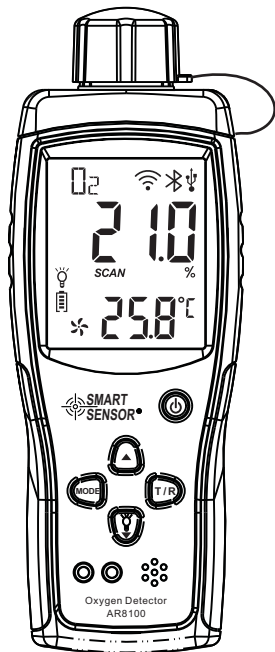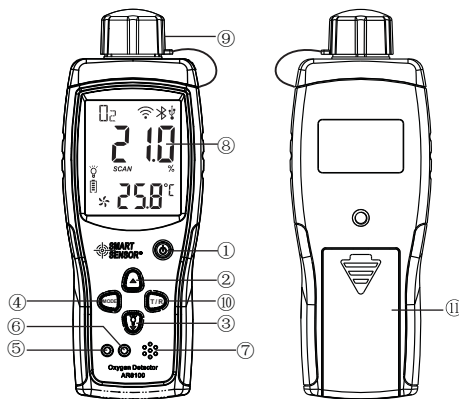# SMART SENSOR®

MODEL：AR8100

Oxygen Detector
Instruction manual

As this device is an intellectual precise measurement apparatus, it is very important that you read through these instructions before using this device.

1.Explanation of the appearance

① ⏻ :ON/OFF
② Decrement button(▼)
③ Increment button / backlight (▲☀)
④ MODE : Measurement mode button
⑤ The first siren (Blue indicator)
⑥ The second siren (red indicator)
⑦ Buzzer
⑧ LCD Display
⑨ Sensor
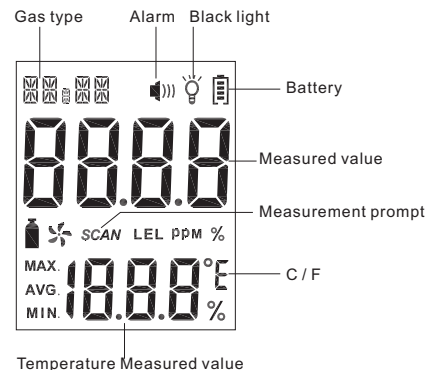⑩ T / R: Temperature / relative humidity button
⑪ Battery compartment cover

2. Technical parameters:

Detection of gas:	Oxygen(O_2)
Measuring range:	0-25%
Resolution:	0.1%
Basic error:	Less than $\pm 0.1\%$
Response time:	Less than 50 seconds
Recovery time:	Less than 50 seconds
The principle of sensor:	Electrochemical principle, life for two years
Battery:	3 X 1.5V AA Battery
Display:	Large screen liquid crystal display
To alarm:	Acoustic, optical double alarm, can set the alarm value, an alarm sound is divided into 80 dB
Working temperature:	-20 ~ 50 ℃
Working humidity:	0-95%RH (Non Gel)

- Over measurement range display:--OL--
- Alarming method: acoustic-optic alarming
- Working principle of the sensor : electrochemical sensor
- The service life of the sensor : 2years(it can be replaced)
- Power supply : 3 X 1.5V AA battery
- Battery service life : about 100 hours of continuous use (when the backlight is off).
- Size :182*66*32(mm)

3.Explanation of the display
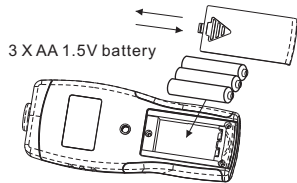

Temperature Measured value

4.Introduction

This oxygen(O_2) detector can detect the oxygen content between the 0~25% (the unit of volume size) and it shows the oxygen volume with an LCD.

The product features:

- As it uses the imported oxygen sensor ,it is very precise and its performance is stable.
- It uses the intellectualized design and has gotten multiple functions.
- With highlight backlight display and acoustic-optic alarming ,it is easily configured.
- The embedded temperature compensation can make the meter measuring the correct value in the environment temperature of-20~50℃.
- As its case is ergonomically designed ,it looks handsome ,feels good and is easy to carry.

