

blacklinesafety

G7

Technical User Manual

CONTENTS

OVERVIEW

Real-time connected safety.....	4
Blackline Safety Network	4
Blackline Live web portal	5
G7 models	6
Device comparison.....	7
What's in the box	8
Hardware details	9

INTERACTION

How it works.....	10
-------------------	----

NOTIFICATIONS

SureSafe.....	11
Yellow pending alarm	12
Yellow warning alarm.....	13
Red alert.....	14
LiveResponse	15

OPERATING

Charging	16
Wearing	16
Power on	17
Power off	17

SAFETY MONITORING FEATURES

Yellow pending alarm features	18
Potential Fall detected	18
Potential no-motion detected.....	19
Check-in request	19
Yellow warning alarm features.....	20
Messages	20
Speaker phone	21
Network connection interruption	21
Low battery	21
Red alert features.....	22
Fall detected	22
No-motion detected.....	22
Missed check-in	23
SOS alert.....	23

GAS DETECTION

Bump test	24
Calibration	26
Zero sensors.....	27

GAS DETECTION FEATURES

Yellow warning alarm gas features	28
Low warning alarm for gas	28
Under limit	29
Sensor error	29
Calibration	29
Bump test.....	29
Red alert gas features.....	30
High alert for gas.....	30
STEL (short term exposure limit) alert.....	30
TWA (time weighted average) alert.....	31
OL (over limit) alert	31

CARTRIDGES

Gas Cartridge replacement program.....	32
Changing cartridges	32
Cartridge care.....	33
Cartridge safety precautions	33
Caution	33

FIRMWARE UPDATES

Over-the-air (OTA) firmware updates	34
---	----

SUPPORT

Learn more	35
Customer Care.....	35

SPECIFICATIONS

Detailed specifications.....	36
------------------------------	----

LEGAL NOTICES AND CERTIFICATIONS

Legal notices	38
Intrinsically safe.....	39

OVERVIEW



REAL-TIME CONNECTED SAFETY

What is G7?

G7 is the first true work-everywhere, wearable, personal safety monitor. It keeps you connected — whether it's a gas leak, a health incident or an intruder.

Your G7 can trigger a facility evacuation, accounting for your location on a real-time map. Should you require help, G7 delivers the instant situational awareness needed to manage the fastest possible response to make a difference.

G7 has your back at all times.

BLACKLINE SAFETY NETWORK

How am I connected?

The Blackline Safety Network is the cloud-hosted system used to monitor your safety. It includes 2G/3G cellular networks, satellite networks, our Blackline Live™ web portal application, your monitoring account and your personal safety monitoring device.

Each G7 device requires an active service plan in order to connect to the Blackline Safety Network. Depending on your needs and requirements, there are various service plan options available such as 24/7 safety monitoring by Blackline's Safety Operations Center and two-way voice communication. Contact your organization's safety professional for more information regarding the details of your service plan.

BLACKLINE LIVE WEB PORTAL

What is Blackline Live?

G7 utilizes the cloud-hosted Blackline Live web portal to monitor and manage all your workers and devices.

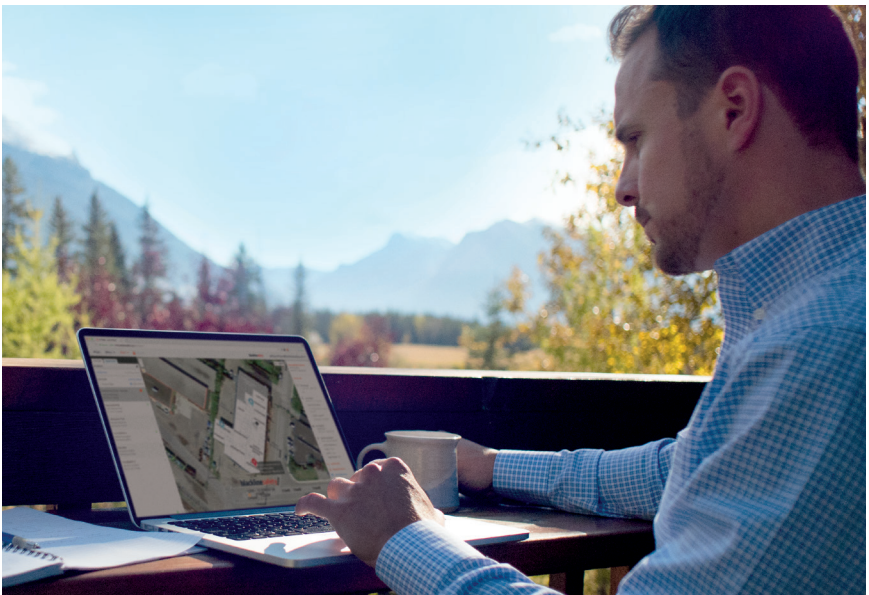
With Blackline Live's real-time alerting and live map with employee locations, you can quickly locate and respond to a worker in distress. Real-time alerts show the employees location on the map with the type of alert, enabling your team to efficiently send the help they need.

Blackline Live also allows you to create and customize configuration profiles that determine how a device or a group of devices operates in the field. Similarly, alert profiles are set up to determine what contacts should be notified in the event of an incident and what response protocol monitoring personnel will follow to ensure your team gets the help it needs.

Blackline Live keeps track of alert history, calibrations and bump tests eliminates the need to manually retrieve data logs from the field. All G7 data is communicated in real-time.

G7 is capable of receiving text messages from Blackline Live, with the option of receiving voice communications.

