

# SMART S-500 OXY

An intelligent solution for Your  
Oxygen Depletion Control



**GUARANTEE 2 YEARS**

## ENHANCED FEATURES

SMD proven technology  
16 Digit display, for operations & diagnostic  
RS-485 Modbus, 4÷20mA Output (3 wires)  
Hot field Sensing Element Replacement  
One-Man & One-Shot calibration - Local & Remote"

Displays Gas Detected Type  
Long Life & Low maintenance  
20÷30VDC power supply  
Integral Free Voltage SPST contacts for  
Warning ,Alarm, Fault

## APPLICATION

- Petrochemical Plants and Refineries
- Chemical & Petrochemical Plants
- Tunnels and Underground Installation
- Drilling platform & rigs
- Processing Food
- Solvent Recovery Plants
- Desulphurisation Plants
- Food & Beverage
- Pharmaceutical
- Painting Facilities
- Waste Water Treatment
- Any Fire Fighting Applications with Inert Gas



**SES-ASA Protection**  
ENGINEERING & TECHNOLOGY



Safety Emergency System

Fire Fighting

**One Single Source for Your Total Gas Protection**

## DESCRIPTION


SMART S-500 OXY is a State of the Art Oxygen Gas Detector, a reliable, continuous monitoring device to protect Your personnel against Oxygen deficiency. SMART S-500 OXY Gas Detector employs a powerful RISC Microprocessor which provides self diagnostic, serial line communications RS-485 for MODBUS, HART protocols, One-Man calibration features firmware resident. SMART S-500 OXY Gas Detector is suitable to be employed with almost all gas sensing elements in the market. SMART S-500 OXY Gas Detector employs a Electrochemical Cell supported by a plug-in cards. The Electrochemical Cell is field replaceable protected in a S.S.316 housing ATEX certified. The electronics and terminals enclosure can be either light alloy or S.S.316 epoxy blue painted ATEX certified. SMART S-500 OXY technology has been developed to offer long life durable and strength device to protect your plant and to provides high reliability with easy and low cost maintenance.

## APPROVAL

RFI/EMI protections:

Certificate of Conformity n° JN04.06.132. TUV  
Tested According to: EMC89/336 EN55011  
EN61000-2-2 EN61000-2-4 EN601010  
Serial Link RS-485 with ESD protection

Certification:

 II 2 G EEx d IIC T6 CESI 04 ATEX 078  
Category 2, Zone 1

Rules & Marks:

94/9/CE (ATEX) - EN 50014 - EN 50018

## ORDERING INFORMATION'S

SMART S-500.13 OXY O2 25 code 135053

### Accessories

1810GO Control Card	code 034800
2407 Logic Control Card	code 034563
O2 25 Cell	code 112415
Splash Guard	code 136100
Cable Glands	code 029055
Calibration Kit (x 1L.)	code 107501
Cylinder 1 litre 20,9 % O2	
Cylinder 1 litre 100 % N2	

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## MECHANICAL SPECIFICATIONS

### Electronic Enclosure & Junction Box

Material	Light Alloy
Colour	Epoxy powder blue painted
Size	Ø 90mm
Height x Width	100 mm
Depth	160 mm

### Sensor Housing

Material	S.S. AISI 316
Size	Ø 36mm
Height	70mm
Key	41mm hexagon.

Total Weight 1,5 kg

## SPECIFIC DATA O<sub>2</sub> DEPLETION 21±11%VOLUME

Sensor Type	: Electrochemical Cell
Detectable Gas	: Oxygen Depletion (O <sub>2</sub> )
Detectable Range	: 21±11 % Vol.
Maximum Overload	: 25 % Vol. (short period)
Output Drift in Air	: < 5% year
Response Time (T95%)	: ≤ 15 Seconds
Repeatability	: ± 2% FSD
Lifetime	: more than 2 years
Operating Temp.	: -20°C ÷ +40°C (-4°F ÷ +104°F)
(Max. Op. Temp.)	: -20°C ÷ +50°C (-4°F ÷ +125°F)
Storage Temp.	: 0°C ÷ +20°C (-32°F ÷ +68°F)
Environmental Humidity	: 0 ÷ 99% RH not condensing
Pressure atmospheric	: ± 10%

