

SpaceLogic Sensors

SLA Series Air Quality Sensors – Analog



Note: A subset of models shown.

Product Description

The SpaceLogic SLA Series of air quality sensors for living space is a flexible multisensor platform for use with BAS controllers designed to accept 4 to 20mA, 0 to 5Vdc or 0 to 10Vdc outputs. Housings are available in Medium matte white and Optimum faces available in black and white. All housing types are available with three user interface options: touchscreen, LCD with three buttons and blank. CO₂ and temperature sensors are included with all SLA Series air quality sensors. Models with VOC sensors and relative humidity sensors are also available.

Features

- Medium matte white housing or optimum glass panel housing available in white or black
- Field calibratable non-dispersive infrared CO₂ sensor
- Replaceable RH element available in 1% & 2% with NIST certificate
- VOC sensor available
- Temperature output on all models
- 61 mm (2.4") backlit color touchscreen and LCD, three button display options available
 - Digital temperature indication (0.1° display resolution of °F or °C)
 - Digital humidity indication (0.1% RH display resolution)
 - Digital CO₂ indication
 - 0 to 10,000 ppm output
 - 1 ppm resolution
 - Stoplight feature for visual indication at user-configurable CO₂ threshold levels (touchscreen models only)
 - Selectable temp, RH and fan speed setpoint (0-10V)
 - Configurable screen/button lock and display timeout
 - Override
- Selectable 4 to 20mA, 0 to 5V and 0 to 10V analog outputs
- 18-24 AWG screw terminals

Available Products Matrix

SLA	Housing	User Interface	CO ₂ Sensor	RH Sensor*
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	S = Medium white matte housing W = Optimum white housing B = Optimum black housing	T = Color touchscreen L = 3-button LCD display X = None	C = NDIR CO ₂ CV = NDIR CO ₂ / VOC	2 = 2% X = None

Example:

SLA

S

T

C

2

*Replaceable RH module available to be ordered separately per table below.

Replaceable RH Elements

Model	Description	Temp. Calibration	RH Calibration
SLXRHS2N	Replaceable RH sensor, 2% with NIST certificate	N/A	2-point calibration
SLXRHS2X	Replaceable RH sensor, 2%	N/A	2-point calibration
SLXRHS1N	Replaceable RH sensor, 1% with NIST certificate	N/A	2-point calibration

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Operating Environment			
Input power	Class 2; 20 to 30 Vdc, 24 Vac, 50 to 60 Hz		
Analog output	Selectable 4 to 20 mA, 0 to 5 V, 0 to 10 V		
Operating temp. range	0 to 50 °C (32 to 122 °F)		
Operating hu- midity range	0 to 95% RH non-condensing		
Housing material	High impact ABS plastic		
IP rating	IP 30		
Mounting location	For indoor use only. Not suitable for wet locations.		
Surface mount	The device can be surface mounted on Single Gang J-Box, British Standard and CE60 wall boxes		
CO ₂ Sensor			
Sensor type	Non-dispersive infrared (NDIR), diffusion sampling		
Output range	0 to 2000/5000 ppm (selectable)		
Accuracy	±30 ppm ±3% of measured value		
Resolution	1 ppm		
Repeatability	±20 ppm ±1% of measured value		
Response time	<60 seconds for 90% step change		
VOC Sensor			
Sensor type	Solid state		
Output range	0 to 100% AQI for VOC		
Accuracy	±15% of measured value		
Output scale	0 to 1,000 ppb of total VOC (TVOC)		
AQI table*	Level	Ventilation Recommendation	TVOC (ppb)
	>61%	Greatly increased	>610
	20 to 61%	Significantly increased	200 to 610
	10 to 20%	Slightly increased	100 to 200
	5 to 10%	Average	50 to 100
	0 to 5%	Target value	0 to 50
RH Sensor			
Sensor type	Solid state capacitive, replaceable		
Output range	0 to 100% RH		
Accuracy (includes hysteresis)**	±3.8% RH from 10 to 60% RH @ 25°C (77 °F) ±4.8% RH from 60 to 80% RH @ 25°C (77 °F) ±5.8% RH from 80 to 100% RH @ 25°C (77 °F)		
Resolution	0.1% RH		
Linearity	Included in accuracy specification		
Stability	±1% @ 20°C (68 °F) annually for 2 years		
Temperature coefficient	±0.1% RH/°C above or below 25 °C (77 °F) typical		

