blacklinesafety

G7

Technical User Manual

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THE WORLD'S FIRST EVERYTHING DETECTOR

What is G7 Insight?
G7 Insight is a simple solution that bundles industry-leading gas detection with automated compliance and business analytics tools. For the first time ever, the days of manually collecting data from the field, reviewing spreadsheets and compiling reports are behind you.

With just a few minutes of connectivity per day, all data automatically recorded by G7 devices in the field is uploaded to the Blackline Safety Network for automatic compilation and report generation.

What are real-time features?
Real-time safety monitoring leverages location technology, communications and live data to provide complete transparency and control over your safety program. Real-time features utilize G7 devices' cellular or satellite connectivity, connecting people in the field with live monitoring teams in real time — ensuring no call for help will ever go unanswered again.

In the event of an safety incident or gas exposure, monitoring personnel can see what has happened, and communicate with workers directly via two-way voice calling or text messaging through their G7 device.

BLACKLINE SAFETY NETWORK

How am I connected?
The Blackline Safety Network is a cloud-hosted system comprised of 2G/3G cellular networks, satellite networks, our Blackline Live™ web portal application, your monitoring account and your G7.

G7 devices require an active service plan in order to connect to the Blackline Safety Network. Depending on your needs and requirements, various service plan options are 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, as well as deliver reports and business analytics insights.

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 help.

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, eliminating the need to manually retrieve data logs from the field.

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.

What is Blackline Analytics?
With Blackline Analytics, review data collected from your device fleet to make decisions, follow up with your team and ensure everything is running smoothly. Choose from a number of different reports and filters to explore your data.

Blackline Analytics is built directly into the Blackline Live portal, allowing anyone with login access to see their own organization's data, as well as client data. If users have only been given access to specific groups of devices, they will only see data attached to those particular devices.

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 four cartridge types. Cartridge selections include Standard, Single-gas, Multi-gas diffusion and Multi-gas pump cartridges. The following comparison chart summarizes the features of each cartridge.

	Standard	Single	Multi (diffusion)	Multi (pump)
Text messaging	●	●	●	●
Fall detection	●	●	●	●
No-motion detection	●	●	●	●
SOS alert	●	●	●	●
Check-in timer	●	●	●	●
Configuration modes		●	●	●
Receive voice calls*	●	●	●	●
Push-to-talk enabled*	●	●	●	●
Single gas detection		●		
Multi gas detection			●	●
Pump enabled				●
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		●	●	●

*G7c devices only

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 Multi-gas cartridge)
- Getting started guide
- Optional real-time features guide
- Charging system
  - Removable charging clip
  - USB cable
  - USB power adapter
- Certification and support card

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

- Single-gas or Multi-gas calibration cap (depending on your cartridge)
- Calibration gas tubing

HARDWARE DETAILS

Top lights
- Pending and warning
- Alerts
- LiveResponse

Connectivity light

Cartridge (Standard, Single-gas or Multi-gas)

LCD screen

Speaker

Up button

Down button

OK button

Latch pull

Power button

Latch push button

Microphone (G7c only)

Charging light

Cartridge label

Metal belt clip

Product label

Charging port

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

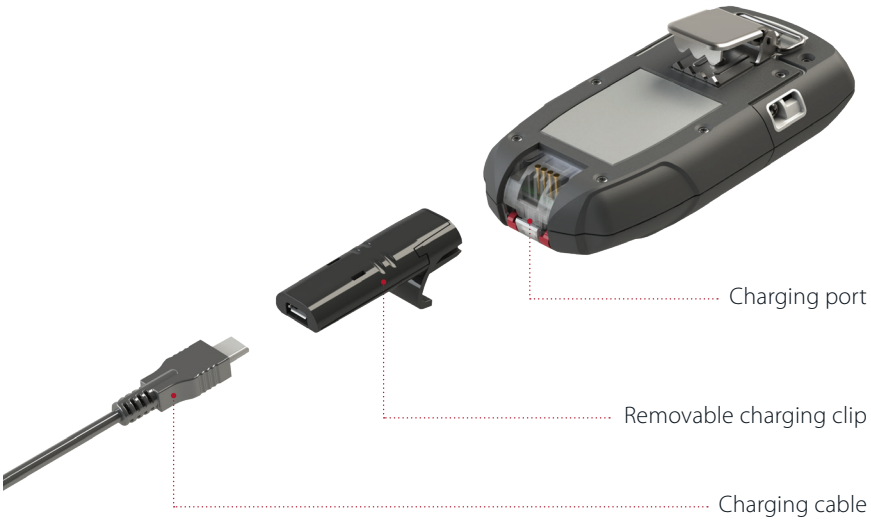
Push the latch in to check in and tell your G7 that you are safe.

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, which can take up to four hours.

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



NOTE: If you have G7 PowerPack accessory attached to your device, simply slide the charging clip into PowerPack's charging port. Both PowerPack and G7 will be charged simultaneously.

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 connectivity light to turn solid. When connected, the green light will remain solid.

