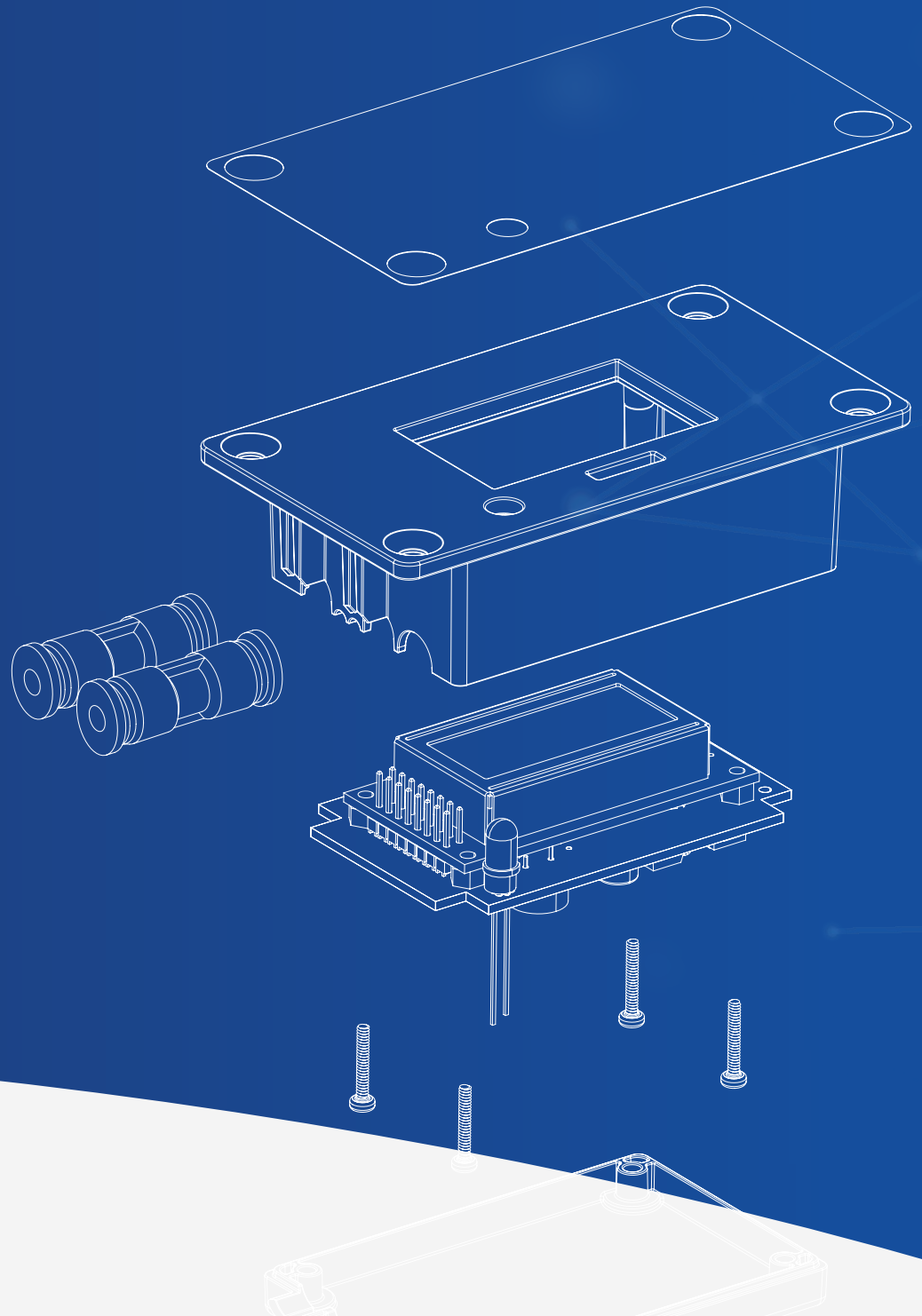
BreatheSafe

CabAire™

User Manual (Standard)



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Contents

1.0 Overview

The CabAire Lite is a pressuriser controller with a user interface, which is highly configurable in the field by letting the user adjust important configuration parameters with the user interface and buttons. The CabAire Lite is our entry level controller, designed for applications when only intelligent pressure control and monitoring is needed. It's the perfect controller for situations when a simplistic solution is needed.

