



**QUANTUM**  
CRYOGENICS

# ONE O2 OXYGEN MONITOR ALARM UNITS

INSTALLATION & OPERATING MANUAL



Revision	Date	Details
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## 1 SAFETY WARNINGS

**THESE INSTALLATION AND OPERATION INSTRUCTIONS SHOULD BE READ COMPLETELY BEFORE INSTALLING OR OPERATING THIS EQUIPMENT / SYSTEM.**

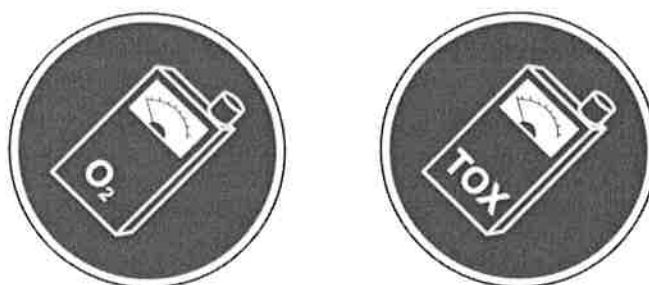
THIS MANUAL ASSUMES:

- YOU ARE ALREADY TRAINED AND COMPETENT IN THE SAFE USE AND HANDLING OF INDUSTRIAL GASES / CRYOGENIC FLUIDS AND CRYOGENIC / ELECTRICAL EQUIPMENT!
- YOU ARE FAMILIAR WITH THE RISKS ASSOCIATED WITH EXTREME LOW TEMPERATURES!
- YOU ARE FAMILIAR WITH THE RISKS ASSOCIATED WITH ASPHYXIATION AND LOW OXYGEN ATMOSPHERES!



Persons handling cryogenic liquids (liquid nitrogen, argon or carbon dioxide) should be aware of the dangers associated with their extreme cold and also the possibility of asphyxiation should large volumes of liquid or gas be discharged in confined or poorly ventilated areas. Persons handling liquid oxygen must also be aware of its potentially hazardous oxidising properties. Carbon dioxide additionally has toxic properties.

CARBON DIOXIDE (CO<sub>2</sub>) IS TOXIC. O<sub>2</sub> MONITORING SYSTEMS SHOULD NOT BE USED FOR CO<sub>2</sub> MONITORING. CO<sub>2</sub> CONCENTRATIONS WILL BECOME DANGEROUSLY TOXIC BEFORE AN O<sub>2</sub> MONITORING SYSTEM WILL REACT. A DEDICATED CO<sub>2</sub> MONITOR SHOULD BE USED TO PROTECT AGAINST CO<sub>2</sub> ENRICHMENT.



USE APPROPRIATE PERSONAL GAS MONITORS WHEN WORKING.



Standard equipment must NOT be used with liquid oxygen. Only equipment which has been specially cleaned and specifically labelled as 'CLEANED FOR OXYGEN SERVICE' may be used with liquid oxygen. This is due to the increased risk of fire or spontaneous combustion in pure or enriched oxygen environments.



Safety information provided by the suppliers of the industrial gas / cryogenic liquid must be read and understood before and followed during the installation and operation of this equipment. Failure to observe all safety precautions may result in property damage, personal injury, and/or death.



**DO NOT TOUCH COLD SURFACES OR LIQUID WITH BARE SKIN.**



Cryogenic liquids are extremely cold and exposure of skin or eyes to liquid, cold gas or cooled objects may result in severe cold burn injury. The use of eye / face protection, insulated

gloves, appropriate clothing and footwear is required. Take time to consider these and other safety precautions that must be observed.



Siren beacons can be extremely loud, >110dBA. Wear appropriate ear protection if working with or close to active siren beacons. Consider others working nearby.



Failure to correctly maintain the equipment / system could result in the equipment / system failing to operate correctly. Calibration should only be performed by persons trained and approved by Quantum Cryogenics.

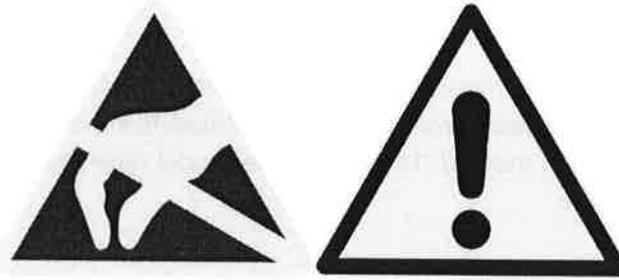
The equipment must be used only for the purpose and in the manner described in these instructions. If used for other purposes or in a manner not specified protection provided by this equipment may be impaired. The equipment must not be used as a critical component in life support devices or systems.



#### **ELECTRICAL SHOCK CAN KILL**

Isolate all power supplies before opening enclosures or attempting to connect / disconnect equipment. Items may have multiple power sources which may include, but are not limited to, internal battery, dedicated low voltage power supply, external low voltage power supply (with or without battery back-up). Power may also be supplied from repeater units or other ancillary items connected.

