



VIOLET/UV-C GERMICIDAL LIGHTING SYSTEM INSTRUCTION MANUAL

HV-VIOLET-6KIT

MANUAL VERSION 1.1 (March 8, 2024)



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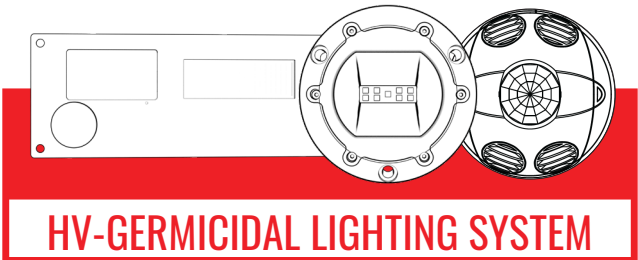
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SAFETY NOTICE & WARRANTY

HiViz Lighting's "Violet" Ultraviolet Germicidal Irradiation system utilizes LEDs which produce UV irradiation between 270 and 285 nanometers. These products are intended to be used in ambulances and other automotive applications where germicidal irradiation is desired, secondary to standard pathogenic decontamination regimens. Despite the value these systems bring, you must avoid exposure to UV rays. This system is designed to be installed in occupied spaces but is designed only to emit UV light when the space is unoccupied. Any time visible light is detected from any LEDs on a Violet emitter, the system is irradiating, and exposure is possible. Any users of this product must be familiar with safe operation of the system, which requires training.

Warning: Ultraviolet Germicidal Irradiation (UVGI) is hazardous to humans, plants and animals. To protect against injuries, the following safety precautions must be observed:



1. **Warning:** Avoid exposure to direct or reflected UV rays. Ultraviolet light rays can cause damage to skin and eyes.
 - Further information about exposure safety can be found here:
<https://www.icnirp.org/cms/upload/publications/ICNIRPUV2004.pdf>
2. Any time you must work in an area where exposure to UV rays is possible, precaution should be taken to ensure all exposed skin is covered, and eyes are shielded with Ultraviolet rated glasses.
3. In the event of system malfunction, or suspected system malfunction, immediately depress the emergency stop button. In addition to the emergency stop, the main power fuse must be removed, or power otherwise disconnected from any malfunctioning system and the system should only be re-connected by a qualified technician who can verify proper system operation.
 - **Warning:** The only way to be certain UVGI irradiation has ceased is to remove power to the system. Failure to remove power from a malfunctioning system could result in leakage which is harmful to skin and eyes.
4. Do **NOT** remove or cover any warning, caution, or danger labels affixed to any portion of this system.
5. At no time should any user bypass or attempt to bypass any of the safety features included with the Violet UVGI system. These safety features include:
 - Emergency stop button
 - Occupancy sensor
 - Fuses or Terminal connectors
 - Speaker (audible announcements)
 - (If enabled) door trigger
 - (If enabled) seat sensor
 - (If enabled) park sensor
 - (If enabled) seatbelt sensor

SAFETY NOTICE & WARRANTY (CONT.)

6. System administrators and installers should read and understand the instructions prior to making any changes or placing any system in service.
7. The Violet system uses an advanced algorithm to determine if UV-C emitters are functioning as intended. Never connect anything to the power outputs on the Violet User Interface Panel (brain) except the Violet emitters. Proper system configuration is critical to safe operation. You must set the number of emitters in the settings to match the number of emitters connected the system!
8. Do **NOT** use system for any purpose other than as intended; UVGI system for ambulances and other automotive vehicles.
9. UVGI systems do **NOT** prevent the spread of communicable disease in all situations or circumstances. Standard pathogen precautions should be taken, and the user should never assume the UVGI system has rendered an environment safe for entry. Precaution should be taken any time you are working in a hazardous environment, and decontamination.
10. HiViz Lighting, its dealers, affiliates, and partner companies are not medical doctors. Dose, irradiation time, and other settings must be reviewed and established by a qualified professional. HiViz sets a system default which must be calibrated and adjusted per vehicle.



SAFETY NOTICE & WARRANTY (CONT.)

**WARNING: INSTALLATION MUST BE CONDUCTED BY A QUALIFIED TECHNICIAN.
IMPROPER INSTALLATION CAN RESULT IN INJURY OR DEATH.**

- Installation must be conducted by a qualified automotive electrician or emergency vehicle technician in accordance with the applicable NFPA standard(s) and procedures (Including but not limited to NFPA 1901, 1906, 1911, 414, 1900)
- All circuits must be fused at 125% of the rated power consumption of the loads on the circuit
- A voltage drop greater than 10% in the power feed to a fixture could be an indicator of an under-sized conductor. Use of improperly sized conductors will, at a minimum, result in poor performance, and at a maximum could result in fire
- Verify input voltage is within fixture range before installation. Voltage range information can be found in this manual or printed on the fixture body
- Allow proper cooling time before handling the fixture if it has been installed & powered to prevent burns
- Any modifications to the fixture will void warranty and are not authorized by the manufacturer
- Always inspect the fixture for any damage prior to installing and DO NOT install if any damage is present



PLEASE READ ALL INSTRUCTIONS BEFORE INSTALLATION

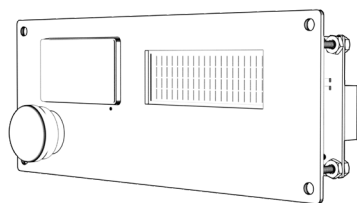


Warranty Information: Full policy available Online at hivizleds.com/warranty

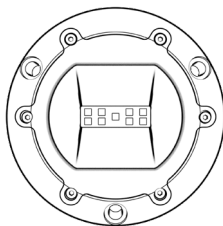
- Proof of purchase may be required to validate warranty. All FireTech products are warranted for the useful service life of the vehicle for which they were first installed
- Improper installation, accident, physical damage, neglect, and normal wear and tear are not covered under warranty
- Lights operated in environments over 150° Fahrenheit are not covered under warranty
- All advance-exchange warranty claims must be validated with HiViz Technical Support prior to issuance of a shipping label. Failure to return defective product will result in an invoice for the full replacement value of the product
- HiViz Lighting will repair or replace defective product at its discretion. Replacement product will be in similar or better cosmetic condition than the defective part.
- Warranties should be handled through the dealer/reseller the product was purchased from; customer is responsible for delivery
- If product is found to have damage not covered under warranty, customer will be responsible for return shipping charges and/or cost of repair
- Non-warranted items can be repaired at the customer's expense of parts and labor, at the discretion of HiViz LED Lighting



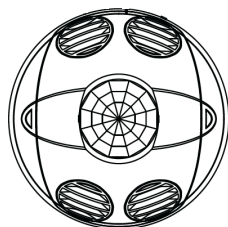
VIOLET LIGHTING SYSTEM ASSEMBLY



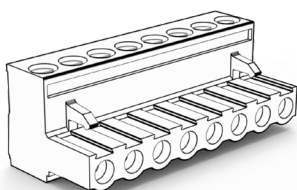
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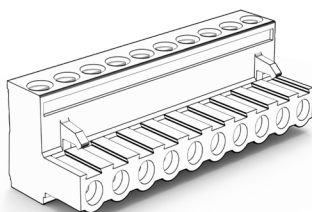
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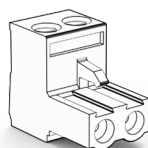
3