Temperature Sensor	
Sensor type	Solid state, integrated circuit
Output range	0 to 50 °C (32 to 122 °F)
Accuracy	±0.2 °C (±0.4 °F) typical
Resolution	0.1 °C (0.1 °F)
Display Models	
Touchscreen	61 mm (2.4 in), color, backlit, capacitive, 240x300px Setpoint: 0-10Vdc. Temperature, humidity or fan speed selectable Timeout override: Display timeout*** Lockout override: Touchscreen/button lockout***
LCD	52mm (2.05 in), segmented with 3 buttons Setpoint: 0-10Vdc. Temperature, humidity or fan speed selectable Timeout override: Display timeout*** Lockout override: Touchscreen/button lockout***
Setpoints****	
Temperature setpoint	0 to 10V output Scale: 10 to 35 °C (50 to 95 °F) / 0 to 50 °C (32 to 122 °F)
Humidity setpoint	0 to 10V output Scale: 0 to 100% RH
Fan speed setpoint	0 to 10V output Off 0V, Auto 1.5V, Low 3.3V, Med. 6.7V, High 10.0V
Override	
Override button	Display models feature momentary-to-ground override button
Wiring Terminals	
Terminal blocks	Screw terminals, 18-24 AWG
Screw terminal torque	0.2 N-m (2.0 in-lbF) max.
Regulatory Information	
Agency approvals	UL 916
	European Conformance CE:
	EN 60730-1, EN 60730-2-9, EN 60730-2-13, EN 61000-6-2, EN 61000-6-3, EN 61000 Series -
	Industrial Immunity, EN 61326-1
	FCC Part 15 Class B, REACH, RoHS, Green Premium, RCM (Australia), ICES-003 (Canada), EAC (Russia), UKCA (UK)

* Air Quality Index for VOC aligns with TVOC levels for IAQ as specified by the WHO (World Health Organization).

** Humidity sensor overall accuracy should include: accuracy, temperature coefficient and stability. Humidity accuracy is shown as an absolute value, so if testing accuracy with a hand-held device, you must check for deviation in its readings instead of calculating the percentual deviation. Additionally, you must consider the overall accuracy of the hand-held device in the comparison.

*** DIP switch selectable.

**** One setpoint type is selectable via DIP switch on display models only.

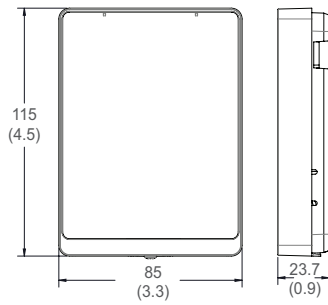
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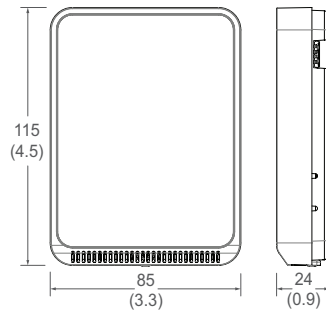
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Dimensions mm (in.)

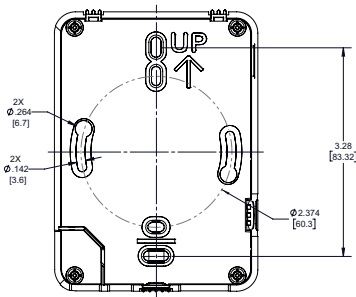
Optimum Housing



Medium Housing



Base Hole Measurement



Safety Information

Important Information

Read these instructions carefully and look at the equipment to become familiar with the device before trying to install, operate, service or maintain it. The following special message may appear throughout this bulletin or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.

NOTICE

NOTICE is used to address practices not related to physical injury.

