

ORBISPHERE 3650 EX ATEX PORTABLE GAS ANALYSER

Applications

- Food & Beverage
- Drinking Water
- Power
- Industrial Water



Precise process monitoring.

- Risk-free measurement in hazardous areas
- Portable (2.4 kg) logging analyser, ideal for chemical industry applications
- Measures aqueous or non-aqueous samples
- No sample preparation needed

The portable ATEX system

The ORBISPHERE 3650 EX portable analyser family measures oxygen (O₂) or hydrogen (H₂) in areas where hazardous and flammable conditions are possible.

It displays continuous line sample measurements and logs the results internally for review later. It can be used for liquid (dissolved) or gaseous samples, and a special "dual-use" is available for oxygen.

Applications

The stainless steel chassis (IP65 / IP67 / NEMA4) makes it strong and robust to handle harsh plant environments. When coupled with a choice of membrane covered, electrochemical sensors, the ORBISPHERE 3650 EX is suitable for sampling and measuring dissolved concentrations from trace ppb to super saturation and gaseous concentrations from vppm to percent (%) levels.

Electrochemical sensors

The exclusive guard ring electrochemical sensor technology reduces residual signals to negligible levels, eliminating the need for zero point calibration. This sensor technology also provides for very fast response times, essential for multiple measurement applications. The sensor is provided with a stainless steel screw-on protection cap that produces a tighter membrane seal for low drift and extended service life. These sensors can be provided from a variety of chemically resistant materials and use an assortment of membranes with permeability and chemical resistance optimising long term measurement performance.

Membrane selection

The analyser offers the ability to select different membranes for the sensor; optimising a wide range of measurement applications.

Calibration

While ORBISPHERE analysers are designed to require calibration only after a sensor service (which may in turn occur only once per year), you may wish to calibrate more frequently. All this requires is just a few front panel keystrokes.

Direct calibration method

This option allows you to calibrate against a liquid or gaseous sample of known concentration. You just enter the gas concentration via the keyboard.

In air calibration method

The ORBISPHERE electrochemical O₂ sensors can be quickly, easily, and accurately calibrated in air by measuring its oxygen content.

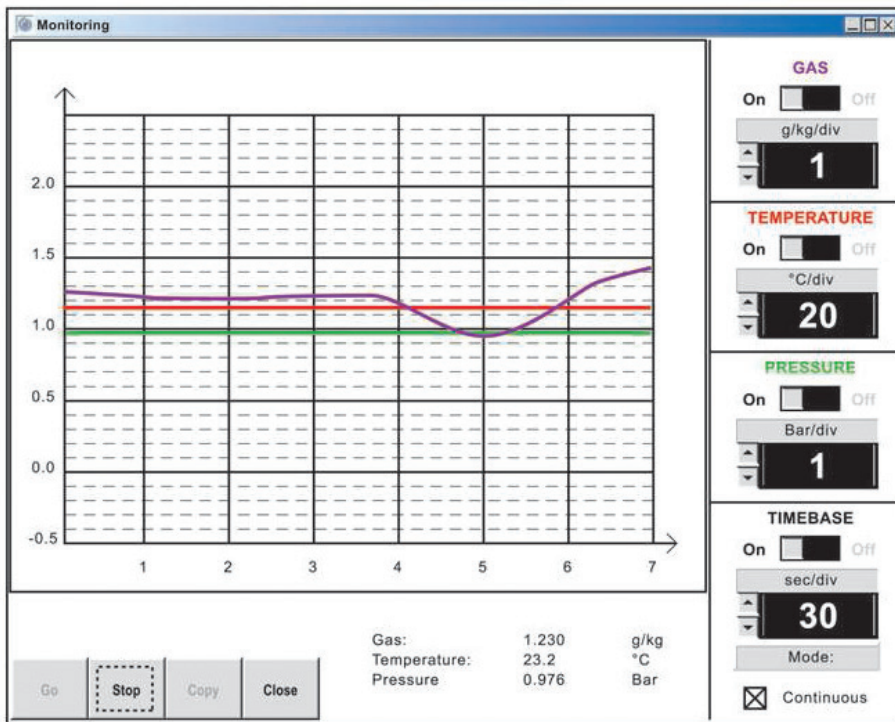
Barometric pressure

The instrument's internal atmospheric pressure sensor can be calibrated, in mbar, against your own barometer.



