

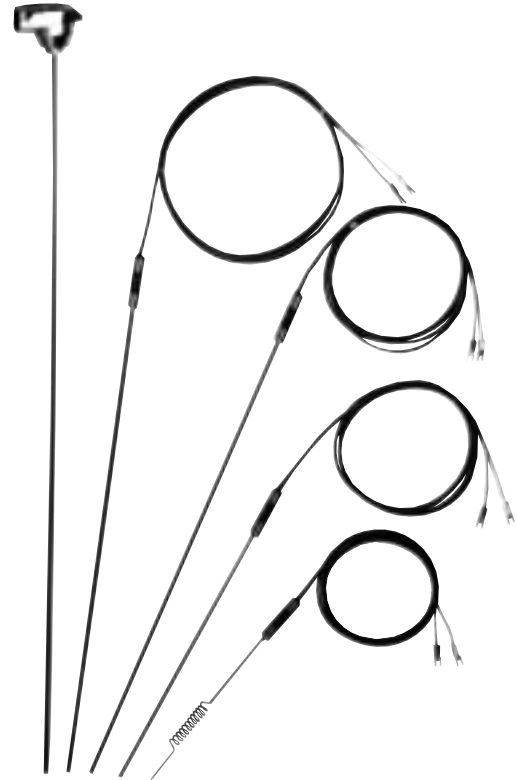
SHEATHED THERMOCOUPLES



SHEATHED THERMOCOUPLES

A metallic sheath and a detection element are assembled in each sheathed temperature sensor.

The clearance between the sheath and the thermocouple wire is tightly filled with magnesium oxide or another inorganic insulator to keep the insulation, and the interior to keep the insulation, and the interior is kept airtight to prevent the sensor from being corroded by air and hot gases. The features of these sensors are as introduced below.



■ FEATURES

- Long life and economical
- Very high sensitivity and little time delay
- Excellent vibration resistance
- Employable under hot, high-pressure, corrosive gas atmosphere, and other unfavorable conditions
- Freely bendable and mountable at a frequent curved position.
- Since the minimum outer diameter of sheathed thermocouples is as thin as $\phi 0.15\text{mm}$, these sensors can detect temperature of a small measuring substance at a narrow place where the temperature measurement has conventionally been impossible.