⚠ WARNING

WARNING indicates a hazardous situation which, if not avoided **could result in death or serious injury**.

Please Note

Electrical equipment should be installed, operated, serviced and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

A qualified person is one who has the skills and knowledge related to the construction, installation and operation of electrical equipment and has received safety training to recognize and avoid the hazards involved.

Safety Precautions

⚠ WARNING



HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA 70E or CSA Z462.
 - This equipment must only be installed and serviced by qualified electrical personnel.
 - Turn off all power supplying this equipment before working on or inside equipment.
 - Always use a properly rated voltage sensing device to confirm power is off.
 - Replace all devices, doors and covers before turning on power to this equipment.
- Failure to follow these instructions can result in death, serious injury or equipment damage.**

This product is intended for use in HVAC and building environmental control applications.

It is not intended for direct medical monitoring of patients.

Read and understand these instructions before installing this product.

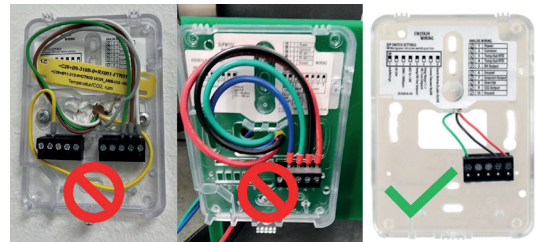
The installer is responsible for all applicable codes.

If this product is used in a manner not specified by the manufacturer, the protection provided by the product may be impaired. No responsibility is assumed by the manufacturer for any consequences arising out of the use of this material.

NOTICE

PRODUCT DAMAGE AND INACCURATE READINGS

- Mount product vertically at a height that is between 3 to 5 feet (0.9 to 1.5 meters) above the floor [or 4 feet (1.2 meters) where the Americans with Disabilities Act needs to be followed]
- Mount product on a wall that is NOT exposed to the outside
- Install product far from windows, heat sources, door frames and at a minimum distance of 6 inches (15 centimeters) from any corner
- Drafts through conduits or other holes in the wall should be eliminated by plugging appropriate material into the cavity.
- This product is specified for environments with stable natural airflow. In dynamic airflow conditions, sensor performance may deviate from expected values. In stable elevated airflow, an offset feature can be applied. Refer to ZL0241-xx, *Field Offset Adjustment Procedure for SLA and SLP Temperature and Humidity Outputs* on www.se.com/myschneider for further information. The offset functionality only exists on units containing a second DIP switch bank dedicated to the offset feature.
- Keep product wall mounted and the base cleared of any wire or other external material:



Failure to follow instructions can result in reduced accuracy, equipment damage or sensor fault.

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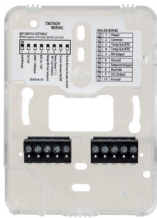
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Installation

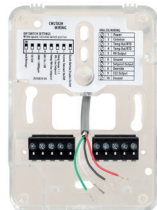
1. Remove the cover from the base at the bottom of the device.



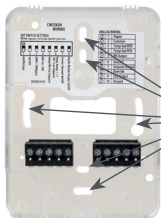
2. Position the sensor base vertically on the wall 1.35 m (4.5 ft.) above the floor with the “UP” arrow facing upward. Locate away from windows, vents and other sources of draft. If possible, do not mount on an external wall, as this may cause inaccurate temperature readings.



3. Pull 18 or 22 AWG cable(s) through the hole in the backplate.

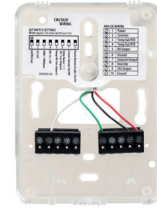


4. Mount the backplate onto the wall using the screws provided.

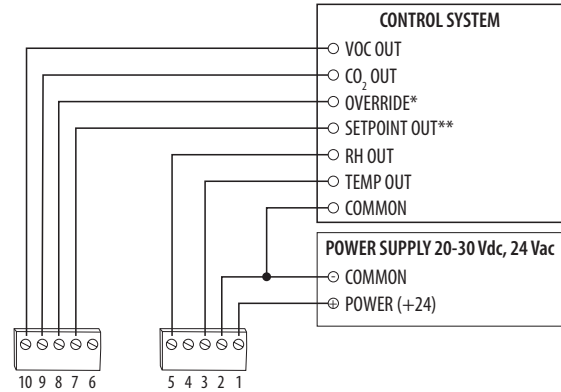


Six screw holes available. Use a minimum of two for secure mounting.

