Setra MA 01719 Filter Alert Installation Guide

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Introduction

The Setra Filter Alert provides a simple, cost-effective, and accurate way to measure and display filter status for air handlers, critical space filters and anywhere else filter status is required. Setra Filter Alert reduces maintenance team effort by providing a simple easy to understand and view filter status where manual evaluation was previously required.

The light ring displays green or red, showing a clear indication of filter status. For the facility manager, using the Setra Filter Alert means the frequency of preventative maintenance walkby inspections can be reduced because Setra Filter Alert is monitoring the filter status.
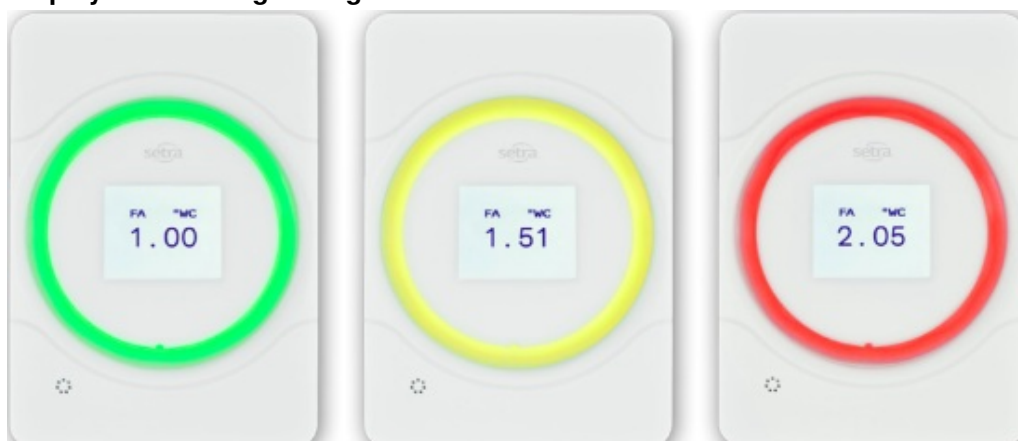
Setra Filter Alert is about the size of a standard light switch and just as simple to install. It fits in standard electrical boxes or directly in sheet metal enclosures. Additional mounting options are available to enable simple installation into existing flush mount and surface mount pressure gauge locations.

An analog output provides the building management system with the pressure signal for any additional trending or alarming needed. Setra Filter Alert is equipped with the reliable and accurate Setra sensor technology critical environment managers rely on, providing a filter status monitor that can be trusted.

Intended Use
Setra Filter Alert is designed to sense and visually indicate the filter status of critical filters in air handlers, critical environments and HEPA filters in a wide range of applications. Setra Filter Alert design provides an intuitive visual indicator of the status of the filter and can also be tied into other devices via analog output.
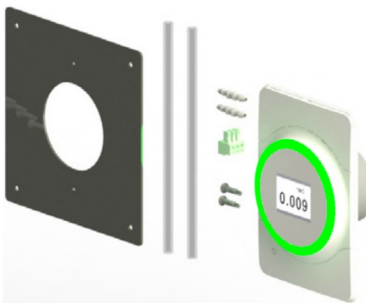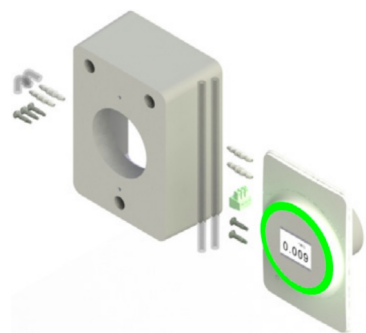
Display and LED Light Ring

Setra Filter Alert features an LED light ring that changes color based on the pressure differential and the user defined thresholds. The light ring will glow green when the filter health is good, yellow when the filter needs changing soon but is still acceptable for use, and red if the filter needs to be replaced.

The design of the light ring allows the filter 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.

In the Box

Monitor Only	Setra Filter Alert Base Unit (As specified by customer) • Mounting hardware • Electrical connector • Tubing and barb connections	
Flush Mount DP Gauge Retrofit Kit	Setra Filter Alert Base Unit (As specified by customer) • Mounting hardware • Electrical connector • Tubing and barb connections • Stainless steel mounting plate	
Surface Mount Kit	Setra Filter Alert Base Unit (As specified by customer) • Mounting hardware • Electrical connector • Tubing and barb connections • Surface mount box	

Rough-In Installation (Wall Mount)

For Setra Filter Alert 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.

Installer Provided Materials

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

1. Power (18-22 AWG recommended) and signal wire
2. 1/8 in. ID silicon tubing to run from both sides of the measured filter to the Filter Alert monitor.
3. 24 VAC or VDC transformer, capacity rated for number of Filter Alert units powered
4. (Optional) Single-gang electrical box

