Shimaden, Temperature and Humidity Control Specialists





BASIC FEATURES

Temperature sensor that can meet your needs

There are two types of Shimaden temperature detectors: standard type and special type.

Standard Type Temperature Sensor

Standard type is a list of commonly used shapes and specifications, and is available with short delivery times and low prices.

- Thermocouple: The TD series is a standard type using class 2 thermocouples. There are two types of sheath thermocouples: TD-11S with direct lead attachment and TD-18S with terminal box. We will manufacture the metal sheath length and compensating lead length according to your order. Please contact your sales representative for pricing.
- R.T.D.: The RD series is a standard type that uses Class B R.T.D. elements, and is available in general type, general type drip-proof specification, and sheath type. We will manufacture the protective tube, metal sheath length and lead wire length according to your order. Please contact your sales representative for pricing.

R series: The R-50M series is a wall-mounted R.T.D. for refrigeration, cold storage and low temperature areas.

Specially Ordered Temperature Sensor

Special ordered types are manufactured to customer specifications.

Series **TD** Thermocouple Sensor

Series TD-11S Themocouple Sensor

- External Dimensions -



■ Data sheet for TD-11S Sensor

ITEMS	CODE					SPECIFICATIONS								
1. Model	TD-11S-	SLEEV	E TYPE ⁻	THERMO	COU	PLE Shea	ath Sl	ENSOR						
			150		150	mm J/45	50 °C	MAX, K/650 °C MAX						
			250		250	mm J/45	50 °C	MAX, K/650 °C MAX						
		016	350	Φ1.6	350	mm J/45	50 °C	MAX, K/650 °C MAX						
			500		500	mm J/45	50 °C	MAX, K/650 °C MAX						
					Othe	ers (Plea	se co	nsult before ordering.)						
			150		150 mm J/650 °C MAX, K/750 °C MAX									
2. Sheath Diam	neter (Φ)		250		250	250 mm J/650 °C MAX, K/750 °C MAX								
8	3.	032	350	Ф3.2	350	mm J/65	50 °C	MAX, K/750 °C MAX						
3. Length (L)			500		500	500 mm J/650 °C MAX, K/750 °C MAX								
01 20.1gen (2)					Oth	Others (Please consult before ordering.)								
		150		150	mm J/75	50 °C	MAX, K/800 °C MAX							
			250		250	250 mm J/750 °C MAX, K/800 °C MAX								
		048	350	Φ4.8	350	350 mm J/750 °C MAX, K/800 °C MAX								
			500		500	mm J/75	50 °C	MAX, K/800 °C MAX						
					Othe	ers (Plea	se co	nsult before ordering.)						
4 Element TVE				J	JIS J 0.75 class 2									
4. Liement Tr	· E			K	JIS	K 0.7	75 c	lass 2						
					С	3000 m	nm (3	merters) Diameter : 0.3 mm x 7, glass wool coating						
5. Lead Wire					F	6000 m	זי (6	merters) Diameter : 0.3 mm x 7, glass wool coating						
					Х	Others	(Plea	se consult before ordering.)						
						00-	None	9						
						45-	With	compression fitting PT1/8 Φ1.6, 3.2, 4.8						
						46-	With	compression fitting PT1/4 Φ1.6, 3.2, 4.8						
6. Fixture						47-	With	compression fitting PT3/8 Φ3.2, 4.8						
								compression fitting PT1/2 Φ3.2, 4.8						
					49-	With	compression fitting PT3/4 Φ3.2, 4.8							
51								Sliding Flange Type (FA)						
7 Bomarks							0 Without							
7. Remarks							9	9 With (Please consult before ordering.)						

Series TD-18S Thermocouple Sensor

- External Dimensions -



■ Data sheet for TD-18S Sensor

ITEMS	CODE							SPECIFICATIONS					
1. Model	TD-18S-	G HEA	D TYPE	THERMO	COU	PLE Shea	ath Sl	ENSOR					
			250		250	mm J/65	50 °C	MAX, K/750 °C MAX					
		022	350	47.7	350	mm J/65	50 °C	MAX, K/750 °C MAX					
		032	500	Ψ3.2	500	mm J/65	50 °C	MAX, K/750 °C MAX					
2 Sheath Diam	neter (Φ)				Othe	ers (Plea	se co	nsult before ordering.)					
2. Sheath Blah			250		250	250 mm J/750 °C MAX, K/800 °C MAX							
	0.	040	350	# 4.0	350	350 mm J/750 °C MAX, K/800 °C MAX							
	X	040	500	Ψ4.0	500	500 mm J/750 °C MAX, K/800 °C MAX							
					Othe	Others (Please consult before ordering.)							
3. Length (L)			250		250	mm J/75	50 °C	MAX, K/800 °C MAX					
		064	350	Φ Ε 4	350	350 mm J/750 °C MAX, K/800 °C MAX							
		004	500	Ψ0.4	500	mm J/75	50 °C	MAX, K/800 °C MAX					
						ers (Plea	se co	nsult before ordering.)					
4 Element TV	DE			J	JIS	J 0.7	5 cl	ass 2					
T. LIEINENCI III	L			К	JIS	JIS K 0.75 class 2							
					N None								
5 Lead Wire					С	3000 m	nm (3	merters) Diameter : 0.3 mm x 7, glass wool coating					
5. Ledu Wire					F	6000 m	nm (6	merters) Diameter : 0.3 mm x 7, glass wool coating					
					Х	Others	(Plea	se consult before ordering.)					
						00-	None	9					
						45-	With	compression fitting PT1/8 Φ3.2, 4.8					
						46-	With	compression fitting PT1/4 Φ3.2, 4.8, 6.4					
6.Fixture						47-	With	compression fitting PT3/8 Φ3.2, 4.8					
						48-	With	compression fitting PT1/2 Φ3.2, 4.8					
						49-	With	compression fitting PT3/4 Φ3.2, 4.8					
							Sliding Flange Type (FA)						
7 Remarks							0	Without					
7 including							9 With (Please consult before ordering.)						

