



setra^{lite}[™]

Installation & Operating Guide

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1.0 Introduction

The Setra Lite provides a simple, cost-effective, and accurate way to measure and display room differential pressure in areas that previously require manual verification. For local staff managing areas, Setra Lite includes visual and audible alarms. The light ring displays green or red, showing a clear indication of room conditions. For the facility manager, using the Lite means the frequency of preventative maintenance walk-by inspections can be reduced because Setra Lite is monitoring the space.

Setra Lite has many features found only in larger, more complex room pressure monitors. These include a bright light ring that can be seen at an angle or down a hallway, a digital display of the pressure value that is always-on or momentary an alarm delay for door entry, and POS or NEG room mode. The Setra Lite sensor has Setra's accuracy and reliability that you can trust.

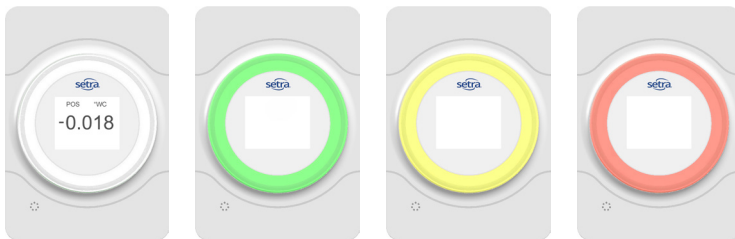
Setra Lite is about the size of a standard light switch and just as simple to install. It fits in a single-gang US electrical box, international 86-box or international round back-box, and is powered by 24 VAC or 24 VDC. The reference side pressure pickup is integral with the Lite faceplate. An analog output provides the building management system with the pressure signal for any additional trending or alarming needed.

The Setra Lite also integrates seamlessly with the Setra Flex environmental monitor. Mount Setra Lite at additional doors that enter the space and use an on-screen badge to display its value.

1.1 Intended Use

Setra Lite is designed to sense and visually indicate the pressurization status of critical environments, including cleanrooms and sensitive hospital areas (sterile bronchoscopy rooms, and other USP 800 compliant pressurized spaces). Setra Lite is design provide an intuitive visual indicator of the status of the room and can also be tied into other devices via analog output.

1.2 Display and LED Light Ring



Setra Lite features an LED light ring that will glow red if room pressurization violates the configured alarm threshold. The design of the light ring allows the room status to be visible from a distance, even from down a hallway. With a simple press of the front lens of the unit, the LCD displays the current differential pressure. Configuration of the unit can be performed on the device via buttons located behind the removable front lens. The unit can be put into and taken out of "Standby" mode by pressing the front lens 3 times in quick succession. When in standby mode, the light ring will glow yellow.

2.0 In the Box

Standard Monitor

Setra Lite Base Unit (As specified by customer)

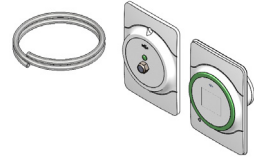
- Pressure Pickup Port (Setra RPS)
- Mounting Hardware
- Elbow Connectors
- 250 ohm resistor (If wiring inputs for 4-20mA current loops)



Dual Alert

Setra Lite Base Unit (As specified by customer)

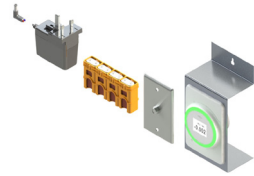
- LED alarm indicator with 30" cable
- Pressure Pickup Port (Matching Dual Alert Variant)
- 30" of rubber connecting tubing
- Mounting Hardware
- Elbow Connectors
- 250 ohm resistor (If wiring inputs for 4-20mA current loops)



Quick Mount Kit

Setra Lite Base Unit (As specified by customer)

- Pressure Pickup Port (Setra RPS)
- Battery Pack
- AC Adapter with 6-foot cord
- Mounting bracket



3.0 Rough-In Installation (Wall Mount)

For Setra Lite to be installed correctly, the rough-in phase of the project must be completed properly. This section will outline the specific considerations the Installer must pay attention to so that the final wiring and commissioning will go smoothly.

