INSTRUCTION MANUAL

Trak-It® IIIa GLT

Combustible Gas Indicator (CGI)

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

Read and understand instructions before use.

SENSIT Technologies
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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.

⚠ **Warning:** To prevent the risk of ignition of flammable atmospheres, batteries must only be changed in an area known to be non-hazardous.

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

Do not mix batteries of different age or type.

CAUTION: Lithium backup cell may explode if mistreated. Do not recharge, disassemble or dispose of in fire.

⚠ **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.

AVERTISSEMENT: Pour réduire le risque d'allumage d'une atmosphère inflammable, des batteries doivent seulement être changées dans un secteur connu pour être inflammables.

Do not mix batteries of different age or type.
Ne mélangez pas les batteries de l'âge ou du type différent.

Not for use in atmospheres of oxygen greater than 21%.
Pas pour l'usage en atmospheres de l'oxygène 21% plus grand que.

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

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PARTS AND ACCESSORIES

Standard Accessories (Included)

360-00059	Carrying Pouch
883-00044	32” Heavy Duty Fiberglass Probe w/Hose
310-00004	Alkaline “C” Batteries
750-00077	Instruction Manual
360-00043	Shoulder Strap
360-00525	Bluetooth Antenna

Accessories and Replacement Parts

873-00019	Hydrocarbon Filter (1)
873-00013	Mini Hydorcarbon Filter (1)
883-00045	Hot Air Probe Assembly
883-00039	30” Brass Probe
870-00018	Sensor Cap with “O” Rings
883-00038	Confined Space Probe with Tubing
883-00041	32” Fiberglass Probe
883-00047	Purge Probe
874-00001	Leak Survey Drag Tube Assembly
883-00046	Telescopic Survey Probe
360-00301	Filter Inlet
874-00003	Pigtail (use for calibration)
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 **TRAK-IT® IIIa GLT** is designed to be used in conjunction with a GLT tablet computer. The paired instrument-tablet system allows users to be trained in a hazardous gas free environment. The trainer monitors each instrument with a tablet computer running specialized software that allows real-time data to be streamed via Bluetooth from the instrument. The software and instrument supports two modes: monitoring and training. Monitoring mode only allows one way communication, from the instrument to the tablet. The trainer sees a real-time feed of exactly what the instrument is reading and displaying, including any supplemental information such as menus the user enters or error messages being displayed. In monitoring mode, the instrument behaves essentially identical to its standard issue counterpart, meaning that the sensors will detect live gas. Training mode allows the same real time display information, but does not allow the sensors to detect live gas. Instead, the trainer is able to send commands to the instrument for all basic functions and tests (i.e. gas readings, test modes such as tick and barhole, condition messages such as flow block and low battery, and more).

In monitor mode, the **TRAK-IT® IIIa GLT**is designed to detect combustible gases, oxygen content and toxic gases when so equipped with the available sensors. Each model of the **TRAK-IT® IIIa GLT** provides specific detection features based on approved sensor options. Each **TRAK-IT® IIIa GLT** can be re-configured or upgraded by the manufacturer for an additional charge should your sensing requirements change.

The **TRAK-IT® IIIa GLT** is designed to detect combustible gases in the LEL range (percent volume optionally). Additionally and optionally oxygen and two toxic sensors may be added to meet your sensing requirements. Toxic sensor configurations include carbon monoxide, hydrogen sulfide or hydrogen cyanide.

GENERAL DESCRIPTION

All **TRAK-IT® IIIa GLT** instruments incorporate a low power catalytic sensor to measure combustible gases in the LEL (lower explosive limit) range and a separate advanced thermal conductivity sensor to measure percent volume (%v/v).

An automatically backlit display shows gas concentrations for all sensors installed. A LED and audible horn indicate exceeding the present alarm limits. Sampling is continuous with the use of the internal sample 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% for LEL only models. When equipped with percent volume (%v) sensor, the alarm range is 50% (2.5% methane) to 17% volume of methane. The carbon monoxide (CO) alarm is preset at 35ppm. The oxygen (O2) alarms are preset at below 19.5% and above 23.5%. The hydrogen sulfide (H2S) alarm is preset at 10ppm. The hydrogen cyanide (HCN) is preset at 5 ppm.

