

# Temperature Sensors (General-Purpose Sheathed Thermocouple with Lead Wires) | YYE Series

The sheath type thermocouple temperature sensors in the YYE series are suitable for applications that require measurement in a wide range of temperatures with high responsiveness.



Note: The model in the photograph is YYE1.

## Specifications

### Thermocouple

Standards compliance	JIS C 1605
Thermocouple type	K, J, E, T
Tolerance	Class 2, class 1
Temperature measuring junction	Not grounded
Protection tube material	ASTM 316L (equiv. to SUS316L)
Measurement range	See Table 1.
Sheath pressure resistance	1 MPa
Sheath outer diameter	See Table 2.
Minimum bend radius	2 times the sheath outer diameter

### Table 1. Measurement range

Thermocouple type	Sheath outer diameter					
	φ1.0 mm	φ1.6 mm	φ3.2 mm	φ4.8 mm	φ6.4 mm	φ8.0 mm
K	-40 to +650 °C	-40 to +650 °C	-40 to +750 °C	-40 to +800 °C	-40 to +800 °C	-40 to +900 °C
J	0 to 450 °C	0 to 450 °C	0 to 650 °C	0 to 750 °C	0 to 750 °C	0 to 750 °C
E	-40 to +650 °C	-40 to +650 °C	-40 to +750 °C	-40 to +800 °C	-40 to +800 °C	-40 to +800 °C
T	-40 to +300 °C	-40 to +300 °C	-40 to +350 °C	-40 to +350 °C	-40 to +350 °C	-40 to +350 °C

### Lead wire and sleeve

Lead wire type	Lead wire heat resistance
L: Polyvinyl chloride insulation	0 to 90 °C (0 to 90 °C at sleeve)
M: Braided fiberglass insulation (with spring)	0 to 200 °C (0 to 200 °C at sleeve)
B: Braided fiberglass insulation with outer stainless steel shield	0 to 200 °C (0 to 200 °C at sleeve)
H: PFA insulation	0 to 260 °C (0 to 200 °C at sleeve)

### Table 2. Sleeve outer diameter corresponding to sheath outer diameter

Sheath outer diameter, φD	Single element sleeve outer diameter, φD	Double element sleeve outer diameter
φ1.0 mm	φ8 mm	—
φ1.6 mm	φ8 mm	—
φ3.2 mm	φ8 mm	φ11 mm
φ4.8 mm	φ8 mm	φ11 mm
φ6.4 mm	φ11 mm	φ11 mm
φ8.0 mm	φ11 mm	φ11 mm

