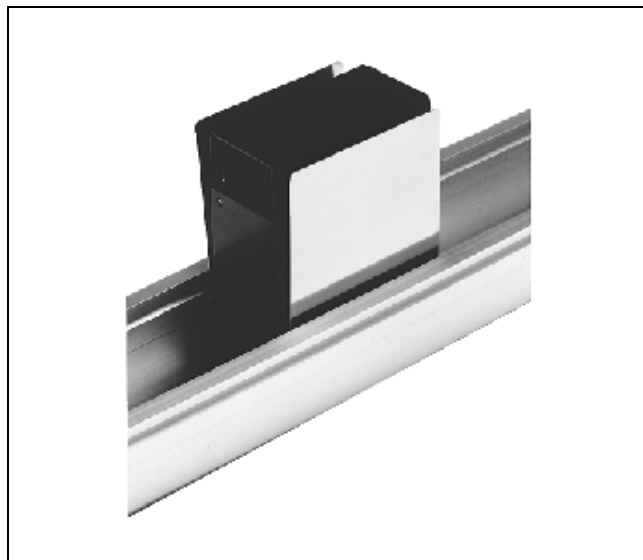


Ceiling Mounted Sensor HTY7033/ TY7033

General

The HTY7033 Ceiling Mounted Sensor uses a Pt100 platinum film temperature sensing element and a polymer capacitive film humidity sensing element (FP3 specially developed by Azbil Corporation) which ensures highly accurate and reliable temperature/humidity sensing. It is designed to be installed to narrow opening of system ceilings and can be used to control or measure temperature and humidity.

TY7033 for temperature only is also available.



Features

- 1) Wide sensing range.
- 2) Excellent long term stability.
- 3) Highly resistant to environment.
- 4) Quick response and high repeatability.
- 5) Easy installation on the "double T bar" of the narrow opening of system ceiling.

Models

HTY	7033	T	1	P	00	Humidity (1-5 V) + Temperature (Pt100)	Lead wire output
TY	7033	Z	0	P	00	Temperature (Pt100)	Lead wire output
TY	7033	Z	0	P	01	Temperature (Pt100)	Modular jack output

Specifications

Item	Specifications	
Sensing range	Temp.	0 to 60 °C
	Humid.	0 to 100 %RH (15 to 35 °C)
Output signal	Temp.	100 Ω/0 °C
	Humid.	1-5 VDC (linear to 0 to 100 %RH) (output impedance: min. 50k Ω)
Sensing accuracy	Temp.	+/- 0.3 °C (at 0 to 60 °C)
	Humid.	+/- 3 %RH (at 30 to 70 %RH 25 °C) +/- 5 %RH (at 20 to 80 %RH 15 to 35 °C)
Time constant (at air velocity 0.15 m/s)	Temp.	Max. 6 min
	Humid.	Max. 40 seconds
Environmental conditions	Temp.	Rated operating conditions: 0 to 60 °C 0 to 100 %RH (non-condensing) Extreme operating conditions: -10 to 60 °C 0 to 100 %RH (non-condensing) Storage conditions: -20 to 70 °C 5 to 95 %RH (non-condensing)
	Humid.	Rated operating conditions: 15 to 35 °C 20 to 80 %RH (non-condensing) Extreme operating conditions: -10 to 60 °C 0 to 100 %RH (non-condensing) Storage conditions: -20 to 70 °C 5 to 95 %RH (non-condensing)
Power supply	24 V AC +10/-15 % (50/60 Hz), 24V DC +/- 10 % (for HTY7033)	
Power consumption	0.15 VA (at 24 V AC, for only HTY7033) 100 mW (at 24 V DC, for only HTY7033)	
Dielectric strength	500 V AC less than 1 mA of leak for 1 minute	
Insulation resistance	500 V DC 20 MΩ or more	
Installation	Installed in return ceiling opening	
Wiring	Lead wire: Length 200mm、 cross section 0.75 mm ² Modular jack connector (for TY7033Z0P01)	
Material	Case: cold-rolled steel sheet (anodized black finish) Shield clip: SUS304	
Weight	Approx. 300 g	
Accessories	None	
Order separately	None	








Safety Instructions

Please read instructions carefully and use the product properly. Please keep this instruction on hand for reference at any time.