All electrical installation must only be carried out by a qualified electrician or other suitably qualified and competent person.



Take extreme care if handling the PCB, THE ASSEMBLY IS EXTREMELY FRAGILE. Protect it from damage and electro static discharge.

## 2 INTRODUCTION

The ONE O2 monitor continually monitors the air surrounding the sensor on its base and provides visual and audible alarms when the monitored concentration of oxygen passes pre-set 'Alarm' levels.

There are 3 models of ONE O2 monitor units for different oxygen deficiency and enrichment applications. Please ensure you have correctly identified the model type and refer to the appropriate sections of this manual. To identify the model type check the text adjacent the red LEDs on the face plate.

### **Low / Critically Low**

For oxygen deficiency applications

Alarm 1 Set 19.5% LOW OXYGEN ALARM

Alarm 2 Set 18.2% CRITICALLY LOW OXYGEN ALARM

### **High / Critically High**

For oxygen enrichment applications

Alarm 1 Set 22% HIGH OXYGEN ALARM

Alarm 2 Set 23% CRITICALLY HIGH OXYGEN ALARM

### **High / Low**

For combined enrichment and deficiency applications

Alarm 1 Set 22% HIGH OXYGEN ALARM

Alarm 2 Set 18.2% LOW OXYGEN ALARM

Please note the alarm thresholds shown above are the current default settings. Older equipment may have different alarm thresholds. Please refer to the calibration certificate for threshold settings specific to an item of equipment.



### **3 INSTALLATION**

The ONE O2 monitor should be fitted adjacent to the gas source. The monitor should be wall mounted by fixing firmly to a clean, dry, vertical surface using appropriate fixings.

When deciding where to position the monitor, consideration should be given to:

- [i] whether the alarm lights and audible alarm can be easily seen and heard, and
- [ii] whether the unit is placed so that it is monitoring the required area adequately.

Take care to ensure that the monitor is not installed above items such as work tops or other equipment and cannot be obstructed or blocked-in by any item which may restrict the free flow of air around the monitor.

The monitor should be located at a height appropriate for the monitoring conditions. For oxygen deficiency applications where the inert gas has a relative density greater than air the monitor should be positioned 1m above floor level. For inert gases with a relative density lower than air (helium) the monitor should be positioned as high as practicable. For oxygen enrichment applications the monitor should be positioned 1m above floor level.

The ONE O2 base unit monitors the surrounding air by natural convection and diffusion into the oxygen sensor through the sensor filter in its base.

IT IS IMPORTANT TO ENSURE THAT THE SENSOR FILTER IS NEITHER COVERED NOR BLOCKED  
and that

AIR CAN CIRCULATE FREELY AROUND THIS FILTER AND THE BASE OF THE UNIT.

The ONE O2 monitor must not be exposed to, immersed in or sprayed with water, rain, solutions or other solvents.

For wiring information please refer to the CryoPanel 4 manual.

## 4 OPERATION

The ONE O2 monitor is powered by internal (non-rechargeable) batteries. It operates continuously and has no ON / OFF switch.

**If the Low Battery condition is observed the ONE O2 monitor should be withdrawn from service immediately** as it may no longer operate correctly. A replacement Sensor-Battery Pack (Part number ONE O2-RS) should then be fitted.

The Sensor-Battery pack within the ONE O2 monitor must be replaced on or before the date shown on the label which is found on the side of the product. The sensor – battery pack has a 3-year life and should be replaced every three years. Older versions may have a 2 year battery and sensor.

### 4.1 LOW / CRITICALLY LOW

The normal operation of the ONE O2 LOW / CRITICALLY LOW monitor is summarised in the table below:

Condition	Audible Alarm (monitor)	19.5% Red LED (monitor)	18% Red LED (monitor)
<b>Normal</b> (Monitored oxygen level above the 'Low Oxygen' threshold and battery voltage satisfactory.	Off	Off	Off
<b>Low Oxygen Alarm -19.5%</b> (Monitored oxygen level below the 'Low Oxygen' but above the 'Critically Low Oxygen' thresholds.	Bleeping	Flashing	Off
<b>Critically Low Oxygen Alarm – 18%</b> (Monitored oxygen level below the 'Critically Low Oxygen' threshold.	Bleeping	Flashing	Flashing
<b>Low Battery</b> (Battery voltage unsatisfactory)	Constant tone	Off	Off

In the 'Normal' condition (monitored oxygen concentration is above the 'Low Oxygen Alarm' threshold and the internal battery voltage is satisfactory) All LED's will be off and audible unit will be off.

