blacklinesafety

G7

Technical User Manual

CONTENTS

WARNINGS

- WARNING: High off-scale readings may indicate an explosive concentration.
- WARNING: Calibrations must only be performed in areas free of flammable gases.
- WARNING: To ensure optimum device connectivity, do not cover G7 with clothing.
- WARNING: Do NOT power off G7 if the blue LiveResponse light is on.
- WARNING: Only perform bump tests in a known clean environment.
- WARNING: G7 does NOT monitor for safety during the firmware update installation process.

1 G7 OVERVIEW

G7 is Blackline Safety's portable standard, single-gas, or multi-gas detector. G7 continuously measures gas concentrations in the ambient environment and activates notifications when concentrations exceed setpoints, allowing operators to respond quickly and safely to changes in their environment.

There are two G7 models: G7c and G7x:

- G7c has integrated 4G cellular networks to communicate with Blackline Live and is available anywhere in the world.
- G7x leverages satellite connectivity to wirelessly link workers to Blackline Live via the Iridium satellite network. G7x requires the use of G7 Bridge and is only available in North America, Australia, New Zealand, and South America (excluding Brazil).

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

1.1 WHAT'S IN THE BOX

G7 comes with:

- G7 personal safety monitoring device
- Pre-installed cartridge (standard, single-gas, or multi-gas)
- Getting started and support information
- Charging system:
  - Removable charging clip
  - USB cable
  - USB power adapter
- Compliance and intrinsic safety information

If you have a single-gas or multi-gas cartridge, you will also receive:

- Single-gas or multi-gas calibration cap
- Calibration gas tubing

1.2 HARDWARE DETAILS

Front

Back

1.2.1 LIGHT AND SOUND PATTERNS

Event/Mode	Lights Patterns	Sound Patterns
Operation		
Device Off Firmware Updates	None	None
Power On	Blinking green connectivity light, when trying to connect to Blackline Live Solid green connectivity light, when connected to Blackline Live	None
Start-up Sequence	Alternating flashing red and yellow lights	Single beep
Low Battery	Alternating flashing yellow lights	Repeating beep pattern
Shutdown Sequence	Two flashes of yellow lights	Single beep
Compliance and Modes		
Calibrations	Simultaneous double flashing yellow lights	Double beep when starting and completing a calibration
Normal Mode	Solid green connectivity light, when connected to Blackline Live	None
Secondary and Pump Modes	Simultaneous double flashing yellow lights every 30 seconds	Double beep when entering and exiting a secondary mode
Low-urgency Notifications		
Potential Fall Detected Potential No-motion Detected Check-in Request Incoming Message Two-way Voice Call Low Gas Pump Blocked AlertLink	Rapid alternating flashing yellow lights	Repeating beep pattern
Sensor Error Sensor Under Limit Device Self Test (Memory and Flash) Error	Rapid alternating flashing yellow lights	Repeating beep pattern
High-urgency Notifications		
Fall Detected No-motion Detected Missed Check-in High Gas Over limit (OL)	Rapid alternating flashing red lights	Repeating beep pattern

Event/Mode	Lights Patterns	Sound Patterns
Short term Exposure Limit (STEL)		
SOS alert		
Time Weighted Average (TWA)		
LEL > 60%	Rapid alternating flashing red lights	Repeating beep pattern
LEL Over Limit		
Gas Alert Muted	Rapid alternating red lights	None

1.3 BLACKLINE SAFETY SERVICE PLANS

Blackline Safety implementations are tailored to your needs and organization and are based on your expertise, staffing, and business goals.

There are various service plans available to suit your organization's needs. For more information contact your Client Success Manager (CSM).

1.4 BLACKLINE SAFETY SERVICES

1.4.1 BLACKLINE SAFETY MONITORING

Depending on your needs and requirements, various service plan options are available for G7, including 24/7 live safety monitoring by Blackline Safety.

Contact your organization's safety professional for more information regarding the details of your service plan.

For more information, please see Blackline 24/7 Live Monitoring.

1.4.2 BLACKLINE LIVE

Blackline Live monitors your G7 devices and allows you to access reports and, depending on your plan, business analytics insights.

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.

For more information, please see Blackline Live.

1.4.3 BLACKLINE ANALYTICS

If enabled by your service plan, Blackline Analytics allows you to review data collected from your device fleet to make decisions, follow up with your team, and ensure everything is

running smoothly. Blackline Analytics provides a variety of pre-defined reports and filters to explore your data.

For more information, please see Blackline Analytics.

1.5 COMMUNICATION INTERVALS

The following table describes the default communication frequency to Blackline Live for each device type.

	Normal Operation	During a High-urgency Event	After a High-urgency Event
G7c	5 min	Immediately (within ~3 seconds)	5 min
G7x	30 min	Immediately (within 5 minutes)	5 min for 1 hr

2 G7 CARTRIDGES

2.1 DEVICE COMPARISON

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 (PTT) enabled*	√	√	√	√
Single gas detection		√		
Multi-gas detection			√	√
Pump enabled				√
Low-gas notification		√	√	√
Under-limit notification		√	√	√
High-gas notification		√	√	√
STEL notification		√	√	√
TWA notification		√	√	√
Over-limit (OL) notification		√	√	√

**G7c devices only*

2.2 CARTRIDGES AND EXTREME WEATHER

G7 is rated to operate in weather conditions as low as -20°C (-4°F). G7 functions in temperatures colder than this for short periods of time, but Blackline Safety does not recommend letting the device's internal temperature drop below -20°C (-4°F).

For more details, see Operating Devices in Extreme Weather on the Blackline Support site.

2.3 CARTRIDGES EQUIPPED WITH COMBUSTIBLE GAS (LEL) SENSORS

For safety reasons, combustible gas (LEL) sensors must be operated and serviced by qualified personnel only. Read and understand the instruction manual completely before operating or servicing LEL sensors.

⚠ WARNING: High off-scale readings may indicate an explosive concentration.

⚠ WARNING: Calibrations must only be performed in areas free of flammable gases.

Blackline's LEL sensors are factory 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 vol% CO 100ppm H_2S 25ppm N_2 Balance

Like any gas sensor, understand potential explosive hazards and choose the appropriate sensor technology based on these hazards.

Blackline supports two different combustible gas (LEL) sensor technologies:

- Molecular Property Spectrometer (LEL-MPS)
- Non-Dispersive Infra-Red (LEL-IR)

Blackline recommends the following for the use of each sensor.

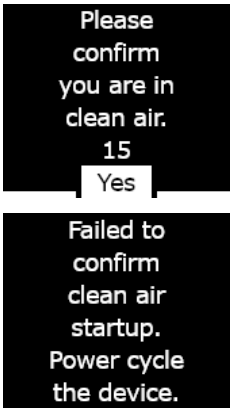
Molecular Property Spectrometer (LEL-MPS)

The LEL-MPS sensor is not intended for inert environments. Environments with oxygen (O_2) levels below 18% negatively impact this sensor's accuracy and Blackline does not recommend using it when oxygen levels are below 10%.

NOTE: LEL sensors cannot be disabled in Blackline Live.

LEL-MPS sensors must be started in clean air and zeroed on start-up to function properly. G7 devices equipped with LEL-MPS sensors cannot perform an automatic zeroing of the LEL-MPS sensor without manual confirmation.

When powering on a G7 with an LEL-MPS sensor, the device prompts you to acknowledge and approve that the device is powered on in a clean-air environment and a zero adjustment can take place. If you fail to acknowledge the zero prompt within 15 seconds, the device enters a latched alarm state and requires that you power cycle the device and approve the zero prompt. For more details, see section 14.3.



The clean-air confirmation prompt is configurable in Blackline Live. If the clean-air confirmation prompt is disabled, the device prompts you to perform a manual zero adjustment.

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

You can calibrate your LEL-MPS sensor in two ways:

- Default calibration—the default calibration process validates and ensures accuracy without adjusting the LEL-MPS sensor's readings. Unlike traditional sensors, this sensor is factory-calibrated for optimal accuracy.

  Blackline Safety recommends using the factory calibration for the lifetime of the sensor.

- Full calibration—advanced users can perform a full calibration with a span adjustment. A full calibration may negatively impact the accuracy of other gases.

For more details, see section 14.3.

NOTE: No known gases desensitize or contaminate Blackline's LEL-MPS sensors. The sensor does not cause any electromagnetic interference (EMI), and is not negatively affected by EMI, such as radio transmissions, of up to 8W.

Non-Dispersive Infrared (LEL-IR)

This sensor is recommended for use in inert environments without oxygen (O_2). This sensor does not detect Hydrogen (H_2) or Acetylene (C_2H_2).

NOTE: No known gases desensitize or contaminate Blackline's LEL-IR sensor. The sensor does not cause any electromagnetic interference (EMI), and is not negatively affected by EMI, such as radio transmissions, of up to 8W.

LEL-IR sensors are impacted by temperature. For more details, see section 2.2.

2.4 CARTRIDGE MAINTENANCE

2.4.1 GAS CARTRIDGE REPLACEMENT PROGRAM

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 *Technical Support* team or your distributor.

2.4.2 CHANGING CARTRIDGES

To change G7's cartridge:

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

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 the screws into each side of the device.

2.4.3 CARTRIDGE CARE

Gas sensors are susceptible to contamination by a variety of common chemicals, reducing or eliminating their sensitivity.

Take care when using silicones, cleaners, solvents, and lubricants near 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.

For details on preventing sensor contamination, refer to Cleaning Devices and Accessories on the Blackline Support site.

2.4.4 CHANGING FILTERS FOR CARTRIDGES

For instructions on how to change filters for cartridges, refer to the following support articles on the Blackline Support site:

- Replacing Filters for G7 Single-gas (Diffusion) Cartridges
- Replacing Filters for G7 Multi-gas (Diffusion) Cartridges
- Changing Pump Filter for G7 Pump Cartridge

3 OPERATION

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

NOTE: This manual describes the available options. Your screen may be different depending on your device's configuration. For more information, contact your Blackline Live administrator.

3.1 G7 PUSH BUTTONS

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 low and high-urgency notifications.

Latch pull

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

Latch push button

Push the latch in to check in, which lets monitoring personnel know you are safe.

3.2 POWERING ON G7

Powering on G7 initiates the device start-up sequence. During the start-up sequence, G7 automatically completes a self-test of the visual and audible functions of the device. The start-up sequence depends on the device's configuration and occurs any time the device is powered on. For more information, see section 14.3.

Always power on G7 in a clean, gas-free environment.

To power on G7c:

1. Press and hold the power button, then wait for the blinking green connectivity light to turn solid. When connected, the green light remains solid.

To power on G7x:

You must power on G7 Bridge before powering on G7x.

1. Press and hold the power button on G7 Bridge, then wait for the blinking green connectivity light to turn solid. It takes approximately two minutes for G7 Bridge to connect to Blackline Live.

   When connected, the green light remains solid.

2. Press and hold the power button on G7x. Wait for the blinking green connectivity light to turn solid, indicating the device is connected.

3.2.1 POWERING OFF G7

Powering off G7 initiates the device shutdown sequence. When the shutdown sequence is complete, the green light should be used as an indicator that the device is off. If the green light is completely off, then the device is not detecting gas and is not connected to Blackline Live. For more information, see section 14.3.

To power off G7c:

1. Press and hold the power button for three seconds.

   The device goes into shutdown sequence. The cartridge displays a shutdown pattern consisting of flashing yellow lights and a single beep. Once the lights and vibrations stop, both G7c and the cartridge power off. You are logged off from Blackline Live.

To power off G7x:

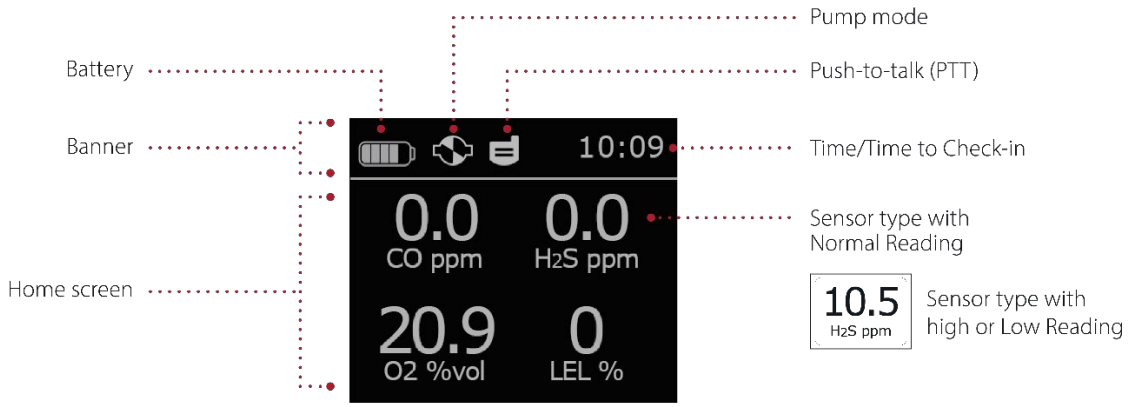
1. Press and hold the power button of your G7x for three seconds. The device goes into shutdown sequence, sending your log-off status to G7 Bridge.
2. When suitably powered, G7 Bridge can always remain on. When G7 Bridge is off, connected devices are no longer monitored.

   Before powering down G7 Bridge, ensure there are no other G7x devices connected. Once confirmed, press and hold the power button on G7 Bridge. The device performs the shutdown sequence. For more information, refer to the G7 Bridge Technical User Manual.

3.3 G7 LCD DISPLAY

3.3.1 HOME SCREEN

The Home screen conveys the current device status through screen and banner messages:

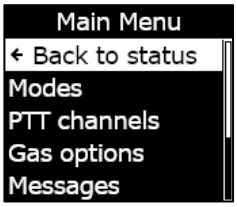


Event notifications are displayed in the banner. If G7 has more than one notification simultaneously active, the banner cycles through active events.

3.3.2 MAIN MENU

The Main menu provides access to your available G7 features. The available items in the Main menu depend on how the G7 is configured through Blackline Live.

To launch the Main menu:



1. From the Home screen, press the OK button. The Main menu opens.

3.4 WEARING G7

G7 monitors you best when clipped to your belt or chest pocket. G7 is equipped with a spring-loaded metal alligator clip that can be used to secure the device in place.

Blackline offers a portfolio of optional Klick Fast accessories for G7. For more information on G7 wearable accessories, contact the Blackline Safety *Technical Support* team.

To attach and fasten G7 in place using the metal alligator clip:

1. At the back of the device, open the metal alligator clip.
2. Place the clip over the top of the fabric edge or belt.
3. Snap the clip closed, testing the attachment to ensure the clip is secure.

⚠ WARNING: To ensure optimum device connectivity, do not cover G7 with clothing.

3.5 CHARGING G7

G7 battery life varies depending on device configurations, connectivity, low-urgency and high-urgency notification response, operating temperature, sensor types, and pump usage.

