SMART SENSOR®

Intelli Instruments™ Pro

Model：AS8901

OXYGEN MONITOR

Version number:AS8901-0-1

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The effect of oxygen-deficient and oxygen-enriched atmospheres	
The concentration of oxygen(%)	Symptoms (atmospheric pressure)
100%	Deadly, 6 minutes(Absolutely airtight environment, such as hyperbaric oxygen chamber
50%	Deadly, can be cured after 45 minutes treatment. (Absolutely airtight environment, such as hyperbaric oxygen chamber)
>23.5%	Rich oxygen
20.9%	Normal
19.5%	Minimum
15～19%	Reduce efficiency, and lead to problems of head, lung and circulation system
10～12%	Shortness of breath, loss of judgment, purple lips
8～10%	governance loss, syncope, unconscious, pale, nausea and vomiting
6～8%	8 minutes, blood pressure, weak heartbeat, mouth breathing, quickly stopped breathing
4～6%	40 seconds, convulsions, respiratory arrest, death

＊ The above parameters are for reference only

3. 2 WARRANTY

* AS8901 Oxygen gas Monitor is warranted to be free from defects in material and workmanships for a period of one year after purchase.
* This warranty not includes the sensor and battery pack after 6 month purchase period.

3.3 MANUFACTURING STATEMENTS

* Thank you for buying and using Smart Sensor As8901 Oxygen Gas monitor.
* The unit has been designed, manufacturing, tested and proven under professional quality team.
* The unit should be reliable to use and operate under the reasonable care and maintenance described in this instruction manual.

3.4. ENCLOSURE

* The used or nonfunctional battery, please follow the international environment regulation to settle.
* Smart Sensor has the right to modify or change the design of the unit, operation manual or product specification prior without any further notice.

一、NOTICE BEFORE USE

1.1 CAUTIONS AND WARNINGS

The user need to read and follow the procedures and conditions as below to prevent ant failure might be occurred during operating this instrument.

⚠ Insufficent oxygen atmospheres may cause combustile gas readings be lower then actual corrected readings.

⚠ Enriched oxygen atmospheres may cause combustile gas readings be higher then the actual corrected readings.

⚠ The intruments need to be re-calibrated after the instrument has been used in an area of silicon vapors were present.

⚠ Please always be kept clean of the sensor opening and the water barriers of the intrument.

⚠ The oxygen readings will be caused temporary fluctuations while the atmospheric preesure is suddenly changed.

⚠ Please do not charge the battery or serving the unit in hazardous or enriched atmospheres condition.

⚠ The intrument only suggested to be used by operated and serviced by qualified personnel whom has fully read and understood the instruction manual completely.

⚠ This insrument is certified to be normal use within the temperature range of -20 deg. C to 40 deg. C only.

⚠ The model of AS8900 must be used only with model AS8930 external sampling pump. (Excluded)

1.2 UNIT PACKING

The gift box should be contain the following items

Description	Quantity
AS8901 Oxygen gas monitor	1PCS
Operation manual	1PCS
Carrying brouch	1PCS
3.7V rechargable lithium battery	1PCS
Battery charger	1PCS

1.3 PRODUCT SPECIFICATIONS

Sensor specification:			
Gas	Range	Resolution	T90
Oxygen (O2)	0~30%	0.1%	10sec
Temperature and humidity range:			
Operating Temperature: -10~ 50℃(except LEL is 0 ~40℃)			
Operating Humidity : 15~95 % RH, typical			
Storage Temperature : 0~40℃			
Size: 120.20mm x 64.50mm x 38.30mm			
Weight: 200g			
Battery specification:			
Rechargeable lithium-ion battery, 3.7 Volts			
Battery working runtime: 18 hours. And 12 hours work with AS8930 sampling pump.(work in room temperature and no alarm conditions.)			

三、OTHERS

3.1 MAINTENANCE

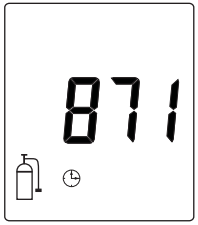
The following guideline should be followed to achieve good maintenance for AS8901 unit.

