTOUGH OxyExact 2200

The OxyExact safe area oxygen analyzer combines high precision Paramagnetic O<sub>2</sub> sensing technology into a flexible and robust safety-enhanced design, optimized to meet the needs of demanding process monitoring applications like feedstock purity testing and clean up, hydrogen and chlorine production, solvent recovery and sewage and sludge driers.

Using an intelligent three enclosure system that facilitates simplified and versatile sampling of any flammable gas up to 100% O<sub>2</sub> (oxygen enriched) - with no need for pre-sample drying - the OxyExact dramatically reduces ongoing costs.

Up to six analyzers can be linked to a single control unit (hazardous area or safe area model variants), ensuring that the OxyExact delivers the leading edge performance and adaptability required by the most dangerous process control environments.

### FLEXIBLE

- Can be used in hazard rated locations including Zone 1 and Division 1
- Samples any flammable gas up to 100% O<sub>2</sub> with a pressure of up to 40psi
- High temperature variant allows the handling of high dew point samples
- Digital communication options: Ethernet and RS485 Modbus

### EASY TO USE

- Six transmitters can be linked to a single control unit, allowing easy device interaction and set-up
- Control unit enclosure allows integration of multiple option cards (4 configurable)
- Internal pressure compensation option to monitor vent pressure variations coupled with high sample pressure option for flare stack applications
- Internal flow alarm option

### LOW COST OF OWNERSHIP

- No need for reference/purge gases during measurement in flammable samples
- Simplified transmitter interaction via intuitive control unit (hazardous area or safe area model variants)
- Rugged, resilient design helps ensure long operational life in harsh conditions
- Auto-validation and calibration

### UNRIVALLED PERFORMANCE

- Uses industry-leading patented Paramagnetic technology for high performance and accuracy
- Intelligent enclosure design for exceptional sampling capability

### BENCHMARK COMPLIANCE

- ATEX, IECEx, CSA and FM for Zone 1 and Division 1 monitoring

**Learn more about the SERVOTOUGH OxyExact 2200  
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# PRODUCT OVERVIEW: OxyExact 2200

## UNRIVALLED PERFORMANCE FOR THE MOST DEMANDING O<sub>2</sub> PROCESS MONITORING

When you work in hazardous area process monitoring applications, a highly accurate, safe O<sub>2</sub> analytical solution that samples any flammable gas mixture up to 100% O<sub>2</sub> is crucial. No matter what your monitoring requirement, you need an analytical solution that offers operational flexibility, exceptional safety and the opportunity to reduce costs. We don't believe you should have to compromise.

## A NO COMPROMISE SOLUTION

The OxyExact's sophisticated, flexible design ethos ensures it can be precisely configured to a wide range of application environments. A single intuitive use controller can be situated in either a safe area or hazardous area, linking to up to six transmitters, permitting simplified set-up and ongoing maintenance through auto-validation and calibration procedures (direct interaction can be facilitated by optional software).

The OxyExact also features an intelligent three enclosure system that allows the flexibility to measure any flammable gas for 0-100% O<sub>2</sub>, helping to reduce costs by removing the need for purge gases.

## FLEXIBLE PERFORMANCE YOU CAN DEPEND ON

The OxyExact uses patented Paramagnetic sensing technologies to deliver highly stable and accurate O<sub>2</sub> measurements. Safety-enhanced design and optional flow alarm and pressure compensation ensures sampling versatility - including flare stack applications - that is demanded by your application needs. In addition, Ethernet or RS485 Modbus protocols deliver enhanced communications capabilities. All these aspects combine to make the OxyExact an industry leading solution for O<sub>2</sub> analysis.

## ALTERNATIVE PRODUCTS

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

### Oxy 1900



When you need high performance O<sub>2</sub> monitoring of flammable gases for applications like blanket inerting and flare stack analysis, choose the award winning Oxy; now augmented by innovative options including Flowcube flow measurement technology.

### 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

- Oxidation control reactions
- EO, PTA and EDC
- Catalyst regeneration
- Hydrogen and chlorine production
- Solvent recovery
- Sewage and sludge driers
- Claus and related processes



# PRODUCT DATA: OxyExact 2200

OPTIONS	DESCRIPTION	SPECIFICATION
Analog output	1 x standard in transmitter Multiple optional in control unit (2 x per option card)	1 x intrinsically safe 0/4-20mA output per transmitter (standard) 2 x isolated 0/4-20mA outputs per control unit (optional)
Output range	Analog output parameters	User selectable over the measurement range (min. range 0-1% O <sub>2</sub> )
Alarms	3 x standard transmitter 'status' alarms (volt free single pole contacts) 2 x standard control unit 'status' alarms (volt free single pole contacts)	3 x intrinsically safe per transmitter (standard) 2 x 30V ac/dc, 1A per control unit (standard)
Flow alarm	Added sampling performance (transmitter only)	Thick film technology flow sensor
Sample compartments	2 x transmitter variants	Allows the sampling of any flammable gas up to 100% O <sub>2</sub>
High temperature sampling	Reduces your sampling costs by removing the need to condense a hot sample prior to analysis	60°C (2223 transmitter) and 110°C (2222 transmitter) operation
Digital communications	Remote monitoring capabilities	Modbus Ethernet or RS485
Control unit	Up to six transmitters can be linked to a single control unit	Safe area/Zone 2 or Zone 1 hazardous area variants
Power supply	Options for use	100-120 or 220-240V ac, 50/60Hz, 50VA
Transmitter software	Direct interrogation (removing need for controller interaction)	Permits direct device configuration from a HMI or PC