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

To charge G7 using a charging clip, USB cable, and power adapter:

1. Connect the USB cable to the USB power adapter, then plug the adapter into an AC power outlet.

2. Insert the micro-USB plug into the removable charging clip.
3. Slide the clip onto the charging port at the bottom of your G7, ensuring that the tabs on the charging clip are lined up correctly on the device.

TROUBLESHOOTING TIPS:

- Confirm the power outlet is functional, the charge clip is clean of debris, and your device is properly fastened to the clip.
- Confirm that you are not trying to charge your device in adverse temperature conditions. Blackline devices will not charge below 5°C (32°F) or above 45°C (113°F).

4 OPERATIONAL NOTIFICATIONS

Operational notifications communicate events that are triggered by routine and expected device operations. An operational notification includes yellow flashing lights, sound, vibration (if enabled), and an on-screen message specific to the event. Operational notifications are local to your device and are activated when your device requires your attention.

4.1 ACKNOWLEDGING OPERATIONAL NOTIFICATIONS

To allow you to read and understand notifications, and to avoid accidentally muting the notification, there is a two-second delay before you can acknowledge full-screen notifications.

To acknowledge an operational notification:

1. Press and hold the up and down arrow buttons until lights, sounds, and vibrations clear.

2. To ensure G7 continues to operate correctly, take the action indicated by the device to address the notification.

4.2 OPERATIONAL NOTIFICATION TYPES

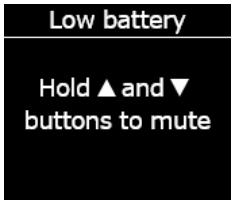
Operational notifications include:

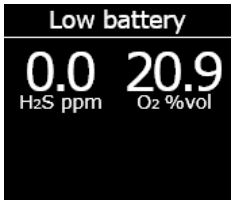
- Bump test due (optional)
- Calibration due (optional)
- Bump test reminder (optional)
- Calibration reminder (optional)
- Timer done
- Low battery
- Lost connection
- Pairing needed (G7x only)

Low battery

The low-battery notification interval is configurable (10%-70%) by your Blackline Live administrator. Your Blackline Live administrator can also mute the notification light, sound, and vibration patterns associated with this notification.

The low-battery notification is activated when G7 detects that it is operating below the configured low battery threshold. G7 remains in low-battery status until it is charged above the configured threshold.

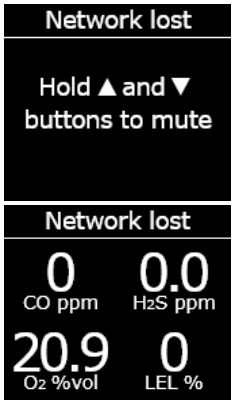




Lost connection

The lost connection interval (in minutes) is configurable by your Blackline Live administrator.

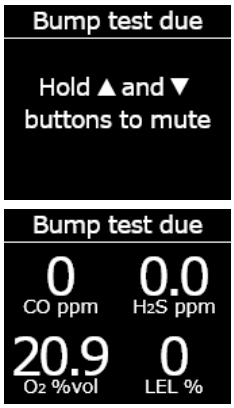
The lost connection notification is activated when G7 fails to connect with Blackline Live for the configured time interval (e.g., five minutes).



Bump test due

The bump test due notification is activated when G7 is overdue for a bump test.

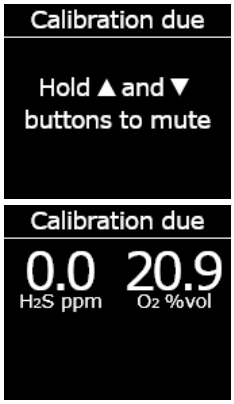
Following the bump test due notification, a message displays in the banner until the device is successfully bump tested. The device remains fully functional.



Bump test reminder

The bump test reminder notification interval is configurable by your Blackline Live administrator. Your Blackline Live administrator can also mute bump test due notification lights, sounds, and vibrations.

The bump test reminder notification is activated when G7 is due for a bump test within the interval (hours or days) as configured in Blackline Live.



Calibration due

The calibration due notification is activated when G7 is overdue for calibration.

Following the calibration due notification, a message displays in the banner until the device is successfully calibrated. The device remains fully functional.

Calibration reminder

The calibration reminder notification interval is configurable by your Blackline Live administrator. Your Blackline Live administrator can also mute the calibration due notification light, sound, and vibration patterns.

The calibration reminder notification is activated when G7 is due for calibration within the interval (hours or days) as configured in Blackline Live.

Timer done

The timer done notification is activated when the G7 timer counts down to zero (0).

Pairing needed (G7x only)

The pairing needed notification is activated when G7x does not have a network key to connect to G7 Bridge.

For more information on connecting G7x to G7 Bridge, refer to the G7 Bridge Technical User Manual.

5 LOW-URGENCY NOTIFICATIONS

Low-urgency notifications communicate events that are triggered by an unexpected condition that could pose a safety risk if not addressed in a timely manner. A low-urgency notification includes yellow flashing lights, sound, vibration (if enabled), and an on-screen message specific to the event.

Low-urgency notifications can be either pending or non-pending. Pending notifications escalate to high-urgency notifications if you do not acknowledge them.

Low-urgency notifications are local to your device and monitoring personnel are not notified. Event data related to low-urgency notifications is uploaded to Blackline Live during your device's next synchronization.

Low-urgency notifications repeat until you acknowledge them.

5.1 ACKNOWLEDGING LOW-URGENCY NOTIFICATIONS

To allow you to read and understand notifications, and to avoid accidentally muting the notification, there is a two-second delay before you can acknowledge full-screen notifications.

To acknowledge and mute a low urgency notification:

1. To respond to non-pending notifications: Press and hold the up and down arrow buttons until light, sound, and vibration patterns clear.

2. To respond to pending (potential fall, potential no-motion, check-in request) notifications: Press and hold the red latch until light, sound, and vibration patterns clear.

3. To ensure G7 continues to operate correctly, take the action indicated by the device to address the notification.

5.2 LOW-URGENCY NOTIFICATION TYPES

Low-urgency notifications include:

Pending notifications:

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

Non-pending notifications:

- Incoming message
- Two-way voice call
- Sensor Error
- Low gas
- Sensor under limit
- Pump blocked
- AlertLink

Potential fall detected

The fall detected notification is configurable by your Blackline Live administrator.

The potential fall detected notification is activated when your G7 detects a sudden change in position.

If your device detects a potential fall and you have not responded to the low-urgency potential fall detected notification, your device activates a high-urgency fall detected notification.

Potential no-motion detected

The no-motion interval and sensitivity are configurable by your Blackline Live administrator.

The potential no-motion detected notification is activated if you do not move within the preset duration.

If you are not moving and you have not responded to the low urgency potential no-motion detected notification, your device activates a high urgency no-motion detected notification.

Check-in request

Check-in requests are configurable by your Blackline Live administrator. Both the check-in timer and pending notification time can be configured.

The check-in countdown is displayed on your device's screen. The check-in request notification is activated when the check-in timer expires.

If you do not check-in during the low-urgency check-in notification, your device activates a high-urgency missed check-in notification.

Early check-in

Your device can be configured to allow you to check-in early, before the notification is activated. If configured, 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.

Incoming message

Your device can receive messages from monitoring personnel via Blackline Live. Messages are available in your device's Message inbox. For more information on sending and receiving messages, see section 8.2.

The incoming message notification is activated as soon as your device receives a message.

Two-way voice call

If you have a G7c with a voice-enabled service plan, your speakerphone automatically answers a call from monitoring personnel.

G7 informs you of an incoming call with a low-urgency notification and a beep sounds to signify that the two-way voice call is connected. In a noisy environment, it may be necessary to remove the device from your clothing and hold it near your ear, as you would a two-way radio.

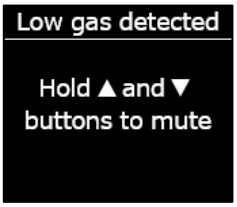
If your device is in a high-urgency status, depending on your response protocol, a G7c with voice enabled service plan

automatically connects your speaker phone to monitoring personnel.

Low gas

The low gas threshold is configurable by your Blackline administrator. The low gas notification is activated when gas levels reach the configured threshold for your device.

A G7 with an O_2 sensor notifies you in both 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.



You can choose to mute the sound and vibration portion of a low-gas notification, but the lights stay active.

Persistent lights and recurring sound and vibration are there to encourage you to leave and help emergency responders to locate you if you pass out or are unable to remove yourself from the area.

After acknowledging a low-gas notification, move to an area where gas is not present. If you do not leave the area and gas levels remain above the low threshold, the low gas notification reactivates after two minutes.

Sensor under limit

The sensor under limit (UL) notification is activated when your device detects a UL gas event.

Following a UL notification, no peak is logged because the UL event type is closely related to a device or sensor error. To resolve the UL event, Blackline Safety recommends that you calibrate your device. For more information on calibration, see section 7.2.

Sensor Error

The sensor error notification is activated when your gas sensor stops working.

Following a sensor notification, your device indicates which sensors are generating the error message. Blackline recommends that you power off and restart your device. If the error persists, replace your cartridge. For more information, contact the Blackline Safety *Technical Support* team.

Pump blocked

If your device is equipped with a multi-gas pump cartridge, the pump blocked notification is activated when your pump inlet is blocked.

AlertLink

The AlertLink notifies you that another G7c, G7x, or EXO device within the configured proximity radius is experiencing a high-urgency event. AlertLink notifications trigger a unique light and sound pattern.

AlertLink is only available for self-monitored or Blackline-monitored organizations.

NOTE: G7x devices cannot receive AlertLink messages.

Your device receives a message at the time of the triggering event, which includes the alert type, the device user's name or device ID of the origin device, the origin device type, other device information, and the gas type when applicable.

When the AlertLink notification is activated, proceed based on your company's safety protocol. You can manually acknowledge the notification on the device or it can be cleared remotely by monitoring personnel in Blackline Live.

AlertLink functionality and proximity radius can be configured in Blackline Live by your company's administrator. For more information, refer to the Blackline Live Technical User Manual.

6 HIGH-URGENCY NOTIFICATIONS

High-urgency notifications communicate events that require your immediate attention and action. A high-urgency notification includes red flashing lights, sound, vibration, and an on-screen message specific to the event.

If your organization is monitored, high-urgency notifications are immediately communicated to monitoring personnel and automatically generate an alert in Blackline Live.

NOTE: If your configuration profile has the gas alert countdown timer enabled, communication to monitoring personnel is delayed by 30 seconds.

6.1 ACKNOWLEDGING HIGH-URGENCY NOTIFICATIONS

To allow you to read and understand high urgency notifications, and to avoid accidentally muting the notification, there is a two-second delay before you can acknowledge full screen notifications.

To respond to a high-urgency notification:

1. Immediately evacuate the area and follow your emergency safety protocol.
2. Once you are in a safe location, read the information on G7's screen.
3. Press and hold the up and down arrow buttons at the same time to mute the sound and vibration. This does not cancel the alert in Blackline Live.
4. To respond to escalated low-urgency notifications (fall detected, no-motion, missed check-in): Press and hold the red latch until light, sound, and vibration patterns clear.

6.2 HIGH-URGENCY NOTIFICATION TYPES

High-urgency notifications include:

- Fall detected
- No-motion detected
- Missed check-in
- High gas
- Over limit (OL)
- Short term exposure limit (STEL)
- SOS alert
- Time weighted average (TWA)

Fall detected

The fall detected notification sensitivity is configurable by your Blackline Live administrator.

If your device detects a potential fall and you have not responded to the low-urgency potential fall detected notification, your device activates a high-urgency fall detected notification.

If AlertLink is enabled, G7c and EXO devices within the configured proximity radius of your device at the time of the triggering event receive a low-urgency notification and a message with the alert details.

NOTE: EXO may be excluded from receiving AlertLink messages.

No-motion detected

The no-motion detected interval and sensitivity are configurable by your Blackline Live administrator.

If you are not moving and you have not responded to the low-urgency potential no-motion detected notification, your device activates a high-urgency no-motion detected notification.

If AlertLink is enabled, G7c and EXO devices within the configured proximity radius of your device at the time of the triggering event receive a low-urgency notification and a message with the alert details.

NOTE: EXO may be excluded from receiving AlertLink messages.

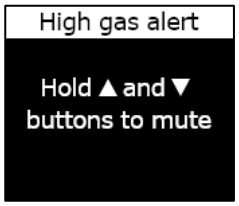
Missed check-in

Check-in requests are configurable by your Blackline Live administrator. Both the check-in timer and pending notification time can be configured.

If you do not check-in during the low-urgency check-in notification, your device activates a high-urgency missed check-in notification.

High gas

The high-gas notification is activated when G7 detects gas levels above the high-gas concentration threshold configured by your Blackline Live administrator.



A device equipped with an O_2 sensor activates high-gas notifications in both oxygen-deficient and oxygen-enriched environments.

When you acknowledge the high-gas notification, your device's banner and lights reflect the high-gas status until the gas conditions return to normal and the high-gas event is resolved.

If muted high-gas event conditions persist past 60 seconds, the high-gas notification re-triggers with lights, sounds, and vibration until the high-gas event is resolved. For more details about muting high-gas notifications with LEL sensors, see section 14.3.

G7 is equipped with a high-gas countdown timer that is configurable (enabled/disabled) by your Blackline Live administrator. Enabling the countdown timer can help reduce the frequency of false high gas

event notifications. If enabled, the countdown timer delays connecting to Blackline Live for 30 seconds.

If AlertLink is enabled, G7c and EXO devices within the configured proximity radius of your device at the time of the triggering event receive a low-urgency notification and a message with the alert details.

NOTE: EXO may be excluded from receiving AlertLink messages.

Following the high-gas notification, the logged peak value of the high-gas event displays on the Gas options screen. The device shows the peak value recorded until a new peak is reached, or the peak value is reset during a power cycle of the device.

Short term exposure limit (STEL)

The sensor short term exposure limit (STEL) notification is activated when G7 detects you have reached the STEL configured by your Blackline Live administrator.

STEL refers to the gas concentration that you can be continuously exposed to for a configurable time frame (default: 15 minutes) without suffering adverse health effects. STEL represents the rolling average of a live gas reading over the duration of a configured time interval.

When you acknowledge the notification, your device's banner and lights reflect the STEL status until the gas conditions dissipate and the STEL event is resolved.

Following the STEL gas notification, the logged STEL value of the STEL event displays on the Gas options screen. The device shows the STEL value until your device is power cycled.

NOTE: Your Blackline Live administrator can configure your device to have G7 resume readings instead.

Time weighted average (TWA)

The time weighted average (TWA) notification is activated when G7 detects that you have exceeded the average allowable amount of gas exposure during a configurable interval (default: eight hours).

