setraFLEX™
Hot-wire Replacement Kit

Quickstart Guide

1.Intended Use

Thank you for purchasing the Setra FLEX Hot-wire Replacement Kit, including the industry's most advanced and flexible room environmental monitor.

Setra FLEX is designed for indoor use only to monitor critical environments by providing differential pressure indication and additional parameters such as temperature, relative humidity, air changes per hour, and user-defined information. Typically this is between a monitored room and a reference space such as a corridor or ante room. The unit also provides monitoring, control, alarm, and communications functions.

The Setra FLEX™ Hot-wire Replacement Kit includes everything required for upgrading obsolete, high maintenance room pressure monitor technology. The kit includes:

- The award-winning Setra FLEX Environmental Monitor
- An adapter frame that fits over the existing wall box
- Setra's no-maintenance transducer sensor
- A housing kit that attaches to the existing thru-the-wall sensor

Included in the box

a) FLEX unit
b) FLEX unit mounting screws
c) Flex adapter box
d) Adapter box mounting screws
e) Pressure sensing hub
f) Room pressure snubber hub
g) Hub fasteners
h) Electrical connectors

Quantity of box contents may vary.

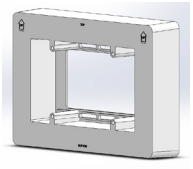
a



b



c



d

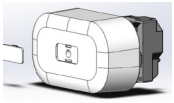




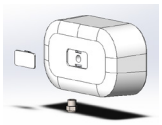
Direct Wall

Junction Box

e



f



g



h



(photos not to scale)

Setra Systems, Inc.
159 Swanson Road, Boxborough, MA 01719
800.257.3872 • www.setra.com

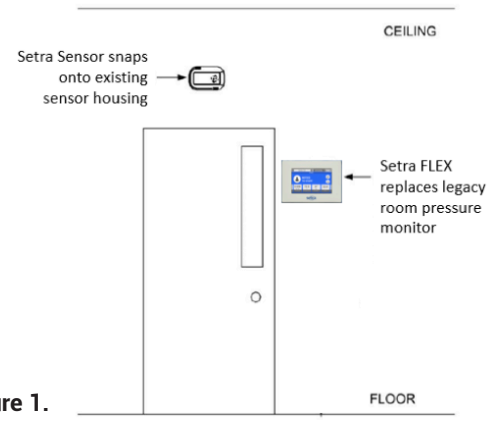


Figure 1.

2. Remove existing room pressure monitor and sensor

Refer to figure 1.

- Shut off power to existing monitor and sensor
- Remove existing room pressure monitor from the wall, and disconnect wires. Set the monitor aside
- Remove monitor's wall plate from the wall and set aside.

PHOTO

- Using a step ladder and small Phillips screwdriver, remove the hot-wire pressure sensor cover from the hallway side and set aside (sensor cover should pull straight out with some force).
- Do NOT remove wires from the sensor wall plate connector at this time
- Do NOT remove the sensor wall plate, as it will be used for mounting the new sensor hub.
- Move ladder to the other sensor housing cover inside doorway and remove hub cover
- No NOT remove the wall plate from wall

PHOTO

3a. Installing the Sensor Hub

The sensor hub comes pre-assembled similar to the existing hot wire kit.

On the hallway side, install the sensor hub as shown. A two wire harness is included.

RED = positive (+) BLACK = negative or common (-)

- At this time, you can take advantage of the existing electrical connector found on the faceplate and connect the two output wires directly, sharing the same positions as the existing output wires, leading down to the old monitor.

Alternatively, you can remove this existing electrical connector terminal from the faceplate and use either the crimp-style butt connectors or wire nuts provided in the kit.

(Take note of the wire colors you are selecting from the wall for easy connecting down below at the new monitor)

- After electrical connections are complete, uncoil the length of tubing connected to the hub and push this through the existing wall tube into the room (you will be connecting this tubing later)
- Assemble the sensor hub to the faceplate, taking care not to pinch or kink the tubing or wires.

- Align adapter box to sheet rock anchors and fasten adapter box to wall using the four screws provided.
- Uncoil the wires from the wall opening into a comfortable position for connecting to the Flex monitor.

On the room side, you will be trimming the tubing to length to accommodate your wall thickness.

- Bring the empty hub cover into close proximity to the wall faceplate on the room side to gauge the appropriate amount o f tubing to trim.

© Setra Systems, Inc. All Rights Reserved. The Setra Systems name and logo are registered trademarks of Setra Systems, Inc.

