SENSIT®P100

PERSONAL GAS MONITOR
INSTRUCTION MANUAL

For use with Oxygen (O2), Carbon Monoxide (CO),
Hydrogen Sulfide (H2S), Hydrogen Cyanide (HCN),
Chlorine (Cl2), Nitrous Oxide (NO),
Nitrogen Dioxide (NO2), Sulfur Dioxide (SO2)

Read and understand
instructions before use.

⚠ **Warning:** To prevent ignition of flammable or combustible atmospheres, disconnect power before servicing.
⚠ **Warning:** To reduce the risk of ignition of a flammable atmosphere, batteries must only be changed in an area known to be nonflammable.
⚠ **Avertissement:** Pour réduire le risque d'allumage d'une atmosphere inflammable, des batteries doivent seulement étre changées dans un secteur connu pour étre inflammables.

For more information contact
SENSIT TECHNOLOGIES

CE 0891 Ⓔ II 1G
Ex ia IIC T4
AEx ia IIC T4
IP65
ATEX Cert. No.: TRAC 09 ATEX 11195X
EMC Directive (2004/108/EC)
EN 61000-4-2:1995, EN 61000-4-3:2002, EN 55011:2007

MET	complies with **UL 913**
LISTING NO: E112902	CSA 22.2 NO. 157

Class 1, Groups A, B, C & D
Exia, Temp code: T4

SAFETY INFORMATION
⚠**1. IMPORTANT:** Read and understand this manual prior to use.

⚠**2. IMPORTANT:** Oxygen instruments will show high readings for up to 30 minutes if taken from warm air to cold temperatures and vice-versa. For best results let them "soak" in the ambient conditions prior to use.

⚠**3. WARNING:** Substitution of components may impair intrinsic safety.

⚠**4. WARNING:** This instrument contains a lithium battery which may leak or explode if improperly used.
DO NOT DISPOSE OF IN A FIRE.

⚠**5. WARNING:** Only service in an area known to be free of combustible gases.

⚠**6. WARNING:** Instruments are not certified intrinsically safe in environments above 21% oxygen.

⚠**7. WARNING:** To verify operation prior to each day's use a function test (bump test) should be performed. If the instrument does not pass this test, full calibration should be performed.

⚠**8. WARNING:** Keep all openings free from dirt, debris and foreign objects.

⚠**9. WARNING:** Do not use a damaged or improperly operating instrument. Contact a service representative immediately.

ONLY zero instrument in a gas free environment.
SEULEMENT l'instrument zéro dans un gas libèrent l'environnnement.

WARNING: To maintain intrinsic safety, service must be performed by factory authorized technicians with approved replacement parts only.
AVERTISSEMENT: Pour maintenir la sûreté intrinsèque, service doit être exécuté par les techniciens autorisés par usine avec les pièces de rechange approuvées seulement.

ACCESSORIES

STANDARD ACCESSORIES
Instruction Manual
Belt Clip

OPTIONAL ACCESSORIES
Bump Test Bottles
Calibration Kits
Balloon T Assembly for Bump Test
Regulators
Computer Interface Connector
Instrument Download Kit

GENERAL DESCRIPTION
The **SENSIT P100** is an exceptionally rugged personal gas monitor. The P100 is available in single gas configurations only. Preset alarms provide visual, audible and vibration alerts for low and high alarm conditions. Built-in "Time Weighted Average" (TWA) and "Short Term Exposure Limit" (STEL) alarms provide even greater margin of safety for the user. A custom display provides the user with easy to view information including gas concentration, time remaining in months to sensor replacement, battery low alert and activation of calibration process.