The TWA interval used to calculate your allowable gas exposure is configurable and depends on the measuring method configured for your device by your Blackline Live administrator:

- OSHA—calculates TWA 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/EH40—calculates TWA as the total accumulate average, from four to 16 hours as configured by your administrator.

When you acknowledge the notification, your device's banner and lights reflect the TWA status until the gas conditions dissipate and the TWA event is resolved.

Following the TWA notification, the logged peak value of the TWA event displays on the Gas options screen. The device shows the peak value recorded until a new peak is reached, or the peak value is reset when the device is power cycled.

NOTE: Your Blackline Live administrator can configure your device to have G7 resume readings instead.

Over limit (OL)

The sensor over limit (OL) notification is activated when your device detects that the gas reading has exceeded the range of its sensor.

When you acknowledge the OL notification, your device's banner and lights reflect the high-gas status until the gas conditions dissipate and the OL event is resolved.

If AlertLink is enabled, G7c and EXO devices within the configured proximity radius of your device at the time of the triggering event receive a low-urgency notification and a message with the alert details.

NOTE: EXO may be excluded from receiving AlertLink messages.

Following the OL notification, the logged peak value of the OL event displays on the Gas options screen. The device shows the peak value recorded until a new peak is reached, or the peak value is reset when the device is power cycled.

NOTE: Your Blackline Live administrator can configure your device to have G7 resume readings instead.

SOS alert

If you require assistance, you can pull the red latch to manually send an SOS to monitoring personnel and request immediate help to your location.

When you acknowledge the notification, your device's banner and lights reflect the SOS status until the SOS event is resolved.

The SOS alert notification is configurable by your Blackline Live administrator. Your device can be configured to send a silent SOS alert notification that does not activate your device's light, sound, and vibration indicators.

If AlertLink is enabled, G7c and EXO devices within the configured proximity radius of your device at the time of the triggering event receive a low-urgency notification and a message with the alert details.

NOTE: EXO may be excluded from receiving AlertLink messages.

6.3 LIVE RESPONSE

The blue LiveResponse light lets you know that remote monitoring personnel are responding to your high-urgency notification using your team's emergency response protocol. Once monitoring personnel have confirmed your safety and resolved the alert, your device's blue LiveResponse light shuts off.

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

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

⚠ WARNING: Do NOT power off G7 if the blue LiveResponse light is on.

7 GAS DETECTION

7.1 BUMP TESTING G7

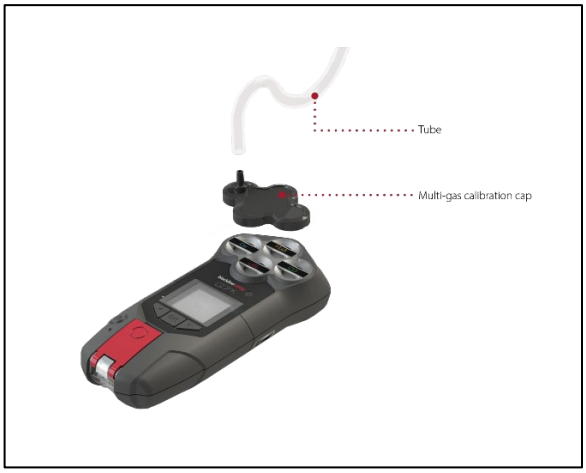
Bump testing verifies that your device's gas sensors and notification indicators (lights, sound, and vibration) are functioning correctly. During a bump test, you apply a known concentration and amount of gas to confirm the sensor will trigger a notification due to the gas exposure. The results of each bump test are sent to Blackline Live automatically.

The bump test schedule can be configured to match your company's safety policy. These changes can be made in the configuration profile on Blackline Live.

Blackline recommends that your bump test interval not exceed 30 days. Where site or regulatory requirements are more stringent, Blackline recommends the more stringent requirements apply.

G7 reminds you when a bump test is overdue. For more information on G7 bump testing notifications, see section 4.

You can manually bump test by applying the target gas to your gas sensor. To manually bump test G7, you need a calibration cap (ACC-Q-CAL) and tube (ACC-T2).



Alternatively, you can bump test using G7 Dock (DOCK-P-NA/DOCK-P-EU). For more information on bump testing with G7 Dock, refer to the G7 Dock Technical User Manual on the Blackline Support site.

Gas cylinders

Sensors can be manually bump tested at the same time using one gas cylinder or individually using multiple gas cylinders. If using multiple cylinders, the manual bump testing process must be repeated for each cylinder.

Some cartridges require you to bump test sensors in a specific order due to gas sensor cross sensitivity. For details, see the following support articles on the Blackline Support site:

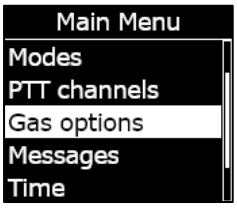
- Gas Sensor Cross Sensitivity
- G7 Gas Sensor Bump Testing and Calibration Order
- Manually Bump Testing G7 with Multiple Gas Cylinders

The gas concentration of the connected gas cylinder should match the gas concentration listed in your device's calibration gas configuration in Blackline Live.

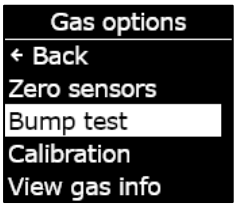
⚠ WARNING: Only perform bump tests in a known clean environment.

To manually bump test G7 using a calibration cap and tube:

1. Attach the tube and calibration cap, ensuring the tube is securely attached to the fixed-flow regulator and calibration cap.
2. Do not turn on the gas cylinder until G7 indicates you should do so.
3. From the Home screen, press the OK button to open G7's Main menu.
4. Using the up and down arrow buttons, scroll through the menu, then select **Gas options** by pressing the OK button. The Gas info menu opens.

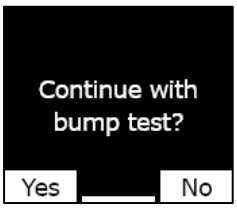


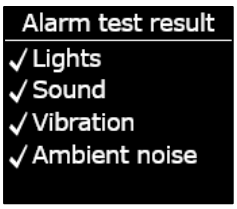
5. Using the up and down arrow buttons, scroll through the menu, then select **Bump test** by pressing the OK button.



6. Select **Yes** by pressing the up arrow button to continue.

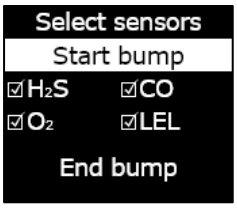
   To exit the workflow, select **No** by pressing the down arrow button.





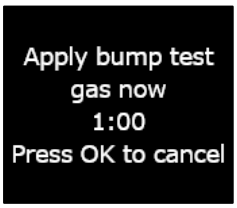
G7 performs an automatic audio and visual assessment to test vibration and lights.

7. Select the sensors you want to bump test. By default, G7 bump tests all sensors.



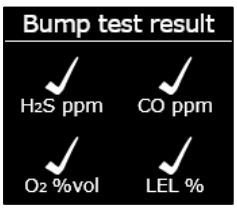
   If you do not want to bump test all the sensors, are bump testing in a specific order, or are using multiple gas cylinders, use the up and down arrow buttons to scroll through the sensors, then press the OK button to select or clear the checkbox for each sensor.

   G7 begins to count down from 60.

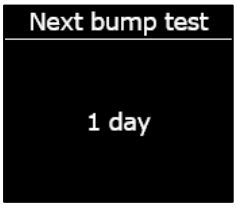


8. Attach the calibration cap to your device and apply the gas within this time window.

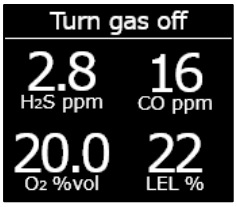
9. Turn the gas off when prompted on your G7 screen. Press the OK button to complete bump test.



   G7 displays if the bump test has passed or failed, and when your next bump test is due.



10. Remove the calibration cap and let your G7 sit until the readings stabilize and your G7 has returned to baseline.



11. If a bump test fail message displays on your LCD screen, try the bump test again. If the error persists, please contact the Blackline Safety *Technical Support* team.

7.2 CALIBRATING G7

Calibration ensures G7 can accurately detect gas. This procedure adjusts sensor parameters while the sensors are exposed to a known concentration of gas for a set amount of time. Calibrations must be done periodically throughout a sensor's operating life. The data collected from each procedure is sent to Blackline Live automatically.

The calibration schedule can be configured to match your company's safety policy. Blackline recommends not exceeding 180 days without a calibration. These changes are made in the configuration profile on Blackline Live.

Sensors on a cartridge share the same calibration schedule, but if you choose to calibrate sensors individually, they can become due independent of the other sensors. Blackline recommends calibrating all the sensors on a cartridge in a single calibration process.

G7 automatically communicates calibration data to Blackline Live at the device's next scheduled synchronization and reminds you when a calibration is overdue. For more information on G7 calibration notifications, see section 4.

You can manually calibrate your G7 by applying the target gas to your gas sensors. To manually calibrate G7, you need a calibration cap (ACC-S-CAL, ACC-Q-CAL) and tube (ACC-T2).

Alternatively, you can calibrate using G7 Dock (DOCK-P-NA/DOCK-P-EU). For more information on calibrating your device with G7 Dock, refer to the G7 Dock Technical User Manual on the Blackline Support site.

Gas cylinders

Sensors can be manually calibrated at the same time using one gas cylinder or individually using multiple gas cylinders. If using multiple cylinders, the manual calibration process must be repeated for each cylinder.

Some cartridges require you to calibrate sensors in a specific order due to gas sensor cross sensitivity. For details, refer to the following support articles on the Blackline Support site:

- Gas Sensor Cross Sensitivity
- G7 Gas Sensor Bump Testing and Calibration Order
- Manually Calibrating G7 with Multiple Gas Cylinders

The gas concentration of the connected gas cylinder should match the gas concentration listed in your device's calibration gas configuration in Blackline Live.

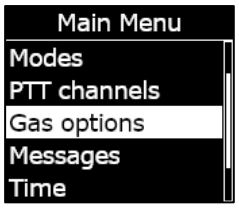
To manually calibrate G7 using a calibration cap and tube:

1. Attach the tube and calibration cap, ensuring the tube is securely attached to the fixed flow regulator and calibration cap.

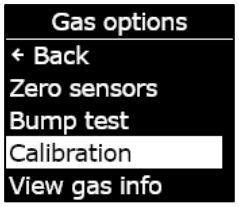
   Do not turn on the gas cylinder until G7 indicates you should do so.

2. From the Home screen, press the OK button to open G7's Main menu.

3. Using the up and down arrow buttons, scroll through the menu and select **Gas options** by pressing the OK button. The Gas info menu opens.

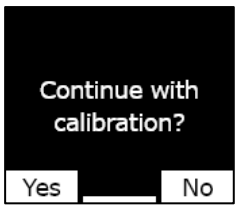


4. Using the up and down arrow buttons, scroll through the menu, then select **Calibration** by pressing the OK button.



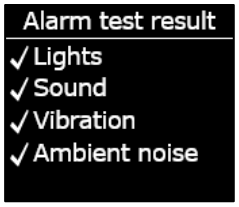
5. Select **Yes** by pressing the up arrow button to continue.

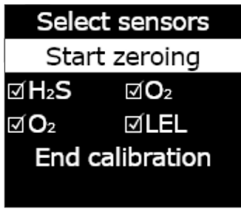
   To exit the workflow, select **No** by pressing the down arrow button.



G7 performs an automatic audio and visual assessment to test vibration and lights.

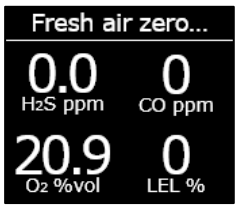
NOTE: Light operation may be suppressed for up to five seconds. For more details, see section 14.3.

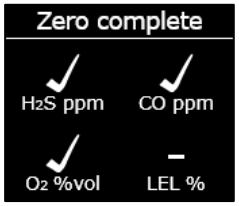




6. Select Start zeroing by pressing the OK button. G7 zeros the sensors before the calibration starts.

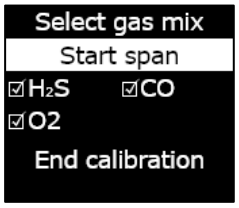
   Do not clear any checkboxes before zeroing. If you are not calibrating all sensors at the same time (i.e., you are only calibrating specific sensors or you are using multiple gas cylinders), you must wait for zeroing to complete before selecting which sensors to calibrate.





7. Select the sensors you want to calibrate. By default, G7 calibrates all sensors.

   If you do not want to calibrate all the sensors, are calibrating in a specific order, or are using multiple gas cylinders, use the up and down arrow buttons to scroll through the sensors, then press the OK button to select or clear the checkbox for each sensor.



8. Use the up and down arrow buttons to select Start span and press the OK button to start the calibration.

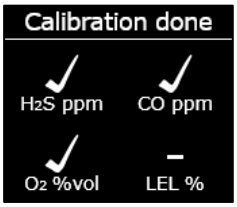
   G7 begins to count down from 60.

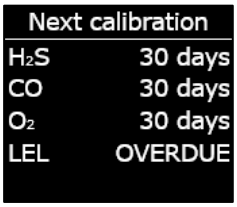
9. Attach the calibration cap to your device and apply the gas within this time window.

10. Turn off the gas when prompted on your G7 screen. Press the OK button to complete the calibration.

11. Allow the residual gas to clear, then disconnect the cap from your G7.

    G7 displays if the calibration has passed or failed, and when your next calibration is due.





12. If you see a calibration fail message on your LCD screen, try the calibration again. If the error persists, please contact the Blackline Safety *Technical Support* team.

7.3 CALIBRATING G7 CLO_2 SENSORS

The calibration of chlorine dioxide (ClO_2) sensors requires the use of a gas generator, not bottled gas, to supply calibration gas. For detailed instructions on calibrating ClO2 sensors, refer to Calibrating G7 ClO_2 sensors on the Blackline Support site.

7.4 CALIBRATING G7 O_3 SENSORS

The calibration of ozone (O_3) sensors requires the use of a gas generator connected to a gas bottle containing 20% oxygen balanced with nitrogen to supply calibration gas. For detailed instructions on calibrating O_3 sensors, refer to the Calibrating G7 O_3 Sensors support article on the Blackline Support site.

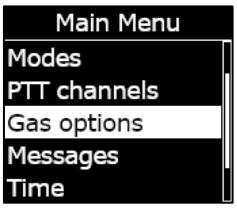
7.5 ZEROING G7

If G7 is not reading zero and you know you are in an atmosphere with no gas, G7's baseline may have shifted, and the sensors may need to be zeroed. If you can calibrate your device, it is best practice to do so, but you can manually zero your sensors if you are unable to calibrate.

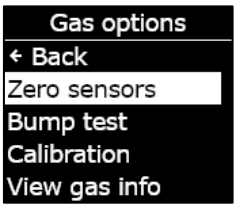
NOTE: The baseline reading for oxygen is 20.9.