- Trim the tubing to length using knife or scissors.
- Attach tubing to barbed pressure port on empty hub

- Assembly hub to faceplate. The sensor port should be facing downward in the room.
- Tighten the empty hub to the faceplate and ensure you are not pinching or kinking the tubing during assembly.
- Snap the screw cover provided into place.

3b. Installing the Setra FLEX Monitor

On the hallway side, there should be an existing 4″ x4″ electrical junction box in the wall. If there is no 4″ x4″ electrical junction box, the Setra FLEX adapter box can still be mounted directly to the wall.



- For junction box mounting: Align the adapter box into position and fasten to the junction box using the two screws provided.

- For direct wall mounting: Align the adapter box appropriately, mark and drill four holes for plastic sheet rock anchors using 3/16 diameter drill bit.
- Gently tap the sheet rock anchors into place.



- Align adapter box to sheet rock anchors and fasten adapter box to wall using four screws provided.
- Uncoil the wires from the wall opening into a comfortable position for connecting to the Flex monitor.



At this time, you should verify the two wire colors you selected above at the sensor hub, noting which color is positive (+) and which color is negative or common (-).

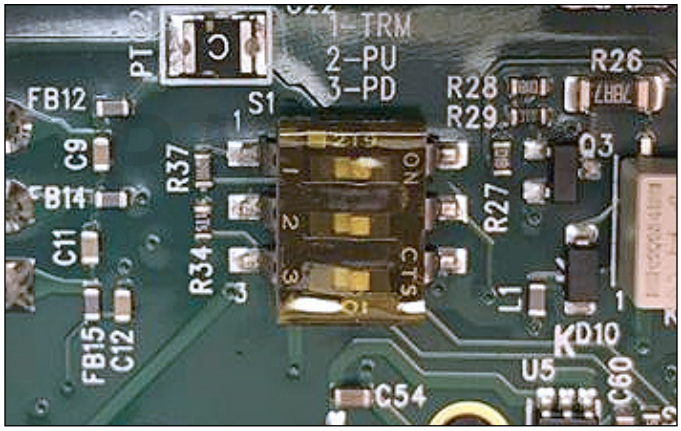
- Prior to connecting wires, fasten the Setra FLEX monitor unit to the adapter box using the four screws provided.



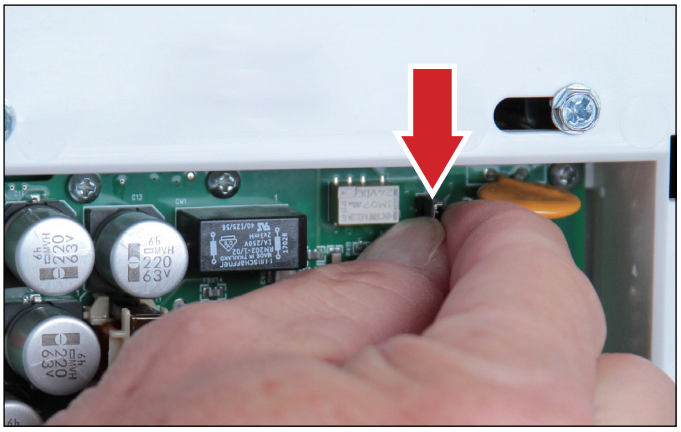
- Connect the two wires from the hub sensor to input location AI1 on the rear of the Setra FLEX monitor.
- Connect existing output wires from the old monitor to the back of the Setra FLEX monitor.
- Connect power to the Setra FLEX monitor at the terminal market PWR.



- BACnet MS/TP hardware is implemented as isolated RS485. Wire to Connector COMM, labeled BACNET. Connect TX line to B (+), RX to A (-) and ground wires to GND. Connect shields together with wire nut. Hardware configuration is done using a three position dip switch located in the upper center section of the rear PCB. Use a small flat blade screwdriver or pen to push the switch to the right to turn the function on, or to the left to turn the function off. If the unit will be at the end of the line, the terminating resistor can be enabled by pushing position 1 to on.



- If live power is already turning on FLEX, power can be cycled on FLEX by removing the J6 jumper on the unit. This can be done by hand, or carefully with non-conductive pliers. Normally, FLEX is continuously powered and this jumper does not need to be accessed.



- With all electrical connections complete, rotate the face of the Setra FLEX monitor up and into the position
- Starting at the lower-left of the monitor bezel, directly in the region of the snaps, push the bezel into place using your thumbs. You should hear a snapping sound.
- Now proceed to lower right, upper-left, and upper-right.