2.0 Start-Up

2.1 Start-Up Display

On first start-up, the device will enter re-zero mode for 10 seconds if the pressure sensor hasn't been calibrated. Otherwise, the display will flash the firmware version number and the serial number for three seconds.

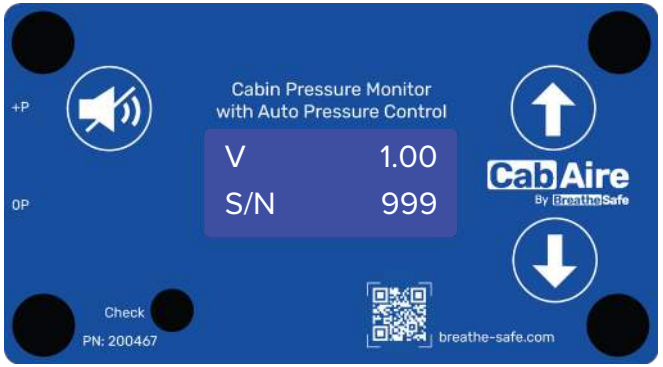


Figure 1. Start-up Screen

3.0 Main Display

3.1 Normal Operation: Active

The screen will then switch to the main display which shows the system pressure and the speed of pressuriser. The controller will then attempt to achieve the setpoint pressure which is 50 pascals by default.

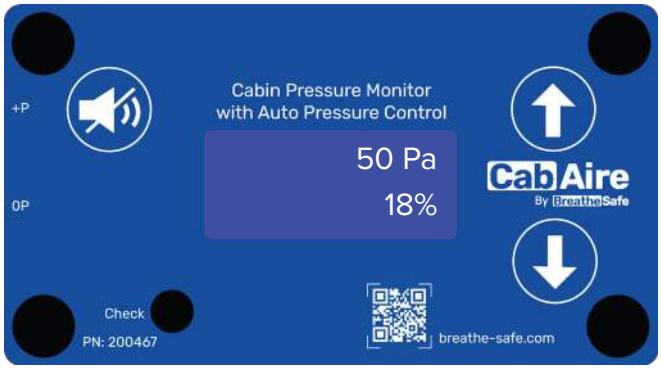


Figure 2. Main Screen with Optimal Pressure

If the system is unable to achieve the setpoint pressure, the system will automatically switch to the motor safe speed and trigger the red led. If the system is still unable to achieve pressure, the buzzer will trigger after the defined 'buzzer delay'. The buzzer can be muted by pressing the MUTE button.

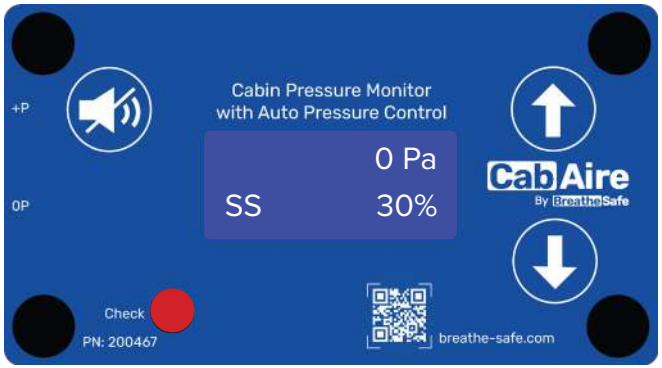


Figure 3. Main Screen with Sub-optimal Pressure

3.2 Normal Operation: Passive

A passive unit will display the pressure after start-up.