To manually zero G7:

1. Using the up and down buttons, scroll through the menu, then select **Gas options** by pressing the OK button. The Gas info menu opens.

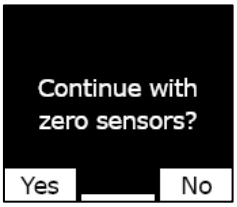


2. Using the up and down arrow buttons, scroll through the menu, then select **Zero sensors** by pressing the OK button.



3. To continue, select **Yes** by pressing the up arrow button. To exit the workflow, select **No** by pressing the down arrow button.

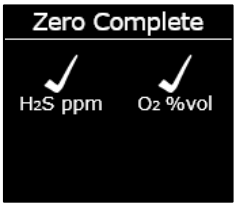
   By default, G7 zeroes all sensors.



4. Press the OK button to return to the Gas info menu.

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

   Contact your organization's safety professional or the Blackline Safety *Technical Support* team for assistance troubleshooting your device.



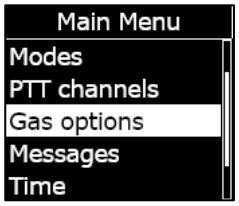
7.6 ACCESSING GAS SENSOR SETTINGS

Use the Gas info menu to access gas sensor information, reset readings, and overwrite configuration profile defaults.

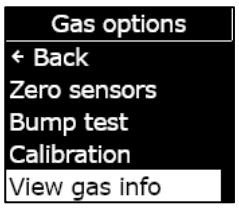
7.6.1 ACCESSING THE GAS INFO MENU

To access the Gas Info menu:

1. From the Home screen, press the OK button to open G7's Main menu.



2. Using the up and down arrow buttons, scroll through the menu, then select **Gas options** by pressing the OK button. The Gas info menu opens.

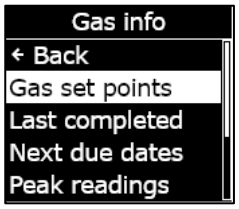


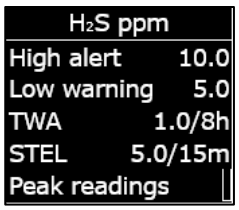
3. Using the up and down arrow buttons, scroll through the menu, then select **View gas info** by pressing the OK button.
4. To return to the Main menu, scroll through the menu, then select **Back** by pressing the OK button.

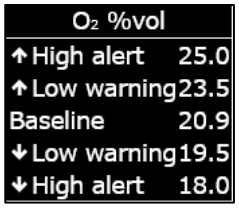
7.6.2 VIEWING GAS SENSOR INFORMATION

To view gas set points:

1. From the Gas info menu, scroll through the menu, then select **Gas set points** by pressing the OK button.







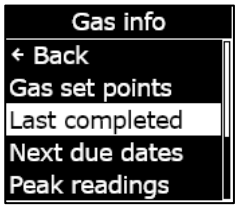
The Gas set points screen opens, displaying the gas sensor set points for your device.

The setpoints are configurable by your Blackline Live administrator. For more information on your device settings, contact your administrator.

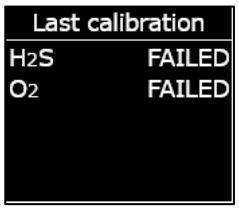
2. Press the OK button to close the screen and return to the Gas info menu.

To view last completed calibration and bump test:

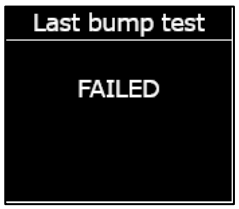
1. From the Gas info menu, scroll through the menu, then select **Last completed** by pressing the OK button.



The last completed screen opens, displaying the date of the last completed calibration and bump test for your device.



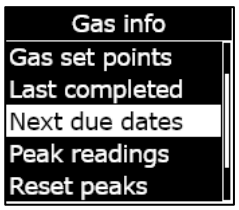
If your device sensor did not successfully complete the calibration or bump, the status displays as **FAILED**.



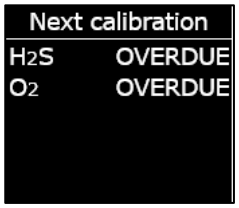
2. Press the OK button to close the screen and return to the Gas info menu.

To view next calibration and bump testing due dates:

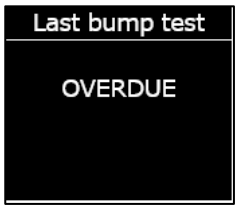
1. From the Gas info menu, scroll through the menu, then select **Next due dates** by pressing the OK button.



The next due date screen opens, displaying the next date calibration and bump testing are due for your device sensors.



If your device is overdue for calibration or bump testing, the sensor status displays as OVERDUE.



2. Press the OK button to close the screen and return to the Gas info menu.

7.6.3 VIEWING AND RESETTING GAS READINGS

Use the Gas options feature to view and reset logged gas readings. Gas readings are only logged and displayed if the configured low/high setpoint is met or exceeded and a notification is triggered.

You can view and, if enabled, reset the following gas readings for your device:

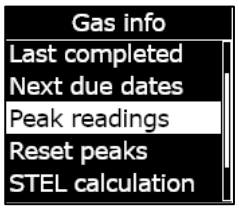
- Peak Gas reading
- Short Term Exposure Limit (STEL) reading
- Time Weighted Average (TWA) reading

You cannot reset the gas readings while your device is in a low- or high-urgency status. The readings automatically reset during the scheduled synchronization with Blackline Live.

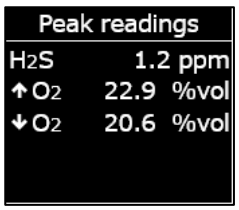
To view peak gas readings:

1. From the Gas info menu, scroll through the menu, then select Peak readings by pressing the OK button.

   The Peak readings screen opens, displaying the logged peak readings (gas events) for your device.



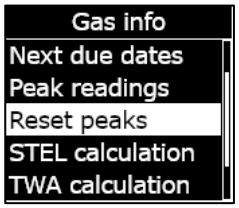
By default, the peak gas readings for your device automatically reset when your device is power cycled. You can manually reset peak gas readings for your devices using the Gas info menu.



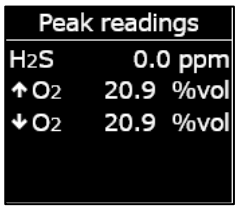
2. Press the OK button to close the screen and return to the Gas info menu.

To reset peak gas readings:

1. From the Gas info menu, scroll through the menu, then select **Reset peaks** by pressing the OK button.



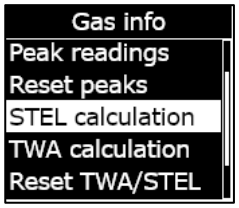
2. Select **Yes** by pressing the up button. The Peak readings screen opens, displaying the reset values.
3. Press the OK button to close the screen and return to the Gas info menu.



To view current STEL calculation:

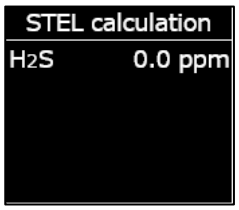
1. From the Gas info menu, scroll through the menu, then select **STEL calculation** by pressing the OK button.

   The short-term exposure limit (STEL) calculation screen opens, displaying the current calculated STEL for your device.



   By default, the STEL value for your device automatically resets when your device is power cycled. You can manually reset the STEL value for your devices using the Gas info menu.

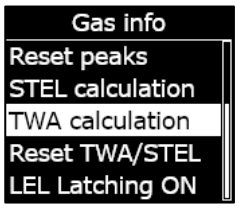
2. Press the OK button to close the screen and return to the Gas info menu.



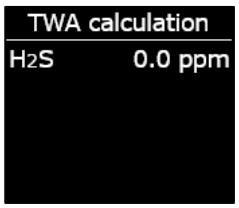
To view current TWA calculation:

1. From the Gas info menu, scroll through the menu, then select **TWA calculation** by pressing the OK button.

   The time-weighted average (TWA) calculation screen opens, displaying the current calculated TWA for your device.



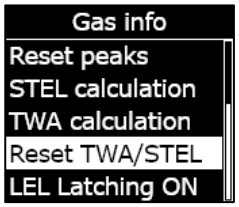
By default, the TWA value for your device automatically resets when your device is power cycled. You can manually reset the TWA value for your devices using the Gas info menu.



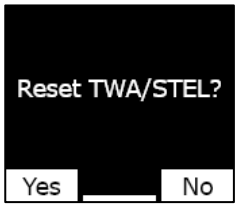
2. Press the OK button to close the screen and return to the Gas info menu.

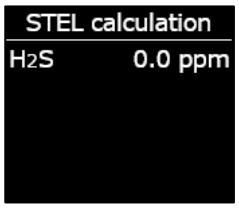
To reset STEL and TWA:

1. From the Gas info menu, scroll through the menu, then select Reset TWA/STEL by pressing the OK button.

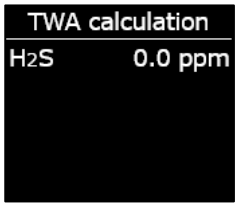


2. To confirm the reset, select Yes by pressing the up arrow button. To exit the workflow, select No by pressing the down arrow button.





The STEL and TWA screens are reset to zero (0).



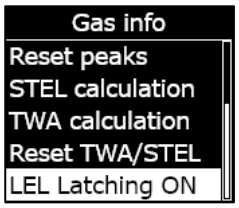
7.6.4 CONFIGURING LEL LATCHING

Use this feature to toggle whether your LEL sensor continues notifications after gas levels return to normal. This feature applies to devices equipped with the pellistor (catalytic bead) combustible gas sensor and prevents an unsafe condition if an over limit event occurs.

When LEL latching is enabled, G7 remains in high-urgency status when LEL sensor readings return from the high gas threshold. You must manually mute the notification by pressing and holding on the G7's up and down arrow buttons until the lights, sound, and vibration indicators stop. If LEL latching is enabled, and the notification is not canceled by the device user, it continues until the battery is depleted.

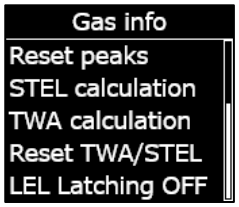
To configure LEL latching:

1. From the Gas info menu, scroll through the menu, then select LEL Latching by pressing the OK button. The menu item displays the current state of LEL latching for your device.



2. To confirm toggling the stat LEL latching, select Yes by pressing the up arrow button. To exit the workflow, select No by pressing the down arrow button.

The LEL Latching menu item displays the updated state for your device.



7.6.5 VIEWING PHOTOIONIZATION DETECTOR (PID) SENSOR TARGET GAS

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

Although PID sensors target a specific volatile organic compound (VOC) gas, readings can still be affected by the presence of non-targeted gases. Consult your safety supervisor or industrial hygienist when preparing to use a PID sensor.

G7's PID sensor target gas is set from the configuration profile in Blackline Live. For more information, contact your Blackline Safety administrator.

To view G7's PID configured target gas:

1. From the Gas info menu, scroll through the menu, then select **VOC target** by pressing the OK button.

   NOTE: The device's VOC target gas also displays when you power on your device.

2. The VOC target gas screen opens, displaying the target gas name, as well as its correction factor for your device.
3. Press the OK button to close the screen and return to the Gas info menu.

7.7 CONFIGURING GAS DETECTION MODES

Configuration modes are customized in the G7 configuration profile in 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 gas detection modes include:

Normal	Use this mode for everyday operation. G7 operates using this mode as a default.
Pre-entry	Activate this mode before entering a space that could potentially contain dangerous gas. Pre-entry mode can be used with or without a pump cartridge, which actively draws surrounding air to its sensors and test gas levels.
SCBA	Use this mode when you are wearing a self-contained or supplied air breathing apparatus (SCBA/SABA) and are entering an area that is known to have high-gas levels.
Leak check	Use this mode 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	Use this mode for general high-risk situations, such as an evacuation or travelling through a dangerous area. High risk mode allows devices to have more frequent check-ins and modified functional settings. Unlike the other modes, it never times out and must be exited manually.

Pump run	Pump run mode requires a pump cartridge, and it runs the pump continuously—such as for use in a hole-watch situation. Unlike the other modes, it never times out and must be exited manually.
Over LEL	This mode lets you silence LEL alarms and alerts when you are entering a known high gas environment. Over LEL mode must be activated prior to entering the high gas environment and can be configured to time out after a specified period. OVER LEL mode must be configured by your company's Blackline Live administrator in Blackline Live. You cannot configure Over LEL mode on your device. For more information, contact your Blackline Live administrator.

NOTE: Some modes can be configured in Blackline Live so that they are only available when a pump cartridge is installed. To enter a mode that uses the pump, you must complete a successful pump block test.

Gas detection modes used in areas with potential gas (pre-entry, SCBA, leak check, and over LEL) have a timeout period. After the timeout interval has elapsed, you are prompted whether you would like to continue in this mode:

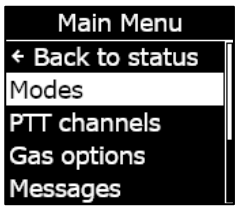
- If you select **Yes**, the mode remains active.
- If you select **No**, G7 returns to normal operation.
- If you do not make a selection within 30 seconds, G7 automatically returns to normal operation. If you have a check-in timer enabled, G7 immediately prompts you to check in.

For more information on gas detection configuration modes, see section 14.3 and refer to the Blackline Live Technical User Manual.

To configure a gas detection mode using the G7 Modes menu:

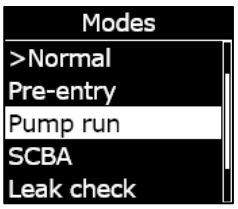
1. From the Home screen, press the OK button to open G7's Main menu.

2. Using the up and down arrow buttons, scroll through the menu, then select **Modes** by pressing the OK button. The Modes menu opens.



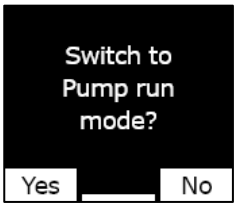
3. Using the up and down buttons, scroll through the menu and select a mode by pressing the OK button.

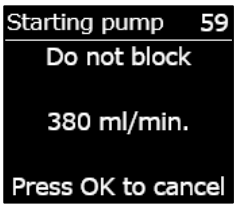
   NOTE: Your device's active settings are flagged with >.



   A prompt displays to confirm you want to switch to the selected mode.

4. Select Yes by pressing the up arrow button.

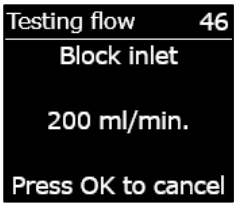


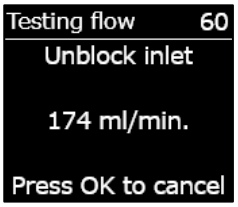


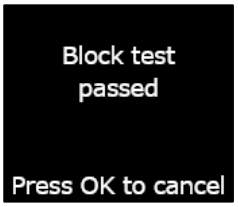
   If the mode selected uses a pump, G7 tests the pump flow before entering the mode.

