Single Gas Clip and SGC Plus User's Manual Rev 2.04

⚠ READ BEFORE OPERATION

Gas Clip Technologies (GCT) Single Gas Clip and SGC Plus detectors are personal safety devices designed to detect the presence of specific toxic gases (Carbon Monoxide (CO) or Hydrogen Sulfide (H2S)) or Oxygen (O2) deficiency. Accordingly please ensure you have been properly trained on the use of the equipment and appropriate actions in the event of an alarm condition.

⚠ WARNING

⚠ If the unit is past the "Activate Before Date" on the package, please do not activate.

⚠ Do not attempt part replacement or substitution as this could impair the intrinsic safety rating and will void the warranty of the product

⚠ Before daily use check the following:
-Sensor and Audio ports are clear of any obstructions i.e. debris or blockage
-Perform the "Self-test" to ensure proper operation of visual, audible, and vibrating alarms
-Confirm receipt of a check mark in the upper left hand corner signaling a successful "Self-test"

⚠ Calibrate the O2 detector at least every 30 days. Make sure to calibrate in a clean air environment. See O2 detector section for instructions on calibration.

⚠ Both the CO and H2S versions of the Single Gas Clip and SGC Plus do not require calibration for the life of the product, however we do recommend bump tests please see our bump test recommendations below:

⚠ Bump Test the detector at least every 90 days by challenging the sensor with a known concentration of the target gas to be detected. Recommended target gas concentrations (H2S: 25 ppm, CO: 200 ppm, O2: 18%). Bump Test can be performed either manually or through the Clip Dock. If a manual test is to be performed make sure to test in a clean air environment.

⚠ If a unit fails the Self-test or Bump Test please discontinue use of the detector

⚠ The detector contains a lithium battery that must be disposed of by a qualified recycler.

⚠ Do not substitute internal components as this may interfere with the intrinsic safety of the device.

⚠ Do not attempt to replace the battery or sensor, this product is designed to be disposable. Changing these components will void the warranty.

⚠ If you suspect any malfunction or have any technical problems please contact GCT at 877-525-0808
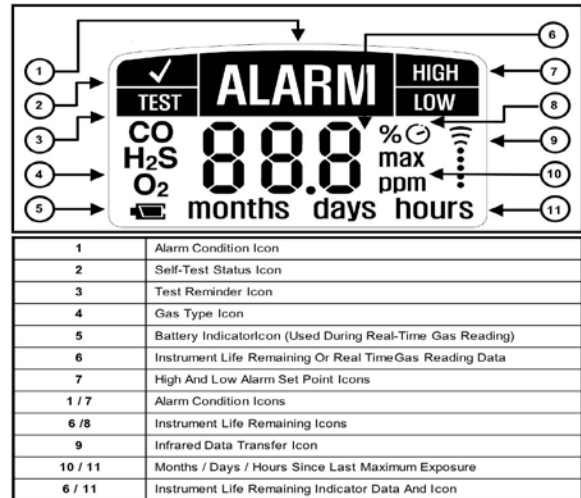
Activating the detector

To activate the detector, press and hold down button for approximately 5 seconds. Upon activation, the detector will vibrate, flash, and sound the audible alarm. A successful activation will display the life remaining in months on the detector as 24 months.

Display Details

The detector utilizes a special high viewing angle LCD that is designed to enhance the screen visibility. In the absence of gas, it displays life remaining. In those cases where gas is present, the display will automatically shift to a display that shows gas concentration and a battery icon.
*Note the display mode can be changed in the IR Link software with the "Sensor Reading" and "Life Remaining" user options.
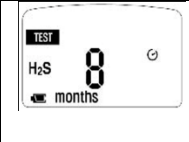
⚠ Warning: Users must familiarize themselves with the icons in both non-alarm and alarm states

⚠ Warning: If the display is missing icons or cannot be clearly read, please contact GCT immediately

1	Alarm Condition Icon
2	Self-Test Status Icon
3	Test Reminder Icon
4	Gas Type Icon
5	Battery Indicator Icon (Used During Real-Time Gas Reading)
6	Instrument Life Remaining Or Real Time Gas Reading Data
7	High And Low Alarm Set Point Icons
1 / 7	Alarm Condition Icons
6 /8	Instrument Life Remaining Icons
9	Infrared Data Transfer Icon
10 / 11	Months / Days / Hours Since Last Maximum Exposure
6 / 11	Instrument Life Remaining Indicator Data And Icon