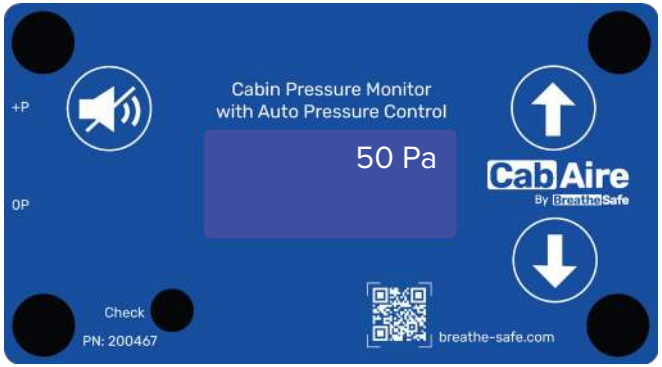


Figure 4. Normal Operation: Passive

If the system pressure is below the alarm set-point, the system will trigger a red ‘check’ light and display ‘LowPress’ until pressure is returned.

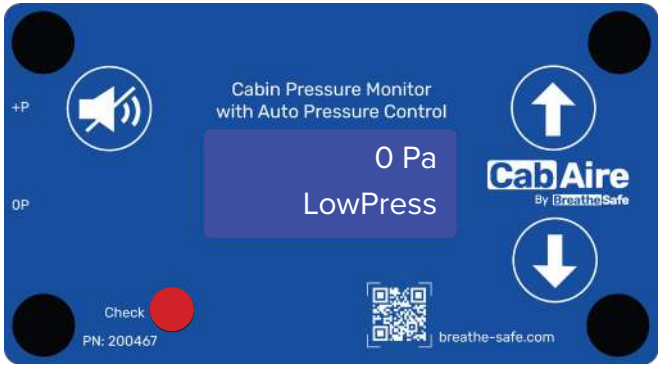


Figure 5. Low Pressure: Passive

3.3 Brightness Control

While in the main display, the brightness can be controlled by holding the UP or DOWN button to brighten or dim the screen respectively. This function can only be used in the main display.

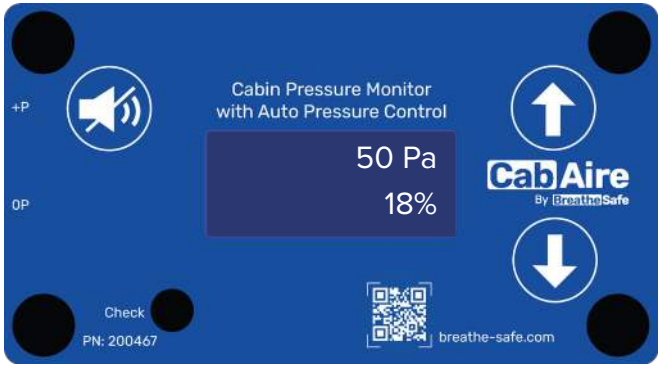


Figure 6. Brightness Control Function

3.4 Menu Access

The main menu is accessible by holding the UP and DOWN buttons simultaneously for two seconds while in the main display.

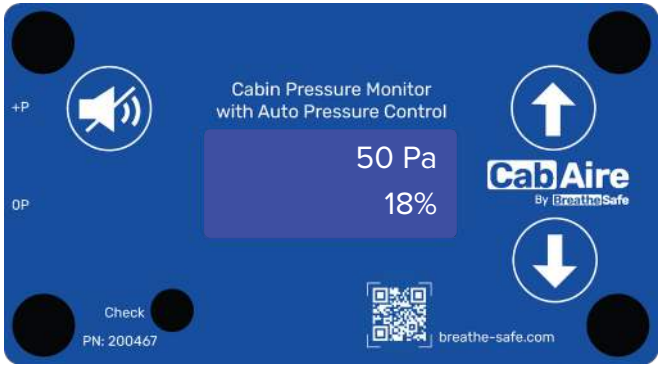


Figure 7. Menu Access Function

4.0 Main Menu

Cycle through menu options by using the UP or DOWN button. There are two pages that the user can select; ‘Enter code’ and ‘Fullspd test’. Outside of the main display, the MUTE button on the left is used as an enter button, to confirm page selections.