4



5



6

PIECES INCLUDED

1 Violet User Interface Panel
P/N: HV-VIOLET-UIP

2 Violet Emitter
P/N: HV-VIOLET-AQX

3 Occupancy Sensor
P/N: P-OSC10-MOW

4 8 Pin Connector (P2)
P/N: ACNTBP01P1-508-08BE

5 10 Pin Connector (P9)
P/N: ACNTBP01P1-508-10BE

6 2 Pin Connector (P1)
P/N: ACNTBP01P1-508-02BE



RECOMMENDED TOOLS & HARDWARE (NOT INCLUDED)

- 1/4-20 x 1.5" socket head screws with washers and locknuts (3 screws per emitter)
- (4) #10-24 x .625" screws with washers and locknuts
- Phillips Screwdriver
- Heat-shrink butt connectors
- Wire Strippers
- Saw or other means to cut out holes

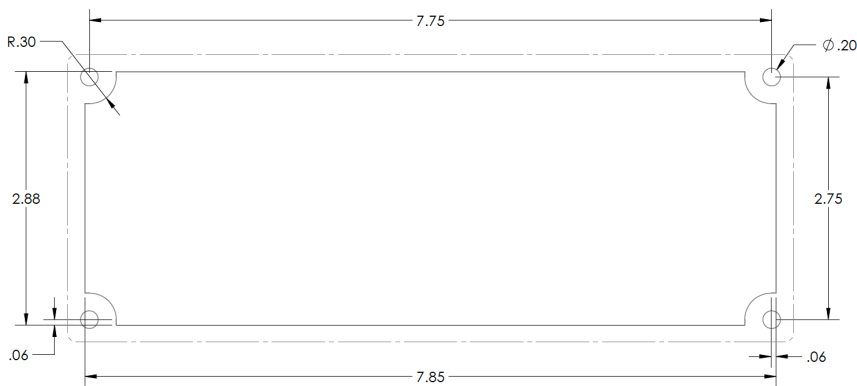
NOTE:

Tighten screws by hand/screwdriver.
Power-tools can cause damage to isolators
and cause an insecure attachment.

MOUNTING DIMENSIONS

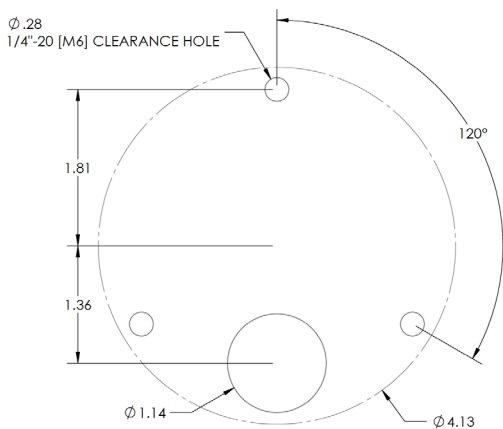
***Please see template on separate full size pieces of paper included in package to use. The template below is NOT to scale.**

1 VIOLET USER INTERFACE PANEL



NOTE: PANEL BOLT HOLES ARE CLEARANCE HOLES FOR #10-24 SCREWS. IT IS UP TO INSTALLERS DISCRETION ON FASTENER CHOICE, HOLE SIZE, AND INSTALLATION METHOD. THE DOTTED LINE SHOWS THE OUTER PERIPHERY OF THE HV-VIOLET-UIP

2 VIOLET EMITTER

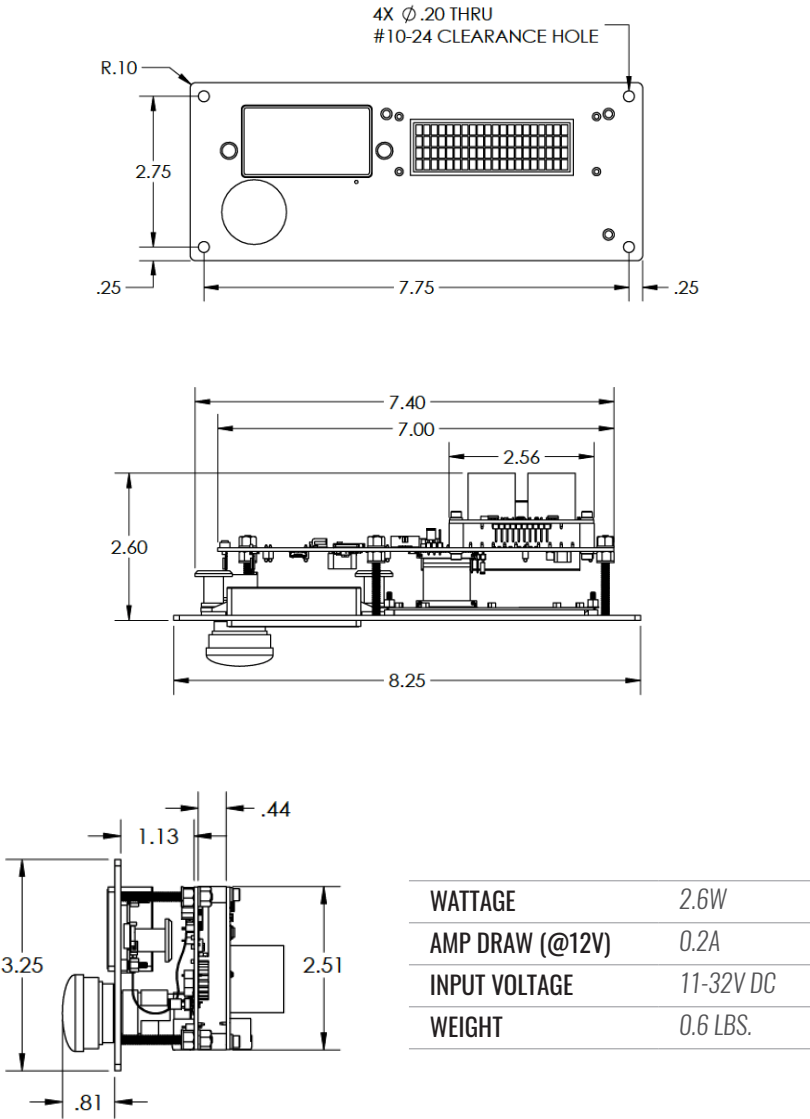


NOTE: EMITTER BOLT HOLES ARE CLEARANCE HOLES FOR 1/4"-20 OR M6 SCREWS. IT IS UP TO INSTALLERS DISCRETION ON FASTENER CHOICE, HOLE SIZE, AND INSTALLATION METHOD. THE DOTTED LINE SHOWS THE OUTER PERIPHERY OF THE HV-VIOLET-AQX.



