INSTRUCTION MANUAL

SENSIT® GOLD

Gas Detection Instrument

For use with combustible gases and optionally available oxygen and toxic gases.

Read and understand instructions before use.

CLASSIFIED

(UL)

7WA6

Approved UL913, For Class 1, Division I, Groups C & D hazardous locations when used with approved batteries.

Warning: To prevent ignition of flammable or combustible atmospheres, disconnect power before servicing.

FOR YOUR SAFETY

NOTICE: ⚠️ **CAUTION: This safety symbol is used to indicate a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.**

⚠️ **NOTICE:** LEL sensor should be checked for accuracy after exposure to any gases containing silicones, high sulfur content, high concentrations of propane and high concentrations of CO (above 1000ppm) or exhaust gases. Continuously low calibration check results or fluctuation of zero readings may indicate sensor end of life or failure. Consult Sensit Technologies with any questions.

For best accuracy always zero in clean air environments similar in temperature and relative humidity to the environment where the instrument will be used. When continuously exposed to combustible gas concentrations beyond LEL for longer than 5 minutes always perform a calibration check prior to the next use.

⚠️ **Warning:** To reduce the risk of ignition of a flammable atmosphere, batteries must only be changed in an area known to be nonflammable.

Do not mix batteries of different age or type.

Not for use in atmospheres of oxygen greater than 21%.

ONLY zero instrument in a gas free environment.

⚠️ **Warning:** To maintain intrinsic safety, service must be performed by factory authorized technicians with approved replacement parts only.

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PARTS AND ACCESSORIES

Standard Accessories (Included)

872-00001	Hard Carrying Case
360-00040	Wrist Strap
870-00018	Extra Sensor Cap with O-Rings
750-00033	Instruction Manual
310-00004	3"C" Alkaline Batteries

Accessories and Replacement Parts

870-00018	Sensor Cap with O-Rings
870-00012	Extension Adapter
883-00023	Hot Air Probe Assembly
883-00015	Confined Space Probe with Tubing
870-00004	IR Printer
870-00039	IR Link Interface w/ SmartLink Software
914-00000-01	Smart-Cal Automatic Calibration Station

Calibration Kits

Contact us with instrument model number for correct Calibration Kit.

GENERAL DESCRIPTION

The **SENSIT® GOLD** is designed to detect combustible gases, oxygen content and toxic gases when so equipped with the available sensors. Each model of the **SENSIT® GOLD** provides specific detection features based on available sensor options. Each **SENSIT® GOLD** can be re-configured or upgraded by the manufacturer for an additional charge should your sensing requirements change. Consult Sensit Technologies for a listing of new sensors available for use with the **SENSIT® GOLD**.

All **SENSIT® GOLD** instruments incorporate an advanced low power semiconductor sensor to measure combustible gases in LEL (Lower Explosive Limit) range. The reading is displayed in the percentage of the lower explosive limit or, if so ordered, in parts-per-million from 0 to 2,000ppm. An automatically backlit display shows all gas concentrations being measured. LEDs located on the front of the instrument indicate preset visual warnings of increased gas concentration. All gases are continuously sampled with the use of an internal pump.

Audible and visual alarms warn the operator of hazardous conditions being sensed. The preset alarms are indicated by a red flashing LED, display indicator and alarm sound. The combustible gas alarm is preset at 10% LEL methane.

The carbon monoxide (CO) alarm is factory preset at 50ppm. The oxygen (O2) alarm is preset at 19.5% and above 22.5%. The hydrogen sulfide (H2S) alarm is preset at 10ppm.

SPECIFICATIONS

SENSOR SPECIFICATIONS

TYPE	RESOLUTION	RANGE	ACCURACY
LEL	0.1%** up to 2%	0-100% LEL	±10%
PPM	1ppm or 10ppm	0-2,000ppm	±10%
O_2	0.1%.	0-25%	±0.2% or 10%**
CO	1ppm	0-2000ppm	±5ppm or 5%**
H_2S	1ppm	0-100ppm	±2ppm or 5%**

** Whichever is greater

PRODUCT SPECIFICATIONS

Size:	11.5" x 3" x 2.32" (292 x 76 x 59 mm)
Weight:	1.2 lbs. (544 g)
Operational Temp:	0 to 120° F (-17.8 to 48.8° C)
Storage Temp:	-20° to 132° F (-28.9 to 55.6° C)
Battery Life:	Alkaline: 12 hrs. continuous

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The **SENSIT® GOLD** instrument is approved by Underwriters Laboratories to UL913, for Class I, Division 1, Groups C & D hazardous locations when used with approved batteries.

APPROVED BATTERIES: Duracell MN 1400BK or equivalent alkalines. Panasonic HHR300CH or equivalent NiMH (Nickel Metal Hydrides).

