OTImix

Automatic system for synthesis of Nitrox

OTImix is a last-generation automatic system for synthesis of Nitrox breathing mixtures [N_2 + O_2] used in hyperbaric oxygen-therapy applications.

Differently from traditional solutions, OTImix employs two proportional solenoid valves managed by a microcontroller, so that O_2 concentration and pressure in mixture remain aligned to the set points, constantly and independently from the outlet flow.

New solutions allows replacing the classical lunging sequence by a continue flow from the mixing circuit, coinciding with the current average consumption.

Advantages of this organization are small size of storing tank, very good accuracy, stability and repeatability in the synthesis process, direct use of different diluent gases as Air, N_2 and He.

OTImix implements two different startup sequences, based on partial pressure calculation, in order to supply a fast correction of the remaining mixture in tank.

The **ECOLOGICAL** startup sequence saves all the contents of the tank, compensating the current consumption by O_2 or Air / N_2, until the O_2 concentration in the tank reaches the current set point.

The **STANDARD** startup sequence partially discharges the tank, so that the remaining mixture can reach the desired concentration and pressure through only one fast charge by O_2 or Air / N_2.

In case the initial conditions of the remaining mixture allow reaching the desired conditions without discharging the tank, both sequences execute one or two fast charges of O_2 and/or Air / N_2 only, before starting the operating status.

User can set all the reference and system parameters by five pushbuttons on the control panel.
The only manual operation is the adjusting of the inlet pressure regulator.

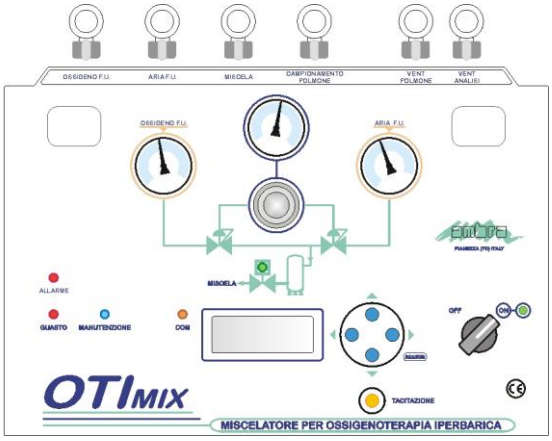
The *Knudsen* effect O_2 analyzer, integrated in the equipment, verifies the composition of the mixture and supplies excellent performances regarding accuracy, long-term stability, operating temperature, independence from atmospheric pressure and flow, response time. It needs a periodic maintenance.

Ambra Sistemi s.r.l. Strada del Portone 125, 10095 Grugliasco TO -Italy-,Tel: +39 011 9677775, Fax: +39 011 9677725

www.ambrasistemi.it

Document subject to alteration without prior notice

TECHNICAL CHARACTERISTICS

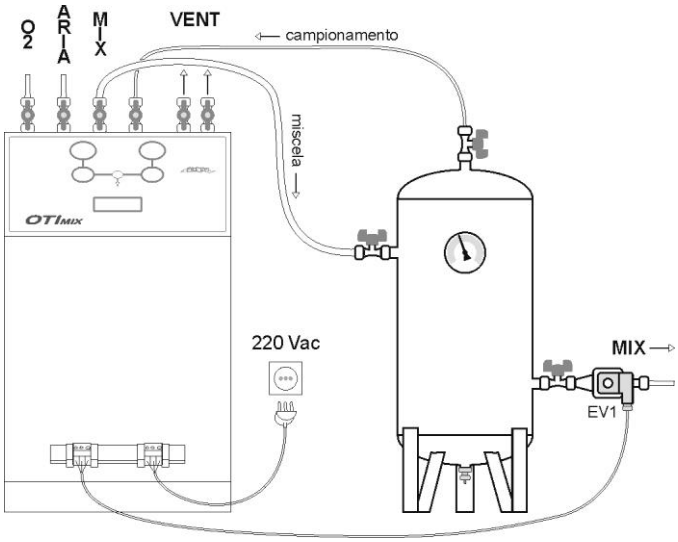


OTImix control panel

- Min P inlet (Air / N_2 / He/ O_2) — P outlet + 1 bar
- Max P inlet (Air / N_2 / He/ O_2) — 15 bar
- P outlet (°) — from 5.5 to 9 bar
- Mix O_2 concentration [% vol] (°) — from 25 to 90 %
- Mix composition combined error — < ± 1% O_2 vol
- Max outlet flow — 150 Nl/m O_2 + 150 Nl/m N_2 /Aria

(°) – Programmable by user

- Board size — L = 500 mm, P = 350 mm, H = 1200 mm
- Proof degree — IP 22
- Tank capacity — 50 l
- Supply — 220 Vac
- Max power — 50 W



OTImix connections

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