SpaceLogic Sensors
Humidity Sensors – BACnet and Modbus
Temperature Sensors – BACnet and Modbus

Note: A subset of models shown.

Product Description

The SpaceLogic SLP Series of humidity and temperature sensors for living space is a flexible multisensor platform for use with BAS controllers designed to accept BACnet or Modbus 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. Temperature sensors are included with all SLP Series humidity sensors.

Features

- Medium matte white housing or optimum glass panel housing available in white or black
- Replaceable RH element available in 1% & 2% with NIST certificate
- 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)
  - Temperature, RH and fan speed setpoints
  - Configurable screen/button lock and display timeout
  - Override
- Selectable BACnet MSTP and Modbus outputs via RS-485
- 18-24 AWG screw terminals

Available Products Matrix

SLP

Housing		User Interface			RH Sensor*
S = Medium white matte housing		T = Color touchscreen			2 = 2%
W = Optimum white housing		L = 3-button LCD display	X		X = None
B = Optimum black housing		X = None			

Example:

SLP	S	T	X	2

* RH elements are replaceable.

Replaceable RH Elements

Model	RH Accuracy	Calibration Certificate	Description
SLXRHS1N	±1%	X	Replaceable RH sensor, 1% with NIST certification
SLXRHS2N	±2%	X	Replaceable RH sensor, 2% with NIST certification
SLXRHS2X	±2%		Replaceable RH sensor, 2%

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Specifications

Operating Environment

|	
Input power	Class 2; 20 to 30 Vdc, 24 Vac, 50 to 60 Hz
Protocol output	BACnet or Modbus via RS-485, selectable
Operating temp. range	0 to 50 °C (32 to 122 °F)
Operating humidity range	0 to 95% RH non-condensing
Housing material	High impact ABS plastic
IP rating	IP 30

RH Sensor

HS sensor	Thin-film capacitive, replaceable
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

Sensor type	Solid state, integrated circuit
Accuracy	±0.2 °C (±0.4 °F) typical
Resolution	0.1 °C (0.1 °F)
Range	0 to 50 °C (32 to 122 °F)

Display Models

Touchscreen	61 mm (2.4 in), color, backlit, capacitive, 240x300px Setpoint: 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: Temperature, humidity or fan speed selectable Timeout override: Display timeout Lockout override: Touchscreen/button lockout

Setpoints*

Temperature setpoint	Scale: 0 to 50 °C (32 to 122 °F) max., adjustable span
Humidity setpoint	Scale: 0 to 100% RH
Fan speed setpoint	Off, Low, Med., High, Auto

Override

Override button	Display models feature a momentary 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
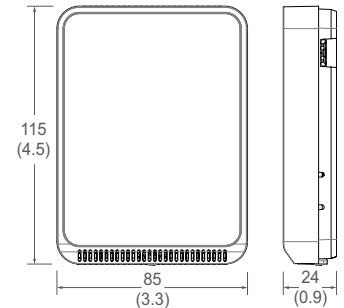
Agency approvals	UL 916, European conformance CE: 　　EN61000-6-2 　　EN61000-6-3 　　EN61000 Series - industrial immunity 　　EN 61326-1 FCC Part 15 Class B, REACH, RoHS, Green Premium, RCM (Australia), ICES-003 (Canada), EAC (Russia)

* On display models only.

Dimensions mm (in.)

Optimum Housing

115 (4.5)

85 (3.3)

23.7 (0.9)

Medium Housing

115 (4.5)

85 (3.3)

24 (0.9)
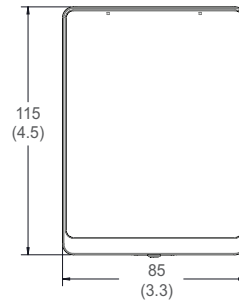
Installation

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.
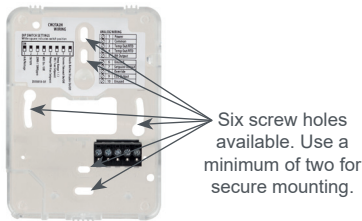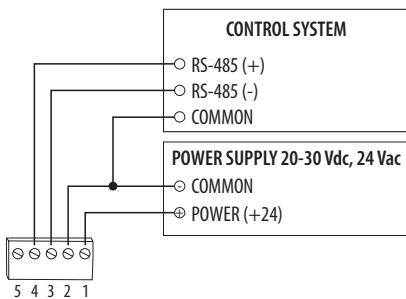
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Installation (cont.)

