PGPx922 Glass Break Detector Installation Guide

About PGPx922

The PGPx922 is a wireless PowerG two-way acoustic glass-break detector designed to detect the breaking of framed glass mounted in an outside wall. This device is wall mountable and suitable for most types of window or door glass, including the following: plate, tempered, laminated, wired, coated, and sealed insulating glass.

The device has the following features:

- Two-factor authentication
- Battery reporting
- Dealer lock down
- The device is fully calibrated
- Provides temperature and light level reports for PowerG control panels that support this feature
- Alarm and other data are forwarded to the control panel
- Back-tamper protection
- Periodic supervision message is transmitted automatically to the control panel at regular interval
- A bi-color LED lights whenever events are reported
- Remote firmware upgrade

Installation guidelines

⚠ **CAUTION:** Only qualified personnel may install this equipment. Place this device in non-hazardous indoor locations only.

Important: Check the device and the entire alarm system weekly to ensure optimal performance.

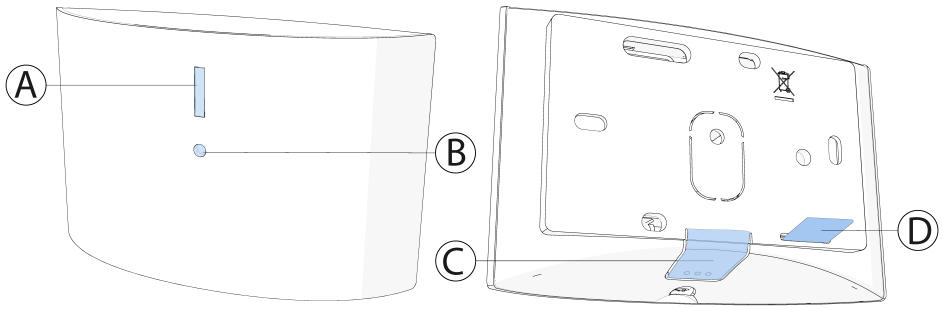
Note:

To comply with FCC and ISED Canada RF exposure compliance requirements, locate the device at a distance of at least 20 cm from all persons during normal operation.

Do not co-locate the antennas used for this product, or operate them in conjunction with any other antenna or transmitter.

Install the PGP9922 in accordance with the Standard for Installation and Classification of Residential Burglar Alarm Systems, UL 1641 and ULC-S302.

Figure 1: PGPx922



Callout	Description
A	LED
B	Microphone
C	Snap
D	Battery pull-tab

For more information refer to section About PGPx922.

Optimizing detection and avoiding false alarms

PGPx922 detects shattering glass. Like all glass-break sensors, the detector might not consistently detect cracks in glass, or bullets that break through or break out the glass. Glass-break sensors should always be backed up by interior protection.

For best detection, avoid installing in:

- Rooms with lined, insulating, or sound-deadening drapes.
- Rooms with closed wooden window shutters inside.

For best false alarm immunity:

- False alarms are most likely to occur when installed on a 24-hour loop, in glass airlocks, and glass vestibule areas. Similarly, when mounted above sinks, residential garages, and in other small acoustic living rooms, false alarms can be generated. In rooms where multiple sounds can reflect and eventually duplicate the glass break frequency pattern, use PowerG shock detectors.
- Avoid 24-hour loop applications. The PGPx922 is recommended for perimeter loops and is designed to function in an occupied area. In 24-hour loop applications, where the device is armed all day and all night, the false alarm prevention technology will be pushed to its limit. Some sounds can duplicate the glass break pattern the acoustic sensor detects.

  Install the PGPx922 on a perimeter loop which is armed whenever the door and window contacts are armed.
- Do not use where white noise, such as air compressor noise, is present. A blast of compressed air may cause a false alarm.
- Avoid rooms smaller than 3 x 3 m (10 x 10 ft) and rooms with multiple noise sources such as small kitchens, glass booths noisy areas, garages, and small bathrooms.
- Do not install in humid rooms. The PGPx922 is not hermetically sealed. Excess moisture on the electronic board can shorten the circuit and cause false alarms.
- Install in rooms with moderate noise. The false alarm immunity is best in rooms with only moderate noise. For 24-hour occupied area protection, use PowerG shock detectors.
- The device should be located at least 1.2 m (4 ft) away from noise sources (televisions, speakers, sinks, doors, and similar). The device must always be in direct line of sight of all protected windows. It cannot consistently detect glass breaking around corners or in other rooms. Front or back, up or down, orientation is not necessary.

