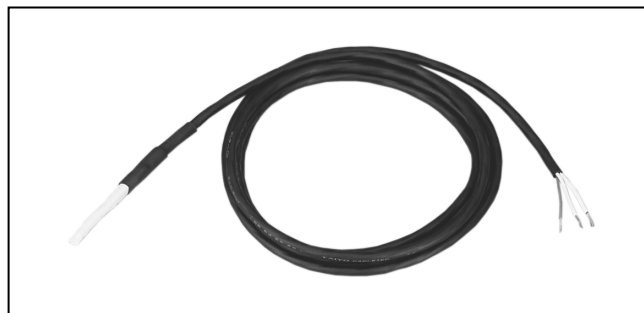


Temperature Sensor for Pipe Surface (Pt100 RTD) for ACTIVAL™ Flow Measurement and Control Valve

General

Temperature sensor for pipe surface Model TY7820Z (often abbreviated to 'pipe sensor') is the temperature sensor for ACTIVAL Flow Measurement and Control Valve. This temperature sensor is mounted onto the pipe surface to measure the temperature of water flowing inside the pipe.



Features

- Pt100 RTD for temperature sensing element. (equivalent to JIS* C1604 Class A)
- Splash-proof housing.
- 1.5 m, 5 m, 10 m, and 30 m long types available.

* JIS: Japanese Industrial Standards

Model Numbers

Model number	Total length ('L' in Fig. 1)
TY7820Z0P01	1.5 m
TY7820Z0P05	5.0 m
TY7820Z0P10	10.0 m
TY7820Z0P30	30.0 m

Specifications

Item	Specification
Use	Temperature measurement of water flowing in pipe
Temperature sensing element	Pt100 RTD (Resistance Temperature Detector)
Output characteristics	100 Ω / 0 °C
Temperature sensing range	0 °C to 80 °C
Sensing accuracy	± 0.35 °C

Dimensions

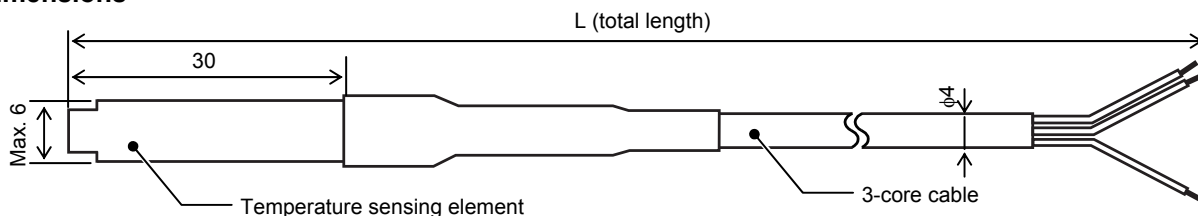


Figure 1. Dimensions (mm)



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 Azbil Corporation's 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 I 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 Q 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 d graphically indicates the actual action to be carried out. (For example, the sign on the left indicates general instructions.)

 **CAUTION**

-  • This product must be operated under the operating conditions (power, temperature, humidity, vibration, shock, installation position, atmospheric condition, etc) specified in this manual to prevent fire and equipment damages.
-  • This product must be operated within its rated operating ranges specified in this manual. Failure to comply will cause equipment damages.
-  • Installation and wiring must be performed by qualified personnel in accordance with all applicable safety standards.
-  • All wiring must comply with local codes of indoor wiring and electric installation rules.
-  • To prevent damage, disconnect power source before performing any wiring.
-  • Use crimp terminal lugs with insulation for the wires to be connected to the terminals.
-  • Dispose of this product as an industrial waste in accordance with your local regulations. Do not reuse all or part of this product.

Installation

IMPORTANT:

- Install the pipe sensor in a location with little temperature change.
- Clean and dry pipe surface where the pipe sensor is installed.
- Do not put external force on the heat insulation covering the pipe sensor.
- Fix the pipe sensor cable with a cable tie.
- Do not pull the pipe sensor cable. If the cable is pulled, large load is put on the temperature sensing element causing damage.
- Fix the temperature sensing element of the pipe sensor with aluminum tape. Do not use a cable tie or vinyl tape. Cable ties or vinyl tape will cause failure or temperature detection error.

Items required for installation

- Cable tie (heat-resistant, long enough for a pipe diameter)
- Aluminum tape
- Heat insulation material (Min. 30 mm thick)
- Water-proof material

Installation procedure

- 1) Hold the position (50 mm from the end of the sensing element) of the pipe sensor cable onto the pipe with a cable tie. Do not hold the temperature sensing element with the cable tie.