Day to Day Usage

Prior to daily use, the detector will prompt the user to perform a self-test this process is a simple and effective way to ensure safe operation of the detector. During the self-test the audio, visual, and vibrating alarms are activated and the sensor is tested. Below is a step by step process for performing the test:

	Screen 1: When the "Test" Icon appears in the upper left hand corner, a self-test is required. Press the button on the front of the detector to perform the test.
	Screen 2: After pressing the button the following screen will appear. During the self-test ensure that the following occurs: (1) The unit emits one audible beep, all LED's light up, and vibration. (2) All LCD display elements appear.
	Screen 3: After the full element LCD screen, the low alarm and high alarm set points will be displayed. Note these alarm set points can be adjusted using the IR Link or Clip Dock configuration options. Factory Standard Alarm Set Points: H2S: Low 10 ppm / High 15 ppm CO: Low 35 ppm / High 200 ppm O2: Min 19.5% / Max 23.5%
	Screen 7: (see Steps 4-6 for additional screen displays) When a self-test is successful the unit will turn to the original screen and display a check mark in place of where the test icon was previously displayed and one short audible beep will sound. The unit will by default prompt another "Self-test" in 20 hours from when the button was pressed. Note this value can be changed via the IR Link software anywhere from 8 to 20 hours. See the IR Link Quick Reference Guide for further detail.

Additional Steps:

Above we outlined the most common screen configurations. However if the unit has been programmed via the IR Link or has been exposed to gas additional screens may appear

Screen 4 (If applicable): If programmed with a "User ID", after the alarm set points are displayed, a combination of numbers and or letters will scroll across the screen. This will be a max of 2 screens with a maximum character limit on the "User ID" of 6 characters. The "User ID" can be changed/modified via the IR Link software

Screen 5 (if applicable): If the detector has been exposed to gas exceeding the low alarm set point a value will appear with "max" next to it. This represents the peak value (highest) that the detector has seen. After this screen there will be another screen displaying a value with (hours, days, or months) this represents the amount of time past since the peak reading.

Screen 6 (if applicable): After the peak reading and time since screens, a screen will appear with CLP. If the user presses the button down while this is displayed, the peak value on the detector will be reset. Note while the value will be cleared on the display the value will be held in the detector's log. See the event log section for further details. This value can be cleared on the next screen.

Failures/FAQ's

⚠️ If the self-test fails, the detector emits five short beeps and flashes before displaying "Test". Repeat the self-test.

⚠️ If the self-test fails three (3) consecutive times the detector will enter a Fail Safe mode. Please contact GCT for a replacement detector.

⚠️ During normal operation, the battery is continuously monitored. If the battery is low for more than (3) hours the detector enters Fail Safe mode.

⚠️ If the battery self-test fails (5) consecutive times the LCD will display "EO5". In case of an EO5 screen discontinue use and contact GCT for a replacement detector.

⚠️ Along with the battery, the sensor is continuously monitored during normal operation. If a problem with the sensor is detected, the screen will display "EO6". In case of an EO6 screen, please discontinue use and contact GCT for a replacement detector.

⚠️ If the detector is displaying "bUP", the detector is either due for a bump test because of a scheduled test or has failed a bump test. Please refer to "Bump Test Interval" for more detail.

⚠️ If the detector is displaying "EOL" the unit has reached the end of its operating life. Please discontinue use.

Alarms

Alarm Types:

Screen Display	Detail
✓ **ALARM** LOW H₂S **10** ppm 🔋	**LOW ALARM** Audible Alarm: One (1) slow beep every second Visual Alarm: One (1) slow flash every second Vibrating Alarm: One (1) slow vibration every second
✓ **ALARM** HIGH H₂S **15** ppm 🔋	**HIGH ALARM and OVER LIMIT (OL) ALARM** Audible Alarm: Two (2) fast beeps every second Visual Alarm: Two (2) fast flashes every second Vibrating Alarm: Two (2) fast vibrations every second
✓ **ALARM** CO **8** ⏱ hours	**DETECTOR LIFE COUNTDOWN ALARM "EOL"** Once the unit has less than One (1) month of life remaining, the unit will switch to days remaining, when it is less than One (1) day remaining it will switch to hours remaining. Once the detector has Eight (8) hours remaining, it will begin to beep, flash, and vibrate intermittently. To end the alarms press the button down. Once the detector has reached the end of its operating life the display will show "EOL" (End Of Life).