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 connectivity light to turn solid, it takes approximately two minutes for G7 Bridge to connect to the Blackline Safety Network. When connected, the green light will remain solid.

Press and hold the power button on your G7x. Wait for the blinking green connectivity light to turn solid. When connected, the green light will remain solid.

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.

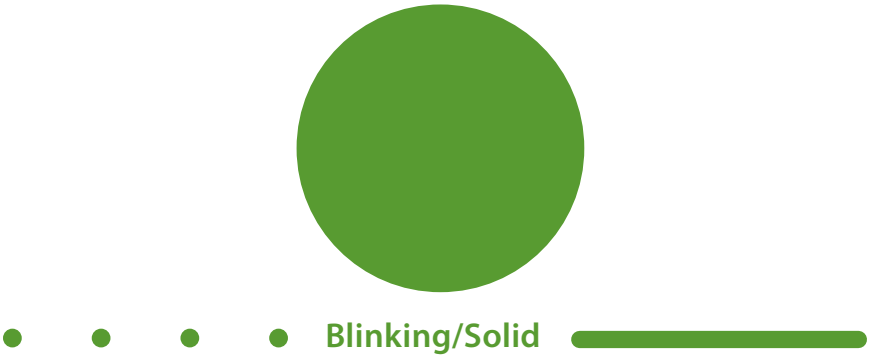
How do I turn off my G7x?
Press and hold the power button of your G7x. The device will go into shutdown sequence, sending your log off status to G7 Bridge.

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 G7x 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.

CONNECTIVITY LIGHT

Are you connected to the Blackline Safety Network?
G7 lets you know your connection status.



Blinking green light
A blinking connectivity light indicates that your G7 is storing data. It is not currently connected to the network and will send data when the light is solid.

Solid green light
A solid connectivity light indicates that G7 is actively transmitting data and is connected to the Blackline Safety Network.

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

NOTE: If you are using real-time features, your safety is only monitored when the connectivity light is solid.

VIEWING G7'S ASSIGNED USER

What is an assigned user?

G7 can be assigned a team member in Blackline Live. From Blackline Live, there is also the option to display the assigned user on the device, which allows you to identify which device belongs to which user. G7 does not have to be assigned a user to function as a safety monitor or gas detector.

Where can I see G7's assigned user?

When the "display assigned user on device" option is enabled from Blackline Live, G7 will show the assigned team member in three places (as seen in the figures below):

- On startup
- On the charging screen
- In G7's menu, under advanced info > user info

On the user info screen, you will also see a team member's employee ID, if it has been added in Blackline Live.

Startup

Charging screen

Advanced info > user info

GAS DETECTION

Included with your G7 Single-gas or Multi-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 on bumping or calibrating with G7 Dock, refer to the G7 Dock technical user manual.

BUMP TEST

What is a bump test?

It is safe practice to regularly test gas sensors by applying the target gas. G7's bump test also tests the operation of light, sound and vibration indicators. The bump test schedule depends on your company's safety policy. G7 automatically communicates bump test data 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 fixed flow regulator on the gas tank
3. On your G7, press the OK button to enter the main menu
4. Use the arrow buttons to navigate to *gas options,* press OK
5. Use the arrow buttons to navigate to *bump test,* press OK
6. Press the up arrow 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. 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 has returned to baseline

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


Tubing
Single-gas calibration cap
H2S
OK


Tubing
Multi-gas calibration cap
H2S
OK

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 fixed flow regulator on the gas tank
3. On your G7, press the OK button to enter the main menu
4. Use the arrow buttons to navigate to *gas options,* press OK
5. Use the arrow buttons to navigate to *calibration,* press OK
6. Press the up arrow 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. Apply the 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.

BUMP TEST & CALIBRATION REMINDER WINDOW

What is the bump test and calibration reminder window?
A bump test and calibration reminder window can be customized from G7's configuration profile in Blackline Live. This setting will prompt the device to show a bump test or calibration reminder alarm upon startup if one of these tests is due within the configured window of time.

What is the purpose of the bump test and calibration reminder window?
Enabling this feature will help ensure G7 goes into alarm upon startup instead of while it is in use in the field. If you have a daily bump interval your bump test will be due in 24 hours. However, if you start your shift 2 hours early the following day, you will not be prompted to bump your device as 24 hours has not elapsed. When it becomes due, you may already be out in the field without bump test materials. If you have a 2 hour bump test/calibration reminder window, G7 will go into yellow warning alarm for bump test due on startup when the bump is due within this 2 hour window.

BUMP TEST AND CALIBRATION LOCK

What is the bump test and calibration lock?
In the case that an organization wants to make the device unusable when it is out of compliance, the calibration or bump test lock can be enabled from G7's configuration profile in Blackline Live. This feature locks the device's screen and all functionality when a bump test or calibration is due on startup. This means the user cannot use their device in any capacity (including gas readings, SOS latch, message sending) until it has been bump tested or calibrated.