SPECIFICATIONS

SENSOR SPECIFICATIONS

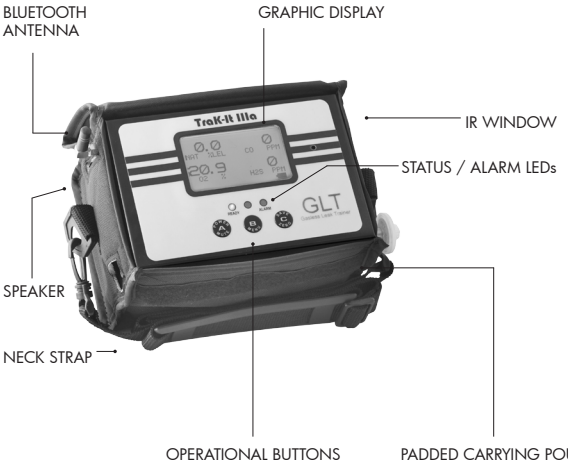
TYPE	RESOLUTION	RANGE	ACCURACY
PPM*	1 or 10ppm	0-2,000ppm	±10%
LEL	0.1%** up to 2%	0-100% LEL	±10%
% NAT GAS	0.1%.	5.0-100% GAS	±5%
O_2	0.1%.	0-25%	±0.2% or 2%***
CO	1ppm	0-2,000ppm	±5ppm or 5%***
H_2S	1ppm	0-100ppm	±2ppm or 5%***
HCN	1ppm	0-30ppm	±2ppm or 5%***

*PPM Optional
** % gas only display has 0.01% resolution in LEL range
*** Whichever is greater

PRODUCT SPECIFICATIONS

Size:	6.5” x 4” x 4.25” (167 x 109 x 102mm)
Weight:	2.8 lbs. (1.27Kg)
Operational Temp:	-4 to 104° F (-20° to 40° C)
Alarm:	≥98db @ 30cm
Battery Life:	4 “C” Alkaline: 25 hrs. continuous

PRODUCT FEATURES



TRAK-IT® IIIa GLT instruments are constructed of durable stainless steel to withstand the rigors of field use.

All **TRAK-IT® IIIa GLT** instruments require 4 Duracell MN 1400 batteries which provide 25+ hours of continuous use.

Alarms can easily be heard from the sounder located on the front of the instrument.

PRODUCT FEATURES

An infrared communication window is located on the right side to allow the **TRAK-IT® IIIa GLT** instruments to download calibration data and readings the operator has elected to save to the instrument's on-board memory.

A graphic 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. The red LED on the right side will flash during any alarm condition.

There are 3 operational button pads on the front of the **TRAK-IT® IIIa GLT**.

BUTTON (A) POWER/MUTE
Displaying power and mute features.

BUTTON (B) MENU
Accesses user functions such as Bar Hole Test and user selectable features: calibration viewing data, setting clock, etc.

BUTTON (C) ZERO/SAVE
Activates the save feature and performs a manual zeroing of the sensors.

Pressing any button will produce a click sound.

SENSOR TYPES AND PUMPS

Combustible Gas Sensor

All **TRAK-IT® IIIa GLT** instruments incorporate a poison resistant catalytic bead 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 of 50ppm up to 100%LEL. When so equipped concentrations above 70% LEL are monitored or measured simultaneously with a state-of -the-art thermal conductivity sensor (TC). This sensor is capable of measuring high concentrations of gas quickly and accurately. All readings are automatically switched between the scales of LEL and % volume.

Electrochemical Sensors (optional)

All **TRAK-IT® IIIa GLT** 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; measure hydrogen sulfide (H2S) levels from 0-100ppm; measure hydrogen cyanide (HCN) levels from 0-30ppm. All gases are displayed simultaneously on the display.

The Pump

The **TRAK-IT® IIIa GLT** is equipped with a powerful and efficient 2 speed diaphragm pump. The filter assembly connected to the probe protects the pump from foreign material. Additional external and internal filters protect the pump from damaging debris if the primary filter is missing or damaged. There are audible and visual indicators that will show a blocked or improperly operating pump.

