USER GUIDE

COMPASSPRO™

BY SAFEGUARD

AN INSTANT RESPONSE WHEN EVERY SECOND COUNTS.

CURRENT AS OF SEPTEMBER 1, 2024

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INTRODUCTION

Field workers face the daily risk of severe or fatal injury as they perform their jobs. There are many potential threats, including falls, blows to the head, arc flash, and current/voltage fields. Injured field workers can go without aid for hours, with the chances of fatality increasing exponentially as every minute passes. When an emergency response occurs, every second counts when providing emergency care and treatment.

COMPASS Pro™ is a streamlined emergency response solution built into a personal non-contact voltage and current detector. Its advanced notification system is designed to warn the User that a source is present, inform them of its approximate location, and assist them and their team in rapid emergency response protocol when an emergency event or SOS is triggered.

The internal sensors in the COMPASS Pro device are designed to detect emergency events such as falls, impacts, arc flash, and no-movement, in addition to voltage and current fields. This advanced warning device can prevent serious injury for anyone working in or around live alternating current (AC) and significantly decrease emergency response time when accidents occur.

INTRODUCTION

PRIMARY FUNCTIONS

- Identify live conductors
- Detect residual or induced voltage
- Identify emergencies
- Trigger emergency response protocol
- Autonomously share emergency locations and information
- Facilitate emergency response communication

KEY FEATURES

- Arc flash detection
- Impact / fall detection
- No movement / man-down detection
- SOS button
- Emergency location detection
- Voltage & current detection
- Team alerts via SMS and in-app messaging
- Events log
- Visual & audio alerts
- Directional voltage notifications
- Interchangeable & replaceable clips
- Rechargeable battery
- Bluetooth pairing with smartphone devices

SAFETY INFORMATION

- The COMPASS Pro device should be used only by trained and qualified personnel.
- Always adhere to proper high voltage electrical safety practices.
- Extreme humidity may decrease the voltage/current detection range.
- Before field use, always confirm that the COMPASS Pro device is powered on, connected to a mobile device, and working (as indicated by the center light blinking green every 5 seconds) and test with a known source of voltage/current.
- Always test and verify that the sensitivity settings on the COMPASS Pro device are appropriate for the workspace environment.
- Some materials may shield electromagnetic fields from the detection circuits of the COMPASS Pro device.
- Always verify that a potential voltage source is de-energized before making contact.
- The COMPASS Pro device should only be used as a secondary voltage detection method.

APP INSTALLATION & SET UP

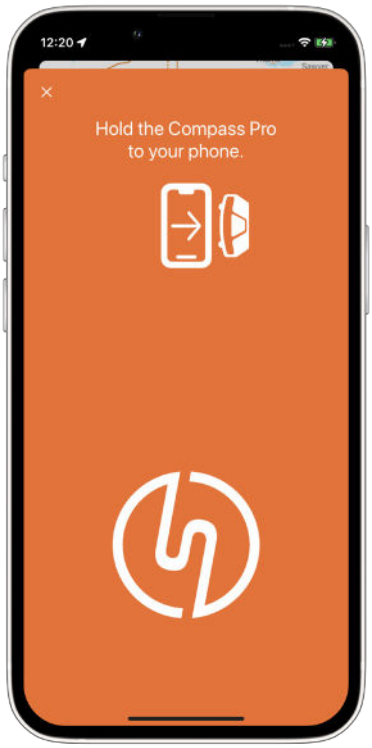
INSTALLING THE SAFEGUARD EQUIPMENT APP

Download App

The Safeguard Equipment app (referred to as "App" or "the App") is required to operate the COMPASS Pro safety service. This App is free for download for iOS and Android Users on the Apple App Store (iOS) and Google Play Store (Android). Please follow the steps below to install the App and set up the device.

1. Download the Safeguard Equipment app from the App Store or Google Play.
2. Open the App and follow prompts to create profile.
3. Follow prompts to pair device to the App.

BLUETOOTH & APP OPERATION



- The COMPASS Pro device will NOT pair from the phone settings application like most Bluetooth devices. Initial pairing must take place within the Safeguard Equipment app.
- After initially pairing the device, the User's phone will automatically connect to it from any distance within Bluetooth range.
- The App will automatically save the User's settings.
- When a User pairs a new COMPASS Pro device or presses the disconnect button within the App, the phone will forget the previous device settings and no longer automatically connect to the last device.
- When COMPASS Pro disconnects from Bluetooth or cellular/Wi-Fi, the device will flash ORANGE lights on each end of the light bar and beep periodically for 30 seconds to notify the User that they are Unprotected. When reconnection is gained, the COMPASS Pro device will notify the User by blinking GREEN lights at the corner of the light bar.