4.1 Full Speed Test (Active Only)
Selecting full speed test will command the motor to run at 100%. This shouldn't be used outside of testing the system for maximum pressure. Use the enter key (MUTE button) to initiate a full speed test, press the enter key again to disable to test.

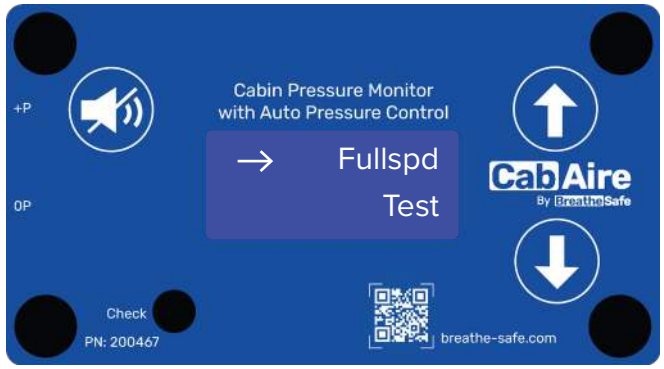


Figure 8. Full Speed Test

4.2 Configuration Menu Access
Selecting 'Enter Code' will prompt the user to enter a pin. Use the UP and DOWN to cycle through digits at each position, use the MUTE button to confirm the selected digit and move to the next position. The pin is 4253.

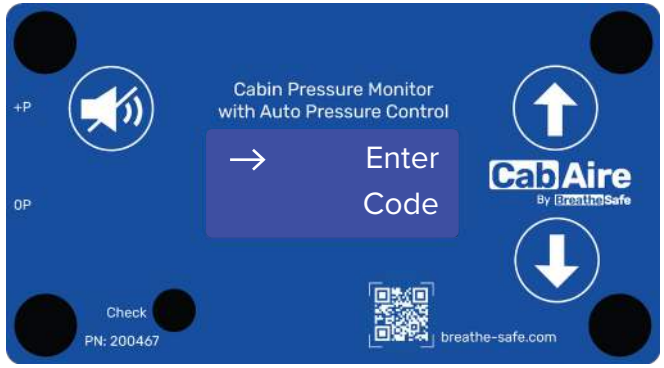


Figure 9. Config Menu Access Screen

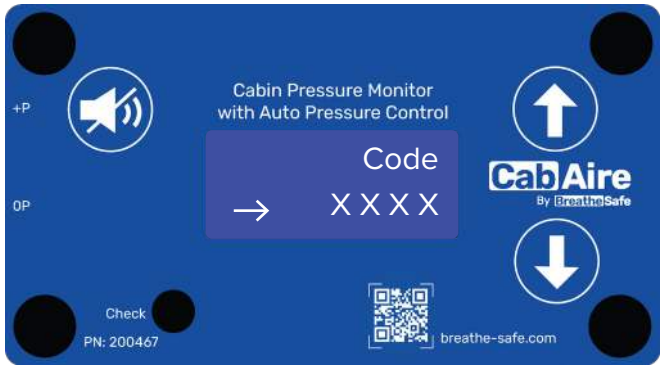


Figure 10. Passcode Entry Screen

5.0 Config Menu
To navigate through the following menus, use the UP and DOWN buttons. Holding down the buttons will allow for faster scrolling between the menu options. The MUTE button can be used to enter menus or confirm a parameter change.

5.1 Programmable Config Parameters
The following config parameters can be adjusted: pressure setpoint, alarm setpoint, buzzer delay, deadband, nearband, farsteps, nearsteps, safe speed, minimum speed, and maximum speed. Pressing the UP and DOWN buttons allows for fine adjustments whereas holding will allow for faster adjustment. Please note that changes will only be saved once the 'save and back' option has been selected; the 'abort and back' option does not save recently configured parameters.

