

ROOSTER™ **PRESSURE100** *Room Monitor* **User Manual**

**High Performance Air Pressure
Sensor**

with Full-Color Touch Screen Display

Version 1.01

Complete Kit includes:

- o Sensor Display Module
- o Pressure Sensor
- o Power Supply (optional)
- o Door Switch (optional)



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Contents

Product Overview	3
<i>Contents</i>	3
<i>Hard Button Overview</i>	4
<i>Soft Buttons and Home Screen Layout</i>	5
<i>Rear Panel Layout for Advanced Connections</i>	8
Technical Specifications	9
Connection and Wiring Information	9
<i>Door Switch Input</i>	9
<i>Unoccupied Room Input</i>	10
<i>Alarm Output</i>	10
Mechanical Information	11
<i>Display Module Mechanical Drawing</i>	11
<i>Pressure Sensor Mechanical Drawing</i>	11
<i>Template for Pressure Sensor Mounting</i>	12
<i>External Face Plate Mechanical Drawing</i>	12
Installation	13
<i>Installation Overview</i>	13
<i>Back Plate Mounting - Display Module</i>	14
<i>Installation Example</i>	14
Mounting Preparations	14
Pressure Sensor Connection and Mounting	15
Display Module Connections and Mounting	16
External Face Plate Connection and Mounting	17
Boot Up Procedure	18
Access Tier Privileges: USER, EH&S & CERTIFIER	19
Set/Change Passwords	19
Calibration	19
Thresholds	20
<i>Occupied and Unoccupied Thresholds</i>	20
<i>Adjust Occupied and Unoccupied Thresholds</i>	20
Alarms/Sound	21
<i>Alarm Controls</i>	21
Unoccupied Room Mode	21
Door Alarm Mute	22
Door Mute Delay	22
Latch Alarm	22
Alarm Ringback	22
Alarm Delay	23
Startup Delay	23
Brightness	24
Pressure Resolution	24
I/O Polarity	25
Data Logging	25
Troubleshooting	26
<i>Alarm Troubleshooting</i>	26
<i>General Troubleshooting</i>	26
USB Field Upgrade Procedure	27
Factory Reset Procedure	27
GUI Map	28
Warranty	29

Product Overview

Congratulations on your purchase of the Rooster™ Pressure100, the next-generation air pressure sensor and alarm for critical pharmaceutical and clean room applications where constant positive or negative air pressure differential is required to be viewed, monitored, alarmed, and even communicated to building and laboratory systems.

Degree Controls Inc. designed the Rooster™ Pressure100 to meet the demand for high performance room pressure sensing applications with an intuitive, glove-friendly, color touchscreen interface and best-in-class pressure and humidity sensing module. The instrumentation class sensors inside require no ongoing factory recalibrations, merely an annual recertification process. The Rooster™ Pressure100 comes calibrated and with a certificate of conformance.

The Rooster™ Pressure100 uses a bright, backlit display and contains many simple-to-use features and configuration capabilities built into an intuitive user interface that requires little to no training to learn. Password-protected access tiers ensure greater safety in a range of environments by limiting access to critical functions and system settings for specific, authorized users.

The Rooster™ Pressure100 is the first pressure sensor with USB-based plug and play firmware upgrades to keep your product current and operating to the latest standards. Register with us to receive these product updates at <http://www.degrec.com/en/support/register.html>.

This manual will guide you through installation, firmware upgrades, alarm control settings, and the full range of features for the Rooster™ Pressure100.

Contents

The Rooster™ Pressure100 consists of:

- (1) Display Module
- (1) Pressure Module, comprised of:
 - Pressure Sensor with connected Sensor Cable, length is 2m [6.6']
 - External Face Plate
 - Flexible Tubing, length is 610 mm [2']
- (1) Power Cable
- (4) Sheetrock Anchors
- (4) Screws-Phillips Flat Head #6x1" Wood Screw (*For mounting Pressure Sensor & External Face Plate*)

as well as your power selection and door switch kit option. Available Power Selections are:

- Customer Supplied Power with Semi-Flush Mount Back Plate
- US Power Supply with Wall Mount Back Plate
- European Power Supply with Wall Mount Back Plate

Specify "Included" at time of order to have the optional Door Switch Kit included.



Figure 1 Rooster™ Pressure100 Contents

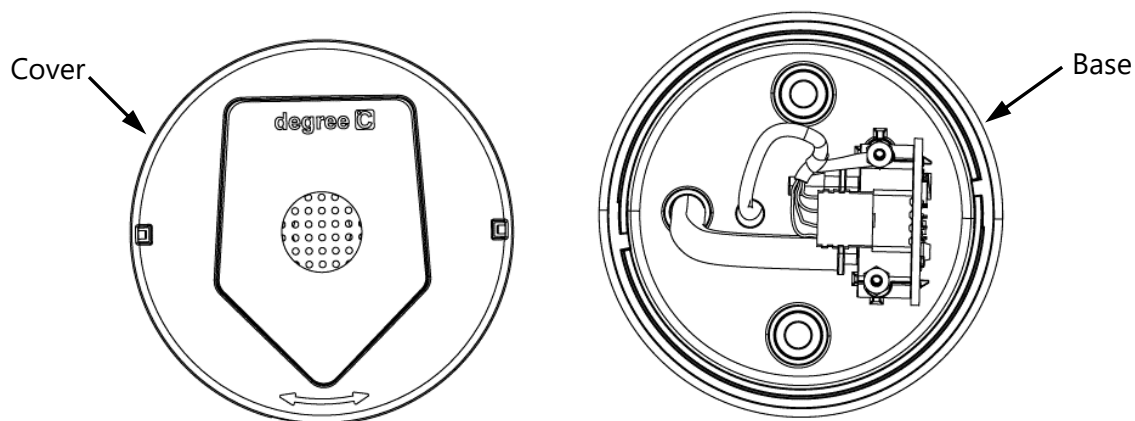


Figure 2 Pressure Module, Cover Removed

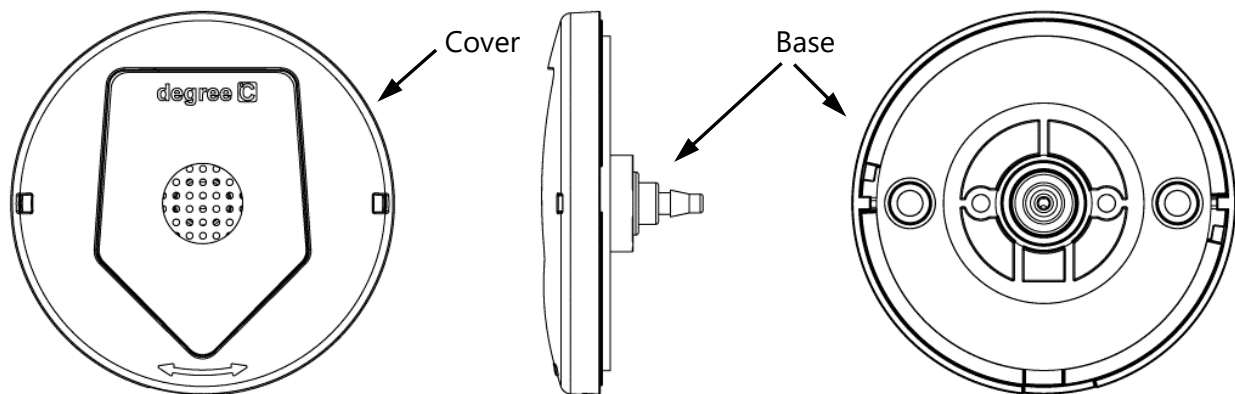
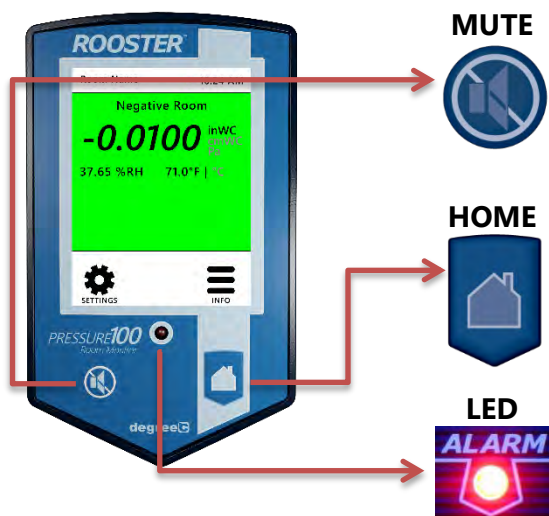


Figure 3 External Face Plate with Removable Cover

Hard Button Overview



MUTE



Mutes the audible alarm, any time it is sounding. When the alarm has been muted, a mute icon [] will appear in the top center portion of the home screen. Just like a snooze button, the audible alarm will re-sound, when the configurable time-out is reached if ringback has been enabled.