Blackline Live allows you to tailor user access depending on employee roles: employee, supervisor, administrator and monitoring team. This ensures that everyone has access to the right tools to accommodate their role in a comprehensive monitoring program.



G7 MODELS

What G7 model do I have?

There are two G7 models: G7c and G7x. The main difference between them is how they connect to the Blackline Safety Network.

If you are unsure of which G7 model you have, refer to the logo on the front of your G7.



G7c works anywhere with 2G/3G cellular coverage in over 200 countries to connect you directly to the Blackline Safety Network. Depending on your service plan, your G7c may have two-way voice capabilities.

G7x works in conjunction with Blackline's G7 Bridge — a portable satellite base station that keeps you connected in remote locations outside cellular coverage. G7x uses a 900 MHz radio to communicate with G7 Bridge up to 2km away. One G7 Bridge can link up to five G7x devices to the Blackline Safety Network through Iridium satellite or cellular data.

DEVICE COMPARISON

What features does my G7 have?

G7c and G7x are customized with one of three cartridge types. Cartridge selections include Standard, Single-gas and Quad-gas cartridges. The following comparison chart summarizes the features of each cartridge.

G7 MODEL

blacklinesafety
G7^c

blacklinesafety
G7^x



Standard Single Quad



Standard Single Quad

	G7 ^c			G7 ^x		
	Standard	Single	Quad	Standard	Single	Quad
Text messaging	●	●	●	●	●	●
Fall detection	●	●	●	●	●	●
No-motion detection	●	●	●	●	●	●
SOS alert	●	●	●	●	●	●
Check-in	●	●	●	●	●	●
Receive voice calls	●	●	●			
Single gas detection		●			●	
Multi gas detection			●			●
Low warning alarm for gas		●	●		●	●
Under limit alarm for gas		●	●		●	●
High alert for gas		●	●		●	●
STEL alert for gas		●	●		●	●
TWA alert for gas		●	●		●	●
Over limit alert for gas		●	●		●	●

WHAT'S IN THE BOX

Your G7 device comes with the following components:

- G7 personal safety monitoring device
- Pre-installed cartridge (Standard, Single-gas or Quad-gas cartridge)
- Quick start guide
- Charging system
 - Removable charging clip
 - USB cable
 - USB power adapter
- Certification and support card

If you have a Single-gas or Quad-gas cartridge you will also receive:

- Gas detection guide
- Single or Quad calibration cap (depending on your cartridge)
- Calibration gas tubing

HARDWARE DETAILS



INTERACTION

HOW IT WORKS

Interacting with G7 is easy with its high-visibility LCD display and three-button menu system.



OK button

Press OK to enter the main menu on the LCD screen and to confirm a menu selection.



Up and down arrow buttons

Press up or down to navigate the menu. Press and hold both simultaneously to mute a yellow warning alarm or red alert.



Latch pull

Pull down the latch to call for help when assistance is required.



Latch push button

Push the latch in to check in and tell your G7 that you are safe.

NOTIFICATIONS

When G7 has something to tell you it uses color, vibration, sound and on-screen messages.

SureSafe

Are you Connected?

G7 lets you know your connection status.



Blinking/Solid

Blinking green light

A blinking green SureSafe® light indicates your device is connecting to the Blackline Safety Network and your safety is not yet monitored.

Solid green light

A solid green SureSafe light indicates you're connected and being monitored by the Blackline Safety Network.

Sound and vibration

Configurable to sound an alarm if connection is lost after 5 minutes.

YELLOW PENDING ALARM

Are you safe?

G7 is asking you to confirm that you are safe.



Push the red latch button within a set period of time to confirm you are safe. If you don't push the latch button your G7 will communicate a red alert to monitoring personnel.

Sound and Vibration

Beeping alarm sound — an alarm sound and vibration, a pause, then an alarm sound and vibration and another pause, etc.

Yellow Pending Alarms:

- Potential fall detected
- Potential no-motion detected
- Check-in request

YELLOW WARNING ALARM

G7 has a message for you

Read your G7 screen.



Press and hold the up and down buttons at the same time to let your G7 know you have read the message. This will disable the audible and visual alarm.

Sound and Vibration

Urgent alarm sound — an alarm sound and vibration, a pause, another alarm sound and vibration, another pause, etc. (Faster than yellow pending alarm sound).

Yellow Warning Alarms:

- New message
- Voice call
- Network connection interruption
- Low battery
- Low warning alarm for gas
- Sensor error
- Under limit
- Calibration
- Bump test

RED ALERT

We're here to help

If you need assistance or have not responded to a yellow pending alarm.



Red alerts are immediately communicated to monitoring personnel. Read the information on your screen. Press and hold the up and down buttons simultaneously to mute. Muting will only silence the sound and vibration and does not cancel the alert to monitoring personnel.

Sound and vibration

Critical alarm sound — an urgent sound and a constant vibration without any pauses.

Red Alerts:

- Fall detected
- No-motion detected
- Missed check-in
- SOS alert
- High alert for gas
- STEL alert for gas
- TWA alert for gas
- Over limit alert for gas

LiveResponse

We've got your back

Monitoring personnel have acknowledged your red alert.



Lets you know that remote monitoring personnel are responding by following your team's emergency protocol. Once monitoring personnel have resolved the red alert, the blue LiveResponse™ light will shut off.

Sound and Vibration

Depending on your response protocol, a G7c with voice enabled service plan will automatically connect your speaker phone to monitoring personnel.