TECHNICAL SPECIFICATIONS

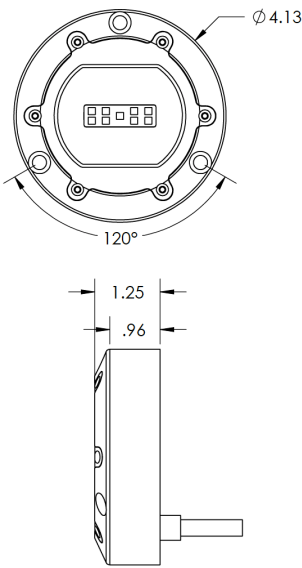
VIOLET USER INTERFACE PANEL



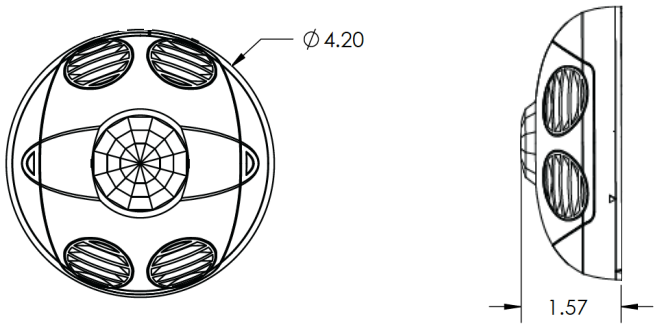
TECHNICAL SPECIFICATIONS CONT.

VIOLET EMITTER

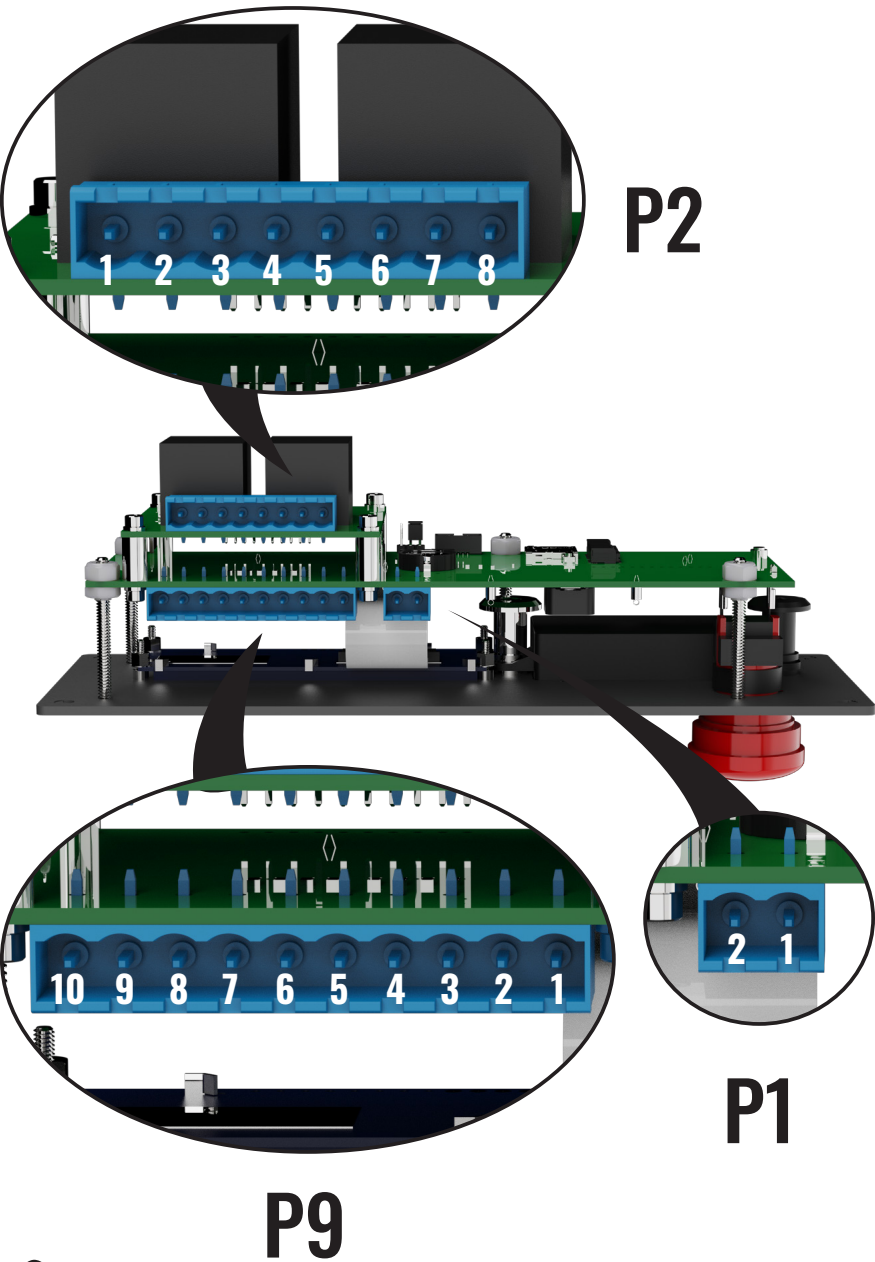
WATTAGE	26.9W
AMP DRAW (@12V)	2.1A
INPUT VOLTAGE	11-32V DC
WEIGHT	1.2 LBS.
TEMP. RATING	-40 ~ 185F
IP RATING	IP68/69K



OCCUPANCY SENSOR



USER INTERFACE PANEL PIN LAYOUT



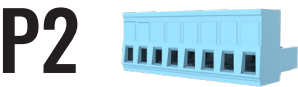
PIN LAYOUT TABLE - P2 MATE

The P2 terminal outputs provide the main power to the Violet Emitters.

There are two Voltage (Vin) pins for each channel because there is a current limit of 16A for each pin, and a limiting wire size of 12 AWG. These two pins can be wired together and share a power source. However, both pins should always be wired.

Likewise, each output channel has two pins, and Violet Emitters should be divided equally among the pins (or as equally as possible, noting for odd number Violet Emitters it is not possible to be exactly equal).

The wires coming from these Voltage pins can be spliced together if necessary. The ground wires of the Violet Emitters can be connected to a common chassis ground.



Mating Connector: ACNTBP01P1-508-08BE (BLUE)		
PIN	P2 PINOUT	DESCRIPTION
1	CH2	HV-VIOLET-AQX: CHANNEL 2 OUT
2	CH2	HV-VIOLET-AQX: CHANNEL 2 OUT
3	VIN	VBAT(+) for CHANNEL 2 IN
4	VIN	VBAT(+) for CHANNEL 2 IN
5	CH1	HV-VIOLET-AQX: CHANNEL 1 OUT
6	CH1	HV-VIOLET-AQX: CHANNEL 1 OUT
7	VIN	VBAT(+) for CHANNEL 1 IN
8	VIN	VBAT(+) for CHANNEL 1 IN



PIN LAYOUT TABLE - P9 MATE

The P9 Sensor Inputs are set up to have a “pull anywhere” polarity, meaning you can give each input a power or a ground signal to activate.