Areas to avoid:

- Glass airlocks and glass vestibule areas
- Noisy kitchens
- Residential car garages
- Small utility rooms
- Stairwells
- Small bathrooms
- Humid rooms

For glass break protection in such applications, use shock sensors on the windows or window frames.

ⓘ **Note:** PGP9922 shall be installed in accordance with the Standard for Installation and Classification of Burglar and Holdup Alarm Systems, UL 681

Sound travel considerations

The acoustic sensor of the PGPx922 is omnidirectional, providing full coverage. Coverage is measured from the sensor to the point on the glass farthest from the sensor. The sensor can be mounted as close as 1.5 m (5 ft) from the glass.

Because the sound of breaking glass travels directionally out from the broken window, the best location for mounting the sensor is on the opposite wall if the glass being protected is within the sensor's range and line of sight. When mounted on the opposite wall, the detector should be mounted at least 1.8 m (6 ft) off the floor, but not less than 30 cm (12 in.) from the ceiling. Corner and adjoining (side) wall mounting is permitted but range versus angle limitations should be taken into consideration.

Avoid obstructions between the detector and the protected glass. Curtains, blinds, and sound-absorbing materials in the protected room may reduce the effective range.

Mounting on the same wall as the protected glass is less effective and not recommended. Optimum detection is partially dependent on sound reflection off the opposite wall.

Enrolling the device

1. Refer to the compatible control panel or receiver combination installation manual for the complete set of enrollment instructions and testing procedures.
2. From the **Installation** menu, select **Devices** > **Security Sensors** > **Auto Learn Sensor**to add a new device.
3. Remove the battery pull-tab to power on the device and begin the auto-enrollment process. If the battery pull-tab is not available or if the device does not automatically enroll, remove and re-insert the batteries. Alternatively, press the enroll button until the yellow LED light turns on.
4. If requested, enter the PIN code printed on the device label.
5. To manually enroll the device:
   a. Scan the QR Code on the device box, using the IQ4 camera if available, or see step b.
   b. Manually enter the device ID, printed on the product label, in the format 162-XXXX.

   The PGPx922 is enrolled with device ID 162-XXXX. In fall back mode it enrolls as PGx922 with device ID 161-XXXX.

   ⓘ **Note:** If the device has been powered up for more than 48 hours it will be identified by the system only after the device has been reset.
6. Select the desired zone.
7. Configure any device parameters that are required.
8. Mount and test the device. See Local diagnostics test for information on testing the device.

Configuring the device parameters

1. Enter the **DEVICE SETTINGS** menu and select the required configuration as described in the following table:

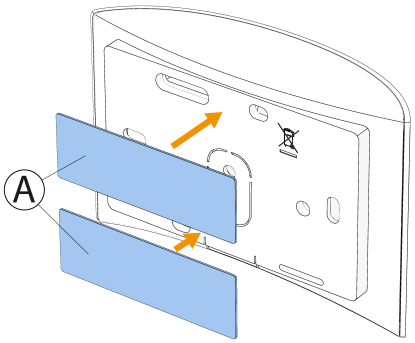
Table 1: Configuration options

Option	Action
Activation LED	Define whether the alarm LED indication will be activated. Optional settings: **Enable** (default) and **Disable**.

Mounting the device using tape

1. Peel the release liners off the two strips of double-sided adhesive tape and attach the tape to the back of the device. See the following figure.