DEVICE SPECIFICATIONS

Size	3.0"(77mm) X 1.4" (35mm) x .9" (23mm); weight: 0.95 oz (27g)
Power System	Rechargeable Lithium-Polymer (LiPo) Battery (3.7V, 250mAh). Discharge rate varies depending on number of alerts. Full charge can last 5 days (40+ hrs).
Charging	Typically charges to 100% in 1.5 hrs. USB minimum 5V, 0.5A
Operating Frequency	50 Hz and 60 Hz options available
Operating Conditions	Operation: -20°C to 60°C (-4°F to 140°F) Charging: 0°C to 45°C (32°F to 113°F)
Enclosure	Rated IP-67 Flame Retardant: UL recognition 94 V-0 at 1.5 mm Electric Strength (IEC 60243-1): 35kV/mm Electric Volume Resistivity (IEC 60093): 1.0E+14 ohms-m
Detection Voltage Ranges	Low: 120VAC - 2.4kVAC Medium: 2.4kVAC - 34.5kVAC High: 34kVAC - 500kVAC Detection distances vary depending on conditions and settings. ***The range is selectable in the Safeguard Equipment app.***
Detection Sensitivity	Eleven sensitivity levels + Smart Adaptive mode
Directional Accuracy	Point source: Approximately ±20°
Impact Detection	Impacts above 190g
Fall Detection	Falls greater than 6ft
Arc Flash Detection	Minimum of 4 Cal/cm^2 with $^+$/- 45 degrees viewing angle.
Compliance This section lists the EMC (electromagnetic compatibility), safety, and environmental compliance standards with which the product complies.	**EMC Compliance** FCC Part 15B Class B: ICES-003 Issue 7 FCC Part 15C: IC RSS-GEN Directive 2014/53/EU (Radio Equipment Directive (RED)) -EN 300 328 V2.2.2 -EN 301 489-1 V2.2.3 -EN 301 489-17 V3.2.6 **Safety Compliance** ANSI/ISEA Z89.1-2014 - Class E Hard Hat, Full Brim, Type 1; Tested Accessory **Environmental Compliance** Directive 2011/65/EU (RoHS 2) Directive 2015/863/EU (RoHS 2 amendment) -EN IEC 63000:2018 Directive 2006/66/EC (Battery RoHS)
Conformance (To Other Standards)	ASTM F3283/F3283M - 18: Standard Specification for the Manufacturing of High Voltage Proximity Alarm to be used for the Detection of Overhead High Voltage Alternating Current (AC)

DEVICE POSITIONING

HARD HAT MOUNTING

The COMPASS Pro device is best worn on the underside brim of a hard hat, directly in front of the User's face. Ensure the unit is within the User's field of peripheral vision to maximize the visibility and effectiveness of voltage and current alerts.

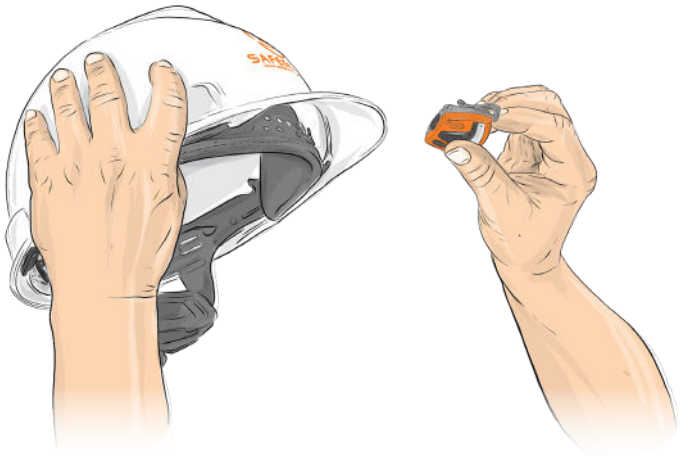


FIGURE. 1

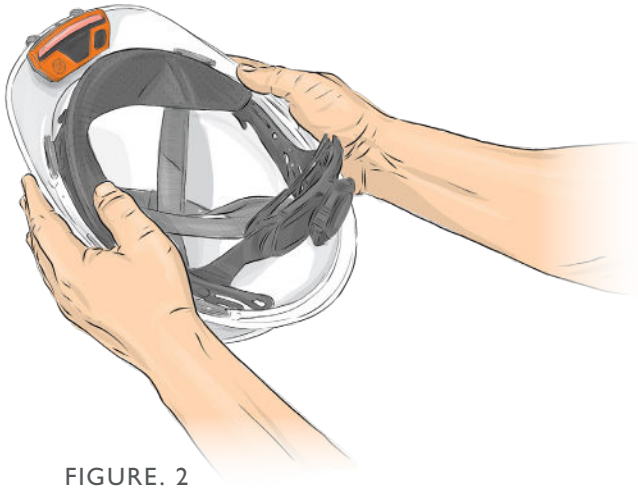


FIGURE. 2

HANDHELD OPERATION

FIGURE. 3

If the User works with low voltage sources (120-2.4kVAC), the COMPASS Pro device can operate as a handheld device. For best results, the User should set the sensitivity to high. The User should not attempt to detect voltage under 2.4kVAC while the COMPASS Pro device is still attached to their hard hat.

