J,E,K Type THERMOCOUPLES FOR GENERAL USE

DATA SHEET FTA,B,D

These thermocouples are convenient for measuring a wide range of temperature in general plants, and are availble in J, E and K type.

They are insulated with a porcelain tube, and then housed in a metal protecting tube for heat-, pressure-and corrosion-proofing.

SPECIFICATIONS

Applicable standard:

JIS C 1602—1995

Thermocouple element:

Material;

Symbol	Material	
	Positive lead	Negative lead
J	Steel	Alloy mainly made from copper and nickel
E	Alloy mainly made from nickel and chrome	Alloy mainly made from copper and nickel
K	Alloy mainly made from nickel and chrome	Alloy mainly made from nickel

Note: Positive lead means the one connected to positive terminal of the instrument measuring thermoelectromotive force, and negative lead means the one connected to the opposite terminal.

Class;

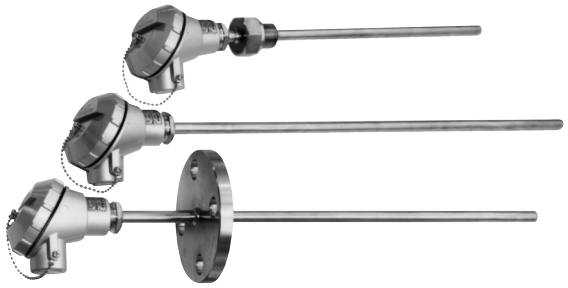
Class	Symbol of material
1	J, E, K
2	J, E, K
3	E, K

Note: Class3 is applicable only to low temperatures below 40°C.

Temperature accuracy;

Symbol	Class	Measured temperature (°C)	Tolerance
K	1	-40°C or more, less than +375°C	±1.5°C
		375°C or more, less than 1000°C	±0.004•|t|
	2	-40°C or more, less than +333°C	±2.5°C
		333°C or more, less than 1200°C	±0.0075•|t|
	3	-167°C or more, less than +40°C	±2.5°C
		-200°C or more, less than -167°C	±0.015•|t|
E	1	-40°C or more, less than +375°C	±1.5°C
		375°C or more, less than 800°C	±0.004•|t|
	2	-40°C or more, less than +333°C	±2.5°C
		333°C or more, less than 900°C	±0.0075•|t|
	3	-167°C or more, less than +40°C	±2.5°C
		-200°C or more, less than -167°C	±0.015•|t|
J	1	-40°C or more, less than +375°C	±1.5°C
		375°C or more, less than 750°C	±0.004•|t|
	2	-40°C or more, less than +333°C	±2.5°C
		333°C or more, less than 750°C	±0.0075•|t|

Note: Tolerance means the maximum allowable limit of the value calculated by subtracting the temperature of the temperature measuring junction from the temperature obtained by converting the thermal electromotive force by the reference thermal electromotive force.
|t| is the value indicated by temperature (°C) that is



Diameter of element; ϕ1, ϕ3.2

Normal limit and allowable overheat limit;

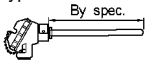
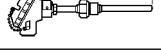
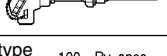
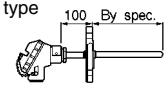
Symbol	Diameter of element [mm]	Normal limit [°C]	Allowable overheat limit [°C]
J	ϕ1	450	550
	ϕ3.2	600	750
E	ϕ1	500	550
	ϕ3.2	700	800
K	ϕ1	750	950
	ϕ3.2	1000	1200

Note: The normal limit means the temperature limit up to which the thermocouple can be used continuously in air.
Allowable overheat limit means the temperature limit up to which the thermocouple can be used for a short time, when necessary.

Material of protecting tube:

S ; 304 stainless steel R ; 310S stainless steel
W ; 316 stainless steel U ; 27Cr
*T ; 316L stainless steel J ; 20Cr-80Ni

Mounting and protecting tube form:

Mounting form \ Protecting tube form	ϕ12	ϕ22 or ϕ27
Insertion type 	A	D
Screw-in type 	F	—
Screw-in type 	J	—
Flange type 	M	Q

Note: The thermocouple of diameter ϕ27 in protecting tube form is applicable to the case where material of protecting tube is J or U.
In the case of U, and with mounting form D and Q, the double element is applicable.

Mounting method:

Insertion type;
Either movable flange (FTR), movable airtight flange (FTT), or movable airtight screw (FTS) is employed for mounting.

