

EXPLOSION PROTECTED, ZIRCONIA BASED HIGH TEMPERATURE (500 - 1600°C) OXYGEN ANALYSER FOR FLUE GAS mod. OXYS



- In situ mounting
- Excellent stability
- Very fast response time
- Unaffected by high Sulphur and HCl
- No calibration required
- Approved for zone 1
- Inexpensive
- Hart protocol available

This analyzer is an excellent solution for oxygen measuring in flue gas in the radiant section at high temperature. It ensures a very fast response time and an accurate measure which is not affected by the outside air, which normally penetrates between the combustion chamber and the stack. The accurate compensation of the output of the zirconia cell to the temperature of the process eliminates any Zero and Span drift. Specific tests carried out on purpose have demonstrated a stability within 0,1% O₂ during twelve months.

The probe, totally ceramic, is unaffected by the most aggressive atmosphere and with high particulate content, like the combustion chamber of incinerators or contaminated liquids and gases.

The very competitive price is compatible with the high performance due to the simple construction of the analyzer.

The equipment is composed of the probe (three different lengths), the field transmitter with active barriers in Ex housing and the calibration kit. The category of the analyser is 2G and it suits for 1 and 2 gas zone. The probe, that has no electric power supply, is an intrinsically safe device. It generates signals lower than the dangerous limits according to the safety norms.



- The probe **mod. 4153 ia** is based on a stabilized zirconium oxide cell which is warmed by the temperature of the process. Inside the probe is fitted a B type thermocouple (that does not need compensated cable). The signals of the thermocouple is used by the electronic unit to continuously compensate the output of the zirconia cell to the real temperature of the probe. The flue gas does not circulate inside the probe; it get in contact with the measuring cell on the tip of the probe by diffusion. The probe is connected to the process normally by a 4" 150 RF ANSI flange or similar. The probe can be optionally equipped with a housing which contain the flame arresters, which completely divides the atmosphere inside and outside the furnace. Test report CESI AD-5426/87X.
- The microprocessor based field transmitter **mod. 8045 Pro Oxy** is housed in an Ex enclosure with glass window for display reading. Inside the Ex enclosure a double channel barrier is housed. Magnetic switches that can be operated without opening the housing by using a magnet through the glass window. They enable to manage all functions of the electronic unit without open it.
- The flow-meters box **mod. 60** receives instrumentation air and gas from gas cylinder and drives reference air and test air and gas to the probe. Without any electric component inside.

Technical Specifications

- Measuring field: 0,0001 ÷ 25% di O₂ in volume
- Precision±0.5% of the theoretical value or 0.1% O₂ (which ever is the greater)
- Stability: within 1%
- Response time (90%): zirconia cell < 1", the whole system < 15"
- Storage temperature: probe -40°C/+80°C
- Working temperature: probe 500° ÷ 1600° C for the temperature of the process. Room temp. < 150° C for the head of the probe; converter and barrier: -20° ÷ +55° C
- Analog output: 4÷20 mA 500 ohm or 0÷10 V 10 mA linear on one of the following fields: 0÷1999 ppm; 0÷5%; 0÷10%; 0÷25%
- Interfaces: RTU Mod-bus protocols on RS485, HART protocol optional
- Alarms: (potential free contacts) O₂ high and low, fault (fail safe) service and calibration in progress. For all contacts 250 V, 1 A max
- In caso di fault l'uscita analogica viene forzata a 2 mA o 0 V
- Dumper: time constant adjustable between 0 and 900 sec.
- Power supply: 115V and 230 V ±10%, 50/60 Hz 50 VA max
- EMC: according E 50081 and EN 50082
- Electric safety: according EN 61010 – 1
- Protection: "c" IIC T4 – IP 65.
- Certificati di conformità: in accordo con direttiva ATEX e CEI EN50020
- Cable connecting probe to electronic unit : 4x1.5 shielded. Max lenght mt 100
- Relative umidity < 90% non condensating
- probe Dimension: immersion lenght: 650, 500, 310 mm; diameter: 27 mm; with extension tubes 1500mm can be reached.
- Transmitter dimensions mm. 305x330 h.200.
- flow-meters box: mm. 230x300 h. 170
- Instrumentation air pressure: 2-12 bar
- Compression fittings for tubing: mm. 6x4 or ¼" NPT-F

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