OPERATING

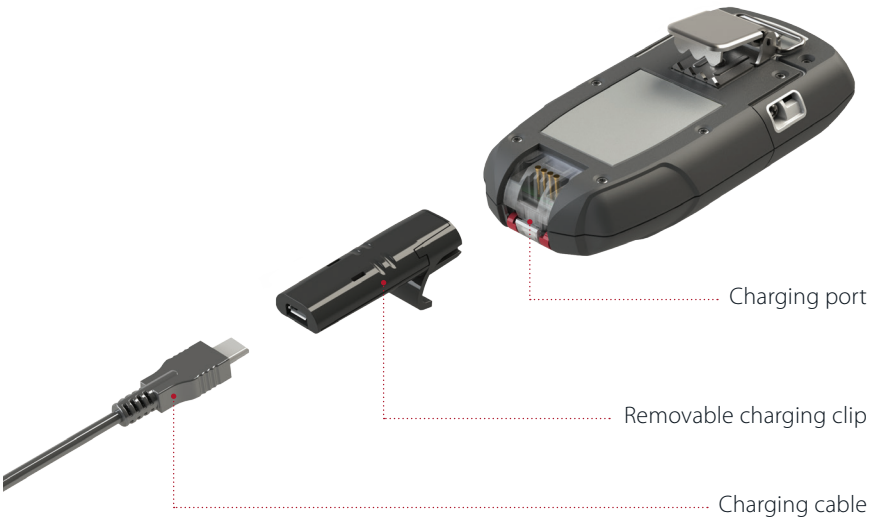
CHARGING

How do I charge my G7?

Insert the micro USB plug into the removable charging clip, then slide the clip onto the charging port at the bottom of your G7. A solid red light at the bottom of the device confirms your G7 is charging. The LCD screen will let you know when it is fully charged.

Blackline recommends that you fully charge your device after every shift.

NOTE: Charging will automatically turn your G7 off to ensure it will not trigger alerts while in the charging process.



WEARING

Where do I wear my device?

G7 monitors you best when clipped to your belt or chest pocket.

POWER ON

How do I turn on my G7c?

Press and hold the power button, and wait for the blinking green SureSafe light to turn solid. Once connected, the green light will stay on and your safety is being monitored.

How do I turn on my G7x?

Press and hold the power button on your G7 Bridge to turn it on first, and wait for the blinking green SureSafe light to turn solid. It takes approximately two minutes for G7 Bridge to connect to the Blackline Safety Network. Once connected, the green light will stay on.

Press and hold the power button on your G7x. Wait for the blinking green SureSafe light to turn solid. Once connected, the green light will stay on and your safety is being monitored.

NOTE: For best results, ensure your G7 Bridge is turned on before your G7x. If you are having difficulties connecting your G7x to G7 Bridge, please refer to your G7 Bridge manual.

POWER OFF

How do I turn off my G7c?

Press and hold the power button. The device will go into shutdown sequence, once all the lights and vibrations have stopped, you have been logged off from the Blackline Safety Network and your safety is no longer being monitored.

How do I turn off my G7x?

Press and hold the power button of your G7x. The device will go into shutdown sequence, sending your log off status to G7 Bridge.

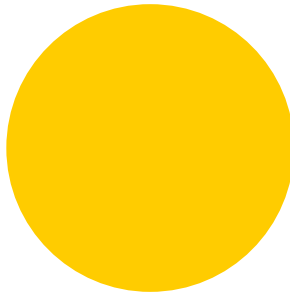
When suitably powered, G7 Bridge can remain on at all times. When G7 Bridge is off, all connected devices will no longer be monitored. Before powering down, ensure there are no other personal safety monitoring devices connected. Once confirmed, press and hold the power button on the G7 Bridge. The device will go into shutdown sequence. Your safety is no longer being monitored.

NOTE: For more information, please refer to the G7 Bridge technical user manual.

SAFETY MONITORING FEATURES

Your G7 is equipped with many features to monitor your safety. They are categorized into the type of notifications they trigger — yellow pending alarms, yellow warning alarms, and red alerts. All are customizable in Blackline Live to best fit your needs. Speak to your safety supervisor to learn about how your G7 features are configured.

YELLOW PENDING ALARM FEATURES



Blinking

POTENTIAL FALL DETECTED



What is a potential fall detected?

Your device is constantly monitoring you for falls. If a potential fall is detected, G7 will initiate a yellow pending alarm. The fall detection sensitivity is configurable.

POTENTIAL NO-MOTION DETECTED



What is a potential no-motion detected?

Your device is constantly monitoring your motion. It will automatically detect if you do not move within a pre-set duration, and will initiate a yellow pending alarm. The no-motion period and sensitivity are configurable.

CHECK-IN REQUEST



What is a check-in?

If enabled, you can configure your device to request periodic check-ins throughout your shift. The check-in countdown is displayed at the top right of the LCD screen. At the end of the timer, your G7 will initiate a yellow pending alarm to confirm you are safe. The check-in timer and pending alarm time are configurable.

NOTE: Your device can be configured to check-in early, before the yellow pending alarm sounds. If enabled, you can push and hold the red latch button for the duration of three vibrations to reset your check-in timer without waiting for the audible alarm. An early check-in cannot be configured if Silent SOS alert is enabled.

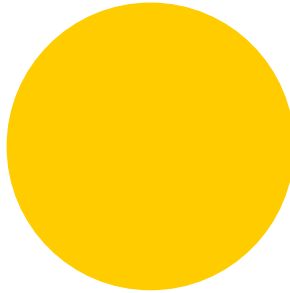
What do I do in the case of a yellow pending alarm?