5. Follow the steps on G7's screen to complete the block test, blocking and unblocking the gas flow when prompted by your device.

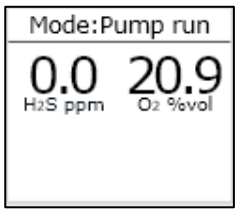
   Select OK to cancel the flow test at any time. If the block test fails, check G7's tubing and try to activate the mode again.







When your device successfully activates the selected mode, the main screen's color scheme inverts, and the banner indicates the mode selected.



Depending on the mode selected, G7 remains in the mode until it times out according to the settings in the configuration profile, or until you manually exit the mode.

6. To manually exit a mode and return to normal operation, open the Modes menu, then select Normal.

To configure a gas detection mode using the G7 Quick select menu:

1. Press the up or down arrow button to open G7's secondary menu. Continue pressing the button until you find your desired mode.
2. Press OK to activate the mode. The main screen's color scheme inverts, and the information banner displays the current mode.
3. To manually exit a mode and return to normal operation, press and hold the up or down arrow buttons.

   A prompt displays to confirm you want to exit the selected mode.
4. Press the OK button to return to normal operation mode.

7.8 SETTING CALIBRATION AND BUMP TEST REMINDERS

Enabling the calibration and bump test reminders feature ensures that you are notified that a calibration or bump test is due upon start-up instead of while you are in the field.

For example, if you have a daily bump test interval, your bump test is due every 24 hours.

If you have not set up a reminder window and you start your shift two hours early one day, you are not prompted to bump test your device because 24 hours has not elapsed. When the bump test becomes due, you may already be out in the field without bump test materials.

If you have set up a two-hour bump test/calibration reminder window and start your shift two hours early, G7 notifies you that the bump test is due on start-up because the bump test is due within this two-hour window. As a result, you avoid a bump test due event while in the field.

The bump test and calibration reminder window can be customized from G7's configuration profile in Blackline Live. For more information, contact your Blackline Live administrator.

7.9 SETTING CALIBRATION AND BUMP TEST LOCKS

This feature locks the device's screen and all functionality when a bump test or calibration is due on start-up.

When locked, you cannot use your G7 in any capacity (including gas readings, SOS latch, messaging) until it has been successfully bump tested or calibrated.

If the bump test or calibration lock is enabled and becomes due during your shift, your device does not lock if it is not power cycled. Your G7 notifies you that a bump test or calibration is due, and a message displays in the banner, but the device remains fully functional.

If the bump test or calibration lock is enabled and becomes due during your shift, and you power cycle your device, your device locks.

The calibration or bump test lock can be enabled from G7's configuration profile in Blackline Live. For more information, contact your Blackline Live administrator.

7.10 CONFIGURING THE G7 GAS ALERT COUNTDOWN

This feature makes it easier to prevent false alarms from being delivered to monitoring services. Gases like CO and O_2 can spike and dip very quickly, setting G7 into high-gas status even when gas levels go back to normal.

The gas alert countdown is an optional gas feature that creates a time buffer before a high-gas alert is delivered to Blackline Live and monitoring personnel.

G7's gas alert countdown can be enabled from the configuration profile in Blackline Live. For more information, contact your Blackline Safety administrator.

How Gas alert countdown works

Typically, when a device's high-gas threshold is crossed, the device immediately sends an alert to Blackline Live. This is done so that monitoring personnel can investigate the incident and follow up with the device user to ensure their safety.

Since the alert is sent immediately, it can result in false alarms where monitoring personnel are alerted even though the exposure was momentary, and the device user is back in a safe area.

When the gas alert countdown feature is enabled, the device waits the configured amount of time before sending an alert. G7 still displays high-urgency lights, sound, and vibration so the user knows to leave the immediate area.

With the gas alert countdown active, the banner at the top of the screen shows the remaining time before an alert is sent to Blackline Live. If gas levels return to normal before this time has elapsed, the alert is cleared. The gas exposure is still visible in the device history view on Blackline Live but does not appear as an alert in the Alerts list.

7.11 USING THE G7 MULTI-GAS PUMP CARTRIDGE

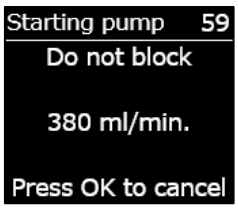
G7's multi-gas pump cartridge is a plug-and-play cartridge that you can attach to G7. The pump cartridge allows you to actively test different areas prior to entering (e.g., down manholes) to determine if the environment is safe.

The pump cartridge uses configuration modes to enable and disable the pump. G7 has three pumped modes: pre-entry, leak check, and pump run. The pump cartridge is toggled between diffusion and pumped operation by entering and exiting gas detection modes.

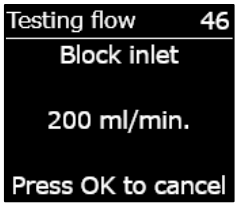
To turn the pump on:

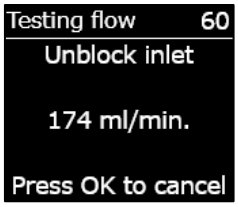
To perform the following steps, your G7 must be equipped with a multi-gas pump cartridge and pumped modes. Pumped modes can be configured in Blackline Live. For more details, see section 14.3.

1. Select the pumped mode you wish to enter. For more information, see section 7.7. G7 tests the pump flow before entering the mode.

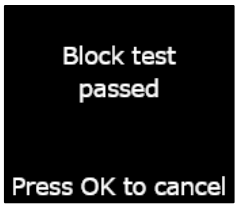


2. Follow the steps on G7's screen to complete the pump block test, blocking and unblocking the gas flow when prompted.

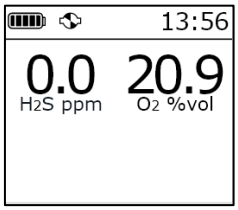




3. Select OK to cancel the test at any time. If the pump block test fails, check G7's tubing and try to activate the mode again.



When the test is complete, the main screen color scheme inverts and the banner ( ) indicates you are in the mode selected. If your cartridge includes an LEL sensor, the yellow LED light illuminates to visually notify you that the pump is running.



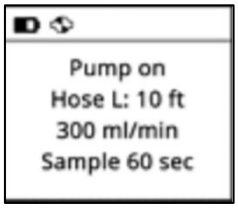
To turn pump off:

1. Enter any non-pumped mode, such as normal, SCBA or high-risk mode. If you enter a secondary mode, the yellow light remains on. If you enter normal mode, the yellow LED light turns off. For more information, see section 7.7.

To view pump details:

1. Press and hold the up or down arrow button from G7's main screen.

   The Pump details screen opens, displaying pump status, tubing length, flow rate, and sample time (if enabled).



NOTE: Flow rate is the speed that air is passing over your device's sensors. To provide accurate gas readings, flow rate must be above 150 ml/min. A flow rate less than 150 ml/min results in a pump block notification.

By default, Blackline's pump aims to maintain a flow rate of 300 ml/min and G7 automatically adjusts its pump speed to maintain this rate.

Bump testing or Calibrating a G7 Multi-Gas Pump Cartridge

Manual bump testing and calibrating of G7 pump cartridges is done using the same calibration cap and method as G7's multi-gas diffusion cartridge. G7 cannot be bump tested or calibrated through the pump itself. For more information, see section 7.1 and 7.2.

NOTE: 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 its unit ID is Dock-P.

Block testing a G7 Multi-Gas Pump Cartridge

Pump block tests are performed when you activate any pumped operating mode (leak check, pre-entry, or pump run) on your device. For more information on selecting your device's operating mode, see section 7.7.

When you are in a pumped mode, you can perform a manual block test at any time by plugging G7's inlet. This causes G7 to go into low-urgency status, and your screen prompts you that the pump is blocked. Unplug the inlet. If the device returns to OK status, your device is safe to use.

NOTE: When performing an automatic pump block test, G7 is in safe mode and gas alerts are not triggered. This prevents triggering false alerts from residual gas in the hose.

Configuring a G7 Multi-Gas Pump Cartridge 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 tube length.

If the sample timer is enabled, the pump status screen shows a countdown and beeps once when a sample cycle completes. The sample cycle repeats continuously until you turn the pump off.

If disabled, the sample timer does not show, the device does not beep, and the pump continues to function normally.

Blackline recommends a 120-second sample time for 10 feet of tube, with an additional second per foot of tube.

Settings for the pump can be found in G7's Main menu, under Settings > Pump options. For more information, see section 9.

Changing a G7 Multi-Gas Pump Cartridge Tube Length:

Tube length is an estimate of how long the tube attached to the pump is. This value is customizable from the Pump options menu, and factors into sample time. G7's multi-gas pump cartridge supports maximum tube lengths of:

- 100 ft of 0.188" diameter tube (30.2 m x 4.78 mm) or,
- 50 ft of 0.125" diameter tube (15.25 m x 3.17 mm).

G7 pump settings can be found in the Device settings menu. For more information, see section 9.4.2.

8 FEATURES

8.1 USING G7'S CONVENIENCE FEATURES

NOTE: Convenience features are available on G7 devices using firmware version 3.450 and higher.

Much like a smartphone, G7 includes the following convenience features that make it easier for device users to do their jobs:

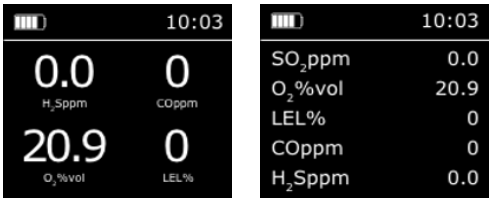
- Local time on device
- Timer
- Stopwatch

If G7 is being used in an area where cellphones are not permitted, these features ensure users do not need to carry multiple devices in the field—G7 can act as an all-in-one solution.

Convenience features are available from both the Main menu and the quick-select menu.

8.1.1 DISPLAYING LOCAL TIME IN BANNER

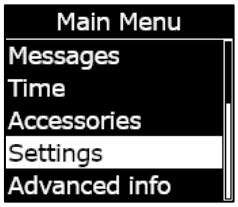
G7 provides the option of showing the local time on the LED screen. The time displays in the top right of the main status screen. Since this is also where the check-in timer displays, you can choose what information you would like to see if you also have the check-in timer feature enabled.



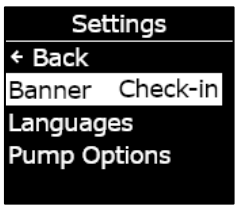
The banner can display the check-in timer or the local time. By default, if your G7 fleet is configured with the check-in timer enabled, the screen displays the check-in timer.

To display local time in the banner:

1. From the Home screen, press the OK button to open G7's Main menu.



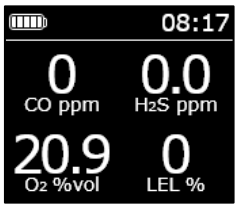
2. Using the up and down arrow buttons, scroll through the menu, then select **Settings** by pressing the OK button. The Settings menu opens.



3. Using the up and down arrow buttons, scroll through the menu and select **Banner** by pressing the OK button.

   The Banner menu displays the current selected setting (Check-in or Time).

4. Select **Yes** to confirm and change the banner display. Select **No** to cancel the workflow and return to the Settings menu.



G7's Home screen displays the local time in the banner.

8.1.2 SETTING LOCAL TIME ON G7

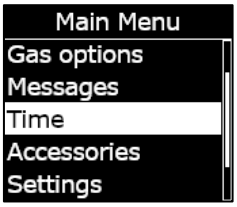
By default, the local time feature uses information gathered from nearby cell towers to determine the time zone and current time based on location.

However, a cellular connection may be unavailable, or your physical location might be on the border between time zones. In these cases, the default settings may provide inconsistent time zone information, and you may need to manually enter a time zone.

To manually enter a time zone:

Time zone offsets are relative to Greenwich Mean Time (GMT: 0:00). You may need to look up the offset of your local time zone with respect to GMT—remember to consider daylight savings as well if your region uses it. The following example used +1:30 as the offset.

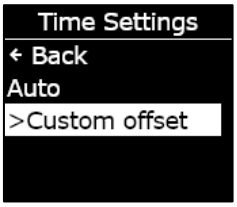
1. Determine the offset relative to GMT for your local time zone.
2. From the Home screen, press the OK button to open G7's Main menu.



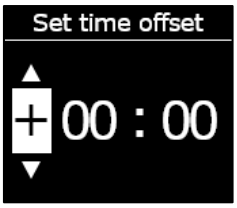
3. Using the up and down arrow buttons, scroll through the menu, then select **Time** by pressing the OK button. The Time menu opens.

4. Using the up and down arrow buttons, scroll through the menu, then select **Time settings** by pressing the OK button. The Time settings menu opens.

   Your device's active settings are flagged with **>**.



5. Using the up and down arrow buttons, scroll through the menu and select **Custom offset** by pressing the OK button.



6. On the Set time offset screen, use the up and down arrow buttons to set the offset relative to GMT, pressing the OK button to navigate between fields:
   - Enter **+** or **-**
   - Enter the **hour**
   - Enter the **minutes** (if applicable)

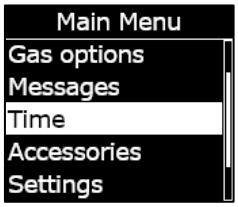
7. Select **Yes** to confirm and change. Select **Edit** to make changes to the time offset entered. Select **No** to cancel the workflow and return to the Time settings menu.

   G7's Home screen displays the local time, including offset, in the banner.

To stop using a manual time zone offset:

1. From the Home screen, press the OK button to open G7's Main menu.

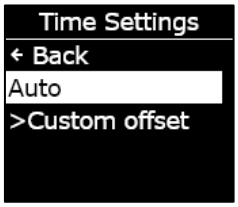
2. Using the up and down arrow buttons, scroll through the menu, then select **Time** by pressing the OK button. The Time menu opens.



3. Using the up and down arrow buttons, scroll through the menu, then select **Time settings** by pressing the OK button. The Time settings menu opens.

   Your device's active settings are flagged with **>**.

4. Using the up and down arrow buttons, scroll through the menu, then select **Auto** by pressing the OK button.



5. Select **Yes** to confirm and change. Select **No** to cancel the workflow and return to the Time settings menu.

   G7's Home screen displays the local time using cellular information in the banner.

Displaying the local time on G7x

The local time feature on G7x requires a connection to a G7 Bridge running firmware version 3.450 or higher to use the **Auto** time setting.

If G7x has not connected to a bridge since starting up, or if it is connected to a bridge running earlier firmware, a blank time (**- -:- -**) displays. In this case, display the local time on the device by manually entering the correct GMT offset for your local time zone.

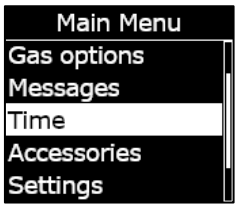
8.1.3 USING THE TIMER

This feature allows you to set a custom length timer on your G7.