Series **RD** R. T. D. Sensor

Series RD-11C R. T. D. Sensor



■ Data sheet for RD-11C Sensor

ITEMS	CODE						SPECIFICATIONS					
1. Model	RD-11C-	SLEEV	/E TYPE R.	T.D. Pt10	0 JIS	SENSOR						
			150		150	mm						
			250		250	mm						
		048	350	Φ4.8	350	mm						
2. Protecting tub	e Diameter (Φ)		500		500 mm							
	_				Othe	ers (Pleas	se consult before ordering.)					
1	š.		150		150	mm						
3. Length (L)			250		250	mm						
		064	350	Φ6.4	350	mm						
			500		500	00 mm						
					Oth	ers (Pleas	se consult before ordering.)					
4. R. T. D. Eleme	ent			F	JIS	Pt100 cla	ss B					
					C 3000 mm (3 merters) Vinyl lead wire							
5. Lead Wire					F 6000 mm (6 merters) Vinyl lead wire							
					Х	Others	(Please consult before ordering.)					
						00 -	None					
						45-	With compression fitting PT1/8 Φ4.8					
						46-	With compression fitting PT1/4 Φ4.8, 6.4					
6. Fixture						47-	With compression fitting PT3/8 Φ4.8, 6.4					
						48-	With compression fitting PT1/2 Φ4.8, 6.4					
						49-	With compression fitting PT3/4 Φ4.8, 6.4					
						51 -	Sliding Flange Type (FA)					
7 Remarks							0 Without					
7. INCITICITINS							9 With (Please consult before ordering.)					

Series RD-18C- R. T. D. Sensor

- External Dimensions -



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■ Data sheet for RD-18C Sensor
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ITEMS	CODE		SPECIFICATIONS											
1. Model	RD-18C-	G HEAD	TYPE R.	T. D. Pt1	O JIS	SENSOR								
			150		150 n	nm								
			250		250 n	nm								
		048	350	Φ4.8	350 mm									
2. Protecting tube D	iameter (Φ)		500		500 mm									
					Other	rs (Please	consul	t before ordering.)						
&			150		150 mm									
3. Length (L)	3. Length (L) 250					nm								
	064 350 Φ6.4													
	500							500 mm						
				Other	rs (Please	consul	t before ordering.)							
4. R. T. D. Element				F	JIS Pt	100 class	В							
					Ν	None								
5 Lead Wire					C 3000 mm (3 merters) Vinyl lead wire									
5. Ledd Wire					F	6000 mm (6 merters) Vinyl lead wire								
					Х	Others	(Please consult before ordering.)							
						00 -	None							
						45-	With o	compression fitting PT1/8 Φ4.8						
						46-	With o	compression fitting PT1/4 Φ4.8, 6.4						
6. Fixture						47-	With o	compression fitting PT3/8 Φ4.8, 6.4						
						48-	With o	compression fitting PT1/2 Φ4.8, 6.4						
						49-	With o	compression fitting PT3/4 Φ4.8, 6.4						
						51 -	Sliding Flange Type (FA)							
7 Remarks						ļ	0 Without							
							9 With (Please consult before ordering.)							

Series RD-22C R. T. D. Sensor



■ Data sheet for RD-22C Sensor

ITEMS	CODE					SPECIFICATIONS				
1. Model	RD-22C-	G HEA	AD TYPE W	ith Fittin	g Nippl	e R. T. D. Pt100 JIS SENSOR				
			150		150 n	nm				
			200		200 r	nm				
		064	250	Φ6.4	250 mm					
2. Protecting tub	e Diameter (Φ)		300		300 mm					
	-				Others (Please consult before ordering.)					
& 150						nm				
3. Length (L)	3. Length (L) 200					nm				
		080	250	Φ8.0	250 r	nm				
			300		300 r	nm				
					Others (Please consult before ordering.)					
4. R. T. D. Eleme	nt			F	JIS P	t100 class B				
					Ν	None				
5 Lead Wire					С	3000 mm (3 merters) Vinyl lead wire				
5. Ledu Wire					F	6000 mm (6 merters) Vinyl lead wire				
					Х	Others (Please consult before ordering.)				
6. Fixture						14 - R (PT) 1/2 Fitting Nipple				
7 Remarks						0 Without				
						9 With (Please consult before ordering.)				

Series RD-10M R. T. D. Sensor

- External Dimensions -



- + Fixture - +Lead Wire Length +R.T.D. Element +Sheath Length (L) •Series

Data sheet for R	D-10M Sensor											
ITEMS	CODE							SPECIFICATIONS				
1. Model	RD-10M-	DRIP	PROOF 1	TYPE R.T.	D. Pt	100 JIS SI	ENSO	R				
2. Protecting tul	be Diameter (Φ)		100		100	mm						
&		070	250	Φ7.0	250 mm							
3. Length (L)					Others (Please consult before ordering.)							
4. R. T. D. Elem	ent	F JIS Pt100 class B										
E Lood Wine					В	2000 mm (2 merters) silicon lead wire						
5. Lead wire					Х	Others	(Plea	se consult before ordering.)				
						00 -	00 - None					
						46-	With compression fitting PT1/4 (non-standard feature)					
C Finture (anti-						47-	Wit	h compression fitting PT3/8				
6. Fixture (optio	50)					48-	Wit	h compression fitting PT1/2				
						49-	Wit	h compression fitting PT3/4				
						51 -	Slid	ing Flange Type (FA)				
7 Demerike							0	Without				
7. Kemarks							9	With (Please consult before ordering.)				

Series RD-12M R. T. D. Sensor



Data sheet for RD-12M Sensor

ITEMS	CODE					SPECIFICATIONS					
1. Model	RD-12M-	DRIP P	ROOF TYPE	R.T.D. P	t100 JIS SE	INSOR					
			150		150 mm						
			200	1	200 mm						
		048	250	Φ4.8	250 mm						
			300	1	300 mm	300 mm					
				1	Others (Please consult before ordering.)						
2. Protecting tub	e Diameter (Φ)		150		150 mm						
			200		200 mm						
8	§.	064	064 250 4		250 mm	250 mm					
3. Length (L)			300		300 mm						
					Others (P	lease consult before ordering.)					
			150		150 mm						
			200		200 mm						
		080	250	Φ8.0	250 mm						
			300		300 mm						
					Others (Please consult before ordering.)						
4. Element Type				F	JIS Pt100	class B					
					C 300	0 mm (3 merters) silicon lead wire					
5. Lead Wire				F 600	0 mm (6 merters) silicon lead wire						
					X Others (Please consult before ordering.)						
6.Fixture					14 -	R (PT) 1/2 Fitting Nipple					
7 Pemarks						0 Without					
7.Nellidiks					9 With (Please consult before ordering.)						