HOME



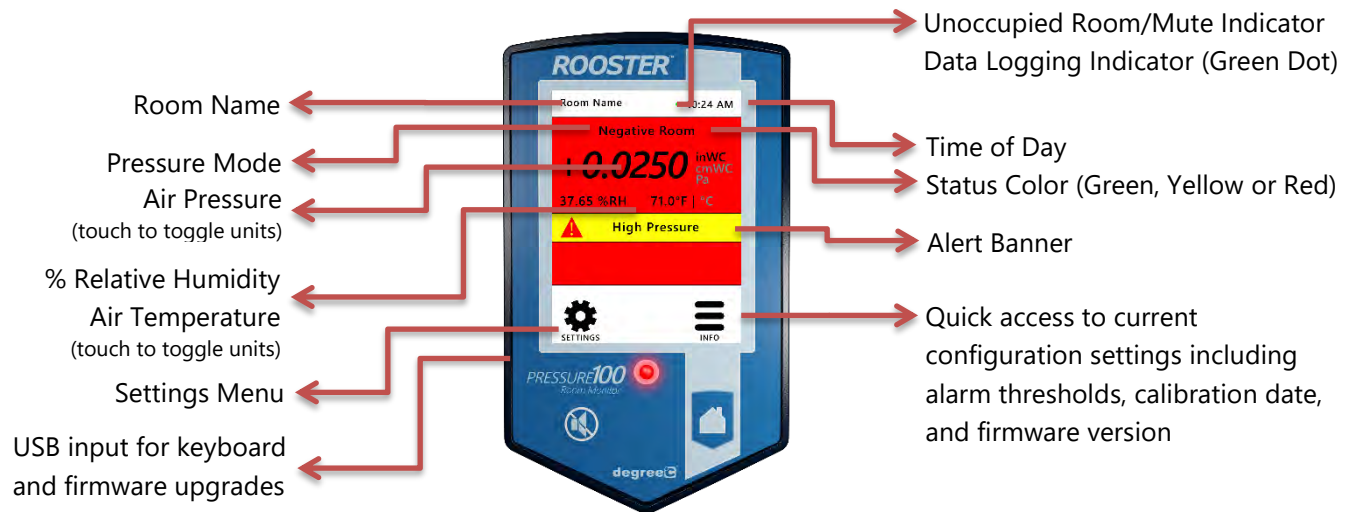
Returns the user to the home screen when pushed from any menu or info screen. * *Cannot be used to abort some critical system functions.* *

LED



This red LED will flash while a pressure alarm is active. If the room is in an Unoccupied state, the alarm will be muted by default and the LED will flash during a pressure alarm. In all other cases, this LED will remain off.

Soft Buttons and Home Screen Layout



PRESSURE MODE

The pressure mode is displayed above the pressure reading on the home screen, Negative Room, Positive Room.

>Home

TOGGLE AIR PRESSURE UNIT TYPE

Instantly toggle displayed pressure units between Pascals, inches of water, or centimeters of water by pressing on the displayed room differential pressure reading on the home screen.

>Home

TOGGLE TEMPERATURE UNIT TYPE

Instantly toggle displayed temperature units from Fahrenheit to Celsius or vice versa by pressing on the displayed temperature reading on the home screen.

>Home

ON-SCREEN ALERT BANNERS

A yellow banner will appear beneath on-screen pressure readings to alert users of the following scenarios: 1) Uncalibrated Sensor 2) Sensor Module Failure 3) Low/High Room Pressure. Alarm latched status will also display here.

>Home

USB INTERFACE FOR FIELD UPGRADE PROCEDURE

Firmware upgrades can be installed on-site via USB flash drive.

CUSTOMIZABLE BOOT SCREEN

Our engineers can configure your unit with a custom image or logo file (240x320) in portable network graphic (.png) format to display on bootup. Contact our sales team to get started:

sales@degrec.com

ALARM VOLUME

Users can toggle through low, medium or high alarm volumes. If logged in as an EH&S or Certifier, a global minimum volume threshold can be set. This restricts a standard user from setting an alarm volume too low for a facility's safety requirements.

Home> Settings>System>Alarms/Sound>Device Volume

KEYPAD SOUNDS

Users may toggle keypad beep sounds on and off.

Home> Settings>System>Alarms/Sound>Key Beep

ALARM LATCHING

EH&S or Certifier users can set up latched alarms to indicate that a low or high pressure state has occurred in the "Alarms/Sound

Alarm Controls" menu. Optionally, a password can be required to clear any latched alarms.

Users must then enter EH&S or Certifier passcode to unlatch an alarm.

Home> Settings>System>Alarms/Sound>Alarm Controls>Latch Alarm

ALARM RINGBACK

EH&S or Certifier users can configure the amount of snooze time before an alarm rings again after being muted in the "Alarms/Sound Alarm Controls" menu.

Home>Settings>System>Alarms/Sound>Alarm Controls>Alarm Delay Settings>Ringback

BACKLIGHT DIMMING

Users can toggle the brightness setting, as well as the brightness of the screen when set to "dim". A "time before dim" option is available that sets the screen to dim after a predetermined amount of time has expired.

Home> Settings>System>Brightness

PRESSURE RESOLUTION

EH&S or Certifier users can select the resolution of air pressure units displayed in Pascals, inches of water, or centimeters of water.

Home>Settings>System>Pressure Settings>Pressure Resolution

CLOCK

Users logged in as EH&S or Certifier can set time, date and change clock to display in 12 or 24 hour format.

Home> Settings>System>Time>Date and Time Settings

ADJUSTABLE I/O POLARITY

Users may connect a variety of dry contact relay devices, like wall switches or door sensors, to indicate whether the room has been accessed in either an Occupied or Unoccupied state. The way the Rooster Pressure100 interprets the trigger signals from these devices can be adjusted by changing the I/O polarities from Normally Open or Normally Closed states.

Home> Settings>System>Advanced>I/O Polarity

CUSTOM ROOM NAME

Users logged in as EH&S can change the default "Room Name" to a custom name. This is useful for naming the sensor in larger distributed systems, or to denote a company asset number. The user may set a 12-digit numeric room name with the provided on-screen

keypad OR plug in a USB interface keyboard to enter a 12 character alphanumeric tag.

Home> Settings>System>Advanced>Configure Room Name

PASSWORD-PROTECTED ACCESS TIERS: CERTIFIER & EH&S

Password protected access tiers enable advanced configuration options and features.

Home> Settings>System>Advanced>Change Passwords

UNOCCUPIED ROOM THRESHOLD

EH&S or Certifier users can configure two convenient modes of operation, Occupied or Unoccupied, each with their own threshold triggers. This is especially useful when users desire to mute alarms and/or adjust thresholds when the room is unoccupied, typically for night service conditions. For more information on setting thresholds, see thresholds section of manual.

Home> Settings>Thresholds

DATA LOGGING

The Rooster™ Pressure100 features a data logging feature with the ability to export to .csv file via USB drive. When data logging is active, a green dot will appear at the top of the screen next to the clock. The default polling rate is 5 seconds, but this can be adjusted from 1 second up to 1 minute.

Home>Settings>System>Data Logging

Rear Panel Layout for Advanced Connections

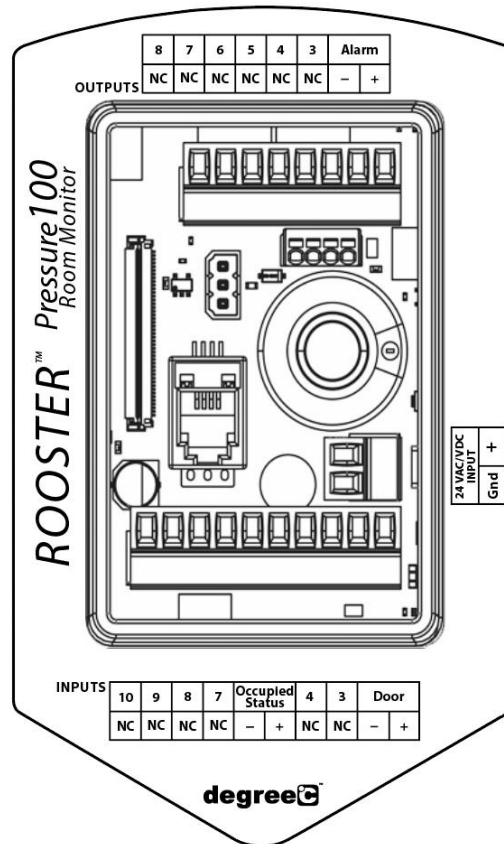


Figure 4 Connections

Connection Description	Connector Type	Mating Connector
Power Entry	2-pin, polarized, Phoenix Contact	Included with display module.
RS485	4-pin, push-in spring connection	Included as part of pressure sensor. For replacement, Part Number: Phoenix Contact 1778573
Output Connection	8-pin, polarized, Phoenix Contact *2-position connectors will fit	Not included. 8-position orderable Part Number: Phoenix Contact 1803633 2-position orderable Part Number: Phoenix Contact 1803578
Input Connection	10-pin, polarized, Phoenix Contact *2-position connectors will fit	Not included. 10-position orderable Part Number: Phoenix Contact 1803659 2-position orderable Part Number: Phoenix Contact 1803578
RJ-11 Connection	RJ-11	Not used.

Table 1 Connections - Rear Panel of Display Module

The Door Switch Kit Option is specified at time of order.