PRODUCT FEATURES

LUER PROBE CONNECTOR

WATER / DIRT FILTER

LEL / PPM SENSOR

INFRARED COMMUNICATIONS

BACKLIT LCD DISPLAY

ALARM LEDs

OPERATION BUTTONS

TICK ADJUST

FLEXIBLE GOOSENECK

BATTERY COMPARTMENT

PRODUCT FEATURES

SENSIT® GOLD instruments are constructed of durable ABS plastic to withstand the rigors of field use.

Incorporated in the hand grip area is the battery compartment. All **SENSIT® GOLD** instruments require 3 "C" type alkaline batteries. APPROVED BATTERIES: Duracell MN 1400BK or equivalent alkalines. Panasonic HHR300CH or equivalent NiMH (Nickel Metal Hydrides). Batteries provide approximately 12 hours of use.

A tick adjust knob is located on the right side of the instrument that activates the audible tick sound that helps in locating the source of a gas leak. This tick is generated by using specialized circuitry in combination with the LEL sensor located at the end of the gooseneck assembly.

The tick can be easily heard with the speaker located in the back of the instrument.

An infrared communication window is located on the right side to allow the **SENSIT® GOLD** instrument to download calibration data, readings the operator has elected to save to the on board memory, as well as communicate with the Smart-Cal Calibration Station and PCI-2s computer interface.

PRODUCT FEATURES

A **flexible gooseneck** is used to assist in locating the source of gas leaks and for remote sampling. A water/dirt trap is located at the end with a convenient luer style connector to attach sampling and probe accessories.

A **two line display** continuously updates the operator of all available gas concentrations and alarms simultaneously as well as indicates internal functions such as air flow and battery power.

Below the display is a series of LEDs that are preset to indicate combustible gas concentrations. The red LED on the right side will flash during any alarm condition.

There are 3 operational button pads on the front of all Sensit®Gold instruments.

BUTTON (A) POWER/MUTE
Operates POWER and MUTE features and exit menu items.

BUTTON (B) MENU
Use to enter, change and select menu items.

BUTTON (C) SAVE/ZERO
Use for save data feature, manually zero sensors, scroll and change menu items.

SENSOR TYPES AND PUMPS

Combustible Gas Sensor
All **SENSIT® GOLD** instruments incorporate a highly sensitive and uniquely designed semiconductor sensor. The function and accuracy of the sensor are monitored and controlled by specialized circuitry and a microprocessor. This sensor is capable of measuring concentrations as low as 1ppm methane up to 100% LEL.

Electrochemical Sensors (optional)
All **SENSIT® GOLD** instruments when equipped with the following optional sensors, microprocessor and associated circuitry will measure oxygen levels from 0-25%; measure carbon monoxide (CO) levels from 0-2000ppm and measure hydrogen sulfide (H2S) levels from 0-100ppm. All gases are displayed simultaneously on the display.

The Pump
The **SENSIT® GOLD** instruments are equipped with a powerful and efficient rotary vane pump. A water/dirt filter is incorporated as part of the sensor cap, located at the end of the gooseneck. This is the primary filter helping to protect the sensor and instrument. There is also an internal and secondary filter which helps to block ingestion of foreign material.

There are audible and visual indicators that will show a blocked or poor flowrate.

NOTE: Operating the instrument without a sensor cap or with an altered sensor cap can cause damage to the instrument and void the warranty.

BATTERY INSTALLATION/REPLACEMENT

Battery replacement is necessary when the display reads **BAT LOW**, an audible alarm sounds and the green ready LED flashes. When the instrument remains in BAT LOW, a count down will appear starting at 300 seconds (5 minutes) which is the maximum time remaining before shut down.

⚠ **CAUTION: Always change batteries in an environment free of combustible gases.**

Remove the battery sleeve cover by depressing the locking tab on the front of the handle with a coin or flat object and pulling the handle away from the top or display area of the instrument.

NOTE: Observe the polarity markings on the inside of the battery holder. Improper battery installation will disable the instrument.

Place three (3) approved batteries into the battery holder. For best results hold the battery compartment so that it lays in one of your hands. With your other hand install the battery that goes toward the front contact spring connector (top) first. The battery that is in contact with the rear spring connector second. Finally insert the third battery in the center position by moving the first and second so that it compresses the spring contacts and allows the battery to go into place. If you do not use one of your hands to hold the bottom of the battery compartment the batteries may come out.

Replace the battery sleeve and allow the locking tab to snap into position. Check to be sure the handle is secure to the instrument body by gently pulling the handle away. The handle will remain firmly in place if a proper connection is made.

OPERATION AND USE

⚠ **CAUTION:** **Always start any SENSIT® GOLD in a gas free environment to insure a proper zero.**

1. Push the POWER/MUTE BUTTON (A). The following start-up sequence will be displayed.
   a. Product name and model version number
   b. System check for proper pump flow and battery strength
   c. Date and time
   d. Gas type
   e. Serial number
   f. Warm-up period. Minimum 30 sec., maximum 5 min.
   g. Autozero of sensors
   h. Work display

2. If the display fails to illuminate or BAT LOW is shown on the display, replace the batteries. There is room in the carrying case to keep an extra set.