Screw-in type;
G3/4 (PF3/4) or R3/4 (PT3/4) external thread

Flange type;
JIS 10K-25A • JIS 20K-25A • JIS 30K-25A or JIS 63K-25A

Composition:

Mounting form	Diameter of element	Protecting tube material (Symbol)	Mounting method
Insertion type A	ϕ1	S • W • T*	Movable flange or movable airtight flange JIS 5K-25 • 10K-25 Movable airtight screw G3/4(PF3/4)
Insertion type D	ϕ3.2	S • W • T* R • U • J	Movable flange or movable airtight flange JIS 5K-25 • 10K-25 Movable airtight screw G1(PF1), G1 1/4 (PF1 1/4)
Screw-in type F • J	ϕ1	S • W • T*	Welded screw G3/4 (PF3/4), R3/4 (PT3/4)
Flange type M	ϕ1	S • W • T*	Welded flange JIS 10K-25 JIS 20K-25 JIS 30K-25 JIS 63K-25
Flange type Q	ϕ3.2	S • W • T* R • U • J	Welded flange JIS 10K-25 JIS 20K-25

Note: (1) On the J, E thermocouple of mounting method D, Q, protecting tube material is S, W, T.
(2) On the thermocouple of mounting method D and protecting tube material J, movable airtight screw is PF1/4.

Insertion length: See other table (page 5)

Working conditions:
See other table (pages 3 and 4)

Terminal box: Material; Diecast aluminum alloy
Conduit connection; G1/2 (PF1/2)
Coating; Baked melamine resin
Finish color; Silver

Standard thermoelectromotive force table:
See other table (page 5)

Scope of delivery: Thermocouple

CODE SYMBOLS

1 2 3 4 5 6 7 8 9 10 11 12	Description
F T A ☐ ☐ ☐ ☐ 3 - ☐ ☐ ☐ ☐	
F T B ☐ ☐ ☐ ☐ 3 - ☐ ☐ ☐ ☐	
F T D ☐ ☐ ☐ ☐ 3 - ☐ ☐ ☐ ☐	
	Kind of thermocouple
F T A	J thermocouple
F T B	K thermocouple
F T D	E thermocouple
	Element
1	Single element (0.75 class)
2	Double element (0.75 class)
3	Single element (1.5 class) } FTD, FTB only
6	Double element (1.5 class) } FTD, FTB only
7	Single element (0.4 class)
8	Double element (0.4 class)
	Mounting method *(1)
A	Insertion type
D	Insertion type
F	Screw-in type (For low temperature)
J	Screw-in type (For high temperature)
M	Flange type
Q	Flange type
	Protecting tube material *(2)
S	304 stainless steel
W	316 stainless steel
* T	316L stainless steel
R	310S stainless steel
U	27Cr
J	20Cr-80Ni
	Mounting dimension
1	Flange JIS 10K-25A
2	Flange JIS 20K-25A
3	Flange JIS 30K-25 (Only M type)
4	Flange JIS 63K-25 (Only M type)
7	Mounting screw G3/4 (PF3/4)
8	Mounting screw R3/4 (PT3/4)
0	Insertion type
	Insertion length
0 1 5 ~ 3 9 5	(According to table of insertion length) Fill in insertion length in cm unit Ex.: 500mm ➡050 1000mm ➡100
	Structure/Explosionproofing
A	Standard type
C	Flameproof type (d2G4)
F	Intrinsically safe explosionproofing (i3nG5) for connection with zener barrier

Asterisked (*) items : Non-standard

(1) Combination of mounting form and protecting tube form

Mounting form \ Protecting tube form	ϕ12	ϕ22 or ϕ27
Insertion type (By spec.)	A	D
Screw-in type (50, By spec.)	F	—
Screw-in type (150, By spec.)	J	—
Flange type (100, By spec.)	M	Q

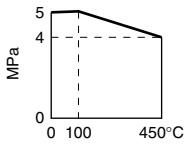
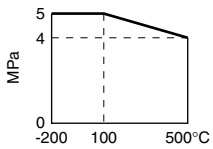
Note: The thermocouple of diameter ϕ27 in protecting tube form is applicable to the case where material of protecting tube is J or U.
In the case of U, and with mounting form D and Q, the double element is applicable.

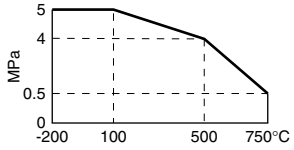
(2) Combination of protecting tube material and mounting method

Material \ Method	A	D	F	J	M	Q
S	△	◎	△	○	△	◎
W	△	◎	△	○	△	◎
T	△	◎	△	○	△	◎
R		○				○
U		○				○
J		○				○

Notes:
(1) ○ ◎ △ mark; Manufacturing possible
(2) ◎ mark; FTA, FTD are applicalbe only to this material
(3) △ mark; Applicalbe to fexplo-sionproof-type