BATTERY INSTALLATION/REPLACEMENT

A battery strength icon is located at the lower right corner of the display which indicates the approximate battery capacity. Battery replacement is necessary when the display reads **BAT LOW (4.25 Volts)**, 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.

⚠ **WARNING: Always change batteries in a non-hazardous location.**

Battery Replacement

To remove the instrument from the pouch, the bluetooth antenna on the top left side must be removed.

Remove the battery door from the bottom of the housing by loosening the hold down screw. Remove the cover by pulling the cover away from the two tabs that secure the opposite side of the door to the instrument.

Place 4 alkaline “C” Duracell MN 1400 batteries into the battery holder. Observe the polarity markings on the inside of the battery holder. Replace and secure the battery door by tightening the screw.

After battery replacement, reinstall the bluetooth antenna.

OPERATION AND USE

⚠ CAUTION: Always start any TRAK-IT® IIIa GLT in a gas free environment to ensure a proper zero.

NOTE: Instrument must be used in monitoring mode in order to read live gas.

1. Push the POWER/MUTE BUTTON (A) until the instrument beeps and the display illuminates. Each of the following will be displayed:

a. Sensit Technologies Logo
b. System check that includes:
    i. LED check
    ii. Backlight check
    iii. Memory check
    iv. Pump check
    v. Battery check
    vi. Microprocessor check
    vii. Pressure sensor check
    viii. Clock check
    ix. Auto Log Check (alert at 50 records remaining before memory is full and overwrites)
    x. Bluetooth Check
c. Wait for trainer
d. GLT Mode
e. Display all active sensors
f. Display "TRAK-IT®IIIa GLT, Configuration Number and Software revision".
g. Date and Time
h. Language (English, Chinese or Turkish)
i. Gas Type (indicating type of calibration gas)
j. Serial Number
k. Cal Due (up coming) or Cal Past Due
l. Sensor Warm Up and Please Wait
m. Autozero (all gases and pressure sensor)
n. Auto Bump Test (optional)
o. Working display showing all gases sensed and battery power remaining

2. If you are not using the instrument along with a GLT tablet, press and release any button on the “Wait for Trainer” screen to select monitoring mode and continue the start-up process.

3. If the display fails to illuminate or BAT LOW is shown on the display, replace the batteries.

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

During “Autozero” all sensors will be displayed with the zeroing result (passed or failed). Pressing and holding any button will freeze the display screen during warm-up to allow extended viewing.

5. If after the warm-up period, during autozero, if the instrument determines that a sensor is inoperable, a FAILED message will flash for that sensor. Then FAIL will show on the display for the corresponding sensor. If this occurs press and hold the ZERO/SAVE (C) button until “Autozero” is displayed to attempt to correct the error.

6. The display will indicate the type of gas used for calibration or to be sensed and the unit of measure (i.e.: LEL, PPM, % VOL) below all readings.

See Page 46 Expert Feature Chart, for optional configurations for the combustible gas detection display. If PPM display is selected, the measurement auto-ranges to LEL at levels above 2000ppm.

When equipped with the optional percent volume sensor, the measurement auto-ranges at 100% LEL. The display will indicate by changing the unit of measure below the reading to “%v/v”.

OPERATION AND USE

7. Prior to use, test the integrity of the sample system.

Use your finger to block the inlet of the probe assembly for 4-5 seconds. The display will read FLOW BLOCKED if all seals are intact.During pump flow block, a beep will occur every 2 seconds until the pump restarts and adequate flow is present.

8. 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.

9. When testing areas with elevated temperatures such as appliance vents or flues, always attach the optional hot air probe to the external filter. 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. Burns may occur!

10. When sampling areas the appropriate sensors will cause the display to update when a gas is encountered. If any alarm condition exists for any sensor, based on their preset alarm points, the red (alarm) LED will flash and the audible alarm will sound unless it is muted.

Additionally, the reading for the gas exceeding the alarm set point will also flash.

OPERATION AND USE

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.