3. If any sensor is past the intended calibration cycle, CAL DUE will appear during the start-up sequence. The instrument will also show which sensor is due for calibration at that time.

4. If after the warm-up period, the instrument determines that a sensor is inoperable, an ERROR message will flash for that sensor. Then FAIL will show on the display for the corresponding sensor.

OPERATION AND USE

5. The display will indicate LEL readings by showing an "L" next to the % symbol. Standard resolution is 0.1% LEL, the equivalent of 50ppm methane. As an option, the instrument is capable of displaying a range of 0.1% LEL up to increments as high as every 2% LEL. An alternative option is to request a PPM display. Resolution for this option is 1ppm or every 10ppm. An X on the display indicates that the instrument is not outfitted with that sensor.

6. Prior to use, test the integrity of the sensor cap and tubing. Use your finger to block the inlet of the sensor cap for 4-5 seconds. The display will read FLOW BLOCKED if all seals are intact. If this does not occur, change the sensor cap and "O" rings. A spare sensor cap and "O" rings are supplied with each instrument. During pump flow block, a beep will occur every 2 seconds until the pump restarts and adequate flow is present.

7. It may be necessary to manually zero the instrument based on company practices and environmental conditions. Always zero the instrument in a clean air environment.

8. When testing areas with elevated temperatures such as appliance vents or flues, always attach the optional hot air probe to the end of the sensor cap. These connections need only be finger tight. Failure to use the approved probe can result in damage to the instrument and may void the warranty.

⚠ **CAUTION: Do not handle the steel portion of any hot air probe after use as burns may occur!**

OPERATION AND USE

9. When sampling high areas or overhead lines the use of the optional extension adapter will allow a broom handle or painters stick to extend the instrument to the area where sensing must be accomplished. This adapter slides onto the battery sleeve and is held in place by the locking nut assembly.

10. When sampling areas the appropriate sensors will cause the display to update when a gas is encountered. Additionally, if a combustible gas is encountered a series of LEDs on the front of the instrument will illuminate when the preset concentrations are reached. If any alarm condition exists for any sensor, based on their preset alarm points, the red (HAZARD 3) LED will flash and the alarm will sound unless it is muted.

Additionally, the reading for the gas exceeding the alarm set point will also flash. The standard factory preset LED indicators and alarm points are:

a. Combustible gas: Methane, audio and visual alarm indicators
from 10% LEL to 100% LEL.
   i. Green LED/Ready = 0% - 4.9%LEL Methane
   ii. Amber LED/Low = 5% - 9.9%LEL Methane
   iii. Red LED/Haz1 & Red Flashing LED/Haz 3 = 10.0% - 24.9% LEL Methane
   iv. Red LED/Haz2 & Red Flashing LED/Haz 3 = 25.0% - 49.9% LEL Methane
   v. Red LED/Haz3 = 10% LEL Methane or greater
b. Oxygen - Below 19.5% and above 22.5%
c. Carbon Monoxide - 50ppm per utility industry standards
d. Hydrogen Sulfide - 10ppm and above per Federal OSHA guidelines

⚠ **CAUTION:** There are gases that can poison or be cross sensitive to the combustible gas sensor. Information regarding this can be found in the "LEL Cross Sensitivity Calculation Chart" in this manual.

OPERATION AND USE

11. To disable the alarm, quickly press and release the POWER/MUTE BUTTON (A). To enable the alarm press the same button again. During an alarm the gas that has exceeded the preset alarm point will flash on the display and the HAZARD 3 LED will flash indicating a potentially unsafe condition. When combustible gas readings exceed the alarm range, all LEDs (except green and red HAZ3) will turn off.

12. To assist in locating the source of small combustible gas leaks or surveying areas outdoors or indoors, rotate the thumbwheel located on the right side of the instrument until a steady ticking sound is heard. NOTE: There is no warm-up for this feature as it uses the LEL sensor that is already operating. Move the sensor head toward the area suspected of leakage.

As the sensor head moves closer to a leak source the tick will increase. When the tick becomes a steady tone rotate the thumbwheel in a clockwise direction while keeping the sensor head in the same position. This will slow down the tick and allow the operator to find a higher concentration using the same procedure.

If the tick goes away you have moved away from the leak or there is no more gas present. The leakage rate may be less than the rate that the pump is drawing the sample. For best results always use the leak detector prior to using any liquid leak detection fluids as these sensors will detect their presence.