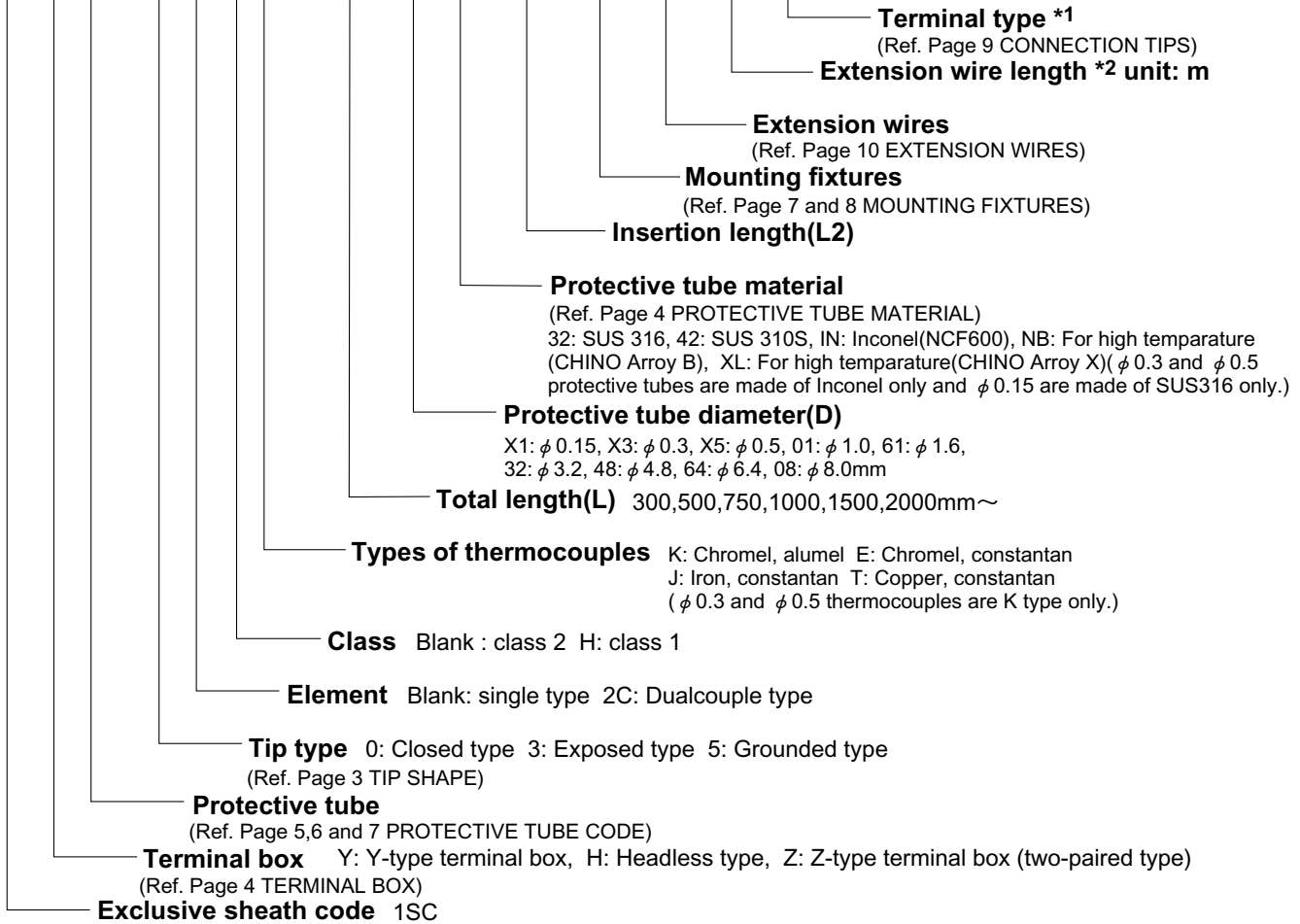
Very fine type



SHEATHED THERMOCOUPLES

MODELS

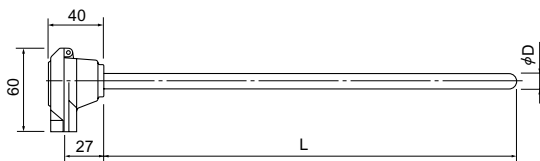
1SC Y N1 0 K 1000 32 32 0800 SC1 WXJ 002 UG



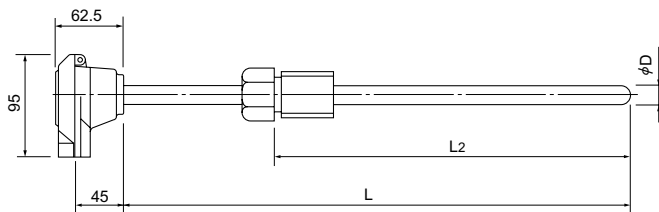
*1 Enter this terminal type at both ends.

Enter A for headless type

*2 Headless type specify the length without fail.(standard length:2m)



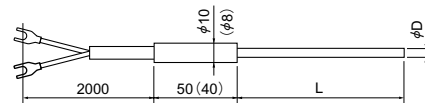
Y-terminal box type



Z-terminal box type

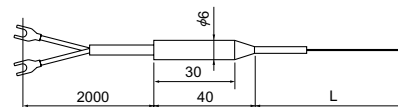
Headless type

· When outside diameter is ϕ 1.0 to ϕ 8.0



Parenthesized sizes () show those of ϕ 1.0 to ϕ 4.8 in outer diameter

· When outside diameter is ϕ 0.3 to ϕ 0.5

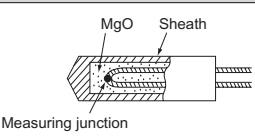
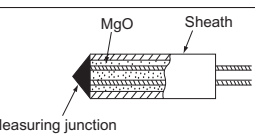
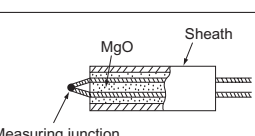


unit: mm

■ GENERAL SPECIFICATIONS

TYPE OF THERMOCOUPLES: (WIRE)	K, J, E and T(K only in case of $\phi 0.3$ and $\phi 0.5$ wires) (Others can be made of R and N)
CLASS :	JIS Class 2(0.75), 1(0.4), 3 Range of class 3 is -200°C to 0°C Class 1 is following JIS C1605
PROTECTIVE TUBE MATERIAL :	K——SUS316, SUS310S, Inconel(NCF600), CHINO ARROY B or X ($\phi 0.3$ and $\phi 0.5$ are made of NCF600 only.) ($\phi 0.15$ is made of SUS316 only) E, J, T—SUS316
PROTECTIVE TUBE DIAMETER :	$\phi 0.15, \phi 0.3, \phi 0.5, \phi 1.0, \phi 1.6, \phi 3.2, \phi 4.8, \phi 6.4, \phi 8.0\text{mm}$ (Can be made following to JIS C1605 as well)
THICKNESS OF SHEATH :	More than 10% of its diameter
WIRE DIAMETER :	More than 15% of its diameter
TOTAL LENGTH(L) :	300, 500, 750, 1000, 2000mm~
TIP SHAPE :	Closed type, Grounded type, Exposed type(3 kinds)
INSULATION RESISTANCE :	Higher than $5\text{M}\Omega$ at 500V DC
INSULATOR :	High purity magnesia MgO
MAXIMUM LENGTH :	$\phi 0.15$ --- 2m $\phi 0.3$ --- 3m $\phi 0.5$ --- Closed type 10m --- Grounded type 50m $\phi 1.0$ --- 200m $\phi 1.6$ --- 100m $\phi 3.2$ --- 50m $\phi 4.8$ --- 50m $\phi 6.4$ --- 35m $\phi 8.0$ --- 15m
DOUBLE ELEMENT :	Outer diameter of protective tube $\phi 3.2, \phi 4.8, \phi 6.4, \phi 8.0\text{mm}$
BENDING RADIUS :	More than double or three times of diameter of its sheath.

■ TIP TYPE

Code	Shape	
Closed type		<ul style="list-style-type: none"> · Thermocouple is covered with insulator. · Long-life · General type
Ground type		<ul style="list-style-type: none"> · Thermocouple is grounded to protective tube. · Rapid-response than Closed type. · Impossible to use around dangerous and noisy area.
Exposed type		<ul style="list-style-type: none"> · Thermocouple is exposed. Rapid-response. · Point of use is tricky so that airtightness, insulation quality and mechanical strength are low.