3. Pull 18 or 22 AWG cable(s) through the hole in the back-plate.
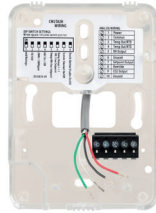
4. Mount the backplate onto the wall using the screws provided.

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.

6. Configure the device.

Address Configuration:

Each device on a single network must have a unique address. Set the DIP switch labeled "ADDRESS" to assign a unique address before the device is connected to the network. If an address is selected that conflicts with another device, neither device will be able to communicate.

Address the device as any whole number between and including 1 to 127. Note that zero is not a valid address for Modbus; zero is a valid address for BACnet. Positions 1 through 7 of the "ADDRESS" DIP switch designate the address. Position 8 toggles between the Modbus and BACnet communication protocols, as shown in the diagram below. This is the left bank of DIP switches on the sensor.
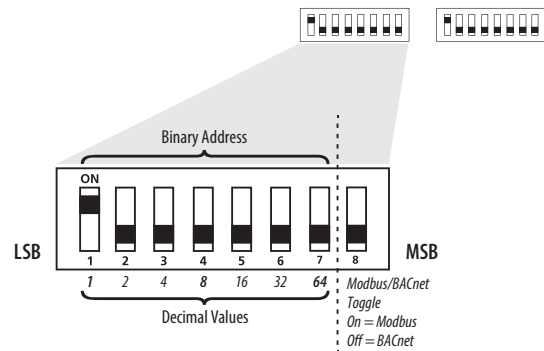
To set an address using the DIP switch, simply add the values of any switches that are in the ON position.

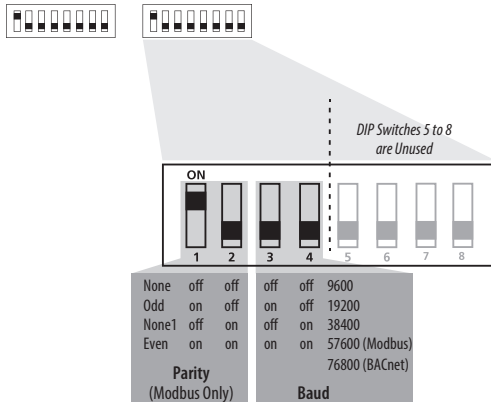For example, an address of 73 is set as shown in the diagram below.
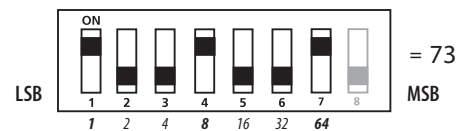
Position number 1 has an ON value of 1, position number 4 has an ON value of 8 and position number 7 has an ON value of 64 (1 + 8 + 64 = 73).

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Installation (cont.)

Communications Configuration:

See the Product Diagram section for the location of the DIP switch labeled "CONFIG". The following parameters are configurable:

- Parity (Modbus only): None, Odd, None1 (one stop bit), Even
- Baud rate: 9600, 19200, 38400, 57600 (Modbus), 76800 (BACnet)

DIP Switches 5 to 8 are Unused

	1	2		3	4	
None	off	off		off	off	9600
Odd	on	off		on	off	19200
None1	off	on		off	on	38400
Even	on	on		on	on	57600 (Modbus)
						76800 (BACnet)
	Parity **(Modbus Only)**			**Baud**		

Example: No Parity, 19200 Baud

1	2	3	4	5	6	7	8
off	off	on	off	off	off	off	off
None		19200 Baud		Unused			

Modbus Point Map
Function Codes:

Function Code	Function
03	Read holding (RW) registers
04	Read input (RO) registers
06	Write single register*
16	Write multiple registers
01	Read coils
05	Write single coil
15	Write multiple coils

* Not supported.

All of these values correspond to BACnet objects with the same name. See the BACnet Conformance Statement for their definitions.