5. Connect the wires to the screw terminals. Do not over-tighten the screws.



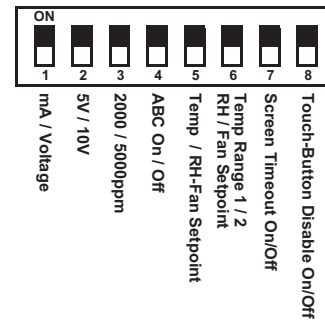
Wiring diagram:



* Momentary to ground.

** 0-10V DIP switch selectable for temperature, RH (if equipped) or fan speed (off, 0V, Auto 1.5V, Low 3.3V, Medium 6.7V or high 10V).

6. Set the DIP switches.



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Installation (cont.)

Switch	Function	Description
1	Output mode	ON - 4-20mA output mode enabled OFF - Voltage output mode enabled
2	Voltage output range*	ON - 0-5V output range enabled OFF 0-10V output range enabled
3	CO ₂ output range	ON - 0-2000 ppm CO ₂ output range enabled OFF - 0-5000 ppm CO ₂ output range enabled
4	Automatic Baseline Calibration (ABC) for CO ₂	ON - ABC enabled OFF - ABC disabled
5	Setpoint output type	ON - Temperature setpoint enabled (temp range selected on DIP switch 6) OFF - RH or Fan Speed setpoint enabled (specific setpoint output type to be selected on DIP switch 6) Models without RH option select only temp or fan setpoint
6	Setpoint output temperature range or RH/Fan Speed output type	Temperature setpoint (must be enabled on DIP switch 5) ON - Temp range 1, 50 to 95 °F (10 to 35 °C) enabled OFF - Temp range 2, 32 to 122 °F (0 to 50 °C) enabled RH or Fan Speed setpoint (must be enabled on DIP switch 5) ON - RH setpoint enabled OFF - Fan Speed setpoint enabled Models without RH option, set to OFF
7	Display times out and turns off after 6-10 seconds of touchscreen/button press	ON - Display Timeout enabled OFF - Display Timeout disabled
8	Touchscreen touch functions and buttons are disabled	ON - Touchscreen touch/button functions disabled OFF - Touchscreen touch/button functions enabled

* Only used with voltage output mode enabled. Not applicable to setpoint output. Setpoint is 0-10V fixed.

Note: This product is specified for environments with stable natural airflow. In dynamic airflow conditions, sensor performance may deviate from expected values. In stable elevated airflow, an offset feature can be applied. Refer to ZL0241-xx, Field Offset Adjustment Procedure for SLA and SLP Temperature and Humidity Outputs on www.se.com/myschneider for further information. The offset functionality only exists on units containing a second DIP switch bank dedicated to the offset feature.

7. With sensor base fully installed, align top of cover to mounting tabs on top of sensor base. Swing cover downward until it latches at the bottom.



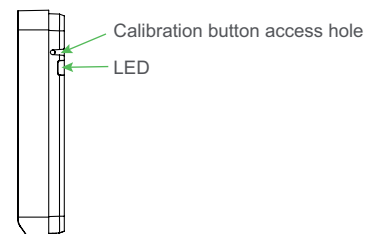
8. Install locking screw to secure cover in closed position.

CO₂ Sensor Calibration

There are two methods for CO₂ calibration available: 400 ppm baseline calibration and automatic baseline calibration (ABC).

400 ppm Baseline Calibration

400 ppm baseline calibration allows the sensor to be set at 400 ppm. Push and hold the calibration button for 3 to 5 seconds. The LED will flash green. Once the button is released, calibration is complete and the LED switches off.