SHEATHED THERMOCOUPLES

■ RESPONSE (Time required to reach 90% of a balancing value)

Outer dia. of sheath	Response time (Sec)	Grounded type		Closed type	
		Room temp → 100°C boiling water	0°C → 750°C static air	Room temp → 100°C boiling water	0°C → 750°C static air
φ0.3mm		0.02	*3.1	—	—
φ0.5mm		0.06	*8.7	0.08	*11.6
φ1.0mm		0.13	18.0	0.16	20.5
φ1.6mm		0.26	33	0.36	38
φ3.2mm		1.3	86	1.9	103
φ4.8mm		2.7	147	4.1	174
φ6.4mm		4.0	215	6.8	254
φ8.0mm		—	260	—	330

* Value: Room temperature → 500°C static air

■ PROTECTIVE TUBE MATERIAL

Sheath material	Description
SUS316	Higher corrosion resistance than that of SUS304 against reducing acids. Toughness may decrease and the grain boundary corrosion may occur during a continuous use at 400°C to 850°C.
SUS310S	Excellent heat resistance with much Ni and Cr content. Not resistible against hot concentrated gases containing Sulfur. Oxidation-resistance protective film is formed in high-temperature and ensure the superior durability.
Inconel(NCF600)	This Ni alloy has heat resistance equivalent to that of SUS310S and excellent corrosion resistance, in general. It is comparatively applicable to heat treatment furnaces for molten lead and zinc, but it is apt to be damaged by Sulfur.
CHINO Arroy B(NB)	Metal gas which pollutes thermocouples wire at high-temperature is not generated and realize long-life.
CHINO Arroy X(XL)	Oxidation-resistance protective film is formed in high-temperature and ensure the superior durability.

■ OUTER DIAMETER AND WORKING TEMPERATURE (NORMAL LIMIT) OF SHEATHED THERMOCOUPLES.

Outer dia. of sheath (mm)	K				
	Working temperature				
	SUS316	SUS310S	NCF600	NB *1	XL *2
φ0.15	400°C	—	—	—	—
φ0.3	—	—	400°C	—	—
φ0.5	—	—	600°C	—	—
φ1.0	650°C	650°C	650°C	—	—
φ1.6	650°C	650°C	650°C	650°C	650°C
φ3.2	750°C	750°C	750°C	750°C	750°C
φ4.8	800°C	900°C	900°C	900°C	900°C
φ6.4	800°C	1000°C	1000°C	1000°C	1000°C
φ8.0	900°C	1050°C	1050°C	—	—

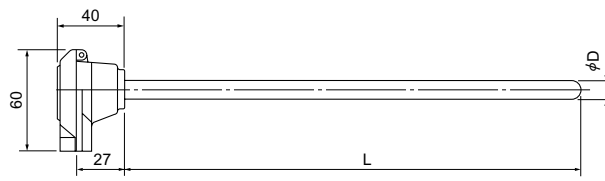
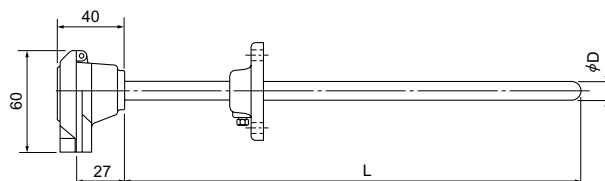
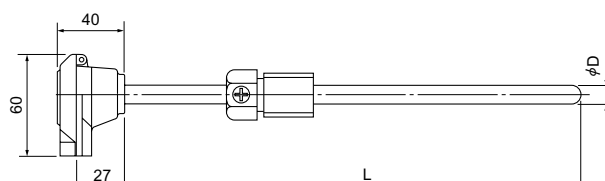
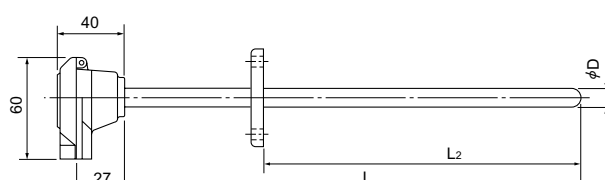
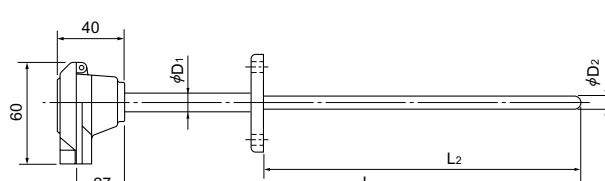
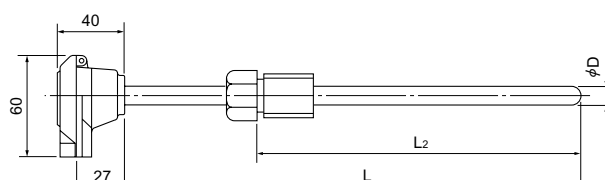
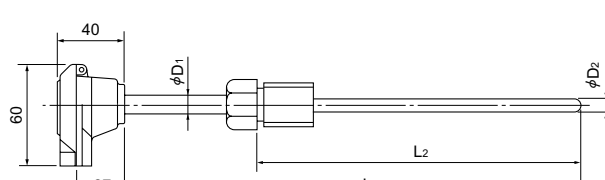
Outer dia. of sheath (mm)	J	E	T
	Working temperature		
	SUS316	SUS316	SUS316
φ1.0	450°C	650°C	300°C
φ1.6	450°C	650°C	300°C
φ3.2	650°C	750°C	350°C
φ4.8	750°C	800°C	350°C
φ6.4	750°C	800°C	350°C
φ8.0	750°C	800°C	350°C