What if a bump test or calibration is due during my shift?
If a bump test or calibration comes due during your shift (not on startup), the device will not lock as this is a safety hazard, since the user will not be able to use G7 to call for help. The device will go into a yellow warning alarm for bump test or calibration due, and the message will display in the banner, but the device will remain fully functional.

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 preform a calibration, you can zero your sensors to reset the baseline.

G7 can be configured to automatically or manually zero on start-up when you turn on your device from the configuration profile 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 *gas options,* press OK
3. Use the arrow buttons to navigate to *zero sensors,* press OK
4. Press the up arrow to begin zeroing. Do not apply any gas.
5. 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.

PID TARGET GASES

What are target gases?

Photoionization (PID) sensors can be used to detect a large range of gases. A target gas refers to the specific gas you are using trying to detect. G7's readings will be adjusted based on the target gas it is configured to detect.

How do I set G7's target gas?

G7's PID sensor's target gas is set from the configuration profile in Blackline Live. Under the photoionization detector section of the gas sensor settings card, you can choose an existing target gas or set a custom target gas.

Where do I see which target gas G7 is detecting?

The target gas G7 is configured to use can be seen in two places:

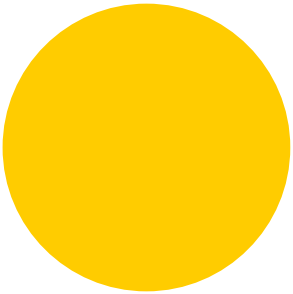
- On startup
- In the gas options menu, under gas info > VOC target

In both of these places, G7's screen will display the target gases name, as well as its correction factor.

GAS DETECTION FEATURES

Once you have completed a bump test and calibration, 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 gas features are configured.

YELLOW WARNING ALARM GAS FEATURES



Rapid Blinking

LOW WARNING ALARM FOR GAS

When does G7 trigger a low yellow warning alarm for gas?
When gas levels reach the low concentration threshold 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 O_2 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.

SENSOR 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.

PUMP BLOCK

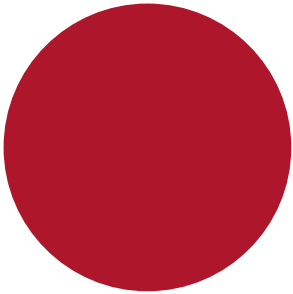
When does G7 trigger a pump block yellow warning alarm?
If your pump inlet is blocked, G7 will inform you with a yellow warning alarm.

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 G7, and will not notify monitoring personnel if you are using real-time features.

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 high gas concentration threshold configured by your safety supervisor.

NOTE: A G7 with O_2 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. 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.

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.

NOTE: STEL, LEL and peak readings are reset on power cycle unless configured to resume readings in G7's configuration profile in Blackline Live.

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

Evacuate the area and follow your emergency safety protocol. 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. The sound and vibration will return after one minute. This will continue until gas levels or averages have reduced or returned to acceptable concentrations.

For real-time users, red alerts are immediately communicated to monitoring personnel. Muting sound and vibration does not cancel the remote alert sent to monitoring personnel.

CONFIGURATION MODES

Configuration modes are customized in the G7 configuration profile on Blackline Live. Each profile supports up to a total of five 'modes' . These modes allow G7 to temporarily change its behavior for different situations, and can be turned on and off through G7's interface.

AVAILABLE MODES

Normal
This mode is the configuration you determine for everyday operation. G7 will operate using this mode as a default.

Pre-entry
Pre-entry mode is used before entering a space that could potentially contain dangerous gas. This mode can be used with or without a pump cartridge, which will actively draw surrounding air to its sensors and test gas levels.

SCBA
This mode is meant to be used when the device user is wearing a self-contained or supplied air breathing apparatus (SCBA/SABA) and is entering an area that is known to have high gas levels.

Leak check
Leak check mode can be used when checking for gas leaks in a particular area. This mode – like pre-entry mode – can be used with or without a pump cartridge.

High risk
This mode is unique in that it is meant for general high-risk situations, such as an evacuation or travelling through a dangerous area. Unlike the other modes, you will never be timed out and must exit it manually.

Pump run
This mode is unique in that a multi-gas pump cartridge is required to use this mode, and it runs the pump continuously – such as for use in a hole-watch situation. Unlike the other modes, you will never be timed out and must exit it manually.

ENTERING A MODE

How do I enter a mode?
To use a mode, it must first be enabled in G7's configuration profile on Blackline Live. Entering a mode can be done from G7's main menu or main status screen.

To enter a mode from the modes menu:

1. Press OK to enter G7's main menu
2. Use the up and down arrows to navigate to *modes*
3. Press OK to enter the modes menu
4. Select the mode you wish to enter
5. Confirm that you want to enter the mode by selecting *yes*
6. G7's screen will invert and your information banner will display your current mode

To enter a mode from the main status screen:

1. Press the up or down arrow to open G7's secondary menu
2. Continue to press the up or down arrow until you reach your desired mode
3. Press OK to enter the mode
4. G7's screen will invert and your information banner will display your current mode

EXITING A MODE

How do I exit a mode?