The Occupancy Sensor utilizes pins 8, 9, and 10. Pins 2 – 5 are currently unused. The door, parking brake, and seat belt triggers can be set as: NO (normally open), NC (normally closed), and NA (not applicable) if there is no trigger/sensor in use.

NOTE: If the signal floats or there are problems for some reason with the input functionality, you can manually set positive or negative input with a jumper on the circuit board, but in nearly all applications the “pull anywhere” polarity allows for simple integration to whatever is existing on the truck for each sensor. A thorough system test should be conducted prior to placing the system in service.

The PIR/Ultrasonic Occupancy Sensor that utilizes pin 8 of P9 is not designed for the “pull anywhere” style input. This input is strictly an “Active High” input. This means that a +12 signal is needed to activate this pin.



Mating Connector: ACNTBP01P1-508-10BE (BLUE)		
PIN	P9 PINOUT	DESCRIPTION
1	DOOR 1	DOOR INPUT (ALL DOORS)
2	DOOR 2	UNUSED, DO NOT WIRE FOR DOOR TRIGGER
3	EXTRA 1	UNUSED
4	EXTRA 2	UNUSED
5	EXTRA 3	UNUSED
6	PARKING BRAKE	PARKING BRAKE INPUT
7	SEAT BELT	SEAT BELT INPUT (ALL SEAT BELTS)
8	PIR INPUT	24V ACTIVE HIGH INPUT (BLUE WIRE) - OCCUPANCY SENSOR
9	GND	GROUND (BLACK WIRE) - OCCUPANCY SENSOR
10	24V DC OUT	24V DC OUTPUT (RED WIRE) - OCCUPANCY SENSOR



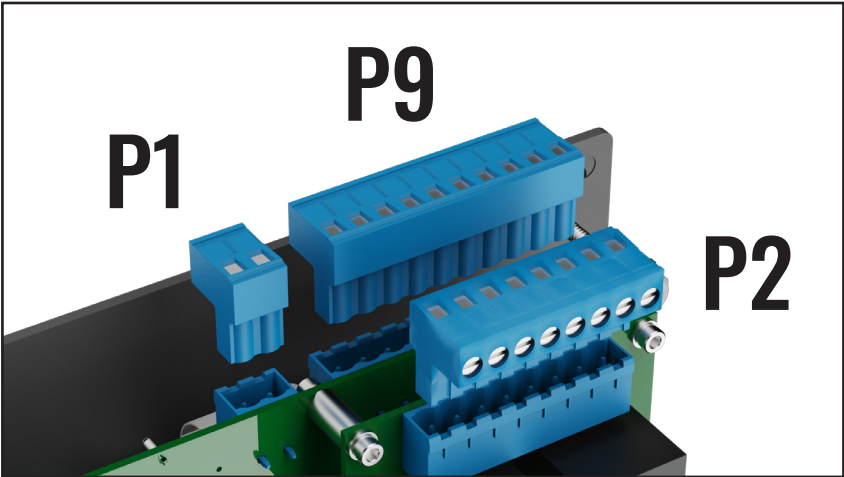
PIN LAYOUT TABLE - P1 MATE

The P1 pins are the main power connections for the Violet User Interface Panel.

NOTE: The ground wire of the Violet User Interface Panel and all Violet Emitters should be connected to the chassis ground (or battery ground). The Violet User Interface Panel does not switch or control the ground plane.

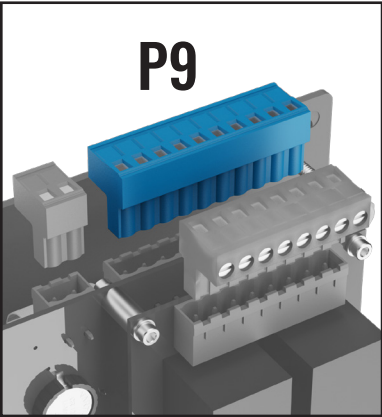
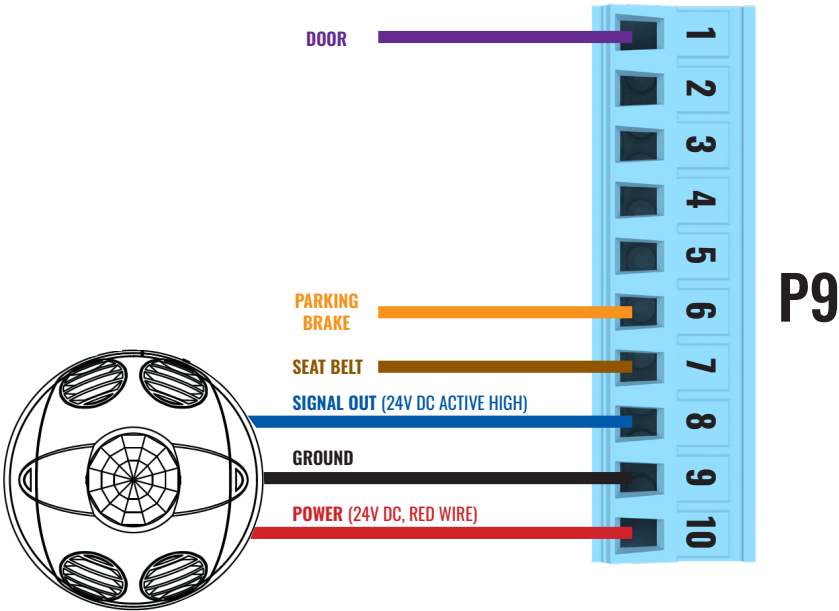


Mating Connector: ACNTBP01P1-508-02BE (BLUE)		
PIN	P1 PINOUT	DESCRIPTION
1	VIN	POWER 9-32V DC
2	GND	GROUND



SENSOR WIRING

The following diagram depicts the recommended electrical layout of the Occupancy Sensor and other sensors.