■ TERMINAL BOX

Code	Y	Z (for two-paired type)
External sizes		
Material	Aluminum diecast	
Surface treatment	Matte finish, chromium plating	
Structure	Terminal enclosed type	

PROTECTIVE TUBE CODE

Unit: mm

	Code	Mounting fixtures	Shape and external dimensions
Straight type	S1	None	
	S2	Slide flange is attached.	
	S3	Screw fixing nipple is attached. (including the compression fitting)	
Flange type	F1	Fixed flange is attached.	
	F2	Fixed flange is attached.	
Nipple type	N1	Fixed flange is attached.	
	N2	Fixed flange is attached.	

(Note) The terminal type is represented as Y type. For using the Z type terminal box, refer to (terminal box).

SHEATHED THERMOCOUPLES

PROTECTIVE TUBE CODE AND EXTERNAL DIMENSIONS

It is possible to produce other than the following.

Terminal box type

Code	Shape and external dimensions
1SCYS1-0 (Standard type)	
1SCYF1-0 (Flange type)	
1SCYN1-0 (Fixed nipple type)	
1SCYF2-0 (Reinforced pipe type)	
1SCZN7-0 (Pressure type)	<p>You can press the tip of the protective tube to the measuring object by the spring. (Spring moving distance 10mm)</p>

Headless type

Unit: mm

Code	Shape and external dimensions
1SCHS1-0 (Standard type)	<p>Dimensions within () are For $\phi D = \phi 1.0$ to $\phi 4.8$</p>
1SCHS1-6 (Needle type)	<p>By sticking to the measuring object, you can measure the internal temperature.</p>
1SC901-0 (Protection spring type)	<p>It is useful to prevent the disconnection of extension wire.</p>
1SC951-0 (Flexible tube type)	<p>Because extension wire is protected by the flexible tube, you can bend it any way and prevent disconnection.</p>
1SC920-0 (Sleeve type)	<p>Can be produced if more than $\phi D = \phi 4.8$. Dual type is also available.</p>

● Headless type

Unit: mm

Code	Shape and external dimensions
1SC961-0 (Metal connector type)	
1SC971-0 (CA connector type)	<p>Pin connector material is same as thermocouple, so it can measure at high accuracy.</p>
1SC980-0 (Nipple/connector type)	

Code	Shape and external dimensions
1SC981-0 (Nipple type)	<p>Dimensions within () are For φD=φ1.0 to φ4.8</p>
1SC921-0 (Pressure type)	<p>You can press the tip of the protective tube to the measuring object by the spring. Spring (φD=φ3.2 or φ4.8)</p>
1SC960-0 (Heat collection board type)	<p>Dimensions within () are For φD=φ1.0 to φ4.8</p> <p>When measuring surface temperature of plain surface or plumbing, by contacting heat collection board to the measuring surface, response time will be faster and more precise temperature measuring is available.</p>

■ MOUNTING FIXTURES

● Flange

Fixed flange	Basic dimension of 5kg/cm ² flange	Nominal size		Code		ØD	Flange dimension				Bolt hole		
		A	B	SUS304	SUS318		T	F	Øg	H	ØC	Øh	n
Sliding flange	Basic dimension of 10kg/cm ² flange	10	3/8	FC3	FM3	75	9	1	39	34	55	12	4
		15	1/2	FC4	FM4	80	9	1	44	34	60	12	4
		20	3/4	FC6	FM6	85	10	1	49	35	65	12	4
		25	1	FC8	FM8	95	10	1	59	35	75	12	4
		40	1-1/2	FCD	FMD	120	12	2	75	37	95	15	4
		50	2	FCE	FME	130	14	2	85	39	105	15	4
		65	2-1/2	FCF	FMF	155	14	2	110	39	130	15	4
		80	3	FCG	FMG	180	14	2	121	39	145	19	4
		100	4	FCH	FMH	200	16	2	141	41	165	19	8
		10	3/8	JC3	JM3	90	12	1	46	37	65	15	4
		15	1/2	JC4	JM4	95	12	1	51	37	70	15	4
		20	3/4	JC6	JM6	100	14	1	56	39	75	15	4
		25	1	JC8	JM8	125	14	1	67	39	90	19	4
		40	1-1/2	JCD	JMD	140	16	2	81	41	105	19	4
		50	2	JCE	JME	155	16	2	96	41	120	19	4
		65	2-1/2	JCF	JMF	175	18	2	116	43	140	19	4
82	3	JCG	JMG	185	18	2	126	43	150	19	8		
100	4	JCH	JMH	210	18	2	151	43	175	19	8		
25	1	KC8	KM8	125	16	1	67	41	90	19	4		
40	1-1/2	KCD	KMD	140	18	2	81	43	105	19	4		
50	2	KCE	KME	155	18	2	96	43	120	19	8		
65	2-1/2	KCF	KMF	175	20	2	116	45	140	23	8		
80	3	KCG	KMG	200	22	2	132	47	160	23	8		
100	4	KCH	KMH	225	24	2	160	49	185	23	8		