Technical Specifications

Alarm Module Size	3.2" x 5.3" x 1.3" (82mm x 135mm x 32mm)
LCD Display Area	2.25" x 2.73" (57mm x 69mm)
Pressure Sensor Size	3.0" x 1.8" (77mm x 46mm)
External Face Plate Size	3.0" x 1.2" (77mm x 31mm)
Differential Pressure Sensing Range	-125 to +125 Pa (-0.5 to +0.5 in H ₂ O)
Air Pressure Accuracy	3% of reading + 0.08 Pa (0.00032 in H ₂ O)
Air Pressure Repeatability	0.5% of reading + 0.04 Pa (0.00016 in H ₂ O)
Response Time	< 1 second
Supply Voltage – Display Module	24 VAC/VDC
Door Switch Input	Dry Contact Closure
Unoccupied Room Input	Dry Contact Closure (0V)
Relay Output	Qty. (1), 1A, 24VDC [Pin 1-2 Differential Pressure Alarm]
Optional Power Adapter	90-250V
Red LED indicator	160° viewing angle
Alarm Volume	0 - 85dB (adjustable)
Operating Relative Humidity	(non-condensing) 5 - 95%
Humidity Sensing Range	0-100% RH; accuracy ±2% at 0-80% RH, ±3% at 100% RH
Operating Temperature	40°F - 140°F (5°C - 60°C)
Storage temperature	-40°F - 185°F (-40°C - 85°C)
Product Weight	1 lb (454g)
Total Packaged Weight	1.5 lbs (680g)
Compliance Standards	RoHS

Connection and Wiring Information

Degree Controls recommends 18-24 AWG wire be used for all wiring connections to the input and output connectors. The Power Entry connection has been prepared for you, and merely needs to be pulled through the electrical box knock-out and connected to the Power Entry connection of the display module.

The supplied sensor cable is terminated both ends and ships connected to the pressure sensor. It needs to be pulled through the electrical box knock-out and connected to the RS485 connection of the display module.

Note: This manual describes a typical installation where the display module mounts semi-flush to a standard electrical box. Other installation scenarios are possible.

The I/O connectors present on the Rooster™ Pressure100 have some pins deactivated as these are reserved for future Rooster™ models designed for more advanced control functionality.

Leave these pins non-connected.

Door Switch Input

This door switch input is a digital input, dry contact, and the default I/O polarity of this door switch input is normally closed. The design intent is that the door switch input be used in combination with an external sensor to detect whether a door is open or closed:

Switch open means door open, and
switch closed means door closed.

Door switch input logic may be reversed using the I/O Polarity menu on the Rooster™ Pressure100 to achieve a different result.

DegreeC can provide you with an optional Door Switch Kit comprised of (1) dry contact sensor with screw terminals and (1) 10-position connector which mates to the input connection of the display module. For this dry contact sensor, the cable length from door switch to display module can be 30m [100'] or more. If multiple door switches are being used, they should be wired in series.

Note: Specify "Included" at time of order to have the optional Door Switch Kit included.

Unoccupied Room Input

The Rooster™ Pressure100 provides an additional digital input for room status, and default I/O polarity of the unoccupied room input is normally open. The purpose of the Unoccupied room input is to allow the user to use two different sets of alarm thresholds based on whether the room is in an occupied or unoccupied state. Unoccupied room input logic may also be reversed using the I/O Polarity menu on the Rooster™ Pressure100.

Once the wiring connections have been made, the user can assert the unoccupied room signal. Three room profile alarm states can be selected:

Off (default): In this state, when the unoccupied room signal is asserted, the Pressure100 will ignore it.

Muted: In this state, when the unoccupied room signal is asserted, the Pressure100 triggers a muted alarm when pressure moves beyond Unoccupied Thresholds. Unoccupied Thresholds are independently set.

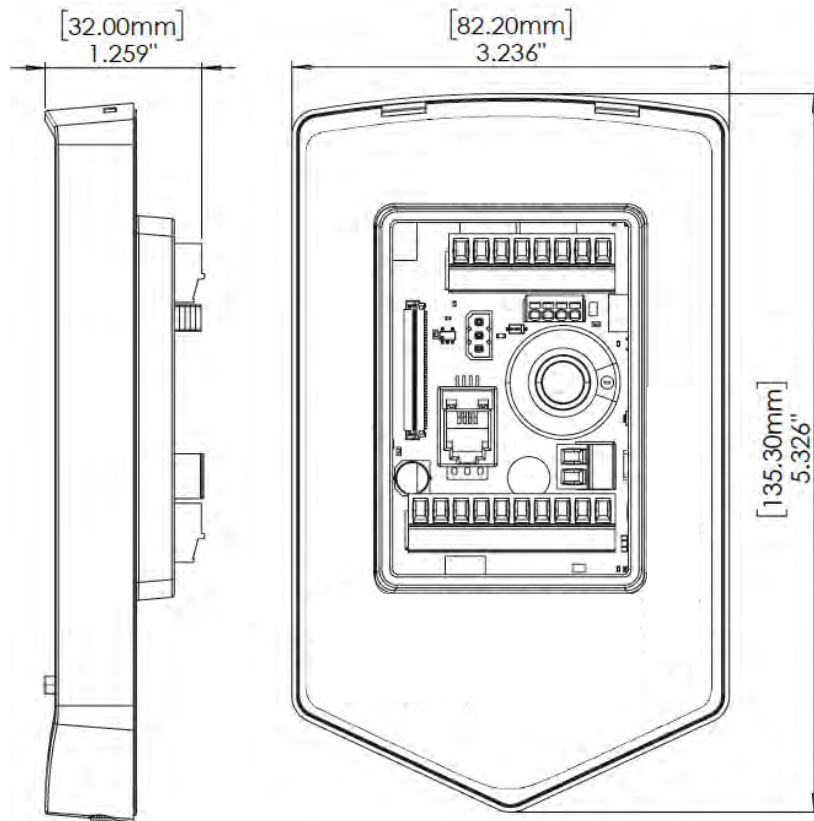
Audible: In this state, when the unoccupied room signal is asserted, the Pressure100 will audibly alarm when pressure moves beyond Unoccupied Thresholds.

Alarm Output

The Rooster™ Pressure100 alarms for differential pressure. The Alarm output is a relay output and available on the output connection of the display module. I/O polarity logic of this output may be reversed as well. See the I/O Polarity menu of the Rooster™ Pressure100.