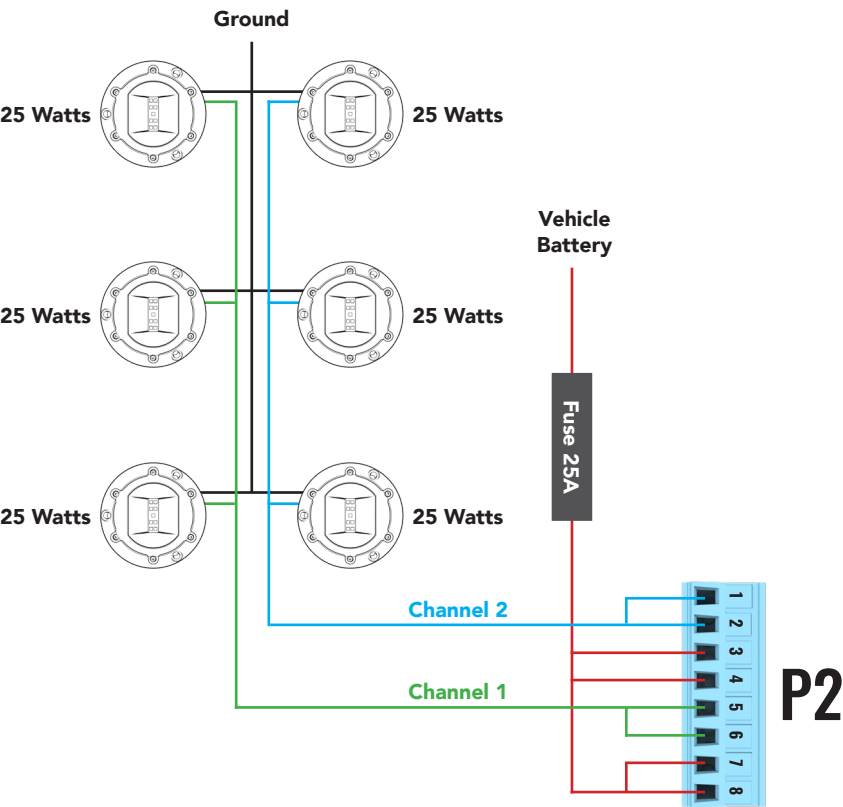


Mating Connector: ACNTBP01P1-508-10BE (BLUE)		
PIN	P9 PINOUT	DESCRIPTION
1	DOOR 1	DOOR INPUT (ALL DOORS)
2	DOOR 2	UNUSED, DO NOT WIRE FOR DOOR TRIGGER
3	EXTRA 1	UNUSED
4	EXTRA 2	UNUSED
5	EXTRA 3	UNUSED
6	PARKING BRAKE	PARKING BRAKE INPUT
7	SEAT BELT	SEAT BELT INPUT (ALL SEAT BELTS)
8	PIR INPUT	24V ACTIVE HIGH INPUT (BLUE WIRE) - OCCUPANCY SENSOR
9	GND	GROUND (BLACK WIRE) - OCCUPANCY SENSOR
10	24V DC OUT	24V DC OUTPUT (RED WIRE) - OCCUPANCY SENSOR

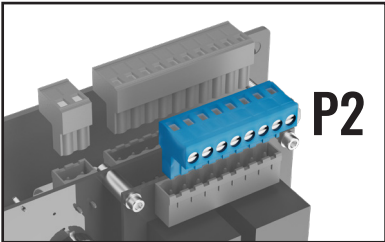
NOTE: There will be an **unused gray wire** connected to the sensor, we recommend cutting the wire back and wrapping up the cord out of the way when installing the sensor.

RECOMMENDED LIGHT CIRCUIT WIRING

The following diagram depicts the recommended electrical circuit layout of the Violet UV-C Decontamination System in a way that should work for most ambulance patient compartments. There is a minimum of one (1) Violet Emitter per channel, and a maximum of four (4) Violet Emitters per channel.



Mating Connector: ACNTBP01P1-508-08BE (BLUE)		
PIN	P2 PINOUT	DESCRIPTION
1	CH2	HV-VIOLET-AQX: CHANNEL 2 OUT
2	CH2	HV-VIOLET-AQX: CHANNEL 2 OUT
3	VIN	VBAT(+) for CHANNEL 2 IN
4	VIN	VBAT(+) for CHANNEL 2 IN
5	CH1	HV-VIOLET-AQX: CHANNEL 1 OUT
6	CH1	HV-VIOLET-AQX: CHANNEL 1 OUT
7	VIN	VBAT(+) for CHANNEL 1 IN
8	VIN	VBAT(+) for CHANNEL 1 IN



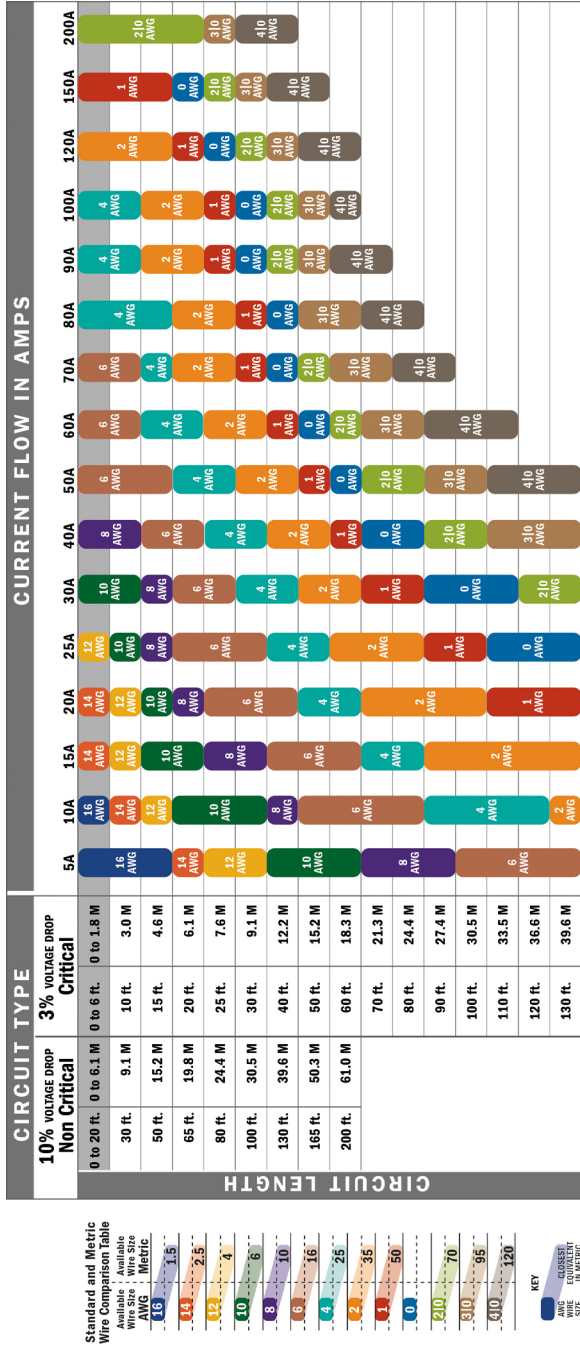
NOTE: This recommended circuit layout may not work for all applications, as ambulances and other emergency vehicles are custom by design. Please contact HiViz for any wiring questions!





Below, **Blue Sea Systems** has provided a chart documenting proper wire size selections for automotive applications. NFPA 1901 13.2.1.1 allows for up to 10% voltage drop on automotive fire apparatus. Please be sure to reference proper conductor size below. Visit blueseasystems.com for more information.

“Printed with permission of **Advanced System Group**”



Although this process uses information from ABYC E-11 to recommend wire size and circuit protection, it may not cover all of the unique characteristics that may exist on a boat. If you have specific questions about your installation please consult an ABYC certified installer.