Series RD-11S R. T. D. Sensor

- External Dimensions -



Data	sheet	for	RD.	115	Sensor
Data	SHEEL	101	KD-	.112	SCHSOL

ITEMS	CODE		SPECIFICATIONS										
1. Model	RD-11S-	SLEEV	'E TYPE R.	r.D. Pt10) JIS S	SENSOR							
			150		150	mm							
			250		250	mm							
		032	350	Ф3.2	350	mm							
			500		500	500 mm							
					Othe	ers (Pleas	e cor	sult before ordering.)					
2. Sheath Dian	neter (Φ)		150		150 mm								
			250		250 mm								
-	&	048	350	Φ4.8	350	350 mm							
			500		500	mm							
3. Length (L)					Othe	ers (Pleas	e cor	sult before ordering.)					
			150		150	mm							
			250		250	mm							
		064	350	Ф6.4	350 mm								
			500		500	mm							
					Othe	ers (Pleas	e cor	sult before ordering.)					
4. Element Typ	e			F	JIS F	JIS Pt100 class B							
					C	C 3000 mm (3 merters) Vinyl lead wire							
5. Lead Wire					F	6000 m	m (6 i	merters) Vinyl lead wire					
					Х	Others (Pleas	se consult before ordering.)					
						00 -	Non	e					
						45-	With	compression fitting PT1/8 Φ3.2, 4.8					
						46-	With	compression fitting PT1/4 Φ3.2, 4.8, 6.4					
6. Fixture						47-	With	compression fitting PT3/8 Φ3.2, 4.8, 6.4					
					48-	With	compression fitting PT1/2 Φ3.2, 4.8, 6.4						
					49-	With	compression fitting PT3/4 Φ3.2, 4.8, 6.4						
						51 -	Sliding Flange Type (FA)						
7 Remarks							0	Without					
7. Remains						[9	With (Please consult before ordering.)					

Series RD-18S R. T. D. Sensor

- External Dimensions -



■ Data sheet for RD-18S Sensor

ITEMS	CODE		SPECIFICATIONS										
1. Model	RD-18S-	G HEA	AD TYPE R.	T. D. Pt:	100 JI	S SENSO	R						
			150		150	mm							
			250		250	mm							
		032	350	Φ3.2	350	mm							
			500		500	mm							
					Othe	ers (Pleas	e cor	nsult before ordering.)					
2. Sheath Diam	neter (Φ)		150		150 mm								
			250		250								
1	&	048	350	Φ4.8	350 mm								
			500		500	500 mm							
3. Length (L)						ers (Pleas	e cor	nsult before ordering.)					
			150		150	mm							
			250		250	mm							
		064	350	Ф6.4	350	mm							
			500		500	mm							
					Others (Please consult before ordering.)								
4. Element Typ	e			F	JIS Pt100 class B								
					С	3000 (3	mert	ers) Vinyl lead wire					
5. Lead Wire					F	6000 (6	mert	ers) Vinyl lead wire					
					Х	Others (Pleas	e consult before ordering.)					
						00 -	Non	e					
						45-	With	n compression fitting PT1/8 Φ3.2, 4.8					
						46-	With	n compression fitting PT1/4 Φ3.2, 4.8, 6.4					
6. Fixture						47-	With	n compression fitting PT3/8 Φ3.2, 4.8, 6.4					
					48-	With	n compression fitting PT1/2 Φ3.2, 4.8, 6.4						
					49-	With	n compression fitting PT3/4 Φ3.2, 4.8, 6.4						
5								ng Flange Type (FA)					
7 Remarks							0	Without					
7 including							9	With (Please consult before ordering.)					

Series **R-50M** R. T. D. Sensor

Series R-50M R.T.D. Sensor



Data sheet for R-50M Sensor

ITEMS	CODE		SPECIFICATIONS											
1. Model	R-50M-	Freeze	e/cool/l	ow tem	peratur	e high humidity type sensor (Temperature)								
2 Number o	folomonto	1	1 ele	ment										
2. Number 0	relements	2	2 ele	ment										
3. Element Ty	/pe (*)		F	Pt10	0									
				Q	Class	4								
4 . Class (grade) S Cla						В								
X 0						ers (Please consult before ordering.)								
0						None								
					1E	5 merters Vinyl lead wire ($0.3^{\circ} \times 3$)								
					1J	J 10 merters Vinyl lead wire (0.3° × 3)								
					3E	5 merters Vinyl lead wire ($0.3^{\circ} \times 6$)								
E Lood wire	nosification				3J	10 merters Vinyl lead wire ($0.3^{\circ} \times 6$)								
5. Leau wire s	specification				5E	5 merters Silicon lead wire ($0.3^{\circ} \times 3$)								
					5J	10 merters Silicon lead wire $(0.3^{\circ} \times 3)$								
					7E	5 merters Silicon lead wire (0.3 × 6)								
					7]	10 merters Silicon lead wire $(0.3^{\circ} \times 6)$								
9X						Others (Please consult before ordering.)								
C. Dementic						0 Without								
b. Remarks						9 With (Please consult before ordering.)								

(STD series is manufactured on special order basis when and if there is no specification found in the standard TD series suitable for your particular requirements.)

STDSeries Special Order Thermocouple Model

Ordering Information

Usable temperature limit: Limit of temperature that can be used continuously in air. Note: 1. The terminal box is not water-proof and drip-proof.