Prepare the Mounting Location

1. Cut a 2″ hole in the wall or sheet metal for the Filter Alert base unit or install 1-gang electrical box.
   Note: Be sure to install electrical box in correct orientation based on purchased configuration (Portrait or Horizontal)
2. Run all tubing and wiring to the Setra Filter Alert electrical box. 1/8" ID 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 Filter Alert.
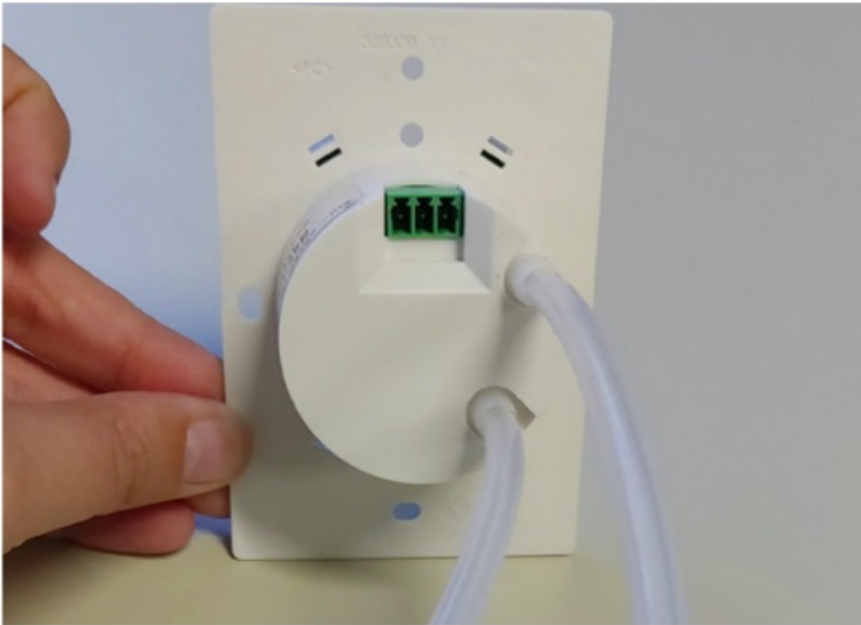
Considerations to Avoid Kinked or Damaged Tubing

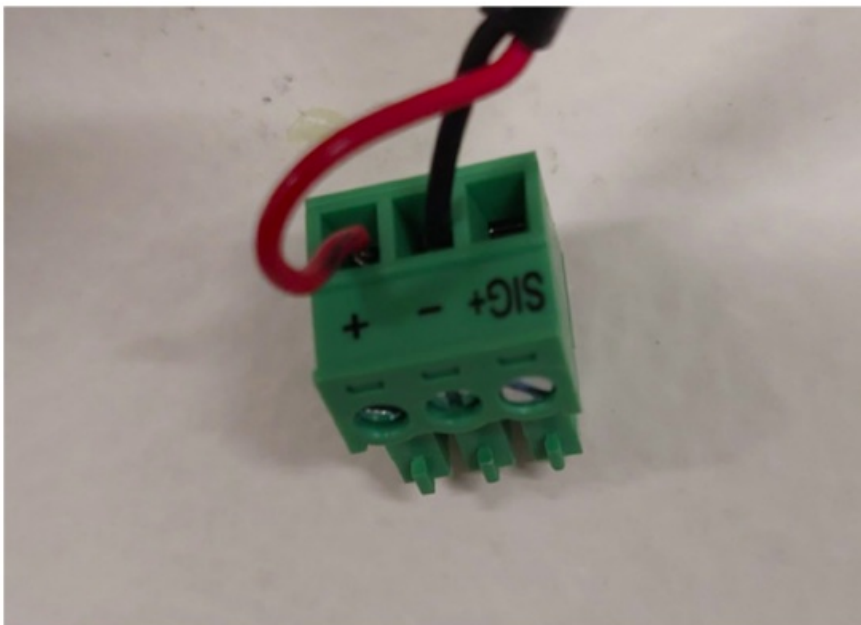Pull tubing runs in a manner that protects the tubing from being damaged, cut, or crimped.
Any break or bend in the tubing may affect the integrity of the pressure signal. DO NOTTIGHTEN STRAIN RELIEFS at the electrical boxes so that they crimp the tubing. Leave the strain reliefs open enough so that 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.

Installing Setra Filter Alert Base Unit

1. Connect intermediate pressure tubing and barbed unions to the ports on the back of the Filter Alert.

2. Add connector to the in-wall wiring for power and analog output (if required) per section 7.0.

   Attach the power connector to the Filter Alert and the intermediate tubing to the in-wall tubing.

3. As you push the Filter Alert unit into the electrical box or wall, push the tubing into the conduit tube or wall cavity.

4. Push Setra Filter Alert into the wall or enclosure and secure with two (2) mounting screws.
5. When the home screen appears, Setra Filter Alert 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 Filter Alert should be installed, powered and operational for a minimum of 2 hours (recommended 24 hours) for warmup and acclimation for one-time pressure sensing stabilization. If necessary, after the warmup, units can be re-zeroed.

Setra Filter Alert contains a small air valve to allow for one-touch zeroing via the configuration menu.
6. Prior to installing the faceplate, be sure the rubber seal is properly installed on the back of the faceplate.

7. 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.

8. 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.
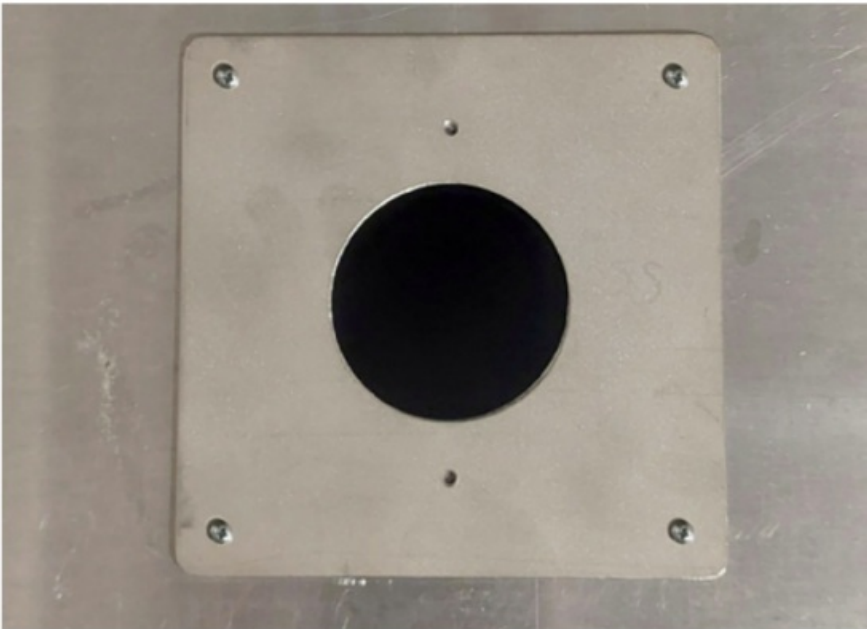