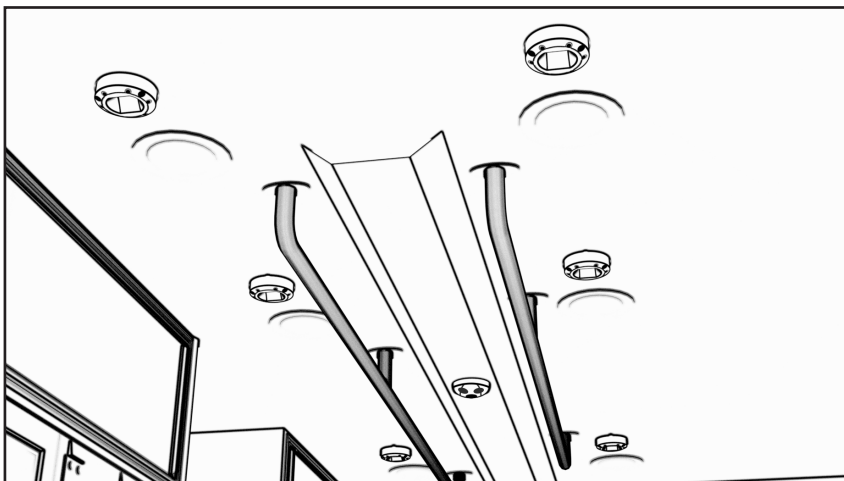
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INSTALLATION INSTRUCTIONS

IDENTIFY MOUNTING LOCATIONS



- Identify mounting location for Violet User Interface Panel. Choose a location within arm's reach of the medic or crew in the back of the ambulance. An occupant of the patient module or irradiation compartment must be able to reach the e-stop in the event of a malfunction. Choose a location where the speaker is audible to all occupants of the irradiation area.



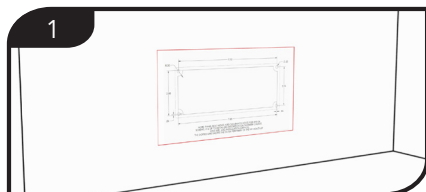
- Identify a mounting location for all emitters. The emitters should be placed such that they are shining directly on contacted surfaces.
- Identify a mounting location for the occupancy sensor. This sensor should be placed centrally in the patient (or irradiation) compartment, and not obstructed by opening of doors or interior cabinets

INSTALLATION INSTRUCTIONS CONT.

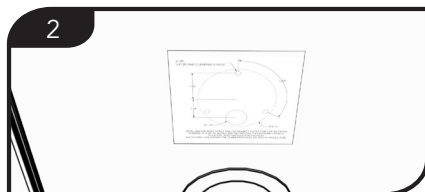
NOTE: Before next steps, use a multimeter and identify and operation of desired triggers. This step requires familiarity with vehicle electrical system and use of a multimeter tool. You will need to identify the polarity of the input and characterize the operation (normally open, normally closed, or n/a).



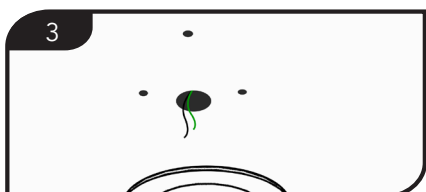
WARNING: TURN OFF POWER BEFORE WIRING



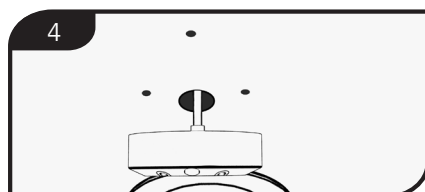
Mark, drill holes, and cut main hole for the user interface panel



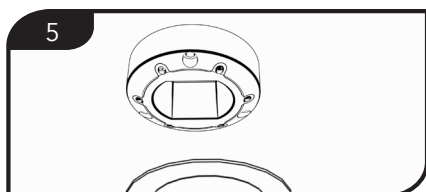
Mark and drill holes for emitters and occupancy sensor



Route wires for emitters and occupancy sensor as shown in electrical diagram on pages 22 and 23

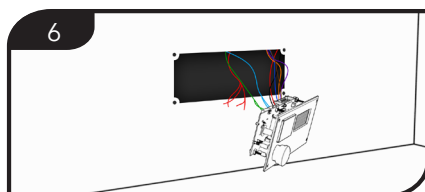


Connect wires to emitters and occupancy sensor



Mount all components in prepared locations

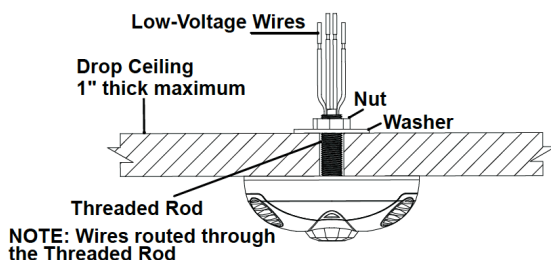
(See pages 27 & 28 for occupancy sensor mounting diagrams)



Connect wiring to violet brain, **leaving the power cable OFF the emitter circuit until system is completely configured**

SENSOR MOUNTING OPTION A

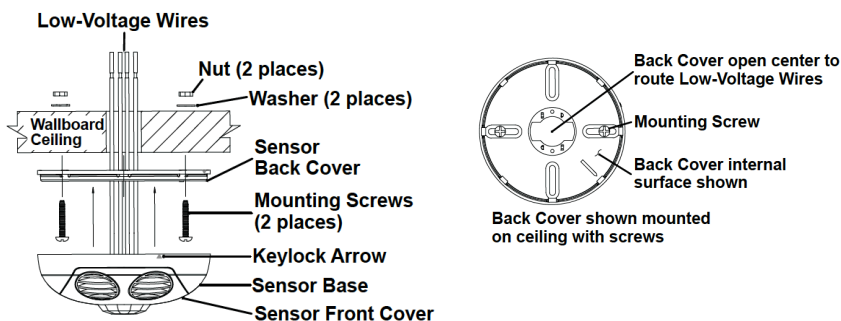
Mounting Option Diagram A Occupancy Sensor Mounted to Drop Ceiling Using Threaded Rod



1. Select location for mounting of sensor and proper masking for your application.
2. Use the supplied threaded rod or other methods to make a hole (1/2" to 1") in the ceiling just large enough to pass the body of the threaded rod through.
3. Insert the sensor wires through the flared end of the threaded rod. Position the threaded rod to the base of the sensor.
4. Insert the flared end of the threaded rod into the opening in the bottom of the sensor and twist to lock into place.
5. Push the wires into the hole in the ceiling and insert the threaded rod until the sensor is flush with the ceiling.
6. Insert the wires through the hole in the included washer, then place the included washer over the rod and screw on the included hex nut.
7. Rotate the sensor to the desired orientation. Note that the sensor base and back cover are keyed. To lock the device in place, ensure that the arrows are not aligned.