To set the timer:

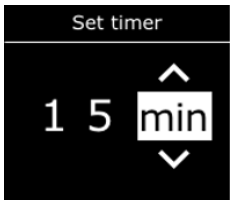
1. From the Home screen, press the OK button to open G7's Main menu.

2. Using the up and down arrow buttons, scroll through the menu, then select **Time** by pressing the OK button. The Time menu opens.



3. Using the up and down arrow buttons, scroll through the menu, then select **Timer** by pressing the OK button.

4. On the Set timer screen, use the up and down arrow buttons to set the time fields, pressing the OK button to navigate between fields:
   - Select the first digit
   - Select the second digit
   - Set units (**min** or **sec**)



5. Select **Yes** to confirm and start the timer. Select **Edit** to make changes to the time interval entered. Select **No** to cancel the workflow and return to the Time settings menu.

The remaining time displays in the **Time** menu, in-line with the **Timer** option.

6. To stop the timer early, navigate to the Time menu, select **Timer**, then select **Yes** when prompted.

To silence the timer notification:

1. When the timer counts down to zero, G7 notifies the user to check the screen. Press and hold the up and down arrow buttons to silence the sound and clear the timer.

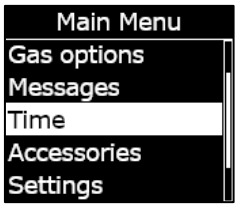
8.1.4 USING THE STOPWATCH

The stopwatch increments in one-second intervals and does not time out. It continues to count in the background, even if you leave the stopwatch screen and return to the Main menu.

To set the stopwatch:

1. From the Home screen, press the OK button to open the Main menu.

2. Using the up and down arrow buttons, scroll through the menu, then select **Time** by pressing the OK button. The Time menu opens.



3. Using the up and down arrow buttons, scroll through the menu, then select **Stopwatch** by pressing the OK button.

   The Stopwatch screen opens, showing the stopwatch at 00:00:00.

4. To start the stopwatch, select ▶ by pressing the OK button.

   To exit the screen, select **Back** by pressing the down arrow button. The stopwatch continues to increment.

5. Once the stopwatch starts counting, select ⏸ to stop the stopwatch.

6. Select **Reset** to set the stopwatch back to zero.

To view how long the stopwatch has been running:

1. Open the Time menu.

   The stopwatch time displays inline with the **Stopwatch** option.

2. Select **Stopwatch** to open the Stopwatch screen.

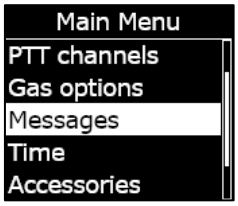
8.2 USING MESSAGING

G7 supports two-way SMS messaging with Blackline Live. G7 can receive a maximum of 90 characters from an automated mass notification message from Blackline Live, and a maximum of 32 characters from a written message sent from a Blackline Live administrator. Messages of up to 16 characters can be sent from a device.

8.2.1 VIEWING MESSAGES RECEIVED FROM BLACKLINE LIVE

To view messages:

1. From the Home screen, press the OK button to open G7's Main menu.

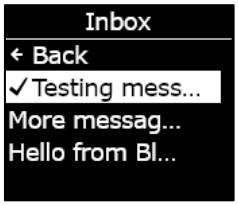


2. Using the up and down arrow buttons, scroll through the menu, then select Messages by pressing the OK button.

   The Messages menu opens.

3. Using the up and down arrow buttons, scroll through the menu, then select Message inbox by pressing the OK button.

   The Messages list opens.



4. Using the up and down arrow buttons, scroll through the menu, then select a message by pressing the OK button.

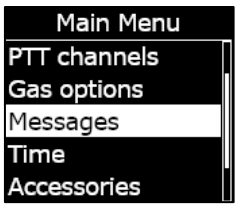
8.2.2 SENDING MESSAGES TO BLACKLINE LIVE

To send a pre-programmed message:

1. From the Home screen, press the OK button to open G7's Main menu.

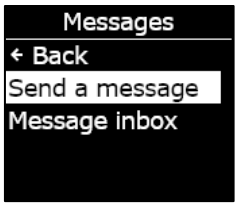
2. Using the up and down arrow buttons, scroll through the menu, then select **Messages** by pressing the OK button.

   The Messages menu opens.

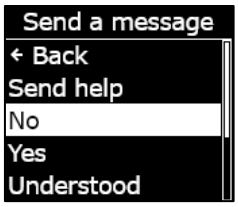


3. Using the up and down arrow buttons, scroll through the menu, then select **Send a message** by pressing the OK button.

   The Messages list opens.



4. Using the up and down arrow buttons, scroll through the list, then select a pre-programmed message. To send the message press the OK button.

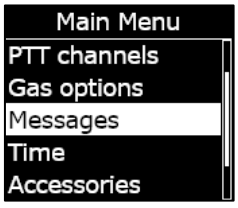


To send a custom message:

1. From the Home screen, press the OK button to open G7's Main menu.

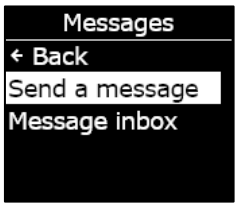
2. Using the up and down arrow buttons, scroll through the menu, then select **Messages** by pressing the OK button.

   The Messages menu opens.



3. Using the up and down arrow buttons, scroll through the menu, then select **Send a message** by pressing the OK button.

   The Messages list opens.



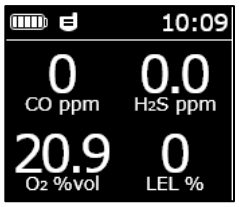
4. Using the up and down arrow buttons, scroll through the list, then select ***Create custom*** by pressing the OK button.

   The custom message screen opens.

5. Use the up and down arrow buttons to select characters, pressing the OK button to navigate between characters.
6. Press the OK button twice to send the message.

7. Select **Yes** to confirm that you want to send the message. Select **Edit** to make changes to the message entered. Select **No** to cancel the workflow and return to the Messages menu.

8.3 PUSH-TO-TALK (PTT) (G7C ONLY)



If you have a G7c with a push-to-talk (PTT) service plan and PTT is enabled in your device's configuration profile, PTT allows you to send and receive voice messages to other G7c device users, like a walkie-talkie.

NOTE: PTT is only available on G7c devices.

8.3.1 TRANSMITTING AND RECEIVING PTT MESSAGES

To send a PTT message:

1. Press and hold G7c's red latch.
2. When G7c finishes beeping, continue to hold and begin talking with the device about six inches from your mouth.

   CAUTION: If you are using an O_2 sensor, confirm that you are talking into G7's microphone and not the cartridge, as this could interfere with the sensor.
3. When you're finished talking, release the latch. G7 allows PTT messages up to 30 seconds in length.

   G7c beeps once more to let you know it's done listening.

To receive a PTT message:

1. G7c beeps twice to signal an incoming PTT message.
2. G7c plays the message.

3. G7c beeps once more when the message is done.
4. G7c's screen displays the channel you are transmitting to or receiving from.

8.3.2 CHANGING PTT CHANNELS

Available PTT Channels include:

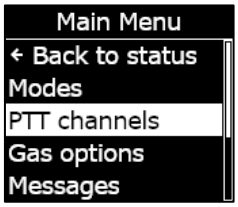
Channel 0-99	Channels 0 through 99 are available for everyday use. When on a specific channel, you can only communicate with devices on the same channel and receive transmissions from all call.
All call	All call is a channel where G7c transmits to all PTT devices in your organization and only hears transmissions 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 cannot transmit to other devices.

To change the PTT channel to a specific channel number:

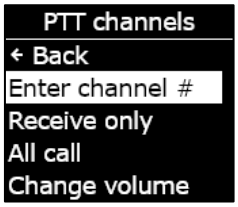
1. From the Home screen, press the OK button to open G7c's Main menu.
2. Using the up and down arrow buttons, scroll through the menu, then select **PTT channels** by pressing the OK button.

   The PTT channels menu opens.

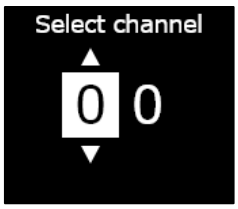
   NOTE: You can also navigate to the PTT channels menu by pressing the up or down arrow from the main screen, then pressing the OK button when the current PTT channel displays on the screen.



3. Using the up and down arrow buttons, scroll through the menu, then select **Enter channel #** by pressing the OK button.



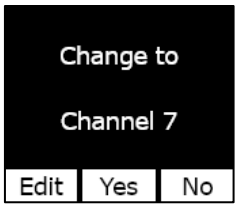
4. Use the up and down buttons to select the first digit of your channel by pressing the OK button. In the example shown, the first digit, 0, is selected.



5. Use the up and down buttons to select the second digit of your channel by pressing the OK button. In the example shown, the second digit, 7, is selected.

6. Select **Yes** by pressing the OK button to confirm and change G7c's channel.

   If you made a mistake, select **Edit** to make changes to the channel. Select **No** to cancel the workflow and return to the PTT channels menu.



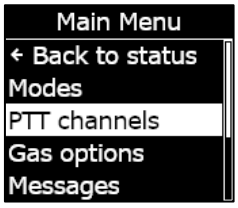
   The channel selected displays on the G7 screen.

To change the PTT channel to receive only or all call:

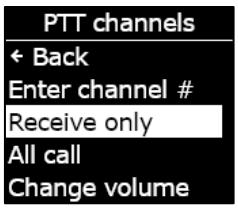
1. From the Home screen, press the OK button to open G7's Main menu.
2. Using the up and down arrow buttons, scroll through the menu, then select **PTT channels** by pressing the OK button.

   The PTT channels menu opens.

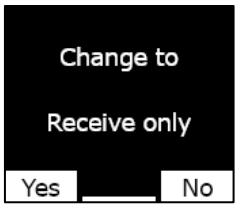
   NOTE: You can also navigate to the PTT channels menu by pressing the up or down arrow from the main screen, then pressing the OK button when the current PTT channel displays on the screen.



3. Using the up and down arrow buttons, scroll through the menu, then select Receive only or All call by pressing the OK button.



4. Press the up arrow button to select Yes and confirm the change to G7's channel. Press the down arrow button to select No to cancel the workflow and return to the PTT channels menu.



The channel selected displays on the G7 screen.

8.3.3 CHANGING PTT VOLUME

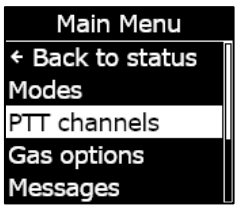
You can change the volume of incoming calls from G7's main screen or the PTT channel menu. Changing the PTT volume only affects incoming calls and does not change G7's notification sounds.

To change volume from the PTT channel menu:

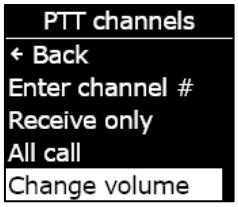
1. From the Home screen, press the OK button to open G7's Main menu.

2. Using the up and down arrow buttons, scroll through the menu, then select PTT channels by pressing the OK button.

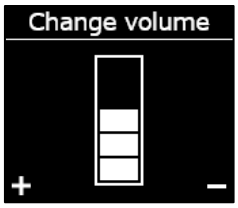
   The Accessories menu opens.



3. Using the up and down arrow buttons, scroll through the menu, then select Change volume by pressing the OK button.



4. Use the up and down buttons to set G7's PTT volume to the desired level, then press the OK button.



8.3.4 PTT AUDIO ACCESSORIES

G7c is equipped with audio accessory pairing for use with PTT. Settings for audio devices can be found in G7's Main menu, under Accessories > Audio pairing.

Audio accessories can only be used for PTT purposes and cannot be used for early check-ins or confirming pending low-urgency notifications.

To pair a new audio device:

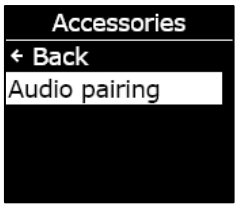
1. From the Home screen, press the OK button to open G7c's Main menu.

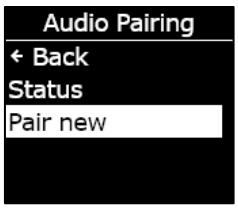
2. Using the up and down arrow buttons, scroll through the menu, then select Accessories by pressing the OK button.

   The Accessories menu opens.

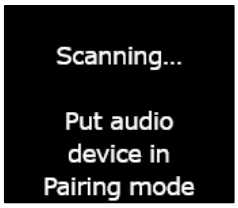
3. Using the up and down arrow buttons, scroll through the menu, then select Audio pairing by pressing the OK button.

   The Audio pairing menu opens.





4. Using the up and down arrow buttons, scroll through the menu and select **Pair new** by pressing the OK button.



5. Put your audio device into pairing mode.

   G7c displays a list of audio accessories in pairing mode.

6. Using the up and down arrow buttons, scroll through the list, then select your device by pressing the OK button.

   G7c displays a successful connection message when your device is connected, as well as an audio accessory icon in the info bar of G7c's main screen.

To reconnect to an audio device:

G7c remembers your audio accessory and pairs automatically when both are powered on. If it does not, you can reconnect to your accessory from the audio pairing menu.

1. From the Home screen, press the OK button to open G7's Main menu.
2. Using the up and down arrow buttons, scroll through the menu, then select Accessories by pressing the OK button.

   The Accessories menu opens.

3. Using the up and down arrow buttons, scroll through the menu, then select Audio pairing by pressing the OK button.

   The Audio pairing menu opens.

4. Using the up and down arrow buttons, scroll through the menu, then select Reconnect by pressing the OK button.

   G7c reconnects to your audio accessory. An audio accessory icon displays in the info bar of G7c's main screen when the connection is successful.

To have G7c forget a paired device:

5. From the Home screen, press the OK button to open G7c's Main menu.
6. Using the up and down arrow buttons, scroll through the menu, then select Accessories by pressing the OK button.

   The Accessories menu opens.

7. Use the up and down arrow buttons to navigate to Settings.

8. Using the up and down arrow buttons, scroll through the menu, then select Audio pairing by pressing the OK button.

   The Audio pairing menu opens.

9. Using the up and down arrow buttons, scroll through the menu, then select Forget device by pressing the OK button.

10. Select **Yes** to confirm that you would like G7c to forget your accessory.

9 DEVICE SETTINGS

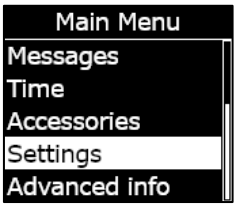
9.1 ACCESSING DEVICE SETTINGS FOR G7

The G7 Device settings menu allows you to access device information (read only), overwrite certain configuration profile defaults (clock, language), and perform advanced operations.