When using the COMPASS Pro device in handheld mode, DO NOT obstruct the front of the device, as this will significantly reduce or even eliminate its detection capabilities. Refer to the photos and illustrations for details on the proper holding technique.

Notes on Handheld Mode:

- Always wear voltage-appropriate protective equipment when holding the COMPASS Pro device.
- Detecting current in handheld mode allows the User to trace live wires through some walls.
- Shielding may cause limited alert range when detecting fuse box voltage.
- Do not allow the COMPASS Pro device to directly contact a live conductor.

WARNING: Emergency SOS features like impact and arc-flash may not operate when using the device in the hand-held orientation. All SOS features are tested and certified in the hard-hat mounted position.

OPERATING INSTRUCTIONS

DEVICE LED COLOR KEY

RED	Voltage sensitivity, alerts, directionals, and range
BLUE	Current sensitivity and alerts
ORANGE and WHITE	Emergency alerts system, emergency detected, emergency countdown, new crisis received
GREEN	Bluetooth communication, receiving data from a phone, sending data to a phone, battery life
WHITE	Power on animation, mute, button feedback

COMPASS PRO HEARTBEAT

The COMPASS Pro device has a heartbeat that flashes every 5 seconds when the User powers on the device. The heartbeat will blink a single LED on the light bar to indicate the voltage range Low Voltage (LV), Medium Voltage (MV), and High Voltage (HV). If the User changes the range, the heartbeat location will move location on the light bar to indicate the new range. Factory setting for Voltage range has been set to medium.

GREEN HEARTBEAT
= User is Protected

WHITE HEARTBEAT
= User is Unprotected

The color of the heartbeat indicates the status of COMPASS Pro. A GREEN heartbeat means the device is successfully connected to Bluetooth, AND the User's phone is connected to the internet (Wi-Fi or cellular data). In this state, the User is "Protected." If neither criterion is met, the User is "Unprotected" and the device will display a WHITE heartbeat. The User will need to check their Bluetooth and Wi-Fi connection to return to a GREEN heartbeat and restore Protection.

OPERATING INSTRUCTIONS

Function	Instructions
Charging Device	When battery life is low: 1. Plug Charger into Micro USB Port: a. One RED LED indicates charging. b. One blinking GREEN LED indicates fully charged. 2. Press the button during charging to display the battery level. LEDs on the light bar will turn GREEN, increasing in lights from left to right as the device continues to charge. 3. The battery level will also be displayed upon unplugging the device. Note: • The SOS button and emergency features do not work while charging. • When plugged into a charger, all existing emergencies
Power On	Press the center button, the COMPASS Pro device will display: • WHITE start-up animation. • COMPASS Pro device heartbeat will display with a GREEN or WHITE light flashing every 5 seconds.
Mute/ Unmute Alerts	To mute the device: 1. Click the primary button quickly (1-second click). 2. COMPASS Pro device will beep twice. The corner lights will periodically display RED when the device is in a voltage field. • The corner lights will periodically display BLUE when the device is in a current field. • If no field is detected, the LEDs display a regular heartbeat. • Muting the device will NOT mute the SOS countdown. SOS countdown only be muted in the App Service Settings To unmute the device: 1. Click the main button quickly (1-second click) 2. The device will issue 3 quick alerts of increasing lights to indicate that alerts are now on. To mute the SOS Countdown alerts, visit the service settings in the Safeguard Equipment app. This will silence the SOS countdown while still displaying lights. • COMPASS Pro device will still beep to indicate whether or not the SOS was sent successfully. • SOS mute will be saved on device even after power down. Note: All audible alerts, except SOS alerts, will automatically reset when the device is powered off.
Checking Battery Life	The battery level is always displayed following the startup animation when the device is first powered on. The battery level is also displayed every time the device wakes up from hibernate mode. To view the battery level at any time, visit the Safeguard App. When 8 hours of battery life remain, the battery level will begin to flash every 30 minutes.
Manually Change Voltage Sensitivity	To manually change voltage settings: 1. Press and hold the main button until corner lights turn RED. Release button at RED lights. VOLTAGE SENSITIVITY mode will be entered. 2. Sensitivity level is indicated by how many RED lights fill the light bar. Click the primary button quickly to cycle through the sensitivities. Smart adaptive is designated by the lights filling and fading from the center out. 3. Press and hold the button for 1 second to save the sensitivity. Corner lights will flash WHITE to confirm and COMPASS Pro will return to normal operation. Settings: 1-11 LEDs, 1 is the lowest sensitivity, and 11 is the highest. Smart Adaptive mode: LEDs move in and out. *Voltage settings can be adjusted in the App under COMPASS Pro Settings*

