

setraFLEX

Environmental Monitor



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.

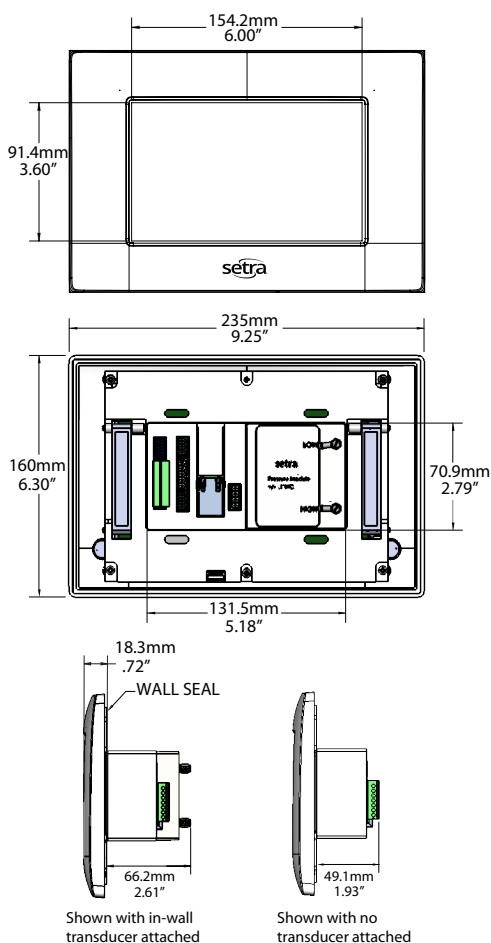


- Supports 3 Rooms, 6 Parameters Each
- 7" Projected Capacitive Touch Screen
- BACnet/IP & BACnet MS/TP

Setra FLEX Features:

- 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

DIMENSIONS



HARDWARE SPECIFICATIONS

Physical Description		Environmental Data	
Dimensions	9.25"W x 6.3"H x 0.65"D (215.0mm x 160.0mm x 16.51mm)	Operating Temp. °F (°C)	32 to 120 (0 to 50)
Mounting	Triple-gang, double deep electrical box. RACO 697, Appleton M3-350, or equivalent	Storage Temp. °F (°C)	-40 to 185 (-40 to 85)
		Operating Humidity	5 to 95% RH (non-condensing)
Case	Fire-retardant plastic UL94 V-0	Ingress Protection (IP) Rating	IP54
Weight	2 lbs		
Display	7" Projected Capacitive (PCAP) multitouch. 800 x 480 pixels. Usable with medical gloves.	Chemical Resistance	
Display Brightness	1-7	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).	
USB Port	Micro-USB port for configuration cloning between units and software upgrades.	Performance	
Audible Alarm	Dual piezo with 3 volume levels (0-75 dB max.)	Accuracy RSS	±0.25%
Communications		Non-Linearity (BFSL)	±0.24%
Protocols (BACnet objects can be found at setra.com)		Hysteresis	±0.05%
BACnet/IP using IPv4, Ethernet CAT5 cables with RJ45		Non-Repeatability	±0.05%
BACnet MS/TP up to 76.8 kbps, 3-conductor, twisted, shielded 16-24 AWG cable		Span Setting Tol.	±0.5% Rdg
Electrical		Zero/Span Shift % FS	± 0.03% PSI (±0.05% FS)
Power	24 VAC (18-32 VAC operational), 50-60 HZ	Overpressure	±1 PSI (15"WC for ≤0.10"WC FS)
Power Draw	13 W max, 10 W typical	Pressure Media	Air or non-conductive, non-explosive gases
Wire	2 or 3-conductor (depending on application) stranded unshielded twisted pair, 16-24 AWG	Pressure Fittings	3/16" barbed fittings
Connections	Removable Terminal Blocks	Regulatory Compliance	
CE, RoHS, WEEE		Altitude	6562 ft. (2000 m) max.
		Position	Housing to be 90° in reference to level surface, ±5°