If you are safe, push the red latch button. If you do not push the latch within the configured amount of time, your yellow pending alarm will communicate a red alert to monitoring personnel.

NOTE: While driving at speeds above 35 km/hr (22 mph), your G7 will not go into alarm for a check-in, potential fall detected or potential no-motion detected.

YELLOW WARNING ALARM FEATURES



MESSAGES



How do I receive a message?

Your device can receive messages from monitoring personnel. When there is an incoming message, G7 will inform you with a yellow warning alarm.

How do I send a message?

You can choose from a list of 10 pre-programmed messages to send to monitoring personnel. The messages can be pre-programmed on Blackline Live. Press the OK button to enter the main menu, the up or down arrow buttons to navigate the menu, highlight your selection, and the OK button to send.

How do I send a custom message?

At the bottom of the pre-programmed message list is an option to send a 16-character custom message to monitoring personnel. Press the up or down arrow buttons to scroll through the alphabet and numbers, press the OK button to move to the next character, press the OK button again to send.

NOTE: In the confirmation screen of your custom message, you have the ability to edit the current message by pressing the up arrow button, send the message by pressing the OK button or cancel the message by pressing the down arrow button.

SPEAKER PHONE



How do I use two-way voice calling?

If you have a G7c with a voice-enabled service plan, your speakerphone will automatically answer a call from monitoring personnel. G7 will inform you of an incoming call with a yellow warning alarm. The blue LiveResponse light will blink and you will hear a beep signifying the two-way voice call has been connected. In a noisy environment, it may be necessary to remove and hold the device near your ear, as you would a two-way radio.

NOTE: Pull the red latch to have monitoring personnel initiate a voice call.

NETWORK CONNECTION INTERRUPTION



How do I know if the connection to my device is lost?

If your device loses connection with the Blackline Safety Network, it will inform you with a yellow warning alarm after 5 minutes. This amount of time is configurable.

LOW BATTERY



How do I know if my device battery is low?

If your battery level goes below 20%, it will inform you with a yellow warning alarm. This percentage level is configurable.

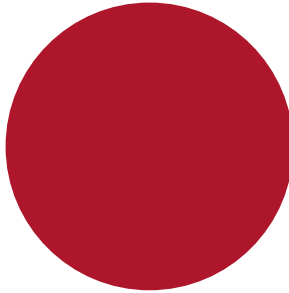
What do I do in the case of a yellow warning alarm?



Read your G7 screen. Press and hold the up and down arrow buttons at the same time to let your G7 know you have read the message.

Yellow warning alarms are between you and your G7, and will not notify monitoring personnel.

RED ALERT FEATURES



● ● ● ● ● ● ● **Rapid Blinking** ● ● ● ● ● ● ●

FALL DETECTED



What is fall detected?

If your device detects a fall and you have not responded to the yellow pending alarm, G7 will communicate a red alert to monitoring personnel. The fall detection sensitivity is configurable.

NO-MOTION DETECTED



What is no-motion detected?

If you are not moving and you have not responded to the yellow pending alarm, G7 will communicate a red alert to monitoring personnel. The no-motion period and sensitivity are configurable.

MISSED CHECK-IN



What is a missed check-in?

If enabled and you are unable to check-in during the yellow pending alarm time, your device will communicate a red alert to monitoring personnel.

SOS ALERT



What is an SOS Alert?

If you require assistance, you can manually send an SOS alert to monitoring personnel requesting immediate help to your location by pulling the red latch.

NOTE: Your device can be configured to send a Silent SOS alert to monitoring personnel without light, sound and vibration.

What do I do in the case of a red alert?



Red alerts are immediately communicated to monitoring personnel. Read the information on your G7 screen. Press and hold the up and down arrow buttons at the same time to mute the sound and vibration. This does not cancel the red alert sent to monitoring personnel.

GAS DETECTION

Included with your G7 Single-gas or Quad-gas cartridge is a calibration cap and tubing for bump tests and calibrations. Alternatively, bump tests and calibrations can be completed using a G7 Dock. Only perform bump test and calibrations in a safe environment. For more information and instructions, refer to the G7 Dock technical user manual.

BUMP TEST

What is a bump test?

It is safe practice to regularly test alarm indicators (lights, sound and vibration) by applying enough gas to confirm the sensors will trigger an alarm when gas is detected. G7 communicates bump test data automatically to the Blackline Safety Network, and will remind you when a bump test is overdue. The bump test schedule is configurable.

NOTE: To meet CSA LEL performance standard, you are required to bump test before each day's use. Blackline recommends you do not exceed 30 days without a bump test.

How do I bump test?

1. Attach tubing to the calibration cap
2. Ensure the other end of the tubing is attached to a 0.5 L/min regulator on the gas tank
3. On your G7, press the OK button to enter the main menu
4. Press the arrow buttons to navigate to Bump Test
5. Press the OK button to select Bump Test
6. Press the OK button to continue
7. G7 preforms an automatic audio and visual assessment to test vibration and lights
8. You can individually choose which sensors to test, by default G7 will test all sensors
9. Attach the calibration cap to your device
10. G7 will begin to count down from 60, apply the gas within this time window
11. Turn gas off when prompted on your G7 screen
12. Press the OK button to complete bump test
13. G7 will let you know if the bump test has passed or failed, and when your next bump test is due
14. Remove the calibration cap and let your G7 sit until the readings stabilize and your G7 is regulated



CALIBRATION

What is calibration?

