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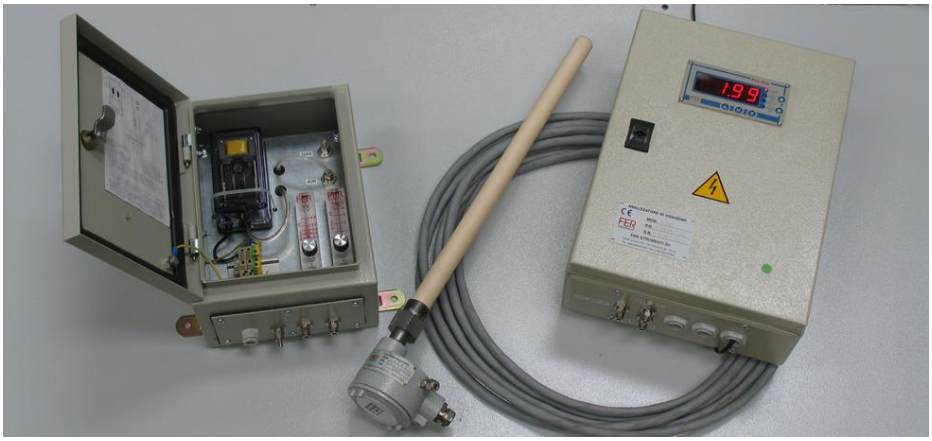
ZIRCONIA BASED OXYGEN ANALYSER MODEL HT300 FOR HIGH TEMPERATURE (500-1600°C)



- In situ mounting
- High response time
- Resistant to hostile atmosphere
- No calibration for drift needed
- Suitable for dusty processes
- Advanced transmitter

This analyser based on an ittria stabilized zirconia cell, is an excellent solution for oxygen measuring in the combustion chamber at high temperature. In that point oxygen measure is not influenced by the outside air that penetrates between the combustion chamber and the exit of the flue gas in the atmosphere. The analyser, whose probe is not equipped with any electric heater, con be used in process with temperature within 500 and 1600°C. The probe can be used in very dusty combustions (fluid bed) keeping a fast response time. The compensation of the zirconia cell's output to the temperature of the electrodes, measured by the platinum thermocouple makes the analyser to be free of drift both of zero and span. A test has demonstrated stability within 0.1% over 12 months.
The competitive price is compatible with the high performances and quality of the instrument because of the easy project.
The instrument is composed by: the probe that is the measuring element (it is produced in three lengths), the microprocessor based transmitter and the flowmeter box.
For the use of the analyser in very hostile process we can propose suitable solutions resulting from our long experience in using this type of analyser in different types of plants.
All parts have been drawn and are produced by Fer Strumenti.

- **The probe mod 4153** compact and resistant is equipped with a strong outside pure recristalized alumina tube. The flue gas for the analysis get in contact with the measuring cell by diffusion without any circulation of the flue gas inside the probe.

The probe is mounted directly into the process, using the provided 1" NPT thread or a flange with a central 1" NPT-F threaded hole. The probe is produced in three different standard lengths: mm. 320, 500, 650 under thread.
Two compression fittings for mm.6x4 tubing are prepared for driving to the cell the reference air and the gas with a known O2 content to carry on the accuracy test of the analyser and operate the calibration.
The probe can be mounted in any position. If it is possible to choose, we suggest the vertical position from top.
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- **The H705 converter** is a field transmitter for the conversion of the electric signals from the zirconia cell and the compensation thermocouple of the FER oxygen probes mod. 4153 that are equipped with a B type thermocouple as standard and S type as option Microprocessor based connected to an analogue to digital

16 bit converter, is equipped with a high brightness led display that continuously visualize the measured oxygen and pressing a key the temperature measured by the compensation thermocouple, the resistance of the cell at high temperature to evacuate the wear of the electrode in contact with the process and all settable parameters. The junction box is equipped with a connector to make easy the cabling.

- **The flowerer's box mod. 62** supplies to the probe reference air produced by an electric pump and air or gas form cylinder to enable the control of accuracy and operate the calibration.

Parameters to be considered for a good use of the probes:

- Maximum and minimum temperature of the process where the probe will be installed.
- Particulate content.
- Length of the probe. In the processes with a high temperature it is not necessary the probe to protrude inside the combustion chamber more than 100 / 120 mm.
- Temperature of the head of the probe.

For any doubt, please contact our technical office that has a long experience in using this type of analysers in the most hostile plants.

Connections

Two electric connections from the probe to electronic unit, using normal copper shielded cables.
Two pneumatic connections from the probe to flometer box (or electronic housing if the pneumatic part is included in the housing of the electronic unit.) using mm. 6x4 tubing.

Options

- Membrane pump and flowmwters housed inside the electronic enclosure (see picture on the right)
- Electronic unit for panel mounting.
- Pressure reducer for the supply of air from the instrument air net instead of the from the pump.
- Mounting flanges and extra tubes, ceramic and metallic for protection of the probe.
- Shielded cable 2x1.5 Teflon or copper or SS 6x4 tubing.

Technical Specifications

- Measuring field: 0,0001 ÷ 25% O2 volume
- Accuracy: ± 0.5% of teorical value or 0,1% di O2 (whichever is the greater)
- Stability: within 1%
- Response time: (90%): cell < 1", system < 15"
- Storage temperature: -40°C/+80°C
- Temperature limits: probe: 500°÷1600°C for the wet part in the process, < 150 C ° for the head of the probe. Converter and flowmwter box -20÷ +45° C; R.H. < 90 non condensation
- Analogue output: 4 ÷ 20 mA 500 ohm o 0 – 10 V 10 mA linear on one of the following fields:
  0 – 1999 ppm; 0 – 5%; 0 ÷ 10%; 0 ÷ 25%
- Serial inerfaces: RS232 e Mod-Bus RTU su RS 485
- Potential free alarms O2 high & O2 low, instrument fault (fail safe), service. For all: 250 V, 1 A max.
- In case of fault the analogue output is forced to 2 mA or 0 V
- Dumper: time constant settable between 0 e 900 seconds
- Power: 115V - 230V ± 10%, 50/60 Hz, 50 Va max
- EMC according EN 50081 e EN 50082
- Electrical safety: according EN 61010 – 1
- Protection: Probe IP 65. Converter and flowmeter box IP 55.
- Electric connection probe/electronic unit: copper shielded cable 2x1.5 max length mt 100
- Pneumatic connections probe/flowmeter box: rigid or flexible tubing mm.6x4
- Dimensions probe: wetted part = 650, 500, 320 mm. Diameter = 27 mm. Using suitable extension tubes, the maximum light of 1500 mm immersion can be reached. Transmitter mm.300x400x150, weight approx. kg 11. Flowmeter box mm. 230x300x170, weight approx. kg.7.

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