OPERATING INSTRUCTIONS

Function	Instructions
Power Down	Press and hold for 5 seconds until the COMPASS Pro device plays shutdown animation
Hibernate Mode	COMPASS Pro will go into hibernate mode if no motion, no alerts, no settings changes, and no App activity is detected for 10 minutes. This is indicated by WHITE lights fading in and out at both ends of the light bar. Move the device to wake it from hibernate mode. When the device wakes, the corners will play a WHITE fade-in animation, followed by the battery level. *Bluetooth will disconnect while in hibernate mode, and will automatically reconnect when the device wakes up.*
Auto Shut Off	The COMPASS Pro will auto shut off after 2 hours of entering hibernate mode. To turn back on, press either of the two buttons. • When the device turns back on, it will play the standard WHITE boot animation, followed by the battery level. • Mute will default back to un-muted. • There is no animation when auto-shutoff occurs.
Low Battery	The battery level is displayed every 30 minutes starting approximately 8 hours before the device will shut down. The battery level will always be displayed in the Safeguard Equipment app.
Manually Change Current Sensitivity Settings	To manually change current settings: 1. Press and hold the main button until corner lights turn BLUE. Release button at BLUE lights. CURRENT SENSITIVITY mode will be entered. 2. Sensitivity level is indicated by how many BLUE lights fill the light bar. Click the main button quickly to cycle through the sensitivities. Smart Adaptive Mode is designated by the lights filling and fading from the center out. 3. Press and hold the button for 1 second to save the sensitivity. Corner lights will flash WHITE to confirm and COMPASS Pro will return to normal operation. Settings: 0-11 LEDs, 1 is the lowest sensitivity, and 11 is the highest. 0 BLUE lights indicate that current detection has been deactivated. Smart Adaptive Mode: BLUE LED lights move in and out.
Change Voltage Range Sensitivity	The User can only adjust the voltage range sensitivity under the Device Settings in the Safeguard Equipment app. The factory setting of voltage range is set to medium.
Triggering SOS with Button	To trigger an SOS alert using the button on the device: 1. Hold the SOS button down for 3 seconds, or until the single ORANGE light completes its journey across the light bar. 2. Release button at the end of the countdown. The corner LEDs will flash ORANGE and WHITE, and the emergency response team will be notified immediately. Unlike the other emergency triggers, the SOS button does NOT have a 30 second countdown. If the SOS button is pressed while the App is not connected to Wi-Fi or Bluetooth, the corner lights will blink ORANGE and audio error tone beeps will occur. This tone plays every 2 seconds while the User holds the button.
Canceling Emergency Alerts	Emergency countdowns for arc flash alerts, fall alerts, and impact alerts last for 1-minute, during which time the User can choose to cancel the emergency. To do this: 1. Hold the main button OR the SOS button down for 2 seconds, during which a single GREEN light will appear and move across the light bar indicating how long the button must be held. 2. Release the button after the GREEN light completes the journey across the light bar. The emergency has been canceled. All emergency events can be canceled on the App at any point in time.

OPERATING INSTRUCTIONS

Function	Instructions
Smart Adaptive Mode	To manually set Smart Adaptive mode for voltage: 1. Press and hold the main button until corner lights turn RED. Release button at RED lights. VOLTAGE SENSITIVITY mode will be entered. 2. Sensitivity level is indicated by how many RED lights fill the light bar. Click the primary button quickly to cycle through the sensitivities. Smart adaptive is designated by the lights filling and fading from the center out. 3. Press and hold the button for 1 second to save the sensitivity. Corner lights will flash WHITE to confirm and COMPASS Pro will return to normal operation. To manually set Smart Adaptive mode for current: 1. Press and hold the main button until corner lights turn BLUE. Release button at BLUE lights. CURRENT SENSITIVITY mode will be entered. 2. Sensitivity level is indicated by how many BLUE lights fill the light bar. Click the main button quickly to cycle through the sensitivities. Smart Adaptive Mode is designated by the lights filling and fading from the center out. 3. Press and hold the button for 1 second to save the sensitivity. Corner lights will flash WHITE to confirm and COMPASS Pro will return to normal operation. *Smart Adaptive Mode can also be activated within the App under "COMPASS Pro Settings."*
Ensuring Device Connectivity	To ensure device's connectivity, observe the color of the heartbeat (*see pg. 4 for more info*). The COMPASS Pro device has a heartbeat that flashes every 5 seconds when the User powers on the device. The heartbeat will blink a single LED on the light bar; a GREEN heartbeat means the device is successfully connected to Bluetooth, and the User's phone is connected to the internet (Wi-Fi or cellular data). When the device is in this state, the User is "Protected." If neither criterion is met, the User is "Unprotected," and the device will display a WHITE heartbeat. When this occurs, double-check the Bluetooth and Wi-Fi connection of the cellular device to ensure the device is connected properly. Make sure the cellular device's Bluetooth settings are turned on. If connection issues persist, force close, reopen the App and try again. *Refer to pg. 3 for instructions on downloading the Safeguard Equipment app and pairing device to phone.* **GREEN HEARTBEAT = User is Protected** **WHITE HEARTBEAT = User is Unprotected**

DETECTION & ALERTS

Emergency response service (ERS) settings will vary depending on the service plan set up by each organization. Some users may or may not have access to all ER services. Before operating COMPASS Pro ERS, please verify that your safety services are activated by visiting 'Device Setting' in the Safeguard Equipment App. Please review the in-App training videos for a complete walkthrough of the ERS operation.