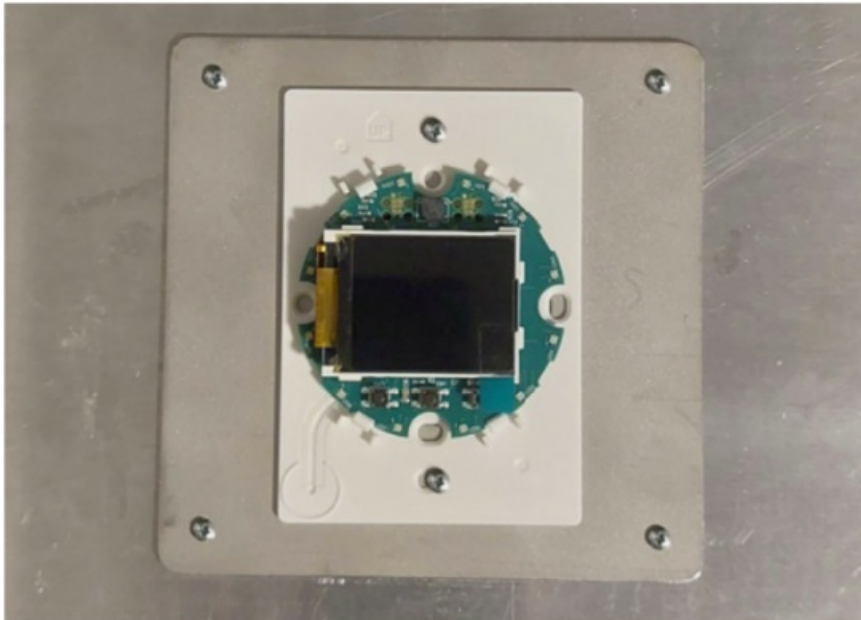## Installing Flush Mount / DP Gauge Retrofit Configuration

1. Locate existing hole from existing DP gauge installation in metal panel. If no hole, cut a 2-1/4" clearance hole.

2. Install flush mount adaptor plate over clearance hole with four sheet metal screws (Customer provided). Ensure mounting holes for the base unit are aligned properly for orientation ordered (landscape or portrait).
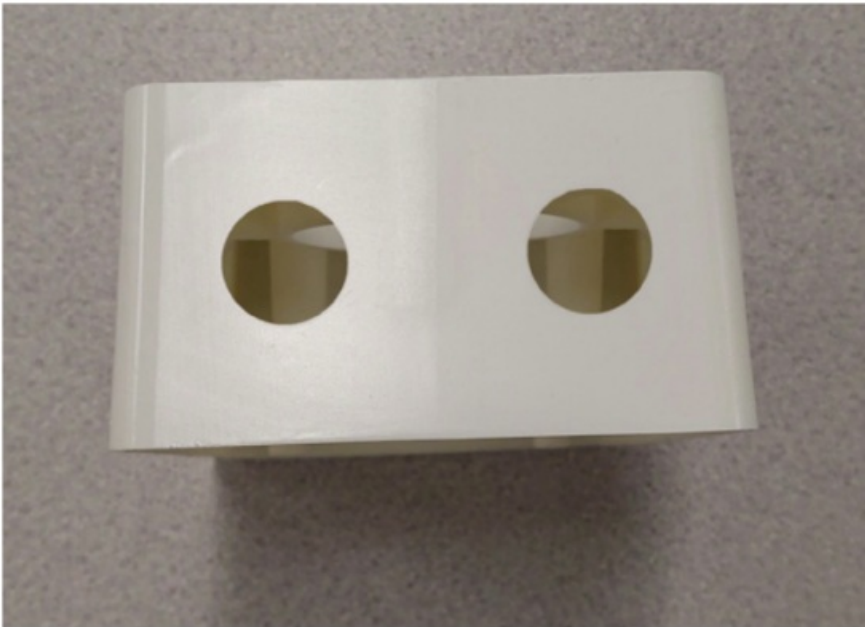
3. Follow instructions from Section 4.0 to install tubing, wiring, and base unit.
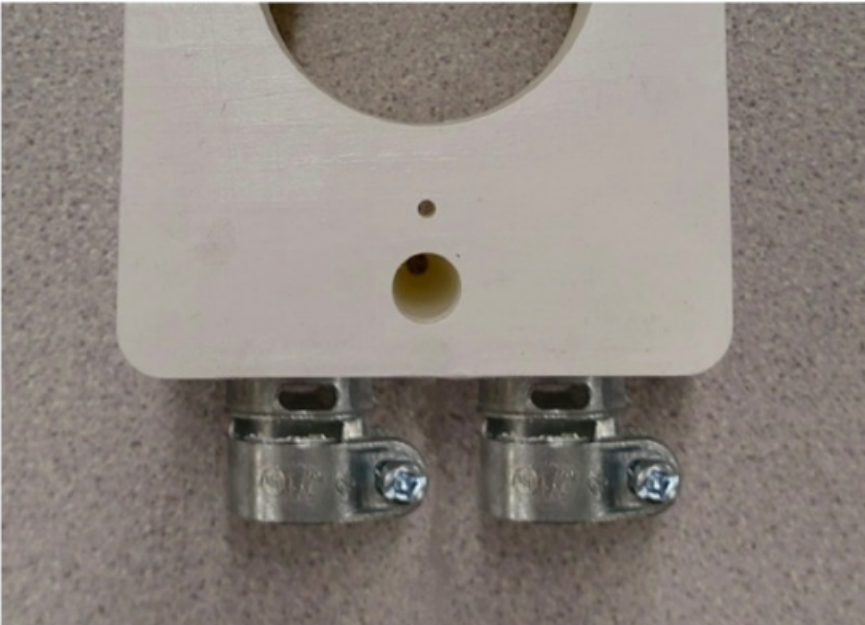