3.1 Installer Provided Materials

The following is a list of parts required and supplied by installer for Setra Lite:

1. Power (18-22 AWG recommended) and signal wire
2. 1/8. in X 1/4 in. silicon tubing to run from the room(s) Pressure Pickup Port(s) to the Setra Lite monitor or external sensors. (Standard monitor only)
3. 24 VAC or VDC transformer, capacity rated for number of Setra Lite units powered
4. Single-gang electrical box, if opting not to install directly into wall
5. Single-gang electrical box, one per Pressure Pickup Port, if opting not to install directly into wall

3.2 Prepare Wall for Mounting - Permanent Installations

1. Cut a 2" hole in the wall for the Setra Lite base unit or install 1-gang electrical box

Note: Be sure to install electrical box in correct orientation based on purchased configuration (Portrait or Landscape)

2. Cut a 1" to 2" hole or install 1-gang electrical box for each Pressure Pickup Port (RPS), either horizontal ceiling mounted or vertically mounted high on a wall surface

Standard: Install RPS either horizontal ceiling mounting or vertical mounted high on a wall surface

Dual Alert: Cut a 1" to 2" hole or install 1-gang electrical box on opposite side of the wall from base unit. Note: Be sure to install electrical box in portrait orientation

3. Run all wiring to the Setra Lite electrical box



3.3 Plumbing

For the standard Lite, a Pressure Pickup Port (RPS) is installed in the primary monitored room and Setra Lite is installed in the reference area (typically a hallway). For the Inside Room setting, the Pressure Pickup Port (RPS) should be installed in the reference area and the Setra Lite is installed inside the primary monitored room. 1/8. in X 1/4 in. soft platinum-cured silicon tubing is typically used to bring the pressure signal from the Pressure Pickup Port to the pressure fitting on the back of Setra Lite.

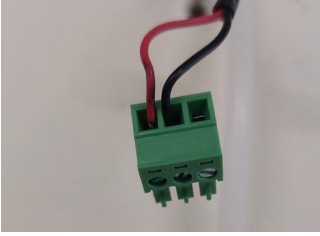
Note: Caution should be taken to locate the Pressure Pickup Port and Setra Lite at least six (6) feet from air turbulence that may originate from air supply diffusers, slot diffusers, mobile equipment cooling fans, or other devices that may exhaust air in the direction of the ports. Air velocity blowing directly on these ports can cause inaccurate pressure measurement.

3.4 Considerations to Avoid Kinked or Damaged Tubing

Pull tubing runs in a manner that protects the tubing from being damaged, cut, or crimped. Any break or bend in the tubing may affect the integrity of the pressure signal. DO NOT TIGHTEN STRAIN RELIEFS at the electrical boxes so that they crimp the tubing. Leave the strain reliefs open enough so that the tubing can slide in and out of the box with a few inches of play. During tubing installation and prior to use, tape the open ends of the tubes closed to prevent contamination during construction.

During final installation of the Pressure Pickup Port, careful observation should be made of how the tubing gets pushed back into the wall for final faceplate mounting.

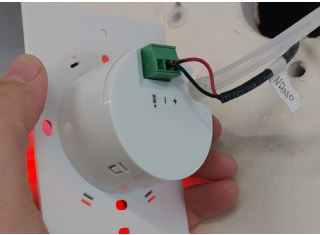
4.0 Installing Lite Base Unit (Permanent Installations)



1. Connect wiring for power and analog output (if required) to removable connector per section 7.0



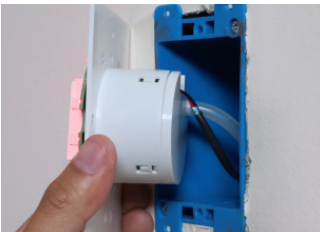
2. Connect pressure tubing from the Pressure Pickup Port to the port on the back of Setra Lite.



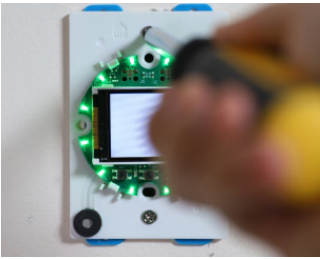
3. Attach wiring connector to the back of the Setra Lite. Thread the wire lead through the wall and into the pressure pickup port box or hole on the opposite side of the wall.



