

Preface

Thank you for purchasing our DSD-200-TRHA, Duct Inserted Temperature/Humidity Sensor.


This manual contains instructions for installation and handling of the DSD-200-TRHA. To ensure safe and correct use, thoroughly read and understand this manual before using this sensor. To prevent accidents arising from the misuse of this sensor, please ensure the operator receives this manual.

Notes

- This sensor should be used in accordance with the specifications described in the manual. If it is not used according to the specifications, it may malfunction or cause a fire.
- Be sure to follow all of the warnings, cautions and notes. If they are not observed, malfunction or serious injury may occur.
- The contents of this instruction manual are subject to change without notice.
- Care has been taken to ensure that the contents of this instruction manual are correct, but if there are any doubts, mistakes or questions, please inform our sales department.
- This sensor is designed to be used in close proximity to the measurement target.
- Any unauthorized transfer or copying of this document, in part or in whole, is prohibited.
- Shinko Technos Co., Ltd. is not liable for any damage or secondary damage(s) incurred as a result of using this product, including any indirect damage.

Safety Precautions (Be sure to read these precautions before using our products.)

The safety precautions are classified into 2 categories: "Warning" and "Caution".

Depending on the circumstances, procedures indicated by  Caution may result in serious consequences, so be sure to follow the directions for usage.

Warning

Procedures which may lead to dangerous conditions and cause death or serious injury, if not carried out properly.

Caution

Procedures which may lead to dangerous conditions and cause superficial to medium injury or physical damage or may degrade or damage the product, if not carried out properly.

Warning

- To prevent an electrical shock or fire, only Shinko or other qualified service personnel may handle the inner assembly.
- To prevent an electrical shock, fire or damage to the instrument, parts replacement may only be undertaken by Shinko or other qualified service personnel.

SAFETY PRECAUTIONS

- To ensure safe and correct use, thoroughly read and understand this manual before using this instrument.
- This instrument is intended to be used for general equipment. Verify correct usage after purpose-of-use consultation with our agency or main office.
(Never use this instrument for medical purposes with which human lives are involved.)
- External protection devices must be installed, as malfunction of this product could result in serious damage to the system or injury to personnel. Proper periodic maintenance is also required.
- This instrument must be used under the conditions and environment described in this manual.
Shinko Technos Co., Ltd. does not accept liability for any injury, loss of life or damage occurring due to the instrument being used under conditions not otherwise stated in this manual.

Caution with Respect to Export Trade Control Ordinance

To avoid this instrument from being used as a component in, or as being utilized in the manufacture of weapons of mass destruction (i.e. military applications, military equipment, etc.), please investigate the end users and the final use of this instrument.

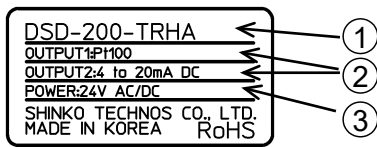
In the case of resale, ensure that this instrument is not illegally exported.

1. Model

1.1 Model

Model	Measurement Range	Output
DSD-200-TRHA	Temperature: -25 to 70°C Humidity: 5 to 95 %RH	Temperature: Pt100 Class A, 3-wire type Humidity: 4 to 20 mA DC

1.2 How to Read the Model Label



(Fig. 1.2-1)

Model label is attached on the inside of the case. (Fig. 1.2-1)

Serial number is attached on the inside of the front cover.

- ① Model
- ② Output
- ③ Power supply voltage

2. Mounting

! Caution

Installation site should be examined, giving careful consideration to the following conditions.

Do not touch, drop or place any pressure on the probe.

[This instrument is intended to be used under the following environmental conditions.]

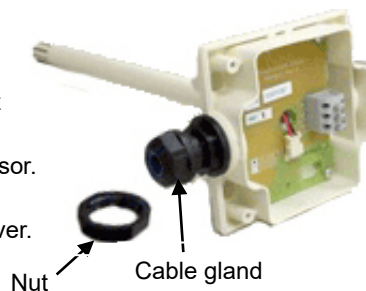
- A minimum of dust, and an absence of corrosive gases
- No flammable, explosive gases
- No mechanical vibrations or shocks
- No exposure to direct sunlight, an ambient temperature of -25 to 70°C that does not change rapidly, and no icing
- An ambient non-condensing humidity of less than 95 %RH
- An absence of chlorinated and sulfidizing gases
- No large capacity electromagnetic switches or cables through which large current is flowing
- No water, oil, chemicals or the vapors of these substances can come into direct contact with the sensor.
- Enough space for the cover to be removed when maintaining or inspecting
- Do not install sensor with the probe in an upward facing position.

(3) Wiring

Remove the front cover, mount the cable gland, and fix it with the nut. After that, wire the sensor.