   METHANE: 50% LEL Methane to 17% volume* Methane
   (LED indicator only above 17% volume Methane)
   *When equipped with percent volume sensor.

b. Oxygen - below 19.5% and above 23.5%
c. Carbon Monoxide - 35ppm per utility industry standards
d. Hydrogen Sulfide - 10ppm and above per Federal OSHA guidelines
e. Hydrogen Cyanide - 5ppm and above

⚠ **Caution: There are gases that can poison or be cross sensitive to the combustible gas sensor. See LEL Cross-Sensitivity Calculation Chart**

11. To disable the alarm, quickly press 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 ALARM LED will flash indicating a potentially unsafe condition. If the alarm condition no longer exists, the alarm sound will automatically deactivate.

12. At any time the operator may save the readings on the display by pressing the ZERO/SAVE BUTTON (C). This will save all readings for download at a later time. Log size is factory set to store 6 logs, but can be increased up to 100 logs. 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.)

13. 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.

14. When equipped with the percent volume sensor, if the instrument encounters a gas it is not calibrated to, it may read "NSR" or "NSC" followed by a number. If the instrument is calibrated for natural gas "NSR" (Non Standard Response) likely indicates a heavy non combustible gas (e.g.: heavier than air, such as carbon dioxide, etc.). If the response is "NSC" Non Standard Combustible) the gas is likely a heavy hydrocarbon, such as gasoline, propane, butane, etc.

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 and POWER OFF appears on the display. Release the button and a purge time followed by the shut down will occur.

BAR HOLE TEST

For percent volume equipped units

To assist pinpointing the location of underground leaks, the Bar Hole Test feature may be used. This feature will draw a timed sample (20 seconds) and display sustained and peak readings.

NOTE: Use an approved barhole probe with filter to prevent damage to the instrument when conducting bar hole surveys.

To Conduct a BAR HOLE Test:

Prior to the test, attach the approved bar hole probe to an operating instrument. Block the inlets of the probe to test for any air leakage. The instrument will show FLOW BLOCKED in approximately 10 seconds if all seals are good. If flow block is not detected, check the integrity of the “O” ring seals and connections on the probe and instrument. If flow block can not be achieved, contact the factory for assistance. An air tight system is crucial for accurate readings.

From the working display, press & release the MENU BUTTON (B). SELECT TEST will appear on the top line of the display. Press & release MENU BUTTON (B) to enter the BH menu. Insert the bar hole probe into the location for the survey. Press and release MENU BUTTON (B) once more to start the test. A 20 second countdown for the test will begin. The current percent of gas by volume (no LEL or PPM reads will be displayed) detected will be displayed as % ON. The peak percent of gas by volume detected will be displayed as % PK. At the conclusion of the test, the pump will shut off and any sustained and peak readings will be shown and recorded.

BAR HOLE TEST

If you have another test to take, press & hold the SAVE/ZERO BUTTON (C). This will restart the pump and clear the last readings. When the readings have returned to zero, release SAVE/ZERO BUTTON (C). The countdown timer will restart.

You may encounter NSR or NSC readings during the bar hole test (see page 12 for definition). A hydrocarbon filter kit is available to help scrub the sample if contact with heavy hydrocarbons is suspected. Please consult the factory for details. If you wish to cancel during a test or return to the working display, press & release the POWER/MUTE BUTTON (A).

LEAK SEARCH (OPTIONAL)

To conduct a LEAK SEARCH (LS):

To enter the LEAK SEARCH mode from the work display, press and release the MENU (B) button. Press and release the SAVE/ZERO (C) button until LS is displayed on the bottom of the screen. Press and release the MENU (B) button. LEAK SEARCH will be displayed on the top of the screen with 0 PPM on the bottom of the screen.

Attach a drag tube assembly or telescoping survey probe. The instrument has a preset alarm of 10ppm (adjustable, contact Sensit for details.) The instrument will read in 1ppm or 10ppm increments up to 5000ppm, auto range to LEL and then to %v/v.

