

# PORTABLE OXYGEN ANALYZERS IN MAP PACKAGING

## HAND O2 & FOOD O2

FOR MAP PACKAGING IN PHARMACEUTICAL AND FOOD & BEVERAGE INDUSTRY

Hand O2 & Food O2 devices are used for determination of oxygen concentration in headspace in various MAP packaging (MAP – modified atmosphere packaging). Micro-invasive measurements are enabled by optical sensor tips smaller than 140 µm. Devices are compliant with pharmaceutical standards and **21 CFR Part 11**.

## Principles

Optical sensors with optical transmitter combined with intelligent software instantly measure the O<sub>2</sub> concentration in very small headspaces.

## Applications

- Pharmaceutical: O<sub>2</sub> concentration in blisters, vials, tubes, patches, sealed bags, etc;
- Food & Beverage: O<sub>2</sub> concentration in coffee, meat, dairy products, all MAP packaging;
- Science: Biotechnology, Micro-respirometry, marine research, R & D.



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# Advantages

- Measurements in gas or liquid phase;
- No sample extraction;
- High accuracy;
- No O<sub>2</sub> consumption during measurements;
- Salinity factor input for different salinity samples in vials;
- IQ & OQ documentation;
- Sterilizable sensors;
- Calibration is fast and can be performed by the user;
- Battery or regular power supply;
- Measuring range: 0–25 % or 0–100 % O<sub>2</sub>;
- Accuracy:  $\pm 0.4$  % at 20.9 % O<sub>2</sub> or  $\pm 0.05$  % at 0.2 % O<sub>2</sub>;
- Temperature measurement range: 0–50 °C;
- Response time ( $t_{90}$ ) < 15 sec;
- Calibration: 2-point calibration using nitrogen and synthetic air;
- Dimensions: 180 × 90 × 270 mm, Weight: 1 kg;
- Interface: USB, RS485, Ethernet;
- Needles Ø: 0.4 mm, 0.8 mm.

## ECHO Instruments HAND O2 & FOOD O2 software

