

SmartX Living Space Sensors



Product Description

SmartX sensors are a family of living space sensors for use with SmartX IP controllers that use the EcoStruxure Building Operation user interface. These sensors use an RJ-45 sensor bus that provides communication and power from the SmartX IP controller. For quick installation, up to four SmartX sensors may be connected to each SmartX IP controller through the RJ-45 sensor bus using Cat 5/6 cable (22 to 26 AWG). A Bluetooth® adapter is available for commissioning and service. It is temporarily connected to installed communicating sensors and allows for quick setup and configuration. The Bluetooth adapter communicates to upload devices (smart phone, laptop, tablet, etc.) with the Living Space Sensor EcoStruxure Building Operation app installed via USB or Bluetooth communications.

SmartX living space sensors are modular and are ordered in two parts: the sensor base and the cover. Four SmartX communicating sensor base models are available that can be paired with any one of six covers. CO₂, Relative Humidity, and Temperature sensor base options provide an efficient, cost effective solution for living space air quality and comfort needs. Covers are available with a 61 mm (2.4") backlit color touchscreen and a three button non-display version for override and setpoint. Blank covers with no user interface are also available. All modular cover variants are available with and without passive infrared occupancy sensors.

Two complete sensor/cover combination models are available:

- SXWSATXXXSLX - Temperature-only with LCD display. Communicating with three button cover. This is a low cost temperature sensor with a basic display.
- SXWSATXXXRXX - A two-wire, resistive-only, non-communicating temperature sensor is offered for a low cost conformance part. This uses an I/O port on the controller.

Combination models come with a sensor base and cover and have the same form factor as the modular sensor bases and covers. Combination units will not work with other covers.

SmartX living space sensors measure the levels of CO₂ (if equipped), RH (if equipped), and temperature of air in a living space application. The CO₂ sensor operates within accuracy specifications for an interval of two years and can be field calibrated. The RH and temperature sensors are warranted to meet accuracy specifications for a period of two years.

Features

- Contemporary, sleek housing
- 61 mm (2.4") backlit color touchscreen cover available
- LCD (SXWSATXXXSLX only)
- Digital temperature indication (selectable for 0.1 or 1 degree display resolution of °F or °C).
- Digital humidity indication (selectable for 0.1 or 1% RH display resolution)
- Long-life humidity sensing element with excellent resistance to contamination and condensation
- Digital CO₂ indication (0-2000 ppm display resolution)
- Field calibratable non-dispersive infrared CO₂ sensor
- Pushbutton override capabilities allow occupants to switch to timed occupied mode for after hours operation
- Displays selected system values such as setpoints, outdoor air temperature, and operating mode
- Provides the ability to change operating modes
- Passive Infrared (PIR) occupancy sensor covers available
- Directly connects to the sensor bus of the MP Series controller with EcoStruxure Building Operation software version 2.0
- Sensor bus provides power and communication via RJ-45 over Cat 5/6 cable (22 to 26 AWG)

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 Europe: +46 10 478 2000
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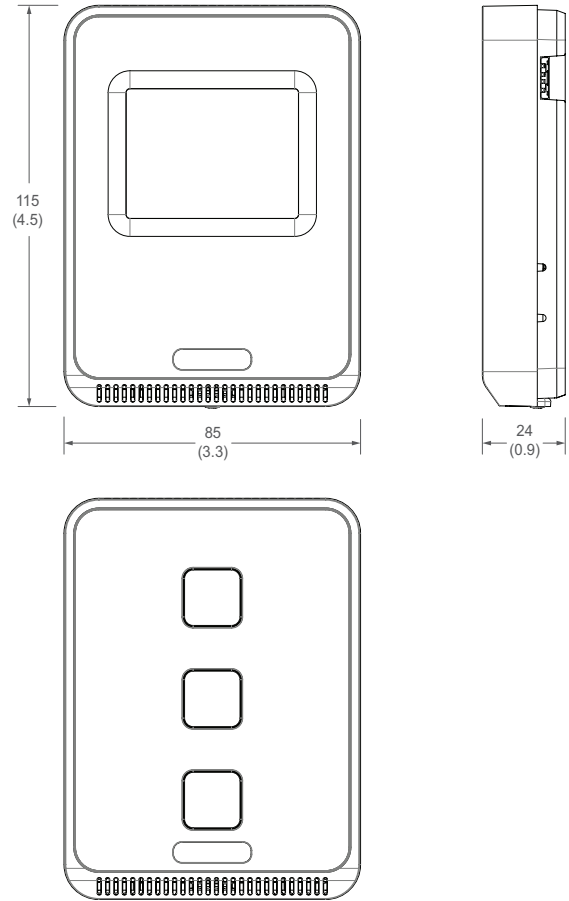
Life Is On