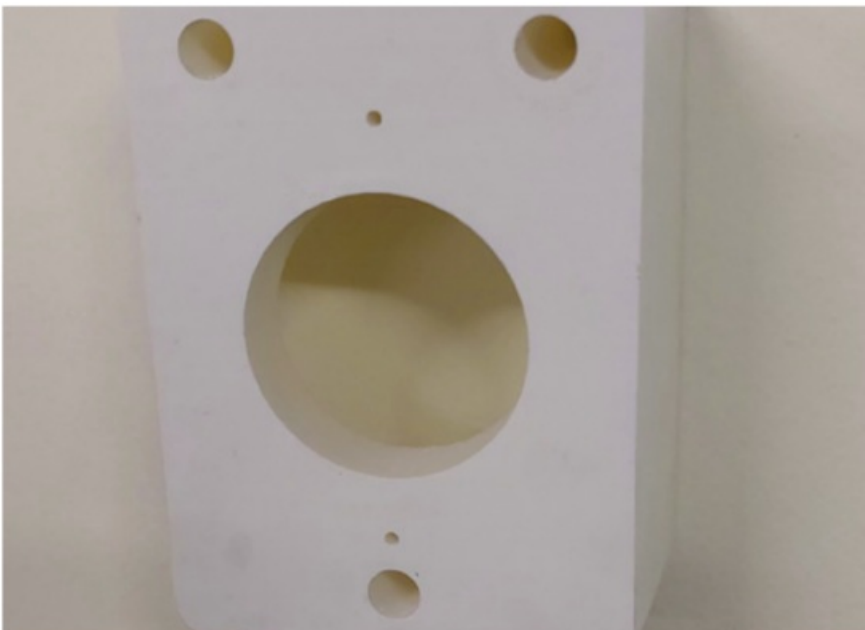## Installing Surface Mount Configuration

1. Drill two holes for ½" conduit fittings as required to provide access for power, analog wiring and pressure pick up tubing.

2. Install conduit fittings.

3. Using supplied hardware, mount adapter box to the wall or sheet metal enclosure of air handler.
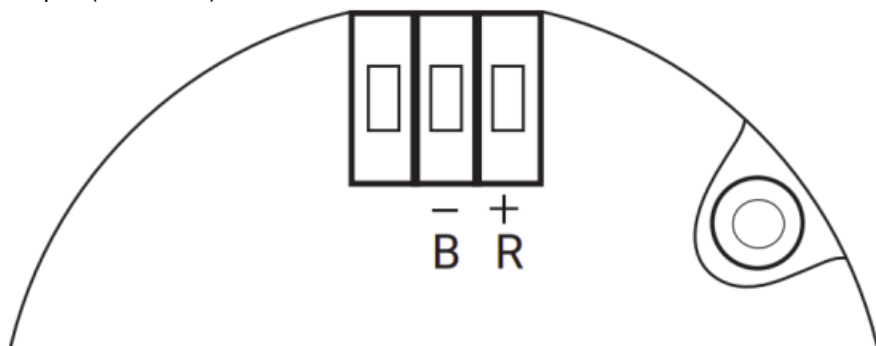
4. Follow instructions from Section 4.0 to install tubing, wiring, and base unit.

Wire Setra Filter Alert (All Variants)
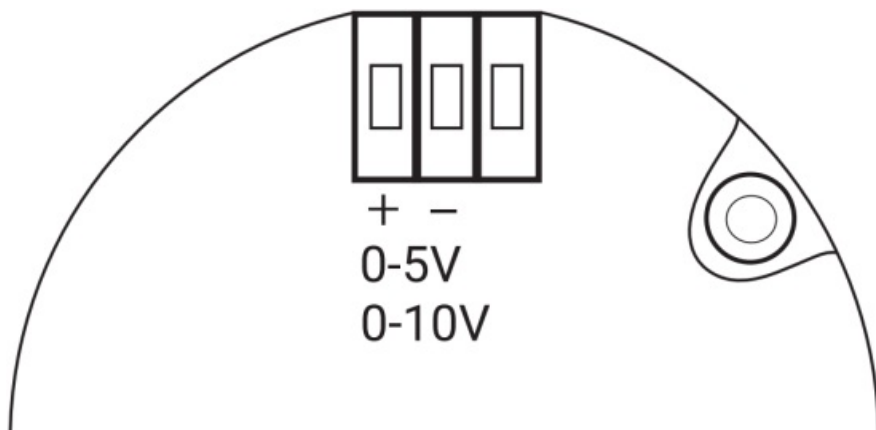
Wiring Setra Filter Alert
The back of Setra Filter Alert has a 3-pin removable terminal block used to connect power and analog pressure output (if needed).
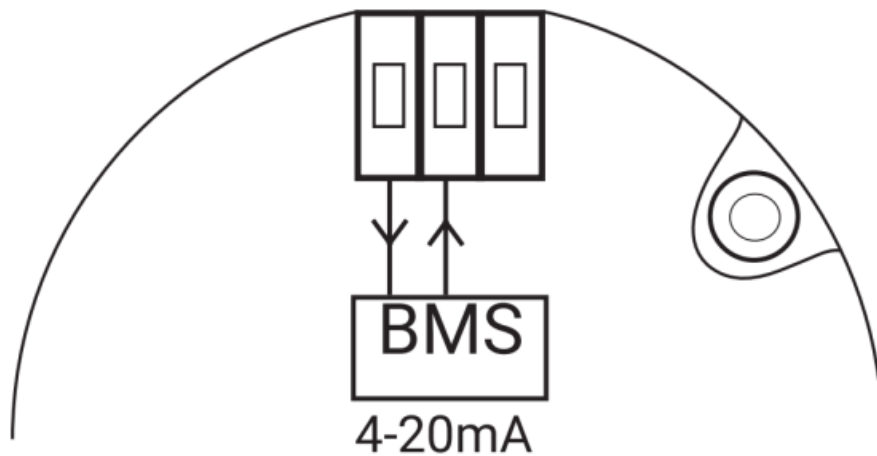

Power
The power connection for Setra Filter Alert uses the 2 pins on the right when looking at the rear of the unit. Connect the 24 VDC (+/- 10%) or 24 VAC (18-32 VDC operational), 50-60 Hz lines to the terminals marked above typically black (B) and red (R) wire.