Gas sensors periodically need to be calibrated by applying a known concentration of gas for a set amount of time. This procedure ensures the gas sensor can accurately detect gas levels throughout its operating life. The calibration schedule depends on your company's safety policy. Blackline recommends not exceeding 180 days without a calibration.

How do I calibrate?

1. Attach tubing to the calibration cap
2. Ensure the other end of the tubing is attached to a 0.5 L/min regulator on the gas tank
3. On your G7, press the OK button to enter the main menu
4. Press the arrow buttons to navigate to Calibration
5. Press the OK button to select calibration
6. Press the OK button to continue
7. G7 performs an automatic audio and visual assessment to test vibration and lights
8. You can individually choose which sensors to test, by default G7 will test all sensors
9. Attach the calibration cap to your device
10. G7 will begin to count down from 60, start applying gas within this time window and continue to apply gas for 2 minutes
11. Turn gas off when prompted on your G7 screen
12. Press the OK button to complete calibration
13. G7 will let you know if the calibration has passed or failed, and when your next calibration is due
14. Remove the calibration cap and let your G7 sit until the readings stabilize and your G7 is calibrated

NOTE: If you see a calibration fail message on your LCD screen, try the calibration again. If the error persists, please contact our Customer Care team.

ZERO SENSORS

What is zeroing?

If G7 is not reading zero and you know you are in an atmosphere with no gas, your gas sensor readings may have shifted. If this happens, it is best to calibrate your sensors. If you are unable to perform a calibration, you can zero your sensors to reset the baseline.

G7 can be configured to automatically zero on start-up when you turn on your device in Blackline Live.

NOTE: The baseline reading for oxygen is 20.9.

How do I zero sensors?

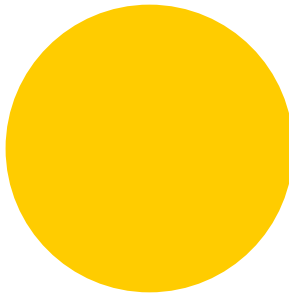
1. On your G7, press the OK button to open the main menu
2. Press the arrow buttons to navigate to Zero Sensors
3. Press the OK button to select zeroing
4. G7 will do an automatic audio and visual assessment to test vibration and lights
5. Press the OK button to start zeroing, do not apply any gas
6. The LCD screen will let you know once zero is complete

NOTE: If you see a zero incomplete message on your LCD screen you may be in an environment with gas levels, or your cartridge may need replacement.

GAS DETECTION FEATURES

Once you have completed the bump test and calibration, your G7 is ready to monitor and notify you of gas exposure. Gas detection alarms will notify you with either a yellow warning alarm or a red alert depending on the gas level measured. All settings are customizable in Blackline Live. Speak to your safety supervisor to learn about how your G7 gas features are configured.

YELLOW WARNING ALARM GAS FEATURES



LOW WARNING ALARM FOR GAS

When does G7 trigger a low yellow warning alarm for gas?

When gas levels reach the low concentration configured by your safety supervisor, G7 will inform you with a yellow warning alarm every two minutes until gas levels are reduced.

NOTE: A G7 with O₂ sensors will trigger low warning alarms in oxygen-deficient and oxygen-enriched atmospheres. An oxygen-deficient atmosphere poses a risk of insufficient oxygen for breathing. An oxygen-enriched atmosphere presents an increased risk of explosion.

UNDER LIMIT

When does G7 trigger an under limit yellow warning alarm?

If a gas sensor's baseline shifts, its reading will shift accordingly and become unreliable. When this happens, the presence of gas can still be measured, but cannot be converted into an accurate reading. G7 will inform you of such an event with a yellow warning alarm. A calibration will be required to ensure the sensors are accurately detecting gas levels. If you are unable to perform a calibration and are in a clean atmosphere, you can zero your sensors to reset the baseline.

SENSOR ERROR

When does G7 trigger a sensor error yellow warning alarm?

If a gas sensor stops working for any reason, G7 will inform you with a yellow warning alarm. An X on your LCD screen will indicate which sensor or sensors are generating the error message. Power off and restart your G7. If the sensor error warning persists, perform a calibration. If this does not correct the problem, you will need to replace your cartridge.

CALIBRATION

When does G7 trigger a calibration yellow warning alarm?

When gas sensors are due for a calibration, G7 will inform you with a yellow warning alarm.

BUMP TEST

When does G7 trigger a bump test yellow warning alarm?

When gas sensors are due for a bump test, G7 will inform you with a yellow warning alarm.

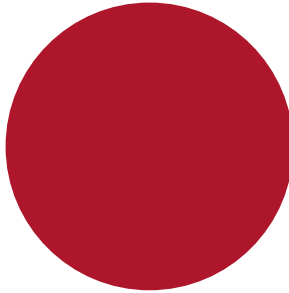
What do I do in the case of a yellow warning alarm?



Read your G7 screen. Press and hold the up and down arrow buttons at the same time to let your G7 know you have read the message.

Yellow warning alarms are between you and your G7, and will not notify monitoring personnel.

RED ALERT GAS FEATURES



● ● ● ● ● ● ● Rapid Blinking ● ● ● ● ● ● ●

HIGH ALERT FOR GAS

When does G7 trigger a high alert for gas?

If a gas sensor detects gas levels above the maximum gas concentration configured by your safety supervisor, G7 will communicate a red alert to monitoring personnel.

NOTE: A G7 with O₂ sensors will trigger red alerts in both oxygen-deficient and oxygen-enriched situations.

