

# SpaceLogic Sensors

## SLXRH Series Replacement Humidity and Temperature Sensors



### Replacement Humidity Sensors for SLA and SLP

SLXRH Series Generation 2 Replacement Humidity Sensors work with the SLA and SLP Series Living Space Sensors (with humidity option). The SLA and SLP Series sensors use an on-board RH sensor. When a replacement sensor is installed into the socket on the SLA or SLP, the reading from the replacement sensor is used. The replacement sensor can subsequently be replaced as needed.

### Specifications

RH Sensor	
Sensor type	Solid state capacitive, replaceable
Accuracy*	SLXRHS1N: $\pm 1\%$ NIST from 10 to 80% RH @ 25°C (77 °F)
	SLXRHS2N: $\pm 2\%$ NIST from 10 to 80% RH @ 25°C (77 °F)
	SLXRHS2X: $\pm 2\%$ from 10 to 80% RH @ 25°C (77 °F)
Hysteresis	1.5% typical
Linearity	Included in accuracy specification
Stability	$\pm 1\%$ @ 20°C (68 °F) annually for 2 years
Output range	0 to 100% RH
Temperature coefficient	$\pm 0.1\%$ RH/°C above or below 25 °C (77 °F) typical

\*Humidity sensor measurement uncertainty should include: accuracy, hysteresis, temperature coefficient and stability.

### Available Products

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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## Replacement Humidity and Temperature Sensors for SCD2, SHD2 & SHO2

SLXRH Generation 2 Replacement Humidity Sensors and T2 Series Temperature only or Temperature and Humidity sensors work with SCD2, SHD2 and SHO2 Series Plant Room Sensors (with humidity and temperature options).

These sensors use on-board RH sensor and solid state temperature sensors to be used on analog transmitters or protocol models. The sensors are factory calibrated and offered in various configurations based on the end application need. When a replacement is installed into the socket, the reading from the replacement sensor is used. The replacement sensor can subsequently be replaced as needed.

### Specifications

RH Sensor	
Sensor type	Solid state capacitive, replaceable
Accuracy*	SLXRHS1N: $\pm 1\%$ NIST from 10 to 80% RH @ 25°C (77 °F)
	SLXRHS2N: $\pm 2\%$ NIST from 10 to 80% RH @ 25°C (77 °F)
	SLXRHS2X: $\pm 2\%$ from 10 to 80% RH @ 25°C (77 °F)
	SLXRHT2: $\pm 2\%$ from 10 to 80% RH @ 25°C (77 °F)
Hysteresis	1.5% typical
Linearity	Included in accuracy specification
Stability	$\pm 1\%$ @ 20°C (68 °F) annually for 2 years
Output range	0 to 100% RH
Temperature coefficient	$\pm 0.1\%$ RH/°C above or below 25 °C (77 °F) typical
Temperature Sensor	
Sensor type	Solid state, integrated circuit
Accuracy**	SLXRHT2: $\pm 0.2^\circ\text{C}$ ( $\pm 0.4^\circ\text{F}$ ) typical @ 25°C (77 °F)
	SLXXT2: $\pm 0.2^\circ\text{C}$ ( $\pm 0.4^\circ\text{F}$ ) typical @ 25°C (77 °F)

\*Humidity sensor measurement uncertainty should include: accuracy, hysteresis, temperature coefficient and stability.

\*\*For SCD2 Series, accuracy over the full operating range of 0 to 50 °C is  $\pm 0.5^\circ\text{C}$ . For SHD2 Series, accuracy over the full operating range of -35 to 60 °C is  $\pm 1^\circ\text{C}$ . For SHO2 Series, accuracy over the full operating range of -40 to 55 °C is  $\pm 1^\circ\text{C}$ .

### Available Products

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
SLXXT2**	Replaceable temperature module with 2-point calibration certificate	2-point calibration	N/A
SLXRHT2**	Replaceable temperature and humidity module with 2-point calibration certificate	2-point calibration	2-point calibration

\*Not for use with SHO2 Series outdoor humidity sensors.

\*\*For use on temperature transmitter models only.

NIST Certificate Example

## Certificate of Performance

Serial Number: XXXXX  
 Model Number: SLXRHS1N or SLXRHS2N  
 Calibration Date: MM/DD/YYYY  
 Accuracy: 1% or 2%

This sensor has been computer profiled and calibrated at multiple relative humidity levels using standards traceable to the National Institute of Standards and Technology through test #H-4622.

The humidity standard produces atmosphere of a known humidity based on the "two-pressure" principal, which is to saturate an air stream with water vapor at a given pressure and temperature. The saturated air stream is then reduced to test pressure. The humidity at test pressure is then the ratio of the two absolute pressures, corrected for vapor pressure and enhancement factor ratios.

Reference (%RH)	Reading (%RH)	Difference (%RH)
79.911	80.867	-0.956
70.006	70.364	-0.358
60.024	60.341	-0.317
50.088	50.411	-0.323
39.964	40.427	-0.463
30.028	30.321	-0.293
19.990	19.700	0.290
12.016	10.475	1.541

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 May 2020  
 Z208187-0A



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