To zero the instrument in the LS mode, press and hold the SAVE/ZERO (C) button until “Autozero” is displayed. Any alarm can be muted by pressing and releasing the POWER/MUTE (A) button once. If the alarm sound is turned off before an alarm condition is met, the alarm will remain off until activated by pressing and releasing the POWER/MUTE (A) button. If the alarm sound is muted during an alarm condition and the concentration of gas is below the alarm threshold, the alarm will activate if the concentration exceeds the alarm threshold again.

To exit the LS mode, press and hold the POWER/MUTE (A) button for 2-3 seconds to exit to the work display.

PURGE MODE

NOTE: This feature is for purging lines in and out of service only (purging with line gas or air)

To conduct a PURGE:

To enter the PURGE mode from the work display, press and release the MENU (B) button. Press and release the SAVE/ZERO (C) button until PURGE is displayed on the bottom of the screen.

Press and release the MENU (B) button. PURGE TEST will be displayed on the top of the screen with %v/v on the bottom left side of the screen and O2 % on the bottom right side of the screen. If O2 (oxygen) is not installed, an “X” will appear.

Attach a purge probe. Do not create a tight seal where the purge probe is inserted for sampling. Allow for blow by so the unit does not get over pressurized.

The LEL sensor is turned off during this mode to prevent unnecessary exposure to high levels of gas for an extended period time. The O2 readings (if equipped) will reflect the amount of oxygen in the line.

To exit the PURGE mode, press and release the POWER/MUTE (A) button to exit to the work display. A “Please Wait” message will flash (the LEL sensor is being powered back on) and this message will appear for a minimum of 5 seconds up to a maximum of 5 minutes.

CALIBRATION CHECK

To verify the accuracy of any **TRAK-IT® IIIa GLT**, 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 **TRAK-IT® IIIa GLT** is not working properly, check calibration.

USER MENU

The **TRAK-IT® IIIa GLT** has several categories within the User Menu. The first twelve fields are standard with all instruments. The last two are only available in certain instrument models when ordered with the Extended Memory option.

SHOW TIME: Displays current date and time. (Cannot be changed from this location.)

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

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

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

CAL: Calibrate all sensors, access AUTO CAL manual calibration procedure.

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

GAS TYPE: Change between Natural and Propane.

USER MENU

CAL LOG: Display last calibration of all sensors.

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

BH LOG: Display barhole logs with the corresponding date and time.

SMART CAL: Prepare for use with calibration station.

CAL DUE: Display future calibration due dates for each gas.

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

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

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

USER MENU

SHOW TIME

From the working display, access the menu by pressing and holding the MENU BUTTON (B) until the display reads USER MENU/SHOW TIME. Press MENU BUTTON (B) one time to display the time and date. Press any button to return to the USER MENU.

SET CLOCK

From the working display access the menu by pressing and holding the MENU BUTTON (B) until the top line reads USER 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 change this section, press & release theMENU BUTTON (B) for adjustments. 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

PRINT

For all printing operations, the printer is only to be used in non-hazardous locations.

From the working display access the menu by pressing & holding the MENU BUTTON (B) until the top line of the display reads USER MENU. The bottom line will read SHOW TIME.

Press & release the SAVE/ZERO BUTTON (C) until "PRINT" is displayed. 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

BUMP TEST

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

USER MENU

CAL

See Calibration section on Page 38.

O2 TEST

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

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

USER MENU

GAS TYPE

From the working display press & hold the MENU BUTTON (B) until the top line reads USER MENU. Press & release the SAVE/ZERO BUTTON (C) until the bottom line reads GAS TYPE. Press & release the MENU BUTTON (B)

To change the gas type, press & release either button (B) or (C). You can select either NAT (methane) or PRO (propane) as your primary gas. Once you have made your selection, press & release the POWER/MUTE BUTTON (A) to store the gas. Press & release the POWER/MUTE BUTTON (A) to return to the working display.

NOTE: Prior to use, confirm that the instrument is reading accurately when switching gas types. Verification is recommended by conducting a Bump Test or Calibration.

USER MENU

CAL LOG

To Show a Calibration Log

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

Press & release the MENU BUTTON (B) once to enter the menu. Calibration data will be displayed. To exit this menu, press & release the POWER/MUTE BUTTON (A).

