

Zirconia based oxygen analyser Model HL 303



This analyser has the unique characteristic that enables the use in process with extremely wide limit of temperature. (from 100 to 1400°C) It can be used in processes with high particulate content and aggressive atmosphere, like the combustion and post-combustion chambers of domestic and industrial incinerators and all other applications where without extraction or circulation of the flue gas a fast and accurate O₂ measure is requested.

The analyser consist in a in situ probe, the electronic transmitter with the power group for the regulation of the EMF and the current of the electric heater and the housing of the flowmeter for the regulation of the reference air and test gas to the probe.

Probe mod.4170

Based on a fully stabilized zirconia element, the probe is quipped with a special heater of the zirconia cell that enables the use of the analyser in any condition of temperature of the process. A platinum thermocouple built inside the cell, measure the temperature.

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The heating element is a thick platinum wire which rises the temperature of the cell to 650°C, if the temperature of the process is lower. If the temperature of the probe due to the combustion rises above 650°C, the electric power is cut off and the electronic unit compensates the O₂ value at the actual temperature. This approach enables the O₂ measure with any temperature of the process.

The materials used for the construction of the wet parts of the probe are high purity ceramics and platinum.

The converter mod. B775

Housed in a waterproof metal box with glass door, the electronic converter is composed by two parts:

- the microprocessor based electronic circuit, that supplies digital O₂ reading; analog and serial output, alarms, etc.
- the power group with regulation of the power of the electric heater.

The high brightness led display continuously displays the measured oxygen (as ppm if the oxygen content is < 0,2% or as percentage if > 0,2%). By pressing some keys, the temperature of the probe, the impedance of the cell, the set point of the alarms and all other functions can be read on the display.

The flowmeter box mod, 62

It supplies reference air to the probe, produced by a membrane electric pump and air or gas from a cylinder for verifying of the accurate measure of the analyser.

Technical Specifications

- Measuring range: oxygen 0,0001 ppm ÷ 25% volume
- Accuracy: ± 0.5% of the theoretical value or 0,5% O₂ whichever is greater
- Stability: within 1%
- Response time: zirconia cell < 0,1 sec., whole system < 15 sec. 90%
- Temperature of the process: 100 ° - 1400 °C
- Temperature of terminal head: < 150 °C
- Temperature of electronic: - 20 ° / +50 °C
- Analogical output: 4 – 20 mA load 500 ohm or 0 – 10 V linear settable on one of the following fields: 10 – 2000 ppm; 0 – 5%; 0 – 10%; 0 – 25%. In fault the analogue output is forced to 2 mA.
- Serial interfaces: RS232 and Mod-Bus RTU on RS 485
- Alarms contacts: O₂ max. and min, instrument fault (fail safe) service, For all alarms: 250 V, 1 A max.
- Dumper. Time constant settable from 0 to 900 sec.
- Power supply: 230 and 115 V. ± 10%, 50/60 Hz., 1000 VA max..
- Probe: lengths under flange mm. 550 or 650 or 750. Diameter of the ceramic probe mm. 38. Connection to the process: AISI flange PN 10 DN 50. IP 65. Weight approx kg. 9
- Converter: mm 500x400x250, IP55, weight approx kg. 17
- Flowmeter box: mm. 200x300x170, IP 55, weight approx kg.
- EMC according EN 50081 e EN 50082. Electrical safety: according EN 61010 – 1
- Electric connections probe / electronic unit: copper cable 2x2.5; shielded cable 2x1.5; compensated cable for S type thermocouple. Max length m. 100
- Pneumatic connections between probe and flowmeter box: n. 2 flexible or rigid tubing mm. 6x4

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