OPERATION AND USE

13. At any time the operator may save the readings on the display by pressing and releasing the ZERO/SAVE (C) button. This will save all readings for download at a later time. The memory is factory set to store 6 events. This can be adjusted from 1-15 at the factory. The most recent save is first during download. An optional Auto log software of extended memory can store up to 1,600 records. (Consult factory for details.)

14. Following Federal, State, Municipal and/or Company procedures move to the areas where gas readings are suspected or must be tested. Use necessary accessories to draw samples from areas not accessible with the instrument itself, such as confined spaces or flues.

During sampling, the respective readings may change. Audible and visual alarms will activate when the preset limits are reached.

15. When being used in dark areas an automatic backlight will illuminate the display.

16. To turn instrument off, press/hold the POWER/MUTE BUTTON (A) until the beeping sound stops, about 5-6 seconds. Release the button and power down will occur.

CALIBRATION CHECK

To verify the accuracy of any **SENSIT® GOLD**, it must be exposed to a known concentration of test gas that will test any sensor combination included in your particular model.

Any sensor that does not meet the specifications listed in this manual may require calibration or repair. A calibration check does not update the calibration due date. Full calibration is required to update these times.

A calibration past due message will illuminate during warm-up if calibration has not been performed per your company specified interval. Any time it is suspected that the **SENSIT® GOLD** is not working properly, check calibration.

USER MENU

The **SENSIT® GOLD** has several categories within the User Menu. The first nine fields are standard with all instruments. The last three are only available in certain instrument models when ordered with the Extended Memory option.

PRINT MENU: Print Session Logs, Cal Log, access Smart-Cal communication, (print CO test or print CF test is optional with some extended memory units).

CALIBRATION: Calibrate all sensors, access Smart-Cal communication.

POWER OFF: Set the automatic shut off timer in minutes. (User adjustable)

SET CLOCK: Set date and time. Displayed using a 24 hour clock. (User adjustable)

SHOW CAL LOG: Display last calibration of all sensors.

SHOW SES LOG: Display saved gas readings with the corresponding date and time.

BUMP TEST: Perform automatic test for sensors response to calibration gas within 60 seconds or less.

O2 TEST: 20 second test to check depletion of the O2 sensor when exposed to the proper gas, such as 100% methane.

SMART-CAL: Access Smart-Cal communication.

USER MENU

NOTE: These additional fields found on certain models ordered with the Extended Memory option.

AUTOLOG: Automatic storage of peak gas readings of up to 1,600 events.

SHOW CO TEST: Display CO levels recorded during timed test.

SHOW CF TEST: Display calculated AIR FREE CO levels recorded during timed test.

USER MENU OPERATION

PRINT MENU

From the working display access the menu by pressing and holding the MENU BUTTON (B) until the top line of the display reads USER MENU.

The bottom line will read PRINT MENU. Press & release the MENU BUTTON (B) once to enter the menu.

Prepare the optional IR printer. Aim the IR window (on the right side of the instrument) at the IR window on the printer.

Press & release the SAVE/ZERO BUTTON (C) to scroll to the item you want to print. Press & release the MENU BUTTON (B) to print that item.

To exit this menu, press & release the POWER/MUTE BUTTON (A) until the instrument returns to the working display.

USER MENU OPERATION

POWER OFF

From the working display access the menu by pressing and holding the MENU BUTTON (B) until the top line reads USER MENU and the bottom line will read PRINT MENU.

Press & release the SAVE/ZERO BUTTON (C) until the bottom line displays POWER OFF.

Press & release the MENU BUTTON (B) once to enter the menu.

Press & release the MENU BUTTON (B) to decrease the minutes until automatic shut-off or press & release the SAVE/ZERO BUTTON (C) to increase the minutes.

NOTE: Setting this number to "0" will set the instrument to run continuously for as long as the battery power will permit.

Press & release the POWER/MUTE BUTTON (A) to save the selection.

To exit this menu, press & release the POWER/MUTE BUTTON (A) once more.

USER MENU OPERATION

SET CLOCK

From the working display access the menu by pressing and holding the MENU BUTTON (B) until the top line reads USER MENU and the bottom reads PRINT MENU.

Press & release the SAVE/ZERO BUTTON (C) until the bottom line displays SET CLOCK. Press & release the MENU BUTTON (B) once to enter the menu.

The day will be the section flashing on the display. To adjust this section, press & release the MENU BUTTON (B). Press & release the SAVE/ZERO BUTTON (C) to advance to the next section (month, year or time).

Press & release the POWER/MUTE BUTTON (A) to save the selection. To exit this menu, press & release the POWER MUTE BUTTON (A).

USER MENU OPERATION

SHOW A CALIBRATION LOG

From the working display press & hold the MENU BUTTON (B) until the top line reads USER MENU, the bottom line reads PRINT MENU.

Press & release the SAVE/ZERO BUTTON (C) to scroll until the bottom line reads SHOW CAL LOG. Press & release the MENU BUTTON (B) once to enter the menu.