4. If using a Dual Alert, attach the LED cable connector to the port on the outside of the Setra Lite. Thread the LED cable through the wall and into the pressure pickup port box or hole on the opposite side of the wall.



5. As you push the Setra Lite unit into the electrical box, push the tubing and wires into the conduit tube or into the wall cavity.



6. Push Setra Lite into the enclosure and secure with two (2) mounting screws.
7. When the home screen appears, Setra Lite can be configured via 3 buttons located below the LCD display on the circuit board. See section 8.0 for configuration instructions and details.

Note: Setra Lite should be installed, powered and operational for 30 minutes for warmup and acclimation for one-time pressure sensing stabilization. If necessary, after the warmup, units can be re-zeroed. Setra Lite contains a small air valve to allow for one-touch zeroing via the configuration menu.



8. Prior to installing the faceplate, be sure the rubber seal is properly installed on the back of the faceplate.



9. Install the faceplate by firmly pressing it into place over the base unit housing. **Note: Press the plate in at a slight angle, leading with the bottom edge.**

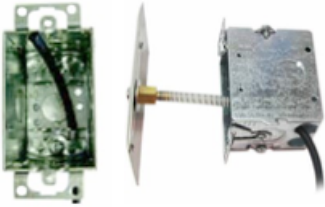


10. After configuration is completed align and engage the top two snaps. Then, align and install the front lens to the faceplate by inserting top snap first, followed by the bottom snap. Left and right snaps are alignment only.



5.0 Pressure Port Installation

5.1 Standard Monitor and Quick Mount Pressure Pick Up Port Install



1. Install the supplied silicone tube (with integrated external spring) and attached barbed tube adapter on the rear face of the RPS unit onto the end of the 0.25" field tubing. This short length of tubing is used as a safety to prevent any kinking inside tight spaces. Add your typical run of 1/8" ID x 1/4" OD tubing between the pressure pickup and the Setra Lite.
2. Screw RPS into electrical box or wall.

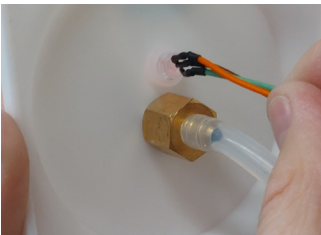
During final installation of the Pressure Pickup Port, careful observation should be made of how the tubing gets pushed back into the wall for final faceplate mounting.

5.2 Dual Alert Pressure Pick Up Port Install

Note: The base unit should be fully installed. Tubing and wire lead from back of base unit should be threaded into the box or hole prepared for the dual alert pressure pickup.



1. Push the open end of the supplied tubing onto the port on the back of the Dual Alert pressure pickup.

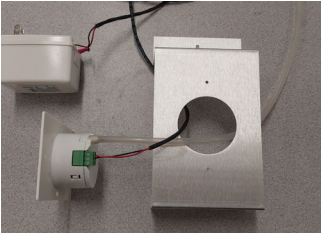


2. Press the LED wire lead into the receptacle in the center of the Dual Alert pressure pickup.

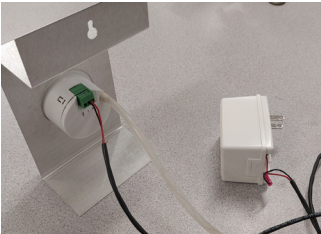


3. Secure the faceplate with provided mounting hardware based on installation type. (Direct wall or electrical box)

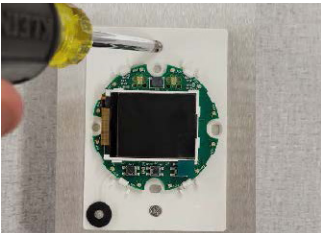
6.0 Quick Mount Installation



1. Prepare the wall for the pressure pick up port as defined in section 3.2. **Note: Pressure pick up port can also be left loose and placed on a surface in the room being monitored, it does not need to be installed in the wall**
2. Install the pressure pick up port as defined in section 5.1
3. Thread the pressure tubing and power wire from transformer or battery through the hole in the quick mount plate.



