

Humidity-Voltage Converting Module TSM-H1

Operation Manual

1. Introduction

Thank you for purchasing this Relative Humidity-Voltage Converting Module TSM-H1. With the use of humidity sensor elements TD-A and TI-A, the product outputs relative humidity with 0 to 1V DC by simply connecting it to the power supply. Durability, high-speed response, and low hysteresis are some of the main characteristics of this product.

2. Wiring and Shape

The wiring diagram of TSM-H1 is shown in Fig. 1. The shape of TSM-H1 is shown in Fig. 2. If the temperature sensor is selected as an option, its resistance value will be outputted with three wires.

3. Specifications

Specifications of TSM-H1 are the following:

Usable Temperature Range	: - 25 to +80°C
Usable Humidity Range	: 0 to 100% RH
Relative Humidity Meter Measuring Accuracy	: ±3%RH (5 to 95%RH at 25°C)
Response Time (Humidity)	: 15 sec. (If the membrane filter is attached: 90% response)
Power Voltage	: 5 to 16V DC
Output (Humidity)	: 0 to 1V DC (Output impedance 100Ω)
	(Temperature: Optional): Resistance (Three wires)
Dimensions	: φ14mm × 80mm (Excluding cable)
Cable Length	: 1,000mm (Standard)
Weight	: Approx. 10g (Excluding cable)
Humidity Sensor Element	: TD-A (Compatible humidity sensor element TI-A for TSM-H1-TIA)
Temperature Sensor Element (Optional)	: Pt100ΩCRZ2005, JIS class A

4. Chemical Resistance

Using TSM-H1 under an environment that contains an active gas, such as organic gas, may cause it to output an abnormal value depending on the type and density of the active gas.

5. Replacement of Humidity Sensor (TSM-H1-TIA)

In case an abnormal value is outputted because of trouble in the humidity sensor, replace the humidity sensor element in accordance with the following procedures:

- (1) Remove the sensor's protective cap by turning it. Remove the humidity sensor element.
- (2) Insert the new sensor and then attach the sensor's protective cap. Use a tweezer to avoid touching the sensor surface.

* No need to adjust the circuit after the replacement of the element.

6. Usage Precautions

Please take note of the following upon using TSM-H1:

- (1) Do not apply strong force on the product.
- (2) Do not expose the product to direct sunlight.
- (3) Do not expose the sensor and circuit sections to liquids such as water.
- (4) Do not touch the humidity sensor section.
- (5) Use the product under proper power voltage.
- (6) Do not short-circuit the output.
- (7) Do not wipe the product with an organic solvent.

- (8) Use the product safely (e.g., stop the system in case of abnormal output).
- (9) Use only the designated AC-DC adapter (if option is selected).

7. Warranty Period

The warranty period of TSM-H1 is one (1) year from the shipment of the product. However, the warranty period of the sensor element shall be six (6) months. Any trouble within the said period shall be subject to repair or replacement with an equivalent item free of charge.

However, please be noted that the warranty does not cover the damages due to natural disasters and customer carelessness, the fluctuations in output value due to the use of the product under the ambience of organic solvent gas, and degradation of the sensor due to condensation.

8. Disclaimer

We shall not be held liable for any incorrect operation of TSM-H1 by the customer. Furthermore, any trouble due to extraordinary natural occurrence and improper usage by the customer shall not be subject to warranty.

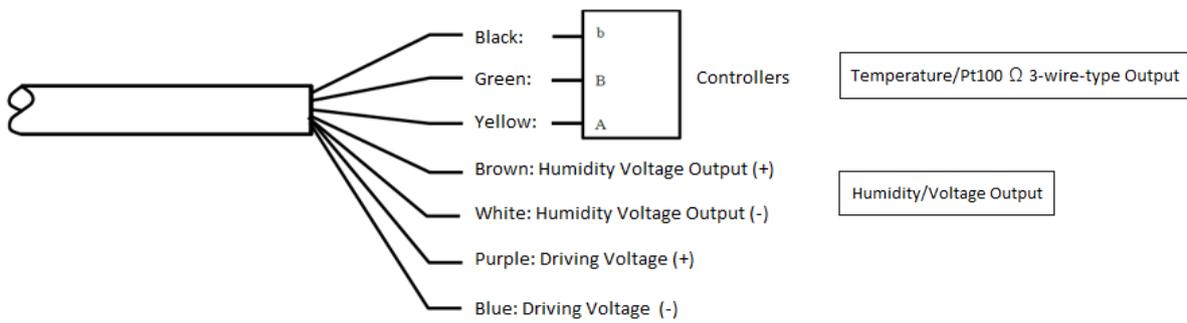


Fig. 1 Wiring Diagram (Temperature Output is Optional)

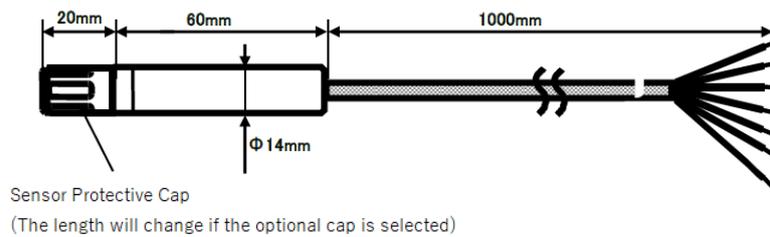


Fig. 2 Dimensional Outline Drawing



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