Mechanical Information

Display Module Mechanical Drawing



Rear Panel of Display Module

Figure 5 Display Module Mechanical Drawing

Pressure Sensor Mechanical Drawing

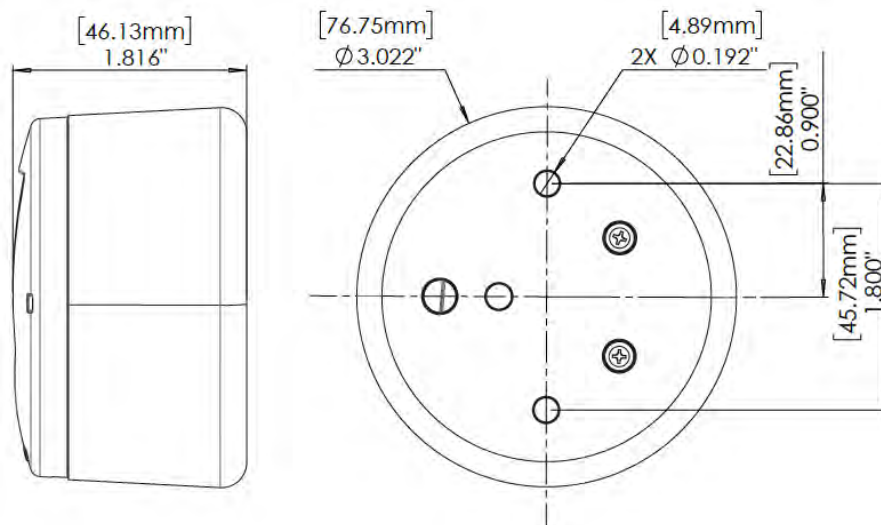


Figure 6 Pressure Sensor Dimensions

Template for Pressure Sensor Mounting

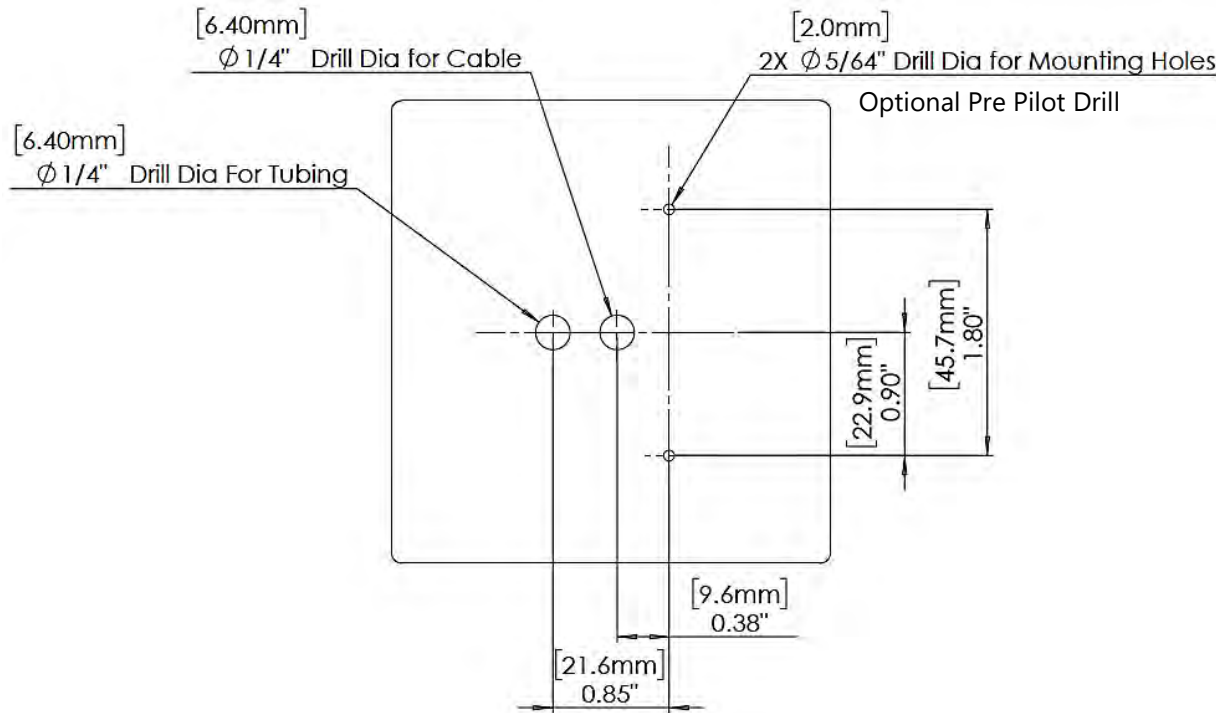


Figure 7 Pressure Sensor Mounting Template Dimensions

External Face Plate Mechanical Drawing

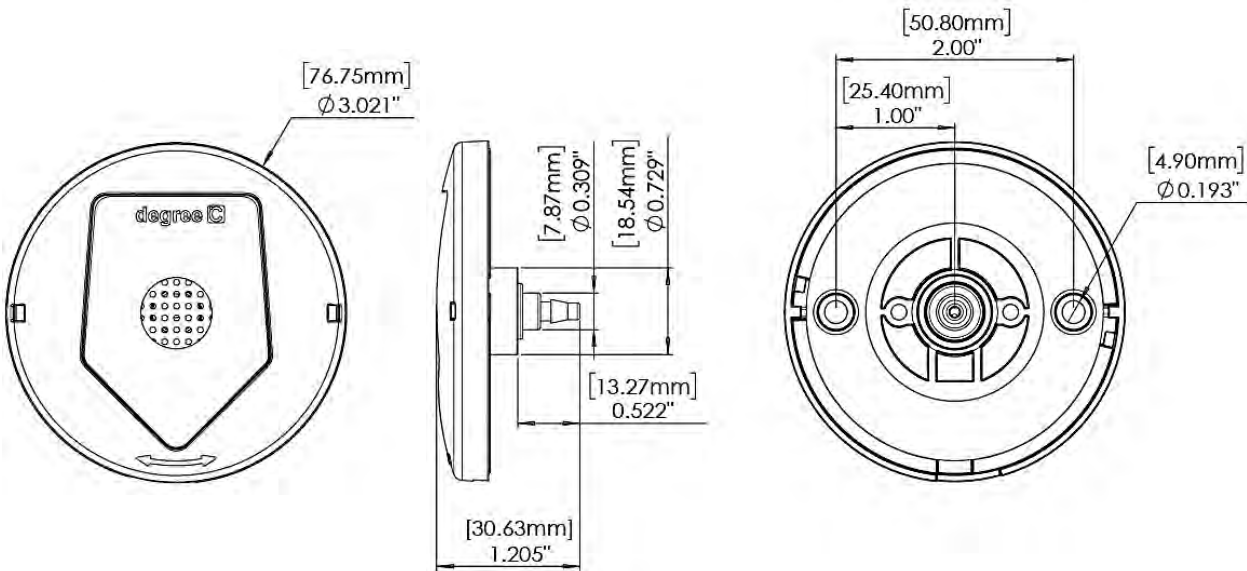


Figure 8 External Face Plate Dimensions

Installation

Installation Overview

Installation of the Rooster™ Pressure100 involves selecting and preparing an appropriate location, wiring and connecting the unit, and then mounting the unit to the wall securely.

Notes:

- Typically, the Rooster™ Pressure100 display module is mounted near an access door, at eye level, and in the controlled room, with the pressure sensor mounted above it.
 - If you choose to mount the display panel in the reference space rather than the controlled space, or choose some other mounting arrangement, the Rooster™ Pressure100 will still work.
- Customer supplied power with *Semi-Flush* mount back plate **or** included power supply with *Wall Mount* back plate is specified at time of order. See Back Plate Mounting section for more information.
- It is recommended that the pressure module be located above the display module, and within the same stud, for efficient wiring.
- The pressure sensor should be mounted in an area free from drafts and turbulence.
- The external face plate must be mounted opposite the pressure sensor in an adjacent room or space.
- You will need to connect the supplied flexible tubing between the pressure sensor and the external face plate.
- You will need to connect power, sensor and optional door switch & unoccupied room input wires to the display module.
- Be sure to leave enough room so that the display module's USB port can be accessed.
- Only qualified Facilities personnel should install the Rooster™ Pressure100.

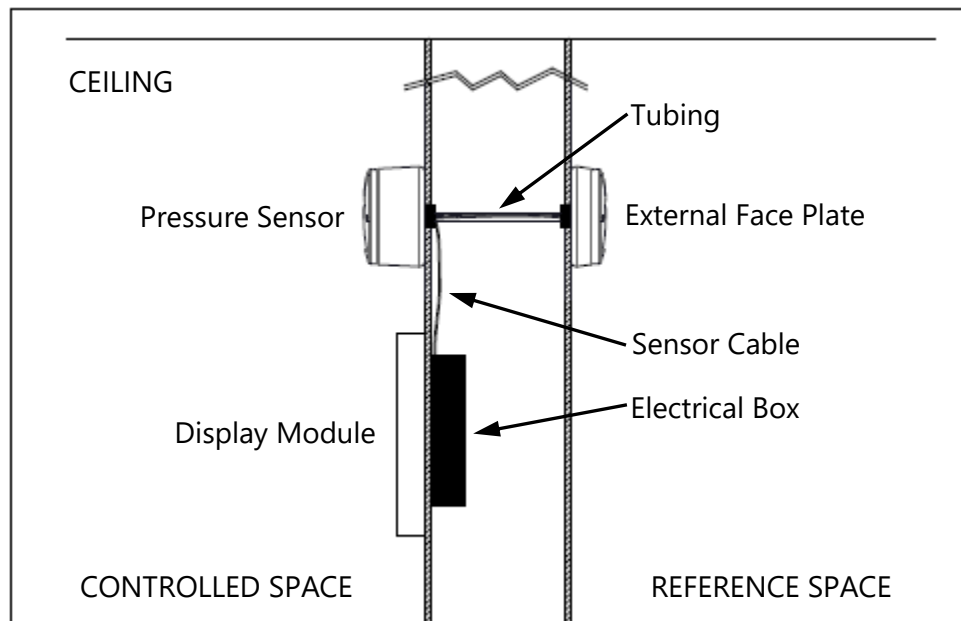


Figure 9 Typical Installation for Rooster™ Pressure100

The Rooster Pressure100 is a pre-calibrated device, with stated accuracy performance. It does not require any special certification process to function properly. However, this should not imply that industry standard annual laboratory certification processes should not be adhered to. This should be conducted at the end user discretion.

Back Plate Mounting - Display Module

The display module can be mounted using one of two back plate options:

Semi-Flush: The back plate sits partially inside a standard electrical box and is secured by self-tapping screws. There is open back access to accept building power.

Wall Mount: The back plate sits directly on a wall or surface and is secured by self-tapping screws or industrial Velcro. Sensor and control wiring access is at the back, while access for power in from the wall mount power supply is at the bottom.

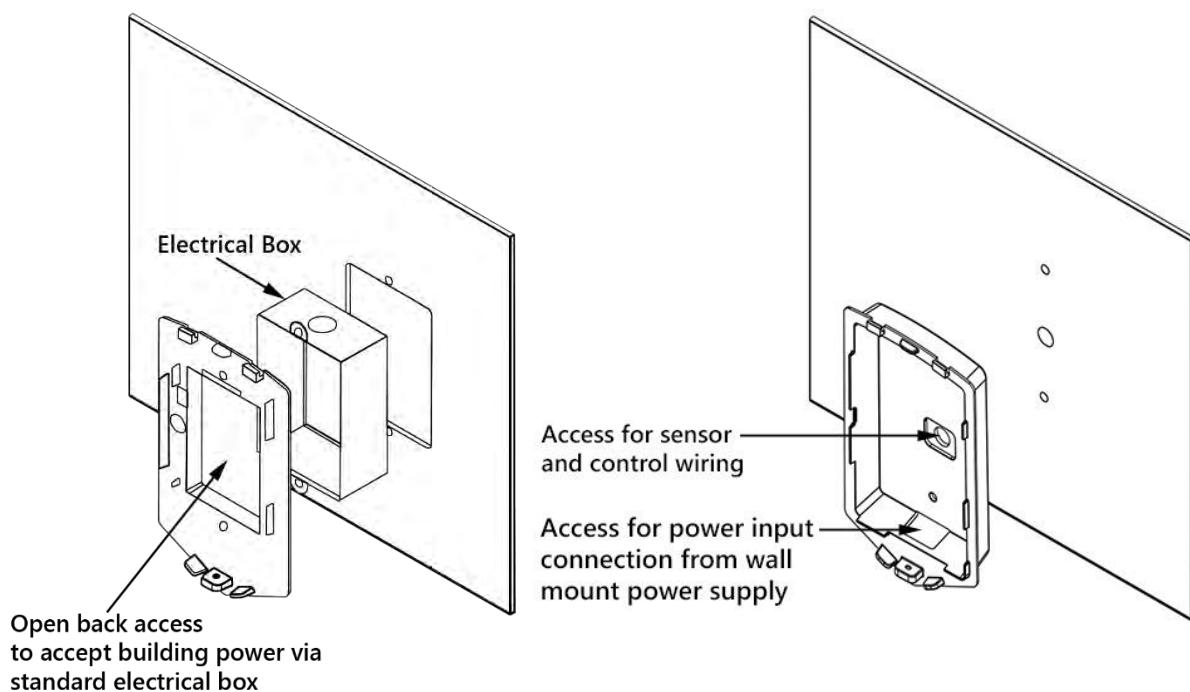


Figure 10 Semi-Flush Mount (left), Wall Mount (right) – for Display Module

Installation Example

The installation steps below represent a typical drywall installation with customer supplied power and semi-flush mount back plate for display module.