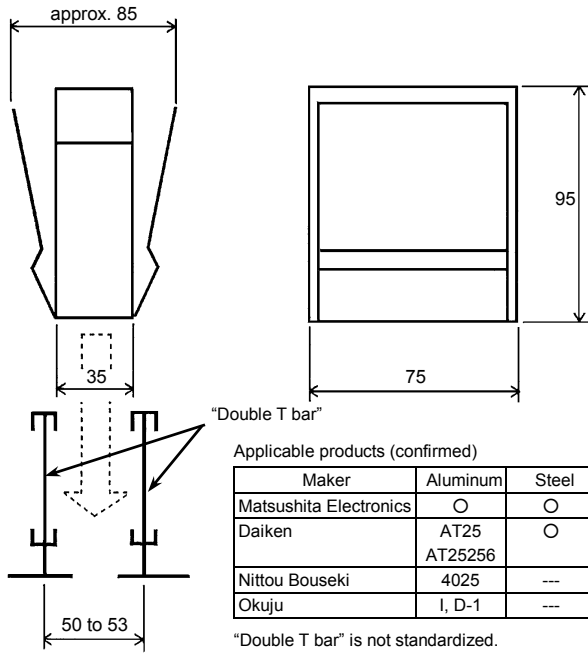
Usage Restrictions

This product is targeted for general air conditioning. Do not use this product in a situation where human life may be affected. If this product is used in clean rooms or places where reliability or control accuracy is particularly required, please contact Azbil Corporation's sales representatives. Azbil Corporation bears no responsibility for any benefit, or lack of benefit, derived from the operation by the customer.

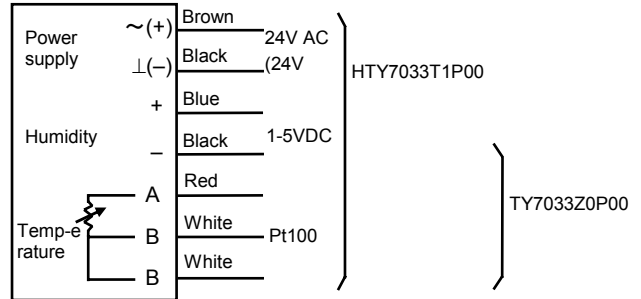
CAUTION

-  • Installer must be a trained, experienced service technician.
-  • Check the ratings given in this instructions to prevent equipment damage.
-  • Check the environment given in this instructions to prevent equipment damage.
-  • Disconnect power supply before wiring to prevent electric shock or equipment damage.
-  • All wiring must comply with local codes and ordinances.
-  • Do not remove or disassemble casing except for wiring. May result in equipment damage.
-  • When the product is faulty, the reduced output may result in excessively humid status. Take safety measures at controller.

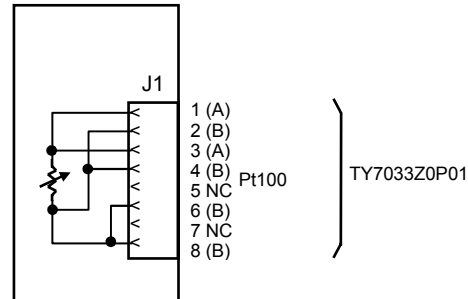
Dimensions(mm)



Wiring



Black wire of power supply and humidity output is wired inside sensor.

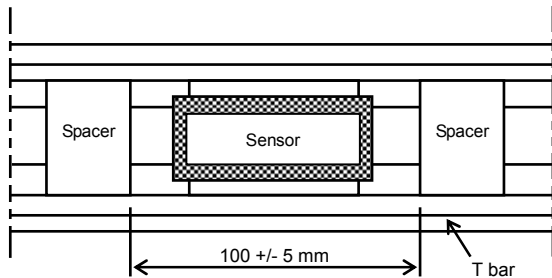


Wiring and color of lead wire

Installation

Cautions on installation

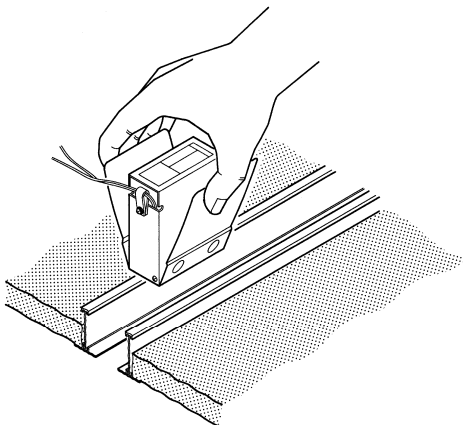
Place spacers between the parallel T bars as shown below to minimize vibration.



Installation of spacer for double T bar

Mounting

Mount the sensor between the parallel T bars. Hold the springs and push into opening, then release springs.



Installation procedure

Cautions on wiring

Use shielded multi conductor cable (CVV-S) of 1.25 mm² for humidity output. IV cable of min. 1.25 mm² may also be used. Be sure to ground the shielded cable at the controller side.

Maximum wiring length is 100 m.

Do not connect power supply to temperature output.

Always check the wiring before power is supplied.

Never share 24V AC transformer with other equipment.