SOFTWARE FEATURES

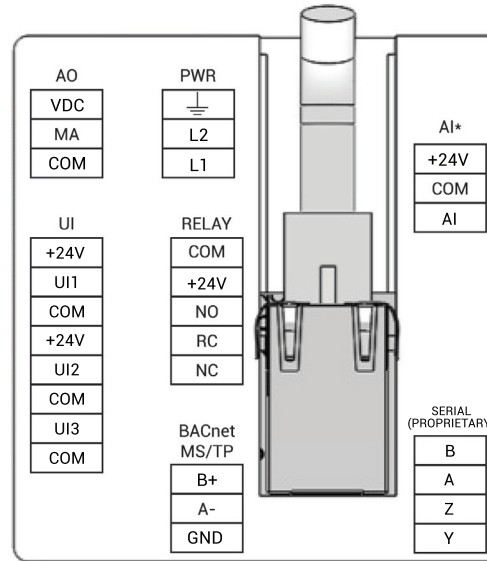
Home Screen			Alarming	
Rooms Supported	3	Carousel display to show up to 3 rooms, with monitor and control for each.	Parameters per Room	6
Parameters per Room	6	Badges display pressure, temperature, humidity, air change rate, and 2 user-defined parameters. Each capable of monitor or control. All information available over BACnet.	Visual	Green = normal, Red = alarm, Yellow = warning
Room Profiles	4	Define profiles for room environmental control and monitoring. User-defined text. Used for modes such as occupied, unoccupied, cleaning, or decontamination.	Audible	Dual buzzers with 3 volume levels (0-75 dB max.)
Pressure Modes	3	Positive, Negative, Neutral	Disable	One-touch all alarms disable function.
Background Colors	5	Green, yellow, blue, red, orange for room condition.	Silence	Selectable 0 - ∞ seconds
Text	2	User defined lines text that describe room condition.	Delay	Selectable 0 - 9999 seconds
Icons	1	Choose from a palate of icons to represent room condition.	Latch	Alarm option to hold alarm state until manually reset by operator.
Control	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.		Remote	Remote annunciation to dedicated unit (p/n SRAN) or to multi-unit room monitor.

Environmental Monitor

INPUTS & OUTPUTS

Inputs and Outputs		
Universal Inputs	3	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.
Analog Input	1	Dedicated for use as input for either on-board pressure transducer, or general AI input. Used only when no transducer is purchased on unit.
Analog Output	1	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. Can be assigned to any room parameter.
Relay Output	1	15 VDC 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
Wire		Stranded shielded twisted pair, 16-24 AWG .14-1.5 mm ² cross sectional area
Expansion I/O Module		8 Universal Inputs, 4 Analog Outputs, 4 Relay Outputs

*Installer provided 250Ω resistor required for 4-20mA signal



*AI for on-board transducer or general AI input.

ORDERING INFORMATION

FLEX - [] [] [] [] [] - [] [] - 7 - [] - []

Model	Pressure Transducer Range for On-Board Sensor		Monitor or Controller		Display		Faceplate		Pressure Snubber ¹	
FLEX	Range Code (Inches W.C.)	Range Code (Pascals)	Select if only monitoring, or if equipment control is needed		Screen Size		S	Setra Logo	N	Quantity 0
	R05WB ±0.05	Z02LB ±12.5	RM	Monitor Only No Control Operation	7	7 Inches	B	Blank	1	Quantity 1
	OR1WB ±0.10	O25LB ±25	RC	Control and Monitoring Full Control Operation					2	Quantity 2
	R25WB ±0.25	O50LB ±50							3	Quantity 3
	OR5WB ±0.50	100LB ±100							4	Quantity 4
	001WB ±1.00	250LB ±250							5	Quantity 5
	NNNN	No Transducer							6	Quantity 6

¹Stainless steel pressure pickup port, 2.75" x 4.5", mounts in standard single-gang wall box. Typically 2 are required for each room.

