OXYGEN (O_2) MONITOR
Reference Guide

In the event of an O_2 Monitor Alarm, assume the alarm to be valid and immediately take action (evacuation/opening lab doors to increase air flow).

The Oxigraf O2iM Oxygen analyzer/monitor unit is designed to run with very little maintenance. If a problem arises with the unit and it cannot be resolved using the information provided below, please contact Oxigraf, the manufacturer, for assistance.

Oxigraf can also be contacted to order more filters or other replacement/supplemental parts for the unit.

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Service Manager:
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Tel: 650-237-0155 ext. 236

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Chris Thacker
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Alarm Settings:

The O_2 monitor has two alarms:

▶ Low O_2 Alarm A: **19.5% O_2**

Alarm will sound 2 seconds after the percent O_2 in the room goes below this percentage.

▶ Low O_2 Alarm B: **19.8% O_2**

When the percent O2 in the room reaches 19.8%, the monitor will start an auto-calibration to ensure the reading is correct. There is no audible alarm associated with this setting.

If the reading is correct and the percent O2 in the room drops to below 19.5% (Low O_2 Alarm A), then the O_2 monitor will go into audible alarm and remain in alarm until the percent O_2 in the room returns to above 19.5%.

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Helpful Keys On The O_2 Monitor

Button	*Function*
O_2/1	**SILENCES ALARM**, Returns to main screen (displays current O_2% and air flow rate)
SETUP/2	Tap multiple times to scroll through setup options. Refer to table below for complete list of options/settings.
FLOW/7	Displays how hard the pump is working. Normal pump drive percent is 28-65%. Monitor will go into alarm if drive percent reaches 70%. If the pump drive percent is in the higher part of the normal range, consider replacing the filters.
HELP/*	Tap this button once for phone support. Tap it twice for Model #, Serial # and Software Version.
ENTER	**SILENCES ALARM**, tap this button to apply changes made to settings.

Oxygen Depletion in Liquid Nitrogen Applications:

The purpose of the oxygen monitor is to provide early warning of a potentially hazardous low-oxygen environment within the lab. The alarm is set to allow personnel time to exit the lab before they notice any signs or symptoms of asphyxia.

Asphyxia as a result of oxygen depletion can take place on a gradual or sudden basis, depending on the extent and rate of the depletion. The symptoms associated with oxygen-depleted atmospheres are detailed below:

Oxygen Content of Air	Signs and Symptoms of Asphyxia
18%—19.5%	May diminish physical and intellectual performance without a person's awareness of the change.
15%—18%	Decreased ability to work strenuously. May impair co-ordination and may induce symptoms in persons with coronary, pulmonary, or circulatory problems.
12%—15%	Respiration deeper, increased pulse rate, and impaired co-ordination, perception and judgment.
10%—12%	Further increase in rate and depth of respiration, further increase in pulse rate, performance failure, giddiness, poor judgment, blue lips.
8%—10%	Further increase in rate and depth of respiration, further increase in pulse rate, performance failure, giddiness, poor judgment, blue lips.
6%—8%	Loss of consciousness within a few minutes, resuscitation possible if carried out immediately.
0%—6%	Loss of consciousness almost immediate, death ensues, brain damage even if rescued.

Location of Filters and Filter Replacement Schedule:

- Change filters on the outside of the unit every 3 months to avoid taxing the pump in the unit.