5.1.1 Setpoint (Active Only)
The CabAire Lite will continuously adjust the commanded motor speed to always stay at or near the pressure setpoint which is 50 Pa by default. The setpoint can be changed by pressing the UP and DOWN arrow keys. The pressure sensor precision is about 0.3 Pa, so setpoint changes will be in steps of 0.3 Pa.

Figure 11. Setpoint Adjustment Page

5.1.2 Alarm Setpoint

The alarm setpoint page allows adjustment of the minimum pressure permissible before the alarm triggers. The alarm will be visual and audial to alert the operator to loss of pressure. The MUTE button can be used to mute this alarm however the 'Check' led will stay lit until pressure is regained.

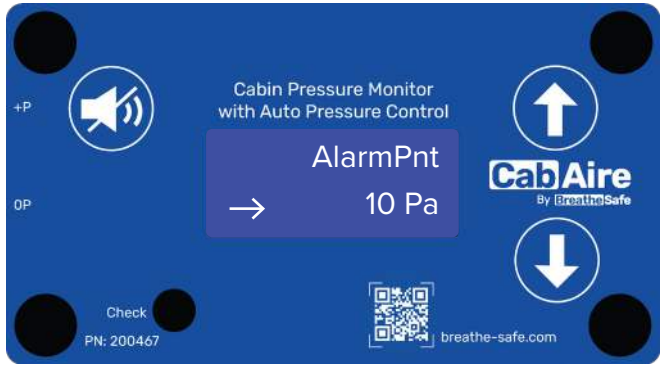


Figure 12. Alarm-point Adjustment Page

5.1.3 Buzzer Delay

When the pressure dips below the alarm setpoint pressure, the buzzer will not activate until the specified buzzer delay has passed. This exists to allow the operator to react to the visual alarm before the buzzer sounds.

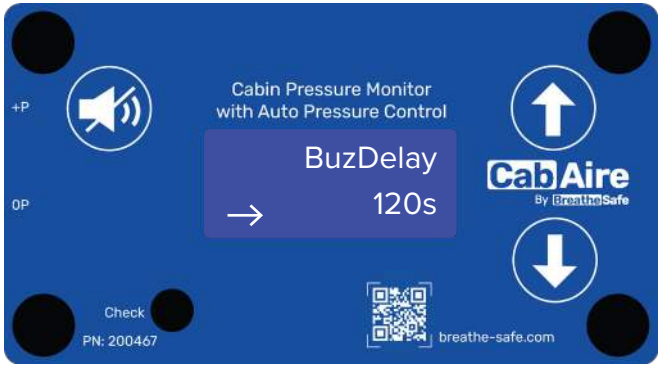


Figure 13. Buzzer Delay Adjustment Page

5.2 Non-Programmable Config Parameters

There are additional pages in the menu which are 'Recalibrate senor' and 'Reset defaults'. Pressing the MUTE button on these pages will respectively trigger pressure sensor re-calibration and configuration factory reset.

5.2.1 Sensor Offset

The 'Sensor Offset' page displays the calibrated offset to compensate for the pressure sensor's drift error over time. The pressure sensor zero point can drift slightly with higher temperature and/or sensor age. This screen is read only. To initiate a sensor recalibration, refer to the recal sensor page.