Working conditions

Model	Working temperature working pressure	Application	Mass{weight}	Outline diagrams
FTA [1/2/7/8] A [S/W/T]	Working temp,; 0 to 450 °C Working pressure; Atmospheric pressure (When both movable airtight screw and flange are used, working pressure can be up to 0.1MPa {1.02kgf/cm^2})	Used for corrosive gas or liquid, and when the insertion length is desired to be adjustable	0.5 to 1.4 kg	Fig. 1
FTA [1/2/7/8] D [S/W/T]	Working temp,; 0 to 600 °C Working pressure; Atmospheric pressure (When both movable airtight screw and flange are used, working pressure can be up to 0.1MPa {1.02kgf/cm^2})	Used for oxidizing atmosphere (gas), and when the insertion length is desired to be adjustable	1 to 6 kg	Fig. 2
FTA [1/2/7/8] [F/J] [S/W/T]		Used for corrosive gas or liquid, J type is used for comparatively high temp.	0.7 to 1.6 kg	Fig. 3 Fig. 4
FTA [1/2/7/8] M [S/W/T] [1/2/3/4]	Working temp,; 0 to 450 °C Working pressure; Below flange (JIS) nominal pressure JIS 10K-25 • JIS 20K-25 JIS 30K-25 • JIS 63K-25 Material; 304, 316, 316L stainless steel	Used for corrosive gas or liquid, and when airtightness is especially required	1.4 to 2.3 kg (JIS 10K) 1.4 to 2.3 kg (JIS 20K) 2 to 2.9 kg (JIS 30K) 2.9 to 3.8 kg (JIS 63K)	Fig. 5 Fig. 6 Fig. 7 Fig. 8
FTA [1/2/7/8] Q [S/W/T] [1/2]	Working temp,; 0 to +600 °C Working pressure; Below flange (JIS) nominal pressure JIS 10K-25 • JIS 20K-25 Material; 304, 316, 316L stainless steel	Used for oxidizing atmosphere (gas)	2 to 7 kg	Fig. 9 Fig. 10
FTD [1/2/3/6/7/8] A [S/W/T]	Working temp,; 200 to +500 °C Working pressure; Atmospheric pressure (When both movable airtight screw and flange are used, working pressure can be up to 0.1MPa {1.02kgf/cm^2})	Used for corrosive gas or liquid, and when the insertion length is desired to be adjustable	0.5 to 1.4 kg	Fig. 1
FTD [1/2/3/6/7/8] D [S/W/T]	Working temp,; 200 to +700 °C Working pressure; Atmospheric pressure (When both movable airtight screw and flange are used, working pressure can be up to 0.1MPa {1.02kgf/cm^2})	Used for oxidizing atmosphere (gas), and when the insertion length is desired to be adjustable	1 to 6 kg	Fig. 2
FTD [1/2/3/6/7/8] [F/J] [S/W/T]		Used for corrosive gas or liquid, J type is used for comparatively high temp.	0.7 to 1.6 kg	Fig. 3 Fig. 4
FTD [1/2/3/6/7/8] M [S/W/T] [1/2/3/4]	Working temp,; 200 to +500 °C Working pressure; Below flange (JIS) nominal pressure JIS 10K-25 • JIS 20K-25 JIS 30K-25 • JIS 63K-25 Material; 304, 316, 316L stainless steel	Used for corrosive gas or liquid, and when airtightness is especially required	1.4 to 2.3 kg (JIS 10K) 1.4 to 2.3 kg (JIS 20K) 2 to 2.9 kg (JIS 30K) 2.9 to 3.8 kg (JIS 63K)	Fig. 5 Fig. 6 Fig. 7 Fig. 8
FTD [1/2/3/6/7/8] Q [S/W/T] [1/2]	Working temp,; 200 to +700 C Working pressure; Below flange (JIS) nominal pressure JIS 10K-25 • JIS 20K-25 Material; 304 stainless steel	Used for oxidizing atmosphere (gas), and when airtightness is especially required	2 to 7 kg	Fig. 9 Fig. 10