When you'd like to return the device to normal operation, you will need to exit the configuration mode you are currently in. Exiting a mode can be done from G7's main menu or main status screen.

To exit from the modes menu:

1. Press OK to enter G7's main menu
2. Use the up and down arrows to navigate to *modes*
3. Press OK to enter the modes menu
4. Select *normal* mode
5. Confirm that you want to return to normal mode by selecting *yes*
6. G7 will return to normal function

To exit from the main status screen:

1. Press the up or down arrow to open G7's secondary menu
2. Press OK to exit the mode
3. G7 will return to normal function

What is a mode timeout?

Each configuration mode (excluding normal and high risk mode) has a timeout period. After this time period has elapsed, you will be asked if you would like to continue in this mode. If you select *yes*, your mode will be extended. If you select *no*, G7 will return to normal operation. If you do not make a selection within 30 seconds, G7 will automatically return to normal operation. If you have a check-in timer enabled, G7 will immediately ask you to check in.

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 Phillips #1 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

NOTE: Cartridges should always be replaced with a manual (not electric) screwdriver in order to avoid damage to the device's plastics.

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.

LEL SENSOR PRECAUTIONS

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

- High off-scale readings may indicate an explosive concentration.
- Calibrations must only be performed in areas free of flammable gases.

Blackline supports three different LEL sensor technologies:

Non-Dispersive Infra-Red (LEL-IR)
This is recommended for use in inert environments without oxygen. This sensor does not detect Hydrogen or Acetylene.

Molecular Property Spectrometer (LEL-MPS)
By default, the calibration process will validate and ensure accuracy without adjusting the MPS sensor readings. This sensor is factory calibrated for optimal accuracy and we recommend using the factory calibration for the lifetime of the sensor. Advanced users can perform a full calibration with a span adjustment by configuring this in Blackline Live, but this may negatively impact the accuracy of other gases.

When bump testing or calibrating cartridges containing this sensor, Blackline recommends applying a gas mixture containing at least 18% oxygen (O_2). Less oxygen than this may impact the MPS sensor's reading. If a gas mixture with less than 18% oxygen is applied to this sensor, power cycling the device is recommended.

Oxygen levels below 18% negatively impact accuracy. This sensor is not intended for inert environments and Blackline does not recommend using the sensor when oxygen levels are below 10%.

The LEL-MPS sensor will auto-zero at startup, and must be started in clean air.

Catalytic-bead pellistor (LEL-P)
Any rapid up-scale reading followed by declining or erratic reading may indicate a gas concentration beyond upper scale limit which may be hazardous. Blackline does not offer this LEL sensor anymore.

Blackline's LEL sensors can be calibrated with the following settings:

Gas	Calibration concentration (%vol)	Calibration concentration (%LEL)	Balance (±5% tolerance)
Methane (CH_4)	2.5%	50% ±2%	O_2 18% CO 100ppm H_2S 25ppm N_2 Balance

No known gases desensitize or contaminate Blackline's LEL sensors. Blackline's LEL sensors do not cause any EMI interference, and are not negatively affected by EMI of up to 8W.

LEL LATCHING ALARM

Enabling the LEL latching alarm setting means G7 will not stop alarming when LEL sensor readings return from the high alarm threshold. The device user must manually cancel the alarm by pressing and holding on the G7's up and down arrow buttons for three seconds. If the LEL gas alarm is not canceled by the device user, it will continue until the battery is depleted.

How do I enable the LEL latching alarm?

1. From the gas status screen, press OK twice to enter the Main menu
2. Use the up and down arrow buttons to navigate to Gas info
3. Press OK to enter the Gas info menu
4. Select Gas options
5. Select LEL latching from the list and confirm your selection

The setting you have chosen for LEL latching alarm will remain in place until it is changed manually. It will not be affected by power cycling the device or downloading future firmware updates.

MULTI-GAS PUMP CARTRIDGE

USING PUMP

How do I turn pump on?

1. Ensure G7 is equipped with a multi-pump cartridge and pumped modes, such as pre-entry, leak check or pump run
2. From G7's main or secondary menu, select the pumped mode you wish to enter
3. Attach tubing, and perform a block test by following the instructions on G7's screen
4. G7's screen will invert, and the pump icon will show in the info bar to let you know pump is running

How do I turn pump off?

To turn pump off, enter any non-pumped mode, such as normal, SCBA or high risk mode.

Where do I see my pump details?

When a pump cartridge is attached to G7, you can see the pump status screen by pressing the up or down arrow from G7's main screen. Here you can see if pump is on or off, your hose length, flow rate and sample time (if enabled).

How do I bump test or calibrate my pumped cartridge?

Manually bump testing and calibrating pump cartridges is done using the same calibration cap and method as G7's multi-gas cartridge. Please refer to page 14-16 of this manual for step-by-step instructions. G7 cannot be bump tested or calibrated through the pump itself.

Bump testing and calibrating with a G7 Dock requires an updated G7 Dock unit. You can tell if your Dock is an updated unit by checking that it's unit ID is Dock-P.

How do I perform a block test?