STEL (SHORT TERM EXPOSURE LIMIT) ALERT

When does G7 trigger a STEL alert?

If a gas sensor detects you have reached the short-term exposure limit configured by your safety supervisor, your G7 will communicate a red alert to monitoring personnel. This limit is the gas concentration that you can be continuously exposed to for a 15-minute time frame without suffering adverse health effects.

TWA (TIME WEIGHTED AVERAGE) ALERT

When does G7 trigger a TWA alert?

If a toxic sensor detects you have exceeded the average allowable amount of gas during an eight-hour period, G7 will communicate a red alert to monitoring personnel.

NOTE: The two TWA measuring methods available for use on your G7 are: OSHA (United States Department of Labor Occupational Safety and Health Administration) or ACGIH (American Conference of Governmental Industrial Hygienists).

OSHA is defined as a rolling average of gas exposure accumulated over an eight-hour period of operation. If the worker is in the field longer, the most recent eight-hour cumulative value is used.

ACGIH is defined as the total accumulated average, from four to 16 hours as configured by your safety supervisor.

OL (OVER LIMIT) ALERT

When does G7 trigger an OL alert?

If a gas sensor detects an excessive amount of gas and can no longer give you an accurate reading, G7 will communicate a red alert to monitoring personnel.

What do I do in the case of a red alert?



Evacuate the area and follow your emergency safety protocol.

Red alerts are immediately communicated to monitoring personnel. Read the information on your G7 screen. Press and hold the up and down arrow buttons at the same time to mute the sound and vibration. This does not cancel the remote alert sent to monitoring personnel. The sound and vibration will return after one minute. This will continue until gas levels or averages have reduced or returned to acceptable concentrations.

CARTRIDGES

GAS CARTRIDGE REPLACEMENT PROGRAM

What do I do when I need a new gas cartridge?

If you have an uninterrupted service plan for your G7 gas cartridge, Blackline will replace expired cartridges for you free of charge. To inquire about or request new cartridges, please contact our Customer Care team or your distributor.

CHANGING CARTRIDGES

How do I change my G7 cartridge?

1. Power off G7
2. Using a Torx T8 screwdriver, remove the screws on each side of the device
3. Pull up on the cartridge
4. Slide a new cartridge onto G7, ensuring the cartridge clicks into place
5. Replace screws into each side of the device



CARTRIDGE CARE

Sensor contaminants

Gas sensors are susceptible to contamination by a variety of common chemicals, reducing or eliminating their sensitivity. Care should be taken when using silicones, cleaners, solvents and lubricants in close proximity to sensors as exposure may cause permanent damage to the sensor. If a device is exposed to a new chemical or compound, it is best practice to bump test and calibrate units to ensure proper sensor function is maintained.

CARTRIDGE SAFETY PRECAUTIONS

CAUTION

For safety reasons this equipment must be operated and serviced by qualified personnel only. Read and understand instruction manual completely before operating or servicing.

To meet the CSA LEL performance standard, the following safety precautions should be considered:

Before each day's usage sensitivity must be tested on a known concentration of methane equivalent to 25-50% of full scale concentration. Accuracy must be within 0 and 20% of actual. Accuracy may be correct by calibration.

Any rapid up-scale reading followed by declining or erratic reading may indicate a gas concentration beyond upper scale limit which may be hazardous.

High off-scale readings may indicate an explosive concentration.

This area must be free of flammable gases during calibration.

FIRMWARE UPDATES

OVER-THE-AIR (OTA) FIRMWARE UPDATES

How does G7 get updated?

To offer new features, Blackline Safety periodically releases over-the-air (OTA) firmware updates. Your G7 device will automatically download and install the new firmware.

Blackline Safety will contact you directly for specific information about new updates. If you have any questions, please contact our Customer Care team.

NOTE: OTA firmware updates are only available for G7 Bridge when it is brought into cellular range. If G7 Bridge cannot be removed from satellite only reception, contact Customer Care to receive a firmware update kit.

SUPPORT

LEARN MORE

Visit support.BlacklineSafety.com to find support and training materials for G7.

CUSTOMER CARE

For technical support, please contact our Customer Care team.

North America (24 hours)

Toll Free: 1-877-869-7212 | support@blacklinesafety.com

United Kingdom (8am-5pm GMT)

+44 1787 222684 | eusupport@blacklinesafety.com

International (24 hours)

+1-403-451-0327 | support@blacklinesafety.com

SPECIFICATIONS

DETAILED SPECIFICATIONS

Standard G7 Safety Alert Features

All safety alerts are transmitted in real-time to the Blackline Safety Network

Fall detection and No-motion detection: Tri-axis accelerometer, tri-axis gyro, software processing, configurable sensitivity, configurable time window (1–30 mins, or off) for no-motion detection

SOS latch: Pull latch to trigger remote alert

Silent emergency: Press and hold latch to trigger remote alert

Low-battery: configurable threshold

Check-in: Configurable timer (15 – 180 min, or off), automatic check-in when driving

Additional Gas Cartridge Features

All gas alerts are transmitted in real-time to the Blackline Safety Network

Over limit

Under limit

Time-weighted average (TWA)

Short-term exposure limit (STEL)

High gas alert

Low gas alert

Bump test and calibration notification

Bump test and calibration failure alert

Size & Weight

G7 with Standard Cartridge

Size: 64 mm x 124 mm x 27 mm (2.52" x 4.88" x 1.06")

Weight: 162 g (5.7 oz)

