

Humidity Sensor Temperature/Humidity Sensor

ES2-HB ES2-THB

Detect Humidity within an Accuracy of $\pm 3\%$ in a Compact Body. Controller Set Provides Superior Humidity Control and Temperature/Humidity Control.

- Employs high-polymer-resistive Sensor with superior durability.
- Compact and lightweight.
- Measurement ranges of 20% to 95% for humidity and 0 to 55°C for temperature.

Ordering Information

Name	Model
Humidity Sensor	ES2-HB
Temperature/Humidity Sensor	ES2-THB
Humidity Sensor Module (See note.)	ES2-M

Note: This is a replacement item. One Module is provided with the ES2-HB/-THB. Always attach the Humidity Sensor Module when using the ES2-HB/-THB. Approximately 7 VDC will be output for the humidity output if the Module is not attached or is incompletely attached.

Specifications

Humidity Sensor section	High-polymer resistive
Humidity detection range	20 to 95%
Humidity detection accuracy	$\pm 3\%$ (25°C, 40 to 80%)
Power supply voltage	24 VDC (See note 1.)
Operating voltage range	85% to 110% of power supply voltage
Current consumption	10 mA max.
Humidity output	1 to 5 V (for humidity of 0% to 100%) Permissible load impedance: 100 k Ω min. (Use a 1:1 connection when connecting to an E5□K.)
Temperature Sensor Section (See note 2.)	Platinum resistance thermometer
Temperature detection range	0 to 55°C
Temperature output	Pt100: 3 wire (See note 4.)
Communications cable length	5 m
Operating temperature and humidity range (See note 3.)	0 to 55°C, humidity of 95% max.
Storage temperature and humidity range (See note 3.)	-20 to 60°C, humidity of 95% max.
Degree of protection	IP 20 equivalent
Weight	ES2-HB: Approx. 41 g (excluding cables) ES2-THB: Approx. 43 g (excluding cables)

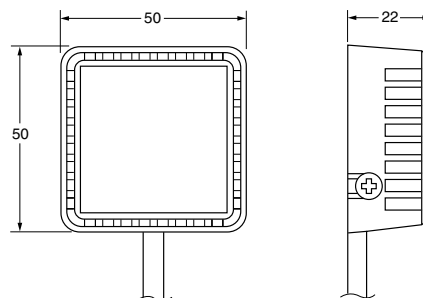


- Note:**
1. The maximum ripple voltage of 2% p-p max. The recommended power supply is the OMRON S82K.
 2. ES2-THB only.
 3. Do not use or store the Sensor for an extended period at a humidity of 90% or more.
 4. Pt100 (JIS C 1604-1989) is used for the measuring elements. Set *Pt100* for input sensor type of the Temperature Controller.

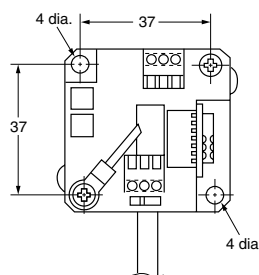
Dimensions

Note: All units are in millimeters unless otherwise indicated.

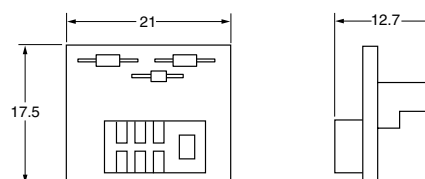
ES2-HB Humidity Sensor
ES2-THB Temperature/Humidity Sensor



Cover



ES2-M Humidity Sensor Module



Note: Firmly insert the connector all the way in when mounting the ES2-M to the Sensor.

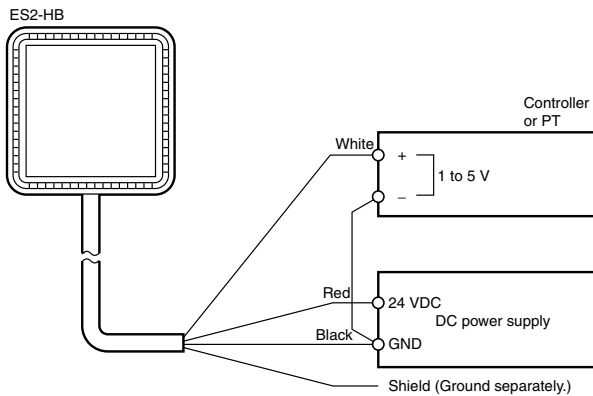
Precautions for Safe Use

Do not use the product in the following locations:

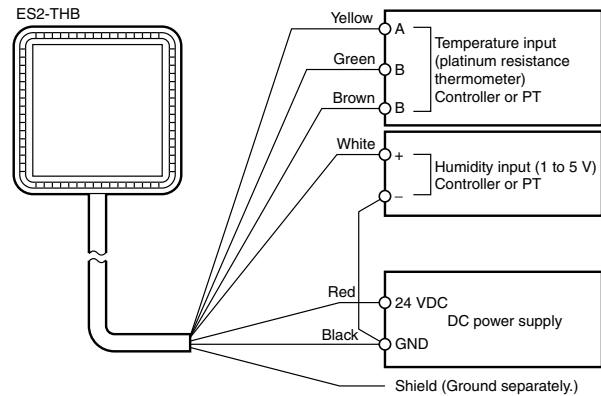
- Locations subject to water splashing or oil contact
- Locations subject to dust or corrosive gases
- Locations subject to icing or condensation
- Locations subject to direct sunlight