Model	Working temperature, working pressure	Application	Mass{weight}	Outline diagrams
FTB [1/2/3/6/7/8] A [S/W/T]	Working temp.; –200 to +750 °C Working pressure; Atmospheric pressure (When both movable airtight screw and flange are used, working pressure can be up to 0.1MPa {1.02kgf/cm^2})	Used for corrosive gas or liquid, and when the insertion length is desired to be adjustable	0.5 to 1.4 kg	Fig. 1
FTB [1/2/3/6/7/8] D [S/W/T]	Working temp,; –200 to +900 °C Working pressure; Atmospheric pressure (When both movable airtight screw and flange are used, working pressure can be up to 0.1MPa {1.02kgf/cm^2})	Used for oxidizing atmosphere (gas), and when the insertion length is desired to be adjustable	1 to 6 kg	Fig. 2
FTB [1/2/7/8] D U	Working temp,; 0 to 1000 °C Working pressure; Atmospheric pressure (When both movable airtight screw and flange are used, working pressure can be up to 0.1MPa {1.02kgf/cm^2})	Used for high temp. gas including sulfur gas and carbon gas Used for high temp. gas excluding sulfur gas		
FTB [1/2/7/8] D R	Working temp,; 0 to 1000 °C Working pressure; Atmospheric pressure (When both movable airtight screw and flange are used, working pressure can be up to 0.1MPa {1.02kgf/cm^2})	Used when mechanical strength is required and for high temp. gas excluding sulfur gas Used for corrosive gas or liquid,		
FTB [1/2/7/8] D J	Working temp,; 0 to 1000 °C Working pressure; Atmospheric pressure (When both movable airtight screw and flange are used, working pressure can be up to 0.1MPa {1.02kgf/cm^2})			
FTB [1/2/3/6/7/8] [F/J] [S/W/T]		J type is used for comparatively high temp. Used for corrosive gas or liquid,	0.7 to 1.6 kg	Fig. 3 Fig. 4
FTB [1/2/3/6/7/8] M [S/W/T] [1/2/3/4]	Working temp,; –200 to +750 °C Working pressure; Below flange (JIS) nominal pressure JIS 10K-25 • JIS 20K-25 JIS 30K-25 • JIS 63K-25 Material; 304, 316, 316L stainless steel	and when airtightness is especially required Used for oxidizing atmosphere	1.4 to 2.3 kg (JIS 10K) 1.4 to 2.3 kg (JIS 20K) 2 to 2.9 kg (JIS 30K) 2.9 to 3.8 kg (JIS 63K)	Fig. 5 Fig. 6 Fig. 7 Fig. 8
FTB [1/2/3/6/7/8] Q [S/W/T] [1/2]	Working temp,; –200 to +900 °C Working pressure; Below flange (JIS) nominal pressure JIS 10K-25 • JIS 20K-25 Material; 304 stainless steel	(gas) Used for high temp. gas including sulfur gas and carbon gas	2 to 7 kg	Fig. 9 Fig. 10
FTB [1/2/7/8] Q U [1/2]	Working temp,; 0 to 1000 °C Working pressure; Below flange (JIS) nominal pressure JIS 10K-25 • JIS 20K-25 Material; 304 stainless steel	Used for high temp. gas excluding sulfur gas		
FTB [1/2/7/8] Q R [1/2]	Working temp,; 0 to 1000 °C Working pressure; Below flange (JIS) nominal pressure JIS 10K-25 • JIS 20K-25 Material; 304 stainless steel	Used when mechanical strength is required and for high temp. gas excluding sulfur gas		
FTB [1/2/7/8] Q J [1/2]	Working temp,; 0 to 1000 °C Working pressure; Below flange (JIS) nominal pressure JIS 10K-25 • JIS 20K-25 Material; 304 stainless steel			

Insertion length [Dimension "L" of "Outline Diagrams"]

Mounting method	Insertion length "L" A	D	F	J	M	Q
Insertion length	150					
	200	200	150			
	250	250	200		150	
	300	300	250	150	200	200
	350	350	300	200	250	250
	400	400	350	250	300	300
	450	450	400	300	350	350
	500	500	450	350	400	400
	550	550	500	400	450	450
	600	600	550	450	500	500
	650	650	600	500	550	550
	700	700	650	550	600	600
	750	750	700	600	650	650
	800	800	750	650	700	700
	850	850	800	700	750	750
	900	900	850	750	800	800

Mounting method	Insertion length "L" A	D	F	J	M	Q
Insertion length	950	950	900	800	850	850
	1050	1050	1000	900	950	950
	1150	1150	1100	1000	1050	1050
	1250	1250	1200	1100	1150	1150
	1350	1350	1300	1200	1250	1250
	1450	1450	1400	1300	1350	1350
		1550				1450
		1650				1550
		1750				1650
		1850				1750
		1950				1850
		2450				2350
		2950				2850
		3450				3350
		3950				3850

Standard thermoelectromotive force of J thermocouple (Unit: μV)

JIS C 1602-1995

Temp. [°C]	–100	0	Temp. [°C]	0	100	200	300	400	500	600	700	800	Temp. [°C]
0	–4633 404	0 501	0	0 507	5269 545	10779 555	16327 554	21848 552	27393 560	33102 587	39132 623	45494 647	0
–10	–5037 389	–501 494	10	507 512	5814 546	11334 555	16881 553	22400 552	27953 563	33689 590	39755 627	46141 645	10
–20	–5426 375	–995 487	20	1019 518	6360 549	11889 556	17434 552	22952 552	28516 564	34279 594	40382 630	46786 645	20
–30	–5801 358	–1482 479	30	1537 522	6909 550	12445 555	17986 552	23504 553	29080 567	34873 597	41012 633	47431 643	30
–40	–6159 341	–1961 470	40	2059 526	7459 551	13000 555	18538 552	24057 553	29647 569	35470 601	41645 636	48074 641	40
–50	–6500 321	–2431 462	50	2585 531	8010 552	13555 555	19090 552	24610 554	30216 572	36071 604	42281 638	48715 638	50
–60	–6821 302	–2893 451	60	3116 534	8562 553	14110 555	19642 552	25164 556	30788 574	36675 609	42919 640	49353 636	60
–70	–7123 280	–3344 442	70	3650 537	9115 554	14665 554	20194 551	25720 556	31362 577	37284 612	43559 644	49989 633	70
–80	–7403 256	–3786 429	80	4187 539	9669 555	15219 554	20745 552	26276 558	31939 580	37896 616	44203 645	50622 629	80
–90	–7659 231	–4215 418	90	4726 543	10224 555	15773 554	21297 551	26834 559	32519 583	38512 620	44848 646	51251 626	90
–100	–7890	–4633	100	5269	10779	16327	21848	27393	33102	39132	45494	51877	100

Remarks: Thermoelectromotive force values shown in the above table are when temperature of reference junction is 0 °C