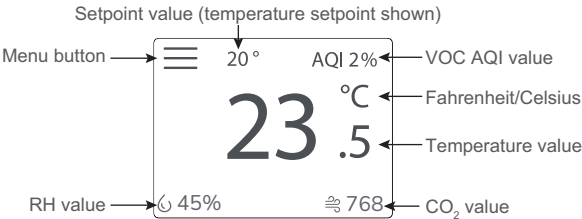
Automatic Baseline Calibration (ABC)

The ABC mode addresses the 400 ppm calibration. It allows turning on or off a background correction/recovery mode that will minimize any calibration error that has been caused by shock during handling and transportation or is caused by a long term shift in measurement. The ABC algorithm constantly keeps track of the sensor's lowest reading over a preconfigured time interval and slowly corrects for any long-term drift detected as compared to the expected fresh air value of 400 ppm. After initial startup, it is expected that the sensor reaches specified accuracy after 7 to 21 days.

Touchscreen Operation

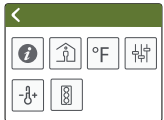
Main Screen

The touchscreen user interface displays applicable sensor output values (temperature, RH, CO₂ and VOC), setpoint value, menu button and CO₂ stoplight status (if enabled).

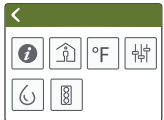


Menu Screen

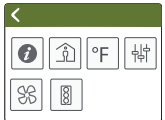
The menu screen opens when pressing the Menu button on the main screen. Integrator's submenu, occupancy/override, Fahrenheit/Celsius, settings, setpoint submenu (temp, RH or fan, determined by DIP switch settings) and CO₂ stoplight buttons are displayed on the menu screen.



Temperature setpoint
DIP switch selected



RH setpoint
DIP switch selected



Fan Speed setpoint
DIP switch selected

Menu Button Functions

Integrator's Submenu
Press this icon to access the Integrator's menu.

Submenu Only

Model	SLASTC2
Serial #	4E54F3BS
Date code	2020
Rev code	01A

Occupied Override Button
Press this icon to provide momentary ground output to the controller

Single Press Only

Signals occupied/override call to controller.

Fahrenheit/Celsius Switch
Press this icon to display either °C or °F.

Single Press Only

°F Changes units to Fahrenheit when pressed.
°C Changes units to Celsius when pressed.

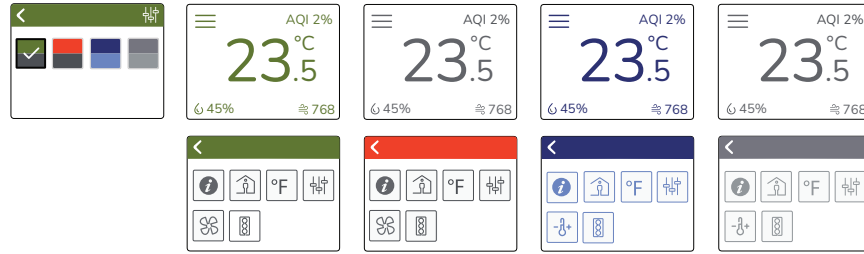


Menu Button Functions (cont.)

**Settings**

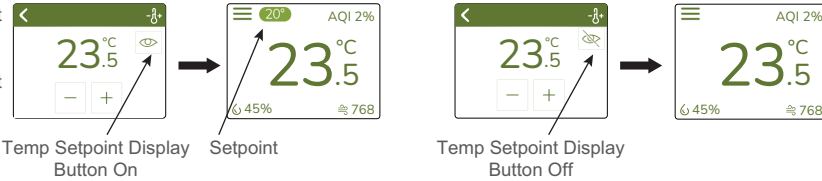
This icon provides the ability to change the color scheme of the display.

Submenu Only

**Temp Setpoint Adjustment**

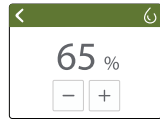
Click this icon to access the setpoint change menu. Toggle the Temp Setpoint Display button to display or hide the setpoint value on the home screen.

Submenu Only

**Humidity Setpoint Adjustment**

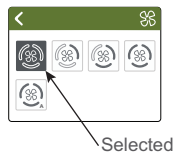
Click this icon to access the setpoint change menu. Mutually exclusive with humidity and fan speed. Set by DIP switch.

