

# SENSIT® GOLD G3

## GAS DETECTION INSTRUMENT

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

### SAFETY MANUAL

READ AND UNDERSTAND INSTRUCTIONS BEFORE USE.



Intrinsically safe for use in:

Class I Div. 1  
Groups C, D  
Temp Classification: T4, IP64  
Hazardous Locations

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

**SENSIT® GOLD G3 Safety Manual (English)**  
PN 750-00091-CD  
Revision: 2022-02-10



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# **FOR YOUR SAFETY**


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## **SENSIT® GOLD G3 (945-00000-WXYZ)**


 **WARNING:** Use only **SENSIT® GOLD G3** Rechargeable Battery Pack (310-00034)

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

 **WARNING:** 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. No substitution of components is permitted.

 **WARNING:** The appliance is not to be brought into a hazardous location without the **SENSIT® GOLD G3** Rechargeable Battery Pack (310-00034) installed.

 **WARNING:** The appliance is not to be used by persons (including children) with reduced physical, sensory, or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction.


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


## **SENSIT® GOLD G3 RECHARGEABLE BATTERY PACK (310-00034)**


 **WARNING:** Intrinsically safe for use in Class I, Groups C, D, T4 Hazardous locations when used in a **SENSIT® GOLD G3** (945-0000-WXYZ).

 **WARNING:** The **SENSIT® GOLD G3** Rechargeable Battery Pack (310-00034) is not to be brought into a hazardous location when not installed into a **SENSIT® GOLD G3**.


 **WARNING:** Use only **SENSIT® GOLD G3** Charger (871-00079).

 **WARNING:** Charge only in a temperature range of 0-40°C.

 **WARNING:** To prevent risk of ignition of a flammable atmosphere, battery pack must only be charged/installed or removed in an area known to be non-hazardous.

 **WARNING:** To prevent ignition of a flammable or combustible atmosphere, disconnect power before servicing.

 **WARNING:** Charging must be done in a dry/dust free environment.

 **WARNING:** Inspect vent cover of the **SENSIT® GOLD G3** Rechargeable Battery Pack for damage or separation from the housing. If any damage or separation is observed, the **SENSIT® GOLD G3** Rechargeable Battery Pack must be removed from service.

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## OPERATION AND USE – QUICK START GUIDE

1. Remove the instrument from the soft pouch and any necessary accessories.
2. Press and hold the A button until the instrument powers on. The LED dome will illuminate and the **SENSIT** logo will be shown on the display.
3. In clean air, allow the instrument to go through the startup sequence, warmup, and Autozero. This typically takes around 30 seconds, but if the battery was disconnected it can take up to 5 minutes.
4. An automatic flow block test may be prompted during startup. If so, place your finger over the inlet at the end of the gooseneck and wait until the test passes. This should happen within 5 seconds. If flow block cannot be achieved, contact **SENSIT Technologies** for assistance.

If the automatic flow block test is not prompted during startup, perform this test after the Autozero is complete and the work display is shown. FLOW BLOCKED will be displayed.

**NOTE:** If any FAIL messages occur during the Autozero, ensure that the instrument is in clear air, and attempt the zero again by pressing and holding the **[C]** button until AUTOZERO is shown on the display. Contact **SENSIT Technologies** if the instrument cannot pass the Autozero.

5. The work display will be shown with gas readings. Up to (5) total gasses can be shown from the following: EX, CO, O<sub>2</sub>, H<sub>2</sub>S, HCN, SO<sub>2</sub>. If equipped with the TC sensor, the combustible gas reading will automatically scale into the percent volume range after the LEL range.

GPS	BAT 2.5 H
0.0 NAT	0 CO
20.9 PPM	0.0 H <sub>2</sub> S
0.0 O <sub>2</sub>	PPM
0.0 VOL	
PPM	
MUTE	MENU SAVE

6. Once the work display is shown with no fail messages, and a flow block check has been successfully done, you are ready to use the instrument.
7. Following federal, state, municipal, and/or company procedures, conduct the leak investigation, survey, or other procedures as needed.
8. If the source of an odor or known leak needs to be pinpointed, use the TICK feature. To enable, press and release the **[B]** button to enter the quick menu. Press and release the **[B]** button again to enable tick.