Standard thermoelectromotive force of E thermocouple (Unit: μV)

JIS C 1602-1995

Temp. [°C]	–100	0	Temp. [°C]	0	100	200	300	400	500	600	700	800	900	Temp. [°C]
0	–5237 444	0 582	0	0 591	6319 679	13421 743	21036 781	28946 801	37005 810	45093 807	53112 796	61017 784	68787 767	0
–10	–5681 426	–582 570	10	591 601	6998 687	14164 748	21817 783	29747 803	37815 809	45900 805	53908 795	61801 782	69554 765	10
–20	–6107 409	–1152 557	20	1192 609	7685 694	14912 752	22600 786	30550 804	38624 810	46705 804	54703 794	62583 781	70319 763	20
–30	–6516 391	–1709 546	30	1801 619	8379 702	15664 756	23386 788	31354 805	39434 809	47509 804	55497 792	63364 780	71082 762	30
–40	–6907 372	–2255 532	40	2420 628	9081 708	16420 761	24174 790	32159 806	40243 810	48313 803	56289 791	64144 778	71844 759	40
–50	–7279 353	–2787 519	50	3048 637	9789 714	17181 764	24964 793	32965 807	41053 809	49116 801	57080 790	64922 776	72603 757	50
–60	–7632 331	–3306 505	60	3685 645	10503 721	17945 768	25757 795	33772 807	41862 809	49917 801	57870 789	65698 775	73360 755	60
–70	–7963 310	–3811 491	70	4330 655	11224 727	18713 771	26552 796	34579 808	42671 808	50718 799	58659 787	66473 773	74115 754	70
–80	–8273 288	–4302 475	80	4985 663	11951 733	19484 775	27348 798	35387 809	43479 806	51517 798	59446 786	67246 771	74869 752	80
–90	–8561 264	–4777 460	90	5648 671	12684 737	20259 777	28146 800	36196 809	44285 808	52315 797	60232 785	68017 770	75621 752	90
–100	–8825	–5237	100	6319	13421	21036	28946	37005	45093	53112	61017	68787	76373	100

Remarks: Thermoelectromotive force values shown in the above table are when temperature of reference junction is 0 °C

Standard thermoelectromotive force of K thermocouple (Unit: μV)

JIS C 1602-1995

Temp. [°C]	−100	0	Temp. [°C]	0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	Temp. [°C]
0	−3554 298	0 392	0	0 397	4096 413	8138 401	12209 415	16397 423	20644 427	24905 425	29129 419	33275 410	37326 399	41276 389	45119 378	48838 364	52410 349	0
−10	−3852 286	−392 386	10	397 401	4509 411	8539 401	12624 416	16820 423	21071 426	25330 425	29548 417	33685 408	37725 399	41665 388	45497 376	49202 363	52759 347	10
−20	−4138 273	−778 378	20	798 405	4920 408	8940 403	13040 417	17243 424	21497 427	25755 424	29965 417	34093 408	38124 398	42053 387	45873 376	49565 361	53106 345	20
−30	−4411 258	−1156 371	30	1203 409	5328 407	9343 404	13457 417	17667 424	21924 426	26179 423	30382 416	34501 407	38522 396	42440 386	46249 374	49926 360	53451 344	30
−40	−4669 244	−1527 362	40	1612 411	5735 403	9747 406	13874 419	18091 425	22350 426	26602 423	30798 415	34908 405	38918 396	42826 385	46623 372	50286 358	53795 343	40
−50	−4913 228	−1889 354	50	2023 413	6138 402	10153 408	14293 420	18516 425	22776 427	27025 422	31213 415	35313 405	39314 394	43211 384	46995 372	50644 356	54138 341	50
−60	−5141 213	−2243 344	60	2436 415	6540 401	10561 410	14713 420	18941 425	23203 426	27447 422	31628 413	35718 403	39708 393	43595 383	47367 370	51000 355	54479 340	60
−70	−5354 196	−2587 333	70	2851 416	6941 399	10971 411	15133 421	19366 426	23629 426	27869 420	32041 412	36121 403	40101 393	43978 381	47737 368	51355 353	54819	70
−80	−5550 180	−2920 323	80	3267 415	7340 399	11382 413	15554 421	19792 426	24055 425	28289 421	32453 412	36524 401	40494 391	44359 381	48105 368	51708 352		80
−90	−5730 161	−3243 311	90	3682 414	7739 399	11795 414	15975 422	20218 426	24480 425	28710 419	32865 410	36925 401	40885 391	44740 379	48473 365	52060 350		90
−100	−5891	−3554	100	4096	8138	12209	16397	20644	24905	29129	33275	37326	41276	45119	48838	52410		100

Remarks: Thermoelectromotive force values shown in the above table are when the temperature of reference junction is 0 °C

OUTLINE DIAGRAM [Unit:mm] (Refer to working conditions of page 3)

Determine insertion length "L" by collating the 5th digit of code symbols with the table shown on page 5. For example, when the 5th digit of code symbol is A, select "L" from 150mm to 1450mm (twenty two varieties) by the table shown on page 5.

