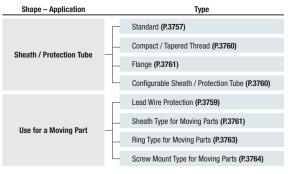
# Temperature Sensor Overview / Plugs for Mounting Temp. Sensor / Temp. Sensors Mounting Holder / Temp. Sensors Mounting Bolt

#### **Overview**

In Misumi's Temperature Sensor line, we offer thermocouples (K Thermocouple and J Thermocouple) and temperature measuring resistors by shape and application. Refer to the following temperature sensor selection list.

#### Table for Temperature Sensor Selection



Usage		Туре
	Г	L-Shaped (P.3759) / Screw Mount Type (P.3764)
For limited space	74	With Tongue Terminals – Ring / Spade Type (P.3763)
For specific environments	—	Heat-Resistant (P. 3759) / Chemical-Resistant Type (P.3762)
For easy replacing at the time of wire breakage	-	Connector Type (P.3762)
To take two temperature signals from temperature measuring point	—	Double Element Type (P.3762)
For measuring cylindrical works	—	Band Type (P.3764)
For close contact to a temperature measuring part	-	Spring Pressure Welded Type (P.3765)
For measuring temperature of work surface	_	Surface Temperature Measurement / Magnet Type (P.3765)

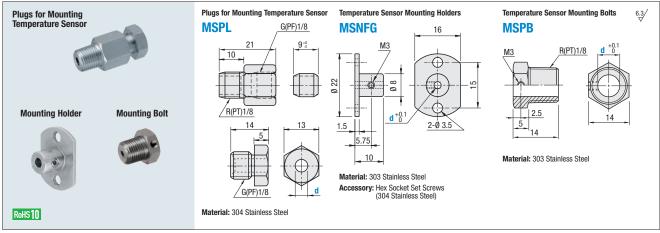
#### **Precautions for Use**

- (Bending of Sheath/Protection Tube Type) Sheath type can be bent (min. bending radius: sheath dia. x 5). However, temperature detecting part (20mm from the tip) cannot be bent. rotection Hollow Type cannot be bent. Bending prevents it from accurate temperature measurement.
- Compensation wire (P.3766) must be used to extend lead wires of thermocouple. For Temperature Measuring Resistor, use the same three lead wires in diameter, length and material.
- Be sure to use each part within its heat resisting temperature listed on product pages.
   Note that the wire might be broken if the temperature exceeds its heat resisting temperature even if it has higher maximum measurement temperature.
- Do not apply large external forces and vibrations.
- Be sure to use sleeve, silicon tube and connector within respective allowable temperatures

#### Comparison of Thermocouple and Temperature Measuring Resistor

	K Thermocouple (J Thermocouple)	Temperature Measuring Resistor
Advantage	Excellent in heat reaction. Strong against vibrations and impacts. A wide range of measurable temperature.	High accuracy of temperature measuring. Connectable to regular wires.
Disadvantage	Accuracy of measurement temperature is slightly lower. Compensation wire must be used.	Expensive Weak against vibrations and impacts.
Precision	(For Class 2 (JIS)) -40°C-Less than 333°C: ±2.5°C 333°C or more: ±0.75°C (Refer to each product page for the range of temperature measurement.)	±0.3 or ±0.5%
Structure Diagram	Importance (in) Chromel (C)	Element (P1000)  Temperatura Detection Flange Approx. 30mm

(Schematic is for Sheath / Protection Tube.)

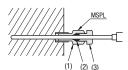


Part Number				
Type D				
	1.0			
MSPL	1.6			
MSNFG	2.3			
MSPB	3.2			
	4.8			

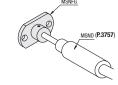








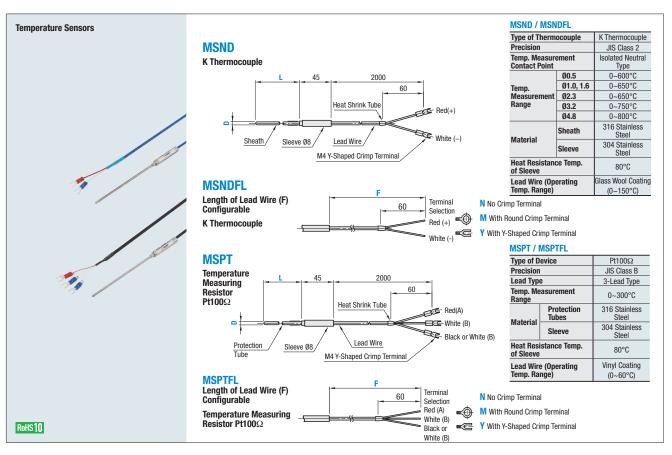
- Cut the 1/8 R (PT) thread in the heated object, fix the (1), and insert the sensor after tightening the (2) and (3) temporarily. Tighten (3), and fix (2) and (3).
- \*Because (2) and (3) are unified after fixing, they cannot be removed and reused after tightening.
- \*When air-tightness is necessary, use Taper Screw Type on **P.3760**.



Highly suitable for changing the position of sensor.

## **Temperature Sensors**

### Standard



Part Number

Type

Part Number			MSNDFL Only				
Туре	D	Selection	Lead Wire Length F 0.1 m Increment	Terminal Selection			
MSND		30, 50					
	0.5	100, 150	_				
		200, 300					
		30, 50, 100					
-	1.0	150, 200					
		300					
		30, 50, 100					
1	1.6	150, 200		N			
MSND		300	0.3-5.0				
MSNDFL		30, 50, 100	0.3-5.0	M			
	2.3	150, 200		Y			
		300					
3.2		30, 50, 100					
	3.2	150, 200					
	300						
		50, 100					
MSND	4.8	150, 200	_				
	300						

			_					
县	Part Number	Part Number	-	L	-	F	-	Terminal
	Example	MSND3.2	-	100				
		MSPT2.3	-	50				
		MSNDFL2.3	-	300	-	F2.5	÷	M

• Please refer to "Precautions for Use" in the Temperature Sensor Guide on P.3756.

• The upper limit temperature for measurement is the value at the temperature measurement point (the tip of sheath). When measuring, keep the sleeve temperature at or below the heat resistance temperature (80°C.) If the sleeve temperature exceeds 80°C, the thermally-expanded inside of sleeve may break the wire. Especially when a heated object temperature exceeds 100°C, a long type of sheath L length is recommended, which is used to put maximum distance between the sleeve and the heated object, or Temperature Sensor, Heat Resistant Type (P.3759) is recommended.

MSPTFL Only

Lead Wire Length F 0.1 m Increment

0.3 - 5.0

50, 100 150 50, 100

50, 100