4. Connect pressure tubing from the Pressure Pickup Port to the port on the back of Setra Lite.
5. Connect analog output (if required) and transformer (Shown left) or battery pack per wiring diagram in section 7. Attach connector to Setra Lite. **Note: Building 24V power can also be applied if available.**



6. Install the Setra Lite base unit housing into the metal quick mount bracket with the provided machine screws.



7. Prior to installing the faceplate, be sure the rubber seal is properly installed on the back of the faceplate.



8. Install the faceplate by firmly pressing it into place over the base unit housing. **Note: Press the plate in at a slight angle, leading with the bottom edge.**



- If mounting to wall install a screw in the wall via drywall anchor or screwing into a supportive structure leaving the screw protruding approximately 1/8" (3mm). Place quickmount onto screw, then tighten screw until firmly tightened. **Note: Unit can also be placed on a flat surface.**

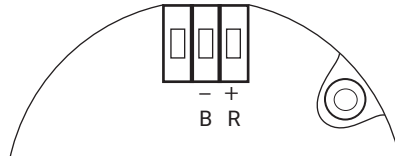


- Configure Setra Lite per section 8.0.
- After configuration is completed, align and install the front lens to the faceplate by inserting top snap first, followed by the bottom snap. Left and right snaps are alignment only. Reference Section 4.10 for more information.

7.0 Wire Setra Lite (All Variants)

7.1 Wiring Setra Lite

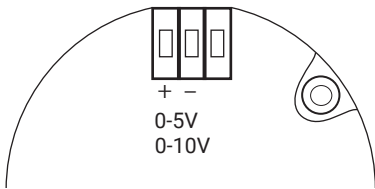
The back of Setra Lite has a 3-pin removable terminal block used to connect power and analog pressure output (if needed).



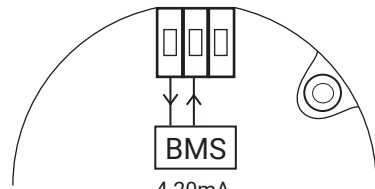
7.2 Power

The power connection for Setra Lite uses the 2 pins on the right when looking at the rear of the unit. Connect the 24 VDC (+/- 10%) or 24 VAC (18-32 VDC operational), 50-60 Hz lines to the terminals marked above typically black (B) and red (R) wire.

7.3 Analog Output



Voltage Output



mA Output

If using the Analog Output (AO) for voltage output, connect to the terminals as labeled on the left diagram above. If using the AO for mA output, connect to the terminals shown in the right diagram above. A 250 Ohm resistor is included for this output type in the event you need to convert to volts (1-5V). The AO generates a 0-5 VDC, 0-10 VDC, or 4-20 mA output signal, as configured.

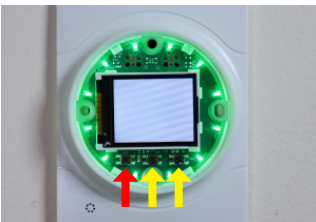
8.0 Configuration and Operation

Once Setra Lite is installed and powered-up, configuration and operation can begin. Setra Lite can be easily configured via 3 buttons located below the LCD display after removing the front lens.

8.1 Navigation and Configuration Basics



With the unit powered on, grab the lens by the left and right edge, then pull away from the unit.



Locate the 3 buttons located below the LCD display. Press and hold the LEFT button for 3 seconds to access the configuration menu (the LED ring should shut off after the configuration menus are accessed).

Press the RIGHT button ("✓") to navigate to the next screen.

Press the LEFT button ("↶") to navigate to the previous screen and eventually exit the configuration menu.

To change a setting, navigate to the desired setting screen, and press and hold the RIGHT button("✓"). The screen text should flash 3 times, indicating ability adjust the setting.

Use the LEFT ("↶") and MIDDLE ("↷") buttons to adjust the selected setting.

When finished, press the RIGHT button ("✓") to save the setting. The screen text should flash 3 times to indicate return to the main configuration selection screens.

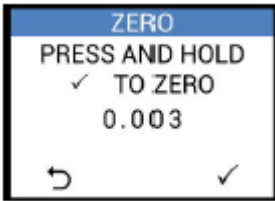
To exit configuration, press the LEFT button ("↶") to navigate to the previous screen and eventually exit the configuration menu. The unit will also automatically timeout and return to normal operation if no buttons are pressed for a set period of time.