Connection Examples

ES2-HB Humidity Sensor



ES2-THB Temperature/Humidity Sensor

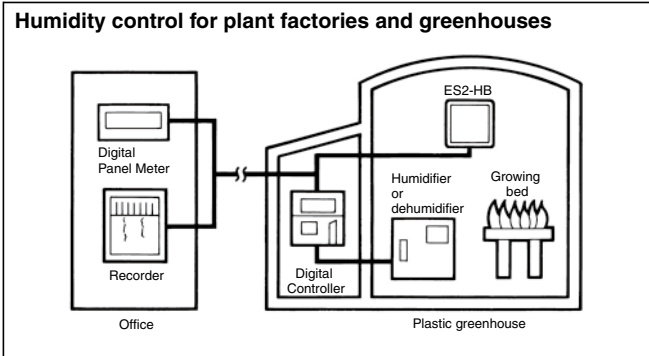
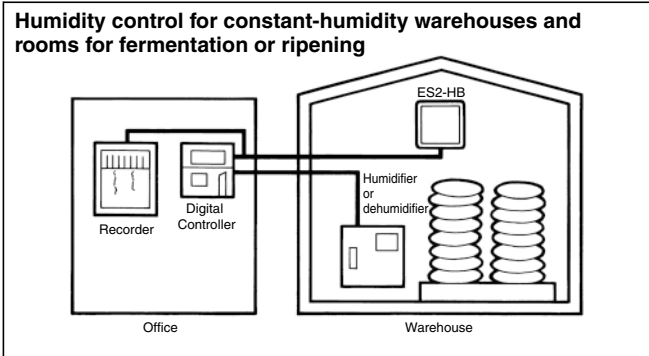
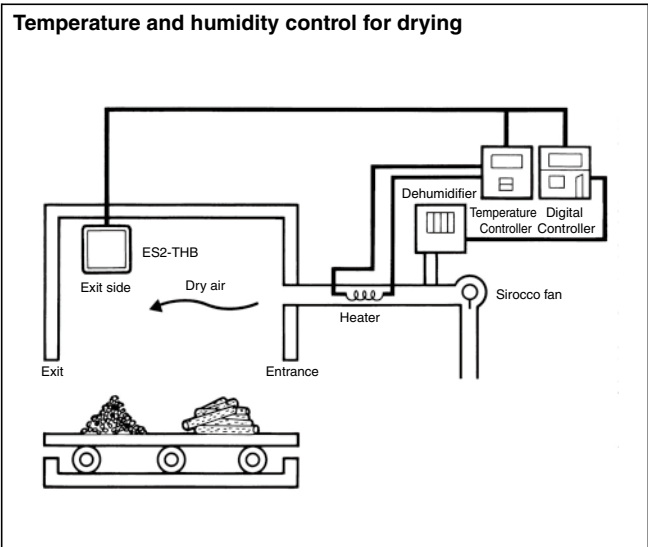
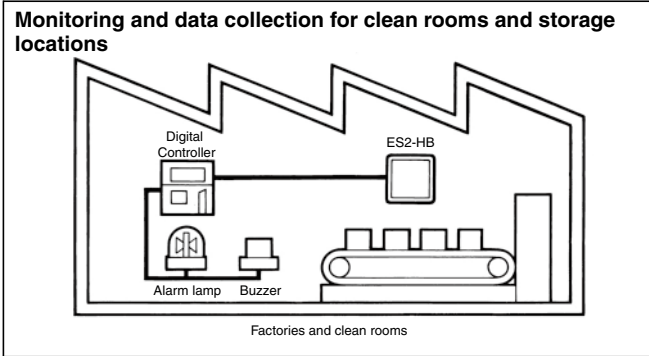
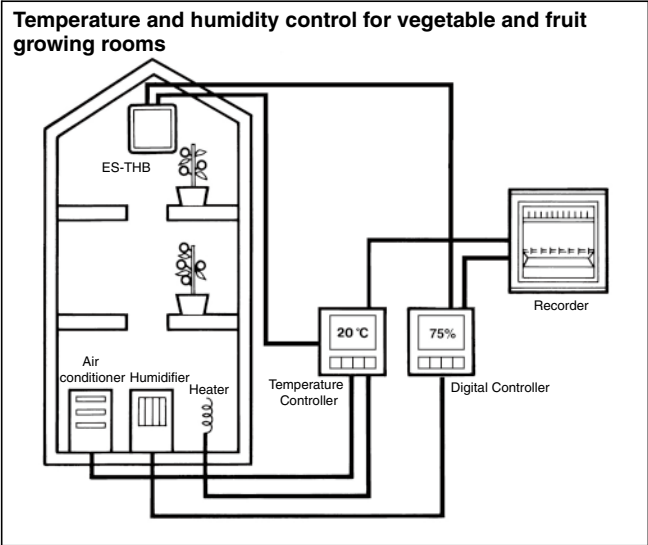


Cable Conditions

Item	Model	ES2-HB	ES2-THB
Diameter		AWG22	AWG24
Number of conductors		3	6
Shield		Braided	Braided
Maximum conductive resistance (20°C)		60 Ω/km max.	92 Ω/km max.
Finished outer cable diameter		5.5 mm	5.9 mm

Note: Provide a separate cable according to the details listed at the left if the length of the supplied cable is insufficient. The cable can be extended to a maximum of 50 m.

Application Examples



ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.
 To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

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