Fig. 1 - Custom Display

PHYSICAL SPECIFICATIONS

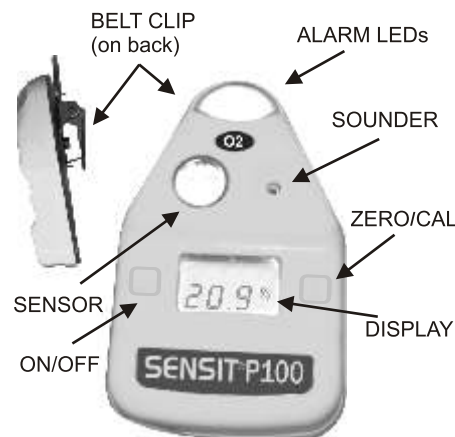|	
Temp:	–4° to 104° F (-20° to 40° C)
Humidity:	15-90% RH (Non-condensing)
Duty Cycle:	Continuous
Response Time:	T90 < 60 seconds

Alarms:	Sound:	90 Db @ 12" (30cm)
	Sight:	Display alerts
		270° viewable LEDs
	Touch:	Vibration

Power Source	3.6V lithium battery

Size:	3.81" x 2.31" x 0.8" (9.67 x 5.87 x 2 cm)
Weight:	3.60oz (105 g)
Battery Life:	2+ years
Sensors:	Electrochemical
Construction:	Environmental reisistance IP65
	Impact resistant rubberized housing
	Durable belt clip

PRODUCT FEATURES
The SENSIT P100 is constructed of durable high impact ABS plastic. The top housing is additionally protected with a shock absorbing material to protect the instrument from the rigors of field use. The front of the instrument has an opening for the sensor and sounder. These are sealed to maintain the integrity of the IP65 rating. Two buttons operate the instrument. The left button is for power while the right is for zeroing and performing calibration. Multiple LED's beneath the frosted area create a very bright warning even in bright sunlight. The instrument is mounted using a sturdy suspender clip on the back of the instrument. This instrument cannot be powered off or zeroed when in alarm mode. All sensors and batteries are designed for 2 years of continuous normal use. The on-board memory will store up to 100 events or alarm conditions. These can be downloaded through a specialized connection and a computer interface. Oldest events are over-written automatically when the maximum is reached.

FUNCTION INDICATORS
Calibration
Battery Low
Operation Time Remaining (months)

• High/Low Alarm Set Points:
  Factory preset to OSHA requirements
• TWA/STEL Alarms: Preset to OSHA limits
• Other alarm settings available
• Datalogging: Up to 100 alarm events

SENSORS	O2	CO	H2S	HCN
Detection Range	0.25%	0-999	0-100	0-30
Resolution	0.1%	1ppm	1ppm	0.1ppm

SENSORS	Cl2	NO	NO2	SO2
Detection Range	0-20	0-250	0-20	0-20
Resolution	0.1ppm	1ppm	0.1ppm	0.1ppm

SENSIT Technologies
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SENSIT® P100
PERSONAL GAS MONITOR

ALARMS

The SENSIT P100 has two basic styles of alarm.
Low Alarms activate at two second intervals while High Alarms activate at one second intervals.

The sound, LEDs and vibrating motor are sequenced during alarms.
The alarm settings are controlled during the set-up of the product. All instruments are preset for the standards that need to be adhered for various locations and needs. Fig. 2 shows examples of some of the alarm ranges.

Other alarm ranges are supplied upon request and appropriately marked with your shipment.

Fig. 2 - Examples of Alarm Ranges

SENSIT P100 O2 Alarm Ranges

	ALARM#	LOW	HI	TWA	STEL
DEFAULT	0	19.5	23.5	NA	NA
US & EU1	1	19.5	23.5	NA	NA
EU2	2	19.0	23.0	NA	NA

SENSIT P100 CO Alarm Ranges

	ALARM#	LOW	HI	TWA	STEL
DEFAULT	0	50	200	50	75
US	1	50	200	50	75
EUROPE STANDARD	2	30	60	30	60
EU FIRE	3	25	100	25	100
EU STEEL	4	75	200	75	200

SENSIT P100 H2S Alarm Ranges

	ALARM#	LOW	HI	TWA	STEL
DEFAULT	0	10	25	5	15
US	1	10	25	5	15
EUROPE 1	2	5	10	5	10
EUROPE 2	3	10	15	10	15
EUROPE 3	4	10	20	10	20

FUNCTION (BUMP) TEST

Turn the instrument on and wait for the working display to illuminate. Apply an approved concentration of gas to the sensor area using the P100 calibration adapter. The flow should be 200-400 cc/min. The alarm should occur in less than 20 seconds.