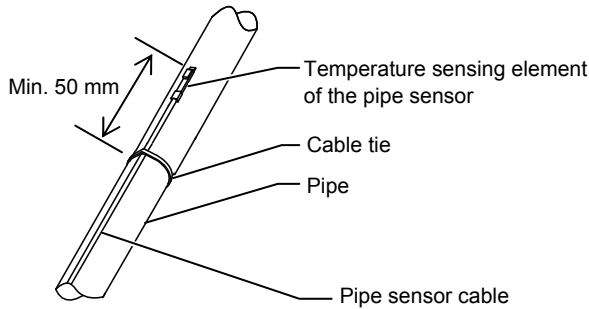


Figure 2. Fix the pipe sensor cable

- 2) Cover the temperature sensing element of the pipe sensor with an aluminum tape to fix on the pipe surface. At this time, rub the tape surface so that the temperature sensing element contacts the pipe surface.

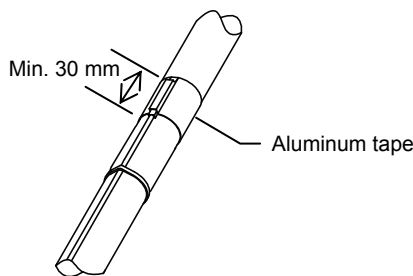


Figure 3. Fix temperature sensing element

- 3) Cover the pipe and the pipe sensor with insulation material. Do not position the seam of the insulation material on the pipe sensor. Use approx. 300 mm or longer insulation material, and position the temperature sensing element in the middle of the insulation material, as the below figure shows.

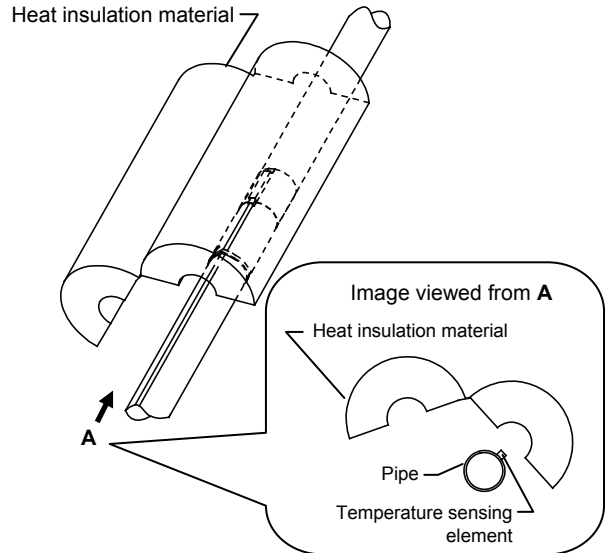


Figure 4. Mount heat insulation material

- 4) Completely cover the pipe and the temperature sensing element with the heat insulation material and seal with the aluminum tape. Attach the tape along the seam.

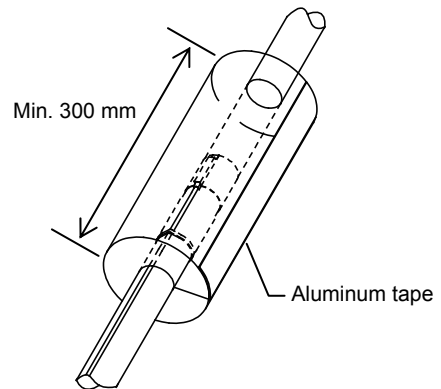


Figure 5. Fix heat insulation material

- 5) If cut sections on each end of the heat insulation material is exposed, waterproof the each end with caulking agent so that the insulation material will not absorb water.

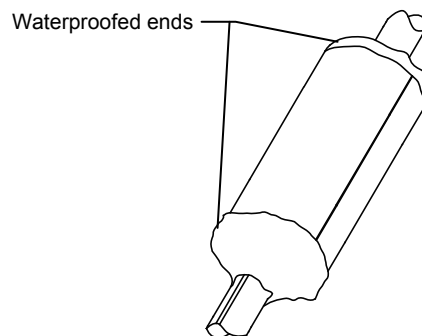


Figure 6. Waterproof each end of heat insulation material

Wiring

The pipe sensor is connected to ACTIVAL Model FVY51 series. For wiring, refer to the corresponding literature (Specifications/Instructions, Installation Manual).

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The logo for Azbil Corporation, featuring the word "azbil" in a bold, lowercase, sans-serif font.

Specifications are subject to change without notice.

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