To Print a Calibration Log

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

Press & release the MENU BUTTON (B) once to enter the menu. Press & release the SAVE/ZERO BUTTON (C) to scroll untill the desired log to be printed appears.

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

SESSION LOG

To Show a Session Log

From the working display, press & hold the MENU BUTTON (B) until the top line reads USER MENU. Press & release the SAVE/ZERO BUTTON (C) to scroll until the bottom line reads SES LOG. Press & release the MENU BUTTON (B) once to enter the menu. SESSION 1 will be displayed. If no saved data, instrument beeps and screen flashes - remains in USER MENU.

This is the most recent data saved. Press & release the SAVE/ZERO BUTTON (C) to scroll to the session number you want to view. The SAVE/ZERO BUTTON (C) will advance and the MENU BUTTON (B) will go back to the previous session.

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

To Print a Session Log

From the working display, press & hold the MENU BUTTON (B) until the top line reads USER MENU. Press & release the SAVE/ZERO BUTTON (C) until PRINT is displayed. Press & release the MENU BUTTON (B) once. SES 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.

USER MENU

SHOW BH LOG

From the working display access the menu by pressing and holding the MENU BUTTON (B) until the display reads USER MENU SHOW TIME. Press the SAVE/ZERO BUTTON (C) to scroll to USER MENU SHOW BH LOG.

Press MENU BUTTON (B) to select this feature. The last record will be displayed. The heading will display BH LOG: XXX (indicating record number) and the date/time of the record. Below will include the recorded (PK) and (ON) concentrations. The SAVE/ZERO BUTTON (C) advances to the next record while pressing the TICK/MENU BUTTON (B) returns you back to the previous record. Press the POWER/MUTE BUTTON (A) to return to the USER MENU.

SMART-CAL

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

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 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.

USER MENU

CAL DUE

From the working display access the menu by pressing and holding the MENU BUTTON (B) until the display reads USER MENU/SHOW TIME. Press the SAVE/ZERO BUTTON (C) to scroll to USER MENU/ CAL DUE.

Press the MENU BUTTON (B) to select this feature. The heading will display CAL DUE if the sensor is past calibration or NEXT CAL indicating when the sensor is due. Press the POWER/MUTE BUTTON (A) to return to the USER MENU.

AUTOLOG (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, in a non-hazardous area, to a PC using the infared computer interface IR LINK (IR LINK with software order #870-00039). Please contact the factory for more information on this accessory.

USER MENU

CF TEST

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

To Conduct a CF Test

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.

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.

From the working display, press & release MENU BUTTON (B) once, SELECT TEST will appear on the top line of the display. Press & release the SAVE/ZERO BUTTON (C) until CF is displayed.

Press & release the MENU BUTTON (B) again and the instrument will auto-zero and then enter the CF test menu. Press & 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 “0PK”. 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.

USER MENU

CF TEST

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 left side of the screen. Simultaneously, the calculated ppm CF reading and the calculated peak ppm CF level will be displayed on the right side of the screen.

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 working display.

USER MENU

CF TEST

To Show a CF Test

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

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

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.

To Print a CF Test

From the working display, press & hold the MENU BUTTON (B) until the top line reads USER MENU. Press & release the SAVE/ZERO BUTTON (C) until PRINT is displayed.

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 LOG.

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 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 working display.

CALIBRATION

NOTE: Calibration should be done while in Monitoring Mode.

Calibration is the process of setting the readings of the instrument to equal the value of certified calibration gases. Prior to calibration allow the instrument to operate for 5 to 10 minutes in a room environment free of combustible, CO, H2S or HCN gases.

Manually zero the instrument prior to beginning the calibration process.

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

Definitions

AUTO CAL is an automatic calibration process not requiring a docking station.

2.5% V/V is the calibration point for the low end of the 100% volume sensor.

50% LEL indicates calibration of the LEL and PPM sensors.

100 PPM CO indicates the calibration point of the carbon monoxide sensor.

25 PPM H2S indicates the calibration point of the hydrogen sulfide sensor.

10 PPM HCN indicates the calibration point of the hydrogen cyanide sensor.

SMART-CAL is the automatic calibration system using IR communication.