Schneider
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Specifications

CO₂ Sensor	
Sensor type	Non-dispersive infrared (NDIR), diffusion sampling
Output range	0 to 2000 ppm
Accuracy	±30 ppm ±2% of measured value
Repeatability	±20 ppm ±1% of measured value
Response time	<60 seconds for 90% step change
RH Sensor	
HS sensor	Thin-film capacitive
Accuracy	±2% from 10 to 80% RH @ 25°C (77 °F)
Hysteresis	1.5% typical
Linearity	Included in accuracy specification
Stability	±1% @ 20°C (68 °F) annually for 2 years
Output range	0 to 100% RH
Temperature coefficient	±0.1% RH/°C above or below 25 °C (77 °F) typical
Temperature Sensor (Non-communicating Models)	
Sensor type	10K Type 3 thermistor
Accuracy	±0.2 °C (±0.4 °F) typical
Resolution	0.1 °C (0.2 °F)
Output range	0 to 50 °C (32 to 122 °F)
Temperature Sensor (Communicating Models)	
Accuracy	±0.2 °C (±0.4 °F) typical
Occupancy Sensor	
Sensor type	Passive infrared (PIR)
Operating Environment	
Operating temperature	0 to 50 °C (32 to 122 °F)
Operating humidity range	0 to 95% RH, non-condensing
Housing material	High impact ABS plastic Flammability rating UL 94 V-0
Input power	2 watts, 24 Vdc over sensor bus
Wiring Terminals	
Non-communicating models	Screw, 2-wire, 18-24 AWG
Communicating models	RJ-45 female sensor bus
Regulatory Information	
Agency approvals	UL 916, European conformance CE: EN61000-6-3 EN61000 Series - industrial immunity standard FCC Part 15 Class B, REACH, RoHS, Green Premium, RCM (Australia), ICES-003 (Canada), EAC (Russia)

Dimensions mm (in.)



Software Specifications

Using the eCommission Bluetooth Adapter to Configure

- Custom field-configurable sensor displays
- Auto-ranging of displayed values
- Occupant command capabilities
- Adjustable minimum/maximum limit setpoint values
- Controller driven, automatically configured, customized display/command values

Communications

SmartX Sensor Bus

SmartX sensor bus communications wiring provides power and communication interface to the SmartX MP-X Series controllers. SmartX sensor bus connects up to four sensor devices per controller using RJ-45 connectors and Cat 5/6 cable (22 to 26 AWG)*. The maximum total length of the SmartX sensor bus is 61 m (200 ft.).

*Due to power constraints there are some limitations on the number of sensors the Sensor Bus can support. For specific sensor combinations supported, see the Sensor Bus Configuration Calculator on the last page of this document.

