

Model RHA Humidity Sensor



| Model List | Power Supply Voltage |
|------------|----------------------|
| RHA | 12 V to 24 V DC |
| RHA-5V | 5 V DC |

Application

- Humidity control in food processing facilities
- Humidity control in air-conditioning equipment
- Humidity control in pharmaceutical factories
- Humidity control in greenhouses/fermentation chambers
- Humidity control in museums, sample chambers, warehouses
- Humidity control in clean rooms
- Humidity control for musical instruments
- Humidity control in plant factories

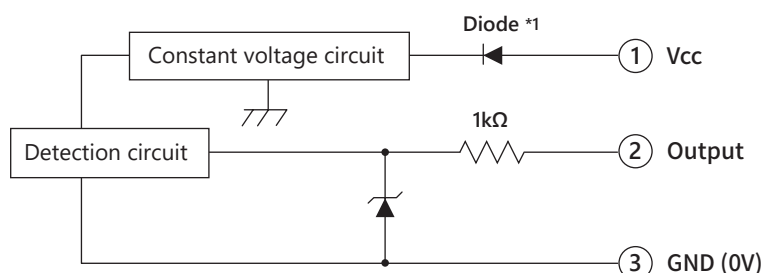
Features

- A small-sized humidity sensor.
- Outputs a linear voltage from 0.5 V to 4V DC corresponding to the humidity level.
- Easy to maintain connector type is used.
- M3 screws facilitate easy mounting.

Rating / Performance

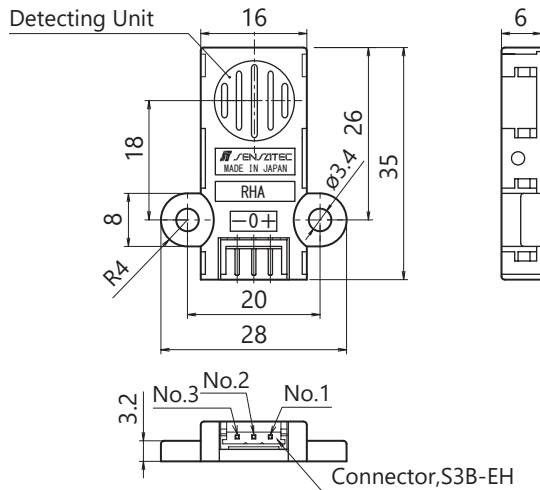
| Model | RHA | RHA-5V |
|-----------------------------|--|-------------------|
| Detection Sensor | Humidity | |
| Temperature Range | -10 to 60 °C (Without dew condensation or icing) | |
| Humidity Range | 0 to 85 % RH (Without dew condensation) | |
| Measurable Humidity Range | 0 to 100 % RH (Short-time measurement without dew condensation only) | |
| Standard Humidity Accuracy | ± 5 % in the RH 25 °C (20 to 80 % RH) | |
| Humidity Response Time | 60 sec (τ 63 %) | |
| Power Supply Voltage | 12 V to 24 V DC | 5 V DC |
| Operating Voltage Range | 10 V to 26.4 V DC | 4.5 V to 5.5 V DC |
| Current Consumption | 1 mA DC or less | 0.5 mA DC or less |
| Resistance Output Impedance | 1 kΩ | |
| Load Resistance | 100 kΩ or more | |
| Storage Temperature Range | -10 to 60 °C (Without dew condensation or icing) | |
| Storage Humidity Range | 80 % RH or less (Without dew condensation) | |
| Dielectric Strength | 500 V AC for 1 minute (Between the live part and case) | |
| Insulation Resistance | 50 MΩ or more at 500 V DC megger (Between the live part and case) | |
| Vibration Resistance | 10 to 55 Hz, 1.5 mm double amplitude in X, Y and Z directions for 2 hours each (at power off) | |
| Shock Resistance | 200 m/s ² (Approx. 20 G) in X, Y and Z directions 3 times each (at power off) | |
| Protection | IP50 | |
| Case Material | Polyarylate | |
| Connector | Connector : S3B-EH (3-pin) (From J.S.T. Mfg. Co., Ltd.) [Connections] Housing : EHR-3, Contact : SEH-001T-P0.6 (From J.S.T. Mfg. Co., Ltd.) | |
| Weight | Approx. 5 g | |
| Options (Sold Separately) | Connector harness : CNH-S3B03S26-300 | |

Output Circuit



*1 : The 5V DC type does not have a built-in backflow prevention diode.
Be sure to check the polarity of the power supply and connect it correctly.

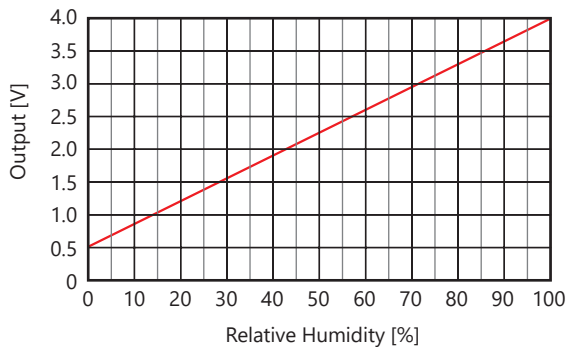
Outline Dimensions



| Pin No. | Signal Name | Function |
|---------|-------------|----------------------|
| 1 | Vcc | Power Supply Voltage |
| 2 | Output | Output Signal |
| 3 | GND(0V) | GND(0V) |

Characteristics Graph (Typical Example)

Humidity Characteristics



RH (%)

$$\text{RH}(\%) = (\text{Output Voltage} - 0.5) \div 0.035$$

Precautions During Use

- When the sensor is not used, to maintain the precision, it is recommended to store it in the delivered package (in the closed anti-static bag) without opening under the following conditions :
 - Temperature range : 10 to 50 °C
 - Humidity range : 20 to 60 % RH
 Do not use antistatic polyethylene bags (light blue, pink or rose pink color).
- The relative humidity value greatly depends on the humidity condition. When measuring the surrounding temperature/humidity, be sure to confirm there is no heated part on the installation surface.
- Use M3 pan head screws for mounting. The tightening torque for the case should be 0.5 N·m or less.
- This sensor has output impedance of 1k Ω to avoid damage due to external noise. The impedance attenuates according to the input impedance of the signal input device. Use a device with as high input impedance as possible - at least 100k Ω .
- The 5V DC type does not have a built-in backflow prevention diode. Be sure to check the polarity of the power supply and connect it correctly.
- This sensor cannot be used in dew condensation conditions. If this is the case, refer to the RHT series.
- Do not use the sensor in the following environmental conditions:
 - Where there is water or moisture
 - Where there are corrosive gases
 - Where there is oil
 - In freezing temperatures or dew condensation
 - Dusty locations
 - A place exposed to direct sunlight or radiated heat
- Vacuum away any serious dust contamination or else a malfunction may result.
- For other precautions, refer to "General Precautions" for infrared temperature sensors.

*For other detailed specifications, refer to the specification sheet of the corresponding model.