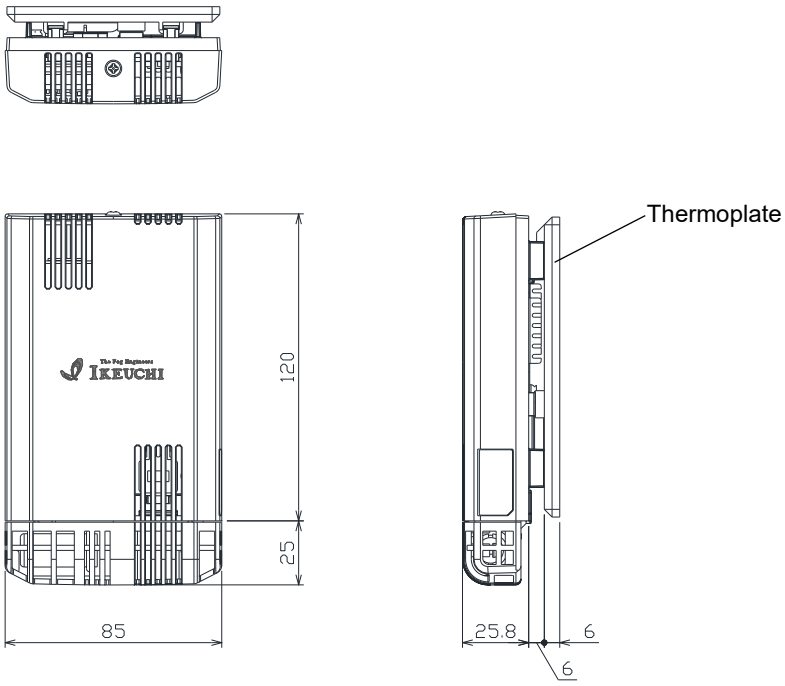
"The Fog Engineers"
H. IKEUCHI & CO., LTD.

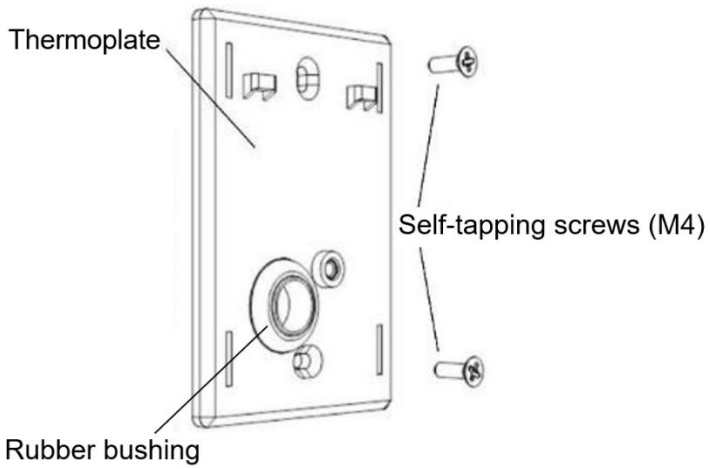
Instruction Manual for Humidity Sensor HN-EKB1NX04

■Outer Dimensions (Unit: mm)



■Installation

1. Remove the rubber bushing from the thermoplate and mount the thermoplate on the wall using self-tapping screws.

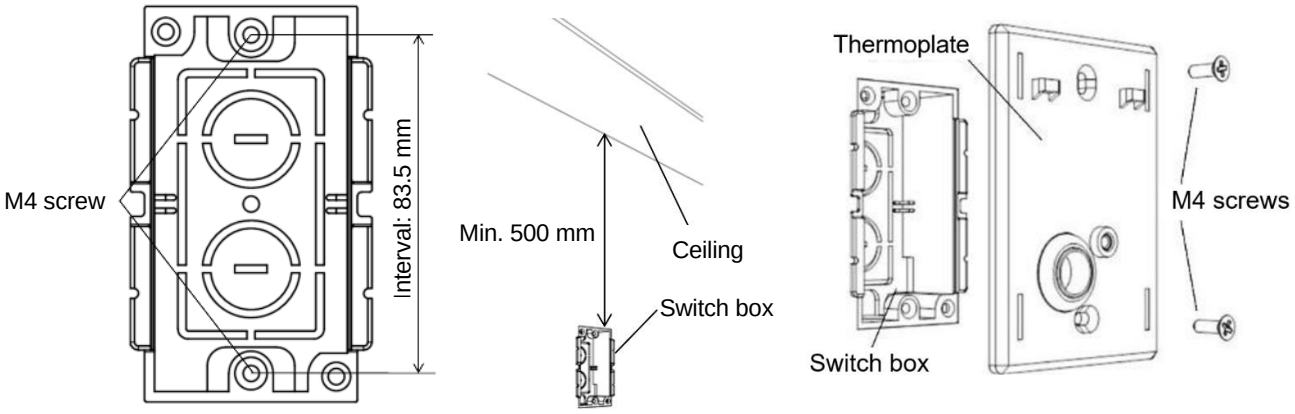


When using a switch box (not included)

Embed a compatible switch box (JIS C 8435-compliant with 83.5 mm screw spacing) into the wall and attach the sensor's thermoplate to the switch box.