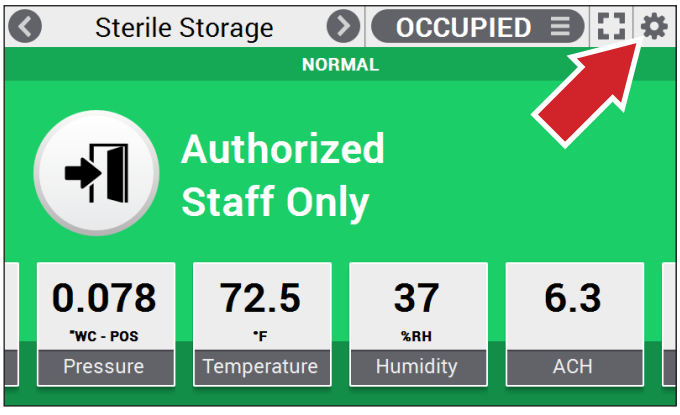


- Swivel up the FLEX display, and push firmly at the frame just above and just below the touch screen. The display will snap into place and seal against the wall surface.

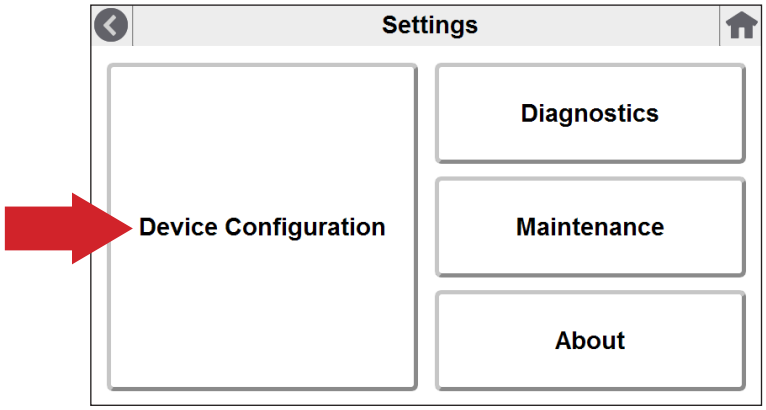


5. Power Up Configuration

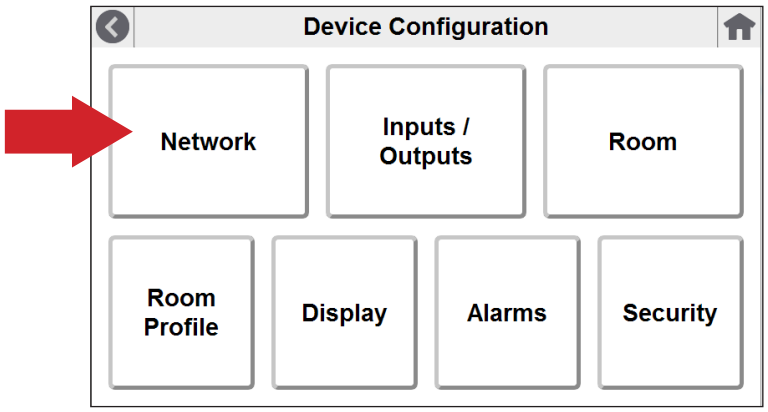
- Access the "cog wheel" on the top-right of the FLEX display to configure the unit.