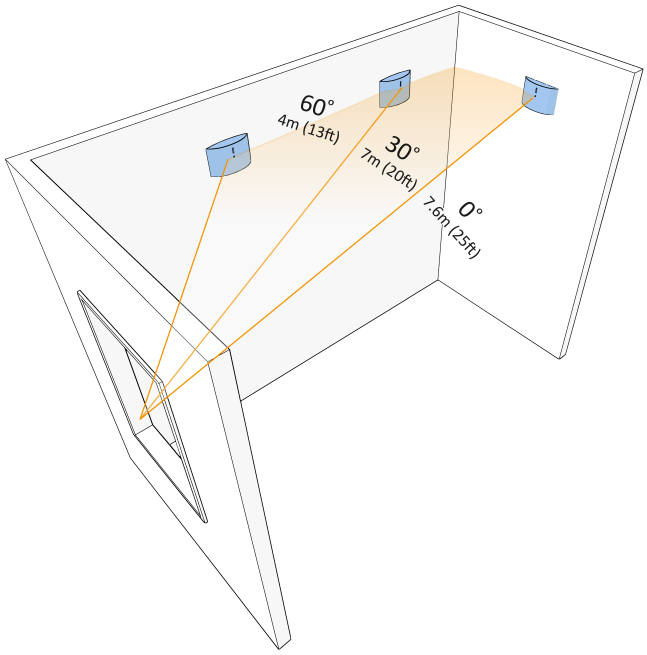
Figure 2: Double-sided adhesive tape placement on the device



Callout	Description
A	Double-sided adhesive tape

2. Place the device on the desired surface.

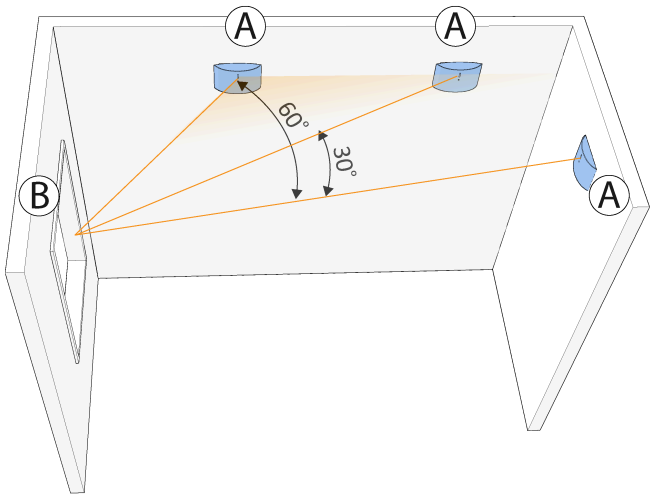
Figure 3: Typical range coverage



Note: Note: For UL/ULC listed products maximum verified range is 6m (20ft) using glass size 30 x 60cm. When mounted on opposite walls, or on adjoining walls, the range is 7.6 m (25 ft) for plate, tempered, laminated, wired, coated, and sealed insulating glass. The coverage range also depends on the angle between the detector and the glass. For a higher angle, the maximum range is reduced. See the following table and figure for details.

Angle	**0°**	**30°**	**45°**	**60°**	**75°**	**90°**
Maximum range	7.6 m (25 ft)	7 m (23 ft)	5.5 m (18 ft)	4 m (13ft)	2.5 m (8 ft)	0 m (0 ft)

Figure 4: Angle between device and window



Callout	Description
A	Device
B	Window

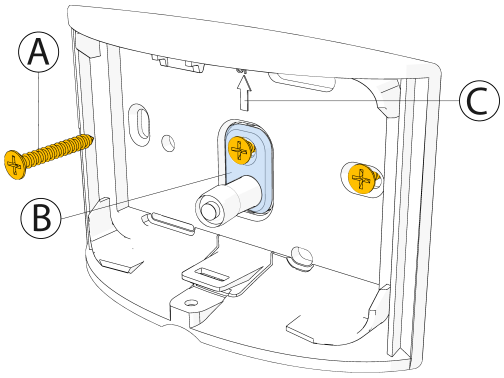
Mounting the device using screws

1. To open the device cover, press in the snap and separate the cover from the base.
2. Screw the device base to the wall. Ensure the device is correctly orientated using the arrow as a guide.

   ⓘ **Note:** Make sure to fasten the break-away segment to the wall. If the device is forcibly removed from the wall, this segment will break away from the base, causing the tamper switch to open.

   ⓘ **Note:** Back tamper protection is required for UL commercial burglary installations.