SENSOR MOUNTING OPTION B

Mounting Option Diagram B Occupancy Sensor Mounted to Wallboard or Drop Ceiling Using Screws



1. Select location for mounting of sensor and proper masking for your application.
2. Make a hole in the ceiling large enough to pass the wire connections and wire nuts through (approximately 1" diameter).
3. Remove the back cover of the sensor. Hold the back cover and body of the sensor and rotate until the two arrows line up and pull apart.
4. Install back cover of the ceiling sensor to the drop ceiling using the included screws nuts, and washers, or screws in combination with commercially available wall anchors.
5. Push wire connections through the center hole of the back cover and into the ceiling.
6. Secure the sensor body to the back cover by aligning the arrows. Lock it by turning the sensor such that the arrows do not line up.
7. Rotate the sensor to the desired orientation.



INSTALLATION INSTRUCTIONS CONT.

FINAL STEPS

- Configure system menus (number of emitters, safety interlocks, and desired runtime) per instructions on pages 14-20.
- Test system operation prior to connecting emitters. System should give an error indicating no presence of emitters detected.
- Manually initiate system while still occupying the compartment (emitters must not be connected). System should make a voice announcement, decontamination should count down and return to idle state WITHOUT commencing.
- Run system and open each door to the compartment. System should stop and display error and make a voice announcement.
- It is critical that every system be tested by being armed and interrupted for every use case before deploying the system to active service.
- ONLY after confirming system operation is safe should you connect emitters. **A final system test should be performed once emitters are connected.**



OCCUPANCY SENSOR SETUP







The PIR/Ultrasonic Occupancy Sensor is recommended to be installed in the main patient compartment of an ambulance, or in the main area where the system is installed for decontamination in each vehicle. It should include coverage of all areas where a person may be when in proximity of the Violet Emitters.

The PIR/Ultrasonic Occupancy Sensor itself will need to be configured before installation.

To set, take off the front cover of the sensor (as seen in the figure below). There should be a black knob with an arrow on it, and an arrow on the periphery of the knob. Turn the black knob counterclockwise until the arrows are aligned. This will set it to the minimum delay timer (30 seconds) and is HiViz recommended configuration time interval.

All other dials (red, green, and blue), should remain in their “default” state as illustrated in the table below.



TABLE 3: ADJUSTMENT KNOB SETTINGS				
Knob Color	Symbol	Function	Knob Setting	Factory Default Setting
Green		Sets the ultrasonic range	Range setting Full CCW = min. (OFF) Full CW = max.	50% 
Red		Sets the infrared range	Range setting Full CCW = min. (OFF) Full CW = max.	75% 
Black		Delayed- Off Time	Full CCW = min. (30 sec.) Full CW = max. (30 min.)	50% (10 min) 



USER INTERFACE PANEL SYSTEM SETUP

MAIN MENU/SETTING & RESETING PASSWORD

When the Violet UV-C Decontamination System is powered on for the first time out of the box, it requires user input for the system to recognize the parameters of each custom set-up.

The **MAIN MENU** can be accessed by pressing the 4th button to the right under the display:



A password will then be needed to enter the main menu to initialize or change any existing settings. To enter the main menu, **THE DEFAULT PASSWORD IS 1234 (AS SEEN ABOVE)**.

From the main menu, a custom password can then be set. If the password is forgotten, there is a small hole in the front of the display under the right corner of the speaker (circled in blue below). **PRESSING A PAPER CLIP INTO THE HOLE WILL RESET THE PASSWORD BACK TO 1234.**



USER INTERFACE PANEL SYSTEM SETUP CONT.

SETTING NUMBER OF LIGHTS (VIOLET EMITTERS)

There are two channels to set emitters on: **CHANNEL 1** and **CHANNEL 2**. This is how you tell the system how many emitters you will have in your system and which channels they will be on based on how you set the PINs.

NOTE: We recommend evenly dividing the number of Violet Emitters between the channels so that the electrical load on the system is minimized. **MIN. NUMBER OF 1 AND MAX. OF 4 EMITTERS ARE ALLOWED PER CHANNEL (MAX OF 8 TOTAL EMITTERS).**

To set CHANNEL 1's emitters:

1. Enter the **MAIN MENU** by pressing button #4
2. Enter the **PIN**
3. Use the #1 and #2 buttons to navigate through the **MAIN MENU** to the **LIGHTS** option
4. Use button #3 for **OK**
5. **CHANNEL 1** should be on the display, use button #3 for **OK**
6. Use buttons #1 and #2 to scroll through the number of emitters (options will be 1-6)
7. Once you select the amount of emitters you will have on **CHANNEL 1**, use button #4 to return to the **MAIN MENU**

To set CHANNEL 2's emitters:

1. Use the #1 and #2 buttons to navigate through the **MAIN MENU** to the **LIGHTS** option
2. Use button #3 for **OK**
3. **CHANNEL 2** should be on the display, use button #3 for **OK**
4. Use buttons #1 and #2 to scroll through the number of emitters (options will be 1-6)
5. Once you select the amount of emitters you will have on **CHANNEL 2**, use button #4 to return to the **MAIN MENU**



USER INTERFACE PANEL SYSTEM SETUP CONT.

TIMER SELECTION - ACTIVE & AUTO DECON

The Violet User Interface Panel includes two operational time intervals that are to be set by the user. These are: **ACTIVE DECON** and **AUTO-DECON**.

- **ACTIVE-DECON: This is the time that the system will remain on for active decontamination (Violet Emitters on).** During the active-decon state, the system is continuously monitoring for a change from the normal state of each sensor that has been set in the "SENSOR" settings (NC, NO, or NA), and will immediately abort active-decon if occupancy is detected. This is set in minutes by the agency, and **the default active-decon timer is set to 15 minutes.**
- **AUTO-DECON: This is the time interval that the system will wait before starting a decon.** During the auto-decon state, the system is continuously monitoring for a change from the normal state of each sensor that has been set in the "SENSOR" settings (NC, NO, or NA). This setting is set in minutes by the agency, and **the default auto-decon timer is set to 3 minutes. In the event that auto-decon is ready but occupancy is detected, the system will quietly reset the auto-decon timer to try again later.**

To set ACTIVE DECON:

1. Use the #1 and #2 buttons to navigate through the MAIN MENU to the TIMERS option
2. Use button #3 for OK
3. ACTIVE DECON should be on the display, use button #3 for OK again
4. Use buttons #1 and #2 to scroll through the time (min)
5. Once you select the time, use button #4 to return to the MAIN MENU

To set AUTO DECON:

1. Use the #1 and #2 buttons to navigate through the MAIN MENU to the TIMERS option
2. Use button #3 for OK
3. AUTO DECON should be on the display, use button #3 for OK again
4. Use buttons #1 and #2 to scroll through the time (min)
5. Once you select the time, use button #4 to return to the MAIN MENU

NOTE: Regardless of auto-decon and active-decon timer settings the system is designed not to run back-to-back decontaminations if not needed. After completing a successful decon, the system will sit in the safe state until occupancy is detected, at which point the auto-decon timers will again silently re-engage.



USER INTERFACE PANEL SYSTEM SETUP CONT.