Benefits

- Suitable for risk-free measurement in hazardous areas conforming to ATEX directive: Ex II 1 G, Ex ia II C T4 Ga
- Portable (2.4 kg) logging analyser ideal for chemical industry applications such as manufacturing, transportation and storage processes
- Measure aqueous or non-aqueous samples such as organics, olefins, fuels, monomers, aromatics, specialty chemicals, water and other liquids and gases
- No sample preparation needed enables wide range of gas analyses without interference from pressure, flow, moisture or other gases



Stored data allows sample concentration and temperature to be monitored

Parameter adjustments

The PC software permits setting the analogue output range as desired, changing the alarm limits, and adjusting the thermal cutoff point. It lets you specify the type of sample (dissolved or gaseous) and the type of membrane used.

Diagnostic tools

The PC software allows you to verify the PC-to-instrument links, sensor-to-instrument signals and has a special keypad and LCD test. The instrument's date and time can also be set.

Monitoring

Real-time running chart of your dissolved gas concentrations, temperature, and pressure for trend analysis can be "monitored". The vertical scale and time-line can be customised to meet your application's requirements. The data can be copied into other Windows® programs for spreadsheet or database analysis.

Configuration view

This allows you to verify all the instrument settings.

For example: instrument measurement configuration real-time sampling rate and calibration status.

ATEX Directive CENELEC marking.
This analyser is certified



II 1G Ex ia IIC T4 Ga



Equipment for potentially explosive atmospheres.

II Equipment group:
surface (not for use in mines).

1G Category equipment that may be used in the presence of ignitable gases, vapors, and mist (excluding dust) up to zone 0. In the zone 0 the ignitable concentration of flammable gases, vapors, and liquids can exist continuously under normal operating conditions.

Ex Explosion-protected apparatus.

ia Protection Concept: Intrinsic safety "very high" Zone 0, based on a safety factor 1.5 on two faults

IIC Gas group: corresponds to the most flammable gases, including acetylene and hydrogen.

No combination of two faults in the analyser can produce a spark, or heating, causing ignition of an explosive atmosphere.

T4 Temperature class: maximum surface temperature of 135 °C for an ambient temperature of 45 °C.

Ga Equipment Protection Level:
very high for Gas, Mist, Vapor

Technical Data*

Power requirements	Model 32960 Intrinsically safe 3.6 V Li battery
Power autonomy	60 hours continuous use
Operating limits	0 to 45°C
Enclosure	IP65 / NEMA4, all stainless steel
Dimensions	(W x H x D) 115 x 150 x 220 mm
Weight	2.4 kg
Digital interface	RS-232, via model 29122 interface box
CE certification	LCIE 03 ATEX 6003X Ex II 1 G Ex ia IIC T4 Ga Exproof standards: EN 60079-0 EN 60079-11 EMC Standards: EN 61326

Instrument Models		
Model	Gas Measurement	Units
ORBISPHERE 3650 EX / 1xx	O ₂ Dissolved Gaseous	ppb / ppm ; ppm % / ppm; %; kPa / Pa ; bar / mbar
ORBISPHERE 3650 EX / 2xx	H ₂ Dissolved Gaseous	ppb /ppm; ppm; cc / hg % / ppm; %; kPa / Pa; bar / mbar

**Subject to change without notice.
Temperature units are available in Centigrade (°C) or Farenheit (°F) on all models.
Instruments are user-configured for a particular membrane, depending on application.
This determines display resolution and measurement limits.*

Order Information

Sensors and Accessories

311xxE.xx	Oxygen sensor
312xxE.xx	Hydrogen sensor
29122.x	PC interface box with 32511 and 32538 cables (X: A=95–130 V AC; B=207–253 V AC)
32007E.xx	Flow chamber, stainless steel (available with 6 mm and 1/4 inch fittings)
32051A	Sample tube adapter
32301	Electrochemical sensor cleaning and regeneration center
32511.03	Instrument-to-interface box cable for 3650 EX
32513E.04	4 meter sensor cable
32538.02	Interface box-to-computer cable (RS 232)
32689	WinLog08 Windows programe software
32813	Rubber gasket for 6 mm or 1/4 inch tubing, used with 32051A
32814	Rubber gasket for 8 mm tubing, used with 32051A
32960	3.6 V primary Li battery for 3650 EX