Note:

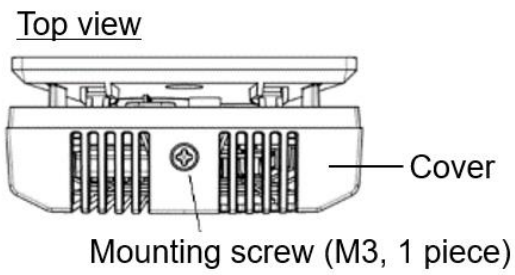
- The switch box is NOT included and should be prepared by the customer if needed.
- Ensure at least 500 mm of space between the top of the switch box and the ceiling.
- No need to remove the rubber bushing from the thermoplate when using a switch box.

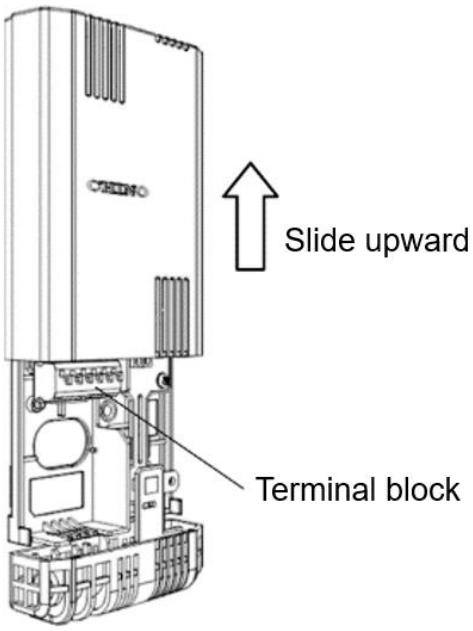


When mounting the Humidity Sensor, avoid the following locations:

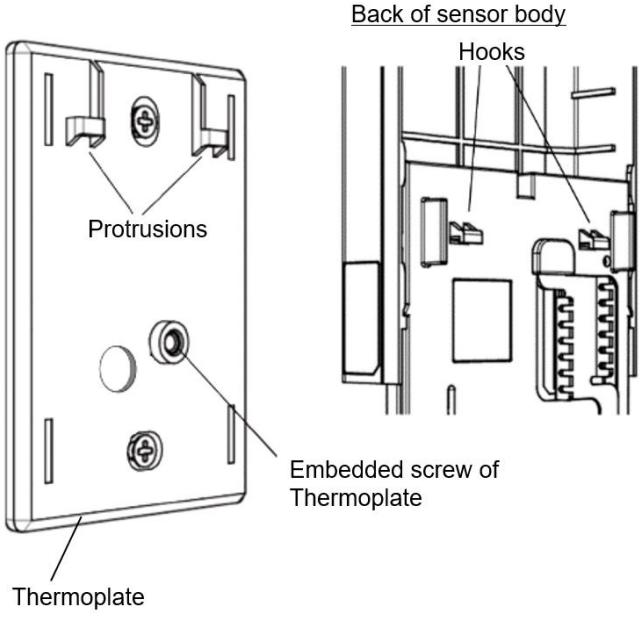
- Environments with high concentrations of organic solvents, including ketones, esters, halogens, strong acids, corrosive substances, oil mist, and salt mist, as these can lead to rapid deterioration of the humidity sensing element, which consists of a highly absorptive polymer film and an extremely thin vapor-permeable electrode.
- Areas exposed to rainfall or where condensation occurs.
- Areas with high levels of dust or particulates.
- Areas exposed to direct sunlight or subject to significant or sudden changes in temperature.
- Areas with stagnant air or insufficient airflow to maintain average humidity levels.
- Environments containing explosive, corrosive, or flammable gases.
- Areas where the temperature falls outside the range of -10 to 55°C (Ensure there is no condensation in low-temperature environments).

2. Remove the screw at the top of the cover and slide the humidity sensor cover upward until it clicks and the terminal block is exposed.