Mounting Preparations

1. Determine mounting locations for the Rooster™ Pressure100 display module and pressure sensor.

Display Module Mounting Preparation

2. Mark the wall for the electrical box where the Rooster™ Pressure100 display module will be located, and make the cutout.

- a. The display module is designed to mount semi-flush where the back plate sits partially inside a standard electrical box. Using this method, the display module protrudes 15mm [0.6"] from the wall.

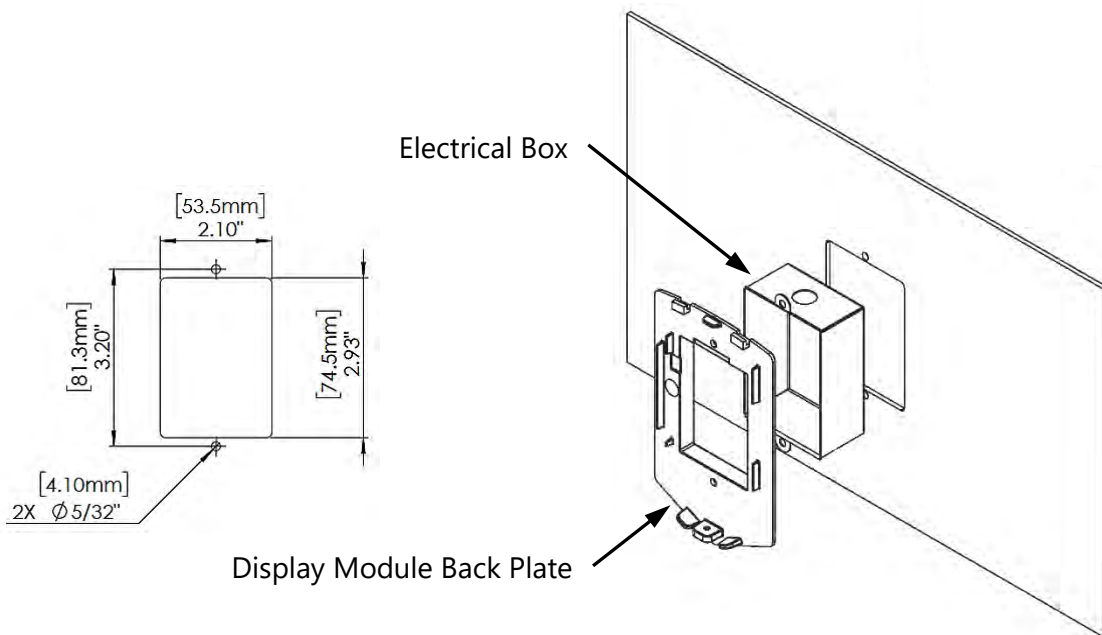


Figure 11 Semi-Flush Back Plate Mounting

Pressure Sensor Mounting Preparation

3. Using the template, mark the wall for pressure sensor mounting. Take care to orient the template right side up such that mounting holes are vertical.
4. Use a 1/4" drill bit to drill holes for Tubing and Cable.
5. Install (2) drywall anchors.

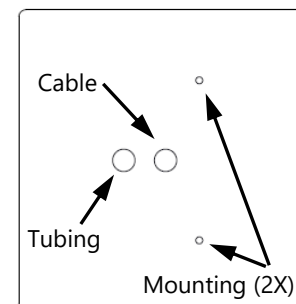


Figure 12 Tubing & Cable Holes

External Face Plate Mounting Preparation

6. Use a 3/4" drill bit to drill the center hole.
7. Drop the base of the external face plate (boss side) in the hole, and mark the wall for face plate mounting. Mounting holes should be horizontal.
8. Remove base from wall, and install (2) drywall anchors.

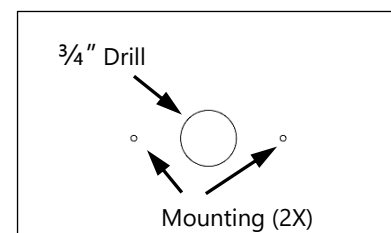


Figure 13 Drop In Boss Side of Base to Locate Mounting Holes

Pressure Sensor Connection and Mounting

The pressure module is comprised of a pressure sensor with connected sensor cable, external face plate, and flexible tubing to connect the pressure sensor to the external face plate. The pressure sensor and external plate are mounted on opposite sides of a wall which separates the controlled environment from the outside, reference space. Inside the sensor are two pitons, one of which is indicated with a red dot.

The pressure sensor is typically mounted on the side of the wall with the display module.

9. Feed the flexible tubing through the pressure sensor base.
10. Connect the tubing to the appropriate piton on the pressure sensor. Be sure to leave enough bend radius to ensure that the tubing will not kink, disrupting airflow.

Which piton you connect the tubing to depends on the environment in which the module is placed:

- If the external face plate is in a neutral pressure environment and the display module and pressure sensor are in a pressurized environment (positive or negative), connect the tubing to the piton **not** marked with the red dot.
 - If the display module and pressure sensor are in a neutral pressure environment and the external face plate is inside a pressurized environment (positive or negative), connect the tubing to the piton marked with the red dot.
11. Feed the tubing and sensor cable from the pressure sensor through the wall to the external face plate and display module mounting locations respectively.
 12. Run a bead of laboratory grade caulking, and fasten the pressure sensor securely to the wall using the included screws.
 13. Install cover: Align tabs, push cover onto base, and turn clockwise to lock in place.

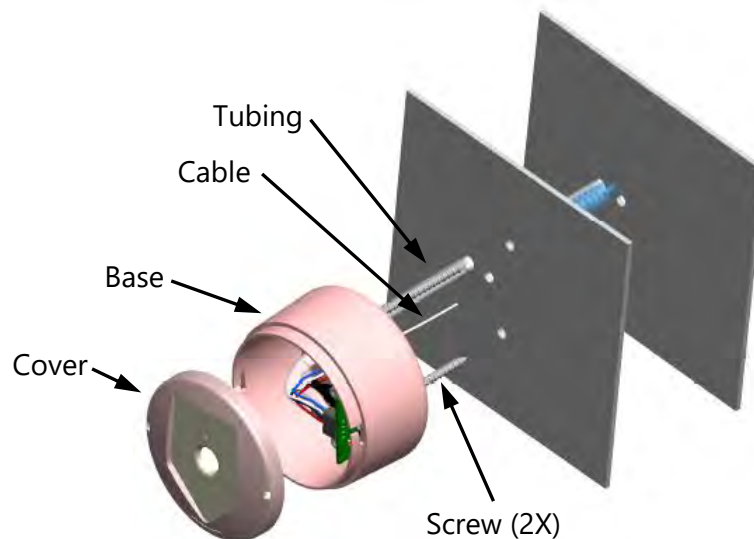


Figure 14 Pressure Sensor Mounting

Display Module Connections and Mounting

14. Have a qualified electrician run 24 VAC/VDC to the prepared cutout, and connect to the supplied power cable.
15. Punch out the appropriate knock-outs on the electrical box that will be secured to drywall, route power and the sensor cable into the box, and install box to wall.
Note: Optional building management system or laboratory control system wiring should be completed at this time.

16. Secure the display module back plate using two screws (Phillips Flat Head 6-32x1" Machine Screw suggested)

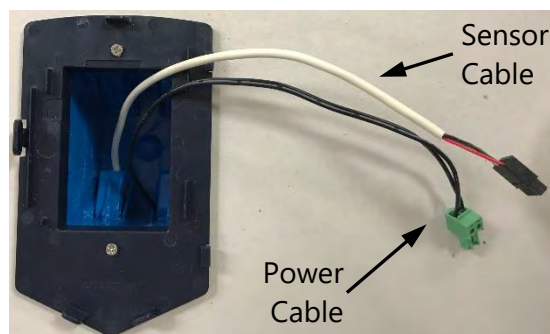


Figure 15 Back Plate Secured to Electrical Box

17. Connect power and sensor to the display module. Make any other optional connections to the display module.
18. Align right side of display module with tabs on back plate and snap display module in place.



Figure 16 Power & Sensor Connection

External Face Plate Connection and Mounting

19. Connect the flexible tubing from the pressure sensor to the base of the external face plate. You may trim the tubing to length, but be sure to leave enough slack in the tubing to prevent any kinks that may disrupt airflow.