Calibration data will be displayed. The sensor which was calibrated will appear on the top line and the date of the last successful calibration will appear on the bottom line.

Press & release the SAVE/ZERO BUTTON (C) to scroll to view the next available sensor calibration data. After viewing the calibration data for the last sensor, the next scroll will return the display to the USER MENU. To exit this menu, press & release the POWER/MUTE BUTTON (A).

PRINT A CALIBRATION LOG

From the working display, press & hold the MENU BUTTON (B) until the top line reads USER MENU, the bottom line reads PRINT MENU. Press & release the MENU BUTTON (B) once to enter the menu. Press & release the SAVE/ZERO BUTTON (C) to scroll until the bottom line reads CAL LOG.

Prepare the optional IR printer. Aim the IR window on the right side of the instrument at the IR printer. Press & release the MENU BUTTON (B) to print the log. To exit this menu, press & release the POWER/MUTE BUTTON (A) to return to working display.

USER MENU OPERATION

SHOW A SESSION LOG

From the working display, press & hold the MENU BUTTON (B) until the top line reads USER MENU and the bottom line reads PRINT MENU.

Press & release the SAVE/ZERO BUTTON (C) to scroll until the bottom line reads SHOW SES LOG. Press & release the MENU BUTTON (B) once to enter the menu.

SESSION 1 will be displayed. This is the most recent data saved. Press & release the SAVE/ZERO BUTTON (C) to scroll to the session number you want to view.

Press & release the MENU BUTTON (B) once to enter that session's recorded day, month and time. Press & release the MENU BUTTON (B) once again to access the gas readings for that session.

Press & release the SAVE/ZERO BUTTON (C) to scroll to view the individual gas readings saved. Press & release the POWER/MUTE BUTTON (A) once to access a different session number.

Press & release the SAVE/ZERO BUTTON (C) to scroll to a new session number.

The standard number of available stored sessions is factory set at 6 but is factory adjustable up to 100. To exit this menu, press & release the POWER/MUTE BUTTON (A) to return to the working display.

USER MENU OPERATION

PRINT A SESSION LOG

From the working display, press & hold the MENU BUTTON (B) until the top line reads USER MENU and the bottom line reads PRINT MENU.

Press & release the MENU BUTTON (B) once to enter this menu, SESSION LOG will be displayed.

Prepare the optional IR printer. Aim the IR window, on the right side of the instrument, at the IR printer. Press & release the MENU BUTTON (B) to print the log.

Press & release the POWER/MUTE BUTTON (A) to return to the working display.

TESTS AND CALIBRATION

BUMP TEST

From the working display, press & hold the MENU BUTTON (B) until the top line reads USER MENU and bottom line reads PRINT MENU. Press & release the SAVE/ZERO BUTTON (C) to scroll until the bottom line reads BUMP TEST.

Prepare the appropriate certified gas mixture for your instrument model (see proper gas mixtures listed in the Calibration section).

Apply the gas to the instrument and press & release the MENU BUTTON (B) to start the BUMP TEST. The display will show the gas value being tested on the top line with registered gas value and a 45-60 second countdown on the bottom line. The instrument will automatically check the LEL sensor and also the CO and H2S sensors, if they are installed.

If each sensor tested reads at least 80% of the value of the gas, within the time period required, the display will flash BUMP TEST PASS before returning to the USER MENU automatically. Press & release the POWER/MUTE BUTTON (A) to exit and return to the work display.

If any sensor fails, the display will show BUMP TEST FAILED. This means that calibration is required. If calibration is unsuccessful, remove the instrument from service.

Consult the factory in the event of any failure. To exit this menu, press & release the POWER/MUTE BUTTON (A) to return to the working display.

TESTS AND CALIBRATION

O2 TEST

From the working display press/hold the MENU BUTTON (B) until the top line reads USER MENU and the bottom line reads PRINT MENU. Press & release the SAVE/ZERO BUTTON (C) to scroll until the bottom line reads O2 TEST.

Apply recommended gas mixture void of oxygen, such as 100% Methane or 100% Nitrogen and press & release the MENU BUTTON (B) to start the test. A 20 second countdown will begin.

If the sensor shows proper depletion within this period, PASSED will flash on the display. Press & release the POWER/MUTE BUTTON (A) to return to the working display.

If the O2 sensor does not respond properly within the 20 second test, FAILED will appear on the display. Remove the instrument from service. Consult the factory in the event of any failure.

Press & release the POWER/MUTE BUTTON (A) to return to the working display.

TESTS AND CALIBRATION

SMART-CAL

From the working display, press & hold the MENU BUTTON (B) until the top line reads USER MENU and the bottom line reads PRINT MENU. Press & release the SAVE/ZERO BUTTON (C) to scroll until the bottom line reads SMART CAL.