Submenu Only

**Fan Speed**

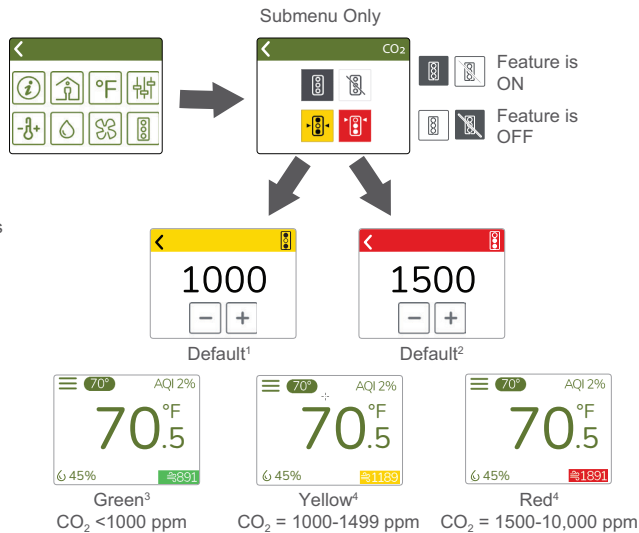
Click this icon to access the fan speed menu.

Submenu Only

**CO₂ Stoplight Menu**

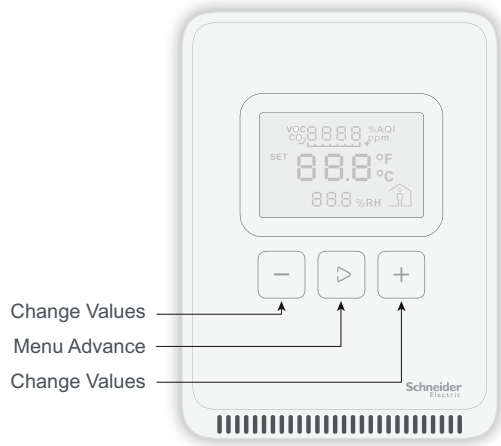
Click this icon to toggle the CO₂ Stoplight feature on and off. With CO₂ Stoplight turned on, the background color of the main screen changes with CO₂ level. This provides a visual indicator of CO₂ levels to the room occupants.

Using the +/- buttons, the thresholds at which the colors change on the main screen are user configurable, as described in the diagram.

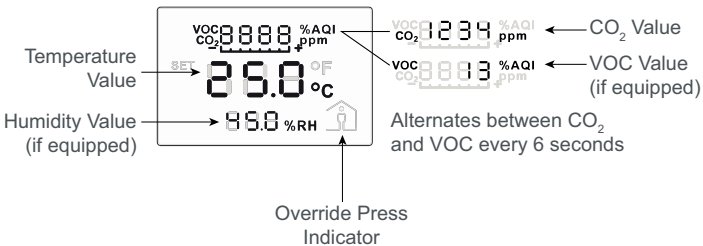


1. Values < 400 ppm will be rounded up to the minimum limit of 400 ppm.
2. Values > 10,000 ppm will be rounded down to the maximum limit of 10,000 ppm.
3. Possible to adjust CO₂ thresholds by changing the yellow and red limits.
4. User configurable in increments of 10 ppm using the +/- buttons. With a long press of these buttons, the number will change more quickly.

LCD Display Operation
Button Functions

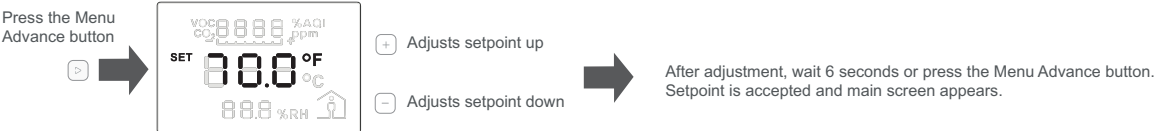


Display Icons
The main screen displays sensor values for CO₂, VOC (if equipped), RH (if equipped), temperature and Celsius/Fahrenheit.