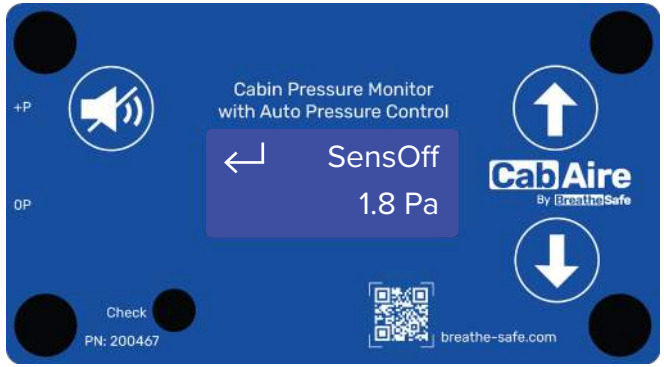


Figure 14. Sensor Offset Read-only Screen

5.2.2 Recal Sensor

The 'Recal Sensor' page allows the operator to recalibrate the pressure sensor if required. The recalibration should occur if the pressure reading has been offset. The I/L will switch off the motor and recalibrate the sensor for about 10 seconds; the display will show the following screen until the calibration is finished.

Figure 15. Recalibrate Pressure Sensor Screen

5.2.3 Reset Defaults

The 'Reset Defaults" page allows a reset of all configuration items on the CabAire Lite controller. Settings will be reverted to their factory settings. This initiates a sensor recalibration immediately.

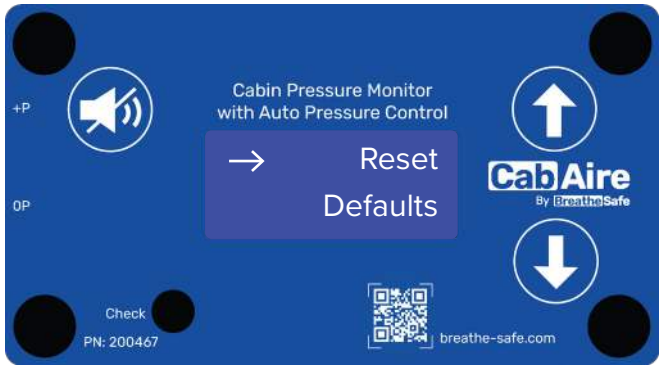


Figure 16. Reset Defaults Screen

5.2.4 Save and Back

Changed parameters will only be changed once the ‘save and back’ option has been selected.

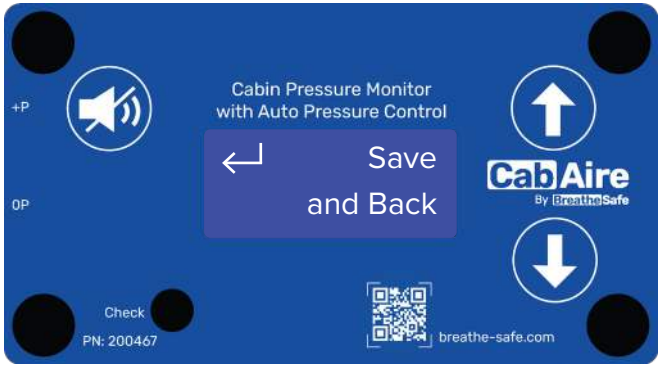


Figure 17. Save Configuration Screen

5.2.5 Abort and Back

The ‘abort and back’ option does not save recently configured parameters.