## ACCESSORIES

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

## MEASUREMENT PERFORMANCE

Transmitter variant	2222 transmitter (110°C)	2223 transmitter (60°C)
Gas	O <sub>2</sub>	O <sub>2</sub>
Technology	Paramagnetic	Paramagnetic
Range	0-100%	0-100%
Accuracy (intrinsic error)	<±0.02% O <sub>2</sub>	<±0.02% O <sub>2</sub>
Repeatability	0.02%	0.02%
Zero drift/week	<0.08%	<0.02%
T <sub>90</sub> response time	<4s	<4s
Operating Temp.	110°C/230°F	60°C/140°F

TUNABLE  
DIODE LASER



FLAME IONISATION  
DETECTOR



GAS  
CHROMATOGRAPHY



PLASMA



LASER MOISTURE



COULOMETRIC



SPECTROSCOPIC



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## SAMPLE FOR MEASUREMENTS

Sample gas	The sample gas must be clean, non-corrosive and free from oil and condensates
Flow Control	Standard: 50 – 250ml/min (200ml/min recommended) Optional high flow internal bypass: 50-70l/h (60l/h recommended)
Sample inlet connection	¼" NPT female, 6mm tube or ¼" tube
Sample wetted material	Standard: 316SS, borosilicate glass, hastelloy, platinum, platinum/iridium alloy, electroless nickel, Viton® Solvent resistant: 316SS, borosilicate glass, hastelloy, platinum, platinum/iridium alloy, electroless nickel, Chemraz® 555, PTFE
Inlet pressure	0.3kPag (0.04psig) relative to sample vent pressure (all variants)
Sample pressure	Standard: 28kPag (4psig) max. High Pressure (< 21% O <sub>2</sub> ): 205kPag (30psig) max

## DEVICE SPECIFICATION

### Size:

- 2210 control unit:  
280 (W) x 290 (H) x 236mm (D)
- 2213 control unit:  
490 (W) x 315 (H) x 236mm (D)
- 2222/2223 transmitter:  
432 (W) x 303 (H) x 210mm (D)

### Weight:

- 2210 control unit: 10kg (22lbs)
- 2213 control unit: 25kg (55.1lbs)
- 2222/2223 transmitter: 16kg (35.3lbs)

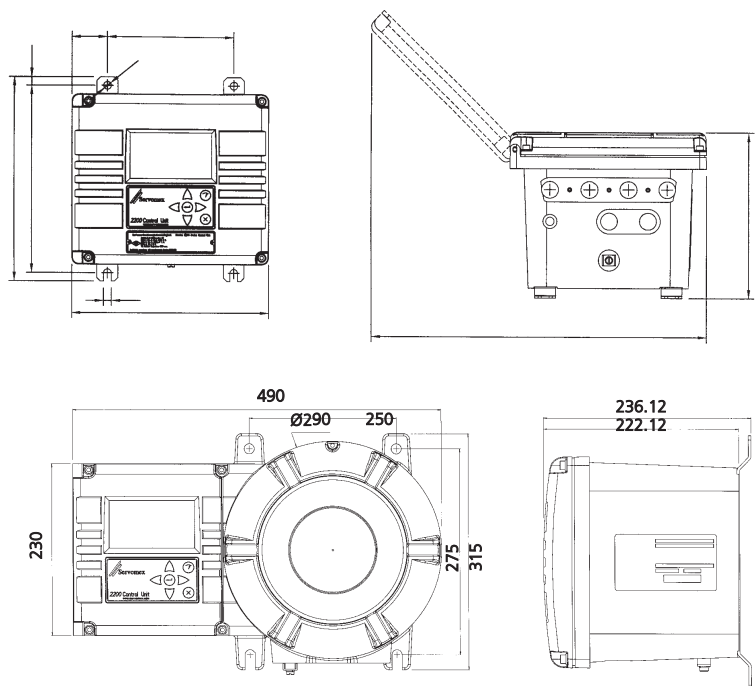
### Sample Pressure:

- Standard: 28kPag (4psig) max  
High Pressure (<21% O<sub>2</sub>): 205kPag (30psig) max

### Certifications:

- 2210 control unit: ATEX Cat. 3 IECEx Zone 2 FM/CSA Class 1 Div. 2
- 2213 control unit: ATEX Cat. 2 IECEx Zone 1 FM/CSA Class 1 Div. 1
- 2222/2223 transmitter: ATEX Cat. 2 IECEx Zone 1 FM/CSA Class 1 Div. 1
- All variants comply with BS EN 61010

## DEVICE SCHEMATIC



*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.*

**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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