

Cable Temperature Sensor

General

Cable temperature sensor Models TY7820Z0P00 and TY7820Z0K00 are the cable-type temperature sensor for FCU controller and VAV controller. The temperature sensing element of the cable temperature sensor is a platinum temperature detector.

The structure of the cable temperature sensor is resistant to dew condensation and to water drop. The cable temperature sensor is thus applied to an FCU inlet, ventilation opening, etc.

FCU: Fan coil unit

VAV: Variable air volume



Model Numbers

Model number	Description
TY7820Z0P00	Cable temperature sensor (RTD (Pt100))
TY7820Z0K00	Cable temperature sensor (RTD (Pt1000))

RTD: Resistance temperature detector

Specifications

Item		Specification		
Measuring range		0 °C to 60 °C * The measuring range may be narrowed depending on the allowable input range of the controller in connection.		
Measuring accuracy	RTD (Pt100)	±0.3 °C * 1 mA applied current, 0.5 m/s air velocity for Model TY7820Z0P00		
	RTD (Pt1000)	±0.5 °C * 0.1–0.3 mA applied current, 0.5 m/s air velocity for Model TY7820Z0K00		
Output signal		100 Ω / 0 °C (RTD (Pt100) conforming to JIS C 1604 Class A) for Model TY7820Z0P00 1000 Ω / 0 °C (RTD (Pt1000) equivalent to JIS C 1604 Class A) for Model TY7820Z0K00		
Time constant		Approx. 2 min. (at 0.5 m/s air velocity)		
Total length		1,500 mm long * Refer to Fig. 1.		
Environmental conditions		Rated operating conditions	Limit operating conditions	Transport/storage conditions
	Ambient temperature	0 °C to 60 °C	-30 °C to 70 °C	-30 °C to 70 °C
	Ambient humidity	0 %RH to 100 %RH	0 %RH to 100 %RH	5 %RH to 95 %RH
	Air velocity	0 m/s to 10 m/s	0 m/s to 15 m/s	—
Insulation resistance		Min. 500 V DC, 20 MΩ		
Withstand voltage		500 V AC applied for 1 min with max. of 1 mA leakage current.		
Accessory		Two clips		



Safety Instructions

Please read instructions carefully and use the product as specified in this manual. Be sure to keep this manual near by for ready reference.




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 a clean room or a place where reliability or control accuracy is particularly required, please contact our sales representative. Azbil Corporation will not bear any responsibility for the results produced by the operators.

Warnings and Cautions

	WARNING	Alerts users that improper handling may cause death or serious injury.
	CAUTION	Alerts users that improper handling may cause minor injury or material loss.

Signs

	Alerts users possible hazardous conditions caused by erroneous operation or erroneous use. The symbol inside △ indicates the specific type of danger. (For example, the sign on the left warns of the risk of electric shock.)
	Notifies users that specific actions are prohibited to prevent possible danger. The symbol inside ⊘ graphically indicates the prohibited action. (For example, the sign on the left notifies that disassembly is prohibited.)
	Instructs users to carry out a specific obligatory action to prevent possible danger. The symbol inside ● graphically indicates the actual action to be carried out. (For example, the sign on the left indicates general instructions.)

 CAUTION	
	Use the product under the operating conditions (temperature, humidity, power, vibration, shock, mounting direction, atmospheric condition, etc.) as listed in the specifications. Failure to do so might cause fire or device failure.
	Use the product within the rated operating ranges as listed in the specifications. Failure to do so might cause device failure.
	Installation and wiring must be performed by qualified personnel in accordance with all applicable safety standards.
	All wiring must comply with applicable codes and ordinances.
	Before wiring, be sure to turn off the power to the product. Failure to do so might cause device failure.
	Do not disassemble the product. Doing so might cause device failure.
	Dispose of the product as industrial waste in accordance with your local regulations. Do not reuse all or part of this product.