Figure 17 Tubing Connection

20. Run a bead of laboratory grade caulking, and fasten the face plate to the wall using the included screws.
21. Install cover: Align tabs, push cover onto base, and turn clockwise to lock in place.

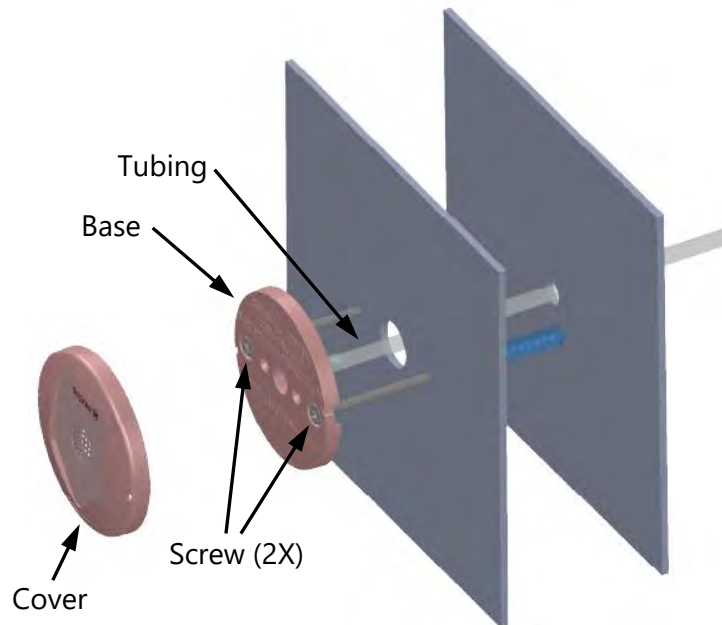


Figure 18 External Face Plate Mounting

Boot Up Procedure

The Rooster™ Pressure100 does not have a power-on switch and will become energized as soon as you apply power to it. The Rooster™ Pressure100 boots to the screen depicted on the right, with a slot for a custom logo. The boot screen is designed to support a custom image or logo file in portable network graphic (.png) format with (240x320) dimensions. This feature must be requested and is not setup for manual configuration.

Once the start procedure has completed, the Home screen will appear with two system buttons and you will need to setup password-protected access tiers for advanced system functions. This is explained in the “Access Tier Privileges” section below.



You can reboot your Rooster™ Pressure100 at any time by pushing the hard “Home” and “Mute” Buttons simultaneously until the Boot Screen reappears.

ACCESS TIER PRIVILEGES: USER, EH&S & CERTIFIER

Users have the ability to customize their pressure areas within a defined set of options for each authorization level. There are three levels of access to the Rooster™: User, EH&S/Facility Manager and Certifier. These are managed by logging in with a 4-digit numerical passcode. The User access level does not require a passcode.

Manufacturer default passcodes:

EH&S = **6823**

Certifier = **1459**

Access Privileges Defined

Function	Passcode Required
Adjust Alarm Volume	None
Alarm Latching Settings	EH&S, Certifier
Alarm Ringback Settings	EH&S, Certifier
Mute Live Alarm	None
Set Room Name	EH&S
Set Minimum Alarm Volume Threshold	EH&S, Certifier
Set Time / Clock Format	EH&S, Certifier
Toggle between Fahrenheit or Centigrade Temperature Units on Home Screen	None
Toggle between Metric or Imperial Pressure Units on Home Screen	None
Toggle ON/OFF Keypad Sounds	None
Calibrate	Certifier
Unlatch Alarm	EH&S
Data Logging	EH&S, Certifier

SET/CHANGE PASSWORDS

To change or set a password, follow this GUI path to trigger the password change sequence:

Home>Settings>System>Advanced>Change Passwords

You will have to enter an EH&S or Certifier passcode to access the “Advanced” menu. To change either the EH&S or Certifier passcode, you must first re-enter the old passcode. Please note that if you are authorized to perform both EH&S and Certifier functions, you may set an identical passcode for both access tiers to make logging in and accessing key functions easier.

Calibration

All Rooster™ Pressure100s are pre-calibrated before leaving the factory, however we recommend a final recalibration when installation is complete. Your local certifier should be recalibrating the unit on an annual basis, or according to your laboratory directives. The calibration menu can be accessed here:

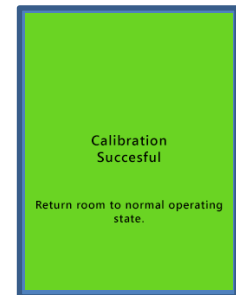
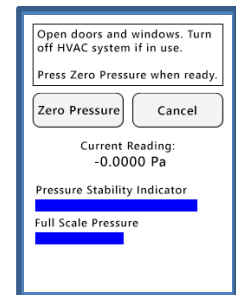
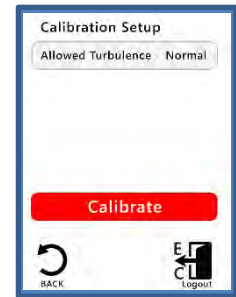
Home>Settings>Calibration



Under "Calibration Info," you can view the date the unit was last calibrated successfully.

To calibrate the unit:

- 1) Press "Calibrate." The Calibration Setup screen will display.
- 2) On the Calibration Setup screen, you will have the option to select the amount of allowed turbulence, either normal or high. Select the high setting if the Rooster™ Pressure100 sensor is in a turbulent environment, e.g. under a fan. Otherwise, choose normal. Press the red "Calibrate" button to advance to the next screen.
- 3) The next screen instructs you to open doors and windows and turn off the HVAC system if in use. This is necessary to equalize the pressure between the two environments and calibrate successfully. Once the two rooms have fully equalized, press "Zero Pressure" or press "Cancel" to return to the previous screen.
- 4) Once calibration has begun, a progress indicator will appear at the bottom of the screen. When it is full, the calibration process is complete. A screen will display indicating whether the calibration was successful or unsuccessful.



Thresholds

Occupied and Unoccupied Thresholds

The Rooster™ Pressure100 features the ability to switch between two distinct sets of alarm threshold values based on whether the room is in an occupied or unoccupied state.

Home> Settings>Thresholds

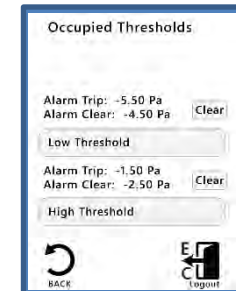
Adjust Occupied and Unoccupied Thresholds

The procedure for adjusting Occupied and Unoccupied Thresholds is the same. If you are experiencing issues, see the Troubleshooting section.

To set your alarm threshold, follow the menu path below:

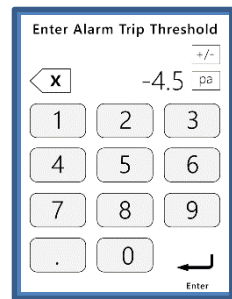
Home> Settings>Thresholds>Adjust Occupied Thresholds/Adjust Unoccupied Thresholds

- 1) To set alarm thresholds, you will first have to define an alarm trip point and an alarm clear point for both the high and low thresholds. The **alarm trip point** is the air pressure value that will trigger an alarm. The **alarm clear point** is the air pressure value that will clear an alarm state. For the high threshold, the alarm will trigger when pressure goes above the set alarm trip point. For the low threshold, the alarm will trigger when the pressure goes below the set alarm trip point. Once you have defined these values, the alarm will trip and clear based on your settings. You may return to this menu at any time to



adjust these values as needed. You can clear both the occupied and unoccupied thresholds by pressing the “Clear” button.

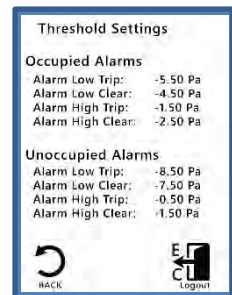
- 2) By default, no value is set for the unoccupied mode of operation. Depending on your application or setup, you may not need to have an active alarm during unoccupied mode. You may choose, however, to set specific high and low alarm trip and clear points for unoccupied mode. You will first have to define an alarm trip point and an alarm clear point for each threshold just as you did for occupied mode. Once thresholds are assigned for unoccupied mode, you may choose to set your alarm as “off,” “audible,” or “muted” in the alarm controls menu below:



Home> Settings>System>Alarms/Sound>Alarm Controls>Unoccupied Alarms

- 3) To quickly glance at threshold settings, follow this menu path below:

Home> Settings>Thresholds>Threshold Info



Alarms/Sound

Alarm Controls

The Rooster™ Pressure100 offers an array of customization options for alarm behaviors. To provide our users with full customization of the alarm behaviors that are best suited for their facilities and unique conditions, the Rooster™ Pressure100 allows authorized users (Certifier & EH&S) to set latching, ringback, occupied & unoccupied room thresholds, door & alarm delays, and pressure resolution preferences.

Unoccupied Room Mode

The Rooster™ Pressure100 supports occupied and unoccupied room modes for environmental control and greater HVAC system integration in building automation systems.