CLEANING:

* If necessary, wipe the outside surface of the unit, please use the soft, clean cloth.
* Never use any solvent or cleaning solutions.
* Make sure the rubber buttons are free od dirts.
* to clean the sensor opening, please use the clean, soft cloth or soft brush.

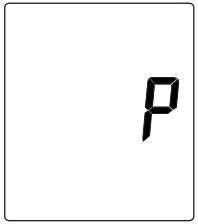
CHARGING THE BATTERY:

* The lithium-ion battery suggested to be fully charged before using the AS8901.
* To charge the battery, plug the connecting lead wire of the battery charger into the charging port located at the bottom of the unit. This port is protect by a rubber flap, so need to release the flap before charging.
* The battery should to fully charged in 6 hours.
* Once fully charged, the unit will be good enough to work for 18 hours operation, and work about 12 hours with AS8930 external sampling pump.
* The shaded area of battery indicator shows full once the battery is fully charged.
* If all shaded area only have one bar is left, the battery need to be charged at once.
* When the battery is low, the unit might emit a periodic alarm sound to alert you to charge the unit.



9. If it shows F , it means the calibration is failed, need to recalibrate again.

10. If no standard gas is used, please do not enter to this instrument calibration mode, for the pre-set value will be easy to be deleted.



2.8 ACCESSORY AS8930 SAMPLING PUMP

* The AS8930 external sampling pump is available to work with all AS8901 series gas monitor but no exclude in any unit pack.
* This pump mount into the AS8901 unit by 2 fasten screws. Please review to the assembly drawing attached.

1.4 OUTLOOK OF THE INSTRUEMENT

1.5 INTRODUCTIONS

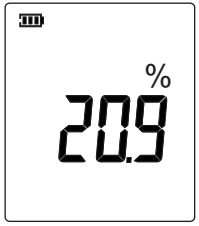
The AS8901 Oxygen gas monitor is a portable and handheld instrument that is capable to use continuously and simultaneously monitoring Oxygen, the gas readings a shows in one LCD display. The unit also provide user to configure high and low alarm.The unit will be audio and visual alarm once the alarm condition is exceeded.

二、OPERATION MANUAL

2.1 INSTRUMENTS OPERATION

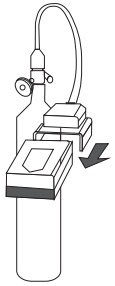
1. To turn on the instrument AS8901, please depress and hold the ⏻ button for over 1 second, the unit will be turn on with a beep sound and vibration, then the lcd will light up all icon and segments. Once the software countdown for 18 seconds then the unit will enter into the Gas Monitoring mode.
2. for to turn off the unit, please depress and hold the ⏻ button for over 3 seconds, then the unit will be power off after 3 beep sounds.
3. for to light up or turn off the backlight of the LCD display, please depress the ⏻ button.

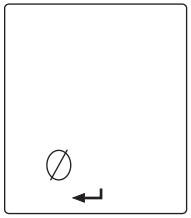
2.2 Oxygen Monitoring mode

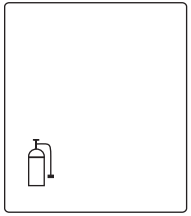


1. once the unit is power on, the display will show oxygen gas symbol with readings.
2. then the unit is already started to continuously monitored and shows the readings on the LCD display. Once the gas level is increase, the corresponding read will be showed the existing gas concentration.
3. Also the battery life indicator is also display in the left upper corner, onr the battery lift is decreased, the shaded showed of the battery icon is alco decreased.
4. Once the gas concentration is exceed the high or low alarm limit , the unit will be triggered the audio and visual alarm with vibration.

2.7 INSTRUMENT CALIBRATION MODE

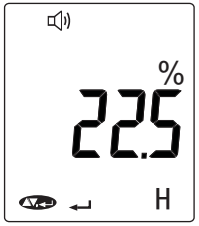






1. This is the final setting mode for zero/calibration mode.
2. The user wants to enter this mode with correct security code.
3. The unit could be easy to calibrate by using a cylinder of a standard gas.
4. To enter in this mode, to press both button of ▲ and ▼ in normal gas monitoring mode, and key in the correct security code to enter in this calibration mode.
5. To press ▲ button 4 times, then will enter to this instrument calibration mode. In this mode the display shows ∅ and ↵ icons, press button again for start the calibration with the icon cylinder is flashing.
6. Please make sure the unit is connected with the gas cylinder firmly before the cylinder icon flashing for 6 seconds.
7. Then to press the ↵ button, the display will shows cylinder and clock with the calibrating value.
8. If the calibration is succeeded, the dispay will shows P icon represent pass.