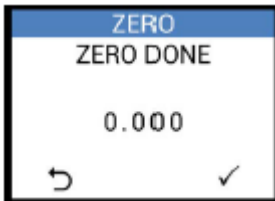
8.2 Configuration Menus

This section will describe the function of each of the configuration menus.

8.2.1 Zero Adjust

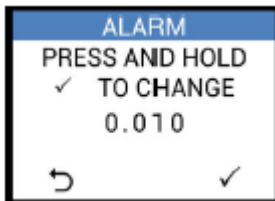


Press and hold the RIGHT button ("✓") to zero the onboard pressure sensor. The unit contains an onboard valve to automatically equalize the pressure differential across the sensor.



Zeroing is complete when the screen reads "ZERO DONE".

8.2.2 Alarm Limits



Press and hold the RIGHT button ("✓") to adjust the alarm limits (i.e. pressure at which the LED ring will turn red); the screen text will flash 3 times to indicate that the setting is ready to be adjusted.

Use the LEFT ("←") and MIDDLE ("→") buttons to adjust.

When finished, press the RIGHT button ("✓") to save the setting. The screen text should flash 3 times to indicate return to the main configuration selection screens.

8.2.3 Audible Alarm

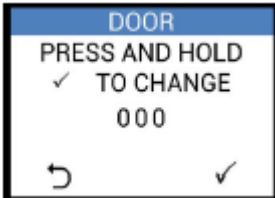


Press and hold the RIGHT button ("✓") to turn the audible alarm on and off; the screen text will flash 3 times to indicate that the setting is ready to be adjusted.

Use the LEFT ("←") and MIDDLE ("→") buttons to adjust.

When finished, press the RIGHT button ("✓") to save the setting. The screen text should flash 3 times to indicate return to the main configuration selection screens.

8.2.4 Door Delay

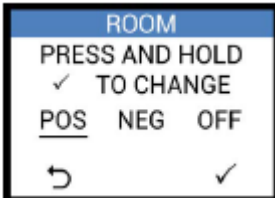


Press and hold the RIGHT button ("✓") to adjust the alarm door delay (i.e. number of seconds before the LED ring will turn red when pressure alarm limits are exceeded); the screen text will flash 3 times to indicate that the setting is ready to be adjusted.

Use the LEFT ("←") and MIDDLE ("→") buttons to adjust between 000 and 999 seconds. If you hold the adjustment button, numbers will accelerate for convenience.

When finished, press the RIGHT button ("✓") to save the setting. The screen text should flash 3 times to indicate return to the main configuration selection screens.

8.2.5 Room Mode



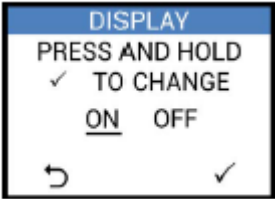
Press and hold the RIGHT button ("✓") to adjust the room (i.e. whether the room is positively or negatively); the screen text will flash 3 times to indicate that the setting is ready to be adjusted.

Use the LEFT ("←") and MIDDLE ("→") buttons to adjust between positive ("POS"), negative ("NEG"), or neutral ("OFF").

If you have ordered the Inside Room version of the Setra Lite ("-IR" is at the end of your Part Number) for mounting inside the space that you're pressurizing, you will see "IR" on the screen under the Setra logo when you start up the unit. Please note that when selecting if the room is positive or negative for the Inside Room version, be sure to keep in mind that the room is positive or negative relative to the outside reference area.

When finished, press the RIGHT button ("✓") to save the setting. The screen text should flash 3 times to indicate return to the main configuration selection screens.

8.2.6 Display



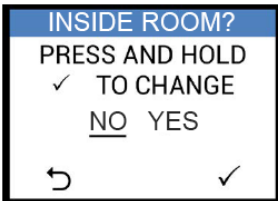
Press and hold the RIGHT button ("✓") to adjust display behavior (i.e. whether the LCD display shows the digital pressure reading by default); the screen text will flash 3 times to indicate that the setting is ready to be adjusted.

Use the LEFT ("←") and MIDDLE ("↔") buttons to adjust between showing a digital reading by default ("ON"), or showing a blank screen ("OFF").