## 4.2 HIGH / CRITICALLY HIGH

The normal operation of the ONE O2 HIGH / CRITICALLY HIGH monitor is summarised in the table below:

<b>Condition</b>	<b>Audible Alarm (monitor)</b>	<b>22% Red LED (monitor)</b>	<b>23% Red LED (monitor)</b>
<b>Normal</b> (Monitored oxygen level below the 'High Oxygen' threshold and battery voltage satisfactory.)	Off	Off	Off
<b>High Oxygen Alarm – 22%</b> (Monitored oxygen level above the 'High Oxygen' but below the 'Critically High Oxygen' thresholds.)	Bleeping	Flashing	Off
<b>Critically High Oxygen Alarm – 23%</b> (Monitored oxygen level above the 'Critically High Oxygen' threshold.)	Bleeping	Flashing	Flashing
<b>Low Battery</b> (Battery voltage unsatisfactory)	Constant tone	Off	Off

In the 'Normal' condition (monitored oxygen concentration is below the 'High Oxygen Alarm' threshold and the internal battery voltage is satisfactory) All LED's will be off and audible unit will be off.

### 4.3 HIGH / LOW

The normal operation of the ONE O2 HIGH / LOW monitor is summarised in the table below:

<b>Condition</b>	<b>Audible Alarm (monitor)</b>	<b>22% Red LED (monitor)</b>	<b>18.2% Red LED (monitor)</b>
<b>Normal</b> (Monitored oxygen level above the 'Low Oxygen' and below the 'High Oxygen' thresholds and battery voltage satisfactory.)	Off	Off	Off
<b>Low Oxygen Alarm - 18.2%</b> (Monitored oxygen level below the 'Low Oxygen' threshold.)	Bleeping	Flashing	Off
<b>High Oxygen Alarm - 22%</b> (Monitored oxygen level above the 'High Oxygen' threshold.)	Bleeping	Off	Flashing
<b>Low Battery</b> (Battery voltage unsatisfactory)	Constant tone	Off	Off

In the 'Normal' condition (monitored oxygen concentration is above the 'Low Oxygen Alarm' and below the 'High Oxygen' thresholds and the internal battery voltage is satisfactory) All LED's will be off and audible unit will be off.

## 5 MAINTENANCE

Other than the Sensor-Battery Pack there are no operator serviceable or replaceable parts. It is important that the weekly, monthly and annual checks described below are followed, in order to ensure that the monitor offers appropriate protection to the user for the life of the sensor/battery pack. Failure to do so may lead to false alarms.

Please remember SAFETY if you suspect your ONE O2 is malfunctioning. DO NOT ENTER ANY AREA UNLESS GAS CONCENTRATION IS KNOWN AND AT A SAFE LEVEL.

### 5.1 TESTING

The ONE O2 system should be tested for functionality on a monthly basis. If the ONE O2 system fails a properly constituted functionality test, it should be withdrawn from service immediately. We recommend keeping a log of this test and recommend that it should be undertaken as part of routine fire alarm tests in order that staff should recognise the alarm and understand the evacuation procedure.

A functionality test involves admitting test gas having an oxygen concentration marginally past the alarm threshold(s) to the sensor and checking that both the appropriate red LEDs flash and that the audible alarm bleeps. Please refer to the appropriate model table in the operation section of this manual for expected unit behaviour. The alarms should activate within 30 seconds.

Calibrated test gas kits are available to purchase from Quantum Cryogenics.

The ONE O2 monitor should return to the normal (non-alarm) state within 60 seconds of fresh air being readmitted to the sensor.

The ONE O2 monitor should be recalibrated at intervals of no longer than twelve months and the sensor optimised every month.

### 5.2 SENSOR OPTIMISATION

This applies to all models of ONE O2.

First, fresh dry air (or test gas with a concentration of 20.8% oxygen in balance of nitrogen) should be admitted to the sensor filter of the monitor for at least 60 seconds.

**IMPORTANT NOTE:** The oxygen concentration in enclosed areas and rooms within buildings may vary significantly from 20.8% O2 due to on-going gas release and / or poor ventilation. In these circumstances the monitor should be optimised using 20.8% O2 calibration test gas.

Whilst still exposed to this gas, a fine blade instrument screwdriver (or trimtool) should be used to adjust the brass coloured adjustment screw (20 turn potentiometer) which is located on the top of the monitor. The adjustment screw should be adjusted until the Cal High and Cal Low LED's are illuminated when the green cal button is pressed on the top of the unit.

### 5.3 CALIBRATION LOW / CRITICALLY LOW

To perform a sensor calibration undertake the sensor optimisation procedure outlined above. When successfully completed a test gas of 18.0% oxygen (balance nitrogen) should

then be admitted to the sensor filter (ideally at a flow rate of 0.5 litres per minute). The 'Low Oxygen' and 'Critically Low' Oxygen' red LEDs should both flash and the audible alarm bleep within 30 seconds.

When fresh air is admitted again to the sensor filter, the alarm indications should cancel within 60 seconds.

#### 5.4 CALIBRATION HIGH / CRITICALLY HIGH

To perform a sensor calibration undertake the sensor optimisation procedure outlined above. When successfully completed a test gas of 23.5% oxygen (balance nitrogen) should then be admitted to the sensor filter (ideally at a flow rate of 0.5 litres per minute). The 'High Oxygen' and 'Critically High' Oxygen' red LEDs should both flash and the audible alarm bleep within 30 seconds.