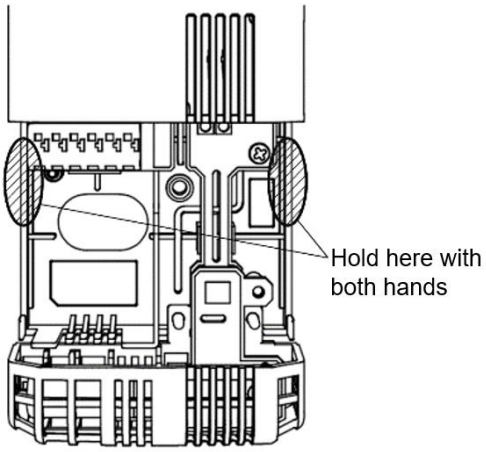




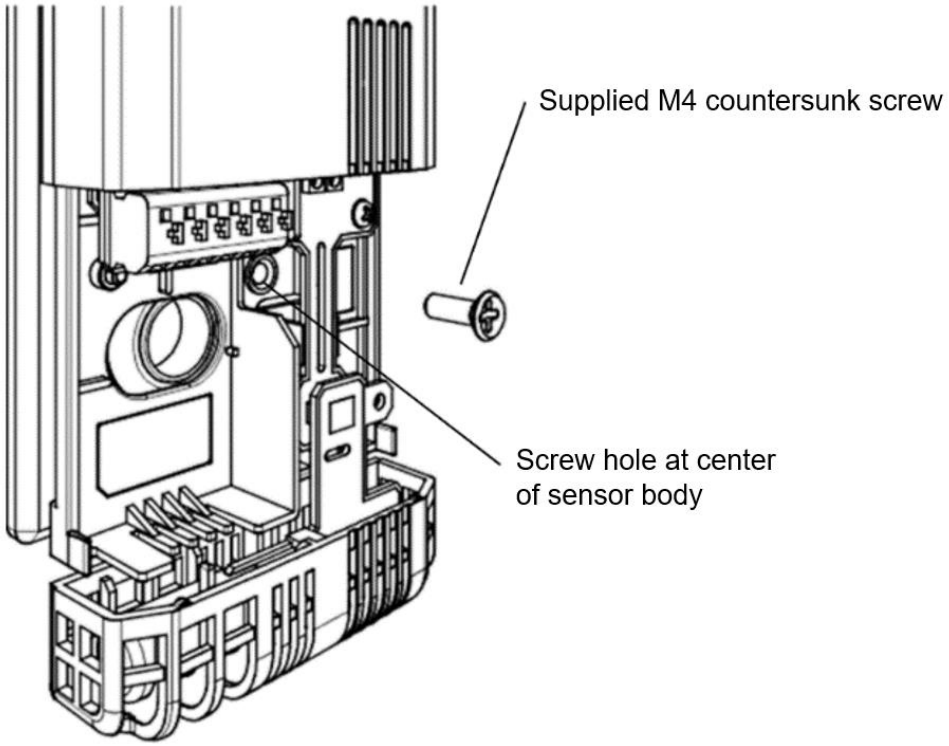
3. Hook the back hooks of the humidity sensor onto the protrusions of the thermoplate mounted on the wall.



It is easier if you hold the sides of the sensor body with both hands, press down slightly, and slide it downward.

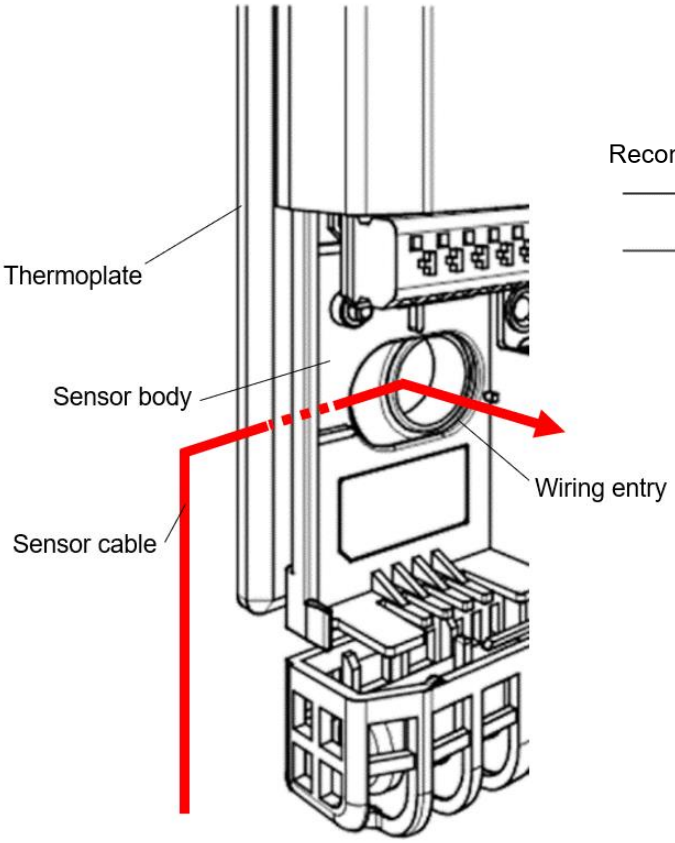


4. Align the embedded screw (threaded insert) at the center of the thermoplate with the screw hole at the center of the humidity sensor, and secure them using the supplied M4 screw.