2. When installing sensor, set terminal box and sleeve below.

Items	Code		_										Sp	ecificatio	ons							
Series	STD-	Special	order ty	pe therr	nocoup	ole no code	o coloctio	n tabla	chour	00.00	000 14											
Туре			Selec	t from tr	ne snap	be code	e selectio	n tadie	SNOWF	1 on pa	ige 14											
Protecting tube	type		C-	Chor	th typ																	
			3-	31160	ui type	5		She	ath tvi	ne					1					General type		
					Out	ter				Worl	king lin	nits (°C))			0)uter					
				Code	diam	eter	2 pairs			SUS31	6		Inc	conel	Code	dia	meter	ieter 2 pairs		Working li	mits (°C)	
					(m	m)	·	Т	J	E	K	N		K	1	(mm))		5	. ,	
				005	Ф0).5		300	400	600	600	600	6	600								
				010	Φ1	.0		300	450	650	650	650	6	50								
				016	Φ1	.6		300	450	650	650	650	6	50	_							
				023	Φ2	.3		300	450	750	750	650	6	250	_							
				048	Φ4	1.8	0	350	750	800	800	800	, c	00	048		b4 8		1			
Sheath & Protect	tina tubo di:	amotor											C		050	0	Þ5.0					
Sheddrick Hotee	ang tabe an	ameter												060	0	Þ6.0	0]				
				064	Φ6	6.4 o 3		350	750	800	800	800	1	000	064	0	Þ6.4	0	C	epends on the thermo	couple wire	liameter.
				080	Φ8	3.0	0	350	/50	800	900	900	1	050	080		P8.0	0	I K	teter to "lolerance of t	hermocouple	and limit of
															120		Φ10 Φ12	0		verneaung (page 20)	•	
															130		Φ13	0	1			
															150		Ф15	0]			
															160	-	Φ16	0				
														200	0	Φ20 *22	0	-				
				000	Otho	-									220		Ψ22	0	1			
												Characto	rictics		torial							
											ilai acte	lisuce	регша	lici idi			Augilable	matorials for				
Material Working limits temperature											ature lin	nit			Gene	ral char	acteristics	Available	ath type			
- tempe										cemper			Go	od corro	osion and	d thern	nal resistances	5110	ar type			
M SUS316 850 '										°C			900 \$	۰C	(su	perior t	o SUS30	4)			0	
					F	SUS3	304		850 °C				900 °C				od corro	osion and	d thern	nal resistances		
Material of the p	rotectina tu	be				Titanium			400 °C			500 °C			°C	Ha	ving che	emical coi	rosion	resistance	Lowor th	on Φ8 0 aro
	,, j				N	Incon	nel			1000	°C			1100 °	°C	Ha	ving the	rmal and	corros	ion resistances	p	ian 46.0 are issible
					Q	Quar	tz			1000	°C			1050 °	°C	Ha	ving stro istance	ong acid	resistar	nce, but no good alkali		
					В	Porce	elain PT1			1500	°C			1600 °	°C	Un	der goo	d atmosp	here s	uch as in an electric		
					S	Porcelain PT0				1600	°C			1800 9	°C	Sui	nace table foi	r ovidatio	n redu	ction atmosphere		
					X	Othe	Other			1000	0			1000	0	1 000		- oxidade				
Length of air coo	bler({)							rd in m	nm unit	t											e L	
										[
Insertion length	(L)									Reco	ord in r	nm unit	:. The v	The values of 999 mm or higher will be recorded with a remark with 999.						Ч		
										U	Non	-ground	led									
Temperature me	asuring jund	tion								G	Grou	Inded										
										E	Tip	open										
Fixture												0-	None	t from t	the firthwe code colortion table about an arr 15							
												<u> </u>	Jelec	T: The	rmocou	nle T.	K: Ther	mocoupl	e K. R:	Thermocouple R. 1: Th	ermocouple]	
Thermocouple ty	/pe													N: The	ermocou	iple N	, B: The	rmocoup	le B, E:	Thermocouple E, S: Th	nermocouple S	5
														X: Oth	ner							
Nomber of wires														1	1 Pair	r						
														2	Z Pair		iss 2 ara	ade 0 25	(just f	or S and R)		
															F	Cla	iss 1 gra	ade 0.4 (precisi	on type except S, R ar	nd B)	
Class (grade)															G	Cla	iss 3 gra	ade 0.5 (just fo	r B)		
															H	Cla	iss 2 gra	ade 0.75	(gene	rally used T, J, E, K and	d N)	K and M
															J		None	aue 1.5 (just toi	temperature below 0 d	egree for 1, E	, k and N)
																1	Vinyl o	coating,	7/0.3,	-20–90 °C		
Componentine	iro ovtoric.	cnocificati	ion													2	Vinyl o	coating,	7/0.65	, -20–90 °C		
(If you seled	t 10, 11 17	specificati 13, 39 in	[Tyne]	please s	select r	other th	າan "∩• №	one")								3	Glass	wool coa	ating, 7	7/0.3, 0–150 °C		
(II YOU SCIECI	. 10, 11, 12,	,,	rube]	picase s		and u		one .j								4	Glass	wool coa	ating, 7	7/0.65, 0–150 °C		
																5	Silicor	n coating	, 20/0	.18, -50–150 °C		
Length of compe	ensation win	ρ														9	Other	00	None	<u></u>		
(If you select	t 10, 11, 12	, 13, 39 in	[Shape], please	select	other 1	than "000): None	".)								0		Reco	rd in cm unit. The value	es of 999 or h	igher will be
([Compensat	ing lead wir	e exterior	specific	ations],	if "0: N	lone" is	s selected	l, it bec	omes	"000: r	no com	ipensati	ion lead	d wire".))				recor	ded with remark(s)		
Composetier		atmost.																	0	No compensation wire		
compensation w				ol m!	o oc!-	+ 0+	the life	Nor -"	、 、										U	M3.5 crimp Y terminal		
(IT YOU SELECT	ina lead wir	, 13, 39 tC e exterior	n Lonape specific	ej, pieas ations]	if "∩• №	.u other Ione" is	: (nañ "U: s selected	ivone".) omes '	"0· no	comre	Insation	lead v	vire")		N No terminal (disconnected)						
				,				., .:		5. 110	Sompe								9	Other		
Remarks																				0 Without		
																				9 With		

(SRD series is manufactured on special order basis when and if there is no specification found in the standard RD series suitable for your particular requirements.)

SRD Series Special Order R.T.D. Model

Ordering Information

Note: 1. The terminal box is not water-proof and drip-proof.

- 2. When installing sensor, set terminal box and sleeve below 80 °C
- 3. When placing an order, please let us know the temperature zone you actually use.
- 3: We will select materials according to the usage conditions and produce them.