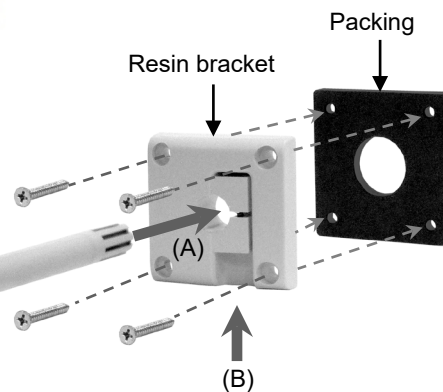
[See p.3 (Fig. 4-1).]

After wiring, install the front cover.



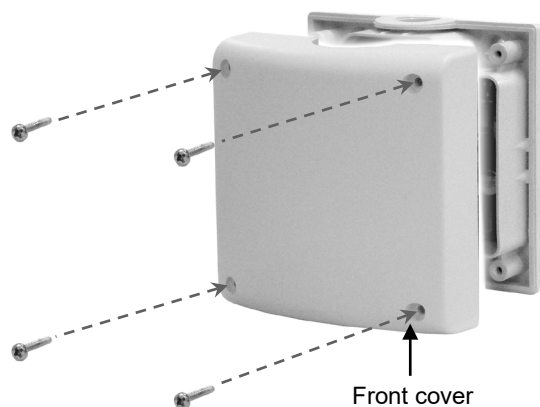
(1) Mount the Resin Bracket

Mount the resin bracket and packing (accessories) at the place of installation.



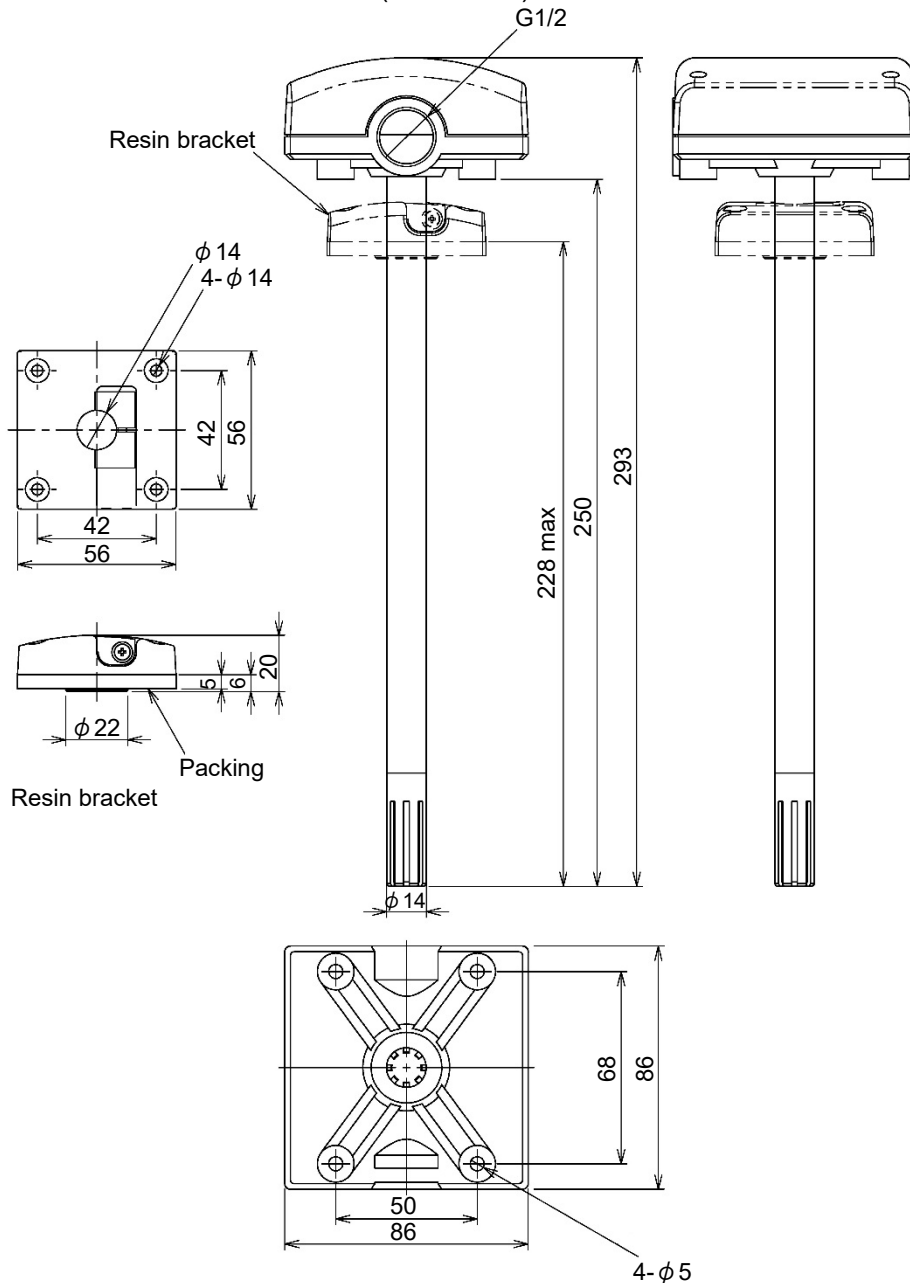
(2) Fix the Sensor

Insert the sensor main unit into the resin bracket. (A)
Tighten the screws of the resin bracket at the sensor fixing position. (B)