Note that an attempt to write to "read only" holding registers will give an error and the entire write command will not be executed even if writing to read/write locations were also requested. Exception code 2 is given in this case. "Preserved" means the values is maintained through power outages.

32-Bit Input Registers (Read Only):

Register	Description
1	Temperature reading in IEEE 32-bit floating point
3	Humidity reading in IEEE 32-bit floating point
9	Model (numeric representation of ASCII characters)
42	Serial number (numeric representation of ASCII characters)

32-Bit Holding Registers (Read/Write):

Register	Description
1	Temperature setpoint
3	Humidity setpoint
5	Screen color set
7	Device name
40	Fan speed

Note: All holding registers are preserved during power outages.

Coils (Read/Write):

Register	Description
3*	Touch button disable
5*	Temperature (°C)
6	Occupancy override
7*	Touch timeout
8*	Display shows humidity
12*	Display shows temperature setpoint on main screen

*Preserved during power outages.

BACnet Descriptions

Note: In the tables below, all properties are read-only unless otherwise noted. "Preserved" means the value is maintained through power outages.

Present_Value Range Restrictions:

Object Name	Minimum Value	Maximum Value
DEV - Object_Name	1 Character	65 Characters
Temperature Setpoint Min_Pres_Value Max_Pres_Value	Min_Pres_Value 0 Min_Pres_Value +1	Max_Pres_Value Max_Pres_Value -1 50
Humidity Setpoint Min_Pres_Value Max_Pres_Value	Min_Pres_Value 0 Min_Pres_Value +1	Max_Pres_Value Max_Pres_Value -1 100
Screen Color	1	4
Fan Speed	1	5
Device_Instance	0	4,194,302

Installation (cont.)

Standard Object Types Supported:

Object Type	Supported Optional Properties	Writable Properties
Analog Input - AI	Reliability	None
Analog Value - AV	Min_Pres_Value Max_Pres_Value	Min_Pres_Value Max_Pres_Value Present_Value
Binary Value - BV	None	Present Value
Multistate Value - MSV	None	Present Value
Device - DEV	Max Info Frames Max_Master	APDU_Timeout Max_Master Object_Name

Objects Table:

Object Name	Object Identifier	Object Property
Room Temperature	AI 1	Temperature in Room
Room Humidity	AI 2	Humidity in Room
Temperature Setpoint*	AV 1	Setpoint Value for Temperature
Humidity Setpoint*	AV2	Setpoint Value for Humdidity
Touch Disable*	BV2	ACTIVE disables Touch Response INACTIVE enables Touch Response
Temperature Units*	BV4	ACTIVE displays temperature in Fahrenhiet INACTIVE displays temperature in Celsius
Occupancy Override	BV5	ACTIVE means room is not occupied INACTIVE means room is occupied
Screen Timeout*	BV 6	ACTIVE enables Screen Timeout INACTIVE disables Screen Timeout
Display Humidity*	BV7	ACTIVE displays humidity on Screen INACTIVE removes humdity from Screen
Display Setpoint*	BV11	ACTIVE displays temperature setpoint on main screen INACTIVE displays temperature setpoint in upper left corner and current temperature on main screen
Screen Color Set*	MSV 1	Selection for Screen Color Theme

Object Name	Object Identifier	Object Property
Fan Speed*	MSV 2	Fan Speed Selection

* Preserved during power outages.

Device Objects Table:

Object Name	Object Identifier	Object Property	Descrip.
Living Space Room Unit XXXXXXX	Vendor_ID + nnn	Object _Identifer (R/W)	Unique value where nnn initially is the MS/TP address

BACnet Protocol Implementation Conformance Statement

Vendor Name: Schneider Electric

Product Name: Living Space Room Unit

Product Model: SLPXXXX

BACnet Protocol Version : 1

BACnet Protocol Revision: 16

Product Description: Environmental Sensor

BACnet Standardized Device Profile (AnnexL):

BACnet Application Specific Controller (B-ASC)

List All BACnet Interoperatvility Building Blocks Supported(Annex K):

DS-RP-B, DS-WP-B, DM-DDB-B, DM-DOB-B, DM-DCC-B

Data Link Layer Options: MS/TP (Clause 9), baud rates, 9600, 19200, 38400, 76800

Device Address Binding: Static Device binding is not supported.