Note: When display is set to "OFF", the digital pressure reading is still viewable by pressing the front lens and then numbers will vanish after 3 seconds.

When finished, press the RIGHT button ("✓") to save the setting. The screen text should flash 3 times to indicate return to the main configuration selection screens.

8.2.7 Inside Room



Press and hold the RIGHT button ("✓") to choose the installation location of the device; the screen text will flash 3 times to indicate that the setting is ready to be adjusted.

Use the LEFT ("←") and MIDDLE ("↔") buttons to adjust between showing a digital reading by default ("ON"), or showing a blank screen ("OFF").

When finished, press the RIGHT button ("✓") to save the setting. The screen text should flash 3 times to indicate return to the main configuration selection screens

8.2.8 Digits



Press and hold the RIGHT button ("✓") to adjust the number of decimal places displayed on the LCD screen; the screen text will flash 3 times to indicate that the setting is ready to be adjusted.

Use the LEFT ("←") and MIDDLE ("↔") buttons to adjust between 0 ("0.000"), tenths ("0.000"), hundredths ("0.000"), or thousandths ("0.000").

When finished, press the RIGHT button ("✓") to save the setting. The screen text should flash 3 times to indicate return to the main configuration selection screens.

8.2.9 Light Ring

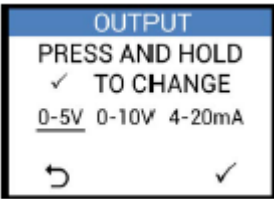


Press and hold the RIGHT button ("✓") to select between no ring light, alarm (red) ring light only or both green/red light ring indicators. The screen text will flash 3 times to indicate that the setting is ready to be adjusted.

Use the LEFT ("←") and MIDDLE ("→") buttons to adjust between always off, on only in alarm, or always on.

When finished, press the RIGHT button ("✓") to save the setting. The screen text should flash 3 times to indicate return to the main configuration selection screens.

8.2.10 Output

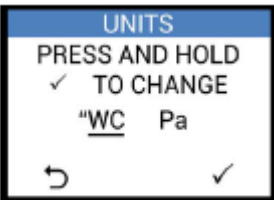


Press and hold the RIGHT button ("✓") to change the output type. The screen text will flash 3 times to indicate that the setting is ready to be adjusted.

Use the LEFT ("←") and MIDDLE ("→") buttons to adjust between 4-20mA, 0-5V, and 0-10V.

When finished, press the RIGHT button ("✓") to save the setting. The screen text should flash 3 times to indicate return to the main configuration selection screens.

8.2.11 Units

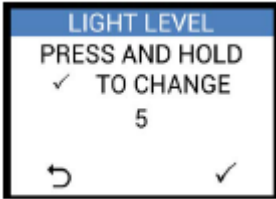


Press and hold the RIGHT button ("✓") to adjust the measuring units used for the digital display and alarm thresholds; the screen text will flash 3 times to indicate that the setting is ready to be adjusted.

Use the LEFT ("←") and MIDDLE ("→") buttons to adjust between pascals ("Pa") and inches of water ("WC").

When finished, press the RIGHT button ("✓") to save the setting. The screen text should flash 3 times to indicate return to the main configuration selection screens.

8.2.12 Light Level



Press and hold the RIGHT button ("✓") to adjust the brightness of the LED light ring; the screen text will flash 3 times to indicate that the setting is ready to be adjusted.

Use the LEFT ("←") and MIDDLE ("↔") buttons to adjust between 1 ("dimtest") and 5 ("brightest").

When finished, press the RIGHT button ("✓") to save the setting. The screen text should flash 3 times to indicate return to the main configuration selection screens.

8.3 Operation

8.3.1 Room Status and Alarming

Under normal operation with pressure within the configured alarm limits, the LED light ring will glow green. Or, NOT be illuminated depending on light ring configuration chosen during setup.



If pressure exceeds alarm limit thresholds, the LED light ring will glow red and an audible alarm will sound for units equipped with audible alarm option.



To silence audible alarm, press the light ring below the display. Audible alarm will stop but red status light will maintain until pressure is within set limits one time.

Alarm limits can be configured via the ALARM LIMITS menu. LED light ring behavior can be configured via the RING menu.