Insertion type

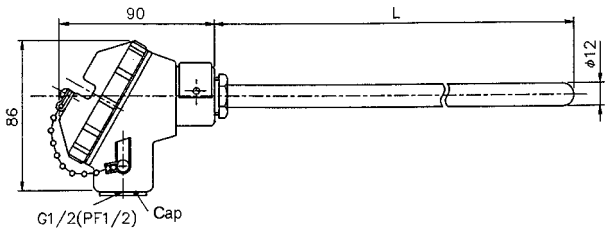


Fig. 1 FT [A B D] [1 2 3 6 7 8] A [S W T] 03 - ••• [A F]

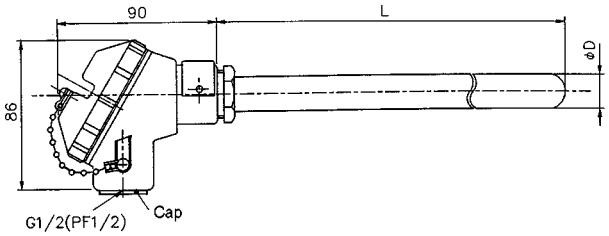


Fig. 2 FT [A B D] [1 2 3 6 7 8] D [S, R W, J T U] 03 - ••• [A F]

Note: ϕD is as follows:

Element	Protecting tube material	ϕD
Single and double	304, 316, 316L stainless steel	22
Single	27Cr	21.3
Double	27Cr	27
Single and double	20Cr-80Ni	27

Screw-in type

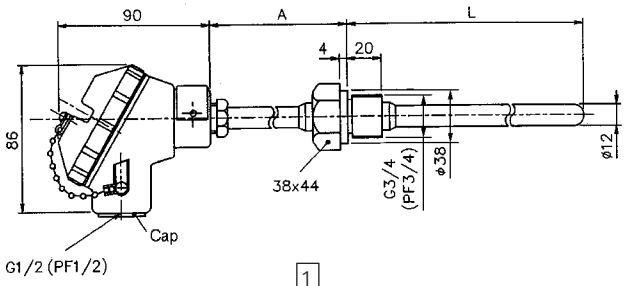


Fig. 3 FT [A B D] [1 2 3 6 7 8] [F J] [S W T] 73 - ••• [A F]

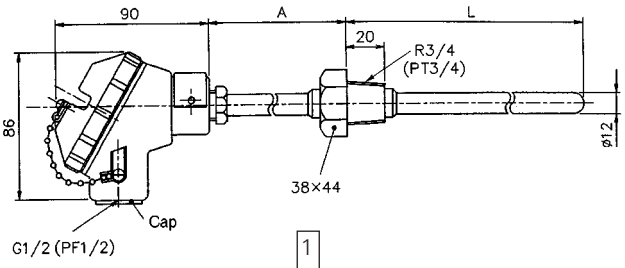


Fig. 4 FT [A B D] [1 2 3 6 7 8] [F J] [S W T] 83 - ••• [A F]

Note: Dimension "A" in case of screw-in type

Dimension "A"	For low temp.	50mm
	For high temp.	150mm

Flange type

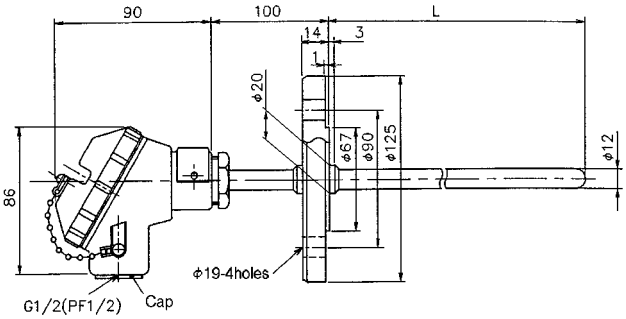


Fig. 5 FT [A B D] [1 2 3 6 7 8] M [S W T] 13 - ••• [A F]

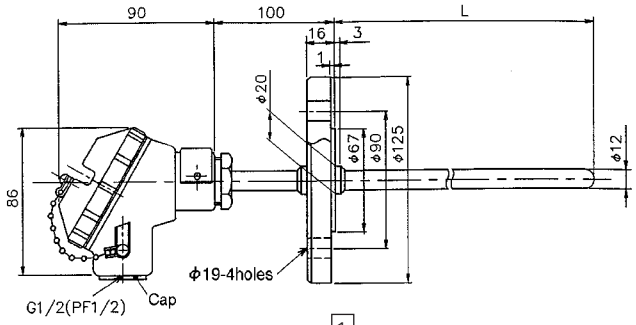


Fig. 6 FT [A B D] [1 2 3 6 7 8] M [S W T] 23 - ••• [A F]