SHEATHED THERMOCOUPLES

●CHINO standard flanges

Nominal size	Applicable protective tube diameter Ød	Code			Flange diameter ØD	Flange		Bolt hole			Mounting bolt
		Sliding flange	Fixed flange			t	h	Center hole diameter ØC	Number n	Diameter ØE	
			Aluminum	SUS304							
A	17 to 32	SAA	FCA	FMA	100	10	34	70	4	10	M8
B	8 to 16	SAB	FCB	FMB	70	7.5	28	50	4	8	M6
C	6.4 or less	SAC	FCC	FMC	50	3	13	35	4	4.5	M4

●Nipple

Nominal size	Applicable protective tube diameter Ød	Code				Screw dimension		Thread number per inch	Opposite side and opposite angle distance		A	B	K
		Parallel screw		Tapered screw		Outside diameter C	Core diameter		G	F			
		SUS304	SUS316	SUS304	SUS316								
G, R1/8	6 or less	SC1	SM1	TC1	TM1	9.7	8.56	28	14	16.2	6	10	4.0
G, R1/4	8 or less	SC2	SM2	TC2	TM2	13.1	11.4	19	17	19.6	8	12	6.0
G, R3/8	10 or less	SC3	SM3	TC3	TM3	16.6	14.9	19	21	24.2	10	15	6.4
G, R1/2	12 or less	SC4	SM4	TC4	TM4	20.9	18.6	14	26	30	12	20	8.2
G, R3/4	16 or less	SC8	SM6	TC6	TM6	26.4	24.1	14	32	37	16	25	9.5
G, R1	22 or less	SC8	SM8	TC8	TM8	33.2	30.2	11	41	47.3	20	30	10.4

●Compression fitting

Type	Material	Code	CF1	CF2	CF3	CF4	CF6	CF8
Type 1	Copper	CF1	CF2	CF3	CF4	CF6	CF8	
	Teflon	CR1	CR2	CR3	CR4	CR6	CR8	
	Screw	R1/8	R1/4	R3/8	R1/2	R3/4	R1	
	For $\phi 1.0$	A=35	A=31	A=36	A=43	A=50	A=52	Frame inside: Type 2
	For $\phi 1.6$	B=10	B=12	B=15	B=20	B=18	B=20	
	For $\phi 2.0$	G1=14	G1=17	G1=21	G1=26	G1=32	G1=38	
	For $\phi 3.2$	G2=14	G2=14	G2=14	G2=14	G2=14	G2=14	
	For $\phi 4.8$					G3=17	G3=17	
	For $\phi 6.0$		A=39		A=43	A=58	A=60	
	For $\phi 6.4$		G2=17	G2=17	G2=17	G2=17	G2=17	
For $\phi 8.0$			A=41	A=44	A=53	A=62		
For $\phi 10$			G2=21	G2=21	B=25	B=30		
					G2=21	G1=41		
Type 2	For $\phi 12$				A=53	A=65		
	For $\phi 15$				G2=26	G2=32		
	For $\phi 16$					A=63		
						G2=32	G2=26	
							G2=41	
	For $\phi 22$							

CONNECTORS

● CA connector

Technical drawings of the CA connector showing front, side, and mounting plate views with dimensions. The front view shows a length of 66.6 mm and a width of 25.4 mm. The side view shows a height of 12.7 mm. The mounting plate view shows a length of 43.3 mm and a width of 15 mm. The panel cutout shows a length of 35 mm and a width of 26 mm, with two holes of diameter 4 mm.

	(+) lead	(-) lead
For B, R, S	Copper	Copper alloy
For K	Chromel	Alumel
For E	Chromel	Constantan
For J	Iron	Constantan
For T	Copper	Constantan

● SM connector

Technical drawings of the SM connector showing front, side, and mounting plate views with dimensions. The front view shows a length of 46.5 mm and a width of 17 mm. The side view shows a height of 8 mm. The mounting plate view shows a length of 21 mm and a width of 25.5 mm, with a hole diameter of 3 mm.

	(+) lead	(-) lead
For B, R, S	Copper	Copper alloy
For K	Chromel	Alumel
For E	Chromel	Constantan
For J	Iron	Constantan
For T	Copper	Constantan

CONNECTION TIPS

The connection tips can roughly be divided into the tips for termination and the tips for extension wires.

The tips for termination are used for terminating extension wires and are convenient for connections to terminals in a terminal board.



