



MicroOx

HIGH-ACCURACY MICRO OXYGENATION SYSTEM

MAIN CHARACTERISTICS

ENARTIS MICROOX is a system developed for micro and macro oxygenation in juice and wine that operates by delivering an effective flow rate of oxygen measured by weight (mg/sec).

Dosage by weight is the most effective way to dose oxygen with a high degree of accuracy. The number of chemical reactions in which oxygen is involved depends on the number of molecules introduced into the wine or juice. Depending on temperature and pressure, the amount of oxygen in a given volume can vary. For this reason only dosage by weight provides the exact amount (number of moles) of oxygen that is actually being added to the liquid.

ENARTIS MICROOX does not require high inlet pressure and operates by automatically compensating every pressure variation in the outlet (independent of the inlet) in order to keep the oxygen flow rate constant throughout dosing. **ENARTIS MICROOX** is equipped with an efficient self-diagnostic system, as well as safety devices designed to immediately stop oxygen delivery in case of anomalies or malfunctioning.

ENARTIS MICROOX can work in three different oxygenation programs:

MICRO: micro-oxygenation based on one month periods (mg/L/month)

MACRO: macro-oxygenation based on one day periods (mg/L/day)

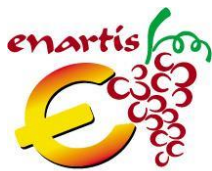
PERS: personalized oxygenation over a set period of time, up to a maximum duration of one day (mg/L/preferred time).

ENARTIS MICROOX does not require a startup procedure. The operator has only to set the amount of oxygen to dose (mg) and the volume of wine to be dosed (liters). With these two pieces of information the internal programmable logic controller (PLC) will automatically calculate the total weight of oxygen to deliver and will adjust the delivery flow rate accordingly depending on the mode selected (micro, macro, personalized).

ENARTIS MICROOX ensures a maximum linearity of dosage. **Instead of using a buffer dosing chamber, ENARTIS MICROOX has sensors that can read the gas flow rate in real time.** A powerful microprocessor and dedicated software are able to perform the required calculations in order to maintain the oxygen flow rate consistent with the preset value over the entire duration of the cycle.

To summarize: the key technical features of **ENARTIS MICROOX** are:

- **Highest dosage linearity**
- **No moving mechanical parts**
- **Low inlet pressure required for correct functioning**
- **Minimum operating pressure on the diffuser: oxygen is delivered at the minimum pressure required in order to minimize bubble diameter and improve oxygenation efficiency.**
- **Immediate pressure self-compensation: the system will automatically respond to every pressure variation in the outlet circuit (for example due to the diffuser clogging or normal atmospheric variation), by adjusting the oxygen flow rate and maintaining a constant delivery weight of oxygen. The system also responds to inlet pressure variation by ensuring that the delivery weight of oxygen remains constant.**
- **Possibility of using any type of diffuser.**
- **Easy maintenance: in case of breakdowns the operator can easily intervene by replacing the circuit board of the damaged dosing point without interrupting the activity of the other dosing points.**
- **Dosing steps of 0.1 mg/L. Minimum dosage is 0.1 mg/L/month on 200 liters; maximum dosage up to 2,000 g/day.**



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VERSIONS AVAILABLE

ENARTIS MICROOX is available in the following standard versions:

ENARTIS MICROOX 1 with one dosing point. The equipment consists of one stainless steel box complete with LCD display and three operating buttons, which allows the operator to navigate throughout the system, set the oxygenation program and visualize the operating parameters during dosing.

ENARTIS MICROOX 5 with 5 dosing points. Consists of one stainless steel box complete with LCD touch screen display and tanks synoptic.

ENARTIS MICROOX 10 with 10 dosing points. Consists of one stainless steel box complete with LCD touch screen display and tanks synoptic.

Upon request, systems from 2 to 120 dosing points can be custom-made.

On multiple dosing point versions, every dosing point is completely independent of the others and in case of non-programmed maintenance it is possible to intervene without stopping the entire system.

All of the **ENARTIS MICROOX** versions are available with the following functions:

- Option of a 'pause' at any time in the oxygenation cycle, and then either resume or abort.
- Option of initiating a personalized oxygenation cycle for the maximum duration of one day inside another oxygenation cycle. At the end of the personalized cycle the operator has the option to resume the original program or exit and stop the dosing.
- Continuous auto diagnosis: all operating parameters are continuously monitored and oxygen delivery is automatically stopped in case non-manageable anomalies are detected. Pressure spikes in both inlet and outlet circuits are automatically compensated.

ENARTIS MICROOX has an auxiliary electronic circuit to keep the buffer battery constantly recharged. The buffer battery will automatically power the electronic circuit in the event of power failure or it can be used to power the system for a short period (depending on the battery type) to perform a dosing cycle. In case of complete power failure, at the following startup, the system will ask if you would like to start a new cycle or resume the one that was interrupted.

ACCESSORIES

Stainless steel diffusers, alloy diffusers, injection rod complete DIN fitting and 50 mm Garolla, pressure reducer and non-return valves are available on request.



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TECHNICAL CHARACTERISTICS of the ENARTIS MICROOX

Minimum inlet operating pressure:	4.5 bars
Maximum inlet operating pressure:	5.5 bars
Nominal operating pressure:	5 bars
Maximum inlet pressure:	6 bars
Maximum dosing distance:	40 m
Maximum single dosage:	2,000 g/day
Minimum dosage:	100 mg/month
Maximum outlet operating pressure:	3.5 bars
Type of gas:	oxygen
Max tolerable pressure spike:	0.5 bars
Inlet fitting gas:	push-in 4x2.7
Outlet fitting gas:	push-in 4x2.7
Minimum dosing step:	0.1 mg
Minimum dosing step programmable:	0.1 mg/L
Maximum dosing step programmable:	99 mg/L
Minimum value of liters programmable:	200 L
Maximum value of liters programmable:	500,000 L
Programs available:	micro (mg/L/month), macro (mg/L/day), personalized (mg/L/personalized time)
Flow rate measurement:	continuous
Power supply:	min 15 Vac, max 24 Vac
Power supply with buffer battery	12 Vcc
Average power consumption	400 mA
Maximum operating temperature:	40°C
Minimum operating temperature:	5°C
Maximum storage temperature:	60°C
Minimum storage temperature:	5°C
Communication ports:	1
Type of communication ports:	RS 485 standard
Communication protocol:	MODBUS RTU