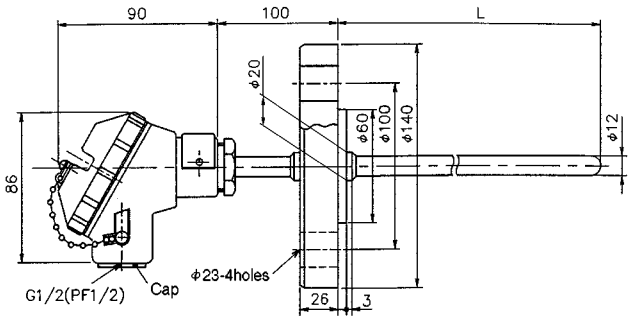


Fig. 7 FT [A B D] [1 2 3 6 7 8] M [S W T] 43 - ••• [A F]

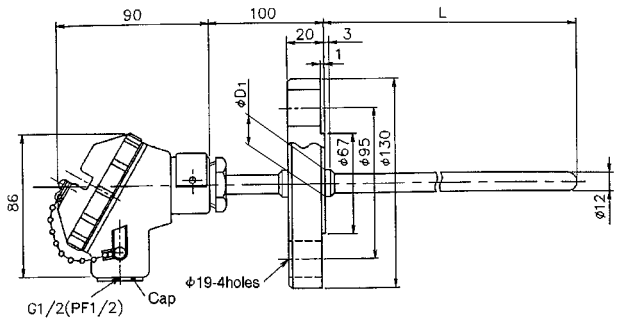


Fig. 8 FT [A B D] [1 2 3 6 7 8] M [S W T] 33 - ••• [A F]

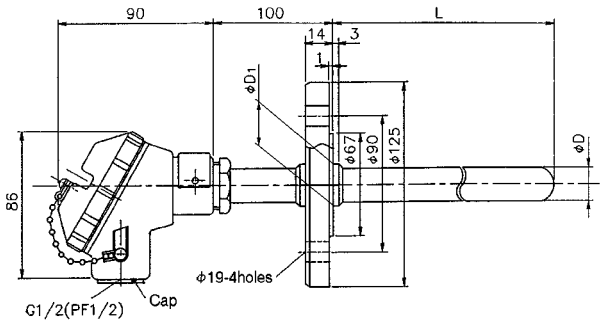


Fig. 9 FT [A B D] [1 2 3 6 7 8] Q [S, R W, J T U] 13 - ••• [A F]

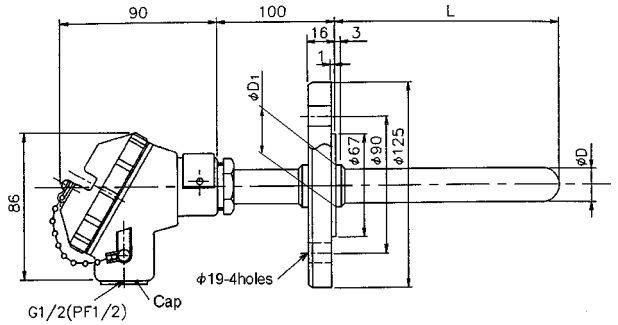
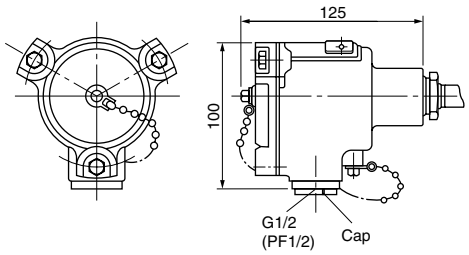


Fig. 10 FT [A B D] [1 2 3 6 7 8] Q [S, U W, R T J] 23 - ••• [A F]

Protecting tube diameter of Fig. 9, 10

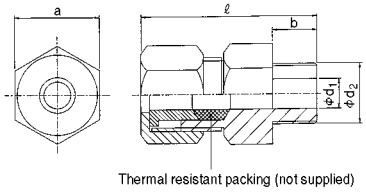
Protecting tube material	Element	ϕD	ϕD₁
304, 316, 316L stainless steel	Single	22	29
	Double		
27Cr	Single	21.3	29
	Double	27	
20Cr-80Ni	Single	27	34
	Double		

Terminal box for flameproof type



Movable airtight screw (type FTS)

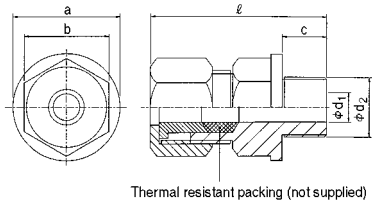
2, 4, 6 in 4th digit of code



Type	ϕd₁	ϕd₂	a	b	Approx. ℓ	Protecting tube outer dia. (ϕD)	Mass {weight} [kg]
FTS6E	31	R1 1/4 (PT1 1/4)	58	30	100	30	1.2
FTS6D	28	R1 1/4 (PT1 1/4)	58	30	100	25 to 27	1.2
FTS4C	24	R1 (PT1)	50	20	80	21.3 to 22	0.8
FTS2A	13	R3/4 (PT3/4)	38	20	80	12	0.8