To verify the operation of this product this test should be done prior to each day's use. Failure to pass this test may indicate a product failure or the need for calibration.

CALIBRATION

Turn on the SENSIT P100 until the working display is illuminated. Wait for 2 minutes prior to beginning the calibration process.

1. Prepare the approved gas cylinder and regulator with the calibration adapter attached. The flow should be 200-400 cc/min.

2. Push and hold the Zero button until the display reads "GAS".

3. Attach the P100 calibration adapter.

4. Start the gas flow.

5. Push and release the Zero button. "GAS" and a changing number will flash as will the CAL icon.

6. Successful calibration is indicated when only the gas concentration is displayed. The CAL icon will no longer be illuminated.

7. Bad calibration will be indicated by the word "BAD" on the display. Press the power button to acknowledge. (Retry calibration)

8. Successful calibration will be logged as an event in the event log.

OPERATION and USE

Press the ON button to start the instrument in an area known to be gas free and with normal oxygen content. The following will display as a normal start up sequence:

1. Activate all segments and icons
2. Gas type to be sensed
3. Software version
4. Temperature in °C
5. Months of operational life remaining
6. "tSt" and a number (1-9) indicating alarm point set-up
7. Alarms will sound, illuminate and vibrate
8. Low alarm value displays
9. High alarm value displays
10. All segments will flash for 6 seconds indicating zeroing
11. Working display is shown

If the instrument is in an area that is not gas free, "BAD" will illuminate after the automatic zeroing followed by a reading based on factory zero set points.

Attach the instrument to the outermost garment as close to your head/face as practical. Follow federal, state, local and company regulations as it relates to the use of this product.

OPERATION and USE continued

Alarms will indicate unsafe levels. The display will show concentration data in combination with audible, visual and vibration indications. TWA alarms can be acknowledged for 10 minute intervals by pressing any button.

A manual fresh air zeroing can be done at anytime. Press the ZERO button for 2-3 seconds and release. All segments of the display will flash followed by the working display.

Exposure to gas in excess of sensors range specifications will result in "OL" being displayed with the high alarm activated.

BAT indicates low battery output and service will be needed soon. Only factory trained personnel should perform any internal servicing.

BAT + LO indicates instrument should be immediately taken out of service for battery replacement. Only factory trained personnel should perform any internal servicing.

MO indicates months/days remaining of operation time before battery and sensor servicing are required. Only factory trained personnel should perform any internal servicing.

I2C indicates a communication error in the EEPROM. Service is required. Only factory trained personnel should perform any internal servicing.

To turn off, hold the POWER button down for 6 seconds until "OFF" is displayed and release the button.

WARRANTY and REPAIR POLICY

Your SENSIT P100 is warranted to be free from defects in materials and workmanship for a period of 2 years after purchase (excluding calibration). If within the warranty period, your instrument should become inoperative from such defects, the unit will be repaired or replaced at our option. This warranty covers normal use and does not cover damage which occurs in shipment or failure which results from alteration, tampering, accident, misuse, abuse, neglect or improper maintenance. Proof of purchase may be required before warranty is rendered. Units out of warranty will be repaired for a service charge. Internal repair of maintenance must be completed by a SENSIT TECHNOLOGIES authorized technician. Violation will void warranty. Units must be returned postpaid, insured and to the attention of the Service Dept. for warranty or repair.

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