Alarm Set Points:
Default factory set points:
H2S: Low Alarm 10 ppm/High Alarm 15 ppm
CO: Low Alarm 35 ppm/High Alarm 200 ppm
O2: Low Alarm 19.5%/High Alarm 23.5%

*Note these set points can be changed using the GCT IR Link. Please refer to the SGC IR Link documentation for further details. To display the detector alarm set points press the button on the front of the detector.

⚠️ Use caution when changing alarm set points. Confirm these levels with your company safety officer.

⚠️ DO NOT use IR communications when an explosive atmosphere may be present.

Event Log

By default the detector stores the last twenty five (25) alarm events. The system stores events by first in first out, i.e. the 26th event will replace the first event and so on. This information can be downloaded using the GCT IR Link. For each alarm event the detector records the following:

- The detector serial number
- Bump Test (Yes or No)
- Life remaining on the detector
- Number of self-tests performed
- Number of events
- Alarm Condition (Low, High, or OL)
- Specific event date and time
- Peak gas concentration in ppm or %.

Bump Test Interval (bUP)

Using the IR Link or GCT Manager, units can be programmed to alert the user if a bump test is due. This interval can be set anywhere from 1 to 365 days. *Note the unit default is to have no bump interval programmed.*

If a detector is due for a bump test, the unit display will alternate between the months remaining and "bUP". In addition the unit will emit alternating flashes (left and right) every 5 seconds. And the "test" icon will remain even after a button push.

This alert can be cleared by either placing the unit in a Clip Dock or, if the bump interval is set, by manually applying gas to the unit. To manually clear the alert, press the button down once and wait for the "GAS" to show on the display while the TEST icon flashes. The detector will wait for 45 seconds for the target gas to be applied, or a button press to skip the bump test. If the SGC is bumped while showing "GAS", then it will record as a bump test in the event log instead of as an exposure. If no gas is applied, it will return to the normal screen and will not record anything in the event log.

O2 Detector-Calibration

⚠️ GCT recommends users of the O2 Single Gas Clip to bump test the detector before using each day.

Single Gas Clip Oxygen (O2) detector factory default will prompt the user to calibrate the detector every 30 days. The user will be prompted by the screen flashing CAL, please see calibration instruction below:

	Calibration Instructions
✓ O2 CAL	⚠️ Only perform O2 calibration in normal air (20.9% Oxygen) that is free of hazardous gases. 1. Press and hold down the yellow button for four (4) seconds 2. The screen will display CAL and the O2 icon will flash in the lower left hand side 3. After a successful calibration, the detector will emit one (1) beep, vibration and LED flash 4. After an unsuccessful calibration, the detector will beep, flash, and continue to display calibration. If after a few failed calibration please contact GCT customer support at 877-525-0808

Cleaning

The detector can be cleaned with a soft damp cloth. Do not use solvents, soaps or polishes. A neutral cleaner, like Mat & Table Top Cleaner (by ACL Staticide) may also be used.

The sensor screen may be cleaned with a soft brush under clean, warm water. Return the filter to the detector once it has fully dried.

Hibernation (SGC+ Only)

When the SGC Plus is not used for extended period of time it can be turned off (Hibernated) to suspend the 24 month operation life countdown.