An audible ticking sound will be heard. Move the end of the gooseneck towards the area suspected of leakage. As you get closer to the source, the tick rate will increase. Press and release the **[B]** button or roll back the thumb wheel to decrease the tick. Press and release the **[A]** button to deactivate.

9. Any NSC reading shown on the display indicates a “non-standard combustible” gas has been detected.

Any NSR reading shown on the display indicates a “non-standard response”, which means the instrument has detected a non-combustible gas that it isn’t calibrated for.

10. To zero out very small levels of gas, press and hold the **[C]** button until autozero is shown on the display. This should only be done to set the instrument zero to your working environment, (e.g. to zero out a small level of CO on a street with heavy vehicle traffic). The instrument will not allow a zero if unsafe levels of gas are present and will show a fail message.
11. When your investigation is complete, press and hold the **[A]** button until the instrument displays POWER OFF SHUTDOWN.

## **945-00000-WXYZ**

**W**

- 0 = No Sensor
- 1 = LEL Only
- 2 = LEL/TC

**X**

- 0 = No Sensor
- 1 = CO
- 2 = LF-O2
- 3 = H2S
- 4 = HCN
- 5 = SO2

**Y**

- 0 = No Sensor
- 1 = LF-O2
- 2 = H2S
- 3 = HCN
- 4 = SO2

**Z**

- 0 = No Sensor
- 1 = H2S
- 2 = HCN
- 3 = SO2
- 4 = Combo

## **PRODUCT DESCRIPTION**

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The **SENSIT® GOLD G3** is designed to detect combustible gases, oxygen content, and toxic gases when so equipped with the available sensors. Each model of the **SENSIT® GOLD G3** provides specific detection features based on approved sensor options. Each **SENSIT® GOLD G3** can be re-configured or upgraded by the manufacturer for an additional charge should your sensing requirements change. **SENSIT® GOLD G3** configurations include measuring PPM, LEL, and/or % vol. of combustible gases, measurement of oxygen (O<sub>2</sub>), carbon monoxide (CO), hydrogen sulfide (H<sub>2</sub>S), hydrogen cyanide (HCN), and sulfur dioxide (SO<sub>2</sub>) gas(es).

**SENSIT® GOLD G3** instruments incorporate an advanced low power semiconductor sensor to measure combustible gases in the LEL (Lower Explosive Limit) range and a thermal conductivity style sensor to measure combustible gases in the percent volume range. The user may select either natural gas (methane) or propane gas readings from a user menu depending on the sensing requirements. A 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 **SENSIT® GOLD G3** instrument is approved for UL 913 5th Edition for Class I Div. 1 Groups A, B, C, D, T4 hazardous locations. Consult **SENSIT Technologies** for certificate details.

Per FCC Part 15, this device must accept interference received, including interference that may cause undesired operation.

## **SPECIFICATIONS**



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Operating Temperature:	-4 to 122° F (-20 to 50°C)
Instrument Storage Temperature:	-4 to 140°F (-20 to 60°C)
Rechargeable Battery Storage Temperature:	-4 to 140°F (-20 to 60°C)
Charging Temperature:	32 to 104°F (0 to 40°C)
Humidity:	0-95% non-condensing
Rechargeable Battery Life:	>20hrs continuous
Recharge Time:	10hrs max.
Instrument Size:	H-13.0 x W-3.0 x D-3.2 in (330 x 76 x 81 mm)
Charger Size:	H-10.8 x W-4.6 x D-5.4 in (274 x 117 x 137 mm)
Instrument Weight (with rechargeable battery):	2.3 lbs (1.0 kg)
Charger Weight:	2.2 lbs (0.9 kg)
Instrument Ingress Protection:	IP64

