

Humidity Sensor Temperature/Humidity Sensor

ES2-HB ES2-THB

CSM_ES2-HB_ES2-THB_DS_E_3_4

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

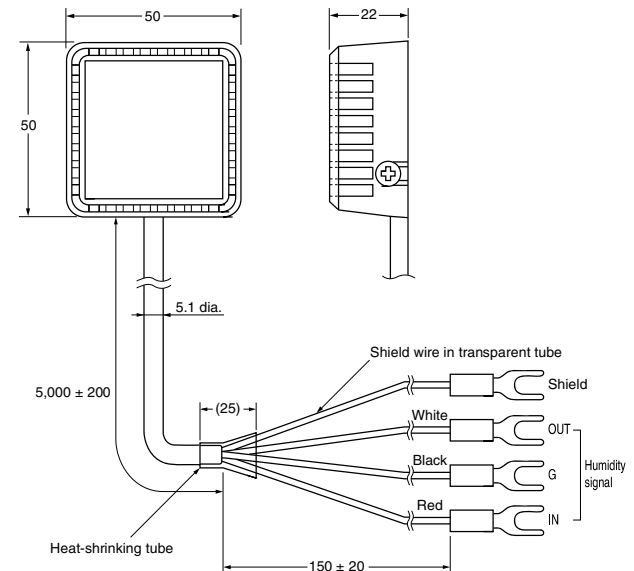
Humidity Sensor section	High-polymer resistive
Humidity detection range	20 to 95%
Humidity detection accuracy	$\pm 3\%$ (25°C, 40 to 80%)
Power supply voltage	24 VDC (See note 1.)
Operating voltage range	85% to 110% of power supply voltage
Current consumption	10 mA max.
Humidity output	1 to 5 V (for humidity of 0% to 100%) Permissible load impedance: 100 k Ω min. (Use a 1:1 connection when connecting to an E5CC/E5EC/E5AC.)
Temperature Sensor Section (See note 2.)	Platinum resistance thermometer
Temperature detection range	0 to 55°C
Temperature output	Pt100: 3 wire (See note 4.)
Class	JIS class B
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 S8JX or S8VS.
 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.

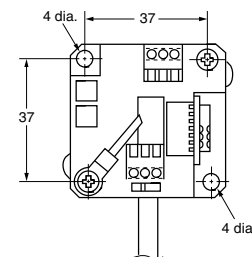
Dimensions

Note: All units are in millimeters unless otherwise indicated.

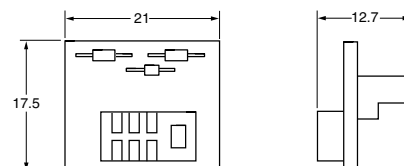
ES2-HB Humidity Sensor ES2-THB Temperature/Humidity Sensor



Cover



ES2-M Humidity Sensor Module



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

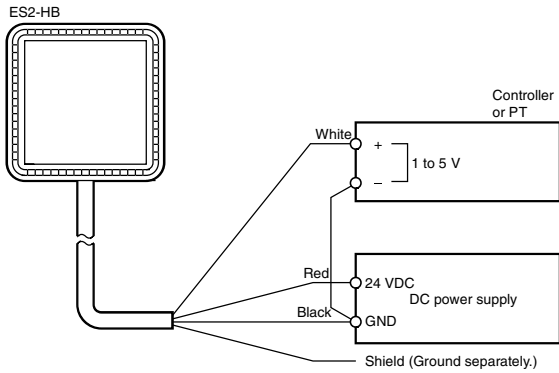
Precautions for Safe Use

Do not use the product in the following locations:

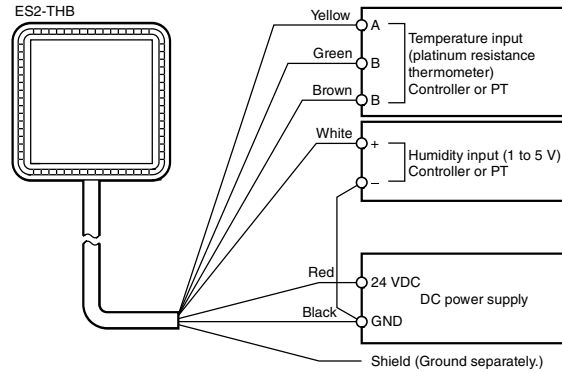
- Locations subject to water splashing or oil contact
- Locations subject to dust or corrosive gases
- Locations subject to icing or condensation
- Locations subject to direct sunlight

Connection Examples

ES2-HB Humidity Sensor



ES2-THB Temperature/Humidity Sensor



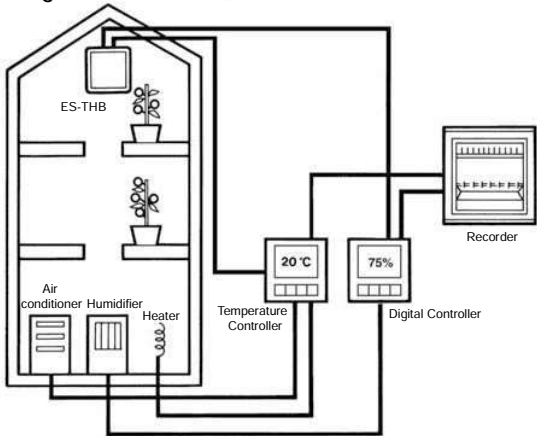
Cable Conditions

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		5.1 mm	5.8 mm

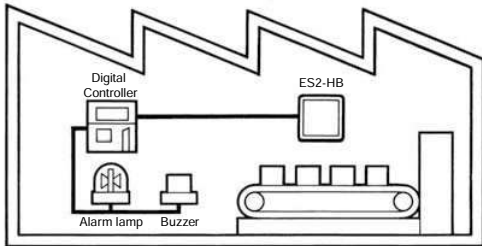
Note: Provide a separate cable according to the details listed at the left if the length of the supplied cable is insufficient. The cable can be extended to a maximum of 50 m.

Application Examples

Temperature and humidity control for vegetable and fruit growing rooms

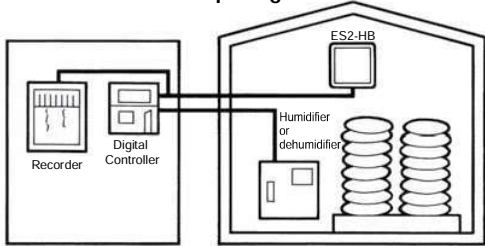


Monitoring and data collection for clean rooms and storage locations



Factories and clean rooms

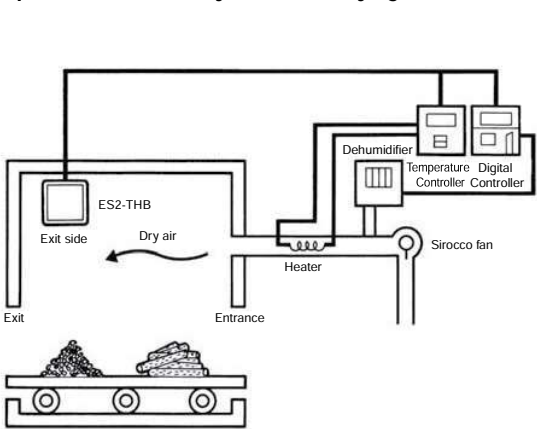
Humidity control for constant-humidity warehouses and rooms for fermentation or ripening



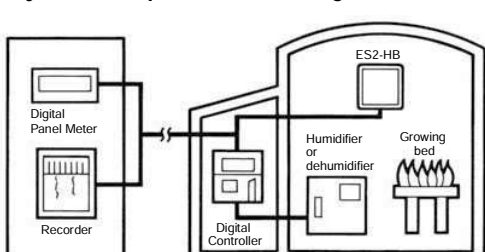
Office

Warehouse

Temperature and humidity control for drying



Humidity control for plant factories and greenhouses



Office

Plastic greenhouse

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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