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.

Configuration and Operation

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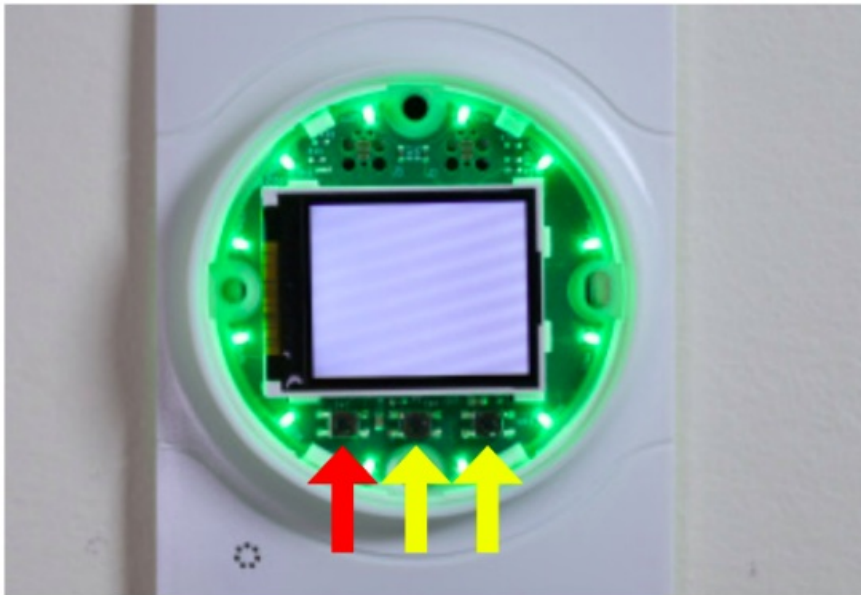
Navigation and Configuration Basics

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).

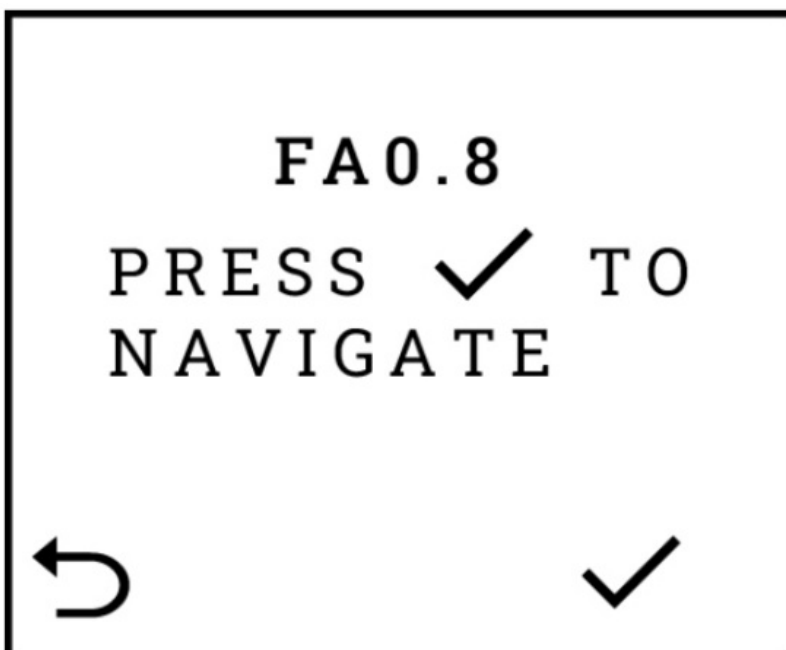Press the RIGHT button (“✔”) to navigate to the next screen.

