

# setra FLEX

## Environmental Monitor

- Supports 3 Rooms, 6 Parameters Each
- 7" Projected Capacitive Touch Screen
- BACnet/IP & BACnet MS/TP
- Flush Mount to Wall
- Mounts in Standard Electrical Boxes
- Full Touch Response with Medical Gloves
- No Programming Required
- 4 Inputs & 2 Outputs On-board
- 8 Inputs & 8 Outputs Expansion I/O Module
- On-board or External Pressure Transducer
- High Accuracy 0.25% Sensor Standard
- Monitor and Control Pressure, Temperature, Humidity, Air Change Rate and 2 User Defined Parameters
- 4 Customizable Room Profiles
- 2 Levels of Password Security
- User-defined On-screen Text and Icons
- Configuration Options Help Reduce Nuisance Alarms
- 50mm Wall Depth when Sensor is Mounted Remotely
- Cloning Features Reduces Time Required for Multi-Unit Installation
- Remote duplicate display shows parameters inside and outside of rooms

Hochwertige Messtechnik und Beratung aus einer Hand



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The Setra FLEX™ provides a flexible room environmental control and monitoring solution in a simple-to-use package. An attractive flush-mount faceplate is complemented by an intuitive graphical display to meet any architectural requirement. The unit supports 3 rooms, monitoring up to 6 parameters for each room. If additional I/O is required, an expansion I/O module enables the monitoring and control for more complicated applications. An optional differential pressure sensor can be either factory-installed in the unit or ordered separately and installed above the ceiling. Integration with building automation systems is made easy through either BACnet/IP or BACnet MS/TP network protocols.

## Modular Design

A modular hardware design enables the FLEX monitor to fit in various wall thickness found around the globe. For applications which require the monitor to fit in wall depths less than 50mm, the FLEX can be ordered with an external pressure sensor. When mounting in a three gang electrical box, the FLEX can be ordered with an integrated on-board sensor. Sufficient on-board I/O provides connectivity for most common equipment and sensor applications. If additional connections are required, or if more advanced HVAC applications demand it, the expansion I/O module can be ordered as an accessory. A high accuracy 0.25% differential pressure transducer is used in all pressure sensing options. A projected capacitive touch screen provides swipe functionality and allows for use with medical gloves. The faceplate is attached to the unit body, enabling both tamper resistant operation and easy opening for pressure calibration.

## Setra FLEX-RM and FLEX-RC

FLEX software is designed to suit any application, with the ability to support up to 3 rooms. FLEX-RM (Room Monitor) provides monitoring only, for those applications where no control from the touch screen is needed. FLEX-RC (Room Control) offers monitoring, plus PI loop or network control of VAV boxes, venturi valves, or hydronic reheat valves. Software is pre-installed, with configuration and network integration done using simple setup screens. There is no programming required. When completed, configuration settings on one unit can be cloned to other devices using a standard USB thumb drive, thereby shortening commissioning time. Units can also be configured remotely over a BACnet network.

The FLEX monitor is both a controller and monitor, with audible and visual alarming on all room environmental parameters. The FLEX monitor enables users to save energy by choosing from two PI control loops and two monitoring sets for any of four room modes, such as occupied and unoccupied.

# Specifications

## Physical Description

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

## Communications

### Protocols (BACnet objects can be found at setra.com)

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

<b>Power</b>	24 VAC (18-32 VAC operational), 50-60 HZ
<b>Power draw</b>	13 W max, 10 W typical
<b>Wire</b>	2 or 3-conductor (depending on application) stranded unshielded twisted pair, 16-24 AWG
<b>Connections</b>	Removable Terminal Blocks

## Regulatory Compliance

CE, RoHS, WEEE

## Environmental Data

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

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

Specifications subject to change without notice.

# Software features

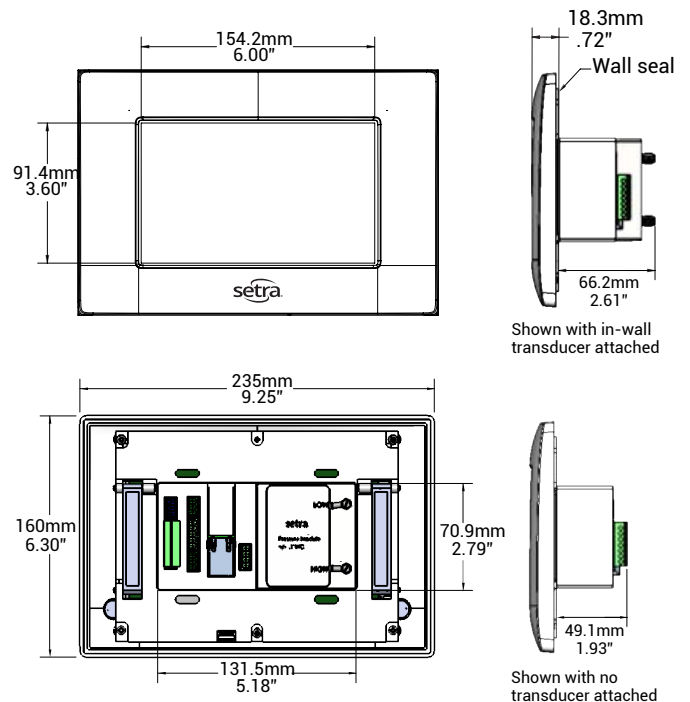
## Home Screen

<b>Rooms supported (3)</b>	Carousel display to show up to 3 rooms, with monitor and control for each.
<b>Parameters per room (6)</b>	Badges display pressure, temperature, humidity, air change rate, and 2 user-defined parameters. Each capable of monitor or control. All information available over BACnet.
<b>Room profiles (4)</b>	Define profiles for room environmental control and monitoring. User-defined text. Used for modes such as occupied, unoccupied, cleaning, or decontamination.
<b>Pressure modes (3)</b>	Positive, Negative, Neutral
<b>Background colors (5)</b>	Green, yellow, blue, red, orange for room condition.
<b>Text (2)</b>	User defined lines text that describe room condition.
<b>Icons (1)</b>	Choose from a palate of icons to represent room condition.
<b>Control</b>	Four control loops assignable per device. PI control loop for on-board and external analog outputs. User-defined set point limits. All information available over BACnet.