When fresh air is admitted again to the sensor filter, the alarm indications should cancel within 60 seconds.

#### 5.5 CALIBRATION HIGH / LOW

To perform a sensor calibration undertake the sensor optimisation procedure outlined above. When successfully completed a test gas of 18.0% oxygen (balance nitrogen) should then be admitted to the sensor filter (ideally at a flow rate of 0.5 litres per minute). The 'Low Oxygen' red LED should both flash and the audible alarm bleep within 30 seconds.

A test gas of 23.5% oxygen (balance nitrogen) should then be admitted to the sensor filter (ideally at a flow rate of 0.5 litres per minute). The 'High Oxygen' and ' red LED should both flash and the audible alarm bleep within 30 seconds.

When fresh air is admitted again to the sensor filter, the alarm indications should cancel within 60 seconds.

## 5.6 REPLACING THE SENSOR AND BATTERY PACK



**THIS UNIT IS DESIGNED PROTECT LIFE. PLEASE NOTE THAT ONLY QUANTUM CRYOGENICS APPROVED / TRAINED OPERATIVES SHOULD ATTEMPT TO REPLACE A SENSOR PACK AND RECALIBRATE THE UNIT. INCORRECT REPLACEMENT / RECALIBRATION COULD LEAD TO FAILURE OF THE UNT TO OPERATE AS INTENDED. LEADING TO A DANGER TO LIFE.**

**WHEN REPLACING ONEO2 SENSOR AND BATTERY PACK ENSURE ONLY GENUINE QUANTUM PARTS ARE USED. DO NOT ATTEMPT TO MODIFY OR REPAIR ONEO2 SENSOR AND BATTERY PACKS. USE OF NON-GENUINE PARTS OR UNAUTHORISED THIRD PARTY MODIFIED / REPAIRED PARTS COULD LEAD TO THE FAILURE OF THE UNIT TO OPERATE AS INTENDED, LEADING TO A DANGER TO LIFE.**

### 5.6.1 REMOVAL OF THE OLD SENSOR-BATTERY PACK.

The 4 corner screws retaining the clear lid of the ONEO2 must be carefully unscrewed (posi-drive screwdriver No.2) and the lid removed. On some models these screws may be underneath covers. Using a fine flat bladed screw-driver the covers can gently lifted out to reveal the screws. Take care to prevent scratching and damaging the lid.

The 4 screws holding the front plate must be unscrewed (posi-drive screwdriver No.1) and removed. This will expose the PCB and provide access to the sensor and battery pack.

Do NOT pull on the wires of the lead.



Please note that the ONEO2 battery and sensor pack must not be disposed of in general waste. They can be disposed of in battery recycling bins. Alternatively they can be returned to Quantum Cryogenics for safe disposal and recycling (please contact QC for returns authorisation number).

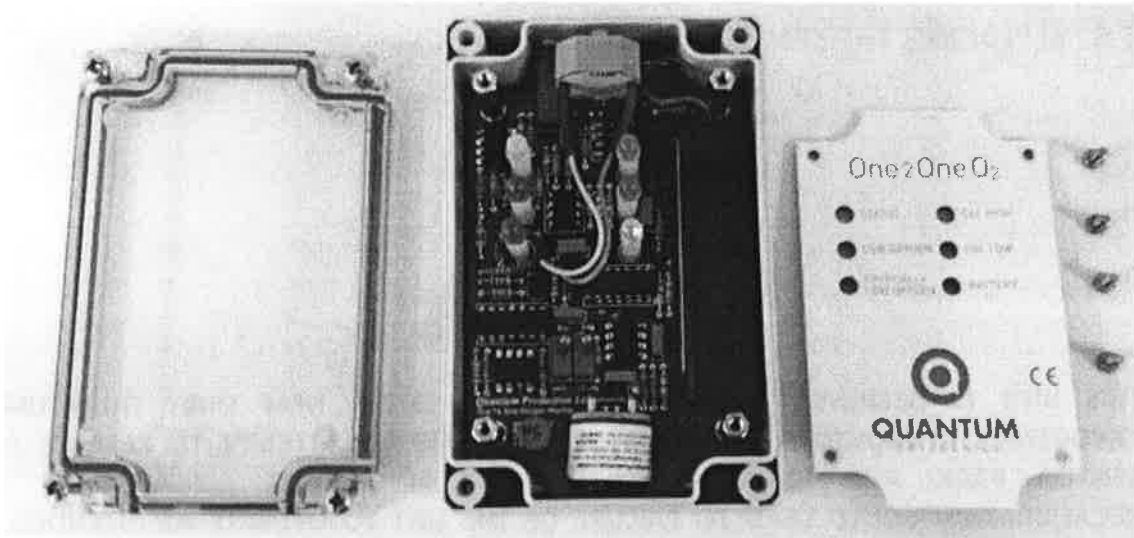


Figure 5-1 ONEO2 MONITOR WITH LID AND FACEPLATE REMOVED

#### 5.6.2 FITTING THE NEW SENSOR-BATTERY PACK

Check that the 'Replace by..' date of the new sensor and battery being inserted has not expired.