Items	Code									Spec	ifications	5					
Series	SRD-	Special	order typ	e R.T.D.													
Туре			Select f	rom the S	hape c	ode select	ion table	shown on	page 1	4							
			C-	General	type												
			M-	General	purpos	se moistui	e-proor tr	reatment									
Protecting tube	e type		S-	Sneath	туре		h = 6 = 1+ = = 4				Shape	code 10	can not be	selected.			
			1- V-	Othor	e-proor	treatmen	t of sheat	птуре									
			<u>^-</u>	Ourier	Dia	meter	2-ele	2-element		C: General type		*	M: General moisture	purpose -proof	S:	Sheath type	Y: Moisture-proof treatment of sheath
					()	nm)			1 616	ement	2 eie	ement	treatmer	nt *			type *
				010		Φ1.0				250 °C		_	-50 to 1	100 °C			
Sheath & Protect	ting tube diamet	er		016		Φ1.6 +2.2			0 to 4	250 °C	-	_	-50 to 1			-30 to 300 °C	-30 to 200 °C
				032		Ψ3.2 Φ4.0			0 to 2	250 °C		_	-50 to 1		-2	200 to 500 °C	-200 to 200 °C
*				048		ው ሳ .0 ከ4 8		0	0 to 2	250°C	0 to 2	250 °C	-50 to 1		-7	200 to 500 °C	-200 to 200 °C
 The stated 	value or each ap	plication t	tempera-	050		Φ5.0		0	0 to 2	250 °C	0 to 2	250 °C	-50 to 1	100 °C		100 to 300 °C	200 10 200 C
ture indicate	es the temperature	re range t	hat can	060		Φ6.0		0	0 to 2	250 °C	0 to 2	250 °C	-50 to 1	100 °C			
be produced	 Specification at 	the time	of order-	064		Φ6.4		0	0 to 4	400 °C	0 to 2	250 °C	-50 to 1	L00 °C	-2	200 to 500 °C	-200 to 200 °C
ing is require	ed for applicable	temperat	ure range	070		Φ7.0		0	0 to 4	450 °C	0 to 2	250 °C	-50 to 1	L00 °C			
band.				080		Ф8.0		0	0 to 4	450 °C	0 to 2	250 °C	-50 to 1	L00 °C	-2	200 to 500 °C	-200 to 200 °C
				100	¢	10.0		0	0 to !	500 °C	0 to 5	500 °C	-50 to 1	L00 °C			
				120	¢	12.0		0	0 to !	500 °C	0 to 5	500 °C	-50 to 1	L00 °C			
				160	¢	16.0		0	0 to !	500 °C	0 to 5	500 °C	-50 to 1	L00 °C			
				999	Oth	er											
					М	SUS316	: Good	corrosion	and the	rmal resi	stances	(superio	r to SUS304)			
					F	SUS304	: Good	corrosion	and the	rmal resi	stances						
Material of the	e protecting tube	2			O Quartz Having chemical corrosion resistance O Quartz Having strong acid resistance but no good alkali resistance												
					Q	Quartz	: Havin	g strong a	icia resis	stance, D	ut no go	od alkali	resistance				
Length of air (cooler (1)				^		Pecore	l in mm u	nit								0
Incortion long	th (1)							Record	in mm u	init. The	values o	f 999 mr	n or higher	will be red	corded	(A)	
								with a r	emark v	vith 999.						j de la constante de la consta	
Fixture									Selec	t from t	ne fixtur	e code s	election tal	ole shown	on pag	ge 15	
R. T. D. eleme	ent								F	Pt100 Other	-						
Number of ele	ments									1	1 elei	ment	nt				
										-	P	Amper	age specifie	ed for clas	s A (Pre	ecision type): 1	lmA
											Q	Amper	age specifie	ed for clas	s A (Pre	ecision type): 2	2mA
Class (grade)											R	Amper	rage specified for class B (Ordinary type): 1mA				mA
											S	Amper	age specifie	ed for clas	s B (Or	dinary type): 2	mA
											Х	Other					
												0	None				
												1	3-core wii	re, vinyl co	oated	U.3"×3, 0.06Ω	/m, 0–60 °C
Lead wire exterio	or specification											2	3-core wit	re, vinyl co	bated *	U./5"×3, U.U3S	2/m, U-60 °C
(*2 This mark	is for lead wire	for 2 elen	nents.)									3	3-core Wil	re, viriyi Co	0 20.00 ↑	- U.S X0, U.Ub	150 °C
(If you select	10, 11, 12, 13, 3	9 for [2. 9	Shape], ple	ease selec	t other	than "0:	None".)					5	3-core wit	re, silicon	0.75%	x3. 0.030/m -	50–150 °C
												6	6-core wi	re, silicon	*2 0.3°	×6. 0.06Ω/m.	-50–150 °C
												9	Other	.,		.,,	
Length of lead w	ire												000	None			
(If you select	10, 11, 12, 13, 3	9 for [Sh	ape] , plea	ase select	other t	han "000:	none".)						000	Record i	in cm u	nit. The values	of 999 or higher will be
([Lead wire e	xterior specificat	ions], if "	0: None" is	s selected	, it bec	omes "00	0: without	t lead wire	e".)					recorded	d with r	remark(s).	
														0	No le	ad wire	
Lead wire end tre	eatment													U	M3.5	crimp Y termir	nal
(If you select	10, 11, 12, 13, 3	9 as [Sha	pe], pleas	e select o	ther tha	an "0: Nor	ne".)							Y	M4 c	rimp Y termina	
(When "0: No	one" is selected in	n [Lead w	ire exterio	or specifica	ations],	it become	es "0: No	lead wire'	.)					N	No te	erminal (discon	nected)
														9	Othe	r	
Remarks															0	Without	
															9	WITH	



Shape code selection table TC / Thermocouple RTD / resistance temperature detector



Fixture code selection table

■Fitting Nipple

			Dimension (unit:mm) / Material:SUS304 (*)								
Category	Code	Screw standard	Nominal diameter D	Nominal diameter D B		L	н				
	01	G(PF)1/8	1/8	14	16	10	5				
C(DE)	02	G(PF)1/4	1/4	17	19.6	12	7				
G(PF) (Straight)	03	G(PF)3/8	3/8	21	24	13	7				
	04	G(PF)1/2	1/2	26	30	16	8				
	05	G(PF)3/4	3/4	32	37	20	10				
	11	R(PT)1/8	1/8	14	16	10	5				
D(DT)	12	R(PT)1/4	1/4	17	19.6	12	7				
(Taper)	13	R(PT)3/8	3/8	21	24	13	7				
	14	R(PT)1/2	1/2	26	30	16	8				
	15	R(PT)3/4	3/4	32	37	20	10				



* Standard material for Fitting Nipple is SUS304. However, according your request, we may manufacture the nipple with any other material.

■Pressure flange

Withstanding	Nominal diameter	Code	D	imension Material:S	Applicable pipe		
pressure	(inch)		D	C	d t		diameter
	10 (3/8)	23	75	55	12	0	17.3
FV	15 (1/2)	24	80	60	12	9	21.7
ЛС	20 (3/4)	25	85	65	12	10	27.2
	25(1)	26	95	75	12	10	34.0
	10 (3/8)	33	90	65	15	12	17.3
10K	15 (1/2)	34	95	70	15	12	21.7
	20 (3/4)	35	100	75	15	14	27.2
	25(1)	36	125	90	19	14	34.0



* Standard material for Pressure flange is SUS304. However, according your request, we may manufacture the nipple with any other material.

Compression Fitting

Codo	Screw	Applicable protecting tube diameter						
Coue	standard	Applicable protecting tube diameter	Refer to page 16 for dimensions.					
45	R(PT)1/8	Φ1.6, 3.2, 4.8						
46	R(PT)1/4	Ф1.6, 3.2, 4.8, 6.4, 8.0	Material: Body / SUS304, Cotter / Brass: C3713					
47	R(PT)3/8	Φ3.2, 4.8, 6.4, 8.0	We also accept Teflon, SUS, etc. as the material for the cotter.					
48	R(PT)1/2	Φ3.2, 4.8, 6.4, 8.0, 10	Please contact your sales representative for details.					
49	R(PT)3/4	Φ3.2, 4.8, 6.4, 8.0, 10, 12						

■Sliding flange

Pressure resistance / nominal diameter	Symbol	Code	Material, screw used	Refer to page 16 for dimensions.		
	FA	51	Material : ZDC (Zinc alloy)			
	(Φ50)	51	Used screw SUS pan head 4 \times 12			
11051/204	FB	52	Material : FC200 (Cast iron)			
JISSKZUA	(Ф85)	52	Used screw M6×20			

■Ferrule Cap

Nominal	Cada	Dimer	Dimension (unit: mm)						
diameter	Code	D	В	A	Materiai				
1S	65	20.1	42 E	FOF					
1 ¹ / ₂ S	66	30.1	43.5	50.5	SUS316L				
2S	67	50.8	56.5	64.0					
2 ¹ / ₂ S	68	63.5	70.5	77.5					
35	69	76.3	83.5	91.0	1				

* Standard material for Ferrule is SUS316L. However, according your request, we may manufacture the Ferrule with any other material.