EMERGENCY ALERTS & NOTIFICATIONS

An emergency can be triggered manually via the SOS button or automatically triggered by the sensors built into the COMPASS Pro internal hardware. The five emergencies that the COMPASS Pro can detect are:

1. SOS
2. Arc Flash
3. Falls
4. Impacts to Head
5. No Motion / Man Down

SOS Button

SOS Alerts are triggered when the User presses and holds the SOS button, immediately signaling an emergency. SOS can also be triggered in the Safeguard Equipment App by pressing the SOS button on the home screen. Unlike the other emergency triggers, the SOS button does NOT have a 30 second countdown. For operating instructions, see page 11 for more info.

Arc Flash Detection

Arc flash is detected when the COMPASS Pro device detects UV light characteristic of an arc flash. When the UV sensors become saturated, the device triggers an emergency countdown (30 seconds to cancel). Arc flash detection can be disabled through the service settings in the App.

Fall Detection

A fall is detected if the COMPASS Pro device experiences a 6ft (1.8m) fall. When a fall is detected, the device triggers an emergency countdown. Fall detection can be disabled through the service settings in the App.

Impact Detection

An impact is detected under the following criteria:

- The COMPASS Pro device was appropriately mounted on a hard hat (see mounting instructions on pg 5).
- The impact is in a downward direction.
- The force of the impact experienced is enough that it could cause a concussion.

Note: Due to specific situations that can accidentally trigger an alert, impact detection will be disabled by default. Users can enable impact detection through the service settings in the App.

DETECTION & ALERTS

No Motion Detected / Man Down

No motion detected is a supplemental event that gets added to the emergency response chat for a given emergency. If an emergency is triggered (fall, SOS, arc flash, or impact) and no motion is detected, a notification will be sent to the User's response team. No movement will not trigger an emergency by itself.

Emergency Alert Operation

When an emergency is triggered, ORANGE and WHITE lights will flash at each end of the light bar, and a countdown will begin.

Note: There is no countdown for the SOS Button. The User's team will immediately be notified.

Users can cancel an emergency by pressing either the central or SOS button (to cancel an emergency, see page 8 for more info).

If an emergency is canceled, the User's designated response team will not be notified. If the emergency is not canceled, an SMS message and in-App push notification will be sent to the User's response team (See Figure 2 for reference) The alert will include information about the type of emergency and the location of the incident. (See Figure 3)

FIGURE. 1

DETECTION & ALERTS

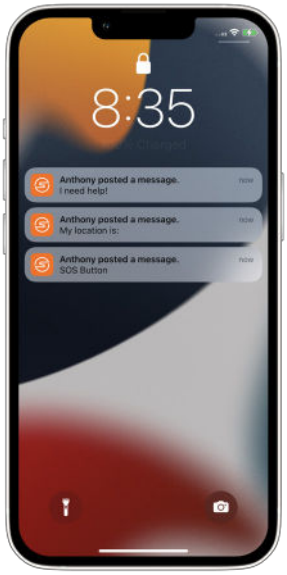


FIGURE. 2

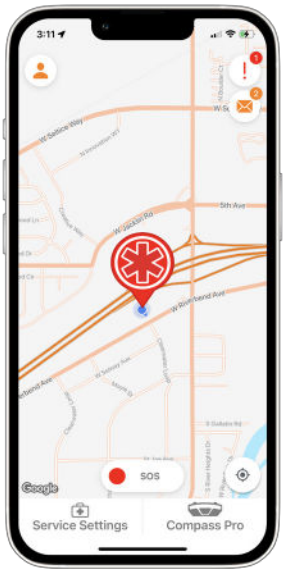


FIGURE. 3

FIGURE. 4

If the emergency fails to be sent before the countdown is complete, the corner lights will blink ORANGE periodically until the User acknowledges the status by pressing the Main Button or SOS Button.

When the information regarding the emergency is successfully sent from the device to the User's phone, the COMPASS Pro device will pulse GREEN lights at both ends of the light bar every 3 seconds. The device will be locked in this mode unless the User acknowledges the emergency by pressing either the Main Button or the SOS Button. Once accepted, the COMPASS Pro device will resume regular operation (providing voltage and current detection). However, the emergency will stay active, and ORANGE/WHITE lights will continue to pulse every 3 seconds. This animation will continue until the Safeguard Equipment app resolves the crisis.

WARNING: If an emergency is detected or the SOS button is pressed while COMPASS Pro is disconnected from Wi-Fi or Bluetooth, it will beep twice and flash the corners ORANGE instead of entering the countdown. The User must restore connection and try again.

EMERGENCY NOTIFICATIONS FROM OTHER USERS

When the User receives an emergency notification from another colleague's COMPASS Pro, the User's device will flash the corners ORANGE and WHITE three times with an accompanying sound to notify the User of the emergency. After this, the regular heartbeat will be replaced with a silent WHITE/ORANGE emergency pulse animation until the User checks the emergency chat for said event. (See Figure 4)

DETECTION & ALERTS

VOLTAGE & CURRENT DETECTION / DISTANCE ALERTS.....