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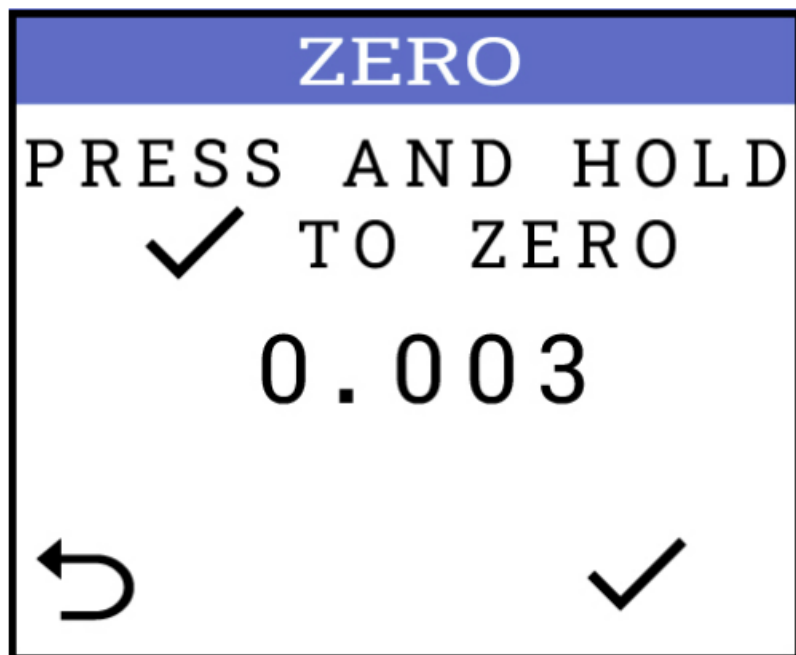
To exit configuration, press the LEFT button (“↰”) to navigate to the previous screen and eventually exit the configuration menu. The unit will also automatically timeout and return to normal operation if no buttons are pressed for a set period of time.
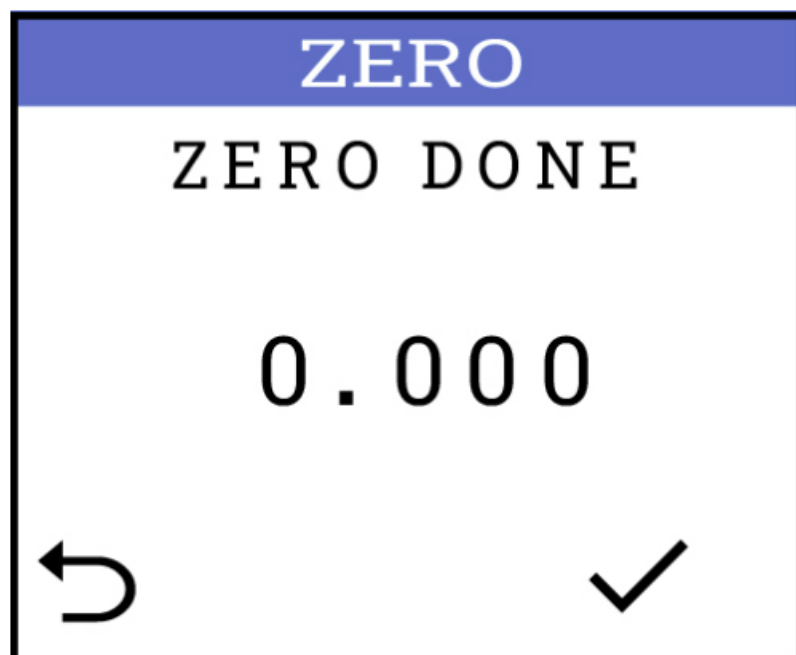

Configuration Menus

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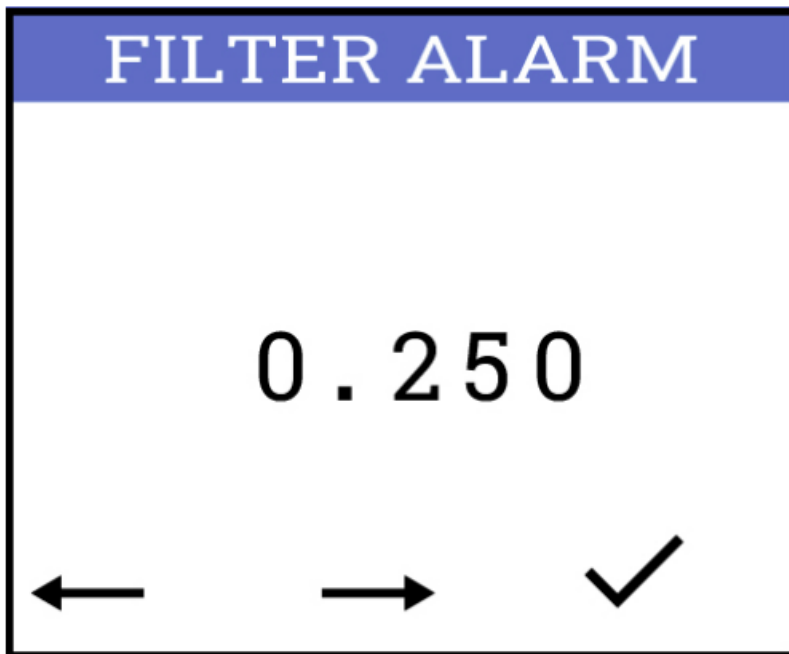
Zero Adjust

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".
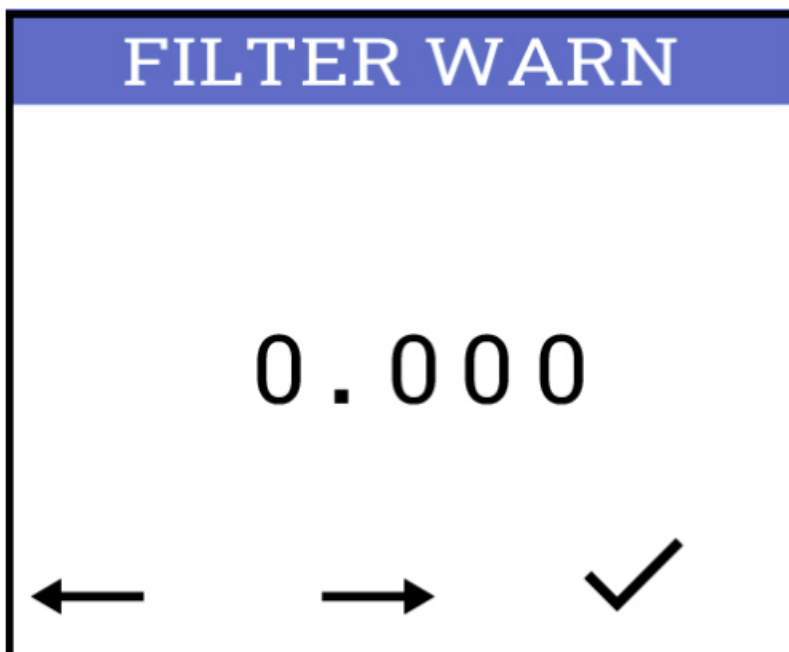