Double Protection

Double Protection Thermo-well

■WP Series Type Welded



Ordering Information

Items	Code		Specifications								
1.Series	WP-	Weld	/elded type								
2 Типо		Ν	Nipple type								
z. type		F	Fange	type	/pe						
3. Fixing brac	cket size		For details, refer to Fixing bracket code selection table (page 14)								
080 Outer diameter size Φ8.0 (inner diameter Φ6.0)						ameter size Φ8.0 (inner diameter Φ6.0)					
				100	Outer di	Duter diameter size Φ10.0 (inner diameter Φ7.0)					
4. Protecting	tube diamete	er (d)		120	Outer diameter size Φ12.0 (inner diameter Φ9.0)						
				150	Outer diameter size Φ 15.0 (inner diameter Φ 11.0)						
					Other th	Other than those above. Dimension code $\Phi \Box \Box \Box \Box$. Processed with special instructions					
5. Insertion le	ength (L)	(*)				Enter in mm. If 999 mm or more long length is required, specify 999 and inform your required length.					
6. Material of the protecting tube						□ Refer to the code selection table (pages 11 to 12) for the protective tube material.					
7 Domorka						0 Without					
7. Remarks 9 With											

* When calculating dimension L, make sure that the total length of the Double protection tube is 10.0 mm or more longer than the insertion length of the sensor used.

■WB Series Type Drilled

•Nipple type



•Fange type



Unit: mm

Unit: mm

Ordering	Information

Items	Code		Specifications									
1.Series	WB-	Drille	rilled type									
N Nipple type												
z. Type		F	Fange type									
3. Fixing bra	cket size		For details, refer to Fixing bracket code selection table (page 14)									
4. Protecting tube diameter (d1) Dimension code $\Phi \Box \Box \Box$												
5. Protecting	tube diame	eter (d	2)			Dimensi	on cod	e Φ□□.□				
C. Incontion	longth (I)	(*)					Ente	er in mm. If 999 mm or more long length is required, specify 999 and inform your required				
6. Insertion	length (L)	(*)					leng	length.				
7. Material of	f the protect	ting tu	be					Refer to the code selection table (pages 11 to 12) for the protective tube material.				
8. Protective tube inner diameter									I⊓□ Inner diameter dimension code Φ□□.□			
0. Domarka	0. Descentes								0	Without		
9. Remarks									9	With		

* When calculating dimension L, make sure that the total length of the Double protection tube is 10.0 mm or more longer than the insertion length of the sensor used.

Fixing bracket (sold separately)

■QTC Series Compression Fitting

•Dimension

•Dimension					τ	Jnit: mm
Symbol	A:Screw standards	(B)	С	D	E	F
Code: 45	R(PT)1/8	(30)	12	9	13	13
Code: 46	R(PT)1/4	(38)	14	12	17	17
Code: 47	R(PT)3/8	(40)	15	13	19	17
Code: 48	R(PT)1/2	(47)	15	17	23	21
Code: 49	R(PT)3/4	(61)	21	19.5	29	23

Material



Body: SUS304

Cotter: C3713 (Brass)

We also accept Teflon, SUS, etc. as the material for the cotter. Please contact your sales representative for details. note. There is no confidentiality.

Items	Code		Specificat	tions		
1.Series	QTC-	Compression	n Fitting			
			016		For Φ1.6	
		45-	023		For Φ2.3	
		(R1/8)	032		For Φ3.2	
			048		For Φ4.8	
			016		For Φ1.6	
			023		For Φ2.3	
		46-	032		For Φ3.2	
		(R1/4)	048		For Φ4.8	
			064		For Φ6.4	
			080		For Φ8.0	
			023		For Φ2.3	
		47	032		For Φ3.2	
		4/-	048		For Φ4.8	
2 . Screw stan	dards /	(R3/8)	064		For Φ6.4	
Applicable	protecting		080		For Φ8.0	
tube diame	ter		023		For Φ2.3	
			032		For Φ3.2	
		10	048		For Φ4.8	
		40-	064		For Φ6.4	
		(R1/2)	080	For Φ8.		
			100	For Φ10.		
			120	For Φ12.		
			023		For Φ2.3	
			032		For Φ3.2	
		10	048		For Φ4.8	
		49-	064		For Φ6.4	
		(K3/4)	080		For Φ8.0	
			100		For Φ10.0	
			120	For Φ12.0		
2 Demender				0	With	
3.Remarks				9	Without	

■QTF Series Sliding Flange

•Dimension

- Dimension										
Symbol	В	С	D	d	t	Н	Used screw			
Code: 51	18	35	50	45	35	15	SUS Pan bead 4 x 12			
(Type FA)	10	55	50	ч. J	5.5	15				
Code: 52	25	CE	05	12	10	40	MC x 20			
(Type FB)	35	65	85	12	10	40	140 × 20			

Material

Type FA: ZDC (Zinc alloy) Type FB: FC200 (Cast iron)



Ordering Information

Items	Code	Specifications				
1. Series	QTF-	Sliding Flange				
			016	For Φ1.6		
			023	For Φ2.3		
			032	For Φ3.2		
			040	For Φ4.0		
		51-	048	For Φ4.8		
		(th (the EA)	060	For Φ6.0		
		(type FA)	064	For Φ6.4		
			070	For Φ7.0		
			080	For Φ8.0		
2. Flange type	/Applicable		100	For Φ10.0		
protective to	protective tube outer diameter		120	For Φ12.0		
diameter			064	For Φ6.4		
			070	For Φ7.0		
			080	For Φ8.0		
			100	For Φ10.0		
			120	For Φ12.0		
			130	For Φ13.0		
			150	For Φ15.0		
			160	For Φ16.0		
			200	For Φ20.0		
			220	For Φ22.0		
2 Bomarks	2. Demerke			0 With		
J. Kelliaiks	5. Remarks			9 Without		

SUPPLEMENTARY ITEM

TERMINAL BOX

*1: Terminal Box does not exceed 80 °C.