Detection and distance are determined by the sensitivity setting set by the User. These settings dictate when an alert will be issued.

When the COMPASS Pro device detects voltage or current, it issues audio (beeping) and visual (flashing LEDs) proximity alerts. As the User approaches an electrified source, LED flashing and audio alerts will steadily increase.

RED LED alerts indicate VOLTAGE

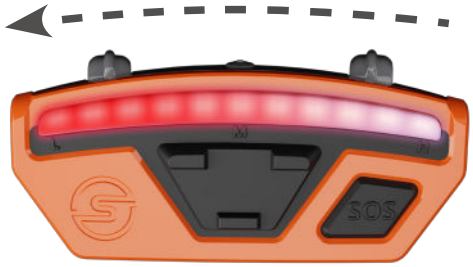
BLUE LED alerts indicate CURRENT

Note: If the COMPASS Pro device detects both voltage and current, voltage alerts will be prioritized over current alerts.

Directional Voltage Notifications

When the COMPASS Pro device has gathered sufficient information to approximate the location of an energized voltage source, the LED alert animation will change from PROXIMITY to DIRECTIONAL mode. In directional mode, the LEDs make a sweeping animation that guides the User's attention to the approximate direction of the source.

- There are no directional alerts for current detection.
- Directional cues have a 240° dynamic bearing range. Accurate to approximately +10° from a point source.



Directional animation will stop when the field becomes balanced, and RED lights will flash at both ends of the light bar. If the field is balanced for more than 2 seconds, directional alerts mode will end, and regular alerts will be issued.

DETECTION & ALERTS

DETECTION DISTANCES

COMPASS Pro has been extensively field tested to determine its detection range for both voltage and current. The testing process is described in the following illustration, and the results are documented in the tables below.

DISTANCE TABLES

Voltage Detection Warning Distances

LOW VOLTAGE RANGE SELECTED (First Alert / Max Alert)

Voltage Sensitivity Setting	400V	600V	1.2kV
1 (Lowest)	6ft / 1ft	6ft / 2ft	9ft / 4ft
2	7.5ft / 3ft	8ft / 4ft	11ft / 6ft
3	10ft / 5ft	10ft / 6ft	14ft / 8ft
4	12ft / 6ft	13ft / 8ft	17ft / 11ft
5	13.5ft / 7.5ft	16ft / 10ft	20ft / 13ft
6	16ft / 10ft	17ft / 11ft	23ft / 15ft
7	17ft / 11ft	19ft / 12ft	25ft / 17ft
8	18ft / 12ft	20ft / 13ft	29ft / 19ft
9	19ft / 13ft	22ft / 14ft	29ft / 20ft
10	20ft / 14ft	23ft / 15ft	34ft / 22ft
11 (Highest)	24ft / 15ft	26ft / 16ft	36ft / 23ft

MEDIUM VOLTAGE RANGE SELECTED (First Alert / Max Alert)

Voltage Sensitivity Setting	2.4kV	4.2kV	7.2kV	13.2kV	20kV
1 (Lowest)	2ft / X	3ft / X	5ft / 1ft	7ft / 3ft	8ft / 4ft
2	3ft / X	4ft / 1ft	6.5ft / 2.5ft	9ft / 4ft	10ft / 6ft
3	4ft / 0.5ft	6ft / 2ft	8ft / 4ft	10ft / 5ft	12ft / 7ft
4	5ft / 1ft	7ft / 3ft	9ft / 5ft	11ft / 7ft	13ft / 8ft
5	6ft / 2ft	8.5ft / 4.5ft	11ft / 7ft	13ft / 8ft	15ft / 9ft
6	8ft / 4ft	10ft / 5.5ft	13ft / 8ft	15ft / 9ft	17ft / 11ft
7	10ft / 5ft	12ft / 7ft	14ft / 9ft	17ft / 11ft	19ft / 13ft
8	11ft / 6ft	14ft / 8ft	17ft / 11ft	19ft / 12ft	22ft / 14ft
9	13ft / 8ft	16ft / 10ft	19ft / 13ft	21ft / 14ft	25ft / 16ft
10	15ft / 9ft	19ft / 12ft	23ft / 15ft	24ft / 16ft	29ft / 18ft
11 (Highest)	18ft / 11ft	23ft / 14ft	27ft / 17ft	28ft / 18ft	33ft / 21ft

X = DO NOT USE! Alert distance too short or non-existent.

Distances were measured using a 4ft x 2in diameter busbar elevated 2.5 feet above ground, in an outdoor setting (26°C and 35% RH) by a tester walking with a COMPASS Pro device mounted on a full-brim hard hat. Distances will vary depending on conditions; always verify exact distances for a given situation.