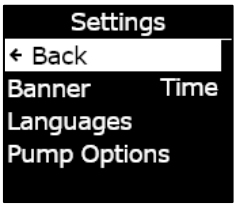
To access the Device settings menu:

1. From the Home screen, press the OK button to open G7's Main menu.

2. Using the up and down arrow buttons, scroll through the menu, then select **Settings** by pressing the OK button.



   The Device settings menu opens.



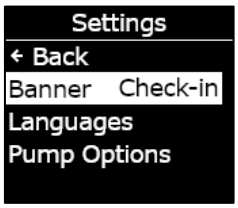
9.2 BANNER

The banner can display the check-in timer or the local time. By default, if your G7 fleet is configured with the check-in timer enabled, the screen displays the check-in timer.

To view and update your device's banner:

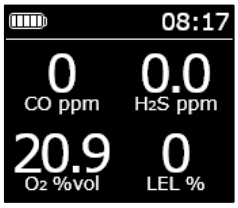
1. Using the up and down arrow buttons, scroll through the Device settings menu, then select **Banner** by pressing the OK button.

   The Banner option display the current setting (Check-in timer or Time).



2. Select **Yes** to confirm and toggle the banner display. Select **No** to cancel the workflow and return to the Settings menu.

G7's Home screen displays the local time in the banner.

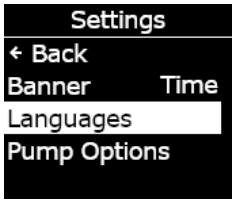


9.3 LANGUAGES

Use the Languages option to view and update your device's language settings. Available languages include:

- English
- Français
- Español
- Deutsch
- Italiano
- Nederlands
- Português

To view and update your device's language:



1. Using the up and down arrow buttons, scroll through the Device settings menu, then select **Languages** by pressing the OK button.

   The Languages screen opens, displaying your device's available language settings. Your device's active language is flagged with a **>**.

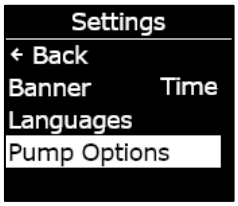
2. Using the up and down arrow buttons, scroll through the Languages options, then press the OK button to select a new primary language for your device.
3. To exit to the Device settings menu, scroll to **Back**, then select it by pressing the OK button.

9.4 PUMP OPTIONS MENU

9.4.1 CONFIGURING THE SAMPLE TIMER

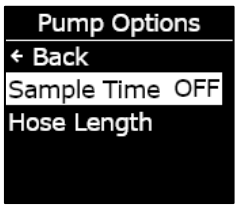
For more information on the sample timer, see section 7.11.

To configure the sample timer:



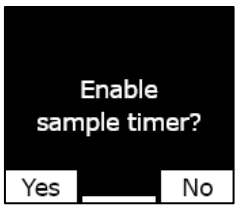
1. Using the up and down arrow buttons, scroll through the Device settings menu, then select **Pump options** by pressing the OK button.

   The Pump options menu opens, displaying your device's available settings.



2. Using the up and down arrow buttons, scroll through the menu, then select **Sample time** by pressing the OK button.

   The Pump options menu displays the item's current selected setting (ON or OFF).



3. Select **Yes** to confirm the update.

   Select **No** to cancel the workflow and return to the Pump options menu.

9.4.2 CONFIGURING TUBE (HOSE) LENGTH

Tube (hose) length describes the length of the tubing attached to the G7 pump cartridge. This value is customizable from the pump options menu, and factors in to sample time.

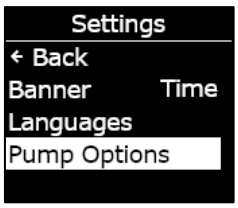
G7's multi-gas pump cartridge supports maximum tube lengths of:

- 100 ft of 0.188" diameter tube (30.2m x 4.78mm) **or**
- 50 ft of 0.125" diameter tube (15.25m x 3.17mm).

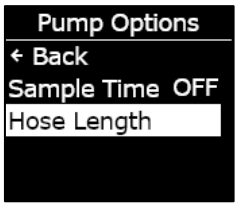
To configure tubing (hose) length:

1. Using the up and down arrow buttons, scroll through the Device settings menu, then select **Pump options** by pressing the OK button.

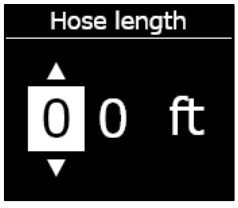
   The Pump options menu opens, displaying your device's available settings.

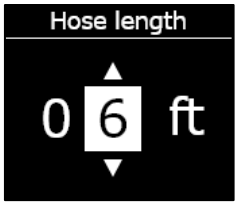


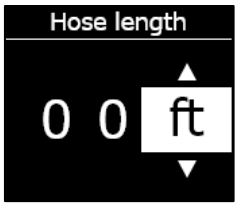
2. Using the up and down arrow buttons, scroll through the menu, then select **Hose length** by pressing the OK button.



3. On the Hose length screen, use the up and down arrow buttons to set the length fields, pressing the OK button to navigate between fields:
   - Select the first digit
   - Select the second digit
   - Set unit (m or ft)







4. Select **Yes** to confirm. Select **Edit** to make changes to the length entered. Select **No** to cancel the workflow and return to the Pump options menu.

10 ADVANCED DEVICE INFORMATION

The Advanced information menu provides detailed information that can be used to quickly troubleshoot your device. The G7 Advanced info menu allows you to access advanced information (read only) including:

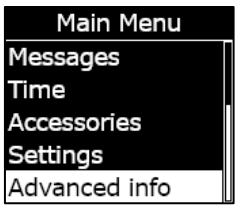
- Device info
- User info
- GPS location
- Beacons
- Communications info

10.1 ACCESSING THE ADVANCED INFO MENU

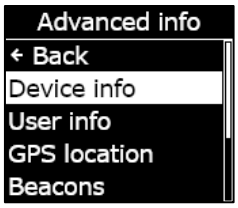
To access the Advanced info menu:

1. From the Home screen, press the OK button to open G7's Main menu.

2. Using the up and down arrow buttons, scroll through the menu, then select **Advanced info** by pressing the OK button.



The Advanced info menu opens.



10.2 DEVICE INFO

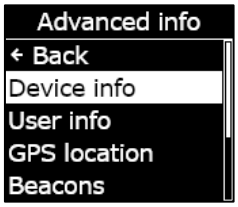
Use the Device info option to view your device's hardware and activation records, including:

- Unit ID
- Region
- Activation code
- Device version
- Build version

To view device information:

1. Using the up and down arrow buttons, scroll through the Advanced info menu and select **Device info** by pressing the OK button.

   The Device info screen opens, displaying your device's settings.



2. Use the up and down arrow buttons to scroll through the Device info screen.
3. To return to the Advanced info menu, press the OK button.

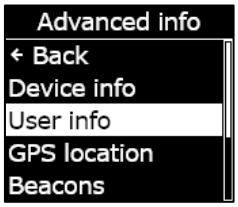
10.3 USER INFO

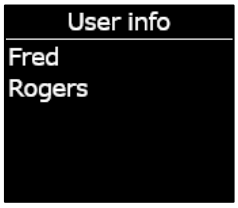
Use the User info option to view your device's assigned user. The assigned user is configurable in Blackline Live. For more information on updating a device user, contact your Blackline Live administrator.

To view device user information:

1. Using the up and down arrow buttons, scroll through the Advanced info menu, then select **User info** by pressing the OK button.

   The User info screen opens, displaying your device's assigned user.





2. To return to the Advanced info menu, press the OK button.

10.4 GPS LOCATION

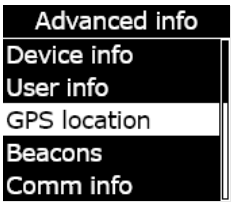
Use the GPS location info option to view information related to your device's recorded GPS location, including:

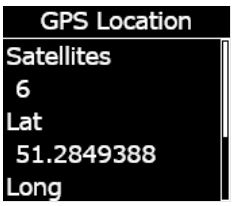
- Time (UTC)
- Lat
- Long
- Satellites
- Signal to noise ratio (SNR) (dB)

To view GPS location information:

1. Using the up and down arrow buttons, scroll through the Advanced info menu, then select **GPS location** by pressing the OK button.

   The GPS location info screen opens.





2. To return to the Advanced info menu, press the OK button

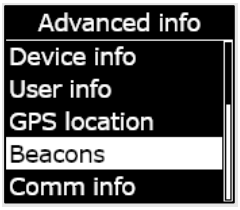
10.5 BEACONS INFO

Use the Beacon info options to view information related to your device's location beacon communications, including:

- Beacon ID
- Power
- RSSI (Received Signal Strength Indication)
- Battery

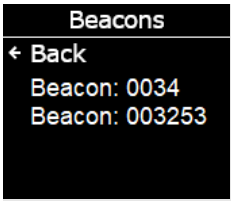
The Beacon information menu provides advanced information that can be used to quickly troubleshoot your device or to support the deployment of Blackline Safety's indoor location beacons.

To view beacon information:



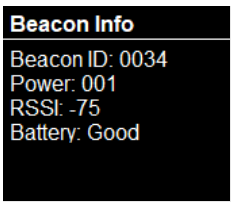
1. Using the up and down arrow buttons, scroll through the Advanced info menu, then select Beacon info by pressing the OK button.

   The Beacon info screen opens, displaying the beacons your device has communicated with.



2. To open the screen for a specific beacon, scroll to the beacon and press the OK button.

   The Beacon info screen opens, displaying information related to the selected beacon.



3. To return to the Advanced info menu, press the OK button.

10.6 COMMUNICATIONS (COMM) INFO

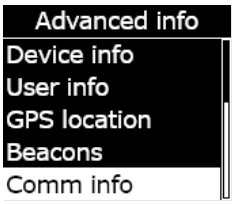
Use the Communications info option to view information related to your device's cellular communications, including:

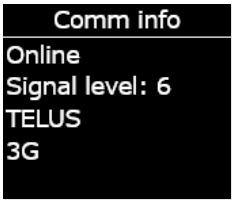
- Status (Online of Offline)
- Signal level (last sync)
- Cell provider (last sync)
- Network (last sync)

To view Communication information:

1. Using the up and down arrow buttons, scroll through the Advanced info menu, then select Comm info by pressing the OK button.

   The Communication info screen opens, displaying your device's communication settings





2. Use the up and down arrow buttons to scroll through the device info screen.
3. To return to the Advanced info menu, press the OK button.

11 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:

- Automatic download
- Automatic installation

11.1 AUTOMATIC DOWNLOAD

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

11.2 AUTOMATIC INSTALLATION

The completely downloaded update is automatically installed the next time G7 is powered on. This installation adds 30 to 60 seconds to the start-up sequence.

When the green light is solid and G7 is connected, it automatically powers down. It then flashes blue and yellow lights on the right side of the screen. The device becomes unresponsive. After 30 to 60 seconds, G7 powers back up and displays the new firmware version it has installed.

Once the update complete, G7 continues to monitor as usual.

⚠ WARNING: G7 does NOT monitor for safety during the firmware update installation process.

Specific information about new updates can be found on the Updates & Notifications page on the Blackline Support site. If you have questions, please contact the Blackline Safety *Technical Support* team.

11.3 G7X FIRMWARE UPDATE KITS

Firmware for G7x devices must be installed through G7 Bridge. 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 the Blackline Safety *Technical Support* team to receive a firmware update kit.

12 SUPPORT

12.1 LEARN MORE

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

12.2 TECHNICAL SUPPORT

Contact our Technical Support team for assistance.

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

13 SPECIFICATIONS

13.1 DETAILED SPECIFICATIONS

DEVICE SPECIFICATIONS	
MATERIAL	Polycarbonate over molded with a static dissipative thermoplastic elastomer (TPE)
WEIGHT	**G7 with Standard Cartridge:** 162 g (5.7 oz) **G7 with Single-gas Cartridge:** 167 g (5.9 oz) **G7 with Multi-gas Diffusion Cartridge:** 192 g (6.8 oz) **G7 with Multi-gas Pump Cartridge:** 238 g (8.4 oz)
DIMENSIONS	**G7 with Standard Cartridge:** 64 mm x 124 mm x 29 mm (2.52" x 4.88" x 1.06") **G7 with Single-gas Cartridge:** 64 mm x 128 mm x 29 mm (2.52" x 5.04" x 1.06") **G7 with Multi-gas Diffusion Cartridge:** 66 mm x 150 mm x 29 mm (2.52" x 5.91" x 1.06") **G7 with Multi-gas Pump Cartridge:** 66 mm x 151 mm x 38.5 mm (2.6" x 5.95" x 1.52")
TEMPERATURE	**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:** 5°C to 45°C (32°F to 113°F)
HUMIDITY	15 to 90% RH Non-condensing
DATA	**Logging:** Every minute **Update interval:** Every 5 minutes for G7c and every 30 minutes for G7x; instantly on high urgency events, and every 5 seconds until event cleared
APPROVALS/ STANDARDS	**RoHS, CE** **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 Performance:** CSA C22.2 No.152; ISA 12.13.01; 60079-29-1
IP RATING	IP67 certified
SOUND LEVELS	**Speaker dB rating:** ~95 dB @ 30 cm (~95 dB @ 11.8")
SENSORS	4 sensors, up to 5 gases
WARRANTY	**G7:** Two-year limited warranty. **Cartridges:** Lifetime with service plan

USER INTERFACE	
DISPLAY	168 by 144 pixel graphical, high contrast, liquid crystal display with front lighting
BUTTONS	**Menu system:** Driven by three-button keypad **Power button:** On/off
SOS LATCH	Send SOS alert
LANGUAGES	**Multi-language support:** EN, FR, ES, DE, IT, NL, PT

CONNECTIVITY	
LOCATION AWARENESS	**GNSS Constellations:** GPS **Receiver type:** 72-Channel **Assisted-GPS:** Yes **Accuracy:** 5m (16 feet), CEP 50%, 24 hours stationary sky view Optional Beacon for indoor location accuracy
CELLULAR	**Wireless coverage:** 219 countries, 381 Operators **4G LTE bands** 1, 12, 13, 18, 19, 2, 20, 26, 28, 3, 38, 39, 4, 40, 41, 5, 7, 8 **3G UMTS bands** 1900, 2100, 850, 900 **2G GSM bands** 850/900/1800/1900 **Antenna:** Internal
BLUETOOTH	4.2 BR/BLE
WIRELESS UPDATES	Over-the-air device configurations Over-the-air firmware upgrades
OPTIONAL PTT	Send and receive voice messages to other G7 and EXO devices

BATTERY AND CHARGING	
RECHARGEABLE BATTERY	Li-ion battery: 1200 mAh Li-ion
CHARGE TIME	4 hours
BATTERY LIFE	**Battery life in diffusion mode:** 18 hours at 20°C (68°F) with LEL-(IR or MPS), H2S, CO and O2 cartridge, under normal connectivity conditions.