Carefully insert the connector attached to the red and black wires of the battery pack onto the black connector of the PCB. The connector is polarised and so can only be fitted one way round. Do NOT force the two halves of the connector together. Carefully slide the battery pack into the space adjacent to the PCB. When correctly fitted the two halves of the connector are held together by the battery pack

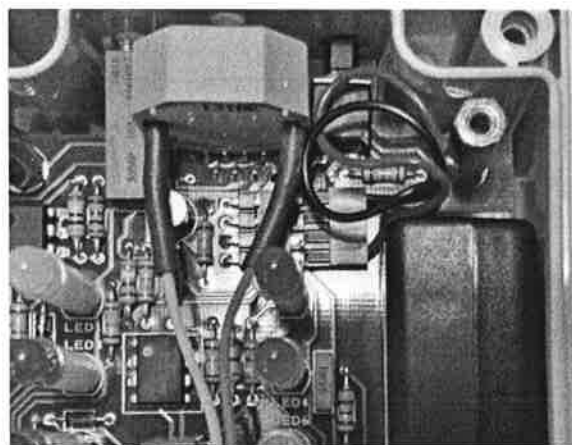


Figure 5-2 BATTERY PACK CONNECTION





Figure 5-3 O2 SENSOR FITTED TO PCB

The sensor should be carefully inserted onto the connector on the ONEO2 PCB. The sensor is then held in place by the foam pad in the rear of the faceplate. When fitting the sensor IT IS IMPORTANT TO ENSURE THAT THE SENSOR IS THE CORRECT WAY ROUND AND THE CORRECT WAY UP. When viewed from below and facing the ONEO2, the white sensor filter should be visible on the outside.

#### 5.6.3 CALIBRATING AND TESTING AFTER FITTING A NEW SENSOR-BATTERY PACK

After fitting a new ONEO2 sensor and battery pack (or after reconnecting the sensor and battery pack) the ONEO2 unit must be left for a minimum period of 15 minutes before accurate balancing, calibration and testing can be performed.

#### 5.6.4 FITTING THE NEW 'REPLACE SENSOR-BATTERY PACK BY ...' LABEL

This label is supplied loose with the replacement Sensor-Battery Pack. The backing paper should be removed and the self-adhesive label fitted should be fitted directly over the previous label (so that previous label is completely covered).

## 6 APPENDIX A – TECHNICAL SPECIFICATION

### MECHANICAL

Dimensions	(excl. cable) 82 (H) x 120 (W) x 56 (D) mm.
Weight	Approx. 550 g (0.55 Kg).
Material	Polycarbonate

### ENVIRONMENTAL

Temperature	-5°C to +45°C (-20°C to +50°C at lower accuracy).
Humidity	0 to 99% RH non-condensing
IP rating	IP40 AS STANDARD IP54 INSIDE W-PROOFBOX
Pressure Range	Atmospheric $\pm$ 10%