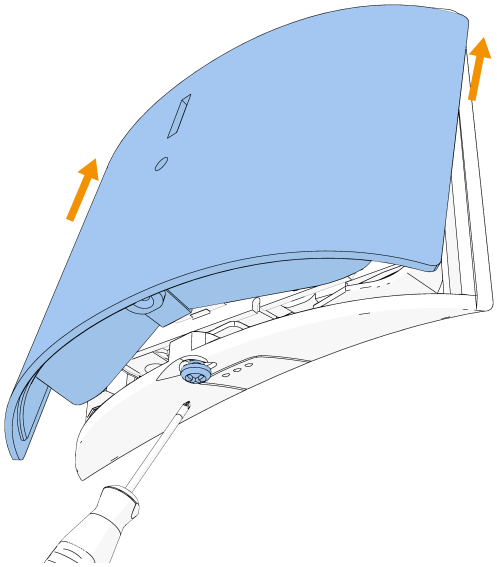
Figure 5: Device screw installation



Callout	Description
A	Screwing device base
B	Break-away segment
C	Up arrow

3. Clip the cover on the device base and tighten the cover screw. See the following figure.

Figure 6: Closing the device cover



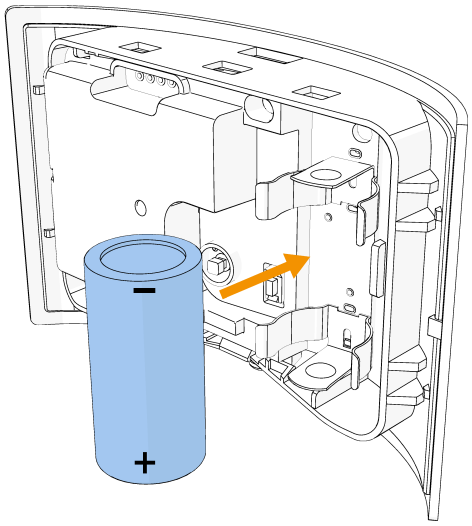
Replacing the battery

Before you begin:

⚠ **CAUTION:** Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the manufacturer's instructions and according to local rules and regulations.

1. Remove the device cover.
2. Remove the battery.
3. Insert the battery into the battery clips while observing battery polarity.

Figure 7: Battery removal and insertion



4. Press down on the battery until it fits into place.
5. Close the cover and fasten the cover screw. See Figure 6.

Local diagnostics test

After power-up or closing the cover, the device automatically enters Test Mode for 15 minutes. To manually enter the devices into Test Mode refer to the Control Panel Installer Guide.

1. Before you start the test, remove the device cover from the base.
2. Close the cover to return the tamper switch to its normal position.
3. After 10 seconds the LED blinks three times.
   The following table indicates received signal strength indication.

Table 2: Signal strength indication

LED response	Reception
Green LED blinks	Strong
Yellow LED blinks	Good

Table 2: Signal strength indication

LED response	Reception
Red LED blinks	Poor
No blinks	No communication

Important: Reliable reception must be assured. Therefore, poor signal strength is not acceptable. If you receive a poor signal from the device, relocate it and re-test until a strong signal strength is received .

Note: It is recommended to have a strong signal strength and you must verify the signal strength using the control panel's diagnostic test. For detailed Diagnostics Test instructions, refer to the control panel installer guide.

Note: If the microphone self-test option is enabled, the microphone performs a test periodically. A beeping sound is emitted during the periodic test as follows:

- After power up or tamper close, 5 consecutive beeps
- During normal operation, once an hour
- If the self-test fails, once every 10 minutes

Testing the Glass Break sensor

The PGPx922 detects when framed glass mounted on an outside wall shatters. Testing the sensor with unframed glass, broken bottles, etc. might not trip the sensor. False alarms such as glass breaking in the middle of a room will not activate the sensor.

A. Basic Test

Test the device's low frequency (FLEX) response by thumping the protected glass with a cushioned object. The green LED will light for 2 seconds. Repeat the test if necessary.

B. Extended glass break simulation test (optional)

This optional test activates the device with flex and audio sounds, that simulate the glass breaking sound of a window. Take care not to shatter the glass during testing.