Classification	Terminals for connection				Terminals for relaying
Applications	For instrument terminals		For sensor terminals	For EB series recorder terminals	For connecting extension wires and thermocouple wires
Code	G	Y	F	U	B
Specifications					
Covering color	+ : Red - : White	+ : Red - : White		+ : Red - : White	+ : Red - : Black

Unit : mm

SHEATHED THERMOCOUPLES

EXTENSION WIRES

Type	Uses	Code	Composition (mm)		Outer sheath		Resistance (Ω/m)	Working temperature ($^{\circ}C$)	Error allowance (μV)	Outer diameter (mm)	
			+lead	-lead	Material	Color					
K	Precision class heat resistance	KXHS	Chromel 0.65 x 7pcs	Alumel 0.65x7pcs	Glass wool braided	Blue	0.43	0 to 150	± 100	4 x 6.5	
	Precision class waterproof	KXVS			Vinyl			(-)20 to 90		5 x 8	
	Thin type precision class heat resistance	KXJS	Chromel 0.32 x 7pcs	Alumel 0.32x7pcs	Glass wool braided		1.94	0 to 150		3 x 4.9	
	Thin type precision class heat general	KXIS			Vinyl			(-)20 to 90		2.4 x 4	
	Heat resistance	WXH	Iron 0.65 x 7pcs	Constantan 0.65x7pcs	Glass wool braided		0.38	0 to 150		± 60	4 x 6.5
	Thin type heat resistance	WXJ	Iron 0.3 x 7pcs	Constantan 0.3x7pcs	Glass wool braided		1.25	0 to 150			2.4 x 4
	Thin type general	VXI	Copper 0.3 x 7pcs	Constantan 0.3x7pcs	Vinyl		1.25	(-)20 to 90			3 x 4.9
	Waterproof	VXV	Copper 0.65 x 7pcs	Constantan 0.65x7pcs	Vinyl		0.22	0 to 90			2.8 x 4.5
	With sheath shield	WXA	Iron 0.3 x 7pcs	Constantan 0.3x7pcs	Stainless braided		1.25	0 to 150			± 60
E	Heat resistance	EXH	Chromel 0.65 x 7pcs	Constantan 0.65x7pcs	Glass wool braided	Purple	0.51	0 to 150	± 200		4 x 6.5
	Waterproof	EXV			Vinyl			(-)20 to 90			5 x 8
	Thin type heat resistance	EXJ	Chromel 0.3 x 7pcs	Constantan 0.3x7pcs	Glass wool braided		2.45	0 to 150			2.4 x 4
	Thin type general	EXI			Vinyl			(-)20 to 90			3 x 4.9
	With sheath shield	EXA			Stainless braided			0 to 150		2.8 x 4.5	
J	Heat resistance	JXH	Iron 0.65 x 7pcs	Constantan 0.65x7pcs	Glass wool braided	Yellow	0.38	0 to 150	± 140	3.4 x 6.2	
	Waterproof	JXV			Vinyl			(-)20 to 90		5 x 8	
	Thin type heat resistance	JXJ	Iron 0.3 x 7pcs	Constantan 0.3x7pcs	Glass wool braided		1.25	0 to 150		2.4 x 4	
	Thin type general	JXI			Vinyl			(-)20 to 90		3 x 4.9	
	With sheath shield	JXA			Stainless braided			0 to 150		2.8 x 4.5	
T	Waterproof	TXV	Copper 0.65 x 7pcs	Constantan 0.65x7pcs	Vinyl	Brown	0.22	(-)20 to 90	± 60	5 x 8	
	Thin type heat resistance	TXJ	Copper 0.3 x 7pcs	Constantan 0.3x7pcs	Glass wool braided			0 to 150		2.4 x 4	
	Thin type general	TXI			Vinyl			(-)20 to 90		3 x 4.9	
	With sheath shield	TXA			Stainless braided			0 to 150		2.8 x 4.5	

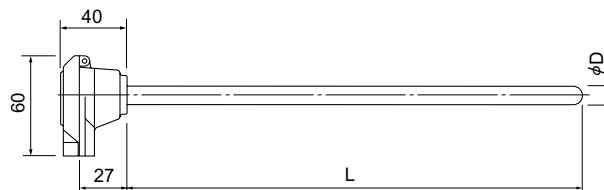
■ PRODUCT CODE (Standard models)

Easy to order by product code!

You can easily order the below standard models of sheathed thermocouple by product code.

● Y-terminal box type

Model	SCYS1-0
Protective tube material	SUS316, SUS310S, NCF600, NB, XL
Protective tube shape	Straight type
Wire	K, E, J, T
Class	JIS Class 2