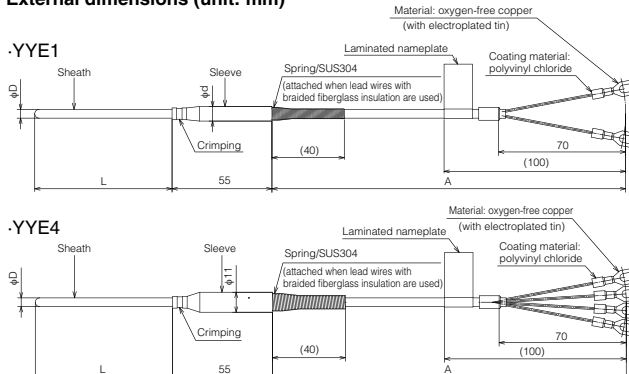
## Straight type

### Model No. configuration

Ex.: YYE1K48350B40A00

Basic model No.	Sensor type	Protection tube outer diameter (mm), φD	Protection tube length (mm), L	Lead wire type	Lead wire length (mm), A	Terminal type	Option	Tolerance class & inspection results	Remarks
YYE1									Single element
YYE4									Double element
	K								K thermocouple
	J								J thermocouple
	E								E thermocouple
	T								T thermocouple
		10 (φ1.0 mm)							Single element only
		16 (φ1.6 mm)							Single element only
		32 (φ3.2 mm)							
		48 (φ4.8 mm)							
		64 (φ6.4 mm)							
		80 (φ8.0 mm)							
			050 (50 mm)						Length is freely selectable from 50 to 1,500 mm Increments: Less than 1,000 mm: 1 mm 1,000 mm or more: 10 mm
			100 (100 mm)						
			150 (150 mm)						
			200 (200 mm)						
			350 (350 mm)						
			500 (500 mm)						
			750 (750 mm)						
			A00 (1,000 mm)						
			A50 (1,500 mm)						
				L					
				M					Braided fiberglass insulation (with spring)
				B					Outer shield of braided fiberglass insulation
				H					PFA insulation
					10 (1,000 mm)				
					20 (2,000 mm)				
					30 (3,000 mm)				
					40 (4,000 mm)				
					50 (5,000 mm)				
					60 (6,000 mm)				
					70 (7,000 mm)				
					80 (8,000 mm)				
					90 (9,000 mm)				
					A0 (10,000 mm)				
						A			M3 terminal
						B			M3.5 terminal
						C			M4 terminal
						N			No terminal
							0		None
								0	Class 2 without inspection results
								D	Class 2 with inspection results
								Y	Class 2 with JCSS calibration certificate
								1	Class 1 without inspection results
								E	Class 1 with inspection results
								W	Class 1 with JCSS calibration certificate

### External dimensions (unit: mm)



Note: Recalibration is available for temperature sensors whose protection tube is 350 mm in length or longer.  
•Other shapes are also available.

# Temperature Sensors (General-Purpose Sheathed Thermocouple with Lead Wires) | YYE Series

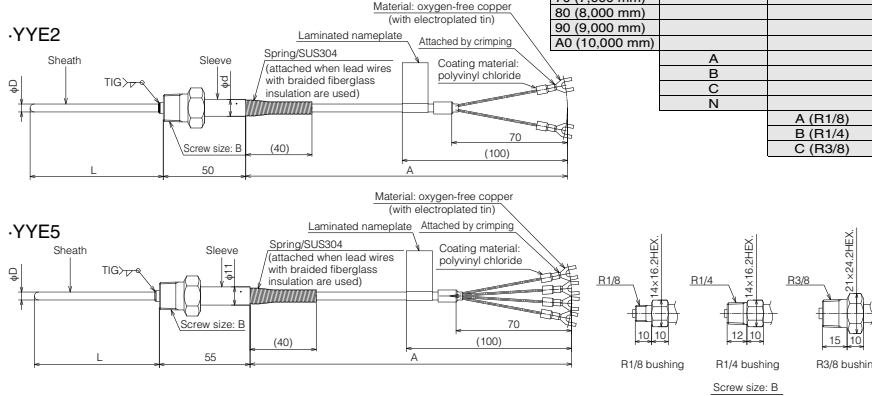
## Screw-mounting type

Model No. configuration

Ex.: YYE2K32150L20ACO

Basic model No.	Sensor type	Protection tube outer diameter (mm), $\phi$ D	Protection tube length (mm), L	Lead wire type	Lead wire length (mm), A	Terminal type	Screw (screw size)	Tolerance class & inspection results	Remarks
YYE2									Single element
YYE5									Double element
	K								K thermocouple
	J								J thermocouple
	E								E thermocouple
	T								T thermocouple
		32 ( $\phi$ 3.2 mm)							Length is freely selectable from 50 to 1,500 mm Increments: Less than 1,000 mm: 1 mm, 1,000 mm or more: 10 mm.
		48 ( $\phi$ 4.8 mm)							
		64 ( $\phi$ 6.4 mm)							
		80 ( $\phi$ 8.0 mm)							
			050 (50 mm)						
			100 (100 mm)						
			150 (150 mm)						
			200 (200 mm)						
			350 (350 mm)						
			500 (500 mm)						
			750 (750 mm)						
			A00 (1,000 mm)						
			A50 (1,500 mm)						
				L					Polyvinyl chloride insulation
				M					Braided fiberglass insulation (with spring)
				B					Outer shield of braided fiberglass insulation
				H					PFA insulation
					10 (1,000 mm)				
					20 (2,000 mm)				
					30 (3,000 mm)				
					40 (4,000 mm)				
					50 (5,000 mm)				
					60 (6,000 mm)				
					70 (7,000 mm)				
					80 (8,000 mm)				
					90 (9,000 mm)				
					A0 (10,000 mm)				
						A			M3 terminal
						B			M3.5 terminal
						C			M4 terminal
						N			No terminal
							A (R1/8)		Only $\phi$ 3.2 and $\phi$ 4.8 mm can be selected.
							B (R1/4)		Selectable from between $\phi$ 3.2 and $\phi$ 8.0 mm.
							C (R3/8)		Selectable from between $\phi$ 3.2 and $\phi$ 8.0 mm.
							0		Class 2 without inspection results
							D		Class 2 with inspection results
							Y		Class 2 with JCSS calibration certificate
							1		Class 1 without inspection results
							E		Class 1 with inspection results
							W		Class 1 with JCSS calibration certificate

