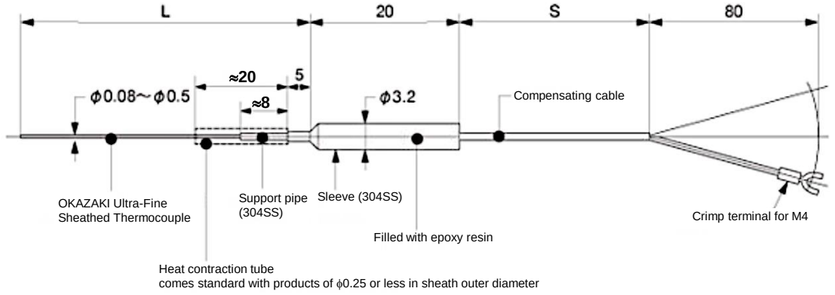
Ultra-Fine Sheathed Thermocouples

Features

The Ultra-Fine Sheathed Thermocouples have a sheath outer diameter of ϕ0.08 mm: the smallest in the world, have a response time of 1 ms or less, and can freely be bent at any angle, enabling fast and accurate temperature measurement of small items or at an extremely narrow place. The products with a sheath outer diameter of ϕ0.10, ϕ0.15, and ϕ0.25 are also available.



Pay attention to immersion length available because the heat contraction tube and the support pipe are larger than the sheath outer diameter.

T32

Thermocouple type	K
Number of element wires	Single element
Measuring junction	U(#9) ungrounded
Sheath material	NCF600 (equivalent to Inconel 600)
Class	2 (JIS C1605-'95)
Compensating cable type	EXD-SS (for general use), EXS-3 (for heat resistance: PFA or FEP coated)
Withstand voltage	32 VDC (sheath outer diameter: ϕ0.25, ϕ0.5)

Electrical and physical properties

	Sheath outer diameter (mm)	ϕ0.08	ϕ0.1	ϕ0.15	ϕ0.25	ϕ0.5
Electrical properties	Insulation resistance	1 MΩ/3 VDC			5 MΩ/25 VDC	
Physical properties	Response (63.2%)*3	1 ms or less	Approx. 1 ms	2 ms	4 ms	16 ms
Others	Production length (mm)	300*1	300*1	500*1	Free	
	Operating temperature range (°C)*2	400	400	400	500	600
Standard test temperature (°C)		100			300	

*1: Longer size is not recommended because the resulting large reciprocating resistance could cause measurement error.
*2: The measurement of up to about 1000°C is possible if the device is used only for a short time (disposable).
*3: In water at room temperature to 100°C boiled water
● The response speeds are based on our inhouse tests and calculation values, and are not guaranteed values.
(The tip of the sheath is slightly larger for our standard products. If you need the tip to be the same diameter as the rest of the sheath, please contact us in advance.)