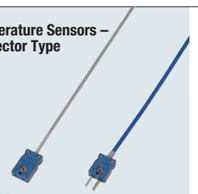
Temperature Sensors

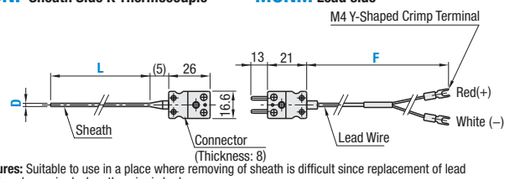
Connector / Double Element / Chemical Resistant Type

Temperature Sensors – Connector Type



RoHS 10

MCNF Sheath Side K Thermocouple MCNM Lead side



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.

MCNF

Type of Thermocouple		K Thermocouple
Precision		JIS Class 2
Temp. Measurement Contact Point		Isolated Neutral Type
Temp. Measurement Range	Ø1.6	0~650°C
	Ø3.2	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)

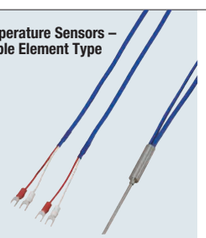
Part Number		L
Type	D	Selection
MCNF	1.6	300
	3.2	500

Lead Side

Part Number	F
	Select (Unit: m)
MCNM	2
	4

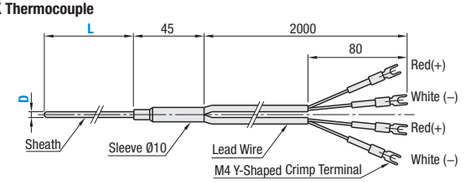
Part Number Example: Part Number **MCNM** - F **F2**

Temperature Sensors – Double Element Type



RoHS 10

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.

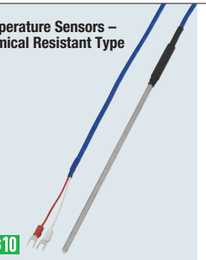
MSWK

Type of Thermocouple		K Thermocouple
Precision		JIS Class 2
Temp. Measurement Contact Point		Isolated Neutral Type
Temp. Measurement Range	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)		Vinyl Coating (-20~70°C)

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

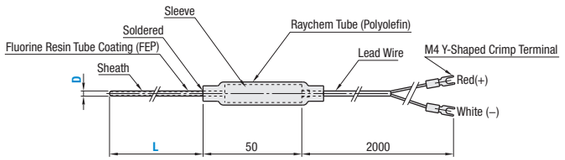
Part Number Example: Part Number **MSWK3.2** - L **100**

Temperature Sensors – Chemical Resistant Type



RoHS 10

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)

Part Number		L
Type	D	Selection
MFLS	5.3	200
		400

Part Number Example: Part Number **MFLS5.3** - L **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.

MiSUMi

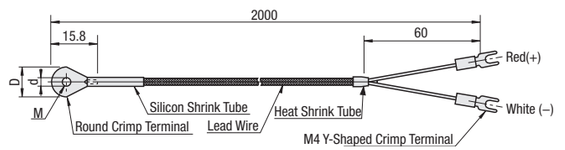
Temperature Sensors

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

Temperature Sensors – Round Thermal Tip Sensors

RoHS 10

MSNDS K Thermocouple



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

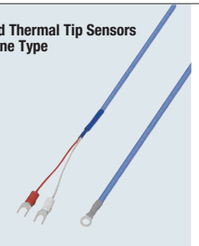
MSNDS

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)

Part Number		Terminal Size M	D	d
Type	No.			
MSNDS	4	M4	8	4.3
	5	M5	8	5.3

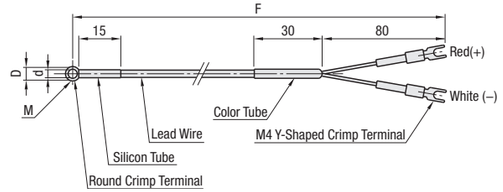
Part Number Example: Part Number **MSNDS5**

Round Thermal Tip Sensors Silicone Type



RoHS 10

MFMT K Thermocouple



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

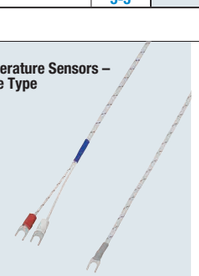
MFMT

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 Mminimum Bending R	20

Part Number		Terminal Size M	D	d	F (m)
Type	No.				
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

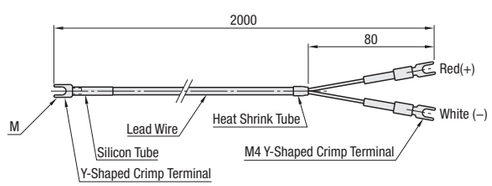
Part Number Example: Part Number **MFMT4**

Temperature Sensors – Spade Type



RoHS 10

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)

Part Number		Terminal Size M
Type	No.	
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**.

Application Example