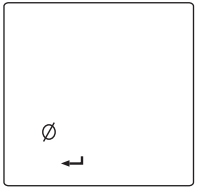
2.6 HIGH ALARM SETTING MODE



1. the high alarm setting mode is the second configuration screen of the unit.
2. in the mode the display will show (speaker) (down) (enter) and (up/down/enter) icon along with the 4 gases high alarm value.
3. if no change is required, press ▲ button to move to nest setting mode.
4. If the changed is needed, press ◄┘ button to have the first high alarm value will be flashing.
5. To adjust the value by press ▲ button or ▼ button.
6. Once the setting is confirmed and completed, press ◄┘ button to next high alarm setting.
7. Continue this setting procedure until 4 gases high alarm value are set. The display will show (speaker) (down) (enter) and (up/down/enter) icon along with the 4 new set alarm value.
8. Depress the ◄┘ button for re-enter this setting mode again for further adjusted setting if required.
9. Dressing the ▲ button to move the setting to next TWA value setting mode.
10. Depressing ⏻ button , the unit will back to high alarm setting mode with no changes will be saved.
11. Depress ⏻ button for second time, the unit will be back to the original gas monitoring mode.

5. Once the gas concentration is drop below the alarm level, the unit will go back to normal gas monitoring mode.
6. For to access this mode, please depress ▲ button. Then the unit will enter to Zero/Calibration mode.

2.3 Zero/ calibration mode

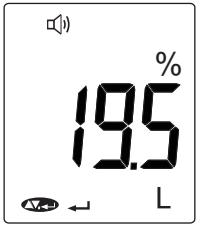


1. Depress the ▲ button once from the gas monitoring mode, the unit will be put in the Zero/ Calibration mode.
2. In this mode the icon ∅ and ◄┘ will be displayed along with oxygen gas readings.
3. If depress ◄┘button the unit will start the Zero/ Calibration process. Once the Oxygen sensors has finished the zeroing process, the display show ∅ and ◷ and the oxygen calibrate value.
4. Once the process is completed, the display will shows the SPAN and ⛽ icon.
5. To depress the ◄┘ button, the unit will begin to calibrate the remaining sensors one by one with same process.
6. the calibration gas are the fixed concentration value, to calibrate the instrument by using a blended cylinder containing 25ppm H2S, 100ppm CO, 25% or 50% LEL Methane or pentane, and 19% Oxygen at 0.5 LPM flow speed.

2.4 PEAK VALUE SETTING MODE

1. To depress the ▲ button from Zero /Calibration mode, the unit will entered to Peak value setting mode.
2. In this mode, the display will shows all 3 gases peak gas readings and the lowest readings of oxygen sensor, with PEAK and ENTER icon are displayed.
3. To depress ↵ button will reset all peak value of the current readings of 4 gases.
4. To depress ↵ button, then the unit will enter to TWA value mode.

2.5 LOW ALARM SETTING MODE



1. Low alarm setting mode is the first configuration screen, the display will show the (speaker) (down) (enter) and (up/down/enter) icons along with the four low alarm set readings of the 4 gases.
2. if the change is desired, press ↵ button, the first gas low alarm value will be flashing.
3. To adjust the value by depress ▲ or ▼ button.
4. Once the setting is confirmed and completed, press ↵ to next gas low alarm setting.
5. Continue this setting procedure until 4 gas low alarm value are set, the display will show (speaker) (down) (enter) and (up/down/enter) icon along with the 4 new low set alarm value.
6. Depress the ↵ button for re-enter this setting mode again for further adjusted setting if required.
7. Pressing the ▲ button to move the setting to high alarm setting mode.
8. Depress the ⏻ button, the unit will back to low alarm setting mode with no changes will be saved.
9. Depress ⏻ button for second time, the unit will be back to the original gas monitoring mode.