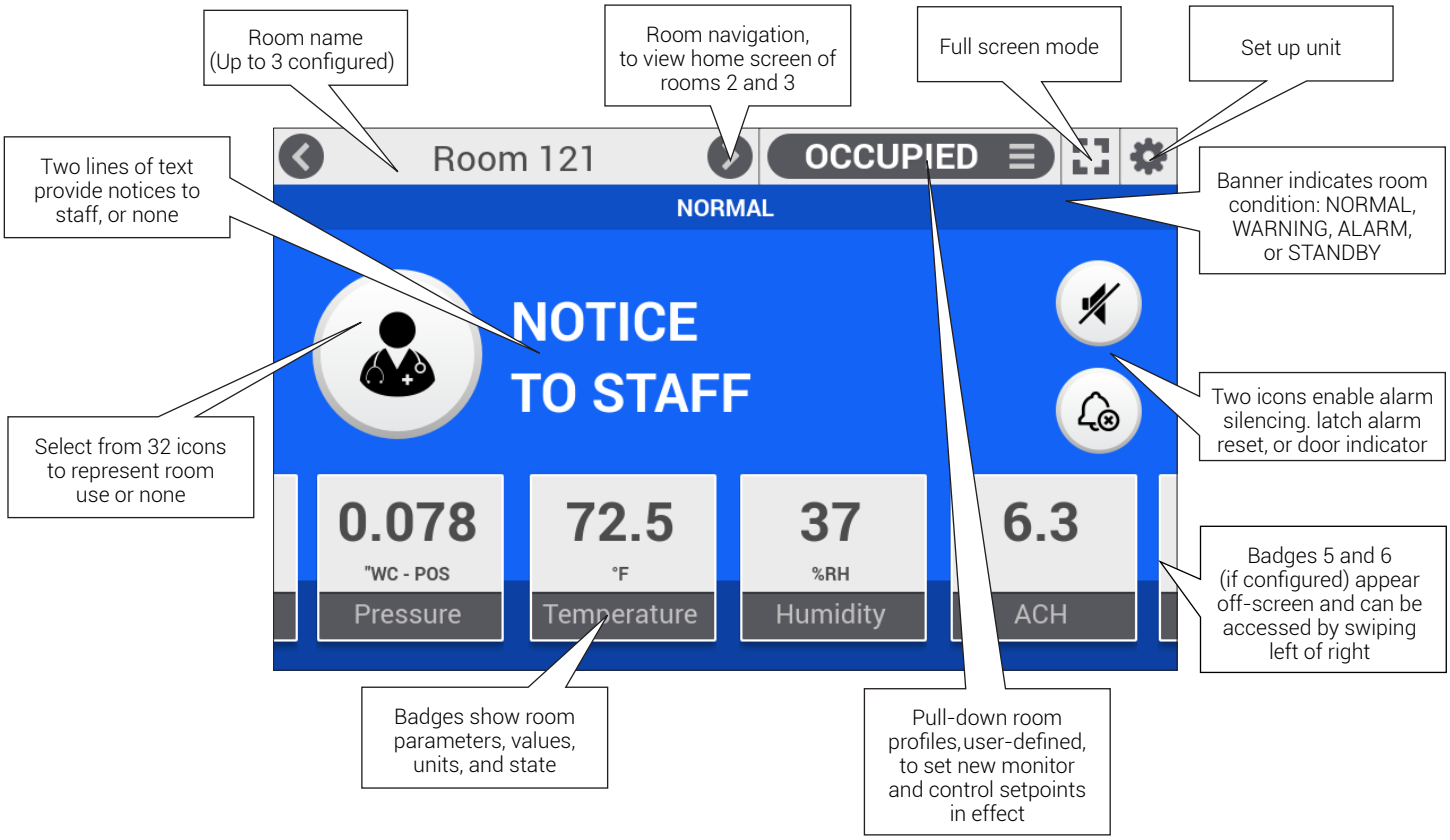
- Use "Device Configuration" for initial setup.



- The next seven menus (three tiles over four) permit complete configuration of your FLEX unit. Detailed instructions for each menu can be found in the FLEX Installation & Operations Guide.



6. FLEX Home Screen



© Setra Systems, Inc. All Rights Reserved. The Setra Systems name and logo are registered trademarks of Setra Systems, Inc.

7. Specifications

Physical Description

Dimensions	9.25" W x 6.3" H x 0.65"D (215.0mm x 160.0mm x 16.51mm)
Mounting	Triple-gang, double deep electrical box. RACO 697, Appleton M3-350, or equivalent
Case	Fire-retardant plastic UL94 V-0
Weight	2 lbs
Display	7" Projected Capacitive (PCAP) multitouch. 800 x 480 pixels. Usable with medical gloves.
Display brightness	1-7
USB port	Micro-USB port for configuration cloning between units and software upgrades.
Audible alarm	Dual piezo with 3 volume levels (0-75 dB max.)

Communications

Protocols (BACnet objects can be found at setra.com) BTL- compliant
BACnet/IP using IPv4, Ethernet CAT5 cables with RJ45
BACnet MS/TP up to 76.8 kbps, 3-conductor, twisted, shielded 16-24 AWG cable

Electrical

Power	24 VAC (18-30 VAC operational), 50-60 HZ
Power draw	13 W max, 10 W typical
Wire	2 or 3-conductor (depending on application) stranded unshielded twisted pair, 16-24 AWG
Connections	Removable Terminal Blocks

Regulatory Compliance

CSA, CE, RoHS, WEEE

Specifications subject to change without notice.