DETECTION & ALERTS

DISTANCE TABLES (CONTINUED)

HIGH VOLTAGE RANGE SELECTED (First Alert / Max Alert)	
Voltage Sensitivity Setting	**20kV**
1 (Lowest)	x / x
2	x / x
3	x / x
4	x / x
5	x / x
6	x / x
7	x / x
8	2.5ft / x
9	3ft / x
10	5ft / x
11 (Highest)	7ft / x

Current Detection Warning Distances

CURRENT First Alert / Max Alert					
LEDs (Sensitivity)	**1A**	**10A**	**50A**	**100A**	**200A**
1 (Lowest)	X / X	1ft / 0.5ft	2.5ft / 1ft	3ft / 2ft	4.5ft / 2.5ft
2	X / X	1ft / 0.5ft	3ft / 1.5ft	3.5ft / 2ft	5ft / 2.5ft
3	X / X	1ft / 0.5ft	3ft / 1.5ft	4ft / 2ft	5ft / 3ft
4	X / X	1.5ft / 0.5ft	3ft / 2ft	4ft / 2ft	6ft / 3.5ft
5	X / X	1.5ft / 0.5ft	3.5ft / 2ft	4.5ft / 3ft	6ft / 4ft
6	0.5ft / X	1.5ft / 1ft	4ft / 2.5ft	5ft / 3.5ft	7ft / 4.5ft
7	0.5ft / X	2ft / 1ft	4.5ft / 3ft	6ft / 4ft	8ft / 5ft
8	1ft / 0.5ft	3ft / 1.5ft	5ft / 3.5ft	7ft / 4.5ft	9.5ft / 6ft
9	1ft / 0.5ft	3.5ft / 2ft	6ft / 4ft	8.5ft / 5ft	11ft / 7ft
10	1.5 ft / 0.5ft	4ft / 2.5ft	7ft / 4.5ft	10ft / 6ft	12ft / 8ft
11 (Highest)	1.5ft / 1ft	4.5ft / 3ft	9ft / 5.5ft	11ft / 7ft	13.5ft / 9ft

X = alert distance under 1 foot

Distances were measured using a cable carrying current 2.5 feet above ground by a tester with a COMPASS Pro device held level with the conductor to represent the direct distance between the COMPASS Pro device and the conductor.

Note: Detection distances will vary in different conditions. Always verify exact distances for a given situation.

SMART ADAPTIVE MODE

Smart Adaptive Mode is designed for Users working in an environment where electric and magnetic fields are known to be present. COMPASS Pro can quickly adapt to the ambient fields and pause alerts if the User is not moving closer to a detected source. If the User moves closer to the detected source, alerts will begin again.

- The COMPASS Pro device will adjust to a constant field after 4 seconds, and alerts will pause automatically.
- While adapted, the COMPASS Pro device will issue heartbeat alerts to remind the User they are in an active field.
- If the User moves away from the energized source and the field strength is reduced for approximately 4 seconds, the COMPASS Pro device will re-adjust and regain sensitivity.
- When muting the device in Smart Adaptive Mode, heartbeat alerts will be issued anytime a User is in a field. Smart Adaptive Mode will reset when the device becomes unmuted, and alerts will be issued until the field is determined to be stable. At that point, the COMPASS Pro device will adapt, and the heartbeat alerts will resume.

WARNING: Smart Adaptive Mode alerts are based on ambient electric or magnetic field changes, not the source's proximity. Alerts in this mode may not occur within the OSHA Minimum Approach Distance (MAD).

MAXIMIZE ALERT ACCURACY

When using COMPASS Pro, always be aware of potential variables that could affect the accuracy of alerts:

- Warning distances can vary due to a live conductor's exposed surface area, elevation above ground, and proximity to other grounded conductive objects.
- If the User is walking briskly, this may reduce initial warning distances by approximately two (2) feet.
- Warning distances can be reduced by large conductive objects such as a fence or vehicle, as these objects will attract the electric field of a nearby energized conductor.
- 3-phase systems can hinder detection accuracy by creating electric fields that effectively cancel out their overall field strength.
- Humid conditions will reduce detection distance.
- Always verify that COMPASS Pro will function in each work environment before relying on it as a safety device.
- Smart Adaptive Mode should be used only by experienced electrical professionals.

TROUBLESHOOTING

SELF-TEST

COMPASS Pro performs regular Self-Test analysis to verify that all sensors work correctly in the background by running continuous diagnostic scans. If any abnormality is detected, the COMPASS Pro device will respond by locking out all User input, and the corner LEDs will flash RED and YELLOW. If these LEDs keep flashing RED and YELLOW, stop using COMPASS Pro and contact customer service.

Note: Self-Test does not test the visual and audible alert systems, so the User should still test these before each use.

WARNING: DO NOT use COMPASS Pro if RED and YELLOW lights are on or flashing.