Sample part number: FLEXOR1WBRM7S4; Setra Flex, ±0.10" W.C., Room monitor only, 7 inch display, Setra logo on faceplate, 4 pressure snubbers.

2641 - [] [] [] [] [] - [] [] - A1 - F

Model	Range Code	Output		Electrical Termination		Accuracy	
2641 = Model 264	Bidirectional	11	4-20 mA	A1	1/2 in. Conduit Enclosure	F	±0.25% FS
	R05WB ±0.05" W.C.	2D	0-5 VDC				
	OR1WB ±0.1" W.C.						
	R25WB ±0.25" W.C.						
	OR5WB ±0.5" W.C.						
	001WB ±1" W.C.						

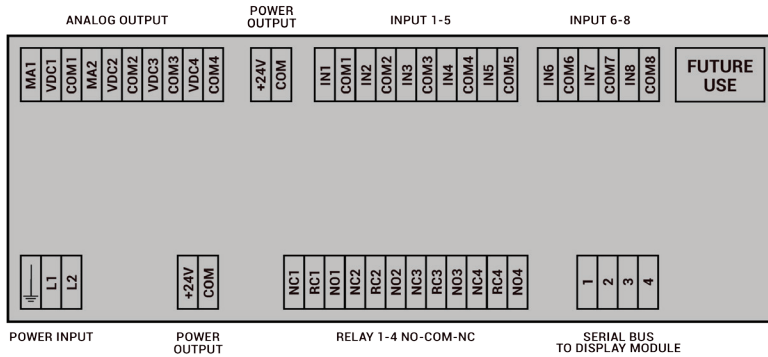
2671 - [] [] [] [] [] - [] [] - A1 - [] []

Model	Range Code	Output		Electrical Termination		Accuracy	
2671 = Model 267	Bidirectional	11	4-20 mA	A1	1/2 in. Conduit Enclosure	FN	±0.25% FS with no LCD display
	R05WB ±0.05" W.C.	2D	0-5 VDC			FD	±0.25% FS with LCD display
	OR1WB ±0.1" W.C.	2E	0-10 VDC				
	R25WB ±0.25" W.C.						
	OR5WB ±0.5" W.C.						
	001WB ±1" W.C.						

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.



I/O EXPANSION MODULE



INPUTS & OUTPUTS

Universal Inputs	8	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.	
Analog Output	4	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.	
		Outputs #1-2	0-5 VDC, 0-10 VDC, or 4-20mA output signal
		Outputs #3-4	0-5 VDC or 0-10 VDC only
Relay Output	4	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	
		Outputs #5-8	3-terminal, NC-COM-NO
Wire		Stranded shielded twisted pair, 16-24 AWG .14-1.5 mm ² cross sectional area	

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

HARDWARE SPECIFICATIONS

Physical Description		Environmental Data		Electrical Data	
Dimensions	6.36"W x 3.53"h x 2.40"D (161.6mm x 89.7mm x 60.75mm)	Operating Temp. ⁴ °F (°C)	32 to 120 (0 to 50)	Power Input	24 VAC (18-32 VAC operational), 50-60 HZ
Mounting	Base Mount or 35mm DIN Rail	Storage Temp. °F (°C)	-40 to 185 (-40 to 85)	Power Output	Auxilliary power for external sensors. 24 VDC, 0.4A
Case	Polycarbonate	Operating Humidity	5 to 95% RH (non-condensing)	Power Draw	13 W maximum depending on load
Weight	11lb	Ingress Protection (IP) Rating	IP 20	Wire	2 or 3-conductor stranded unshielded twisted pair, 16-22 AWG
				Connections	Removable Terminal Blocks
				Regulatory Compliance	
				CE, RoHS, WEEE	
				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.	

ORDERING INFORMATION

FLEX - EM16

Model	Expansion Module	
FLEX	EM16	Include Expansion I/O module with order