Dimensions

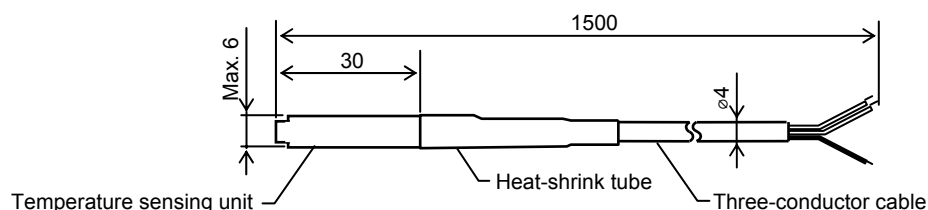


Figure 1. Dimensions (mm)

Installation

⚠ CAUTION



Use the product under the operating conditions (temperature, humidity, power, vibration, shock, mounting direction, atmospheric condition, etc.) as listed in the specifications.
Failure to do so might cause fire or device failure.



Installation and wiring must be performed by qualified personnel in accordance with all applicable safety standards.

Installation location

Install the cable temperature sensor to an FCU inlet or ventilation opening.

Precautions for installation

Follow the below instructions when installing the cable temperature sensor.

- Keep the cable temperature sensor away from the radiation heat of coils and lighting devices and from the conductive heat of the metal fittings.
- Select a location with 0.3 m/s or more air flow for detecting the temperature.
- Do not put any load on the temperature sensing unit (White part of the cable temperature sensor).
- Do not bend the temperature sensing unit or the heat-shrink tube.

Clip for installation

- 1) Drill a hole ($\varnothing 4.8$ mm) on a position of the mounting surface to attach the accessory clip.
Attach the clip to the position by inserting the pin of the clip into the hole.
- 2) Pinch the cable or the temperature sensing unit of the cable temperature sensor and twist the clip to fasten.

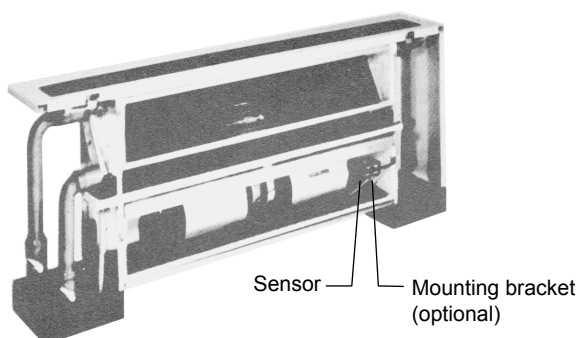


Figure 2. Installing the cable temperature sensor with the optional mounting bracket

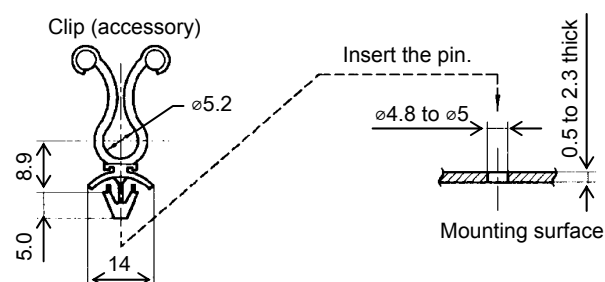


Figure 3. Mounting dimensions of the accessory clip

Wiring

⚠ CAUTION	
!	Installation and wiring must be performed by qualified personnel in accordance with all applicable safety standards.
!	All wiring must comply with applicable codes and ordinances.
!	Before wiring, be sure to turn off the power to the product. Failure to do so might cause device failure.

Internal circuit

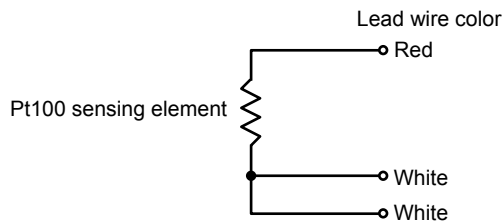


Figure 4. Internal circuit: Model TY7820Z0P00

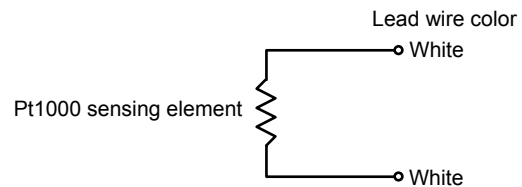


Figure 5. Internal circuit: Model TY7820Z0K00

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Specifications are subject to change without notice.

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