2: The terminal box is not water-proof/splash-proof.

•SPECIFICATIONS

ITEM		Makavial	CROUND	Chain	
NAME		Materia	GROUND	Material / Appearance	
Type M (Large Model)		Aluminum alloys (Both body and cap)		C3713 (Brass) / Chrome-nickel steel plating	
Type G (S	mall Model)	Aluminum alloys (Both body and cap)	C(DE)1/2 (15A)	C3713 (Brass) / Chrome-nickel steel plating	
Lead port double type terminal box (For 2 elements)		Aluminum alloys (Both body and cap)	Inner diameter Φ14.2	C3713 (Brass) / Chrome-nickel steel plating	
Phenolic resin terminal box		Phenolic resin		C3713 (Brass) / Chrome-nickel steel plating	
Open type TL (Large Model) Type TS (Small Model)		Body: Aluminum alloy Terminal board: Phenolic resin	M4 x 6		
		Body: Aluminum alloy Terminal board: Phenolic resin	M3 x 6		
Lead port twin type terminal box (For 2 elements)		Aluminum alloy (Both body and cap)	G(PF)1/2	C3713 (Brass) / Chrome-nickel steel plating	

•OUTLINE DRAWING, TERMINAL INSIDE VIEW

■Type M (Large Model)

















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■Additional items

• The specifications of the sleeves and protective springs used in the standard detectors RD and TD are as follows. Sleeve: $\Phi 8.0 \times 40 \text{ mm}$ Material / SUS304 or SUS303 Protection spring: 50 mm appearance / nickel plating

- Special orders such as the STD series and SRD series may differ. Please contact your sales representative for details.
- Compensating lead and lead wire length includes the exposed area (standard 80 mm / center of crimped Y terminal).
- The standard size of the crimping Y terminal of the TD / RD / R-50M series is M3.5, but it is possible to change to other sizes and shapes with the custom-made STD / SRD series.
- Please contact your sales representative for details.
- •About joining of fixed nipple and pressure flange
- In the case of the general type: The protective tube outer diameter mm 3.2 mm or less is produced with silver solder, and the larger diameter is produced by argon welding.

In the case of the sheath type: In principle, silver solder is used, but it may differ depending on the specifications and outer diameter. Please contact your sales representative for details.

- If the sensor with terminal box has an air-cooled part or support and the outer diameter of the protective tube or sheath tube is less than $\varphi 4.8$ mm, the outer diameter of the air-cooled part or support is manufactured as standard q8. For non-standard products, please contact your sales representative.
- •In the STD series Compensating lead wire termination (No. 15 on page 12) and SRD series lead wire termination (No. 14 on page 13), "No terminal" is generated as follows.



Standards for Thermocouple

∎Tole	Tolerance and Working Limits for Thermocouple JIS C 1602-1995						
		Classification of tolerances (New standards)				Working limit and Overheated working limit	
Types		Class 1	Class 2	Class 3	Diameter of element wire (mm)	Working Limit Temperature (°C)	Overheated Working Limit Temperature (°C)
	Tolerance for			600°C or higher and less than 800°C			
	temperature range			±4°C			
В	Tolerance for		600°C or higher and less than 1700°C	800°C or higher and less than 1700°C	0.50	1500	1700
	temperature range		±0.0025 · t	±0.005 · t			
	Grade (former standard)*		-	Grade 0.5			
	Tolerance for	0°C or higher and less than 1100°C	0°C or higher and less than ±600°C				
	tomporaturo rango						
	Tolerance for		600°C or higher and less than 1600°C				
R, S	tomporaturo rango				0.50	1400	1600
	Grado		±0.0025 [t]				
	(former standard)*		Grade 0.25				
	Tolerance for	-40°C or higher and less than +375°C	-40°C or higher and less than +333°C	-167°C or higher and less than +40°C	0.65	850	900
	temperature range	+1.5%	+2.5%	+2.5%	1.00	950	1000
	Tolerance for	375°C or higher and less than 1000°C	333°C or higher and less than 1200°C	-200°C or higher and less than -167°C	1.60	1050	1100
N	temperature range	+0.004 • 1 + 1	+0.0075 • 1 t 1	+0.015 • 1 + 1	2.30	1100	1150
	Grade	10.001 [1]	20.0073 [1]	10.015 [1]	2.50	1100	1150
	(former standard)*				3.20	1200	1250
	Tolerance for	-40°C or higher and less than +375°C	-40°C or higher and less than +333°C	-167°C or higher and less than +40°C	0.65	650	850
	temperature range	±1.5℃	±2.5°C	±2.5°C	1.00	750	950
	Tolerance for	375°C or higher and less than 1000°C	333°C or higher and less than 1200°C	-200°C or higher and less than -167°C	1.60	850	1050
ĸ	temperature range	±0.004 · t	±0.0075 · t	±0.015 · t	2.30	900	1100
	Grade (former standard)*	Grade 0.4	Grade 0.75	Grade 1.5	3.20	1000	1200
	Tolerance for	-40°C or higher and less than +375°C	-40°C or higher and less than +333°C	-167°C or higher and less than +40°C	0.65	450	500
	temperature range	±1.5℃	±2.5°C	±2.5°C	1.00	500	550
_	Tolerance for	375°C or higher and less than 800°C	333°C or higher and less than 900°C	-200°C or higher and less than -167°C	1.60	550	600
E	temperature range	±0.004 · t	±0.0075 · t	±0.015 · t	2.30	600	750
	Grade (former standard)*	Grade 0.4	Grade 0.75	Grade 1.5	3.20	700	800
	Tolerance for	-40°C or higher and less than +375°C	-40°C or higher and less than +333°C		0.65	400	500
	temperature range	±1.5℃	±2.5°C		1.00	450	550
	Tolerance for	375°C or higher and less than 750°C	333°C or higher and less than 750°C		1.60	500	650
J	temperature range	±0.004 · t	±0.0075 · t		2.30	550	750
	Grade (former standard)*	Grade 0.4	Grade 0.75		3.20	600	750
	Tolerance for	-40°C or higher and less than +125°C	-40°C or higher and less than +133°C	-67°C or higher and less than +40°C	0.32	200	250
	temperature range	±0.5°C	±1°C	±1°C	0.65	200	250
-	Tolerance for	125°C or higher and less than 350°C	133°C or higher and less than 350°C	-200°C or higher and less than -67°C	1.00	250	300
'	temperature range	±0.004 · t	±0.0075 · t	±0.015 · t	1.60	300	350
	Grade (former standard)*	Grade 0.4	Grade 0.75	Grade 1.5			

Note) • The tolerance means the allowable maximum limits for the value obtained by subtracting the temperature at the temperature measuring junction from the temperature obtained by converting thermo-electromotive force based on reference table for thermoelectromotive force. • Working Limits are the limits of temperature within which the thermocouple could be continuously used in the atmosphere.