You will be asked to perform a block test upon entering any pumped mode, such as leak check, pre-entry or pump run. Follow the steps on G7's screen to complete the block test. If you do not pass the block test, you will not be able to enter the mode.

IMPORTANT: When performing an automatic block test, G7 is in a safe mode where gas alerts will not be triggered. This prevents triggering false alerts from residual gas in the tubing.

When you are in a pumped mode, you can perform a manual block test at any time by plugging G7's inlet. This will cause G7 to go into yellow warning alarm, and your screen will let you know that your pump is blocked. Unplug your inlet, and if the warning alarm silences, you know that your equipment is safe to use.

What is flow rate?
Flow rate is the speed at which air is passing over your device's sensors. In order to provide accurate gas readings, flow rate needs to be above 150 ml/min. A flow rate less than 150 ml/min will result in a pump block yellow warning alarm. By default, Blackline's pump aims to maintain a flow rate of 300ml/min and G7 will automatically adjust its pump speed to maintain this rate.

PUMP OPTIONS

Settings for pump can be found in G7's main menu, under settings > pump options.

What is the sample timer?
The sample timer is the amount of time it takes for one air sample to be pumped to your sensors. This calculation is based on your hose length. If sample timer is enabled, the pump status screen will show a countdown and beep once when a sample cycle has completed. The sample cycle will repeat continuously until you turn pump off. If disabled, the sample timer will not show and the device will not beep, and pump will continue to function normally. Blackline recommends a 120 second sample time for 10 feet of tubing, with an additional second per foot of tubing.

How do I enable or disable the sample timer?
1. Press OK to enter G7's main menu
2. Use the up and down arrows to navigate to *settings*, press OK
3. Use the up and down arrows to navigate to *pump options*, press OK
4. The menu will display the current status of your sample timer. Select *sample timer off* or *sample timer on*.
5. Select *yes* to confirm that you would like to enable or disable the sample timer

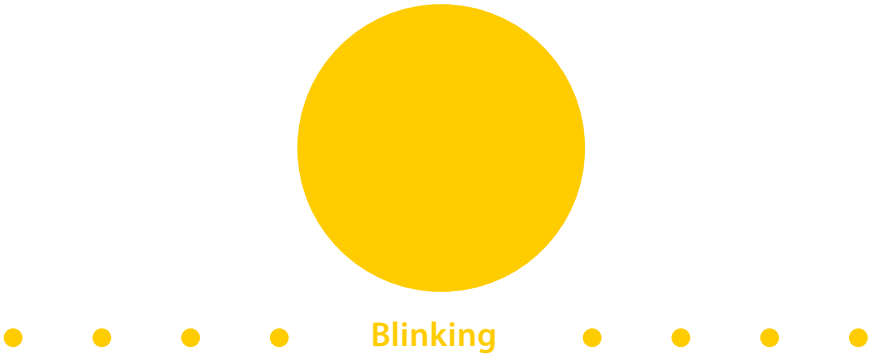
What is hose length?
Hose length is an estimate of how long the tubing attached to pump is. This value is customizable from the pump options menu, and factors in to sample time. G7's multi-gas pump cartridge supports a maximum of 99 feet of tubing.

How do I change hose length?
1. Press OK to enter G7's main menu
2. Use the up and down arrows to navigate to *settings* and press OK
3. Use the up and down arrows to navigate to *pump options* and press OK
4. Select *hose length*
5. Use the up and down arrows to choose your units, meters or feet, and press OK
6. Use the up and down arrow to enter the first digit of your length and press OK
7. Use the up and down arrow to enter the second digit of your length and press OK
8. Select *yes* to confirm your length or select *edit* to make changes to your choice

REAL-TIME FEATURES

Your G7 can be 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



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.

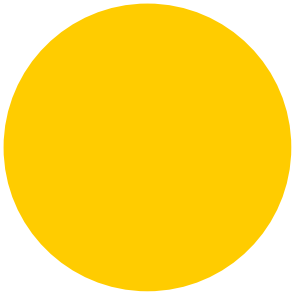
NOTE: Your device can be configured to check-in early, before the yellow pending alarm sounds. If enabled, you can push and hold the red latch button for the duration of three vibrations to reset your check-in timer before the audible alarm. An early check-in cannot be configured if Silent SOS alert 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: G7 can be configured to mute pending alarms while driving at speeds above 35 km/hr (22 mph) or while charging.

YELLOW WARNING ALARM FEATURES



Rapid Blinking

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 are customizable from 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 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.

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

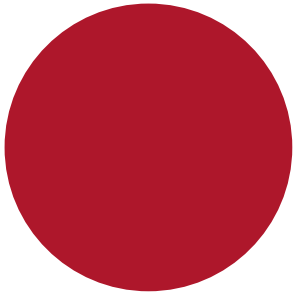
How do I know if my device battery is low?
If your battery level goes below 20%, it will inform you with a yellow warning alarm. This percentage level is configurable.

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 G7 know you have read the message.

Yellow warning alarms are between you and 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 and request immediate help to your location by pulling the red latch.