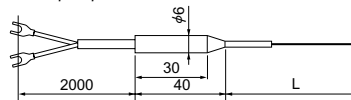


Outer dia. of sheath(D) mm	Length(L)mm	Product code							
		K					E	J	T
		SUS316	SUS310S	NCF600	NB	XL	SUS316	SUS316	SUS316
φ1.0	300	1SKF013	1SKS013	1SKN013			1SEF013	1SJF013	1STF013
	500	1SKF015	1SKS015	1SKN015			1SEF015	1SJF015	1STF015
	750	1SKF017	1SKS017	1SKN017			1SEF017	1SJF017	1STF017
	1,000	1SKF01A	1SKS01A	1SKN01A			1SEF01A	1SJF01A	1STF01A
	1,500	1SKF01B	1SKS01B	1SKN01B			1SEF01B	1SJF01B	1STF01B
	2,000	1SKF01C	1SKS01C	1SKN01C			1SEF01C	1SJF01C	1STF01C
φ1.6	300	1SKF613	1SKS613	1SKN613	1SKB613	1SKX613	1SEF613	1SJF613	1STF613
	500	1SKF615	1SKS615	1SKN615	1SKB615	1SKX615	1SEF615	1SJF615	1STF615
	750	1SKF617	1SKS617	1SKN617	1SKB617	1SKX617	1SEF617	1SJF617	1STF617
	1,000	1SKF61A	1SKS61A	1SKN61A	1SKB61A	1SKX61A	1SEF61A	1SJF61A	1STF61A
	1,500	1SKF61B	1SKS61B	1SKN61B	1SKB61B	1SKX61B	1SEF61B	1SJF61B	1STF61B
	2,000	1SKF61C	1SKS61C	1SKN61C	1SKB61C	1SKX61C	1SEF61C	1SJF61C	1STF61C
φ3.2	300	1SKF323	1SKS323	1SKN323	1SKB323	1SKX323	1SEF323	1SJF323	1STF323
	500	1SKF325	1SKS325	1SKN325	1SKB325	1SKX325	1SEF325	1SJF325	1STF325
	750	1SKF327	1SKS327	1SKN327	1SKB327	1SKX327	1SEF327	1SJF327	1STF327
	1,000	1SKF32A	1SKS32A	1SKN32A	1SKB32A	1SKX32A	1SEF32A	1SJF32A	1STF32A
	1,500	1SKF32B	1SKS32B	1SKN32B	1SKB32B	1SKX32B	1SEF32B	1SJF32B	1STF32B
	2,000	1SKF32C	1SKS32C	1SKN32C	1SKB32C	1SKX32C	1SEF32C	1SJF32C	1STF32C
φ4.8	300	1SKF483	1SKS483	1SKN483	1SKB483	1SKX483	1SEF483	1SJF483	1STF483
	500	1SKF485	1SKS485	1SKN485	1SKB485	1SKX485	1SEF485	1SJF485	1STF485
	750	1SKF487	1SKS487	1SKN487	1SKB487	1SKX487	1SEF487	1SJF487	1STF487
	1,000	1SKF48A	1SKS48A	1SKN48A	1SKB48A	1SKX48A	1SEF48A	1SJF48A	1STF48A
	1,500	1SKF48B	1SKS48B	1SKN48B	1SKB48B	1SKX48B	1SEF48B	1SJF48B	1STF48B
	2,000	1SKF48C	1SKS48C	1SKN48C	1SKB48C	1SKX48C	1SEF48C	1SJF48C	1STF48C
φ6.4	300	1SKF643	1SKS643	1SKN643	1SKB643	1SKX643	1SEF643	1SJF643	1STF643
	500	1SKF645	1SKS645	1SKN645	1SKB645	1SKX645	1SEF645	1SJF645	1STF645
	750	1SKF647	1SKS647	1SKN647	1SKB647	1SKX647	1SEF647	1SJF647	1STF647
	1,000	1SKF64A	1SKS64A	1SKN64A	1SKB64A	1SKX64A	1SEF64A	1SJF64A	1STF64A
	1,500	1SKF64B	1SKS64B	1SKN64B	1SKB64B	1SKX64B	1SEF64B	1SJF64B	1STF64B
	2,000	1SKF64C	1SKS64C	1SKN64C	1SKB64C	1SKX64C	1SEF64C	1SJF64C	1STF64C
φ8.0	300	1SKF083	1SKS083	1SKN083			1SEF083	1SJF083	1STF083
	500	1SKF085	1SKS085	1SKN085			1SEF085	1SJF085	1STF085
	750	1SKF087	1SKS087	1SKN087			1SEF087	1SJF087	1STF087
	1,000	1SKF08A	1SKS08A	1SKN08A			1SEF08A	1SJF08A	1STF08A
	1,500	1SKF08B	1SKS08B	1SKN08B			1SEF08B	1SJF08B	1STF08B
	2,000	1SKF08C	1SKS08C	1SKN08C			1SEF08C	1SJF08C	1STF08C

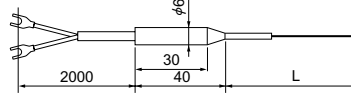
● Headless type

Model	SCHS1-0
Protective tube material	SUS316, SUS310S, NCF600, NB, XL
Protective tube shape	Straight type
Wire	K, E, J, T
Class	JIS Class 2
Extension wire	Standard 2m Tube D=φ0.15 to φ0.5: GK0 (Covered thermocouple) D = more than φ1.0: WXJ, EXJ JXJ, TXI(very fine type)