## Alarming

<b>Parameters per room (6)</b>	Visual and audible alarms for pressure, temperature, humidity, air change rate, and 2 user-defined parameters.
<b>Visual</b>	Green = normal, Red = alarm, Yellow = warning
<b>Audible</b>	Dual buzzers with 3 volume levels (0-75 dB max.)
<b>Disable</b>	One-touch all alarms disable function.
<b>Silence</b>	Selectable 0 - ∞ seconds
<b>Delay</b>	Selectable 0 - 9999 seconds
<b>Latch</b>	Alarm option to hold alarm state until manually reset by operator.
<b>Remote</b>	Remote annunciation to dedicated unit (p/n SRAN) or to multi-unit room monitor.

# Dimensions





# Expansion I/O Module

The FLEX Expansion I/O Module adds an additional eight inputs and eight outputs to the FLEX monitor. This I/O module can be used for additional hard-wired sensors, expanding monitoring and control applications. Eight universal inputs can be configured as either analog inputs or digital inputs. Four analog outputs provide external signaling and data values to third party equipment and controllers. Four relay outputs enable equipment control for reheat coils, VAV damper actuators, and similar devices. A 24 VDC output can be used with other peripheral devices such as Setra's SRAN remote annunciator. Communications to the FLEX monitor is via a proprietary serial bus.



## Inputs & Outputs

<b>Universal inputs (8)</b>	0-5 VDC, 0-10 VDC, or 4-20 mA input signal* Configurable for either Analog or Digital signals. Use external sensors for pressure, temperature, humidity, or any suitable application. Use as digital input for door, HVAC filter DP, or duct static DP pressure switch.
<b>Analog outputs (4)</b>	0-5 VDC, 0-10 VDC, or 4-20 mA output signal. Use as PI control loop to modulate reheat valves or other analog driven devices, pressure output signal, or mirror an input signal. <b>Outputs #1-2:</b> 0-5 VDC, 0-10 VDC, or 4-20mA output signal <b>Outputs #3-4:</b> 0-5 VDC or 0-10 VDC only
<b>Relay outputs (4)</b>	SPDT NO/NC Relay. Use as remote alarm annunciator or other NO/NC applications. Contact rating 2.0A @ 30 VDC / VA 0.6A @125 VAC <b>Outputs #5-8:</b> 3-terminal, NC-COM-NO
<b>Wire</b>	Stranded shielded twisted pair, 16-24 AWG .14-1.5 mm <sup>2</sup> cross sectional area

\*Installer-provided 250 ohm resistor required for use of 4-20 mA signal.

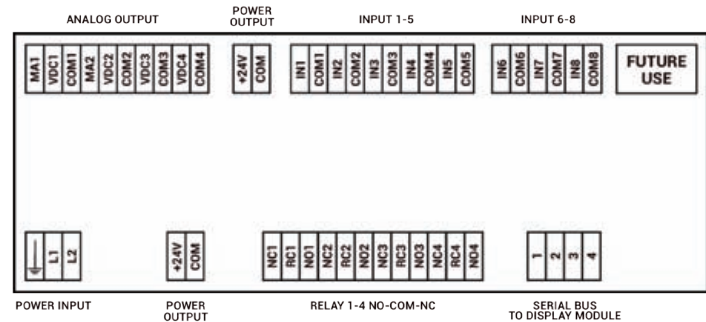
## Hardware specifications

### Physical description

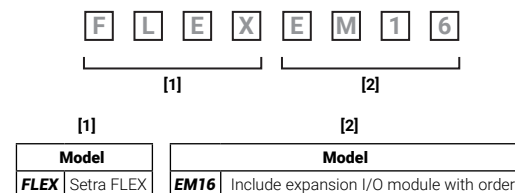
<b>Dimensions</b>	6.36" W x 3.53"h x 2.40"D (161.6mm x 89.7mm x 60.75mm)
<b>Mounting</b>	Base mount or 35mm DIN rail
<b>Case</b>	Polycarbonate
<b>Weight</b>	1lb

### Environmental data

<b>Operating temp.</b> <sup>4</sup> °F (°C)	32 to 120 (0 to 50)
<b>Storage temp.</b> °F (°C)	-40 to 185 (-40 to 85)
<b>Operating humidity</b>	5 to 95% RH (non-condensing)
<b>Ingress Protection (IP) rating</b>	IP 20



## Ordering Information



### Communications

RS-485 isolated full duplex. Dedicated I/O expansion module to the FLEX touch monitor product family. I/O points are accessible on BACnet/IP or BACnet MS/TP through the FLEX monitor.

### Electrical data

<b>Power input</b>	24 VAC (18-32 VAC operational), 50-60 HZ
<b>Power output</b>	Auxilliary power for external sensors. 24 VDC, 0.4A
<b>Power draw</b>	13 W maximum depending on load
<b>Wire</b>	2 or 3-conductor stranded unshielded twisted pair, 16-22 AWG
<b>Connections</b>	Removable terminal blocks

### Regulatory compliance

CE, RoHS, WEEE