• Overheated working limit is the temperature limit up to which the thermocouple may be used for short time period when inevitably required.

• Class 1 of the tolerance for thermocouple R/S will be applied to the standard thermocouples.

Remark 1. | t | is a modulus value of measured temperature (°C) regardless over or under the reezing point (+/-).

2. * is indicated for reference.

Insulation resistance and dielectric strength of the thermocouple (between terminal and protecting tube)

Item	Characteristics		
Insulation resistance	500V DC 10MΩ or higher		
Dielectric strength	500V AC for 1 minute or longer		

Remark 1. Applied to thermocouples with protecting tube

2. For ground mode, or of any structure under which a protecting tube is to be used as a

leg of wire for thermocouple, this test will not be conducted.

Standards for Thermocouple

11010		TKING LIMITS FOR SHEATH T	liennocoupies		JIS C 1	1002-19	,,,
Types		Classification of tolerances			OD of Metal Sheath	Metal Sheath (°C)	
		Class 1	Class 2	Class 3	(mm)	A	В
SNI	Tolerance for	-40°C or higher and less than +375°C	-40°C or higher and less than +333°C	-167°C or higher and less than +40°C	0.5	600	
	temperature range ±1.5°C		±2.5°C	±2.5°C	1.0, 1.5 (, 1.6) , 2.0	650	
	Tolerance for	375°C or higher and less than 1000°C	333°C or higher and less than 1200°C	-200°C or higher and less than -167°C	3.0 (,3.2)	750	
JIN	temperature range	±0.004 · t	±0.0075 · t	±0.015 · t	4.5 (,4.8)	800	900
	Grade				6.0 (,6.4)	800	1000
	(former standard)*				8.0	900	1050
	Tolerance for	-40°C or higher and less than +375°C	-40°C or higher and less than +333°C	-167°C or higher and less than +40°C	0.5	600	
	temperature range	±1.5°C	±2.5°C	±2.5°C	1.0, 1.5 (, 1.6) , 2.0	650	
сv	Tolerance for	375°C or higher and less than 1000°C	333°C or higher and less than 1200°C	-200°C or higher and less than -167°C	3.0 (,3.2)	75	50
JI	temperature range	±0.004 · t	±0.0075 · t	±0.015 · t	4.5 (,4.8)	800	900
	Grade			Crade 1 F	6.0 (,6.4)	800	1000
	(former standard)*		Grade 0.75	Grade 1.5	8.0	900	1050
	Tolerance for	-40°C or higher and less than +375°C	-40°C or higher and less than +333°C	-167°C or higher and less than +40°C	0.5	600	
	temperature range ±1.5°C	±1.5°C	±2.5°C	±2.5°C	1.0, 1.5 (, 1.6) , 2.0	650	
CF.	Tolerance for 375°C or higher and less than 800°C temperature range ±0.004 · t	333°C or higher and less than 900°C ±0.0075 · t	-200°C or higher and less than -167°C ±0.015 · t	3.0 (,3.2)	750		
SE				4.5 (,4.8)	800	900	
	Grade		Crada 0.75	Grade 1.5	6.0 (,6.4)	800	900
	(former standard)*		Grade 0.75		8.0	800	900
Tolerance for	Tolerance for	-40°C or higher and less than +375°C	-40°C or higher and less than +333°C		0.5	40	0
	temperature range	±1.5°C	±2.5°C		1.0, 1.5 (, 1.6) , 2.0	45	i0
C 1	Tolerance for	375°C or higher and less than 750°C	333°C or higher and less than 750°C ± 0.0075 \cdot t		3.0 (,3.2)	650	
21	temperature range	±0.004 · t			4.5 (,4.8)	750	
	Grade		Crede 0.75		6.0 (,6.4)	750	
(former standard)*			Gidue 0.75		8.0	750	
	Tolerance for temperature range -40°C or higher and less than +125°C ±0.5°C	-40°C or higher and less than +125°C	-40°C or higher and less than +133°C	-67°C or higher and less than +40°C	0.5	30	0
		±1°C	±1℃	1.0, 1.5 (, 1.6) , 2.0	30	0	
ст	Tolerance for 125°C or higher and less than 350°C	133°C or higher and less than 350°C	-200°C or higher and less than -67°C	3.0 (,3.2)	350		
51	temperature range	±0.004 · t	±0.0075 · t	±0.015 · t	4.5 (,4.8)	350	
	Grade	0	Contra 1 5	6.0 (,6.4)	35	;0	
	(former standard)*		Giade 0.75	Giade 1.5	8.0	35	i0
ote) Tl fr	te) The tolerance means the allowable maximum limits for the value obtained by subtracting the temperature at the temperature measuring junction from the temperature obtained by converting thermo-electromotive force based on reference table for thermo-electromotive force.			Remark 1. The series indicated within the parenthesis will be discontinued in future.			
				2. Material of metal sheath A: Austenitic stainless steel			

B: Corrosion and thermal resistant

super alloy

Remark 1. | t | is a modulus value of measured temperature (°C) regardless over or under the freezing point (+/-).

2. * is for reference.

■ Insulation resistance and withstand voltage of sheath thermocouple (between terminal and metal sheath)

ITEM	Outer diameter of metal sheath (mm)	Characteristic		
Inculation resistance	0.5, 1.0, 1.5 ,(1.6), 2.0	100V DC 20 MΩ or more		
Insulation resistance	3.0, (3.2), 4.5, (4.8),6.0, (6.4), 8.0	500V DC 100 MΩ or more		
Withstand voltage	1.0, 1.5, (1.6)	100V AC 1 minute		
(Note)	3.0, (3.2), 4.5, (4.8), 6.0, (6.4), 8.0	500V AC 1 minute		

(Note)The outer diameter 0.5 mm of the metal sheath does not apply.

Remarks 1. Not applicable to grounded type.

2. For compensation wire attachment, use the smaller of the insulation resistance value specified in JIS C 1610.

3. Series in () will be abolished in the future.

Withstand voltage test is not conducted in our company.

The contents of this material are subject to change without notice.



* Be sure to follow the instruction manual when operating this device.

* This device is designed for industrial use to control temperature, humidity and other physical values.

Avoid using it for control of devices upon which human life is dependent.

* If the possibility of loss or damage to your system or property as a result of failure of any parts of the process exists, proper safety measures must be made before the instrument is put into use so as to prevent the occurrence of trouble.

Head Office & Saitama Factory ISO 9001/ISO14001 Certification Obtained

Temperature and Humidity Control Specialists