Networking Options: None

Character Sets supported: ISO 10646 (UTF-8)

Installation (cont.)

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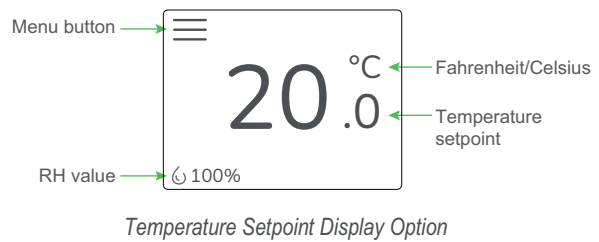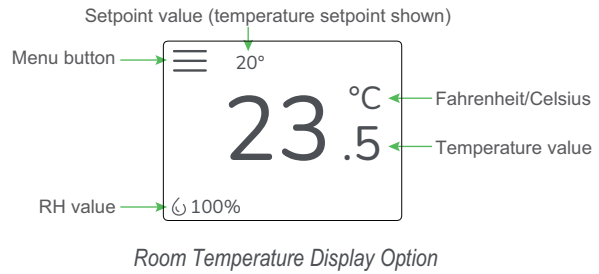
8. Install locking screw to secure cover in closed position.

Touchscreen Operation
Main Screen

The touchscreen user interface displays applicable sensor output values (temperature and RH), setpoint value and menu button.

Room Temperature Display Option

Temperature Setpoint Display Option

Menu Screen

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

Note: RH setpoint will not appear on non-RH models.

Menu Button Functions

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

Submenu Only

Device	
Model	SLPSTX2
Serial Number	4E54FB0A
Firmware Revision	LSA_APP_REV00800
◄ page 1 of 3 ►	

Protocol	
Sensor Address	1
Baud Rate	38400
◄ page 2 of 3 ►	

Sensors	
Temperature C	24.7
Humidity %	100
◄ page 3 of 3 ►	
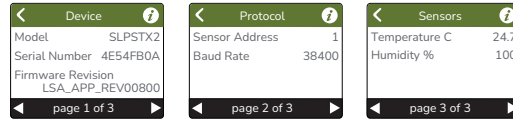
Occupied Override Button
Press this icon to provide momentary signal output to the controller

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.
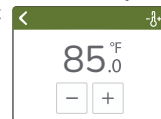
°C Changes units to Celsius when pressed.

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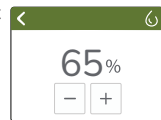This icon provides the ability to change the color scheme of the display.

Submenu Only

23.5 °C 100%
23.5 °C 100%
23.5 °C 100%
23.5 °C 100%
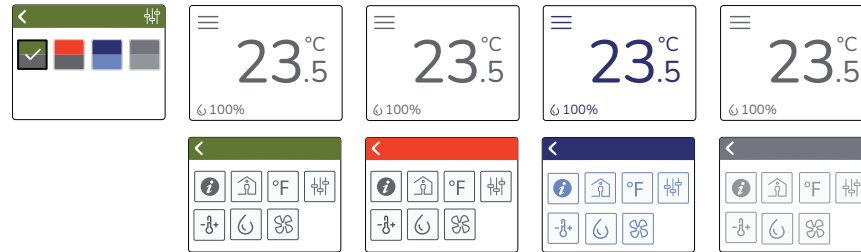
Temp Setpoint Adjustment
Click this icon to access the setpoint change menu.
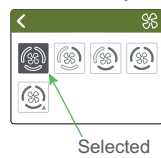
Submenu Only

85.0 °F
− +

Humidity Setpoint Adjustment
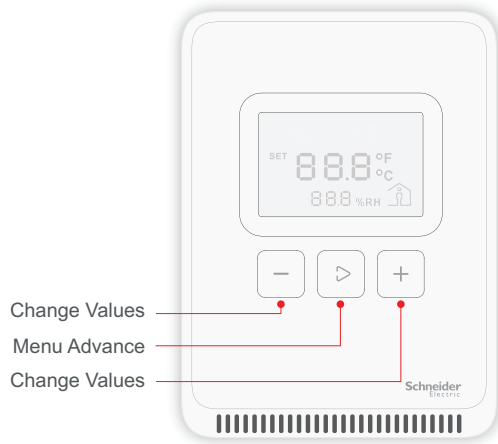Click this icon to access the setpoint change menu.

