

Paramagnetic oxygen analyser

PAROX 2000*Plus*

precise and maintenance-free

Plus auto-calibration



Brief description

The **PAROX 2000*Plus*** is a precise oxygen analyser for continuous monitoring purposes at an amazing price. Build in a modular housing system, with a modern micro-controller technology, it is specially designed for process and ambient air measurements. The analyser is equipped with an auto-calibration functionality and a self-diagnosis capability and has an RS232 interface. With the programmable auto calibration function it is capable to fulfil a fully automatic calibration by means of the integrated relays. The measuring unit is thermostat temperature controlled to 55°C. The operation and parameterisation is carried out by means of a user friendly 4 keys and a 16-digit LCD display and also through RS232 interface

Measuring principle

The measurement is based on the paramagnetic characteristic of oxygen. It generates a partial pressure within a strong and non-homogeneous magnetic field which moves a rotatable glass dumbbell within the measuring cell. This small rotation is measured by the projection of a light source on a photodiode via a small mirror on the dumbbell. A small current through a wire around the dumbbell forces the dumbbell to its initial position. This current is amplified and is directly proportional the oxygen concentration.

MBE AG Bolstrasse 7, Postfach 574 CH-8623 Wetzikon
Tel. +41 44 931 22 88 ■ Fax +41 44 931 22 80
E-Mail: contact@mbe.ch ■ Internet: www.mbe.ch

Housings



PAROX 2000Plus

19" 3 HU rack or table model with or without sample test gas filter and flow display on the front panel (option).

Single or multiple channel versions (MBE 2000Plus).

WxHxD: 482 x 133 x 245 mm



PAROX 2100Plus

1/2 19" portable model optional with filter on the rear.

WxHxD: 235 x 155 x 280 mm



PAROX 2200Plus

wall-mounted housing Rittal,

Single or multiple channel versions (MBE 2200Plus).

WxHxD: 380 x 410 x 210 mm

Specifications

Measurement range output

free settable by input of parameters between 0- 100% O₂

Measurement range

Standard range 0-25%, 0-100%,

others on request

Measurement signal

4-20mA or 0-20mA (max. apparent ohmic resistance 500 Ohm)

Status output

2 alarm relays, 1 malfunction relay

Output connection

pump relay, maintenance

sample gas relay, zero gas relay, test gas relay

for the autocalibration

Display

LCD digital multifunction display, indication of measured value:

100.0 %O₂; Flow 99l/h, alarms, malfunction, parameters,

total 16 digits

Options

- pressure compensation (electronic or backpressure regulator)
- test gas pump
- sample gas filter
- external flow display (rotameter)
- flow sensor with alarm setting
- NDIR sensors for CO₂, CH₄ and CO (MBE 2000Plus).

Design

Materials of gas conducting parts PVDF, glass, steel 1.4571, gold, viton, platinum-iridium, epoxy resin, nickel

Gas connections PVDF bulkhead connection, for hose with inside \varnothing 4mm

Power supply

Voltage 100 - 240VAC 50/60Hz

Operating conditions

Flow 10-90 l/h

Gas conditioning necessary for humid and/or corrosive gases, pre-filter required

Operating gas pressure 10-1000 hPa (0.01-1bar)

Operating temperature 5-45°C

Calibration 2-point calibration: with gases as desired,
menu-controlled, time controlled.
fully automatic AUTOCAL or semiautomatic calibration

Storage and transport temperature -25°C to +65°C

Relative humidity 0-75% RH

Background gas influence slight (for guideline data see operating instructions)

Measuring details

PAROX 2000*Plus*

Detection limit 0,01 % O₂

Repeatability $\leq \pm 0,03$ % O₂ (time base for gas switch ≥ 5 min)

Zero point drift $\leq \pm 0,1$ % O₂ / week (offset)
may be higher during the first days after putting into operation
or after longer period of storage or transport

Temperature influence at zero $< \pm 0,05$ % O₂ / °C

Temperature influence span $< \pm 0,20$ % of measured value / °C

Pressure influence on zero no influence

Pressure influence span 1% air pressure change causes 1% change in reading without
backpressure regulator (option) or pressure compensation
(option)

Flow error $\leq 0,1$ Vol.-% O₂ within 10...90 l/h
with the in-build flow regulator (option)

T90-time ≤ 6 s at 90 l/h and gas change from nitrogen to air