Hach Orbisphere 3650-3655 Selective Oxygen Measurement

Features and Benefits

Ideal for Harsh Environments

The Hach Orbisphere 3650™ offers a robust portable system solution for oxygen measurement. The compact stainless steel construction is designed for the harsh environment of breweries, but it is also perfectly adapted for laboratory or verification purposes in other beverage applications. In addition, the 3650 can be used across a wide range of applications in the power generation, electronics and life sciences industries.

Designed for use with the Orbisphere A1100 high quality oxygen sensor, these instruments provide fast, accurate and repeatable measurements in both the dissolved and gaseous phase, at line or in the laboratory. For low level applications, the specially configured Orbisphere 3655 measures to 0.1 ppb oxygen.

Simple Installation and Operation

The Orbisphere 3650 inlet tube is connected to a sample point or to a piercing device by a simple connector, making it quick and easy to install. The sample flows over the sensor membrane in the flow chamber, with an output valve controlling the sample's flow rate. The instrument's outlet tube allows the sample to drain away. The sample volume requirement is small, minimizing waste.

The Orbisphere 3650 uses two C-type, NiMH or alkaline batteries. Changing the batteries is quick and easy; there is no down time for the instrument. Stored measurements are not lost if batteries go flat or are being changed.

Low Maintenance

The use of the Orbisphere A1100 sensor with this portable instrument allows for very quick cleaning with nothing more than tap water and requires no technical skills. The sensor refurbishment (typically every 6 months) takes only 3 minutes with a pre-mounted membrane cartridge and electrolyte, eliminating any risk of incorrect membrane positioning.

Easy Calibration

Calibration after each sensor refurbishment is recommended. A traceable and simple calibration can be done directly in air by measuring its oxygen content with the use of the built-in pressure sensor and the automatic software calculation. Alternatively, the calibration can be performed against a liquid or gaseous sample of known concentration by simply entering the gas concentration via the keyboard.

The Orbisphere A1100 oxygen sensor technology reduces residual signals to negligible levels, eliminating the need for a zero point calibration and providing fast response times essential for multiple measurements. A number of different membranes are available for use with the sensor, optimizing the wide range of measurement applications.

Uncomplicated Data Management

The Orbisphere 3650 display is large and easy to read. No conversion tables are needed as this instrument directly indicates the gas concentration in the chosen unit. The temperature of the sample is displayed by pressing one key.

Each instrument comes with a Windows® software package that enables the user to analyze up to 500 stored measurements and to configure the instrument. Using the RS-232 connection, stored measurements can be simply downloaded to a PC for analysis.

Specifications*

Sample

Temperature
-5 to 60°C (23 to 140°F)

Maximum Pressure
10 bars / 145 psia

Instrument

Power Requirements
Batteries: two C-type, NiMH or alkaline, each 26 x 50 mm, 2.4 - 3 volts total

Battery Life Time
40 hours continuous use

Digital Interface
RS-232C: Baud rate=9600; Parity=None; Stop bit=1; Start bit=0

Data Storage
500 data

CE certification
EN 61326-1:1997 / A1:1998 / A2:2001 / A3:2003

Directive
89 / 336 / CE

Enclosure
IP 67, stainless steel

Temperature of Use
-5 to 100°C (23 to 212°F)

Temperature Compensation Range
-5 to 60°C (23 to 140°F)

Dimensions (W x H x D)
115 x 150 x 220 mm
(4.53 x 5.91 x 8.66 in.)

Weight
2.5 kg

*DW = drinking water WW = wastewater municipal PW = pure water / power
IW = industrial water E = environmental C = collections FB = food and beverage*

DW

PW

FB

HACH®

Be Right™

Specifications* continued

Measurement

Membrane	2952A-A	2956A-A	2958A-A	29552A-A
Response Time	38 sec	7.2 sec	9.5 sec	90 sec
Range (dissolved O_2)	0 ppb - 80 ppm	0 ppb - 20 ppm	0 ppb - 40 ppm	0 ppb - 80 ppm
Range (gaseous O_2)	0 Pa - 200 kPa	0 Pa - 50 kPa	0 Pa - 100 kPa	0 Pa - 200 kPa
Min liquid flow rate	50 mL/min	180 mL/min	120 mL/min	50 mL/min
Min gaseous flow rate	0.1- 3 L/min	0.1- 3 L/min	0.1- 3 L/min	0.1- 3 L/min
Accuracy (greater of)	±1% of reading or ±2 ppb or ±5 Pa	±1% of reading or ±0.1 ppb (3655) or ±1 ppb (3650) or ±0.25 Pa	±1% of reading or ±1 ppb or ±2 Pa	±1% of reading or ±1 ppb or ±1 ppb

Configurations

Model	Display Units	Display Resolution
3650/111 - Dissolved O_2	ppm/ppb or ppm only	1 ppb or 0.001 ppm
3650/112 - Gas phase O_2	% or ppm	1 ppm
3650/113 - Dual-use (gas/liquid) O_2	% (gaseous) or ppm (liquid)	0.001 ppm or 0.001 %
3655/111 - Dissolved O_2 high resolution	ppm/ppb or ppm only	0.1 ppb or 0.001 ppm

Note: Instruments are user-configured for a particular membrane, depending on the application. This determines the display resolution and measurement limits.

CE

*Specifications subject to change without notice.

Ordering Information

3655/111 — Instrument, Substance measured: Oxygen, Configuration: Portable battery powered, Number of channels: 1, RS232 (serial) output, DO_2, Measurement units: ppm/ppb/ppm.

A1100-S00 — Electro-Chemical oxygen sensor, Stainless Steel, Maximum pressure 100 bar, with Smart capability

32007D — Flow chamber in Delrin for the power logger (3655), with one meter of tubing.

2956A-A — Recharge kit of 4 pre-filled cartridges with premounted 2956A membranes for A1xxx oxygen sensors. Includes o-rings, cotton filters and cleaning tools

32687 — Windows software 32689 plus communications cable for 3650 & 3655 instruments. (WINLOG97).

Accessories/Options

32051A — Adapter for attaching 32007D flow cell inlet tubing to customer's sample tube. Includes one 6 mm (32813) and one 8 mm (32814) rubber sealing gasket.

32507.MM — 1 to 3 meters of 10 wire sensor cable for use with 31XXX sensors and 3650Ex and 3650 instruments. Supplied with 2 connectors. MM = total length of cable.

32751 — Battery recharger with pack of two rechargeable NiCd batteries (Europe only).

At Hach, it's about learning from our customers and providing the right answers. It's more than ensuring the quality of water—it's about ensuring the quality of life. When it comes to the things that touch our lives...

Keep it pure.

Make it simple.

Be right.

For current price information, technical support, and ordering assistance, contact the Hach office or distributor serving your area.

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