This crescent moon icon [☾] will appear on the top portion of the home screen when Unoccupied Room mode is active

Home> Settings>System>Alarms/Sound>Alarm Controls>Unoccupied Alarms

Users can toggle between three modes of Unoccupied Alarm operation:

Unoccupied Room Alarm Modes	Definition
Off (default)	In this state, when the unoccupied room signal is asserted, the Pressure100 will ignore it.
Muted	In this state, when the unoccupied room signal is asserted, the Pressure100 triggers a muted alarm when pressure moves beyond Unoccupied Thresholds.
Audible	In this state, when the unoccupied room signal is asserted, the Pressure100 triggers a muted alarm when pressure moves beyond Unoccupied Thresholds.

Note that users can optionally reverse the input relay trigger behavior by adjusting settings here:

Home> Settings>System>Advanced>I/O Polarity

Door Alarm Mute

The Rooster™ Pressure100 provides the user with the ability to temporarily mute alarms for low or high pressure when the door is open. If Door Alarm Mute is "On" to block alarms and the door switch indicates door open, alarms due to high or low pressure will be ignored for the duration of the door alarm mute delay. The screen background will however, change to blue indicating that the door is open.

Home> Settings>System>Alarms/Sound>Alarm Controls>Door Alarm Mute

Door Mute Delay

Alarms due to low or high pressure will be ignored for the duration of the Door Mute Delay, if Door Alarm Mute is enabled. The Door Mute Delay can range from 1 second to 120 seconds and is applicable when the door switch indicates door open. The screen will turn blue indicating door open.

Latch Alarm

Alarm latching is a useful feature to indicate that an alarm state was triggered even if the device is no longer in an active alarm state. This could occur, for example, when a user has stepped away from the workstation. When latching is activated "ON", a yellow banner will display beneath the pressure and temperature readings on the home screen to indicate that a low or high pressure event has occurred. If the latch alarm setting is set to "Password" mode, an EH&S passcode must be entered to unlatch this alarm. If the Latch alarm setting is set to "ON", simply tap the banner to disable the alarm. Switching the latch state to "OFF" disables this feature entirely.

Home> Settings>System>Alarms/Sound>Alarm Controls>Latch Alarm

Alarm Ringback

When an active alarm state is muted, ringback is a useful safety feature to remind the user that the muted alarm is still active. Whenever there is an active alarm state, the red LED will flash for the entire duration of the alarm. There are 7 ringback modes available:

Home> Settings>System>Alarms/Sound>Alarm Controls>Alarm Delay Settings>Ringback

Settings	Definition
Off	A muted alarm will ringback audibly after about 1 second if the unit is still in an active alarm state.
10s	A muted alarm will ringback audibly after 10 seconds if the unit is still in an active alarm state. This is the default setting.
30s	A muted alarm will ringback audibly after 30 seconds if the unit is still in an active alarm state.
1min	A muted alarm will ringback audibly after 60 seconds if the unit is still in an active alarm state.

Settings	Definition
5min	A muted alarm will ringback audibly after 5 minutes if the unit is still in an active alarm state.
10min	A muted alarm will ringback audibly after 10 minutes if the unit is still in an active alarm state.
60min	A muted alarm will ringback audibly after 60 minutes if the unit is still in an active alarm state.

Alarm Delay

To prevent false alarms, users can define the amount of time that the Rooster™ Pressure100 must achieve continuous, out-of-bounds pressure readings before an alarm is triggered and continuous acceptable pressure readings before an alarm state is cleared. This is called Alarm Delay.

Alarm Delay	Definition
1s	Alarm is triggered after 1 second of continuous pressure readings outside of alarm thresholds. Alarm is cleared after 1 second of continuous pressure readings within set thresholds. This is the default setting.
2s	Alarm is triggered after 2 seconds of continuous pressure readings outside of alarm thresholds. Alarm is cleared after 2 seconds of continuous pressure readings within set thresholds.
5s	Alarm is triggered after 5 seconds of continuous pressure readings outside of alarm thresholds. Alarm is cleared after 5 seconds of continuous pressure readings within set thresholds.
10s	Alarm is triggered after 10 seconds of continuous pressure readings outside of alarm thresholds. Alarm is cleared after 10 seconds of continuous pressure readings within set thresholds.

Startup Delay

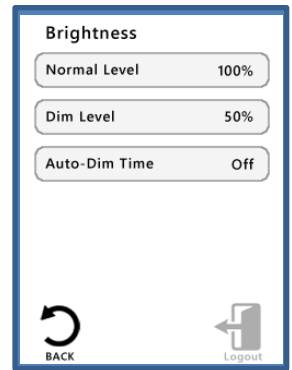
The startup delay prevents an alarm from triggering until the workstation and ventilation systems have fully powered up and are operational.

Alarm Delay	Definition
30s	Alarm is paused for 30 seconds on power up.
1 min	Alarm is paused for 1 minute on power up.
2 min	Alarm is paused for 2 minutes on power up.
5 min	Alarm is paused for 5 minutes on power up.

Brightness

Brightness is adjusted via the left and right arrows. Actual screen brightness adjusts immediately as the setting is changed. The Enter button will save the brightness setting and cancel will leave the setting unchanged. Normal and dim brightness levels are displayed as percentages.

Auto-Dim Time resets a timer each time that the screen is pressed. Once that defined amount of time has expired, the screen will dim. When the screen is pressed again, the screen will return to its original brightness setting. The dimmest setting will not allow the screen to turn completely dark, instead it will remain just bright enough to still be readable. Dim times are [1, 5, 10, 60] minutes, with an "Off" setting, and a default time of 10 minutes initially.



Home> Settings>System>Brightness

Pressure Resolution

For advanced users, displayed pressure units can be configured to display in an alternate resolution.

The default resolution for units is 0.5 pascal, 0.002 inWC, and 0.005 cmWC respectively, however, for users who prefer a more uniform readout, this can be configured up to 5 pascals, 0.01 inWC, and 0.02 cmWC respectively.

Home>Settings>System>Pressure Settings>Pressure Resolution

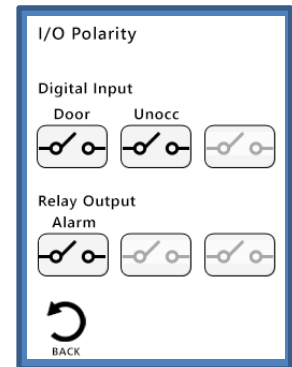
Pressure Resolution	Definition
0.5 pascals	Displayed units in pascals are rounded to 0.5 pascals. This is the default setting.
1 pascals	Displayed units in pascals are rounded to 1 pascal.
5 pascals	Displayed units in pascals are rounded to 5 pascal
0.002 inWC	Displayed units in inWC are rounded to 0.002 inWC. This is the default setting.
0.005 inWC	Displayed units in inWC are rounded to 0.005 inWC.
0.01 inWC	Displayed units in inWC are rounded to 0.01 inWC.
0.005 cmWC	Displayed units in cmWC are rounded to 0.005 cmWC. This is the default setting.
0.01 cmWC	Displayed units in cmWC are rounded to 0.01 cmWC.
0.02 cmWC	Displayed units in cmWC are rounded to 0.02 cmWC.

I/O Polarity

For advanced users, it may be helpful to toggle relay and input nodes from Normally Closed to Normally Open.

Two input relays, and one output relay, may be configured as shown in the image to the right.

Home>Settings>System>Advanced>I/O Polarity



Data Logging

The Rooster™ Pressure100 features a data logging feature with the ability to export to a .csv file via USB drive. When data logging is active, a green dot will appear at the top of the home screen next to the clock. The default polling rate is 5 seconds, but this can be adjusted from 1 second up to 1 minute.

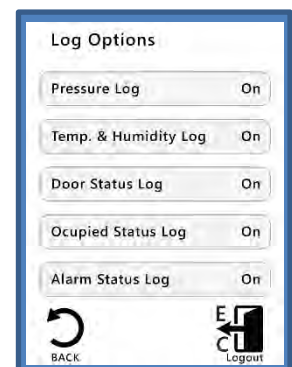
Home>Settings>Data Logging

Users can select which data they wish to be logged on the Log Options screen. If no options are selected, data logging is disabled.

Home>Settings>Data Logging>Log Options

The following data may be logged:

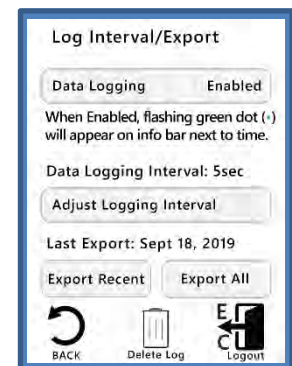
- Pressure
- Temperature & Humidity
- Door Status
- Occupied Status
- Alarm Status



When data logging is enabled, a new log file is created every day. Log files follow the format Room_name_YYYY_MM_DD.csv where Room name is the user assigned room name, and YYYY_MM_DD is the date in Year-Month-Day format

On the Log Interval/Export screen, users can set the data logging polling rate between 1 second and 1 minute and delete or export data to a connected USB drive. Users can also see the date of the last data export, if it exists.

Home>Settings>Data Logging>Log Interval/Export



Before exporting, one or more of the data logging options above must be enabled. Connect a USB drive to the Rooster™ Pressure100. If no USB drive is inserted, you will be prompted to connect one. Once connected, you will be given the option to export all data stored on the Rooster™ Pressure100 or just the most recent data logged since the last export.

To delete the log file, press the “Delete Log” icon at the bottom center of the screen. A screen will appear asking you to confirm deletion.

Troubleshooting

The Rooster™ Pressure100 is designed to be user-friendly and trouble free. Possible system problems are outlined below.