Environmental Data

Operating temp. °F (°C)	32 to 120 (0 to 50)
Storage temp. °F (°C)	-40 to 185 (-40 to 85)
Operating humidity	5 to 95% RH (non-condensing)
Ingress Protection (IP) rating	IP54

Chemical Resistance

Exposed surfaces are chemically resistant to vaporized hydrogen peroxide (VHP), formaldehyde, chlorine dioxide (clidox), perchloric acid, sodium hypochlorite 3-6% (bleach), quaternary ammonium 7% in 1:128 tap water (ammonia).

Performance

Accuracy RSS	±0.25%
Non-linearity (BFSL)	±0.24%
Hysteresis	±0.05%
Non-repeatability	±0.05%
Span setting tol.	±0.5% Rdg
Zero/span shift % FS	± 0.03% PSI (±0.05% FS)
Overpressure	±1 PSI (15" WC for ≤0.10" WC FS)
Pressure media	Air or non-conductive, non-explosive gases
Pressure fittings	3/16" barbed fittings
Altitude	6562 ft. (2000 m) max.
Position	Housing to be 90° in reference to level surface, ±5°

8. Maintenance

- The FLEX is designed to operate in an indoor environment, monitoring clean, dry air.
- Upon final installation of the FLEX Environmental Monitor, no routine maintenance is required. An annual check of system calibration is recommended. FLEX is not field serviceable and should be returned if repair is needed (field repair should not be attempted and may void warranty). Be sure to include a brief description of the problem plus any relevant application notes. Contact customer service to receive a return goods authorization number before shipping.
- **WARNING:** Do not blow into the pressure tubing or fittings with mouth, compressed air, or canned air. Such actions may permanently damage the pressure sensor. Do not clean or wash-down FLEX with industrial cleaners or solvents other than those approved in specifications. Do not immerse unit.

9. Returns

When returning a product to Setra Systems, the material should be carefully packaged and shipped prepaid to:

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

To assure prompt handling, please refer to return instructions at the following URL:

http://www.setra.com/tra/repairs/cal_rep.htm.

10. Warranty and limitation of liability

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 writing and signed by a SETRA officer, SETRA pressure, humidity, 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. 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).

⚠ Safety Precautions

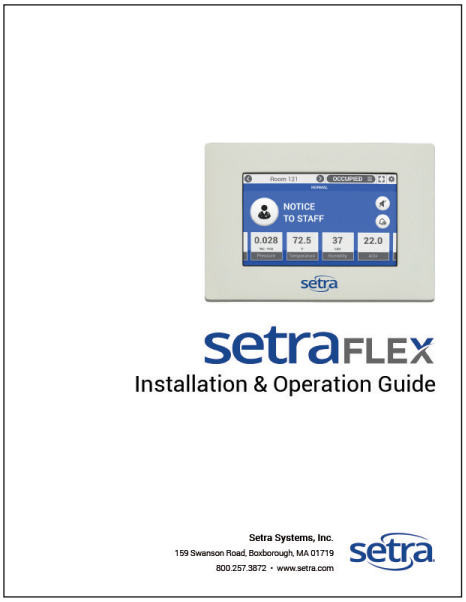
This product conforms to UL 61010-1/61010-2-201 and CSA CSA22.2 No. 61010-1/61010-2-201 safety standards Pollution Desgree 2, and Measurement Category 2.
To ensure the safe operation and service of the device, follow these instructions closely. Failure to observe warnings can result in severe personal injury or permanent damage to the device.

- This product is for indoors use only
- Use a Class-2 transformer of the appropriate size to supply power to the device
- Relay shall only be used to switch load up to 30VDC 2A
- Temperature inside enclosure may exceed 60˚C under normal operation. Select appropriate cable or wire rating for connection. Avoid touching electronics components with bare hands to prevent personal injury
- All wiring must conform to national and local codes and regulations
- Observe ESD general practice. Wear ESD wrist strap to install and service the device

© Setra Systems, Inc. All Rights Reserved. The Setra Systems name and logo are registered trademarks of Setra Systems, Inc.

11. Support

Setra FLEX
Installation & Operation Guide



Setra FLEX
Data Sheet



Technical Support

800.257.3872

www.setra.com

techsupport@setra.com

RoHS

Setra Systems, Inc.
159 Swanson Road, Boxborough, MA 01719
800.257.3872 • www.setra.com