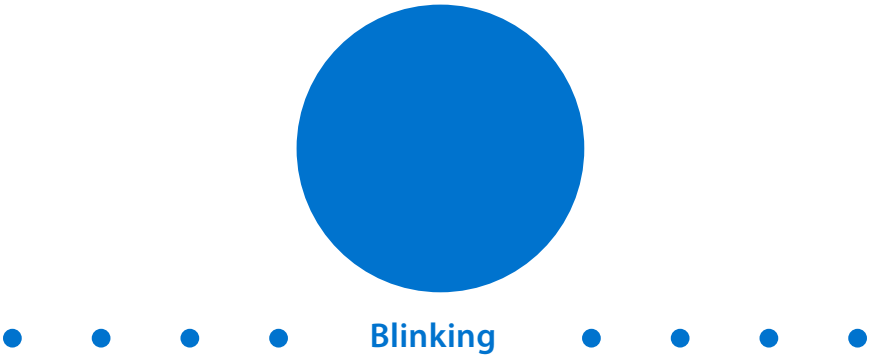
NOTE: Your device can be configured to send a Silent SOS alert to monitoring personnel without light, sound and vibration.

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.

LiveResponse

When monitoring personnel have acknowledged your red alert, the blue LiveResponse light will shine on your device.



This light 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.

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

In the case that a silent SOS alert is sent, the blue LiveResponse light will not shine. Instead, G7 can be configured to vibrate to let you know that remote monitoring personnel are responding by following your team's emergency protocol.

PUSH-TO-TALK (PTT)

If you have a G7c with a PTT service plan and PTT is enabled in your device's configuration profile, push-to-talk allows you to send and receive voice messages to other G7c device users, similar to a walkie-talkie. Push-to-talk is only available on G7c devices.

TRANSMITTING

How do I send a PTT message?

1. Press and hold the red latch
2. When G7c finishes beeping, continue to hold and begin talking with the device about 6 inches from your mouth.
   NOTE: If you are using an O_2 sensor, be sure that you are talking into G7's microphone, not the cartridge, as this could cause gas alarms.
3. When you're finished talking, release the latch. G7 allows PTT messages up to 30 seconds in length.
4. G7c will beep once more to let you know it's done listening

RECEIVING

How do I receive a PTT message?

1. G7c will beep twice to signal an incoming PTT message
2. G7c will play the message
3. G7c will beep once more when the message is done

NOTE: G7c's screen will display which channel you are transmitting to or receiving from.

AVAILABLE CHANNELS

Channel 0-99

Channels 0 through 99 are available for everyday use. When on a specific channel, you will only be able to communicate with devices that are on the same channel, and will receive transmissions from all call.

All call

All call is a channel where G7c will transmit to all PTT devices in your organization, and will only hear transmissions from all call. This channel is recommended for safety supervisors or managers.

Receive only

The receive only channel only hears transmissions from all call, and can't transmit to other devices.

CHANGING CHANNELS

How do I change my channel?

Changing your PTT channel is done from the PTT channel menu.

To change to a specific channel number:

1. Press the OK button to enter G7c's main menu
2. Use the up and down arrows to navigate to *PTT channels*, and select OK.
3. Select *enter channel #*
4. Use the up and down arrows to enter the first digit of your channel. For example, for channel 40, the first digit is 4.
5. Press OK
6. Use the up and down arrow to enter the second digit of your channel. For example, for channel 40, the second digit is 0.
7. Press OK
8. Select *yes* to confirm and change G7c's channel or select *edit* to make changes

To change to receive only or all call:

1. Press the OK button to enter G7c's main menu
2. Use the up and down arrows to navigate to *PTT channels*, and select OK.
3. Select *receive only* or *all call*
4. Read the message on the screen
5. Select *yes* to confirm

NOTE: You can also navigate to the PTT channels menu by pressing the up or down arrow from the main screen, and pressing OK when the current PTT channel shows.

CHANGING VOLUME

How do I change my push-to-talk call volume?

Changing the volume of incoming calls can be done from G7's main screen or the PTT channel menu. Changing your PTT volume only affects incoming calls, and won't change the way G7's alerts sound.

To change volume from the main screen:

1. Press and hold the up or down arrow
2. Use the up and down arrows to set G7's volume to the desired level
3. Press OK or wait for the screen to timeout to save

To change volume from the PTT channel menu:

1. Press the OK button to enter G7c's main menu
2. Use the up and down arrows to navigate to *PTT channels*, and select OK
3. Use the up and down arrows to navigate to *change volume*, and select OK
4. Use the up and down arrows to set G7's volume to the desired level
5. Press OK or wait for the screen to timeout to save

PTT AUDIO ACCESSORIES

G7c is equipped with audio pairing in order to use an audio accessory with push-to-talk. All settings for audio devices can be found in G7's main menu, under settings > audio pairing.

How do I pair a new audio device?