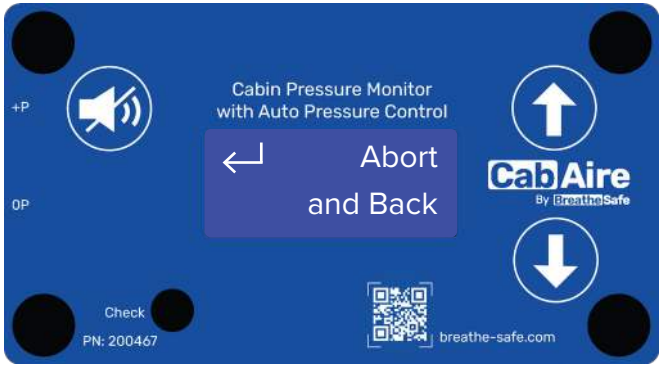
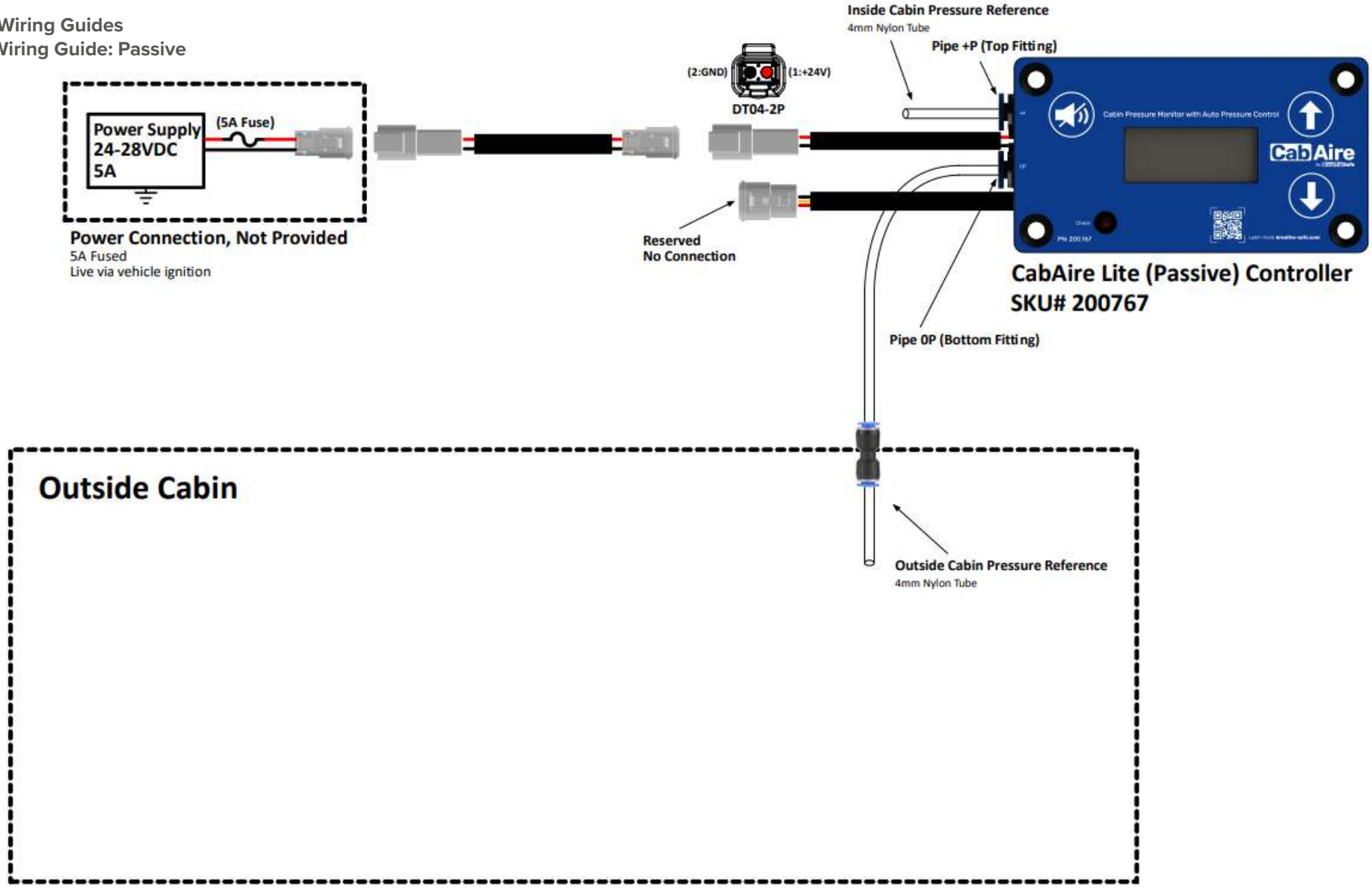


Figure 18. Abort Screen

6.0 Wiring Guides

6.1 Wiring Guide: Passive



6.2 Wiring Guide: Active