AUDIO SELECTION

To set **VOICE**:

1. Use the #1 and #2 buttons to navigate through the MAIN MENU to the **AUDIO** option
2. Use button #3 for OK
3. **VOICE** should be on the display, use button #3 for OK again
4. Use buttons #1 and #2 to choose **MALE** or **FEMALE** for the voice
5. Once you select the voice, use button #4 to return to the MAIN MENU

To set **VOLUME**:

1. Use the #1 and #2 buttons to navigate through the MAIN MENU to the **AUDIO** option
2. Use button #3 for OK
3. **VOLUME** should be on the display, use button #3 for OK again
4. Use buttons #1 and #2 to choose the volume setting desired. The options range from 0 - muted to 10 - loudest setting. **DEFAULT SETTING IS 3.**
5. Once you select the volume level you want, use button #4 to return to the **MAIN MENU**



USER INTERFACE PANEL SYSTEM SETUP CONT.

SENSOR SELECTIONS

The Violet User Interface Panel has 3 sensor inputs. These sensor inputs include a parking brake input, a seatbelt input, a door open input, and the system included PIR/Ultrasonic Occupancy Sensor input. We recommend using all sensor inputs available on the vehicle for safety and redundancy purposes.

SENSOR SETTING OPTIONS:

- **NC - NORMALLY CLOSED**
- **NO - NORMALLY OPEN**
- **NA - SENSOR NOT PRESENT OR NOT DESIRED TO BE USED**

To set PARKING BRAKE:

1. Use the #1 and #2 buttons to navigate through the MAIN MENU to the **SENSORS** option
2. Use button #3 for OK
3. Use buttons #1 and #2 to navigate until **PARKING BRAKE** is on the display
4. Use button #3 for OK
5. Use buttons #1 & #2 to scroll through the setting options:
 - **NC - Normally Closed (DEFAULT)**
 - **NO - Normally Open**
 - **NA - Not Applicable**
6. Once you select the sensor setting, use button #4 to return to the **MAIN MENU**

To set DOOR:

1. Use the #1 and #2 buttons to navigate through the MAIN MENU to the **SENSORS** option
2. Use button #3 for OK
3. Use buttons #1 and #2 to navigate until **DOOR** is on the display
4. Use button #3 for OK
5. Use buttons #1 and #2 to scroll through the setting options:
 - **NC - Normally Closed (DEFAULT)**
 - **NO - Normally Open**
 - **NA - Not Applicable**
6. Once you select the sensor setting, use button #4 to return to the **MAIN MENU**

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USER INTERFACE PANEL SYSTEM SETUP CONT.

SENSOR SELECTION CONT.

To set *SEAT BELT*:

1. Use the #1 and #2 buttons to navigate through the MAIN MENU to the **SENSORS** option
2. Use button #3 for OK
3. Use buttons #1 and #2 to navigate until SEAT BELT is on the display
4. Use button #3 for OK
5. Use buttons #1 and #2 to scroll through the setting options:
 - NC - Normally Closed
 - NO - Normally Open (DEFAULT)
 - NA - Not Applicable
6. Once you select the sensor setting, use button #4 to return to the MAIN MENU

NOTE: The PIR/Ultrasonic Occupancy Sensor that is included with the system cannot be set to NA, as it is designed to be the minimum level of safe functionality of the system.

NEW PIN

To set a new PIN:

1. Use the #1 and #2 buttons to navigate through the MAIN MENU to the **SYSTEM** option
2. Use button #3 for OK
3. Use the #1 and #2 buttons to navigate through the system options until you see PIN on the display
4. Use button #3 for OK
5. Enter your new PIN
6. Use button #3 for OK

SET DATE

To SET DATE:

1. Use the #1 and #2 buttons to navigate through the MAIN MENU to the **SYSTEM** option
2. Use button #3 for OK
3. Use the #1 and #2 buttons to navigate through the system options until you see SET DATE
4. Use button #3 for OK
5. Use the #1 and #2 buttons to navigate through the date options
6. Once you select the date, use button #4 to return to the MAIN MENU



USER INTERFACE PANEL SYSTEM SETUP CONT.

SET TIME

To SET TIME:

1. Use the #1 and #2 buttons to navigate through the MAIN MENU to the SYSTEM option
2. Use button #3 for OK
3. Use the #1 and #2 buttons to navigate through the system options until you see SET TIME
4. Use button #3 for OK
5. Use the #1 and #2 buttons to navigate through the time options
6. Once you select the time, use button #4 to return to the MAIN MENU

FACTORY RESET

To FACTORY RESET:

1. Use the #1 and #2 buttons to navigate through the MAIN MENU to the SYSTEM option
2. Use button #3 for OK
3. Use the #1 and #2 buttons to navigate through the system options until you see SYSTEM RESET on the display.
4. Use button #3 to click OK twice

The system is now reset to factory default settings (except the date and time).



OPERATING WARNINGS & ERRORS

The Violet User Interface Panel has the ability to measure the current consumed by the Violet Emitters. This allows the system to detect if one or more of the Violet Emitters is not functioning properly.

When the number of Violet Emitters is set in the Violet User Interface Panel settings, the system will expect a certain current draw.

If one of the Violet Emitters becomes non-functional during its service life, the system will identify the failure and notify the user. The error will read "ERR:CH1" or "ERR:CH2" in the event of an under draw (emitter out scenario), **which could impact the effectiveness of the system and should be investigated by a technician.**

In the event an over draw is detected (rather than under draw), the system will notify the user with the message "WRN:CH1" or "WRN:CH2", which should also be investigated by a technician.

The error and warning messages each designate which channel is encountering the problem to allow for troubleshooting. Note that the warning messages may occur if there is a large amount of voltage drop in the system. This will cause the current needed to power the emitters to increase and trigger this warning. If this warning occurs, first look at the number of emitters set in each channel in the user interface panel settings and ensure that each channel has the correct number of emitters. If this is accurate, then attempt to measure the voltage at the light head to see if any voltage drop is occurring.

TROUBLESHOOTING

- If one of the Violet Emitters becomes non-functional during its service life, the system will identify the failure and notify the user. The error will read "**ERR:CH1**" or "**ERR:CH2**" in the event of an under draw (emitter out scenario), which could impact the effectiveness of the system and should be investigated by a technician.
- In the event an over draw is detected (rather than under draw), the system will notify the user with the message "**WRN:CH1**" or "**WRN:CH2**", which should also be investigated by a technician.
- If there is no audio first check that the volume is not set to zero. Then check to ensure that the memory card is properly seated. If both of those do not resolve the issue, contact HiViz on reformatting the memory card.
- If system does not enter decon, ensure that the E-stop is not pressed, then ensure that all sensors are properly connected or disabled. Validate functionality of each input that is configured using a multimeter to confirm proper operation.
- If Violet emitters do not cut off, press E stop, exit patient compartment, remove fuse from system and contact HiViz. **Improper operation of violet emitters in the presence of an occupant could present a safety hazard.**

