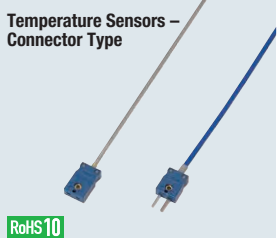


Temperature Sensors

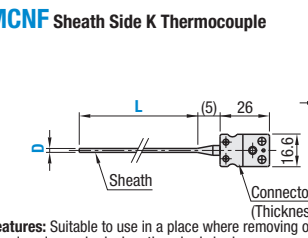
Connector / Double Element / Chemical Resistant Type

Temperature Sensors – Connector Type



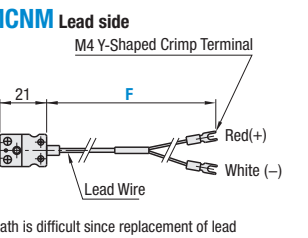
RoHS10

MCNF Sheath Side K Thermocouple



Features: Suitable to use in a place where removing of sheath is difficult since replacement of lead wire is only required when the wire is broken.

MCNM Lead side



M4 Y-Shaped Crimp Terminal

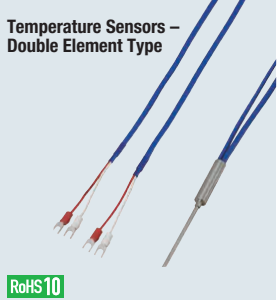
Red(+)
White (-)

MCNF	
Type of Thermocouple	K Thermocouple
Precision	JIS Class 2
Temp. Measurement Contact Point	Isolated Neutral Type
Temp. Measurement Range	01.6 0~650°C 03.2 0~750°C
Material	Sheath 316 Stainless Steel Connector PPS
Heat Resistance Temp. of Connector	220°C
Lead Wire (Operating Temp. Range)	Glass Wool Coating (0~150°C)

Sheath Side (K Thermocouple)			Lead Side		
Type	Part Number	D	L Selection	Part Number	F Select (Unit: m)
MCNF		1.6	300	MCNM	2
		3.2	500		4

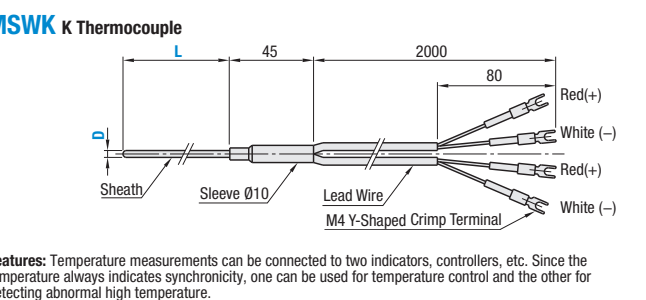
Part Number Example
 Part Number - F
 MCNM - F2

Temperature Sensors – Double Element Type



RoHS10

MSWK K Thermocouple



Features: Temperature measurements can be connected to two indicators, controllers, etc. Since the temperature always indicates synchronicity, one can be used for temperature control and the other for detecting abnormal high temperature.

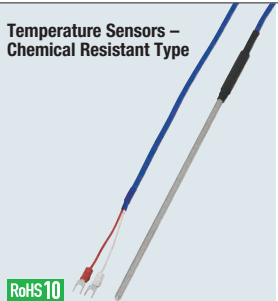
MSWK

Type of Thermocouple	K Thermocouple
Precision	JIS Class 2
Temp. Measurement Contact Point	Isolated Neutral Type
Temp. Measurement Range	03.2 0~750°C 04.8 0~800°C
Material	Sheath 316 Stainless Steel Sleeve 304 Stainless Steel
Heat Resistance Temp. of Sleeve	80°C
Lead Wire (Operating Temp. Range)	Vinyl Coating (-20~70°C)

Type	Part Number	D	L Selection
MSWK		3.2	100
			200
		4.8	300

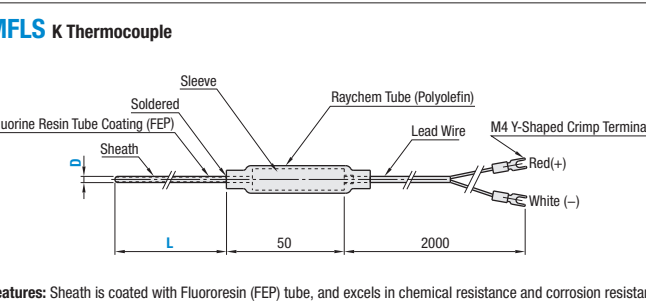
Part Number Example
 Part Number - L
 MSWK3.2 - 100

Temperature Sensors – Chemical Resistant Type



RoHS10

MFLS K Thermocouple



Features: Sheath is coated with Fluororesin (FEP) tube, and excels in chemical resistance and corrosion resistance.

MFLS

Type of Thermocouple	K Thermocouple
Precision	JIS Class 2
Temp. Measurement Contact Point	Isolated Neutral Type
Measurement Temp. Range	0~180°C
Material	Protection Tubes Sheath 316 Stainless Steel + Fluororesin (FEP) tube Sleeve 304 Stainless Steel
Heat Resistance Temp. of Sleeve	80°C
Lead Wire (Operating Temp. Range)	Vinyl Coating (-20~70°C)

Type	Part Number	D	L Selection
MFLS		5.3	200
			400

Part Number Example
 Part Number - L
 MFLS5.3 - 200

Chemical Resistance (Reference) of Fluoro Resin (FEP) Tube Coating

The list below is for reference only and not to guarantee.