TROUBLESHOOTING

If COMPASS Pro experiences a safety-critical error, it will re-try the action three times. If the error is still occurring, the device will enter error mode, indicated by RED and YELLOW corner lights. To resolve:

1. Try charging on any micro USB power source for at least 90 minutes.
2. Turn the device off and back on. When powering on, COMPASS Pro will try to recover from the failure.
3. Connect the device to the phone via Bluetooth. The device will automatically send the error report to the App for the Safeguard Equipment engineering support team to view and resolve.

If you have attempted all troubleshooting measures and COMPASS Pro continues to malfunction, STOP using it immediately. To resolve the issue, please fill out an RMA form at:
SafeguardEquipment.com/return, or call 208-773-9263

LIMITED WARRANTY

Effective October 3rd, 2022, this warranty applies to the COMPASS Pro device and software service designed, manufactured, and sold by Safeguard Equipment, Inc. (the "Product").
NOTICE: READ THIS LIMITATION OF WARRANTY AND LIABILITY BEFORE BUYING OR USING THE PRODUCT AND SERVICE CONTAINED HEREIN.

It is impossible to eliminate all risks associated with the use of the Product and Service. Risks of serious injury or death, including risks associated with electrocution, arcing and thermal burns, are inherent in work in and around energized electrical systems. Such risks arise from the wide variety of electrical systems and equipment to which the Product may be applied, the manner of use or application, weather and environmental conditions and/or other unknown factors, all of which are beyond the control of Safeguard Equipment, Inc. Safeguard Equipment, Inc. does not agree to be an insurer of these or other risks, and shall have no liability for any claims arising from these or other risks inherent in electrical systems.

WHEN YOU BUY OR USE THE PRODUCT AND SERVICE, YOU AGREE TO ACCEPT THESE RISKS.

Safeguard Equipment, Inc. warrants to the original purchaser that the Product and Service will be free from defects in material and workmanship under normal, with regular service and preventative maintenance, for a period of one (1) year from the date of shipment (the "Warranty Period"). Should any failure to conform with this warranty be found during the Warranty Period, you must notify Safeguard Equipment, Inc. of your claim within thirty (30) days of discovery, and within the Warranty Period. Your failure to give notice of claims of breach of warranty within the Warranty Period shall be deemed an absolute and unconditional waiver of claims for such defects. Safeguard Equipment, Inc. will have no responsibility to honor claims received after the date the applicable Warranty Period expires.

Upon notice of your claim, Safeguard Equipment, Inc. will provide a return authorization number and further instructions on how to return the product for service. You must follow Safeguard Equipment, Inc.'s instruction. You are responsible for the Product removal, handling, re-installation, and shipping (both to and from Safeguard Equipment, Inc.). The Product returned for repair, as well as repaired or replaced, shall be sent postage / freight prepaid. After receipt of a product that Safeguard Equipment, Inc. determines is defective, Safeguard Equipment, Inc. will, at its option, either (1) repair (or authorize the repair of) the Product or (2) replace the Product, subject to the following: The Product are made using parts sourced from a variety of manufacturers. Due to the rapidly changing technology environment, parts may become obsolete / unavailable over time (end of life). In the event that a Product cannot be repaired or replaced due to unavailability of parts, Safeguard Equipment, Inc. will use commercially reasonable efforts to obtain substitute parts or conduct work around design, but cannot guarantee its ability to do so.

Items not found defective will be returned at your expense, or failing receipt of instruction from you on return of such items within five (5) business days of our notice to you that the product is not defective, Safeguard Equipment, Inc. may dispose of the product at its discretion and with no liability to you. Safeguard Equipment, Inc.'s determination of defects is final. Products repaired or replaced during the Warranty Period shall be covered by the foregoing warranties for the remainder of the original Warranty Period or ninety (90) days from the date of delivery of the repaired or replaced Products, whichever is longer.

LIMITATIONS:
- This warranty is void in the event of misuse, alteration, faulty installation, or misapplication of the Product and Service.
- This warranty does not cover failure of product or components due to any ACT OF NATURE including, but not limited to, lightning, floods, hurricanes, tornadoes or any other such catastrophic events.
- Safeguard Equipment, Inc. does not warrant any third party products or associated hardware or their performance or suitability for use and application.
- All repairs must be authorized by Safeguard Equipment, Inc. Unauthorized repairs will not be reimbursed under any circumstances.
- Safeguard Equipment, Inc. is not required to make replacement or loaner equipment available while Products are being repaired or replaced, or to compensate you for any in/out labor charges or expenses associated with removal, handling or re-installation of the products.

To the maximum extent permitted by law, this warranty and the remedies set forth above are exclusive and in lieu of all other warranties, remedies and conditions, whether oral or written, express or implied.

SAFEGUARD EQUIPMENT, INC. EXPRESSLY DISCLAIMS ALL OTHER WARRANTIES OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION IMPLIED WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY AND NON-INFRINGEMENT.

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Safeguard Equipment, Inc. must have prompt notice of any claim so that an immediate product inspection and investigation can be made. Buyer and all users shall promptly notify Safeguard Equipment, Inc. of any claims, whether based on contract, negligence, strict liability, or other tort or otherwise be barred from any remedy.