### ELECTRICAL

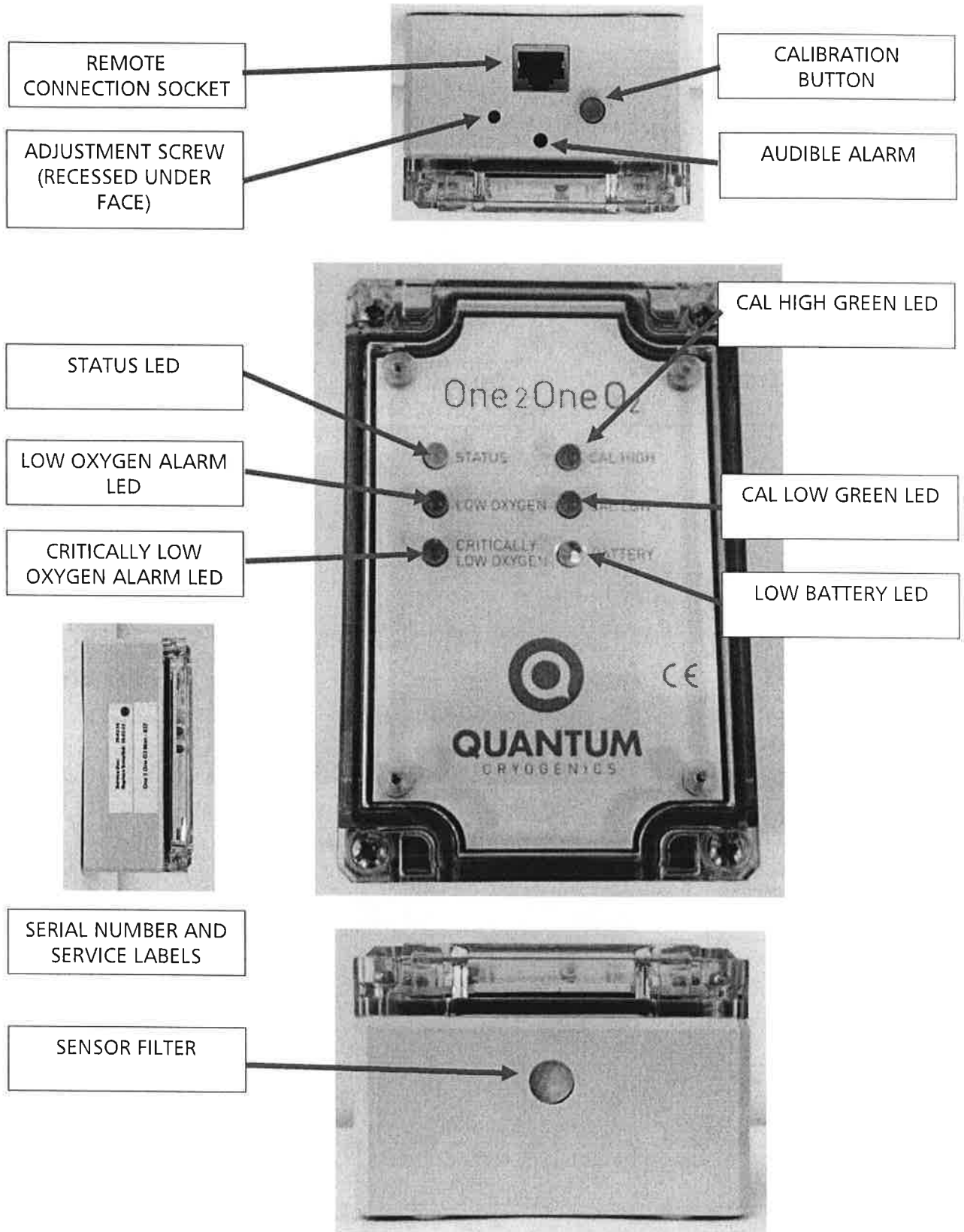
Power source	Internal battery (part of ONEO2RS)
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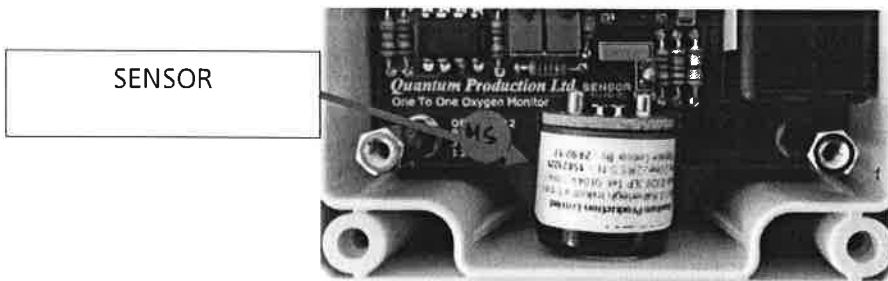
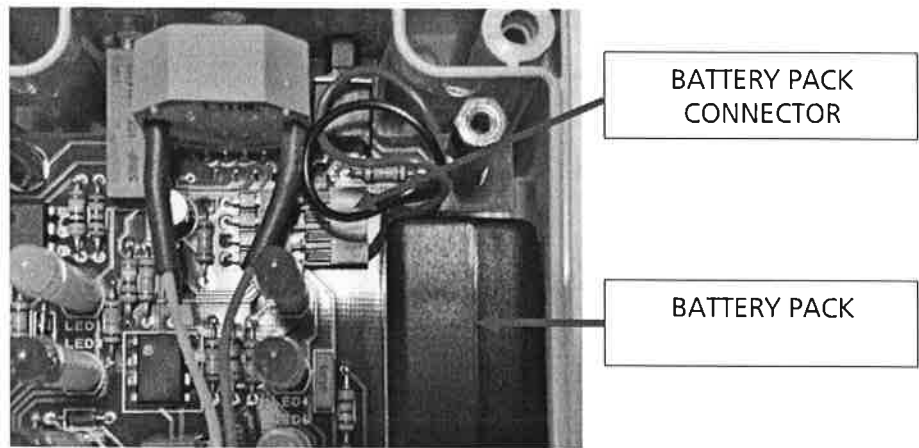
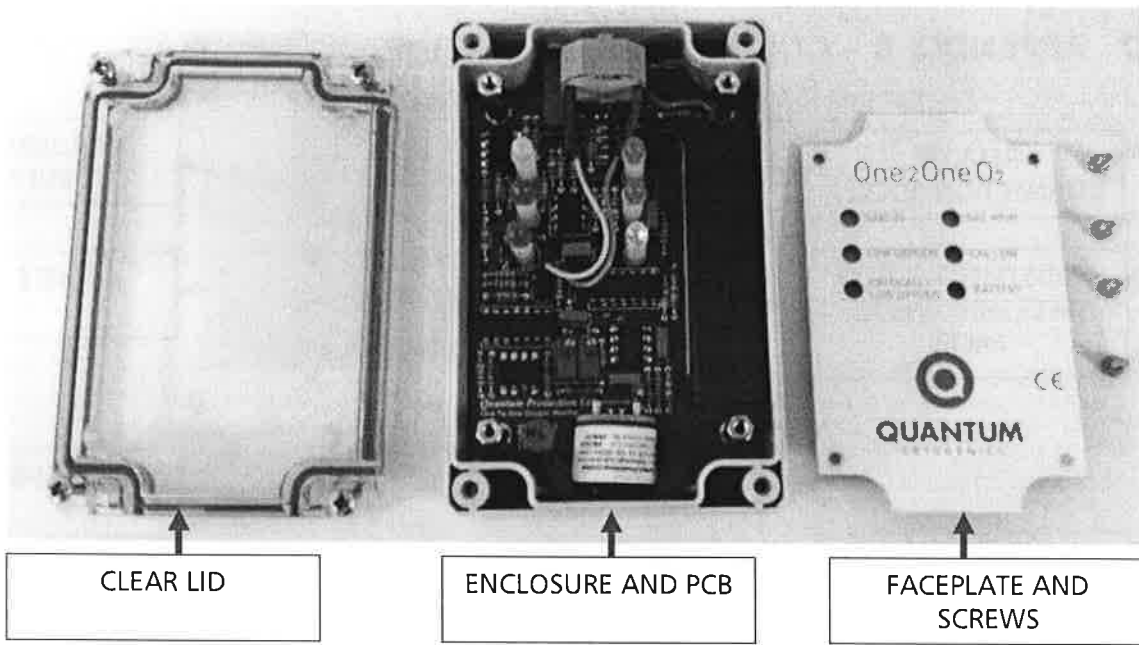
### TECHNICAL