CALIBRATION

Prior to starting calibration prepare the necessary gases per the sensor configuration.

From the working display access the menu by pressing and holding the MENU BUTTON (B) until the display reads USER MENU SHOW TIME. Press the SAVE/ZERO BUTTON (C) to scroll to USER MENU CAL .

Press the MENU BUTTON (B) to the calibration modes. The display will now show CAL AUTO CAL. Pressing the SAVE/ZERO BUTTON (C) will allow viewing of all other modes of calibration.

AUTO CAL

To calibrate, prepare all gases and regulators needed. Press & hold the MENU BUTTON (B) until the top line reads USER MENU. Press & release the SAVE/ZERO BUTTON (C) until CAL is displayed. Press and release the MENU BUTTON (B) one time to show AUTO CAL.

Press the MENU BUTTON (B) and apply the gas shown on the display. You have 30 seconds to attach the gas. If the gas is not sensed, the unit will beep and display FAILED until any button is pressed to acknowledge and move on to the next gas.

If the readings are satisfactory the display will show DATA SAVED and begin calibrating the next gas in sequence. When finished remove and shut off the gas.

Use the POWER/MUTE BUTTON (A) to return to the working display. Calibration due date is automatically reset with a successful calibration.

MANUAL CALIBRATION

The following instructions pertain to manual calibration of the TRAK-IT®IIIa GLT. If you are using the automatic Smart-Cal Calibration System, the procedure is different. See the Smart-Cal sections of this manual or consult the Smart-Cal instruction manual for details.

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) until the bottom line reads CAL.

Press & release the MENU BUTTON (B) once. The bottom line will read AUTO CAL. Scroll with the SAVE/ZERO BUTTON (C) until CO 100PPM is displayed. 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) until the bottom line reads CAL.

Press & release the MENU BUTTON (B) once. The bottom line will read AUTO CAL. Press & release the SAVE/ZERO BUTTON (C) until the bottom line reads 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

HYDROGEN CYANIDE (HCN) CALIBRATION (HCN 10 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) until the bottom line reads CAL.

Press & release the MENU BUTTON (B) once. The bottom line will read AUTO CAL. Press & release the SAVE/ZERO BUTTON (C) until the bottom line reads HCN 10ppm.

Apply 10ppm HCN/N2 to the instrument and press & release the MENU BUTTON (B) to start HCN 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
2.5% V/V (Volume) 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) until the bottom line reads CAL.

Press & release the MENU BUTTON (B) once, the bottom line will read AUTO CAL. Press & release the SAVE/ZERO BUTTON (C) once. The bottom line will read 2.5%V/V. 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. Do not remove the gas until the second DATA SAVED flashes. Two calibrations take place during the 50%LEL Methane calibration. 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
100% VOLUME METHANE

NOTE: After calibration of 100% Methane, it is recommended to auto-zero the unit before use.

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

Press & release SAVE/ZERO BUTTON (C) to scroll until the bottom line reads 100%V/V. Apply 100% methane to the instrument. Immediately press & release the MENU BUTTON (B) to start 100% methane 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 (1.1% PROPANE or 50% LEL PROPANE)

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

Press & release the SAVE/ZERO BUTTON (C) to scroll until the bottom line reads 1.1%V/V. Apply 1.1% propane (50% LEL propane) to the instrument. Immediately press & release the MENU BUTTON (B) to start propane calibration.

When the reading is satisfactory, the display will flash DATA SAVED indicating that calibration is complete for that sensor. Do not remove the gas until the second DATA SAVED flashes. Two calibrations take place during the 1.1%V/V propane calibration.

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 FAILED. Re-calibration should be attempted. Any instrument that does not accept calibration should be taken out of service. Please contact the factory for any needed repairs.