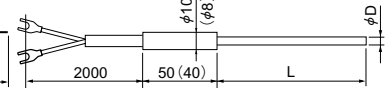
● For φD=φ0.15



● For φD=φ0.3 or φ0.5



● For φD=φ1.0 or φ0.8



*Dimensions within () are for φD=φ1.0 to φ4.8

Outer dia. of sheath(D) mm	Length(L)mm	Product code								
		K					E	J	T	
		SUS316	SUS310S	NCF600	NB	XL	SUS316	SUS316	SUS316	
φ 0.15	100	1HKF511								
	200	1HKF512								
	300	1HKF513								
	500	1HKF515								
	750	1HKF517								
	1,000	1HKF51A								
	1,500	1HKF51B								
2,000	1HKF51C									
φ 0.3	300			1HKN033						
	500			1HKN035						
	750			1HKN037						
	1,000			1HKN03A						
	1,500			1HKN03B						
2,000			1HKN03C							
φ 0.5	300			1HKN053						
	500			1HKN055						
	750			1HKN057						
	1,000			1HKN05A						
	1,500			1HKN05B						
2,000			1HKN05C							
φ 1.0	100	1HKF011	1HKS011				1HEF011	1HJF011	1HTF011	
	300	1HKF013	1HKS013	1HKN013			1HEF013	1HJF013	1HTF013	
	500	1HKF015	1HKS015	1HKN015			1HEF015	1HJF015	1HTF015	
	750	1HKF017	1HKS017	1HKN017			1HEF017	1HJF017	1HTF017	
	1,000	1HKF01A	1HKS01A	1HKN01A			1HEF01A	1HJF01A	1HTF01A	
	1,500	1HKF01B	1HKS01B	1HKN01B			1HEF01B	1HJF01B	1HTF01B	
2,000	1HKF01C	1HKS01C	1HKN01C			1HEF01C	1HJF01C	1HTF01C		
φ 1.6	100	1HKF611	1HKS611				1HEF611	1HJF611	1HTF611	
	300	1HKF613	1HKS613	1HKN613	1HKB613	1HKX613	1HEF613	1HJF613	1HTF613	
	500	1HKF615	1HKS615	1HKN615	1HKB615	1HKX615	1HEF615	1HJF615	1HTF615	
	750	1HKF617	1HKS617	1HKN617	1HKB617	1HKX617	1HEF617	1HJF617	1HTF617	
	1,000	1HKF61A	1HKS61A	1HKN61A	1HKB61A	1HKX61A	1HEF61A	1HJF61A	1HTF61A	
	1,500	1HKF61B	1HKS61B	1HKN61B	1HKB61B	1HKX61B	1HEF61B	1HJF61B	1HTF61B	
2,000	1HKF61C	1HKS61C	1HKN61C	1HKB61C	1HKX61C	1HEF61C	1HJF61C	1HTF61C		
φ 3.2	300	1HKF323	1HKS323	1HKN323	1HKB323	1HKX323	1HEF323	1HJF323	1HTF323	
	500	1HKF325	1HKS325	1HKN325	1HKB325	1HKX325	1HEF325	1HJF325	1HTF325	
	750	1HKF327	1HKS327	1HKN327	1HKB327	1HKX327	1HEF327	1HJF327	1HTF327	
	1,000	1HKF32A	1HKS32A	1HKN32A	1HKB32A	1HKX32A	1HEF32A	1HJF32A	1HTF32A	
	1,500	1HKF32B	1HKS32B	1HKN32B	1HKB32B	1HKX32B	1HEF32B	1HJF32B	1HTF32B	
2,000	1HKF32C	1HKS32C	1HKN32C	1HKB32C	1HKX32C	1HEF32C	1HJF32C	1HTF32C		
φ 4.8	300	1HKF483	1HKS483	1HKN483	1HKB483	1HKX483	1HEF483	1HJF483	1HTF483	
	500	1HKF485	1HKS485	1HKN485	1HKB485	1HKX485	1HEF485	1HJF485	1HTF485	
	750	1HKF487	1HKS487	1HKN487	1HKB487	1HKX487	1HEF487	1HJF487	1HTF487	
	1,000	1HKF48A	1HKS48A	1HKN48A	1HKB48A	1HKX48A	1HEF48A	1HJF48A	1HTF48A	
	1,500	1HKF48B	1HKS48B	1HKN48B	1HKB48B	1HKX48B	1HEF48B	1HJF48B	1HTF48B	
	2,000	1HKF48C	1HKS48C	1HKN48C	1HKB48C	1HKX48C	1HEF48C	1HJF48C	1HTF48C	
φ 6.4	300	1HKF643	1HKS643	1HKN643	1HKB643	1HKX643	1HEF643	1HJF643	1HTF643	
	500	1HKF645	1HKS645	1HKN645	1HKB645	1HKX645	1HEF645	1HJF645	1HTF645	
	750	1HKF647	1HKS647	1HKN647	1HKB647	1HKX647	1HEF647	1HJF647	1HTF647	
	1,000	1HKF64A	1HKS64A	1HKN64A	1HKB64A	1HKX64A	1HEF64A	1HJF64A	1HTF64A	
	1,500	1HKF64B	1HKS64B	1HKN64B	1HKB64B	1HKX64B	1HEF64B	1HJF64B	1HTF64B	
2,000	1HKF64C	1HKS64C	1HKN64C	1HKB64C	1HKX64C	1HEF64C	1HJF64C	1HTF64C		
φ 8.0	300	1HKF083	1HKS083	1HKN083			1HEF083	1HJF083	1HTF083	
	500	1HKF085	1HKS085	1HKN085			1HEF085	1HJF085	1HTF085	
	750	1HKF087	1HKS087	1HKN087			1HEF087	1HJF087	1HTF087	
	1,000	1HKF08A	1HKS08A	1HKN08A			1HEF08A	1HJF08A	1HTF08A	
	1,500	1HKF08B	1HKS08B	1HKN08B			1HEF08B	1HJF08B	1HTF08B	
2,000	1HKF08C	1HKS08C	1HKN08C			1HEF08C	1HJF08C	1HTF08C		

Specifications subject to change without notice. Printed in Japan (I) 2009. 10

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