To test complete the following steps:

1. Switch the device to Test Mode. To enter Test Mode, power-up or close the cover.
2. Generate a flex signal and simulate a glass breaking sound by using one of the following methods:
   - Simulator in manual mode. Hold the simulator close to the protected glass. Thump the glass and immediately start the simulator manually to create the sound of breaking glass. Examples of such simulators are AFT-100 or 5709C.
   - Simulator with automatic activation. Hold the simulator close to the protected glass. Thump the glass, the simulator creates the sound of breaking glass automatically. Examples of automatic simulators using flex signals are FG-700/ FG-701 or GT-2.
   - Hand clap Thump the glass and immediately clap hands firmly three times. This method is best used in relatively small rooms with a maximum distance up to 5 or 6 m (16 ft or 20 ft).

   Note:

   The instructions for some simulators instruct you to switch the glass break detector to Test mode by sounding a special signal. The PGPx922 device has an inbuilt Test mode therefore it is not necessary to use that switch.

Use a glass pane with dimensions of at least 0.5 x 0.5 m (1.5 x 1.5 ft) to assure success of the simulator test.

Always aim the simulator at the detector being tested.

3. The device will alarm, the red LED lights for 2 seconds.

4. Repeat the test if necessary.

Important:

Room acoustics can artificially extend the range of a glass-break sensor. The specified range of the PGPx922 has been established for worst-case conditions. While the sensor is likely to function at an additional range, it may miss a minimum output break, or room acoustics may be changed at some future time, restoring sensor coverage back to the normal range of 6 m (20 ft).

Do not exceed the rated range of the sensor, regardless of what the tester shows.

LED Indications and Events

Table 3: LED indications and events

LED Response	Description
Red LED blinks	Stabilization (warm-up 8 sec)
Red LED ON 0.2 sec.	Tamper open / close
Red LED ON 2 sec.	Glass break alarm
Green LED ON 2 sec.	Low frequency detection – Test mode
Green and red LED blink alternately (0.2 sec Green, 0.2 sec Red, 0.4 sec OFF)	Self-test failure – Test mode
Green and red LED blink alternately slowly (0.2 sec Green, 0.2 sec Red, 30 sec OFF)	Self-test failure – Normal mode

Specifications

Frequency Band	912 to 919 MHz
Modulation	GFSK
Communication Protocol	PowerG
Battery Type	3 V Lithium CR123A GP, Duracell, or Panasonic only
Battery Life	5 years with typical use at room temperature 25°C (77°F) **Note:** Not evaluated by UL/ULC.
Low Battery Threshold	2.6 V
Nominal Operating Voltage	3 V
Operating Temperature	-10°C (14°F) to 55°C (131°F) indoors **Note:** UL/ULC only evaluated 0°C-49°C
Storage Temperature	-20°C (-4°F) to 60°C (140°F)
Relative Humidity	Up to 95% non-condensing
Dimensions (LxWxD)	107.5 x 69 x 30 mm (4.2 x 2.7 x 1.2 in.)
Weight (including battery)	105 g (3.7 oz)
Color	White
Maximum Detection Range	7.6 m (25 ft) if glass size is minimum 40 x 40 cm (15 ¾ in. x 15 ¾ in.) 6 m (20 ft) if glass size is 30 x 30 cm (12 in. x 12 in.) to 40 x 40 cm (15 ¾ in. x 15 ¾ in.) For UL/ULC maximum verified range is 6 m (20ft)
Glass Type	UL tested on: Plate, tempered, wired, laminated, covered, and sealed insulated

Minimum Glass Size	UL tested on: 30 x 30 cm (12 in. x 12 in.)
Glass Thickness	UL tested on: • Plate: 3.2 to 6.4 mm (1/8 in. to ¼ in.) • Tempered: 3.2 to 6.4 mm (1/8 in. to ¼ in.) • Wired: 6.4 mm (¼ in.) • Coated: 3.2 to 6.4 mm (1/8 in. to ¼ in.) • Laminated: 6.4 mm (¼ in.) • Sealed Insulating: 3.2 to 6.4 mm (1/8 in. to ¼ in.) Note: Laminated and Sealed Insulating glass types are protected only if both plates of the unit are broken.
Room Size	Not larger than 12 x 12 m (40 x 40 ft) Not smaller than 3 x 3 m (10 x 10 ft)
Min. Distance from Glass	1.5 m (5 ft)

Compliance with standards

The PGPx922 complies with the following standards:

PGP9922	**FCC (912 to 919 MHz)**: 47CFR part 15.247 **ISED Canada (912 to 919 MHz)**: RSS-247 **UL/ULC**: UL 634, ULC/ORD-C634

FCC and ISED Compliance Statement

This device complies with FCC Rules Part 15 and with ISED Canada license-exempt RSS standard(s). Operation is subject to two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference that may be received or that may cause undesired operation.