Place the instrument into the cradle on the left side of the Smart-Cal Calibration Station. Attach the tubing from the station to the instrument. Press & release the MENU BUTTON (B), the display will show SMART CAL communicating.

Press & release the CALIBRATE button on the Smart -Cal and calibration will begin automatically. If successful, CALIBRATION PASSED will show on display.

If unsuccessful, CALIBRATION FAILED will show. Let the instrument clear and repeat the calibration process. If the instrument will not pass, remove the instrument from service. Consult the factory in the event of any failure.

Alternative methods to enter the Smart-Cal menu are:

1. Enter the USER MENU. Press & release the MENU BUTTON (B) once to enter the PRINT menu.

Press & release the SAVE/ZERO BUTTON (C), to scroll until the bottom line reads SMART-CAL. Press & release the MENU BUTTON (B) once to begin Smart-Cal communication.

2. From the working display, press & hold the POWER/MUTE BUTTON (A) for 2-3 seconds. The display will read SMART CAL communicating.

TESTS AND CALIBRATION

AUTOLOG

(Automatically included with every unit that has the optional CF Test feature)

With this feature the instrument will automatically save the peak readings of all sensors while the unit is operating in the working display. These peak readings are stored in Events with a maximum capacity of 1,600 events. They are stored accumulatively throughout day to day use until the maximum capacity is reached. Each use of the SAVE/ZERO BUTTON (C) to make a manual save will also record one event.

TO RETRIEVE AUTOLOG EVENTS:

Stored autolog events can be downloaded to a PC using the IR-Link computer interface with SmartLink software. Please contact the factory for more information on this accessory.

TESTS AND CALIBRATION

CO TEST

Only available as an option for instruments with CO and the extended memory feature.

TO CONDUCT A CO TEST:

From the work display, press/release MENU BUTTON (B) once, SELECT TEST will appear on the top line of the display. Press/release the MENU BUTTON (B) again to enter the CO test menu.

Press and release the MENU BUTTON (B) once more to start the test. NOTE: Using the SAVE/ZERO BUTTON (C) may advance you to another test option depending on the instrument version.

A 180 second timed test will begin. The time for this test is factory adjustable. A countdown timer will show the remaining seconds of the test. During this test period, the detected ppm CO level will be displayed on the left. Simultaneously, the peak ppm CO level detected will be displayed and recorded on the right.

The test number, date, time and detected peak ppm CO level will be automatically stored by the instrument for display or printout at a later date. Press/release the MENU BUTTON (B) to repeat the test. Press/release the POWER/MUTE BUTTON (A) to return to the work display.

TESTS AND CALIBRATION

TO SHOW A CO TEST:

From the work display, press/hold the MENU BUTTON (B) until the top line reads USER MENU, the bottom line reads PRINT MENU. Press/release the SAVE/ZERO BUTTON (C) to scroll until the bottom line reads SHOW CO TEST.

Press/release the MENU BUTTON (B) once. CO TEST 1 will appear. This represents the most recent CO test data stored.

Press/release the SAVE/ZERO BUTTON (C) to scroll to the test number you wish to view. Press/release the MENU BUTTON (B) to view the day, month and time of that test. Press/release the MENU BUTTON (B) again to view the data for that test. Data from previous tests can be viewed by scrolling with the SAVE/ZERO BUTTON (C). Press/release the POWER/MUTE BUTTON (A) to return to the work display.

TO PRINT A CO TEST:

From the work display, press/hold MENU BUTTON (B) until the top line reads USER MENU, the bottom line will read PRINT MENU. Press/release the MENU BUTTON (B) once. Press/release the SAVE/ZERO BUTTON (C) to scroll until the bottom line reads CO TEST.

Prepare the optional IR printer. The IR window is on the right side of the instrument. Aim the IR window at the printer.

Press/release the MENU BUTTON (B) to print the data. The printout will include the test number, number 1 being the most recent, the date and time of that test and the peak ppm CO level detected during that test. Press/release the POWER/MUTE BUTTON (A) to return to the work display.

TESTS AND CALIBRATION

CF TEST

Only available as an option for instruments with CO and O2 and the extended memory feature.

TO CONDUCT A CF TEST

IMPORTANT: Air free CO levels or CF readings are calculated by the instrument based on CO and O2 levels detected during flue gas sampling of gas fired appliances.

NOTE: The hot air flue probe must be used with the instrument when conducting this test to prevent damage to the instrument and to receive proper calculations.

From the work display, press/release MENU BUTTON (B) once, SELECT TEST will appear on the top line of the display. Press and release the MENU BUTTON (B) again and the instrument will auto-zero and then enter the CF test menu. Press and release the MENU BUTTON (B) once more to start the test.

NOTE: Using the SAVE/ZERO BUTTON (C) may advance you to another test option depending on the instrument version.