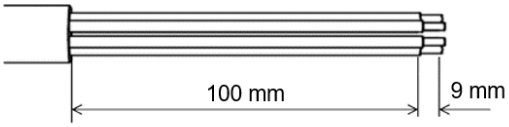


■Wiring at the Sensor

1. Pass the included sensor cable through the gap between the thermoplate and the humidity sensor body, then pull it out through the wiring entry as shown below.



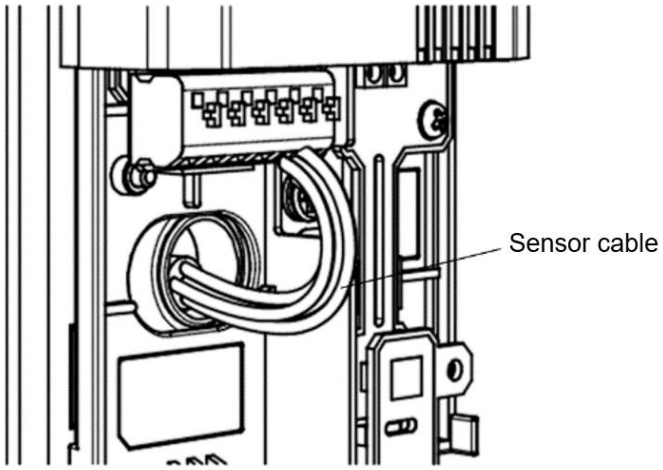
Recommended processing dimensions of sensor cable



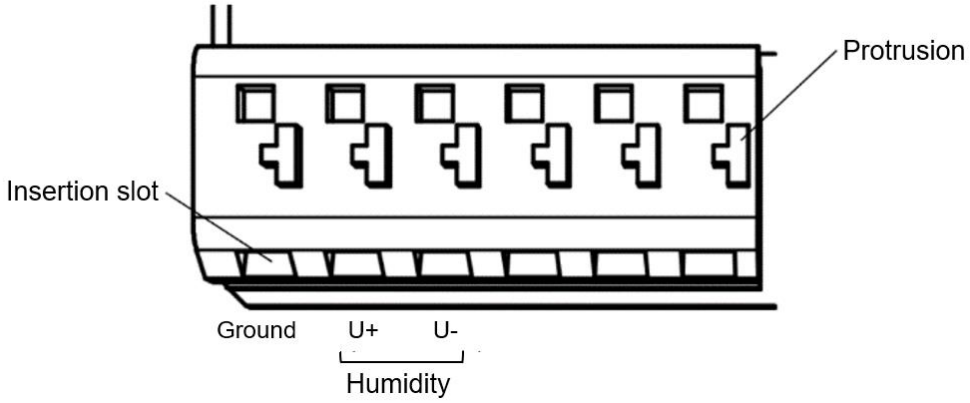
Please use the shielded wire cables.

When using a switch box (not included)

If the thermoplate is mounted on a wall-embedded switch box, pass the sensor cable from the back of the humidity sensor and pull it out through the wiring entry as shown below.



2. Connect the sensor cable to the second and third terminal blocks from the left.
While pressing down on the protrusion in the upper part of the terminal block, insert the stripped end of the cable into the insertion slot and then release the protrusion.



Sensor Cable Wiring:

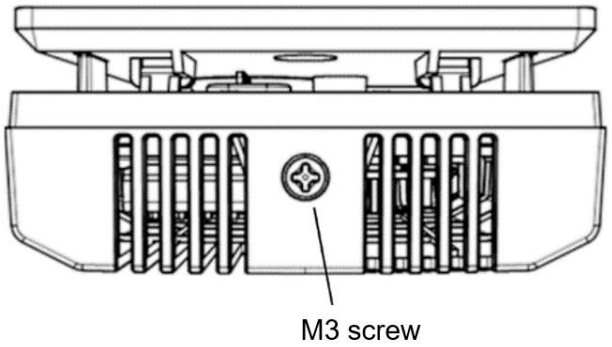
Controller		Humidity Sensor
H□+	⇔	U+ (2nd terminal from the left)
H□-	⇔	U- (3rd terminal from the left)
PE	⇔	Ground (Leftmost terminal)

Note:

- The terminal numbers provided here may differ from those on the control panel, so please refer to the control panel instruction manual for wiring.
- Do not mistake + and -.
- If there is no noise or surge current in the environment, the humidity sensor can operate normally without being grounded. However, to prevent malfunctions, it is still recommended to connect the sensor's ground terminal to the grounding terminal of the control panel. If the control panel does not have a dedicated grounding terminal, connect it to a nearby grounding terminal.