Standard Alarm Thresholds (Special thresholds available on request)		
Low / Critically Low model	Low Oxygen	19.5% oxygen
	Critically Low Oxygen	18.2% oxygen
High / Critically High model	High Oxygen	22% oxygen
	Critically High Oxygen	23% oxygen
High / Low model	High Oxygen	22% oxygen
	Low Oxygen	18.2% oxygen
Response time (for correctly calibrated unit)	Typically less than 10 secs. for alarms to activate when sensor subject to 18% oxygen test gas	
Monitor Indications	Status LED (yellow) Low oxygen LED (red) Critical oxygen LED (red) CAL HIGH LED (green) CAL LOW LED (green) Battery LED (red) Audible alarm (85dB)	
Working Lifetime of the ONEO2 Sensor & Battery Pack	The ONEO2 must be replaced by date shown on label	

RJ45 connection socket on top face for connection only to approved dedicated units.

## 7 APPENDIX B – QUICK REFERENCE GUIDE





## 8 APPENDIX C – WARRANTY STATEMENT

Set out below are the warranty statements from the Quantum Production Ltd standard Terms and Conditions of Sale 2008. Please contact Quantum Cryogenics for a full copy of the terms and conditions of sale.

- 5.2 Subject to Clauses 5.3 and 5.4 below, the Company warrants to the Customer that the Products delivered shall be:
- (a) in good condition on delivery;
  - (b) of the correct type, quality, weight and measurements (if specified);
  - (c) in full accordance with the Specifications (if any);
  - (d) reasonably fit for any purpose specified by the Customer; and
  - (e) complete with all manuals and documentation required, if any.
- 5.3 The Customer shall have seven (7) days from the Delivery Date ("Inspection Period") in which to inspect the Products and if they or any part of them are not in accordance with the Specifications, the Customer shall be entitled (without prejudice to its rights generally) to reject the same or such part of them. Any breakages or deficiencies must be notified in writing to the carrier immediately by the Customer and to the Company within the Inspection Period. Inspection shall be deemed to have taken place only when the Products are inspected and examined by a person duly authorised by the Customer. Any failure to inform the Company of any defect in the Products or non-compliance with the Specifications during the Inspection Period shall be deemed to be an acceptance of the Products by the Customer and the Company shall not be liable for that Order.
- 5.4 In the event that the Customer rejects any Products under Clause 5.3 for a reason accepted by the Company, the Company shall, at its own expense, repair or replace the Products or credit the Customer's account with any amounts paid in respect of any Products if the Customer chooses to return such Products.
- 5.5 Subject to Clauses 5.6 and 5.7 below, the Warranty shall be valid for 12 (twelve) months from the date of acceptance or deemed acceptance determined in accordance with Clause 5.2 above. Notwithstanding the foregoing, the Warranty shall be subject to the following conditions:
- (a) the Company shall not be liable for any defects in the Products arising from any Specifications supplied by the Customer; or
  - (b) the Company shall not be liable for any liability arising from any fair wear and tear, wilful damage, negligence, neglect, failure to comply with statutory requirements including the maintenance of the Products, misuse, alteration or repair to any of the Products without the Company's written approval; or
  - (c) the Company shall not be liable for any defects or damage arising from the Customer's failure to implement a procedure appropriate for the business environment of the Customer including storage conditions, quality control and handling procedures appropriate for the Products and that the Customer shall ensure and procure that the procedure is complied with and regular checks made to ensure all procedures are maintained at all times; or
  - (d) a force majeure event occurs as defined in Clause 10 below.
- 5.6 The Warranty shall exclude any physical damage to the Products.
- 5.7 Any claim made under the Warranty shall be solely for the repair and replacement of parts provided the Customer shall return the Products for repair to the premises of the Company, at the Customer's costs. For the avoidance of doubt, no repairs shall be undertaken on site at the premises of the Customer. On-site inspections shall only be provided if the Customer has entered into a services and maintenance agreement with the Company."