A 180 second timed test will begin. (The time for this test is factory adjustable.) A countdown timer will show the remaining seconds of the test. The peak CF reading will start to flash "OPK". It will continue to flash until 20 seconds after the oxygen level drops below 18.9%. At this point, conditions are acceptable for a valid test calculation.

TESTS AND CALIBRATION

TO CONDUCT A CF TEST (CONTINUED)

If this segment continues to flash during the test period, conditions for a proper test were not possible. In this case any test results are invalid. The display and printout will show N/A for the peak CF reading. The test should be repeated.

During the test period, the detected ppm CO level will be displayed on the top line. Simultaneously, the calculated ppm CF reading and the calculated peak ppm CF level will be displayed on the bottom line.

If the proper condition for an accurate test existed, the detected CO level, calculated CF level and the peak CF level will remain on the display at the end of the test.

The CF readings are automatically recorded by the instrument and can be viewed at a later date. In addition, the peak CF reading will be stored for a printout report.

Press & release the MENU BUTTON (B) to repeat the test. Press & release the POWER/MUTE BUTTON (A) to return to the work display.

TESTS AND CALIBRATION

TO SHOW A CF TEST

From the work display, press/hold MENU BUTTON (B) until the top line reads USER MENU, the bottom line will read PRINT MENU. Press & release the SAVE/ZERO BUTTON (C) to scroll until the bottom line reads SHOW CF TEST.

Press & release the MENU BUTTON (B) once. CF TEST 1 will appear. This represents the most recent CF test data stored.

Press & release the SAVE/ZERO BUTTON (C) to scroll to the test number you wish to view. Press & release the MENU BUTTON (B) to view the day, month and time of that test.

Press & release the C again to view the readings of that test. Invalid test data will show as "N/A" for the peak CF level. Data from previous test can be viewed by scrolling with the SAVE/ZERO BUTTON (C). Press & release the POWER/MUTE BUTTON (A) to return to the work display.

TESTS AND CALIBRATION

TO PRINT A CF TEST

From the work display, press & hold the MENU BUTTON (B) until the top line reads USER MENU, the bottom line will read PRINT MENU.

Press & release the MENU BUTTON (B) once to enter this menu. Press & release the SAVE/ZERO BUTTON (C) to scroll until the bottom line reads CF TEST.

Prepare the optional IR printer. The IR window is on the right side of the instrument. Aim the IR window at the printer. Press and release the MENU BUTTON (B) to print the CF test data.

Invalid test data will show as "N/A" for the peak CF level. Press & release the POWER/MUTE BUTTON (A) to return to the work display.

CALIBRATION

Calibration is the process of setting the readings of the sensors in the instrument to equal the value of certified calibration gases. Prior to calibration, allow the instrument to operate for 5 minutes in a clean air environment and conduct a manual zero of the instrument using the SAVE/ZERO (C) button.

NOTE: Using calibration kits other than recommended by SENSIT TECHNOLOGIES may cause inaccurate readings. Repairs are required if any sensor fails to calibrate. Consult SENSIT TECHNOLOGIES for details.

NOTE: When calibrating, the numbers shown on the display represent the numbers seen by the microprocessor and should not be confused with actual gas readings. These readings will update every 5 seconds during calibration.

MANUAL CALIBRATION

The following instructions pertain to manual calibration of the Sensit GOLD. If you are using the automatic Smart-Cal Calibration Station, the procedure is different. See the Smart-Cal sections of this manual or consult the Smart-Cal instruction manual.

CARBON MONOXIDE (CO) CALIBRATION (100PPM CO/AIR)

From the working display press & hold the MENU BUTTON (B) until the top line reads USER MENU.

Press & release the SAVE/ZERO BUTTON (C) once, the bottom line will read CALIBRATION.

Press & release the MENU BUTTON (B) once. The bottom line will read CO 100ppm. Apply 100ppm CO/Air calibration gas and press & release the MENU BUTTON (B) to start CO calibration.

When the reading is satisfactory, the display will flash DATA SAVED indicating that calibration is complete for that sensor. The date for CAL PAST DUE is automatically reset for that sensor as well.

Scroll with the SAVE/ZERO BUTTON (C) if you need to calibrate another sensor. When finished, remove and shut off the gas supply. Press & release the POWER/MUTE BUTTON (A) to return to the working display.

MANUAL CALIBRATION

HYDROGEN SULFIDE (H2S) CALIBRATION (H2S 25 PPM)

From the working display press & hold the MENU BUTTON (B) until the top line reads USER MENU. Press & release the SAVE/ZERO BUTTON (C) once, the bottom line will read CALIBRATION.

Press & release the MENU BUTTON (B) once, the bottom line will read CO/100 PPM. Press & release the SAVE/ZERO BUTTON (C) once, the bottom line will read H2S 25ppm. Apply 25ppm H2S/AIR to the instrument and press & release the MENU BUTTON (B) to start H2S calibration.