SGC Plus Hibernation with the IR Link
1. Check that you have installed the IR Link Software and the IR Link USB connections are plugged in
2. Click Read Device on the IR Link Software
3. Note when the monitor is hibernated the event log will be cleared. It is highly recommended to save the event log by pressing the save event log before hibernating.
4. Click on the Hibernate Button, acknowledge the event log message
5. Keep in front of the IR Link until the "Hibernate OK" message is displayed at the bottom of the IR Link Software
6. Confirm the monitor screen is blank
7. If you encounter any problems please contact GCT customer support at 877-525-0808

SGC Plus Hibernation with the Clip Dock
1. Check that the Clip Dock is turned on and USB memory is inserted
2. The Clip Dock is capable of hibernating 4 units at one time, place the desired amount of monitors in the docking station
3. Press and hold the bump test and calibration buttons down simultaneously for approximately 2 seconds
4. A successful hibernation will result in a GREEN light on for the corresponding unit number
5. Note the event log will be automatically stored on the Clip Dock USB memory
6. Confirm the monitor screen is blank
7. If you encounter any problems please contact GCT customer support at 877-525-0808

Instrument Specifications

Size: 3.3 x 2.0 x 1.1 in. (85 x 50 x 28 mm.)
Weight: 2.7 oz. (76 g)
Temperature: -40 to 122°F (-40 to +50°C) for CO and H_2S, -31 to +122°F (-35 to +50°C) for O_2
Humidity: 5% to 95% non-condensing relative humidity
Ingress Protection: IP 67
Alarms: Visual, vibrating, audible (minimum 95dB)
LEDs: 4 red alarm bar LEDs
Display: Liquid Crystal Display (LCD)
Battery Life: 24 months of operation/ 2 minutes of alarm per day.
Event Log Storage: Last 25 events. Newer events replace older events.
Warranty: Full 2 years (SGC) or 3 years (SGC+)
Sensor Type: Single plug-in electrochemical cell
User Options: User ID, Low Alarm, High Alarm, Calibration Interval, Bump Interval, Self-Test Interval, Calibration Gas, Display sensor/life remaining, Bump Due LED
Approvals: Intrinsic Safety/ Sécurité Intrinsèque:

Class I, Groups A, B, C, D T4
ETL 4003191
Europe: CE ⟨Ex⟩ II 1 G Ex ia IIC T4 Ga
IECEx Ex ia IIC T4 Ga
ITS11ATEX27326
IECEx ETL 11.0002
NCC 13.02333: Ex ia IIC T4 Ga
            (-40°C (H_2S,CO) / -35°C (O_2) ≤ Ta ≤ +50°C)

Contact Information

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Limited Warranty

Gas Clip Technologies ("GCT") warrants this product to be free from defects in material and workmanship under normal use and service for a period of two years beginning upon the date of activation for all Single Gas Clip products and the SGC Plus monitor for 3 years from date of activation or 24 months of operational life, whichever occurs first. This warranty is valid only if the detector is activated by the date on package. This warranty extends only to the sale of new and unused products to the original buyer. GCT's warranty obligation is limited, at GCT's option, to refund of the purchase price, repair, or replacement of a defective product that is returned to a GCT authorized service center within the warranty period. In no event shall GCT's liability hereunder exceed the purchase price actually paid by the buyer for the product. This Warranty does not include: (1) Fuses, disposable batteries, or routine replacement of parts due to the normal wear and tear of the product arising from use. (2) Any product which in GCT's opinion, has been misused, altered, neglected or damaged by accident or abnormal conditions of operation, handling, or use. (3) Any damage or defects attributable to repair of the product by any person other than the authorized dealer, or installation of unapproved parts on the product. The obligations set forth in this warranty are conditional on: (1) Proper storage, installation, calibration, use, maintenance, and compliance with the user's manual instructions and any other applicable recommendations of GCT. (2) The buyer promptly notifying GCT of any defect and, if required, promptly making the product available for correction. No goods shall be returned to GCT until receipt by the buyer of instructions from GCT. (3) The right of GCT to require that the buyer provide proof sale or packing slip to establish that the product is within the warranty period. The buyer agrees that this warranty is the buyer's sole and exclusive remedy and is in lieu of all other warranties, express or implied, including but not limited to any implied warranty or merchantability or fitness for a particular purpose. GCT shall not be liable for any special, indirect, incidental, or consequential damages or losses, including loss of data, whether arising from breach of warranty or based on contract, tort, or reliance on any other theory. Some countries or states do not allow limitation of the term of an applied warranty, or exclusion or limitation of incidental or consequential damages, the limitations and exclusions of this warranty may not apply to every buyer. If any provision of this warranty is held invalid or unenforceable by a court of competent jurisdiction, such holding will not affect the validity or enforceability of any other provision.