

THERMOCOUPLE()

[熱電對]

?

(金屬導體)

(閉回路)가 (形成)
(溫度差異)

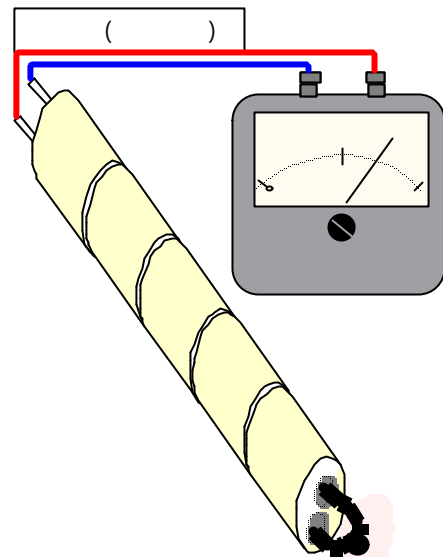
(EM)

[Steinbeck's effect]

, () 0

()

" "



()

1.

2.

0 2,300

가

3.

가

4. 가

5.

가

(産業用)

(素線)

(絶縁官)

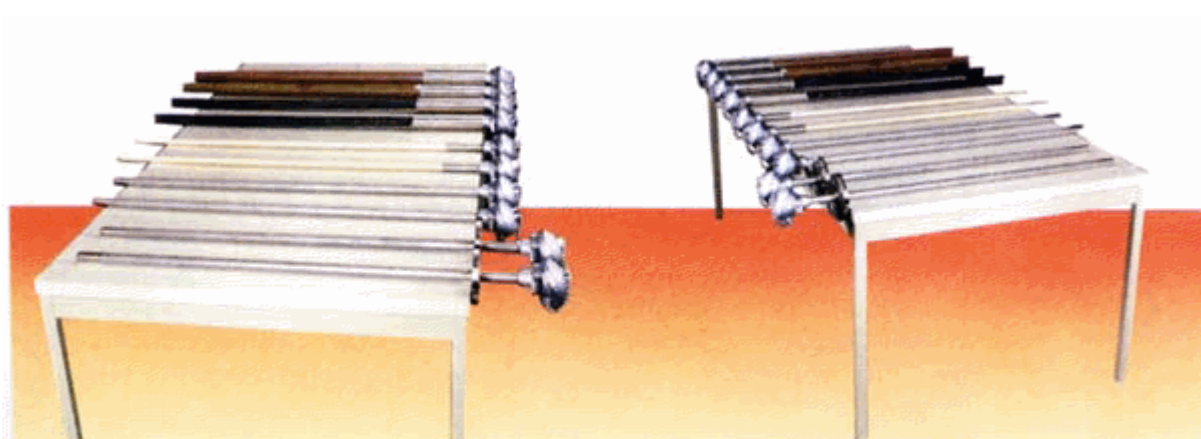
(保護官)

(0)