*QUANTUM PRODUCTION LIMITED - STANDARD CONDITIONS OF SALE 2008*

Please note depending on the nature of use it may be necessary to complete a decontamination process and provide documentary evidence that this has been completed and verified prior to returning goods.

No deliveries / returns are accepted without a Returns Authorisation Number (RAN). Unauthorised returns will be automatically rejected / returned to sender collect.

Please contact the Quantum Cryogenics for more details and returns authorisation.

## 9 APPENDIX D – EC DECLARATION OF CONFORMITY

ELECTROMAGNETIC COMPATIBILITY DIRECTIVE 2004/108/EC  
SAFETY REQUIREMENTS FOR ELECTRICAL EQUIPMENT FOR MEASUREMENT, CONTROL AND  
LABORATORY USE

COMPANY NAME: QUANTUM PRODUCTION LIMITED

COMPANY ADDRESS: Units 1 – 3 Hatherleigh Industrial Estate  
Hatherleigh, Devon, EX20 3LP. England

APPARATUS NAME: One O2

APPARATUS DESCRIPTION: Oxygen enrichment / deficiency monitor

The above mentioned product complies with the essential requirements, which are specified in the directive 2006/95/EC on the approximation of the laws of the Member States relating to electromagnetic compatibility.

The product of the declaration described above is in conformity with the requirements of the following specifications:

Standard	Description	UKAS / non-UKAS	Pass / Fail
EN 61326-1: 2006	Electrical equipment for measurement, control and laboratory use – EMC requirements		
EN 55011: 1998 A1 A2	Conducted RF Emissions	UKAS	Pass
EN 55011: 1998 A1 A2	Radiated Emissions	UKAS	Pass
EN 61000-4-2:1995 A1 A2	Electrostatic Discharge	UKAS	Pass
EN 61000-4-3:2002	Radiated RF Immunity 80 MHz to 2.7 GHz	UKAS	Pass
EN 61000-4-4:2004	Fast Transient and Burst Immunity	UKAS	Pass
EN 61000-4-5:1995 A1	Surge Immunity	UKAS	Pass
EN 61000-4-6:1996 A1	Conducted RF Immunity	UKAS	Pass
EN 61000-4-11:2004	Mains Dips and Interruptions	UKAS	Pass
EN 61000-4-8:1994 A1	Power Frequency Magnetic Field Immunity	UKAS	Pass
EN 61000-3-2:2006	Harmonics	UKAS	Pass
EN 61000-3-3:2008	Flicker	UKAS	Pass

TESTED BY: Electronic Test & Calibration Ltd.  
Caddsdwn Industrial Park, Clovelly Road,  
Bideford, EX39 3DX

Identification of signatory empowered to bind the manufacturer or his authorised representative manufacturer or authorised representative: manufacturer

SIGNATURE:



NAME AND POSITION: David Thornton-Wood DIRECTOR.

## 10 APPENDIX E – END OF LIFE DISPOSAL

Quantum Cryogenics take great care to prevent our activities adversely affecting the environment we all live in. Quantum Production Ltd is a member of "WeeeCare Compliance".

Any Quantum supplied equipment may be returned to Quantum for recycling and safe disposal when it reaches the end of its working life.

Please note depending on the nature of use it may be necessary to complete a decontamination process and provide documentary evidence that this has been completed and verified.

No deliveries / returns are accepted without a Returns Authorisation Number (RAN). Unauthorised returns will be returned to sender collect.

# WeeeCare Compliance Certificate of Membership

Environment Agency Producer Registration Number

WEE/EC1538XW

This is to certify that

Quantum Production Ltd

are a member of the WeeeCare Compliance Scheme  
(EA approved registration no. WEE/MP3538PZ/SCH) and therefore fulfil their obligations  
in accordance with the Waste Electrical and Electronic Equipment Regulations 2006

Compliance period

1st January 2012

**WeeeCare®Plc**

a silver lining industries company



Signed

Graeme Parkin  
Managing Director

This certificate is the property of WeeeCare Plc. It is not to be used for any other purpose.

100% Recycled Paper