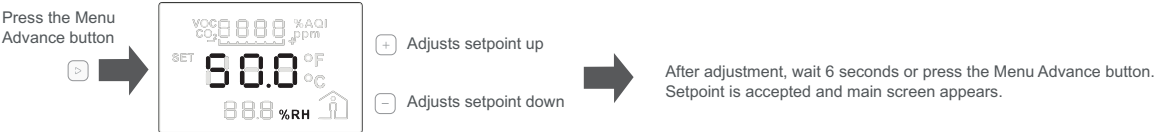
Setpoint Function
A single 0-10V setpoint (temperature, RH (if equipped) or fan speed) can be selected via DIP switch.

Temperature Setpoint Adjustment



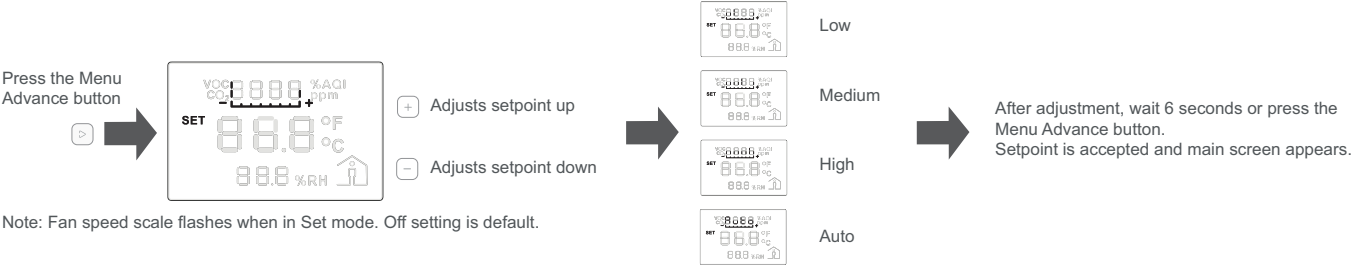
Note: Numeric information will flash while in Set mode.

RH Setpoint Adjustment



Note: Numeric information will flash while in Set mode.

Fan Speed Setpoint Adjustment

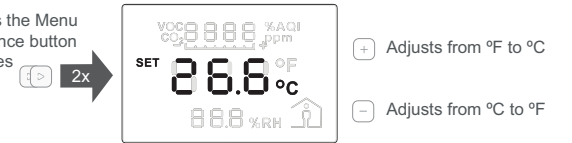


Note: Fan speed scale flashes when in Set mode. Off setting is default.

Setpoint Function (cont.)

Changing Celsius and Fahrenheit Scales

Press the Menu Advance button 2 times



Adjusts from °F to °C

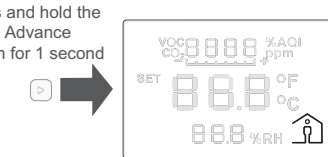
Adjusts from °C to °F

After adjustment, wait 6 seconds or press the Menu Advance button to return to the main screen.

Note: °F or °C text will flash while in Set mode.

Occupied/Override Button

Press and hold the Menu Advance button for 1 second



Override Press Indicator illuminates for 6 seconds.

China RoHS Compliance Information
Environment-Friendly Use Period (EFUP) Table

有害物质 - Hazardous Substances						
部件名称 Part Name	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr (VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
电子件 Electronic	X	O	O	O	O	O

本表格依据SJ/T11364的规定编制。

O: 表示该有害物质在该部件所有均质材料中的含量均在 GB/T 26572规定的限量要求以下。

X: 表示该有害物质至少在该部件的某一均质材料中的含量超出 GB/T 26572规定的限量要求。

(企业可在此处, 根据实际情况对上表中打 * 的技术原因进行进一步说明。)


This table is made according to SJ/T 11364.

O: indicates that the concentration of hazardous substance in all of the homogeneous materials for this part is below the limit as stipulated in GB/T 26572.

X: indicates that concentration of hazardous substance in at least one of the homogeneous materials used for this part is above the limit as stipulated in GB/T 26572

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