(Fig. 2-1)

3. External Dimensions (Scale: mm)

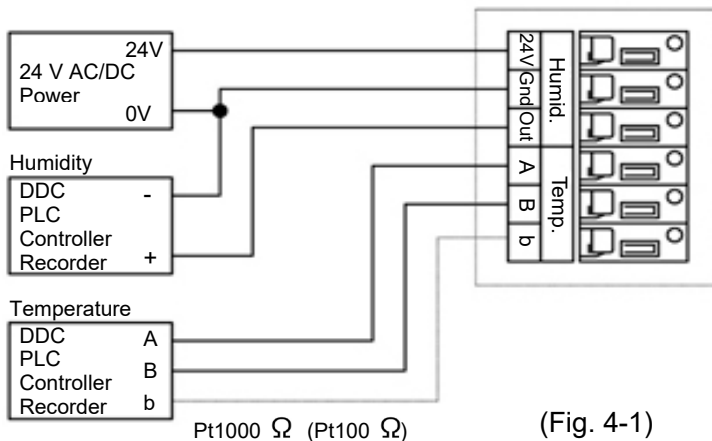


(Fig. 3-1)

4. Terminal Arrangement

Warning

Turn the power supply to the instrument OFF before wiring or checking.
Working on or touching the terminal with the power switched ON may result in severe injury or death due to electrical shock.



DSD-200-TRHA terminal section

When using 1 to 5 V DC humidity output, connect the provided Current/Voltage conversion resistor (RES-S06-250) between Out and Gnd of humidity.

(Fig. 4-1)

5. Specifications

Measurement Range	Temperature: -25 to 70°C Humidity: 5 to 95 %RH
Output	Temperature: Pt100 Class A, 3-wire type Humidity: 4 to 20 mA DC (Linear conversion corresponding to 0 to 100 %RH) (Maximum allowable load: 1 kΩ max.)
Power Supply Voltage	24 V AC/DC ±20% 50/60 Hz
Sensing Element	Temperature: Platinum thin film RTD, Pt100 Class A Humidity: IC (integrated circuit)
External Dimensions	86 x 86 x 293 mm (W x H x D)
Mounting	Duct inserted, and fixed with the resin bracket.
Material	Protection tube: ABS, Main body: ABS
Color	Beige
Drip-proof/Dust-proof Structure	Housing: IP54 (Only when water-proof connector is used)
Cable	1.0 mm ²
Cable Insertion Hole	PF 1/2" (Use commercially available water-proof connector.)
Accuracy:	Temperature: ±1.0°C (-25 to 75°C), however, ±0.3°C (-10 to 50°C) Humidity: Within ±5 %RH (at 23°C)
Response time	Approx. 20 seconds (at 2 m/sec wind velocity)
Power Consumption	Approx. 1 VA (for 24 V AC), Approx. 1 W (for 24 V DC)
Operating Environment	Temperature: -25 to 70°C Humidity: Less than 95%RH (non-condensing) (Operating environment temperature: Up to 50°C: Less than 95 %RH, 50 to 70°C: Less than 70 %RH)
Operating Environment Limitation	[Caution] Do not use this sensor in an environment where dew condensation occurs. Do not use this sensor in an environment where chlorinated and sulfidizing gases are being generated.
Storage Environment	Temperature: -25 to 70°C Humidity: Less than 95 %RH (non-condensing) (Operating environment temperature: Up to 50°C: Less than 95 %RH, 50 to 70°C: Less than 70 %RH)
Weight	Approx. 190 g (including resin bracket)
Insulation Resistance	Between Case – Output terminal, 500 MΩ minimum, at 500 V DC
Dielectric Strength	Between Case – Output terminal, 1.5 kV for 1 minute, 0.5 mA max.
Accessories	Mounting screw: 4 pieces, Resin bracket: 1 piece, Packing: 1 piece, Current/Voltage conversion resistor (RES-S06-250): 1 piece, Cable gland (OA-W1608E): 1 piece, Instruction manual: 1 copy
Environmental Specification	RoHS directive compliant

******* Inquiries *******

For any inquiries about this unit, please contact our agency or the vendor where you purchased the unit after checking the model and serial number. Please let us know the details of the malfunction, or discrepancy, and the operating conditions.

SHINKO TECHNOS CO., LTD. OVERSEAS DIVISION

Head Office : 2-5-1, Senbahigashi, Minoo, Osaka, Japan

URL: <http://www.shinko-technos.co.jp/e/>

Tel : +81-72-727-6100

E-mail: overseas@shinko-technos.co.jp

Fax: +81-72-727-7006