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Available Products

SmartX Sensor Bases

Model Number	Temp	RH	CO ₂	Cover	SmartX System Bus	Resistive Only (10K T3)
SXWSBTXXXSXX	X			Not Included	X	
SXWSBTHXSXX	X	X		Not Included	X	
SXWSBTXCXSXX	X		X	Not Included	X	
SXWSBTHCXSXX	X	X	X	Not Included	X	
SXWSATXXXSLX	X			Included	X	
SXWSATXXXRXX	X			Included		X

SmartX Covers

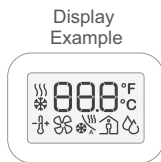
Model Number	61 mm (2.4") Color Touchscreen	Override	Setpoint	Occupancy Sensor (PIR)
SXWSCDXSELXX	X	X	X	
SXWSC3XSELXX		X	X	
SXWSCBXSELXX				
SXWSCDPSELXX	X	X	X	X
SXWSC3PSELXX		X	X	X
SXWSCBPSELXX				X

Sensor and Cover Combination Models

Communicating Temperature Only User Interface with LCD



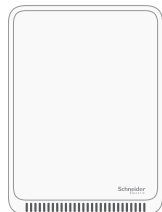
SXWSATXXXSLX



Display Example

- Configurable through the eCommission Bluetooth Adapter or EcoStruxure Building Operation software
- LCD displays temperature, heating, cooling status
- Setpoint and override

Non-communicating Temperature Only, No User Interface

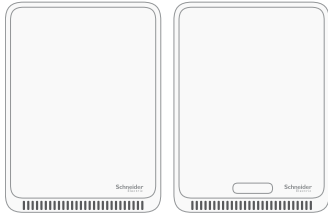


SXWSATXXXRXX

- 2-wire resistive output
- 10K Type 3 thermistor
- Uses I/O port on controller

Cover Variants - Communicating Sensors

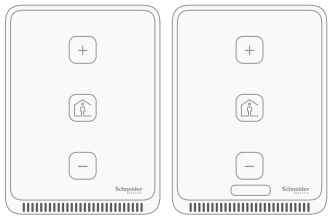
Blank, No User Interface



SXWSCBXSELXX SXWSCBPSELXX
with Occupancy
Sensor

- Configurable through the eCommission Bluetooth Adapter or EcoStruxure Building Operation software
- Occupancy sensor version available

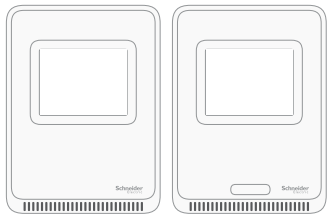
3-Button User Interface, Setpoint and Override



SXWSC3XSELXX SXWSC3PSELXX
with Occupancy
Sensor

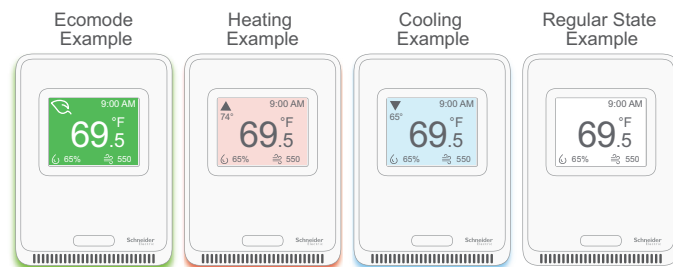
- Configurable through the eCommission Bluetooth Adapter or EcoStruxure Building Operation software
- Setpoint and override buttons
- Halo indicates heating and cooling status
- Occupancy sensor version available

Touch Screen User Interface



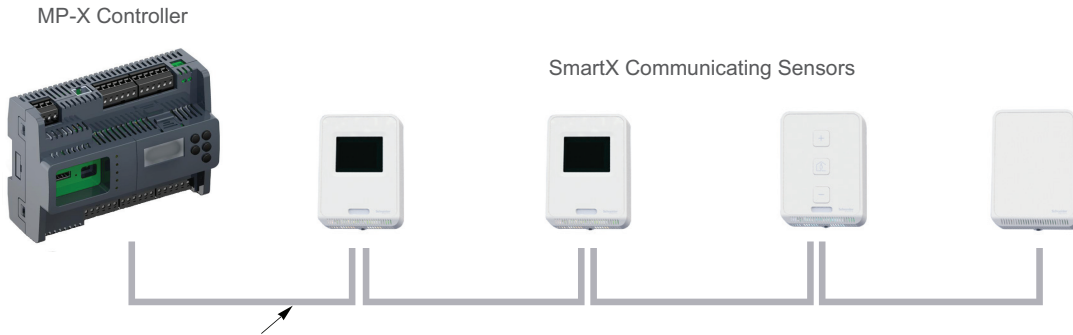
SXWSCDXSELXX SXWSCDPSELXX
with Occupancy
Sensor