Filter Alarm Limits

Press and hold the RIGHT button ("✔") to adjust the alarm limit (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.
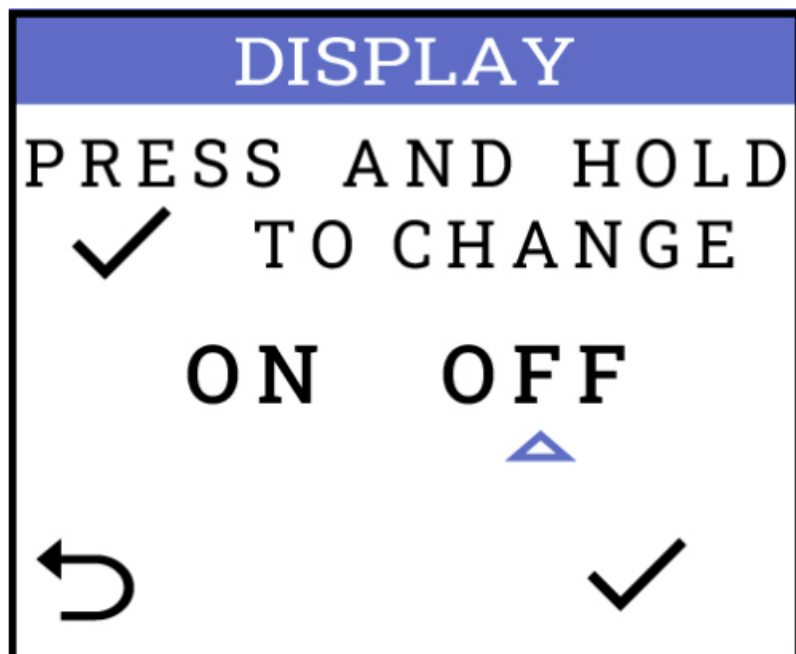
Filter Warn

Press and hold the RIGHT button ("✔") to adjust the warning limit (i.e. pressure at which the LED ring will turn yellow); 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.

Note: Recommend setting Filter Warning limit lower than filter alarm limit
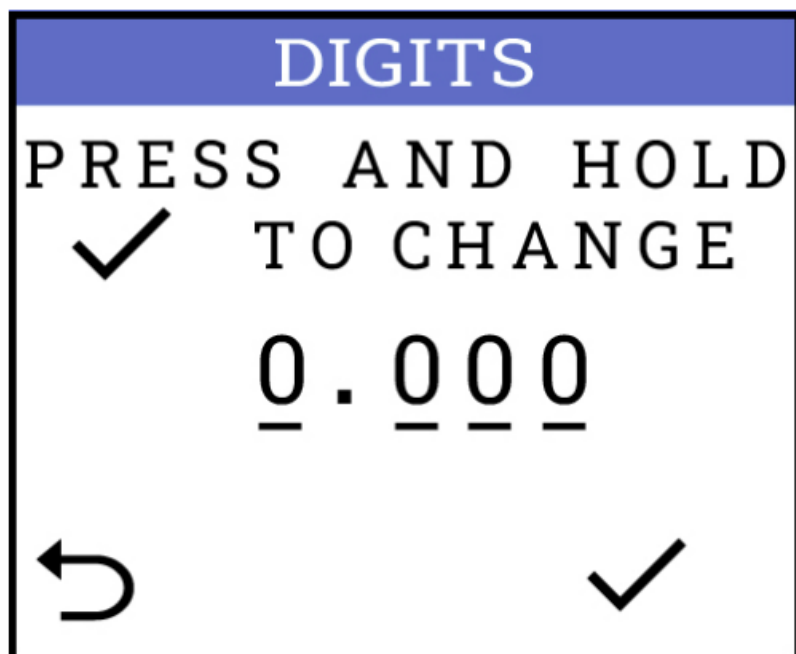
Display

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.
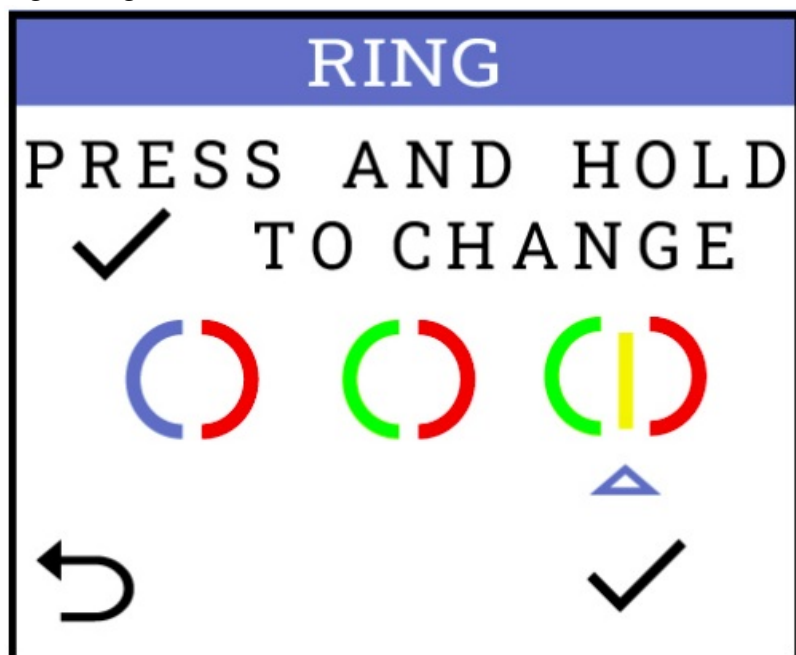
Digits