Alarm Troubleshooting

Is your alarm failing to sound or clear as you intended? You may need to verify that you have entered **valid threshold values**. For both occupied and unoccupied modes of operation, the high “Alarm Trip” point must be set higher than the high “Alarm Clear” point and the low “Alarm Trip” point must be set lower than the low “Alarm Clear” point. In addition, both the high “Alarm Trip” and “Alarm Clear” points must be higher than the low “Alarm Trip” and “Alarm Clear” points.

If you are dealing with negatively pressurized environments, be sure you are properly setting the threshold values as negative when appropriate. For example, in a negatively pressurized environment (e.g. -4.0 Pa), the low “Alarm Trip” and “Alarm Clear” points must be below that (e.g. -7.0 Pa and -5.5 Pa). You can add or remove the minus sign in front of the entered threshold value by pressing the “+/-” button in the upper right.

General Troubleshooting

Symptom	Possible Cause	Corrective Action
Display module is blank.	No power.	Verify the voltage at the power entry connector of the display module.
Display module displays opposite air pressure and pressure mode.	Tubing is connected to the wrong pressure sensor piton.	Change tubing connection. Reference the Installation section of this manual.
Displayed room pressure is inconsistent, frequently changing.	Supply or exhaust air is affecting the pressure sensor.	Check location of pressure sensor with respect to diffusers. Turbulent airflow can cause pressure readings to fluctuate. Relocate supply or exhaust air.
Displayed room pressure does not change.	Tubing from pressure sensor to external face plate may be kinked or blocked. Tubing connections may not be properly seated on pitons.	Check tubing for kinks and blockage. Ensure tubing connections are secure.
Alarm relay does not work.	Incorrect or defective wiring.	Check the wiring from the display module relay output to the connected device.
Display module is dim.	Brightness is set too low.	Adjust screen brightness setting.

Table 2 Troubleshooting

USB Field Upgrade Procedure

Firmware upgrades for the Rooster™ Pressure100 can be installed on-site via a USB flash drive.

You will need:

- USB thumb drive with new firmware "Rooster.bin"
- Rooster™ Pressure100

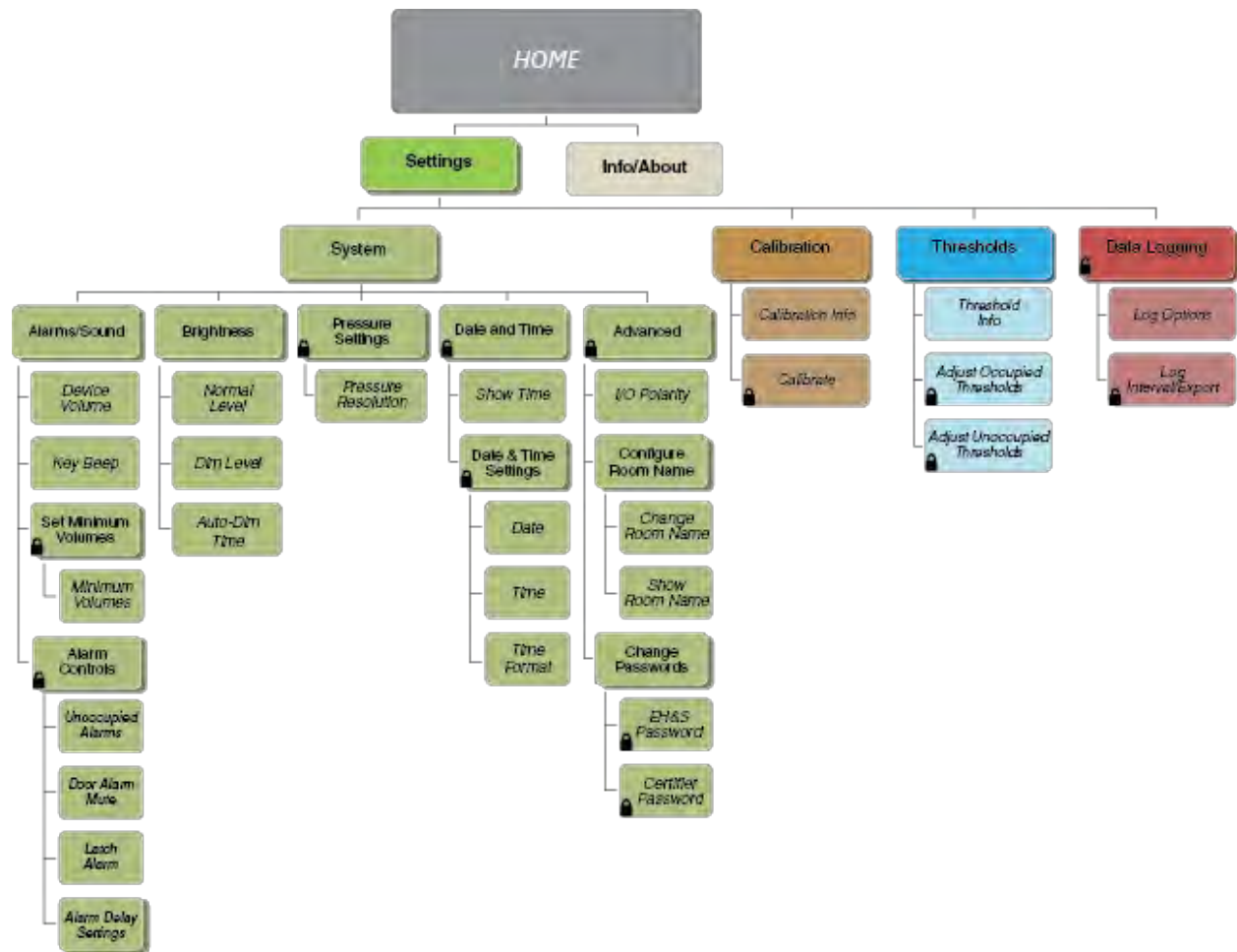
Procedure to field upgrade Rooster™ Pressure100 Operating System:

- 1) Remove power from the Rooster™ Pressure100 by unplugging power supply.
- 2) Insert USB thumb drive into left side of Rooster™ Pressure100.
- 3) Depress and hold "Home" button, then re-apply power to your unit. *(Hard Home button must be depressed while Rooster™ powers up to enter the firmware update sequence)*
- 4) After ~3 seconds, release Home button. After 10 seconds, the LED on the front of the Rooster™ will light and the unit will boot up with new Firmware.
- 5) When you have completed the Factory Reset Procedure, navigate to the info [] screen from home to validate that your new firmware version was properly installed. The date of the firmware release – listed next to "firmware" - should have changed to the most current build. If this is not the case, repeat steps 1-5 again.

Factory Reset Procedure

The Master Reset will return the Rooster™ Pressure100 to its default alarm & input/output settings. For more information, contact Degree Controls.

GUI Map



Warranty

For a period of one (1) year following the date of delivery, and subject to the other provisions of this Warranty Section, DegreeC warrants that all new products that are both (a) manufactured by DegreeC and (b) purchased directly from DegreeC (or an authorized distributor of DegreeC) shall be free of material defects in materials and workmanship. Buyer's sole and exclusive remedy, and DegreeC's sole and exclusive obligation, in the event of any product defect shall be for DegreeC to, at its option, repair or replace such products free of charge. In no event shall DegreeC be liable for ordinary wear and tear. In order to get the benefit of the foregoing warranty, Buyer must examine the delivered products immediately upon receipt thereof and report to DegreeC, in writing, any visible defects within ten (10) working days of such receipt. Buyer's failure to report defects within the foregoing time period will be deemed an unqualified waiver of any and all of Buyer's rights to warranty claims. DegreeC does not provide any warranty for third party parts, components, or products that are not manufactured by DegreeC. Such parts, components, or products may be warranted by third parties on a "pass through" basis. The foregoing remedies shall not apply to any product failure caused in whole or in part by (i) Buyer's failure to operate, maintain, or service the products in accordance with DegreeC's documentation, (ii) any alteration, modification, or repair made to the products other than by DegreeC, or (iii) use of the products for a purpose other than that for which it is intended. THE FOREGOING EXPRESS WARRANTY extends only to the original customer of DegreeC or DegreeC's authorized distributor, as the case may be. THE CORRECTION OF ANY DEFECT IN, OR FAILURE OF, PRODUCTS BY REPAIR OR REPLACEMENT IN ACCORDANCE WITH DEGREEC'S POLICIES DESCRIBED HEREIN SHALL BE DEGREEC'S SOLE AND EXCLUSIVE OBLIGATION AND THE SOLE AND EXCLUSIVE REMEDY OF BUYER FOR ANY AND ALL LOSSES, DELAYS OR DAMAGES RESULTING FROM THE PURCHASE OR USE OF DEGREEC'S PRODUCTS. OTHER THAN THE LIMITED WARRANTY SPECIFICALLY STATED HEREIN, DEGREEC SPECIFICALLY DISCLAIMS ANY AND ALL OTHER WARRANTIES WITH RESPECT TO DEGREEC'S PRODUCTS, INCLUDING THE PERFORMANCE THEREOF AND ANY SERVICES PROVIDED TO BUYER, EITHER EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, ANY WARRANTY ARISING FROM A COURSE OF DEALING OR USAGE OF TRADE, NON-INFRINGEMENT AND ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR USE.