Note: Material is SS400

1, 3, 5 in 4th digit of code

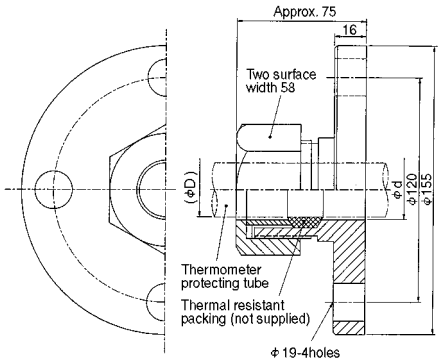


Type	ϕd₁	ϕd₂	ϕa	b	c	Approx. ℓ	Protecting tube outer dia. (ϕD)	Mass {weight} [kg]
FTS5E	31	G1 1/4 (PF1 1/4)	69	58	30	100	30	1.2
FTS5D	28	G1 1/4 (PF1 1/4)	69	58	30	100	25 to 27	1.2
FTS3C	24	G1 (PF1)	59	50	20	80	21.3 to 22	0.8
FTS1A	13	G3/4 (PF3/4)	48	38	20	80	12	0.8

Note: Material is SS400

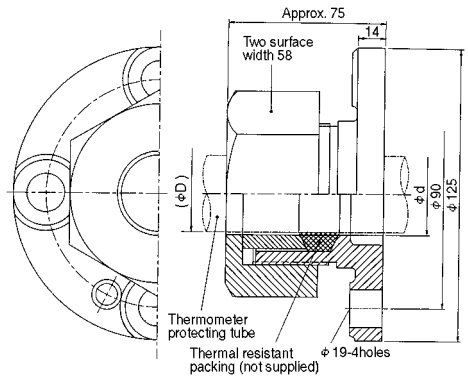
Movable airtight flange (type FTT)

JIS 10K-50 flange



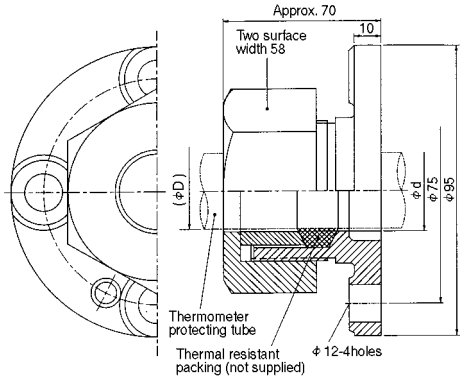
ϕd	Protecting tube outer dia. (ϕD)	Material
31	30	SS400
28	26.8 • 27	
24	21.3 • 21.7 • 22	

JIS 10K-25 flange



Type	ϕd	Protecting tube outer dia. (ϕD)	Material
FTT2D	28	26.8 • 27	FC200
FTT2C	24	21.3 • 21.7 • 22	
FTT2A	13	12	

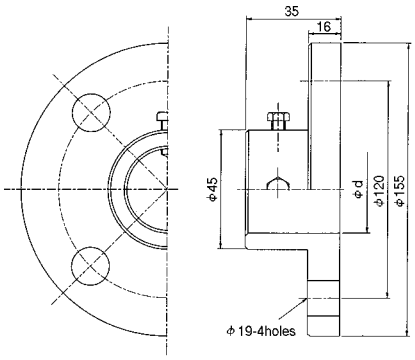
JIS 5K-25 flange



Type	ϕd	Protecting tube outer dia. (ϕD)	Material
FTT1D	28	26.8 • 27	FC200
FTT1C	24	21.3 • 21.7 • 22	
FTT1A	13	12	

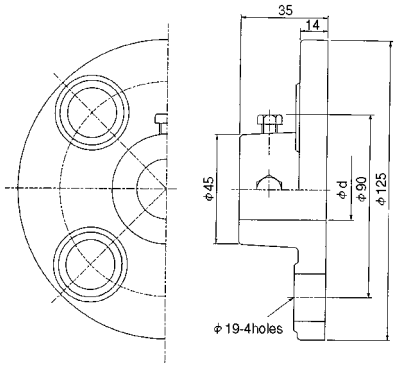
Movable flange (type FTR)

JIS 10K-50 flange



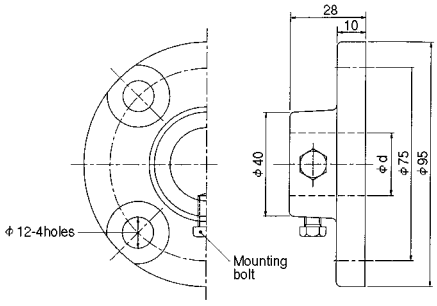
ϕd	Protecting tube outer dia. (ϕD)	Material
50	49	SS400
31	30	
28	25 to 27	
24	21.3 to 22	
13	12	

JIS 10K-25 flange



Type	ϕd	Protecting tube outer dia. (ϕD)	Material
FTR2D	28	25 to 27	FC200
FTR2C	24	21.3 to 22	
FTR2A	13	12	

JIS 5K-25 flange



Type	ϕd	Protecting tube outer dia. (ϕD)	Material
FTR1D	28	25 to 27	FC200
FTR1C	24	21.3 to 22	
FTR1A	13	12	

⚠ Caution on Safety

*Before using this product, be sure to read its instruction manual in advance.

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