**SENSIT® GOLD G3**  
Label

**SENSIT® GOLD G3**  
MULTI GAS DETECTOR

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**S/N:**


**DOM:**

STORE AT -20°C (-4°F) TO 60°C (140°F)  
-20°C (-4°F) ≤ T<sub>AMB</sub> ≤ 50°C (122°F)  
INTRINSICALLY SAFE, CLASS I DIV. 1, GROUPS C, D  
TEMP CLASSIFICATION: T4, IP64


**WARNINGS**

1. READ AND UNDERSTAND MANUAL BEFORE OPERATING
2. USE ONLY SENSIT BATTERY PACK (310-00034). ONLY INSTALL, REMOVE, AND CHARGE IN NON-HAZARDOUS AREA
3. DO NOT SUBSTITUTE COMPONENTS. THIS MAY IMPAIR INTRINSIC SAFETY
4. CHARGE ONLY WITH SENSIT G3 CHARGER (871-00079) AND WITHIN A TEMP. RANGE BETW. 0°C (32°F) TO 40°C (104°F)
5. BATTERY PACK MUST BE INSTALLED UNLESS IN A CLEAN/DRY ENVIRONMENT

**SENSIT** Part No:  
945-00000-



**SENSIT® PN Label**



**GOLD G3 BATTERY**

PART # 310-00034  
OUTPUT: 4.2 VDC MAX ENERGY  
RATING: 3.36 W MAX  
CURRENT: 0.8 ADC MAX  
SERIAL NUMBER:

CHARGE ONLY IN A TEMPERATURE RANGE OF 0°C(32°F) TO 40°C(104°F)  
STORE AT: -4°F(-20°C) TO 140°F(60°C)  
D.O.M.:

**WARNING:**

1. READ MANUAL BEFORE OPERATING
2. BATTERY PACK IS INTRINSICALLY SAFE ONLY WHEN INSTALLED IN THE SENSIT G3 GAS LEAK DETECTOR:  
CLASS I DIV 1 GROUPS A,B,C,D WHEN IN 935-0000-WXYZ  
CLASS I DIV 1 GROUPS CD WHEN IN 945-0000-WXYZ  
(WHERE W = 0,1, OR 5  
X = 0 TO 5, Y = 0 TO 4,  
AND Z = 0 TO 4)
3. MUST BE CHARGED WITH SENSIT G3 CHARGER (871-00079)
4. TO PREVENT THE RISK OF IGNITION OF FLAMMABLE GASES, BATTERY PACK MUST ONLY BE CHARGED IN AN AREA KNOWN TO BE NON-HAZARDOUS
5. ONLY INSTALL BATTERY PACK IN A CLEAN, DRY, AND NON-HAZARDOUS AREA  
TEMP CODE: T4, IP 54  
-20°C ≤ T<sub>AMB</sub> ≤ 50°C  
851 TRANSPORT DR,  
VALPARAISO, IN 46383  
ASSEMBLED IN USA

**SENSIT® GOLD G3**  
Battery Label



## **RECHARGEABLE BATTERY AND CHARGER (871-00079)**

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**⚠ WARNING:** Use only **SENSIT® GOLD G3** Charger (871-00079).

**⚠ WARNING:** Charge only in a temperature range of 0-40°C.

**⚠ WARNING:** To prevent risk of ignition of a flammable atmosphere, battery pack must only be charged/installed or removed in an area known to be non-hazardous.

**⚠ WARNING:** Charging must be done in a dry/dust free environment.

**⚠ WARNING:** he **SENSIT® GOLD G3** Rechargeable Battery Pack (310-00034) is not to be brought into a hazardous location when not installed into a **SENSIT® GOLD G3**.

Recharging the **SENSIT® GOLD G3** Rechargeable Battery Pack is necessary when the battery life has run out and the instrument indicates low battery shutdown. This can be done while the **SENSIT® GOLD G3** Rechargeable Battery Pack is installed in the instrument or independently.

### **BATTERY (PN: 310-00034) REMOVAL**

1. Use a Phillips Head screwdriver to loosen the retaining screw, located in a recessed compartment at the bottom of the battery pack.
2. Grip the bottom of the battery pack and pull the battery pack out of the compartment, without rotating the battery.