- Configurable through the eCommission Bluetooth Adapter or EcoStruxure Building Operation software
- 61 mm (2.4") color touchscreen
- CO₂, RH, temperature, setpoint and override displayed
- Heating, cooling, ecomode status
- Occupancy sensor version available



Architecture

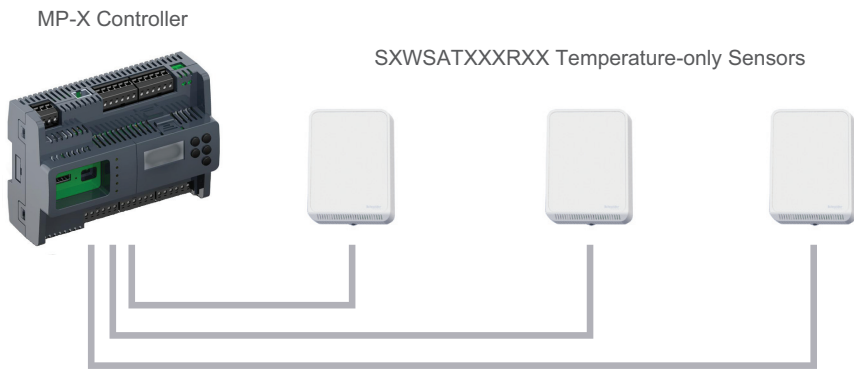
MP-X Controller and Sensor Bus with Communicating Sensors



Cat 5/6 cable (22 to 26 AWG) terminated via RJ-45.
61 m (200 ft.) total maximum length.

Up to four communicating sensors on sensor bus. For specific combinations of sensors supported by the Sensor Bus, see the Sensor Bus Configuration Calculator on the last page of this document.

MP-X Controller and Non-communicating Sensors



Each sensor uses an I/O port on the controller.
Maximum number of inputs varies by controller type.

Sensor Bus Configuration Calculator

Calculate Power/mW to Validate Sensor Bus Configuration

Add power/mW for all covers, combination units and bases to be used on a single sensor bus for total sensor bus wattage. The sensor bus will support current of up to 2000 mW. Device combinations totalling more than 2000 mW will not be supported on the sensor bus.

Sensor Bus Power Table

Description	Model Number	Power/mW
Sensor Base, Temperature	SXWSBTXXXSXX	90
Sensor Base, Temperature, Humidity	SXWSBTHXXSXX	90
Sensor Base, Temperature, CO ₂	SXWSBTXCXSXX	490
Sensor Base, Temperature, Humidity, CO ₂	SXWSBTHCXsXX	490
Sensor, Temp, LCD, Setpoint, Pushbutton Operation with Cover Plate	SXWSATXXXSLX	80
Sensor, Temp, 10K T3, Non-communicating, with Cover Plate	SXWSATXXXRXX	0
Cover Plate, Blank Cover	SXWSCBXSELXX	0
Cover Plate, User Interface, Basic	SXWSCDXSELXX	190
Cover Plate, Override, Setpoint	SXWSC3XSELXX	190
Cover Plate, User Interface, Basic, Occupancy	SXWSCDPSELXX	210
Cover Plate, Override, Setpoint, Occupancy	SXWSC3PSELXX	210
Cover Plate, Blank Cover, Occupancy	SXWSCBPSELXX	20
eCommission Bluetooth Adapter	SXWBTAECXX10001*	300

*The eCommission Bluetooth Adapter is used temporarily for commissioning and servicing only.

Key Combinations

- Blank covers:
 - Up to four of any combination of sensor base types
- 3-button and touchscreen covers:
 - Up to two sensor bases with CO₂
 - Up to four non-CO₂ sensor bases
- LCD temperature combination sensors:
 - Up to four are supported