

SpaceLogic Sensors

SHD2 Series Humidity Sensors – BACnet and Modbus



Product Description

SpaceLogic SHD2 Series Humidity Transmitters provide an ideal solution for measuring relative humidity in a wide range of conditions. All models are equipped with a thin-film capacitive humidity sensor that is easy to replace in the field and a solid state temperature sensor for high accuracy measurements.

SHD2 is an all-in-one device combining humidity and temperature sensing. Intended for duct mount applications, the device ensures a building’s optimum temperature and humidity levels, resulting in greater energy efficiency.

Each device is an active sensor that converts a humidity or temperature measurement into BACnet MS/TP, Modbus RTU.

As an integral part of Schneider Electric EcoStructure™ Building Operation (EBO) software, the SHD2 protocol models’ Ready-Connect feature enables a plug & play experience for easy integration and configuration.

Different models are available based on application requirements for lower-cost installations.

SHD2 is available with an LCD display option on select models (see Available Products, below).

Features

- Easy to install:
 - Latch-on sensor cover
 - Screwless terminal block wiring with spring actuator
 - Mounting accessory adjusts probe length in duct
- Quick to commission with DIP switch selectable BACnet and Modbus outputs via RS-485
- 1% or 2% with NIST certificate, 2% RH module – field replaceable
- Solid state temperature sensor providing high accuracy measurements
- Multiple temperature thermistors and transmitter options, compatible with a wide range of controllers
- Backlit LCD display
- 2-point calibration certificate available for humidity and temperature or temperature-only replaceable module
- Key component for the LEED green building program and WELL Building Standard*

*Leadership in Energy and Environmental Design (LEED) is a registered trademark of the US Green Building Council. The WELL Building Standard is a trademark of the International WELL Building Institute in the United States and other countries.

Available Products

| | | | | | |
|------|--------------------------------------------|------------------------------------|-----------------------------------------|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| SHD2 | User Interface <input type="checkbox"/> | Output <input type="checkbox"/> | RH Accuracy <input type="checkbox"/> | Temperature <input type="checkbox"/> | Example: SHD2 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| | L = LCD display X = None | P = BACnet/Modbus | 2 = 2% | A = Transmitter only | |

Note: Replaceable RH and temperature modules available to be ordered separately per table on page 2.

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www.schneider-electric.com

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Replaceable RH Elements & Temperature and Humidity Calibration Modules

| Part Number | Description |
|-------------|----------------------------------------------------------------------------------|
| SLXRHS1N | Replaceable RH sensor, 1% with NIST certificate |
| SLXRHS2N | Replaceable RH sensor, 2% with NIST certificate |
| SLXRHS2X | Replaceable RH sensor, 2% |
| SLXXT2* | Replaceable temperature module with 2-point calibration certificate |
| SLXRHT2* | Replaceable temperature and humidity module with 2-point calibration certificate |

*For temperature transmitter models only.

Specifications

| Operating and Storage Environment | |
|-----------------------------------|----------------------------------------------------------------------------------|
| Operating temperature | -35 to 60 °C (-31 to 140 °F)* |
| Operating humidity | 0 to 95% RH (non-condensing)* |
| Storage temperature | -35 to 70 °C (-31 to 158 °F)* |
| Storage humidity | 0 to 95% RH (non-condensing) |
| Power supply | 20 to 30 Vdc, 24 Vac, 50 to 60 Hz |
| Output | BACnet MS/TP, Modbus RTU |
| Power consumption | See Maximum Power Consumption table, page 6 |
| Tube length | 200 mm |
| Medium | Neutral gas, air |
| Housing material | Polycarbonate; Flammability rating UL 94 V0 |
| Mounting location | For indoor use only. Not suitable for wet locations. |
| IP rating | IP 65 |
| Protection class | Class III |
| Humidity Sensor | |
| Sensor type | Solid state capacitive, replaceable |
| Accuracy** | ±2% from 10 to 80% RH @ 25 °C (77 °F) ±1%, ±2% NIST and 2% replaceable option |
| 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 |
| Time constant | Air velocity 1.5 m/s. approx. 72 s; Air velocity 3.0 m/s. approx. 52 s |
| Accuracy*** | ±0.2 °C (±0.4 °F) typical at 25 °C |
| Resolution | 0.1 °C (0.1 °F) |

| Range | -35 to 60 °C (-31 to 140 °F)* |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Display Models | |
| LCD type | Positive display with backlight |
| Measurement values displayed | Temperature: °C or °F Humidity: % RH |
| Display resolution | Temperature: 0.1 °C or °F Humidity: 0.1% RH |
| Wiring Terminals | |
| Wiring | Screwless terminal block with spring actuator, 16-24 AWG |
| EBO integration | Download Modbus Device Type template for Modbus models from the Building Application tool. Device import file and instructions: https://bms-applications.schneider-electric.com/type/MB/download/263 |
| Warranty | |
| Limited warranty | 2 years |
| Regulatory Information | |
| Agency approvals | UL 916 European conformance CE: EN61000-6-2, EN61000-6-3, EN61000 Series immunity, EN 61326-1 FCC Part 15 Class A Green Premium (REACH, RoHS), RoHS 2 (China), RCM (Australia), ICES-003 (Canada), UKCA (UK) |

*Duct mount model with temperature and humidity only. LCD operation from -10 to 60 °C (14 to 140 °F).

**Humidity sensor measurement uncertainty should include: accuracy, hysteresis, temperature coefficient and stability. Humidity accuracy up to -20°C.

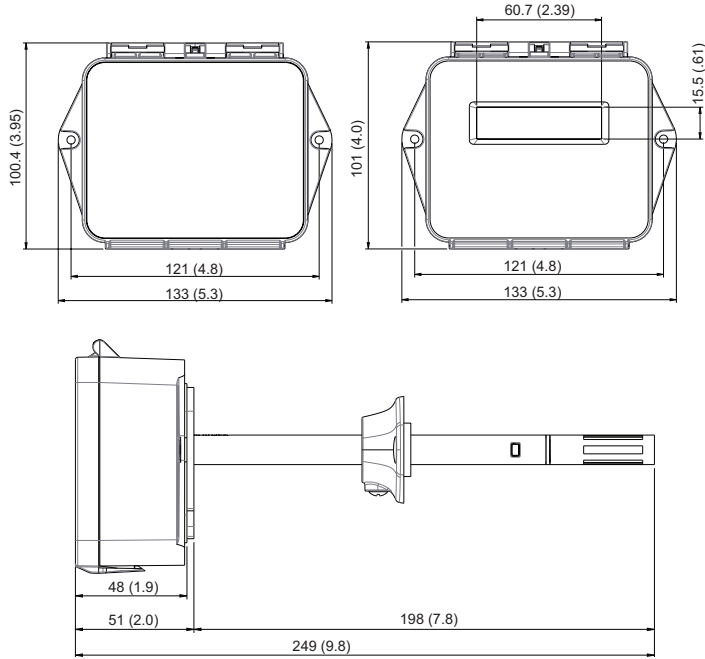
***±0.5 °C accuracy from 0 to 60°C, ±1°C accuracy from -35 to 0°C over the full operating range.

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Dimensions mm (in.)



Maximum Power Consumption

| Series | LCD | Temp./RH | Max. Power |
|----------|-----|----------|---------------|
| SHD2 | Yes | Yes | 1.5VA @ 24VAC |
| Protocol | No | Yes | 0.8VA @ 24VAC |

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