### External dimensions (unit: mm)



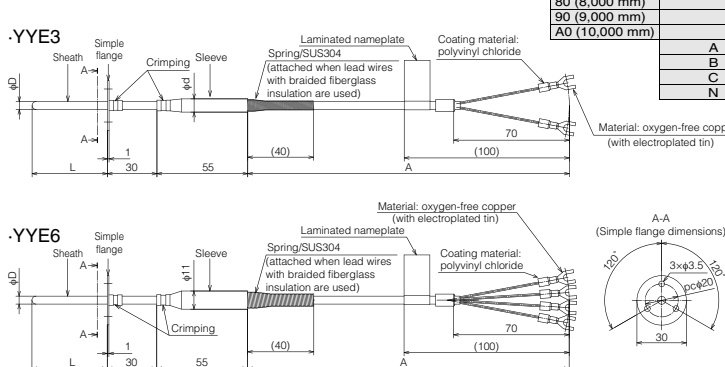
## Simple flange type

Model No. configuration

Ex.: YYE3K32150B20A00

Basic model No.	Sensor type	Protection tube outer diameter (mm), $\phi$ D	Protection tube length (mm), L	Lead wire type	Lead wire length (mm), A	Terminal type	Screw (screw size)	Tolerance class & inspection results	Remarks
YYE3									Single element
YYE6									Double element
	K								K thermocouple
	J								J thermocouple
	E								E thermocouple
	T								T thermocouple
		32 ( $\phi$ 3.2 mm)							Length is freely selectable from 50 to 1,500 mm Increments: Less than 1,000 mm: 1 mm, 1,000 mm or more: 10 mm.
		48 ( $\phi$ 4.8 mm)							
		64 ( $\phi$ 6.4 mm)							
		80 ( $\phi$ 8.0 mm)							
			050 (50 mm)						
			100 (100 mm)						
			150 (150 mm)						
			200 (200 mm)						
			350 (350 mm)						
			500 (500 mm)						
			750 (750 mm)						
			A00 (1,000 mm)						
			A50 (1,500 mm)						
				L					Polyvinyl chloride insulation
				M					Braided fiberglass insulation with spring
				B					Outer shield of braided fiberglass insulation
				H					PFA insulation
					10 (1,000 mm)				
					20 (2,000 mm)				
					30 (3,000 mm)				
					40 (4,000 mm)				
					50 (5,000 mm)				
					60 (6,000 mm)				
					70 (7,000 mm)				
					80 (8,000 mm)				
					90 (9,000 mm)				
					A0 (10,000 mm)				
						A			M3 terminal
						B			M3.5 terminal
						C			M4 terminal
						N			No terminal
							0		None
							D		Class 2 without inspection results
							Y		Class 2 with inspection results
							1		Class 2 with JCSS calibration certificate
							E		Class 1 without inspection results
							W		Class 1 with inspection results
									Class 1 with JCSS calibration certificate

### External dimensions (unit: mm)



Note: Recalibration is available for temperature sensors whose protection tube is 350 mm in length or longer.  
•Other shapes are also available.