1. Press OK to enter the main menu
2. Use the up and down arrows to navigate to *accessories*
3. Navigate to *audio pairing*, and press OK
4. Use the up and down arrows to navigate to *pair new*, and press OK
5. Put your audio accessory into pairing mode as per its instructions
6. Select your audio accessory from the list
7. G7 will give you a successful connection message when your device is connected, and you will see an audio accessory icon in the info bar of G7c's main screen

How do I reconnect to an audio device?

G7 will remember your audio accessory and pair automatically when both are powered on. In the case that it doesn't, you can reconnect to your accessory from the audio pairing menu.

1. Press OK to enter the main menu
2. Use the up and down arrows to navigate to *settings*
3. Navigate to *audio pairing*, and press OK
4. Use the up and down arrows to navigate to *reconnect,* and press OK
5. Ensure your accessory is on
6. G7c will reconnect to your audio accessory, and you will see an audio accessory icon in the info bar of G7c's main screen when the connection is successful

How do I forget a paired device?

1. Press OK to enter the main menu
2. Use the up and down arrows to navigate to *settings*
3. Navigate to *audio pairing*, and press OK
4. Use the up and down arrows to navigate to *forget device,* and press OK
5. Select *yes* to confirm that you would like to forget your accessory

NOTE: Audio accessories can only be used for push-to-talk purposes, and cannot be used for early check-ins or confirming pending alarms.

FIRMWARE UPDATES

OVER-THE-AIR (OTA) FIRMWARE UPDATES

To offer new features, Blackline Safety periodically releases over-the-air (OTA) firmware updates. OTA firmware updates are only available when G7 is on a cellular network. Firmware updates have two steps:

1. Automatic download
2. Automatic installation

Automatic download

When a firmware update is released, G7 will gradually download the update whenever it is on and connected to a cellular network. G7 will be ready to install the firmware update when the download is complete. This will not interfere with normal G7 use.

Automatic installation

The completely downloaded update will automatically be installed the next time G7 is powered on. This installation will add 30-60 seconds to the startup sequence.

When the green light is solid and G7 is connected, it will automatically power down. The user will then see flashing blue and yellow lights on the right side of the LED screen and the device will be unresponsive. After 30-60 seconds, G7 will power back up and display the new firmware version it has downloaded.

Once completed, G7 will continue to monitor as usual.

⚠ **SAFETY WARNING:** G7 will NOT monitor during the installation process.

Specific information about new updates can be found at Support.BlacklineSafety.com. If you have any questions, please contact our Customer Care team.

Firmware Update Kits

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 features

Fall detection and No-motion detection: Tri-axis accelerometer, tri-axis gyro, software processing, configurable sensitivity, configurable time for no-motion
SOS latch: Pull latch to trigger SOS alert
Silent SOS: Press and hold latch to trigger SOS alert
Low-battery: Configurable threshold
Worker check-in: Configurable timer (30 – 180 min, or off), automatic check-in when driving

Additional gas cartridge features

Under limit
Over 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

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)

G7 with Multi-gas pump Cartridge
Size: 66 mm x 151 mm x 38.5 mm (2.6" x 5.95" x 1.52")
Weight: 238 g (8.4 oz)"
Target flow rate: 300ml/min
Maximum hose length: 99ft (30.2 m)

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 SOS alert)

Multi-language support: Yes, EN, FR, ES, NL, DE, IT, PT"

User notification

Green SureSafe® light: Blinking (powered), continuous (connected)
Yellow top and front lights: Yellow pending alarm and yellow warning alarm
Red top and front lights: Red alert communicated
Blue LiveResponse™ top and front lights: Confirmation that a monitoring team has acknowledged the alert
Alarm Indicators: Speaker, LED lights and vibration motor
Speaker sound pressure level: ~95 dB @ 30 cm (~95 dB @ 11.8")
Voice calling: Speakerphone and phone modes (G7c model only)

G7c wireless radio

Wireless coverage: 100 countries, 200 wireless carriers
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 optimised

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 60°C (-22°F to 140°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
Unit ID 3570xxxxxx
FCC ID: W77G7C2 IC: 8255A-G7C2
Contains FCC ID: XPY1EIQ24NN IC: 8595A-1EIQ24NN
or

Unit ID 3567xxxxxx
FCC ID: W77G7C IC: 8255A-G7C
Contains FCC ID: XPY1CGM5NNN, IC: 8595A-1CGM5NNN
or
Unit ID 3566xxxxxx
Contains FCC ID: XPY1CGM5NNN, IC: 8595A-1CGM5NNN
Canada & USA: Class I Division 1 Group A,B,C,D T4; Class I Zone 0 AEx da ia IIC T4; Ex da ia IIC T4 Ga
IECEx: Ex da ia IIC T4 Ga
ATEX: Ex da ia IIC T4 Ga
LEL: CSA C22.2 No.152**;** ISA 12.13.01
LEL Pump Cartridge: CSA C22.2 No.152; 0°C ≤ Ta ≤ 40°C; ANSI/ISA-12.13.01; -10°C ≤ Ta ≤ 40°C

G7x: SAR, RoHS, RCM
FCC ID: W77G7X | IC ID: 8255A-G7X
Canada & USA: Class I Division 1 Group A,B,C,D T4; Class I Zone 0 AEx da ia IIC T4; Ex da ia IIC T4 Ga
IECEx: Ex ib IIC T4 Gb

LEL: CSA C22.2 No.152; ISA 12.13.01
LEL Pump Cartridge: CSA C22.2 No.152; 0°C ≤ Ta ≤ 40°C; ANSI/ISA-12.13.01; -10°C ≤ Ta ≤ 40°C

Warranty

G7: two years limited warranty
Cartridges: lifetime with service plan
Blackline Complete: three year operating lease with three year warranty

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.

