

# Temperature Sensors

## Sheath / Lead Wire Length Configurable

**Temperature Sensors – Sheath / Lead Wire Length Configurable**

**RoHS 10**

**MSFK K Thermocouple**  
**MSFJ J Thermocouple**

**MSFP Temperature Measuring Resistor (Pt100Ω)**

**MSFK, MSFJ**

Type of Thermocouple	K Thermocouple	J Thermocouple
Precision	JIS Class 2	
Temp. Measurement Contact Point	Isolated Neutral Type	
Temp. Measurement Range	Ø1.0, 1.6	0~650°C
	Ø3.2	0~750°C
	Ø4.8	0~800°C
Material	Sheath	316 Stainless Steel
	Sleeve	304 Stainless Steel
Heat Resistance Temp. of Sleeve	80°C	
Lead Wire (Operating Temp. Range)	Glass Wool Coating (0~150°C)	

**MSFP**

Type of Device	Pt100Ω	
Precision	JIS Class B	
Lead Type	3-lead Type	
Temp. Measurement Range	0~300°C	
Material	Protection Tubes	316 Stainless Steel
	Sleeve	304 Stainless Steel
Heat Resistance Temp. of Sleeve	80°C	
Lead Wire (Operating Temp. Range)	Vinyl Coating (-20~70°C)	

**K Thermocouple / J Thermocouple**

Part Number	D	L	Lead Wire Length F	Terminal Selection
Type		10mm Increment	0.1m Increment	
K Thermocouple MSFK	1.0	50~200	0.3~5.0	N M Y
	1.6	50~500		
J Thermocouple MSFJ	3.2	50~1000		
	4.8	50~1500		

**Temperature Measuring Resistor Pt100Ω**

Part Number	D	L	Lead Wire Length F	Terminal Selection
Type		10mm Increment	0.1m Increment	
Temperature Measuring Resistor MSFP	1.6	50~500	0.3~5.0	N
	3.2			M
	4.8			Y

**Part Number Example** Part Number - L - F - Terminal  
MSFK1.6 - 170 - F2.5 - M

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

ⓘ The maximum temperature of measurement is only a value of measurement point (end of Sheath). As for the actual temperature measurement, please be careful so that the temperature of Sheath will not exceed the heat resistance temperature (80°C). It might cause disconnection because of the swell caused by heat inside the sleeve. 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.

# Temperature Sensors

## L-Shaped / Lead Wire Protection / Heat Resistant Type

**Temperature Sensors – L-Shaped**

**RoHS 10**

**MSNDL K Thermocouple**

Features: For narrow spaces

⓪ Full Length of Sheath L-L1 ≥ 30

⓪ Overall length of sheath L-L1 is bent formed and will be +5.

**MSNDL**

Type of Thermocouple	K Thermocouple	
Precision	JIS Class 2	
Temp. Measurement Contact Point	Isolated Neutral Type	
Temp. Measurement Range	Ø1.6	0~650°C
	Ø2.3	0~700°C
	Ø3.2	0~750°C
Material	Sheath	316 Stainless Steel
	Sleeve	304 Stainless Steel
Heat Resistance Temp. of Sleeve	80°C	
Lead Wire (Operating Temp. Range)	Glass Wool Coating (0~150°C)	

**Part Number Example** Part Number - L - L1

Part Number	D	Full Length of Sheath L	L1	R
Type			1 mm Increment	
MSNDL	1.6	100	20~270	5
	2.3	150	40~260	7
	3.2	200	50~250	9

⓪ L-L1 ≥ 30

**Application Example**

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

**Temperature Sensors – Lead Wire Protection**

**RoHS 10**

**MSNDFC K Thermocouple**

Features: Flexible tube covers lead wires and protects them from damage.

**MSNDFC**

Type of Thermocouple	K Thermocouple	
Precision	JIS Class 2	
Temp. Measurement Contact Point	Isolated Neutral Type	
Temp. Measurement Range	0~750°C	
	Sheath	316 Stainless Steel
	Sleeve	304 Stainless Steel
Material	Flexible Tube	Stainless Steel
Heat Resistance Temp. of Sleeve	80°C	
Lead Wire (Operating Temp. Range)	Glass Wool Coating (0~150°C)	

**Temperature Sensors – Heat-Resistant Type**

**RoHS 10**

**MSNDHG K Thermocouple**

Features: Temperature Sensor heat resistance temperature of sleeve is 180°C (generally 80°C).

**MSNDHG**

Type of Thermocouple	K Thermocouple	
Precision	JIS Class 2	
Temp. Measurement Contact Point	Isolated Neutral Type	
Temp. Measurement Range	Ø1.0, 1.6	0~650°C
	Ø2.3	0~650°C
	Ø3.2	0~750°C
Material	Sheath	316 Stainless Steel
	Sleeve	304 Stainless Steel
Heat Resistance Temp. of Sleeve	180°C	
Lead Wire (Operating Temp. Range)	Teflon Coating (0~200°C)	

Part Number	D	L Selection
MSNDFC	3.2	100
		300

Part Number	D	L Selection
MSNDHG	3.2	30
		50
		100
		150

**Part Number Example** Part Number - L

MSNDFC3.2 - 100  
MSNDHG3.2 - 100

ⓘ The maximum temperature of measurement is only a value of measurement point (end of Sheath). As for the actual temperature measurement, please be careful so that the temperature of Sheath will not exceed the heat resistance temperature (80°C). It might cause disconnection because of the swell caused by heat inside the sleeve. 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.