G7 with Single-gas Cartridge

Size: 64 mm x 128 mm x 27 mm (2.52" x 5.04" x 1.06")

Weight: 167 g (5.9 oz)

G7 with Quad-gas Cartridge

Size: 66 mm x 150 mm x 27 mm (2.52" x 5.91" x 1.06")

Weight: 192 g (6.8 oz)

Gas Sensor Options

H₂S, LEL, CO, O₂, CO₂, NH₃

H₂S (Hydrogen Sulfide)

Sensor type: Electrochemical

Lowest detection limit: 0.5 ppm

Upper detection limit: 50 ppm

Resolution: 0.1 ppm

LEL Combustible

Sensor type: MEMS pellistor or NDIR

Lowest detection limit: 4% LEL

Upper detection limit: 100% LEL

Resolution: 1% LEL

CO (Carbon Monoxide)

Sensor type: Electrochemical

Lowest detection limit: 1 ppm

Upper detection limit: 500 ppm

Resolution: 1 ppm

O₂ (Oxygen)

Sensor type: Pumped electrochemical

Lowest detection limit: 0.1% vol

Upper detection limit: 25.0% vol

Resolution: 0.1% vol

CO₂ (Carbon Dioxide)

Sensor type: Infrared

Lowest detection limit: 50 ppm

Upper detection limit: 50000 ppm

Resolution: 50 ppm

NH₃ (Ammonia)

Sensor type: Electrochemical

Lowest detection limit: 0.5 ppm

Upper detection limit: 100.0 ppm

Resolution: 0.1 ppm

For a full range of supported gas sensors contact Blackline Safety.

User Interface

168 by 144 pixel graphical, high contrast, liquid crystal display with front lighting, menu system driven by three-button keypad, power button (on/off), check-in button (check-in/silent SOS), SOS latch (send emergency alert)

User Notification

Green SureSafe® light: Blinking (powered), continuous (connected)

Yellow top and front lights: Personal pending alarm and personal warning alarm

Red top and front lights: Alert communicated

Blue LiveResponse™ top and front lights: Monitoring team confirmation that alert has been acknowledged

Personal alarm Indicators: speaker, LEDs and vibration motor

Speaker sound pressure level: ~90 dB @ 10 cm (~90 dB @3.94")

Voice calling: Speakerphone and phone modes (G7c model only)

G7c Wireless Radio

Wireless coverage: ~200 countries

North America: 2G/3G radio, GSM 850 MHz, PCS 1900 MHz, 3G UMTS bands 2, 5 and 6

International: 2G/3G radio, E-GSM 900 MHz, DSC 1800 MHz, 3G UMTS bands 1 and 8

Antenna: Internal regionally optimized

G7x Wireless Radio

Works with G7 Bridge satellite base station

Radio: 902.0 – 928.0 MHz, 1 Watt

Antenna: Internal

Radio link range: 2 km (1.25 mi) real-world

Wireless Updates

Device configuration changes: Yes

Device firmware upgrade over-the-air (FOTA): Yes

Location Technology

GPS Radio: 48-channel high sensitivity

Assisted-GPS: Yes (G7c model only)

GPS Accuracy: ~5 m (16 ft) Outdoors

Indoor location technology: Blackline Safety location beacons

Location update frequency: G7c 5 min, G7x 15 min defaults

Power & Battery

Rechargeable Li-ion battery: 1100 mAh Li-ion

Battery Life: 18 hours at 20°C (68°F) under normal usage

Charge time: 4 hours

Environmental

Storage temperature: -30°C to 75°C (-22°F to 167°F)

Operating temperature: -20°C to 55°C (-4°F to 131°F)

Charging temperature: 0°C to 45°C (32°F to 113°F)

Ingress Protection: Designed to meet IP67

Approvals*

G7c: SAR, RoHS, CE, RCM

FCC ID: XPY1CGM5NNN | IC ID: 8595A-1CGM5NNN

Intrinsically safe: Class I Division 1 Groups A, B, C, D T4;

Class I Zone 0 AEx ia IIC T4 Ga; Ex ia IIC T4 Ga

G7x: SAR, RoHS, RCM

FCC ID: W77G7X | IC ID: 8255A-G7X

Intrinsically safe: Class I Division 1 Groups A, B, C, D T4; Class I

Zone 0 AEx ia IIC T4 Ga; Ex ia IIC T4 Ga; IECEx Ex ib IIC T4 Gb

Warranty

G7: two years limited warranty

Cartridges: lifetime warranty and sensor replacements with service plan

Blackline Complete: three year operating lease

Blackline Live Web Application

Cloud-hosted safety monitoring web application is highly customizable for every customer requirement. Includes live map, employee address book, user roles, alert management, device configurations, alert setups and reporting.

* Check with Blackline for approval status. All specifications subject to change.

LEGAL NOTICES AND CERTIFICATIONS

LEGAL NOTICES

Information in this document is subject to change without notice. This document is provided "as is" and Blackline Safety Corp. ("Blackline") and its affiliated companies and partners assume no responsibility for any typographical, technical or other inaccuracies in this document. Blackline reserves the right to periodically change information that is contained in this document. However, Blackline makes no commitment to provide any such changes, updates, enhancements or other additions to this document to you in a timely manner or at all.

Copyright © 2016 Blackline Safety Corp. All rights reserved.