3. Slide the humidity sensor cover downwards until it is fully closed. Then, tighten the screw at the top of the cover.

Top view



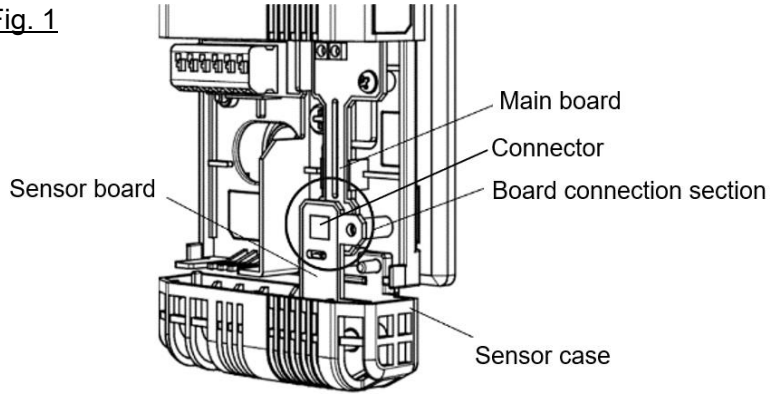
■Maintenance

- When dirty, gently wipe with a dry cloth.
- Periodically inspect the sensor element filter for dirt or clogging.
- The sensor element is a consumable part, so regular replacement is recommended to maintain long-term accuracy and reliability. If there is an abnormal reading in the humidity output, it may indicate that the sensor element has reached the end of its lifespan. In such cases, replacing the sensor element unit will restore normal operation.
  The sensor element unit of this product is compatible, so no recalibration is required after replacement. (Replacement part: #423791 Humidity Sensor Element Unit HN-ESKB9NX04)

■Replacing the Humidity Sensor Element Unit

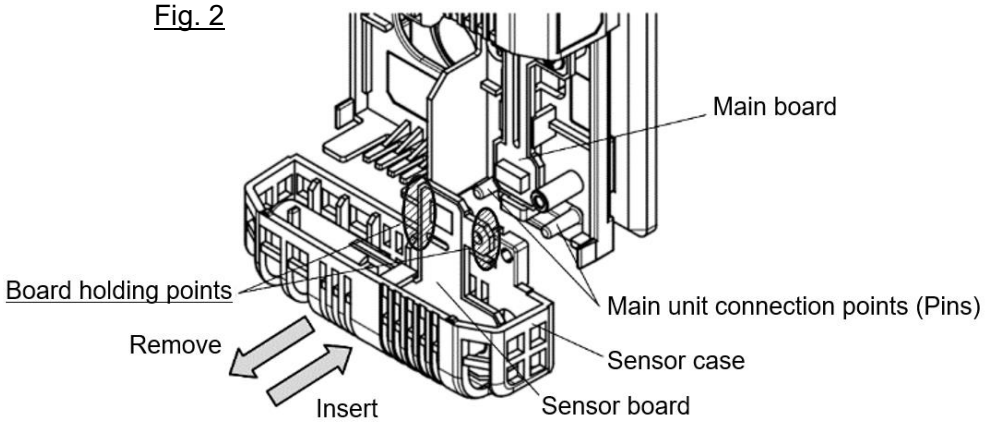
1. Always turn off the power before replacement. Remove the screw at the top of the sensor cover, and slide the cover upward to expose the sensor board and main board.
2. Hold the sensor board at the holding points (see Fig. 2) and pull it out from the connector on the main board.

Fig. 1



3. After confirming the sensor board is detached from the main board's connector, grasp the sensor case and remove it from the main unit by pulling it off the pins.
   Note: If you pull out the sensor case before disconnecting the sensor board from the main board, it may result in damage to the main board. Always disconnect the connector first.
4. Insert the sensor case of the new sensor element unit into the main unit connection points, and then connect the sensor board to the connector on the main board.

Fig. 2



5. Slide the humidity sensor cover downwards until it is fully closed. Then, tighten the screw at the top of the cover.

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