Le présent appareil est conforme aux CNR d'ISED Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

(1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

To comply with FCC Section 1.1310 for human exposure to radio frequency electromagnetic fields and ISED Canada requirements, implement the following instruction:

A distance of at least 20cm. between the equipment and all persons should be maintained during the operation of the equipment.

Le dispositif doit être placé à une distance d'au moins 20 cm à partir de toutes les personnes au cours de son fonctionnement normal. Les antennes utilisées pour ce produit ne doivent pas être situés ou exploités conjointement avec une autre antenne ou transmetteur.

Note: 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 help.

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numerique de la classe B est conforme a la norme NMB-003 du Canada.

WARNING: Changes or modifications to this equipment not expressly approved by the party responsible for compliance (DSC.) could void the user's authority to operate the equipment.

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UL/ULC notes

Only model PGP9922 operating in the frequency band 912-919MHz is UL/ULC listed. The PGP9922 has been listed by UL/ULC for commercial and residential burglary applications in accordance with the requirements in the Standards UL 634 and ULC/ORD-C634 for contacts and switches. For UL/ULC installations use this device only in conjunction with compatible DSC wireless receivers: HSM2HOST9, HS2LCDRF(P)9, HS2ICNRF(P) 9, HS2LCDRFPRO9, PG9920, and Qolsys IQPanel2, IQHub, IQPanel4. After installation, verify the product functionality in conjunction with the compatible receiver used.

Safety Instructions

Read the safety information before you install the equipment.

The detector shall be installed and used within an environment that provides the pollution degree max 2 and over voltages category II in non-hazardous locations, indoor only. The equipment is designed to be installed by SERVICE PERSONS only; (SERVICE PERSON is defined as a person having the appropriate technical training and experience necessary to be aware of hazards to which that person may be exposed in performing a task and of measures to minimize the risks to that person or other persons).

WEEE Product recycling declaration

	For information regarding the recycling of this product you must contact the company from which you originally purchased it. If you are discarding this product and not returning it for repair then you must ensure that it is returned as identified by your supplier. This product is not to be thrown away with everyday waste. Directive 2012/19/EU Waste Electrical and Electronic Equipment.

Limited Warranty

Digital Security Controls warrants that for a period of 12 months from the date of purchase, the product shall be free of defects in materials and workmanship under normal use and that in fulfilment of any breach of such warranty, Digital Security Controls shall, at its option, repair or replace the defective equipment upon return of the equipment to its repair depot. This warranty applies only to defects in parts and workmanship and not to damage incurred in shipping or handling, or damage due to causes beyond the control of Digital Security Controls such as lightning, excessive voltage, mechanical shock, water damage, or damage arising out of abuse, alteration or improper application of the equipment.

The foregoing warranty shall apply only to the original buyer, and is and shall be in lieu of any and all other warranties, whether expressed or implied and of all other obligations or liabilities on the part of Digital Security Controls. Digital Security Controls neither assumes responsibility for, nor authorizes any other person purporting to act on its behalf to modify or to change this warranty, nor to assume for it any other warranty or liability concerning this product.

In no event shall Digital Security Controls be liable for any direct, indirect or consequential damages, loss of anticipated profits, loss of time or any other losses incurred by the buyer in connection with the purchase, installation or operation or failure of this product.

Warning: *Digital Security Controls recommends that the entire system be completely tested on a regular basis. However, despite frequent testing, and due to, but not limited to, criminal tampering or electrical disruption, it is possible for this product to fail to perform as expected.*

Important Information: *Changes or modifications not expressly approved by Digital Security Controls could void the user's authority to operate this equipment.*

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