13.2 WIRELESS SPECIFICATIONS

3G G7c Wireless Specifications

	3G G7c North America (NA)		3G G7c Europe (EU)	
Model:	G7C-NA		G7C-EU	
Unit ID:	3566xxxxxx	3567xxxxxx	3568xxxxxx	3569xxxxxx
Cellular Radio				
Coverage	172 Countries, 306 Operators			
Bands	3G UMTS 800/850/900/1900/2100 2G GSM 850/900/1800/1900			
Approvals	FCC ID: XPYICGM5NNN IC: 8595A-ICGM5NNN RCM		CE	
Antenna	Internal			
Bluetooth				
Version	-	4.2 BR/BLE	-	4.2 BR/BLE
Band	-	2.4 GHz	-	2.4 GHz
Approvals	-	FCC ID: W77G7C IC: 8255A-G7C RCM	-	CE
Antenna	Internal			
Location Technology				
Constellations	GPS			
Receiver type	72-channel			
Assisted-GNSS	Yes			
Accuracy	5 meters, CEP 50%, 24 hours stationary sky-view			
Antenna	Internal			
Indoor location technology	Blackline Safety location beacons			
Location update frequency	5 minutes			

4G G7c Wireless Specifications

	4G G7c NA		4G G7c EU		4G G7c NA	4G G7c EU
Model:	G7C-NA2		G7C-EU2		G7C-NA2	G7C-EU2
Unit ID:	3570xxxxxx	35718xxxxx	35702xxxxx	357182xxxx	3571xxxxxx	35712xxxxx
Cellular Radio						
Coverage	172 Countries, 306 Operators					
Bands	4G LTE 12, 2, 4, 5 3G UMTS 850/1900		4G LTE bands 20, 3, 7 2G GSM 900/1800		4G LTE 1, 12, 13, 18, 19, 2, 20, 26, 28, 3, 38, 39, 4, 40, 41, 5, 7, 8 3G UMTS 1900, 2100, 850, 900 2G GSM 850/900/1800/1900	
Approvals	FCC ID: XPY1EIQ24NN IC: 8595A-1EIQ24NN		CE, UKCA, Anatel*		FCC ID: XPYUBX21BE01 IC: 8595A-UBX21BE01	CE, UKCA, Anatel*
Antenna	Internal					
Bluetooth						
Version	4.2 BR/BLE					
Band	2.4 GHz					
Approvals	FCC ID: W77G7C IC: 8255A-G7C		CE, UKCA, Anatel*		FCC ID: W77G7C2 IC: 8255A-G7C2 RCM	CE, UKCA, Anatel*
Antenna	Internal					
Location Technology						
Constellations	GPS					
Receiver type	72-channel					
Assisted-GNSS	Yes					
Accuracy	5 meters, CEP 50%, 24 hours stationary sky-view					
Antenna	Internal					
Indoor location technology	Blackline Safety location beacons					
Location update frequency	5 minutes					

*This product is certified by Anatel in accordance with the regulated procedures for the evaluation of conformity of telecommunications products and complies with the applied technical requirements, including the limits of Specific Absorption Rate (SAR) exposure for electric, magnetic, and electromagnetic radiofrequency fields.

ANATEL
13816-20-13011

For more information, please visit the ANATEL website at www.anatel.gov.br.

This equipment is not entitled to protection against harmful interference and must not cause interference in duly authorized systems. Higher SAR values: Head: 1.72 W/kg; Body: 0.73 W/kg.

G7x Wireless Specifications

	G7x NA		G7x Australia New Zealand (AZ)	
Model:	G7X-NA		G7X-AZ	
Unit ID:	3973xxxxxx	3974xxxxxx	3975xxxxxx	3976xxxxxx
Bluetooth				
Version	4.2 BLE Receive-only			
Band	2.4 GHz			
Antenna	Internal			
900 MHz Radio				
Band	902-928 MHz		916-927 MHz	
Approvals	FCC ID: W77G7X IC: 8255A-G7X	FCC ID: 2AZEH-AMU900 IC: 27118-AMU900	RCM	
Antenna	Internal			
Range	Radio link range: 2 km (1.25 mi) real-world			
Location Technology				
Constellations	GPS			
Receiver type	72-channel			
Assisted-GNSS	Yes			
Accuracy	5 meters, CEP 50%, 24 hours stationary sky-view			
Antenna	Internal			
Indoor location technology	Blackline Safety location beacons			
Location update frequency	15 minutes			

13.3 GAS SENSOR SPECIFICATIONS

GAS CARTRIDGE AND SENSORS			
GAS	**SENSOR TYPE**	**RANGE**	**RESOLUTION**
AMMONIA (NH3)	Electrochemical	0–100 ppm	0.1 ppm
CARBON DIOXIDE (CO2)	NDIR	0–50,000 ppm	50 ppm
CARBON MONOXIDE (CO)	Electrochemical	0–500 ppm	1 ppm
CHLORINE (Cl2)[1]	Electrochemical	0–20 ppm	0.1 ppm
CHLORINE DIOXIDE (ClO2)[1]	Electrochemical	0–2 ppm	0.01 ppm
COSH (CO & H2S)	Electrochemical	0–500 ppm CO and 0–200 ppm H2S	1 ppm CO and 0.1 ppm H2S
HIGH-RANGE AMMONIA (NH3)	Electrochemical	0–500 ppm	1 ppm
HIGH-RANGE CARBON MONOXIDE (CO)	Electrochemical	0–2000 ppm	1 ppm
HIGH-RANGE HYDROGEN SULFIDE (H2S)	Electrochemical	0-500 ppm	0.5 ppm
HYDROGEN (H2) (OUTSIDE NORTH AMERICA)	Electrochemical	0-40,000 ppm	1% LEL (400 ppm H2)
HYDROGEN CYANIDE (HCN)	Electrochemical	0–30 ppm	0.1 ppm
HYDROGEN FLUORIDE (HF) [1]	Electrochemical	0–10 ppm	0.1 ppm
HYDROGEN RESISTANT CARBON MONOXIDE (CO-H)	Electrochemical	0–500 ppm	1 ppm
HYDROGEN SULFIDE (H2S)	Electrochemical	0–100 ppm	0.1 ppm
LEL - INFRARED (LEL-IR)	NDIR	0–100% LEL	1% LEL
LEL- MOLECULAR PROPERTY SPECTROMETER (LEL-MPS)[3]	MPS	0-100% LEL	1% LEL
NITROGEN DIOXIDE (NO2)	Electrochemical	0–50 ppm	0.1 ppm
OXYGEN (O2)	Pumped electrochemical	0–25% vol	0.1% vol
OZONE (O3) [1]	Electrochemical	0.1 ppm	0.1 ppm
PHOTOIONIZATION (PID)	PID	0–4,000 ppm	Variable[2], lowest 0.1 ppm
SULFUR DIOXIDE (SO2)	Electrochemical	0–100 ppm	0.1 ppm

[1]This sensor is not compatible with the pump cartridge.

[2]Dependent on correction factor.

[3]Operating pressure: 80 to 120 kPa (11.6 psi to 17.4 psi).

NOTE: To avoid gas sensor cross-sensitivity responses, confirm sensor combinations with Blackline Safety *Technical Support*.

14 LEGAL NOTICES AND CERTIFICATIONS

14.1 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. 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.

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.
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: (1is device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

(1) 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 dispositive.
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.

14.2 INTRINSICALLY SAFE CERTIFICATION

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.

CSA: MC267256
Class I Division 1 Groups A,B,C,D; T4
Class I Zone 0 AEx da ia IIC T4 Ga
Ex da ia IIC T4 Ga

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

2813 II 1 G

-20°C ≤ Tamb ≤ +55°C
Base unit P/N "G7*-#" (* = c, x, or blank; # = NA, EU, 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.
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 5Vdc and 2A respectively.
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.

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 Group IIC T4 Ga dans les lieux classés comme dangereux.

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
CAN/CSA C22.2 No. 60079-29-1:2017
UL 913, Eighth Edition
UL 60079-0: Sixth Edition
UL 60079-11: Sixth Edition
UL 60079-1: Seventh Edition
UL 60079-29-1:2019
EN 60079-0: 2012/A11:2 013
EN 60079-1: 2014
EN 60079-11: 2012
IEC 60079-0: 2011 6th Edition
IEC 60079-1: 2014-06 7th Edition
IEC 60079-11: 2014 7th Edition
IEC 60079-26: 2014-10 3rd Edition

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.

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 5Vdc et 2A.

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.

14.3 LEL FUNCTIONAL SAFETY

Outputs and alarms are described. More detailed information on each alarm can be found in the manual. The alarm outputs on the cartridge are the highest priority and must be followed. Cartridge notifications have precedence over any other notifications from the device.

Device Start-up Self-Test

On device startup, the device performs a self-test sequence which exercises the device lights and audio. Verify functionality of device outputs by confirming that all lights turn on and audio can be heard.

Calibration Protection

When a calibration is started, the cartridge suppresses LEL high-gas detection and notifications, and the yellow light flashes every 30 seconds. The maximum amount of time the cartridge can stay in the calibration mode is 5 minutes. When calibration finishes, or 5 minutes expires, the yellow light stops flashing.

Calibration Sequence

Monitor the gas readings on the screen during calibration and verify that the concentrations reach the target gas concentrations (50% LEL for LEL).

Pump Operation

When the pump is started or stopped, a beep will sound to indicate the event. While the pump is in operation, the yellow light flashes every 30 seconds. Manually verify the pump is in operation by listening for the aspiration sound.

Muting

Alarms on the device can be muted by holding the up/down arrow buttons for 3 seconds. An alarm will not be muted if the buttons are not held down for the entire 3-second duration.

Gas Alarm Muting

LEL high gas notifications can be muted for 60 seconds every 2 minutes when the gas threshold exceeds 60% LEL. Additional muting requests are ignored, and the audible and visual alert patterns continue.

Non-Gas Alarm Muting

Non gas alarms such as low battery can be muted using the standard muting procedure.

Gas Detection

T90 for LEL gas detection will be under 50 seconds in the worst case.

Secondary Modes

If a secondary mode is entered when LEL notifications are disabled, the yellow light will flash every 30 seconds to indicate that gas notifications are being suppressed.

MPS Automatic Zeroing

G7 prompts the user to acknowledge that it is performing an automatic zeroing on startup. If you do not acknowledge the prompt by pressing OK within 15 seconds, the device displays a sensor error notification.

Test Pattern

When G7 is performing an automatic assessment during calibration, the cartridge suppresses light operation for a maximum of 5 seconds. During this time, only the audible assessment is performed.

Shutdown

To initiate shutdown, press the power button for 3 seconds. The device beeps once and double flash the yellow lights. When the green light is completely off, the device is not detecting gas.

Standards

CAN/CSA C22.2 No. 60079-29-1:2017
UL 60079-29-1:2019

Fault States and Output

Low Battery: Indicated by yellow light flashing and audible by piezo. Standard warning pattern applied on both. Indicator activates within 120s of battery being low. The device runs for at least 10 minutes in low-battery mode.

Tous les résultats et alarmes sont décrits. Des informations plus détaillées sur chaque alarme se trouvent dans le manuel. Les sorties d'alarme de la cartouche sont prioritaires et doivent être prises en compte. Les notifications de la cartouche ont la priorité sur toutes les autres notifications de l'appareil.

Auto-test de démarrage du dispositif

Lors du démarrage du dispositif, celui-ci effectue une séquence d'auto-test qui met en service les LED et l'audio du dispositif. Vérifiez le bon fonctionnement de toutes les sorties du dispositif.

Protection de l'étalonnage

Lorsqu'un étalonnage est lancé, la cartouche supprimera la détection et les alertes de gaz LEL élevé, et la lumière jaune clignotera toutes les 30 secondes.
La durée maximale pendant laquelle la cartouche peut rester en mode d'étalonnage est de 5 minutes. Lorsque l'étalonnage est terminé, ou que 5 minutes se sont écoulées, la lumière jaune cessera de clignoter.

Séquence d'étalonnage

Surveillez les lectures de gaz à l'écran pendant l'étalonnage et vérifiez que les concentrations atteignent les concentrations cibles de gaz (50 % LEL pour LEL).

Fonctionnement de la pompe

Lorsque la pompe est mise en marche ou arrêtée, un bip sonore retentira pour indiquer l'événement. Pendant le fonctionnement de la pompe, la lumière jaune clignotera toutes les 30 secondes. Vérifiez manuellement que la pompe fonctionne en écoutant le son d'aspiration.

Mise en sourdine

Les alarmes de l'appareil peuvent être désactivées en maintenant les flèches haut/bas enfoncées pendant 3 secondes. L'alarme ne sera pas désactivée si les boutons ne sont pas maintenus enfoncés pendant ces 3 secondes.

Mise en sourdine de l'alarme de gaz

Les alertes de gaz LEL élevé peuvent être mises en sourdine pendant 60 secondes toutes les 2 minutes lorsque le seuil de gaz dépasse 60 % LEL. Les demandes de mise en sourdine supplémentaires seront ignorées, et les modèles d'alerte sonore et visuelle continueront.

Désactivation des alarmes non liées au gaz

Les alarmes non liées au gaz, telles que les alarmes de batterie faible, peuvent être désactivées à l'aide de la procédure de désactivation standard.

Modes secondaires

Si un mode secondaire est activé lorsque les alertes LEL sont désactivées, la lumière jaune clignotera toutes les 30 secondes pour indiquer que les alertes de gaz sont supprimées.

Auto-zéro MPS

Le G7 demandera à l'utilisateur de reconnaître qu'il effectue un auto-zéro au démarrage. Si vous ne reconnaissez pas l'auto-zéro en appuyant sur OK dans les 15 secondes, le dispositif affichera une alerte d'erreur de capteur.

Motif de test

Lorsque le G7 effectue une évaluation automatique pendant l'étalonnage, la cartouche supprimera le fonctionnement de la lumière pendant un maximum de 5 secondes. Pendant ce temps, seule l'évaluation sonore sera effectuée.

Normes :

CAN/CSA C22.2 No. 60079-29-1:2017
UL 60079-29-1:2019

États de défaillance et sorties

Batterie faible : indiquée par le clignotement de la LED jaune et audible par le buzzer. Modèle d'avertissement standard appliqué aux deux.

Self-Test Failure: Errors including memory tests, sensor tests and watchdog tests are indicated by yellow light flashing and audible by piezo.

Sensor Communication Failure: Indicated by yellow light flashing and audible by piezo. Standard warning pattern applied on both.

Under Limit Detected: Indicated by yellow light flashing and audible by piezo.

Échec de l'auto-test de mémoire : indiqué par le clignotement de la LED jaune et audible par le buzzer. Modèle d'avertissement standard appliqué aux deux.

Échec de la communication du capteur : indiqué par le clignotement de la LED jaune et audible par le buzzer. Modèle d'avertissement standard appliqué aux deux.

Détection sous la limite : indiquée par le clignotement de la LED jaune et audible par le buzzer. Modèle d'avertissement standard appliqué aux deux.