When the reading is satisfactory, the display will flash DATA SAVED indicating that calibration is complete for that sensor.

The date for CAL PAST DUE is automatically reset for that sensor as well.

Scroll with the SAVE/ZERO BUTTON (C) if you need to calibrate another sensor. When finished, remove and shut off the gas supply. Press & release the POWER/MUTE BUTTON (A) to return to the working display.

MANUAL CALIBRATION

COMBUSTIBLE GAS CALIBRATION (50% LEL METHANE)

From the working display press & hold the MENU BUTTON (B) until the top line reads USER MENU. Press & release the SAVE/ZERO BUTTON (C) once, the bottom line will read CALIBRATION.

Press & release the MENU BUTTON (B) once, the bottom line will read CO/100 ppm. Press & release the SAVE/ZERO BUTTON (C) twice, the bottom line will read 50% LEL NAT. Apply 50%LEL methane/air calibration gas and press & release the MENU BUTTON (B) to start 50% LEL calibration.

When readings stabilize, the display will read DATA SAVED indicating calibration is complete for that sensor. The date for CAL PAST DUE is automatically reset for that sensor as well.

Scroll with the SAVE/ZERO BUTTON (C) if you need to calibrate another sensor. When finished, remove and shut off the gas supply. Press & release the POWER/MUTE BUTTON (A) to return to the working display.

MANUAL CALIBRATION

OXYGEN SENSOR TEST

To determine if the O2 sensor is working properly, verify the sensors reaction by exposing it to a calibration gas void of oxygen, such as 100% methane or 100% nitrogen.

From the working display press & hold the MENU BUTTON (B) until the top line reads USER MENU. Scroll with SAVE/ZERO BUTTON (C) until the bottom line reads O2 TEST.

Apply proper gas and press & release the MENU BUTTON (B) to start the test. A 20 second countdown will begin. If the sensor shows proper depletion within this period, PASSED will flash on the display. Press & release the POWER/MUTE BUTTON (A) to return to the working display.

If the O2 sensor does not respond properly within the 20 second test, FAILED will appear on the display.

Consult the factory in the event of any failure. Press & release the POWER/MUTE BUTTON (A) to return to the working display.

NOTE: A calibration failure is indicated on the display by BAD CAL. Recalibration should be attempted. Any instrument that does not accept calibration should be taken out of service. Please contact SENSIT TECHNOLOGIES for any needed repairs.

SMART-CAL CALIBRATION

USING THE SMART-CAL CALIBRATION STATION

From the working display press & hold the MENU BUTTON (B) until the top line reads USER MENU. Scroll with SAVE/ZERO BUTTON (C) until the bottom line reads SMART CAL.

Place the instrument into the cradle on the left side of the Smart-Cal Calibration Station. Attach the tubing from the station to the instrument. Press & release the MENU BUTTON (B), the display will show SMART CAL communicating. Press & release the CALIBRATE Button on the Smart-Cal and calibration will begin automatically.

If successful, CALIBRATION PASSED will be displayed on the instrument. If unsuccessful, CALIBRATION FAILED will show. Let the instrument clear and repeat the calibration process. If the instrument will not pass, remove the instrument from service. Consult the factory in the event of any failure.

Alternative methods to enter the Smart Cal menu are:

1. Enter the USER MENU. Press & release the MENU BUTTON (B) once to enter the PRINT menu. Press & release the SAVE/ZERO BUTTON (C) to scroll until the bottom line reads SMART CAL. Press & release the MENU BUTTON (B) once to begin Smart Cal communication.

2. From the working display, Press & hold the POWER/MUTE BUTTON (A) for 2-3 seconds. The display will read SMART CAL communicating.

Please see the Smart-Cal Calibration Station instruction manual for additional information.

FACTORY ADJUSTABLE FEATURES

USING THE SMART-CAL CALIBRATION STATION

FEATURE	RANGE	DEFAULT
Session Saves	1-100	6
Purge Time	0-30 Seconds	0 Seconds
LEL Reading	0-100% by .1% up to 2% increments	%LEL (by 0.1%)
LEL or PPM	0-2000ppm by 1ppm or 10ppm	
Alarm - LEL	1.0%-99% (by 0.1%)	10%LEL
Alarm - O2 (low only)	19.5% - 22.5%	19.5% (OHSA)
Alarm - CO	5-300ppm	50ppm
Alarm - H2S	2-30ppm	10ppm
Cal Due interval	30, 45, 60, 90, 180, 360 Days	30 Days
Show Session Log*	1-100	6
Autolog		1,600 events

*Can be disabled

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WARRANTY

Your **SENSIT® GOLD** is warranted to be free from defects in materials and workmanship for a period of two years after purchase (excluding calibration and batteries). 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 or 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.

This warranty gives you specific legal rights and you may have other rights which vary from state to state.

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