8.3.2 View Pressure Reading



If the DISPLAY is set to "OFF", the LCD display will display Setra logo under normal operation. To see a digital pressure reading, simply press on the lens of Setra Lite.

8.3.4 Standby Mode



For temporary instances where the Red/Green LED light ring status and/ or audible alarming is not needed (e.g. room is opened for extended cleaning), Setra Lite can be placed into STANDBY mode by pressing the lens 3 times in a quick succession. The LED light ring glows yellow in STANDBY mode. This mode is used when the room will be open longer than the "door delay" feature allows. The maximum door delay is usually set by facility personnel to avoid false alarms caused by intermittent door openings. The maximum door delay can be set for up to 999 seconds.

To bring the unit out of STANDBY mode and back into normal operation, press the lens 3 times in quick succession.

9.0 Removal of Permanent Installations

9.1 Removal



In the event Setra Lite needs to be removed for service, first remove the front lens. To remove the front lens, grab the front lens from the left and right side edges, and pull the lens away from the wall.



Next, locate the 4 snaps holding the faceplate to the unit. Carefully push on the inside lip of the faceplate near each snap to disengage each snap one at a time.



Once the faceplate has been removed, unscrew the unit from the wall or electrical box, and disconnect wires and pressure tubing.

10.0 Returning Products for Repair

Please contact a Setra application engineer (800-257-3872, 978-263-1400) before returning unit for repair to review information relative to your application. Many times only minor field adjustments may be necessary. When returning a product to Setra, the material should be carefully packaged and shipped prepaid to:

Setra Systems, Inc.
159 Swanson Road
Boxborough, MA 01719-1304
Attn: Repair Department

To ensure prompt handling, please supply the following information and include it inside the package or returned material:

- Name and phone number of person to contact.
- Shipping and billing instructions.
- Full description of the malfunctions.
- Identify any hazardous material used with the product.

Notes

Please remove any pressure fittings and plumbing that you have installed and enclose any required mating electrical connectors and wiring diagrams.

Allow approximately 3 weeks after receipt at Setra for the repair and return of the unit. Non-warranty repairs will not be made without customer approval and a purchase order to cover repair chargers.

Calibration Services

Setra maintains a complete calibrations facility that is traceable to the National Institute of Standards and Technology (NIST). If you would like to recalibrate or recertify your Setra pressure transducers or transmitters, please call our Repair Department at 800-257-3872 (978-263-1400) for scheduling.

11.0 Limited Warranty & Limitation of Repair

SETRA warrants its products to be free from defects in materials and workmanship, subject to the following terms and conditions: Without charge, SETRA will repair or replace products found to be defective in materials or workmanship within the warranty period; provided that:

- a) the product has not been subjected to abuse, neglect, accident, incorrect wiring not our own, improper installation or servicing, or use in violation of instructions furnished by SETRA;
- b) the product has not been repaired or altered by anyone except SETRA or its authorized service agencies;
- c) the serial number or date code has not been removed, defaced, or otherwise changed; and
- d) examination discloses, in the judgment of SETRA, the defect in materials or workmanship developed under normal installation, use and service;
- e) SETRA is notified in advance of and the product is returned to SETRA transportation prepaid.

Unless otherwise specified in a manual or warranty card, or agreed to in a writing signed by a SETRA officer, SETRA pressure and acceleration products shall be warranted for one year from date of sale.

The foregoing warranty is in lieu of all warranties, express, implied or statutory, including but not limited to, any implied warranty of merchantability for a particular purpose.

SETRA's liability for breach of warranty is limited to repair or replacement, or if the goods cannot be repaired or replaced, to a refund of the purchase price.

SETRA's liability for all other breaches is limited to a refund of the purchase price. In no instance shall SETRA be liable for incidental or consequential damages arising from a breach of warranty, or from the use or installation of its products.

No representative or person is authorized to give any warranty other than as set out above or to assume for SETRA any other liability in connection with the sale of its products.

For all CE technical questions, contact Setra Systems, USA. EU customers may contact our EU representative Hengstler GmbH, Uhlandstr 49, 78554 Aldingen, Germany (Tel: +49-7424-890; Fax: +49-7424-89500).



Setra Systems, Inc.

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