Submenu Only

65 %
− +

Fan Speed
Click this icon to access the fan speed menu.

Submenu Only

Selected

LCD Display Operation
Button Functions

Change Values
Menu Advance
Change Values

Display Icons

The main screen displays sensor values for RH (if equipped), room temperature or temperature setpoint and Celsius/Fahrenheit.

Temperature Value

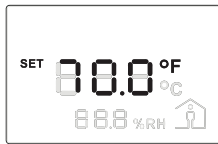Humidity Value (if equipped)

Override Press Indicator
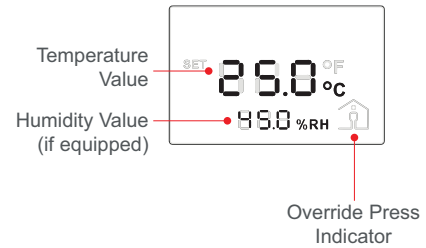
Setpoint Function

The Menu Advance button cycles between Temperature, RH (if equipped), Fan Speed setpoints and Celsius/Fahrenheit adjustment screens in order.

Temperature Setpoint Adjustment

Press the Menu Advance button
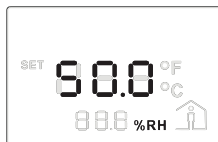
+ Adjusts setpoint up

− Adjusts setpoint down

After adjustment, wait 6 seconds or press the Menu Advance button. Setpoint is accepted and main screen appears.

Note: Numeric information will flash while in Set mode.

RH Setpoint Adjustment

Press the Menu Advance button

+ Adjusts setpoint up
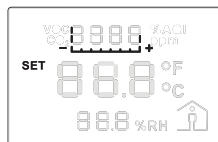
− Adjusts setpoint down

After adjustment, wait 6 seconds or press the Menu Advance button. Setpoint is accepted and main screen appears.

Note: Numeric information will flash while in Set mode.

Fan Speed Setpoint Adjustment

Press the Menu Advance button

+ Adjusts setpoint up

− Adjusts setpoint down

Low

Medium

High

Auto

After adjustment, wait 6 seconds or press the Menu Advance button. Setpoint is accepted and main screen appears.

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

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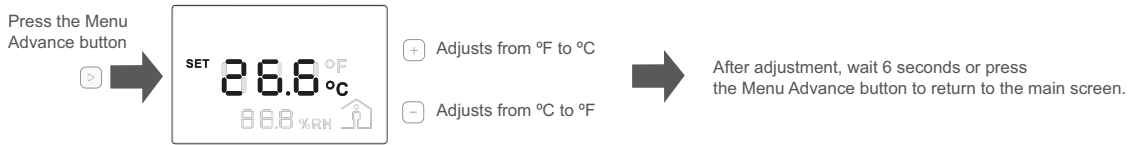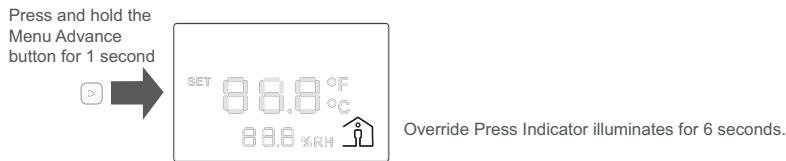
Setpoint Function (cont.)

Changing Celsius and Fahrenheit Scales

The Menu Advance button cycles between Temperature, RH (if equipped), Fan Speed setpoints and Celsius/Fahrenheit adjustment screens in order.

Press the Menu Advance button

SET 26.6 °F °C
88.8 %RH

+ 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

SET 88.8 °F °C
88.8 %RH

Override Press Indicator illuminates for 6 seconds.

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

部件名称	有害物质 - Hazardous Substances					
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

Z000057-0B