EXPERT MENU FEATURE DEFINITIONS

CONTRAST: Set display contrast for better viewing

TICK: Set normal speed of tick rate when resetting

%LEL MODE: Set to LEL display. If off readings are %V/V

100% LEL: Set the value of LEL between 4-5% methane

LEL RESOLUTION: Set reading increments on display

NEW O2: Tracks install date

N COMP: Specialized sensor compensation software

CAL DUE REMINDER: Alert system for calibration

DUE ACK: Requires operator to push a button when cal is overdue

PROPANE 100%: Requires calibration to 100% propane

N2 for O2: Requires oxygen test using N2

SHOW SES LOG: Show the session log on display

SHOW BH LOG: Show bar hole test logs on display

SHOW CF/CO LOG: Show CO and CF test logs on display

ALARM SETTINGS: Limits for alarms

LOW LED: Concentration when first LED illuminates

Continued On Next Page.

EXPERT MENU FEATURE DEFINITIONS

POWER OFF: Automatic shut off time

PURGE TIME: Run time before instrument shut down after power off

BH TIME: Adjustment for the bar hole test time

CF/CO TIME: Adjustment for the CO test time

ERASE AUTO: Erase the AUTO LOG

NG FACTOR: Factor for methane content in 100% natural gas

NSR: Disable gas distinguishing software

NSC: Disable combustible/inert identifier

NSC LEL: Concentration to activate NSC control

AUTO BUMP: Enable required bump test

TICK FIRST: Position of tick in test menu

MUTE LATCH: If in mute, unit can remain until reactivated

ERASE LOG: Erase all sessions, BH, CO, CF Logs

CAL RQD: Set instrument to shut down after “Cal Past Due”

EXPERT FEATURE CHART

FEATURE	SETTINGS	DEFAULT
SERVICE:		
CONTRAST	0-63	30
% LEL MODE	ON/OFF	ON
100%LEL N	4.0-5.0	5.0
100%LEL P	1.8-2.2	2.2
RESOLUTION	0.0-2.0	0.0
N COMP	ON/OFF	OFF
CAL DUE	30,45,60,90,180,360 DAYS	30
DUE ACK	ON/OFF	OFF
N2 FOR O2	ON/OFF	OFF
SHOW SES	ON/OFF	ON
SHOW BH	ON/OFF	ON
SHOW AUTO	ON/OFF	OFF
ALARM:		
LOW O2	17.5-20.5	19.5
HIGH O2	21.5-23.5	23.5
CO	5-300	35
H2S	2-30	10
HCN	2-20	5
LEL	1.0-99.0	50.0
NAT	5.0-100.0	17.0
PRO	2.0-100.0	12.0

EXPERT FEATURE CHART

FEATURE	SETTINGS	DEFAULT
POWER OFF	0-480 MIN.	60 MIN.
PURGE TIME	0-120 SEC.	10 SEC.
BH TIME	5-120 SEC.	20 SEC.
ERASE AUTO	ERASE AUTO	PASSWORD REQ.
NG FACTOR	50-100	100
NSR	ON/OFF	ON
NSC	ON/OFF	ON
NSC LEL	1.0-10.0	2.0
AUTO BUMP	0-30	0
MUTE LATCH	ON/OFF	OFF
ERASE LOG	ERASE ALL SES LOG	PASSWORD REQ
LANGUAGE	ENGLISH	ENGLISH
	TURKISH	
	CHINESE	

LEL CROSS SENSITIVITY

When sensing other gases the methane calibrated reading may be lower than the actual LEL of the gas sensed.

For example 100% LEL of propane will only display as 70% LEL.

LEL Cross Sensitivity Calculation Chart

The chart below shows the relative reading if exposed to 50% LEL of the most common gases this instrument may be used to detect.

50%LEL Propane = 35%

50%LEL Butane= 35%

50%LEL Hexane = 22.5%

50%LEL Pentane = 25%

50%LEL Toluene = 22.5%

50%LELMethanol = 50%

50%LEL Ethanol = 35%

50%LEL MEK = 25%

50%LEL Isopropyl Alcohol = 30%

WARRANTY

Your **TRAK-IT® IIIa GLT** is warranted to be free from defects in materials and workmanship for a period of two years after purchase (excluding calibration and batteries). The circuit board and percent gas sensor (TC) are warranted for 5 years. 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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MADE IN THE USA
WITH GLOBALLY SOURCED COMPONENTS

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