

# 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.

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# Housings



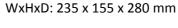
#### PAROX 2000Plus

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:  $482 \times 133 \times 245 \text{ mm}$ 



#### PAROX 2100Plus

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





#### PAROX 2200Plus

wall-mounted housing Rittal, Single or multiple channel versions (MBE 2200Plus).

WxHxD: 380 x 410 x 210 mm

# Specifications

Measurement range output

Measurement range

Measurement signal

Status output

**Output connection** 

Display

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

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

others on request

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

2 alarm relays, 1 malfunction relay

pump relay, maintenance

sample gas relay, zero gas relay, test gas relay

for the autocalibration

LCD digital multifunction display, indication of measured value:

100.0 %O2; Flow 99I/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 ø 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  $= \pm 0.03 \% O2 \text{ (time base for gas switch } = 5 \text{ min)}$ 

Zero point drift  $= \pm 0.1 \% O2 / week (offset)$ 

may be higher during the first days after putting into operation

or after longer period of storage or transport

Temperature influence at zero < ± 0,05 % O2 /°C

Temperature influence span < ± 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 <= 0,1 Vol.-% O2 within 10...90 l/h

with the in-build flow regulator (option)

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