Applications:

- Oxygen manufacturing workshop
- Petroleum refining and petrochemical plants
- Oxygen content detecting in trains and automobiles
- Oxygen content detecting in minerals
- Oxygen content detecting during mountain climbing and in sealed place
- Other industries and plants using oxygen.

3 X AA 1.5V battery

5.How to operate it

a.Push the cover downwards to open it and put new 3 X 1.5V AA battery in.

b.Power on/off

Press the "⏻" to power on

c.Backlight On/Off

You can switch the backlight on or off by slightly touching the "☼"

d.How to set up the alarming grade for the meter

Switch the meter to the preset status of the grade **4** alarming-line by slightly touching the "MODE" button when the meter is in status of measurement SCAN and the "ALM" shows in the display ; touch the Position shift button and Figure Adjusting button (0-9) to set up the data of the grade **4** alarming-line (if you touch the "MODE" button now , you would give up setting up the grade **4** alarming-line enters into the measurement status); touch the "MODE" button to save the setup value for the grade **4** alarming-line and switch the meter to the status for setting up the grade **2** alarming-line and "ALM" shows in the display .

Touch the position Shift button and Figure Adjusting button (0~9) to set up the data of the grade **2** alarming-line (if you touch the "MODE" button now , you would give up setting up the grade **2** alarming-line enters into the measurement status); touch the "MODE"

button to save the setup value for the grade **2** alarming-line and switch the meter to the status of 21% calibration.

Touch the "MODE" button slightly to exit 21% calibration and the alarming line of the meter is set up. (The factory default setup value for the grade **4** alarming-line is 19.5% and 18% for the grade **2** alarming-line.)

e.**The 21% calibration for the meter (the oxygen content in clean air is about 21% VOL)**

Switch to the status of the grade **4** alarming-line by slightly touching the "MODE" button when the meter is in the status of "SCAN" then touch the "MODE" button to skip the status for setting up the grade **4** and grade **2** alarming-line and enter into the status of 21% calibration ; "021.0" shows and flickers in the display ; you must keep the meter in clean air for more than 1 minute and then touch the "MODE" to save the value of 21% calibration ; then the 21% calibration is finished. The meter will switch to the status of measurement "SACN" automatically.

f.**Meter alarming**

The meter alarming when the meter measurement value is less than the preset value .The buzzer alarming and the yellow indicator flickers when the meter measurement value is less than the value preset for the grade **4** alarming-line ; and the buzzer alarms and the red indicator flickers when the meter measurement value is less than the value preset for the grade **2** alarming-line.

6.**Attentions:**

1).This meter is a precise measurement apparatus. To avoid damaging the meter , keep it away from water and hot objects (more than 60).

2).If the meter will be measuring for a long time , please turn off the backlight to save power consumption and prolong the service life of the battery.

3).When "▥" is displayed , the battery is fully ; the small black frame in the battery sign reduces as the battery power volume reduces . When "▢" is shown the meter cannot work normally . Please promptly replace. First turn off the meter , then take out the unused battery and put new battery in.

4).The meter is automatically power off if no button is pressed in 10 minutes.

5).When the buzzer alarms , the measured value is less then the alarming-line you have set up ; so please take measures to protect people's lives and property.

6).If you are not going to use this meter for a long period of time , turn off the meter and take out the batteries to avoid damage due to the battery oozing liquid . If you take out the batteries when the meter is on , the data preset for the grade **4** and grade **2** alarming-line will be lost ; when the meter is powered on and enabled , the previous values preset for the grade **4** and grade **2** alarming will return . If you are going to save the values preset for the two grades of alarming lines , you must turn off the meter normally once.

7).When there is a big difference between the displayed value measured in the clean air by the meter and the 21% value , a 21% calibration is required for the meter.

7.Explanation of the display

Oxygen content (vol)	Explanation
21%	Oxygen content in the normal clear air environment
18%	The minimum value of Oxygen content as per the labor safety and hygiene standards
14%~18%	Person breathes quicker and deeper and limbs cannot be moved properly
10%~14%	Person may be tired and lose attention
6%~10%	Person may be dizzy, nauseas, lose consciousness and go into a coma
Less than 6%	Person may stop breathing and die

8. Pay special attention to

The Sensing tip is high precision parts, When in use must be careful to protect, Don't dirty broke. This component cannot repair, not in warranty scope.

IntelliSafe   CE   SGS   UKAS MANAGEMENT SYSTEMS 005