Gas sensor specifications

Gas	Sensor type	Range	Resolution
Ammonia (NH_3)	Electrochemical	0–100 ppm	0.1 ppm
High-range ammonia (NH_3)	Electrochemical	0–500 ppm	1 ppm
Carbon monoxide (CO)	Electrochemical	0–500 ppm	1 ppm
High-range carbon monoxide (CO)	Electrochemical	0–2000 ppm	5 ppm
Hydrogen resistant carbon monoxide (CO-H)	Electrochemical	0–500 ppm	1 ppm
Carbon dioxide (CO_2)	NDIR	0–50,000 ppm	50 ppm
Chlorine (Cl_2)	Electrochemical	0–20 ppm	0.1 ppm
Chlorine dioxide (ClO_2)	Electrochemical	0-2 ppm	0.01 ppm
COSH	Electrochemical	0–500 ppm CO, 0–100 ppm H_2S	1 ppm CO, 0.1 ppm H_2S
Hydrogen (H_2)	Electrochemical	0–40,000 ppm	1% LEL (400 ppm)
Hydrogen cyanide (HCN)	Electrochemical	0–30 ppm	0.1 ppm
Hydrogen sulphide (H_2S)	Electrochemical	0–100 ppm	0.1 ppm
High-range hydrogen sulphide (H_2S)	Electrochemical	0-500 ppm	0.5 ppm
LEL-infrared (LEL-IR)	NDIR	0–100% LEL	1% LEL
Oxygen (O_2)	Pumped electrochemical	0–25% vol	0.1% vol
Ozone (O_3)	Electrochemical	0-1 ppm	0.01 ppm
Photoionisation (PID)	PID	0–6,000 ppm	0.1 ppm (0–100 ppm), 2 ppm (100–6,000 ppm)
Sulphur dioxide (SO_2)	Electrochemical	0–100 ppm	0.1 ppm

** 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.

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.

RF exposure was tested with the supplied belt clip. Use of third-party accessories may result in non-compliant exposure.

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.

RF exposure was tested with the supplied belt clip. Use of third-party accessories may result in non-compliant exposure.

Notification d'Industrie Canada

Ce dispositif est conforme au(x) format(s) RSS libre(s) d'Industrie Canada. Son fonctionnement est assujetti 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.

L'exposition RF a été testée avec le clip de ceinture fourni. L'utilisation d'accessoires tiers peut entraîner une exposition non conforme.

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 contain a non-replaceable 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 da ia IIC T4 Ga; Class I Zone 0 AEx da 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 da ia IIC T4 Ga; classe I zone 0 AEx da 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 da ia IIC T4 Ga
CAN/CSA C22.2 No. 60079
Ex da ia IIC T4 Ga

IECEx/ATEX: IECEx CSA 17.0005; Sira 17ATEX2083X
IEC 60079; EN 60079
G7c: Ex da ia IIC T4 Ga
G7x: Ex ib IIC T4 Gb

-20°C <= Ta <= +55°C

Base unit P/N "G7*-#" (* = c, x, or blank; # = NA, EU or AZ)
Gas cartridge: Standard P/N "Z" | Single-gas P/N "S-#" | Multi-gas P/N "Q-####" | Pump Module P/N "P-####" (# = Electro chemical sensor identifier or "X" indicating no sensor)

Caution: For safety reasons this equipment must be operated and serviced by qualified personnel only. High off-scale readings may indicate explosive concentration.

Attention: Pour des raisons de sécurité, cet équipment doit être utilisé, entretenu et réparé uniquement par un personnel qualifié. Des lectures supérieures à l'échellepeuvent indiquer des concentration explosives.

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 2A 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, la référence SAW06D-050-1000xx, fabriquée 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 2A.

Standards:
CAN/CSA C22.2 No. 60079-0: 2015
CAN/CSA C22.2 No. 60079-11: 2014
CAN/CSA C22.2 No. 60079-1: 2016
C22.2 No. 152 - M1984 (R2011)
UL 913, Eighth Edition
UL 60079-0: Sixth Edition
UL 60079-11: Sixth Edition
UL 60079-1: Seventh Edition

ANSI/ISA 12.13.01: 2000
EN 60079-0: 2012/A11:2013
EN 60079-11: 2012
EN 60079-1: 2014
IEC 60079-0: 2011 6th Edition
IEC 60079-11: 2011 6th Edition
IEC 60079-1: 2014 7th Edition

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.

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0149/R31/2020-08-14