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.
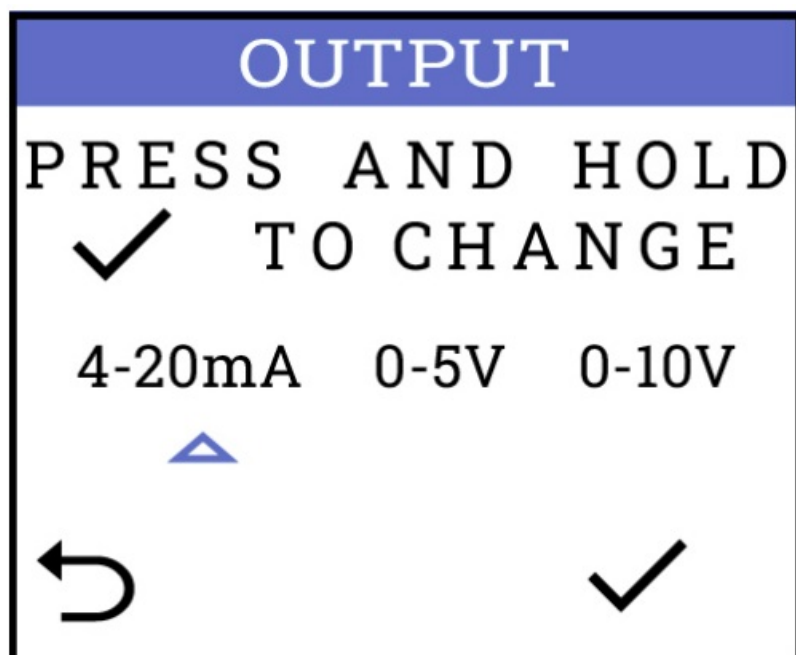
Light Ring

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 on only in alarm, green and red, or 3 stage light indication of green, yellow and red.

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.

Outputs

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.

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.
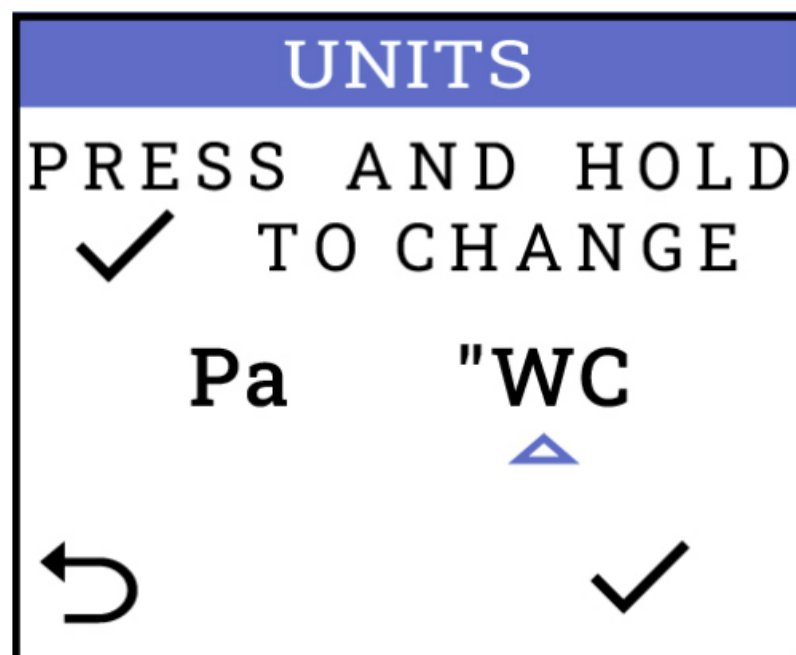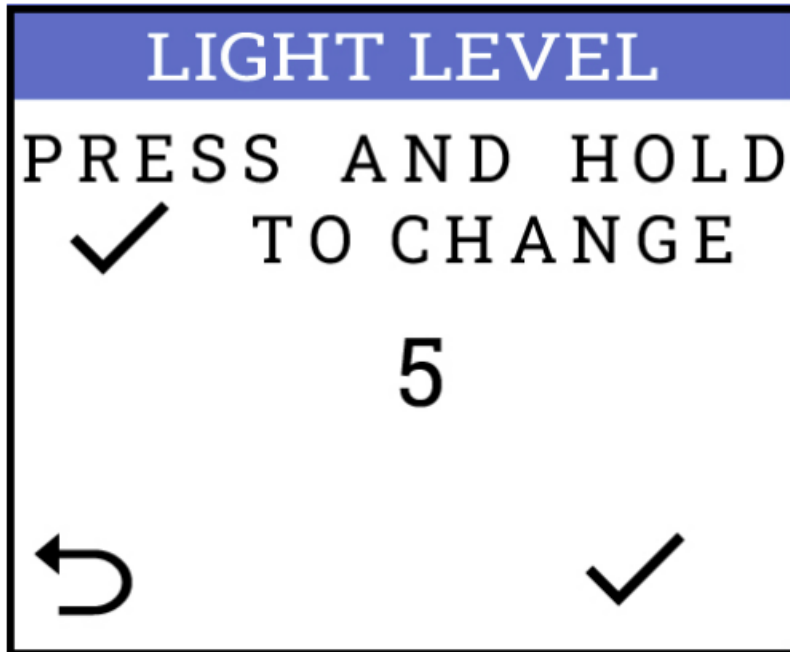
Light Level

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 ("dimmest") 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.

Operation

Filter 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 the warning limit threshold, the LED light ring will glow yellow, indicating that that the filter should be changed soon. If pressure exceeds the alarm limit threshold, the LED light ring will glow red, indicating that the filter should be changed as soon as possible.

Alarm/warning limits can be configured via the ALARM LIMITS and WARN LIMITS menus. LED light ring behavior can be configured via the RING menu.

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 Filter Alert.

Removal of Permanent Installations

Removal

In the event Setra Filter Alert needs to be removed for service, first remove the front lens. To remove the front

lends, 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.

Returning Products for Repair

Please contact a Setra application engineer (1.**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 1.**978-263-1400** for scheduling.

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).

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Documents / Resources

Setra MA 01719 Filter Alert [pdf] Installation Guide
SS-FLTR Rev A 1.pdf, MA 01719 Filter Alert, MA 01719, Filter Alert, Alert

References

- **User Manual**