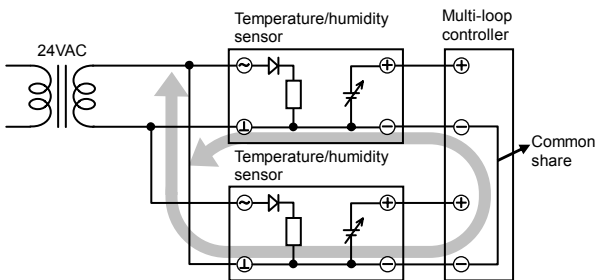
Connect Separate Transformers

⚠ CAUTION



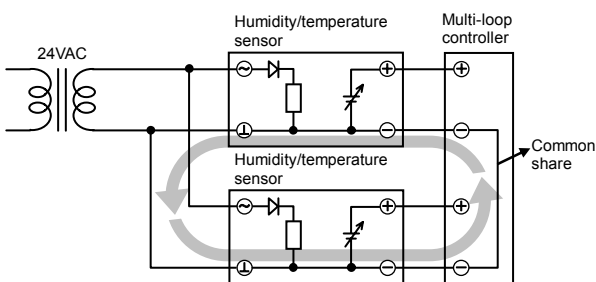
Use insulated transformer to supply 24V AC power supply voltage.
Never share 24V AC power supply with other equipment.
If a transformer is shared with other equipment, loop will be formed at common and the sensor may be damaged.

- Transformer (24V AC power supply) shared



Not Good

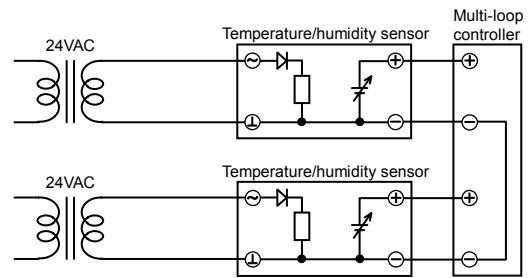
The transmitter will be shorted if miss-wired.



Not Good

Common loop formed

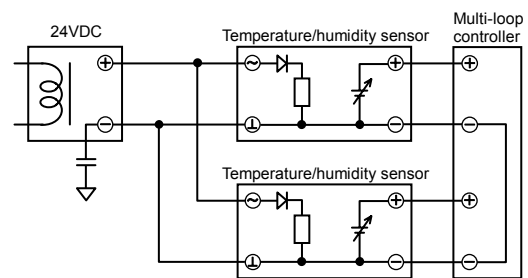
- Separate transformer (24V AC power supply)



Good

No common loop formed

- 24V DC power supply shared



Good

Common loop formed, however, not so affected by common mode noise.

Follow the next instructions to prevent an induction current flowing from the humidity sensor to the controller input circuit, or to prevent an influence on the generating noise due to inadequate time constant of the controller input.

- Use a controller with a low pass filter with a removal ratio of 40dB or higher (normal mode).
- Connect an isolator to the controller input circuit if a removal ratio is unknown.
- If you use a Azbil Corporation controller, no problem will occur.

Maintenance

Since the temperature/humidity sensor have been inspected and adjusted accurately before shipment, they need no adjustment at the site. However, follow the maintenance instructions below :

1) Periodical inspection

Determine the periodical inspection intervals according to the amount of suspended dust and other contaminants in the environment. Regularly check the sensor's accuracy and the condition of its cover.

2) Troubleshooting

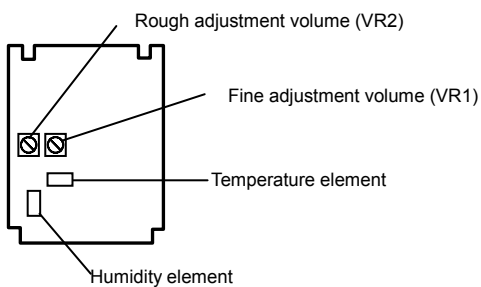
If any problem occurs during operation, refer to the following table for appropriate solutions.

Troubleshooting

Problem...	Check...	Action...
- No output generated - Unstable output	- Check loose connection - Check Incorrect wiring - Check supply voltage - Check sensor damage	- Re-connect the wire - Replace sensor
- Slow response - Error in output	- Check the sensor for water leakage or condensation - Check the installed location - Check the dust. soil.	- Remove cover Dry the unit with no power. - Refer to the Installation instructions - Clean the cover - Replace the sensor - Humidity one point adjustment

3) Humidity one point adjustment

When you find a calibration error in the humidity sensor, re-calibrate the sensor using the adjustment volume (VR1, VR2) located on the circuit board. The output value is increased by turning this volume in clockwise direction and decreased by turning it counterclockwise. Use referenced humidity meter of adequate accuracy. A digital multimeter is recommended to check the output voltage.



Parts Identification of Adjustment volume

Cautions

1. After unpacking, age the transmitter in the ambient atmosphere for at least 24 hours.
2. To calibrate and adjust, take care the heat from human body or appliances.

azbil

Specifications are subject to change without notice.

Azbil Corporation
Building Systems Company

<http://www.azbil.com/>

Rev.1.1 Jul. 2012

AB-5965 0.5H-H (W)
Printed in Japan.