### **BATTERY (PN: 310-00034) INSTALLATION**

To install the battery pack:

1. Hold the instrument with the instrument display facing upwards, the handle with the empty battery compartment should be facing you.
2. Align the battery such that the longer side of the connector at the top of the battery is perpendicular to the ground, and on the LEFT side of the battery.
3. Without rotating the battery or the instrument, slide the battery into the G3 battery compartment.
4. Push the battery into the compartment until the battery is fully seated into the compartment; this occurs when you cannot see a gap between the battery and instrument.
5. Use a Phillips Head screwdriver to tighten the retaining screw, located in a recessed compartment at the bottom of the battery pack.

**NOTE:** The retaining screw must be installed and tightened before use in a hazardous environment.

### **BATTERY CHARGING: INSTALLED IN INSTRUMENT**

1. Make sure the **YELLOW** power light is lit on the front face of the charging station (PN: 871-00079). This indicates power is connected to the charger, and it is ready for charging.
2. Angle the G3 slightly and place the bottom of it into charging station.
3. Push the G3 forward into the charging station until the locking mechanism latches. A click should be heard, and the latch on the right side of the G3 should pop outwards.
4. The **RED** light should be solid on the front face of the charger. This indicates the instrument is charging.

## **BATTERY CHARGING: STAND-ALONE**

1. Make sure the YELLOW power light is lit on the front face of the charging station (PN: 871-00079). This indicates power is connected to the charger, and it is ready for charging.
2. Lift the External Charging Latch.
3. Place the bottom of the G3 battery (SENSIT PN: 310-00034) into charging station so that the connector on the top of the battery is on the left (with respect to the front of the charger).
4. Lower the External Charging Latch such that the cutout fits around the connector at the top of the battery pack.
5. The RED light should be solid on the front face of the charger. This indicates the instrument is charging.

Once charging is complete, the red light will turn off and the green light will turn on, typically <10 hours.

To remove the battery:

1. Lift the External Charging Latch.
2. Remove the battery.

## **MAINTENANCE**

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### **SENSOR CAP AND O-RING REPLACEMENT (PN: 870-00018)**

The sensor cap at the end of the gooseneck assembly has a hydrophobic filter installed in it that is meant to keep dirt and water from reaching the inside of the instrument. If this filter becomes clogged or damaged, replace the cap. The cap must be replaced as an assembly. The filter cannot be replaced on its own.

It is recommended to replace the O-rings anytime the sensor cap is replaced, but is not strictly necessary, especially if the sensor cap is being replaced frequently.

1. Firmly grab the black sensor base with one hand and twist off the sensor cap with the other hand. Unscrew the metal luer fitting from the old sensor cap.
2. Remove the old O-ring from the luer fitting and install the new one. Screw the fitting into the new sensor cap.
3. Carefully remove the O-ring that is installed in the groove of the sensor base and replace it with a new one. If possible, use only your fingers to remove the old O-ring.

**WARNING:** If a tool must be used to remove the old O-ring, be very careful not to damage the plastic – doing so may cause a leak and require the instrument to be sent in for service.

4. Grab the black sensor base with one hand and with the other twist on the new sensor cap assembly.

### **LEL SENSOR REPLACEMENT (PN: 375-2611-01)**

1. Power off the G3.
2. Firmly grab the black sensor base with one hand and twist off the sensor cap with the other hand.
3. Pull out and old sensor and discard it.
4. Locate the alignment tab on the new sensor. It is a small metal square sticking out of one side of the sensor. Align this tab to the white square outline on the circuit board and press the new sensor into the sockets. You will feel it bottom out in the sockets – it will not seat flush to the circuit board.
5. Firmly grab the black sensor base with one hand and twist on the sensor cap with the other hand.
6. Power on the G3 and perform a calibration. The new sensor must be successfully calibrated before use.

## WARRANTY

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Your **SENSIT® GOLD G3** is warranted to be free from defects in materials and workmanship for a period of 2 years after purchase (excluding calibration and wear components). 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

#### **SENSIT® GOLD G3 Safety Manual (English)**

Part Number: 750-00091-CD

Revision: 2022-02-10