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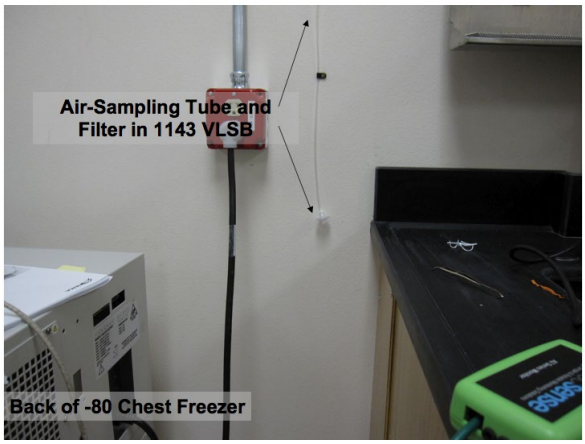
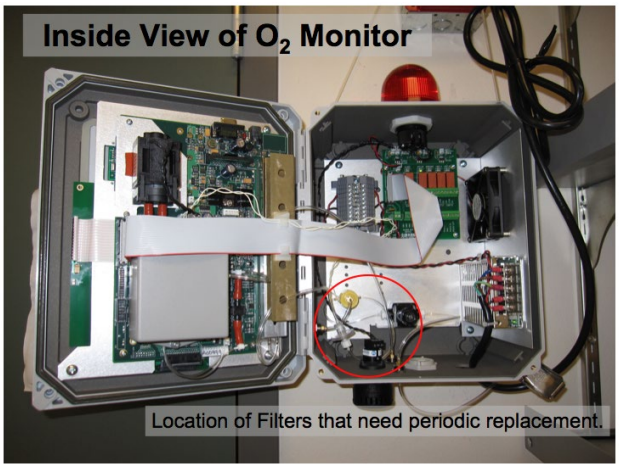
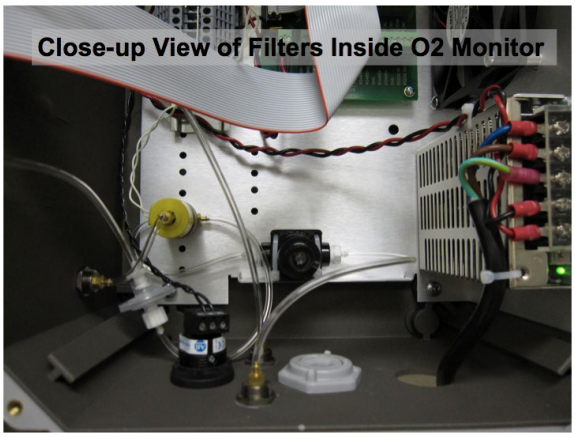
▶ Change the internal filters every 5-6 months







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Oxygen Monitor Original Settings and Key for LCD Display:

Set by Jason and Chris from Oxigraf when unit was installed.

BUTTON	FUNCTION	DISPLAY LINE 1	DISPLAY LINE 2
O2	Display O2 & Home Screen	O2: 20.7%	Flow: 150 ml/m
Setup	O2 Filter setpoint	O2 Filter	7: 500 ms IIR
	Low calibration gas concentration	O2 Low Cal	20.7% Oxygen
	High calibration gas concentration	O2 High Cal	100.00% Oxygen
	Unit Autocalibrates every X hours	Autocal Period	3.0 hours
	Cal valve delay	Cal Valve Delay	30 sec
	O2 Autocal mode setup	O2 Auto Cal Mode	Cal 1
	Autocal Level B level trigger enable	Autocal Level B	On
	4 mA O2 value	O2 4 mA Iout	0.00% Oxygen
	20 mA O2 value	O2 20 mA Iout	100.00% Oxygen
	Flow setpoint	Flow Setpoint	150 ml/min
	Pump On/Off/Max	Flow: 150 ml/m	Pump State: On
		Purge Pulse	Off
		Purge Period	Off
	Low O2 limit A	Low O2 Alarm A	19.50% Oxygen
	High O2 limit A	High O2 Alarm A	23.00% Oxygen
	Low O2 limit B	Low O2 Alarm B	19.80% Oxygen
	High O2 limit B	High O2 Alarm B	22.90% Oxygen
	O2 limit hysteresis	O2 Alarm Hyst	0.10% Oxygen
	Low flow alarm	Low Flow Alarm	40 ml/min
	Pump drive level alarm	Pump Drive Alarm	70%
	Low pressure alarm	Low Pres Alarm	100.0 mb
	High pressure alarm	High Pres Alarm	1200.0 mb
	Relay latch mode	Relay Latch	Off
	Relay flash mode	Relay Flash	Off
	Relay failsafe mode	Relay Failsafe	Off
	Relay exclusive mode	Relay Exclusive	Off
	Horn/Strobe mode control	Horn/Strobe: 9	FlashWarning+A
	Alarm delay A	Alarm Delay A	2 sec
	Alarm delay B	Alarm Delay B	2 sec
	Warning delay	Warning Delay	2 sec
	Alarm acknowledge time	Alarm Ack Time	1 sec
	Mode idle dwell time	Mode Dwell Time	60 sec
	Keypad beep volume *****Do not set higher than 7; will cause premature failure of speaker!!**	Beep Vol (1-10)	7
	Keypad lock	Keypad Lock	Off
	Modbus enable address *****For connecting unit to building monitoring system.**	Modbus Address	Off