## ELECTRICAL SPECIFICATIONS

Power Supply	24VDC (20÷30VDC)
Consumption	3 Watt MAX.
Analog signal	4÷20 mA / 24 VDC
Fault	0 mA
Calibration	2 mA
0-100% FDS	4÷20 mA proportional
Overrange	22 mA

### Cable specification

For connections use shielded cables

### Core Section and Cables Length

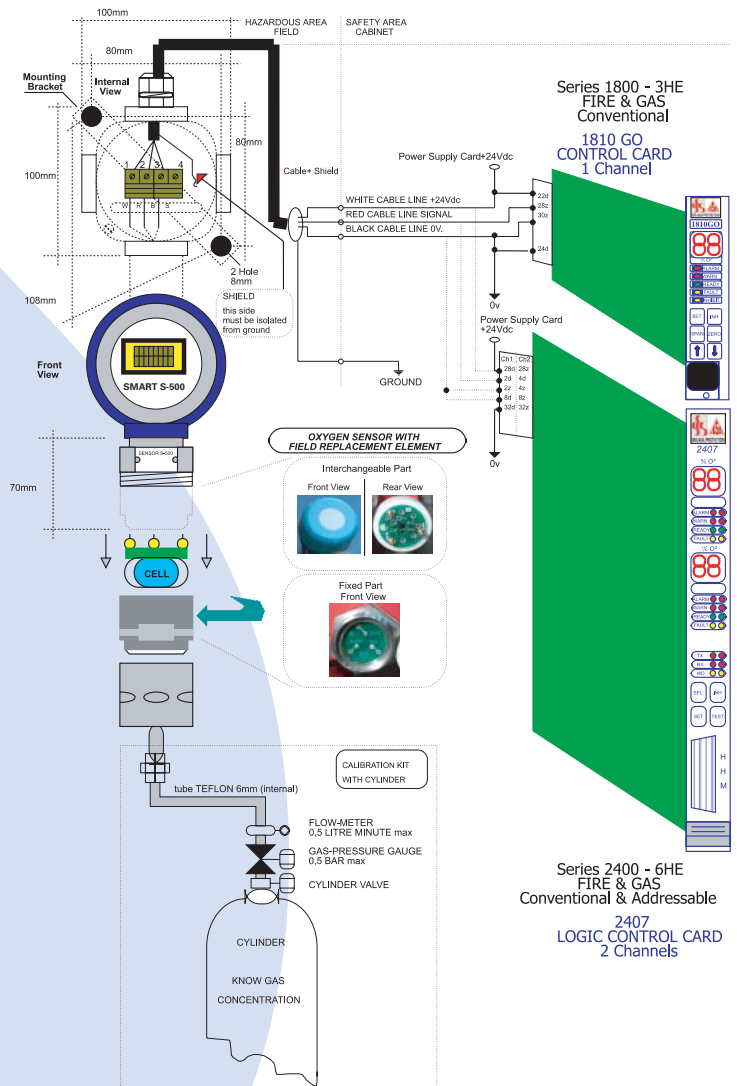
mm2	AWG	Meters	Feet
2.5	14	2320	7600
1.5	16	1460	4800
1	18	910	3000

## ELECTROCHEMICAL CELL

### Detectable Gases and Range Available

Measuring	ppm	Cell Code
<b>Oxygen Depletion O<sub>2</sub></b>	<b>21±11 %Vol.</b>	<b>112415</b>
Hydrogen Sulphide H <sub>2</sub> S	0÷100	112404
Hydrogen Sulphide H <sub>2</sub> S	0÷1000	112405
Carbon Monoxide CO	0÷100	112403
Ammonia NH <sub>3</sub>	0÷100	112413
Hydrogen Cyanide HCN	0÷15	112411
Nitric Oxide NO	0÷100	112408
Sulphur Dioxide SO <sub>2</sub>	0÷20	112406
Nitrogen Dioxide NO <sub>2</sub>	0÷10	112409
Chlorine Cl <sub>2</sub>	0÷5	112410
Ozone O <sub>3</sub>	0÷1	112416

## DIMENSIONS - CONNECTIONS - CALIBRATION



Specification subject to change without notice Document SES-DS-SMARTS500OXY-E-R2



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Fire & Gas Safety Automation-Systems Manufacturer-Fire Fighting