Mineral Oil	Water	Hydrochloric Acid (10%, RT)	Ammonia Water	Gasoline	Organic Solvent
Good	Excellent	Excellent	Excellent	Excellent	Good


Excellent – Slightly affected.
 Good – Affected or swollen to some extent but usable depending on conditions.
 (RT is for ambient temperature = 20°C, % is concentration of solution.)

- ⓘ 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). 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

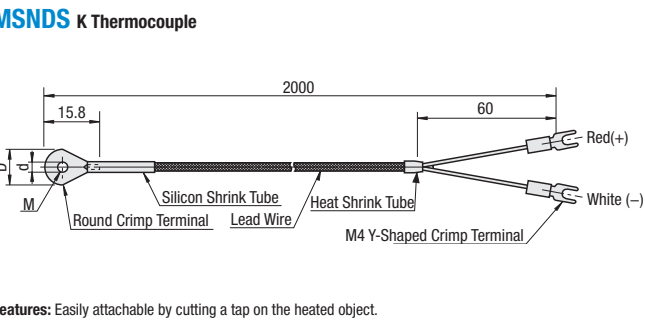
Round Thermal Tip Sensors / Round Thermal Tip Sensors Silicone Type / Spade Type

Temperature Sensors – Round Thermal Tip Sensors



RoHS10

MSNDS K Thermocouple



Features: Easily attachable by cutting a tap on the heated object.

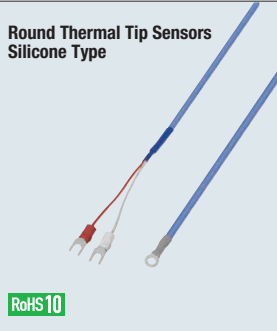
MSNDS

Type of Thermocouple	K Thermocouple
Precision	JIS Class 2
Temp. Measurement Contact Point	Grounded Type
Temperature Measurement Range	0~150°C
Silicon Tube Heat Resistance Temp.	150°C
Lead Wire (Operating Temp. Range)	Glass Wool Coating + Outer Shield Winding (0~250°C)

Type	Part Number	Terminal Size M	D	d
MSNDS	4	M4	8	4.3
	5	M5	8	5.3

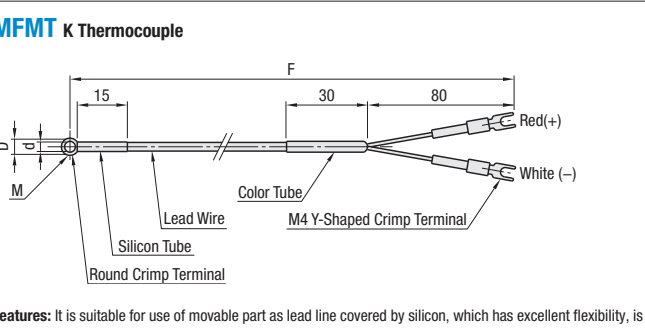
Part Number Example
 Part Number
 MSNDS5

Round Thermal Tip Sensors Silicone Type



RoHS10

MFMT K Thermocouple



Features: It is suitable for use of movable part as lead line covered by silicon, which has excellent flexibility, is applied.

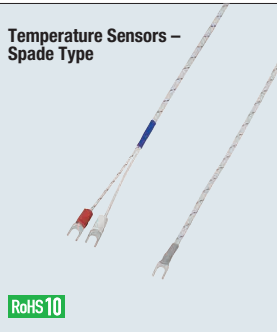
MFMT

Type of Thermocouple	K Thermocouple
Precision	JIS Class 2
Temp. Measurement Contact Point	Grounded Type
Temperature Measurement Range	0~150°C
Silicon Tube Heat Resistance Temp.	150°C
Lead Wire (Operating Temp. Range)	Silicon Coating (0~150°C)
Lead Wire Minimum Bending R	20

Type	Part Number	Terminal Size M	D	d	F (m)
MFMT	4-1	M4	8	4.3	1
	4				2
	4-5				5
	5-1	M5	8	5.3	1
	5				2
	5-5				5

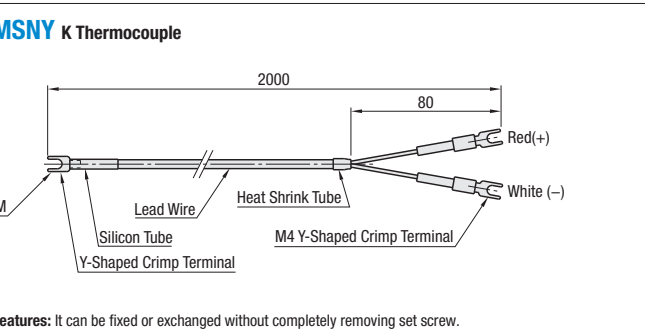
Part Number Example
 Part Number
 MFMT4

Temperature Sensors – Spade Type



RoHS10

MSNY K Thermocouple



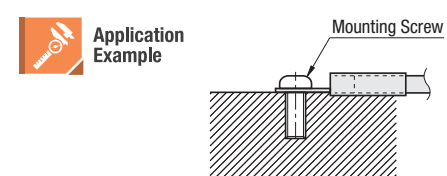
Features: It can be fixed or exchanged without completely removing set screw.

MSNY

Type of Thermocouple	K Thermocouple
Precision	JIS Class 2
Temp. Measurement Contact Point	Grounded Type
Temperature Measurement Range	0~150°C
Silicon Tube Heat Resistance Temp.	150°C
Lead Wire (Operating Temp. Range)	Glass Wool Coating (0~150°C)

Type	Part Number	Terminal Size M
MSNY	4	M4
	5	M5

Part Number Example
 Part Number
 MSNDS5



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