Except as expressly provided herein, no part of this manual may be reproduced, copied, transmitted, disseminated, downloaded, or stored in any storage medium, for any purpose without the express prior written consent of Blackline Safety Corp. ("Blackline"). Blackline hereby grants permission to download a single copy of this manual onto some form of electronic storage medium to be viewed and to print one copy of this manual or any revision hereto, provided that such electronic or printed copy of this manual must contain the complete text of this copyright notice. Further, any unauthorized commercial distribution of this manual or any revision hereto is strictly prohibited.

The Blackline, Alert, Locate, Respond, families of related marks, images and symbols, including Blackline, G7, G7c, G7x, LiveResponse, Loner, LonerIS, Loner IS+, Loner M6, Loner M6i, Loner Mobile, Loner 900, and SureSafe are the exclusive properties and trademarks of Blackline Safety Corp. All other brands, product names, company names, trademarks and service marks are the properties of their respective owners.

Warranty

Your G7 device is warranted against defects in materials and workmanship for up to two years from date of purchase. For further details regarding your Blackline warranty, please refer to your terms and conditions of service.

FCC Compliance

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Note: the grantee is not responsible for any changes or modifications not expressly approved by the party responsible for compliance. Such modifications could void the user's authority to operate the equipment.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for further assistance.

Industry Canada Compliance

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Notification d'Industrie Canada

Ce dispositif est conforme au(x) format(s) RSS libre(s) d'Industrie Canada. Son fonctionnement est assujéti aux deux conditions suivantes : (1) Cet appareil ne peut causer d'interférences nuisibles, et (2) cet appareil doit accepter toute interférence reçue, y compris les interférences pouvant provoquer un mauvais fonctionnement du dispositif.

Warning

Do not operate Blackline Safety products where you are not able to safely operate your mobile/cellular phone.

Electrical equipment may be hazardous if misused. Operation of this product, or similar products, must always be supervised by an adult. Do not allow children access to the interior of any electrical product and do not permit them to handle any cables.

Do not operate or store Blackline products outside their specified operating or storage temperatures. Consult the specifications section for more information.

Blackline products may contain an internal lithium-ion battery pack. Seek advice from your local electronics recycling authority regarding the disposal of your device. Do not dispose Blackline products in your household trash.

INTRINSICALLY SAFE

Intrinsically Safe

This device is certified Intrinsically Safe for use in Class I, Division 1, Groups A,B,C,D T4; Ex ia IIC T4 Ga; Class I, Zone 0, AEx ia Group IIC T4 Ga hazardous (classified) locations. G7x is certified as Ex ib IIC T4 Gb under IECEx.

Sécurité intrinsèque

Cet appareil est certifié à sécurité intrinsèque pour l'usage en classe I, division 1, groupe A,B,C,D T4; Ex ia IIC T4 Ga; classe I zone 0 AEx ia groupe IIC T4 Ga dans les lieux classés comme dangereux.

CSA: 70098755
UL 60079

Class I, Division 1, Groups A,B,C,D,T4
Class I, Zone 0, AEx ia IIC T4 Ga

CAN/CSA C22.2 No. 60079
Ex ia IIC T4 Ga

-20°C ≤ Ta ≤ +55°C

IECEx/ATEX: IECEX CSA 17.0005;
Sira 17ATEX2083X

IEC 60079; EN 60079

G7c: Ex ia IIC T4 Ga

G7x: Ex ib IIC T4 Gb



Base unit P/N "G7*-#" (* = c or x; # = NA, EU or AZ)

Gas cartridge: Standard P/N "Z" | Single-gas P/N "S-#" | Quad-gas P/N "Q-####" (# = Electro chemical sensor identifier or "X" indicating no sensor)

Quad-gas cartridges with P/N matching "Q-###P" are rated "Ex ia IIB T4 Ga" and "Ex ib IIC T4 Gb".

The equipment shall only be charged when in the non-hazardous area using a charger specifically supplied for use with the unit (for example part number SAW06D-050-1000xx, manufactured by Shenzhen Shi Ying Yuan Electronics Co., Ltd.), approved as SELV or Class 2 equipment against IEC 60950, IEC 61010-1 or an equivalent IEC standard. The maximum voltage and current from the charger shall not exceed 5.625Vdc and 1A respectively.

L'équipement ne doit être chargé que dans la zone non dangereuse à l'aide d'un chargeur spécifiquement fourni pour l'utilisation avec l'appareil (par exemple, numéro de référence SAW06D-050-1000xx, fabriqué par Shenzhen Shi Ying Yuan Electronics Co., Ltd.) SELV ou Classe 2 selon IEC 60950, IEC 61010-1 ou une norme IEC équivalente. La tension et le courant maximum du chargeur ne doivent pas dépasser respectivement 5.625Vdc et 1A.

Standards:

UL 60079-0: 2013

UL 60079-11: 2013

CAN/CSA C22.2 No. 60079-0: 2015

CAN/CSA C22.2 No. 60079-11: 2014

EN 60079-0: 2012

N 60079-11: 2012

IEC 60079-0: 2011

IEC 60079-11: 2011

Consult with your organization's safety professional for further information regarding the topic of intrinsic safety and any policies, procedures, facilities, or locations within facilities that may be related to intrinsic safety.

S'il vous plaît consulter professionnel de la sécurité de votre organisation pour de plus amples informations concernant le sujet de la sécurité intrinsèque et les politiques, les procédures, les installations, ou emplacements au sein des établissements qui peuvent être liés à la sécurité intrinsèque.

Blackline Safety | Suite 101, 1215 - 13 Street SE | Calgary, AB T2G 3J4 | Canada

blacklinesafety

www.BlacklineSafety.com