가

가

가

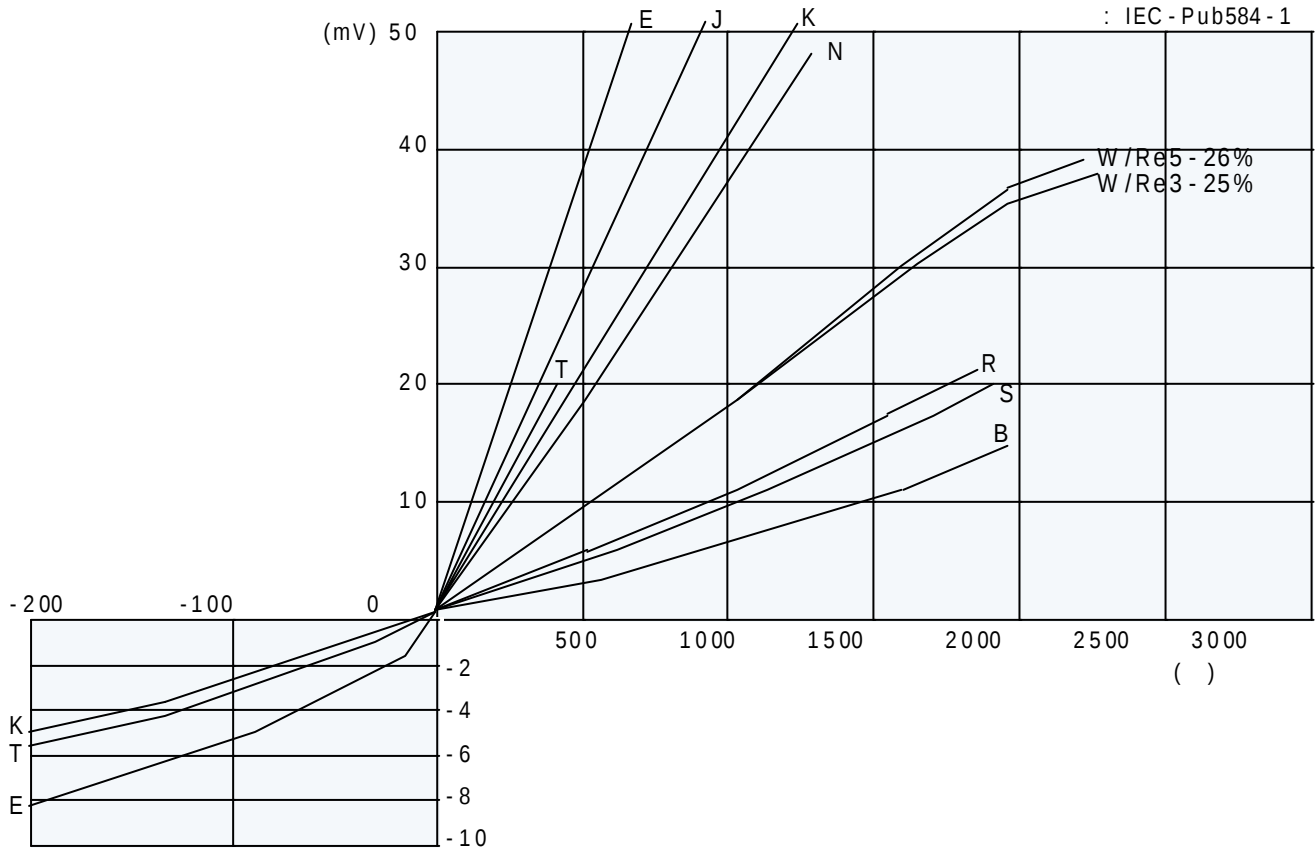




: JIS C 1602-1981
IEC - Pub584- 2

	JIS		
		(+)	(-)
B	-	70% Platinum() 30% Rhodium()	94% Platinum() 6% Rhodium()
R	PR*	87% Platinum() 13% Rhodium()	100% Platinum()
S	-	90% Platinum() 10% Rhodium()	100% Platinum()
K	CA	Chromel()** [90%Ni() · 10%Cr()]	Alumel()** [95%Ni() · 2%Mn() · 2%Al()]
E	CRC	Chromel()** [90%Ni() · 10%Cr()]	Constantan() [55%Cu() · 45%Ni()]
J	IC	99.5% Iron()	Constantan() [55%Cu() · 45%Ni()]
T	CC	100% Copper()	Constantan() [55%Cu() · 45%Ni()]
N	-	Nicrosil() [84%Ni() · 14.2%Cr() · 1.45%Si()]	Nisil() [95%Ni() · 4.4%Si() · 0.15%Mg()]

: * JIS PR R (+)
** , (Hoskins)





: JIS C 1602-1981
IEC-Pub584-2

	JIS		Class	*	
B	-	600 1,700	0.5	± 4	± 0.5%
R	PR13	0 1,600	0.25	± 1.5	± 0.25%
S	-				
K	CA	0 1,000	0.4	± 1.5	± 0.4%
		0 1,200	0.75	± 2.5	± 0.75%
		-200 0	1.5	± 2.5	± 1.5%
E	CRC	0 800	0.4	± 1.5	± 0.4%
		0 800	0.75	± 2.5	± 0.75%
		-200 0	1.5	± 2.5	± 1.5%
J	IC	0 750	0.4	± 1.5	± 0.4%
		0 750	0.75	± 2.5	± 0.75%
T	CC	0 350	0.4	± 0.5	± 0.4%
		0 350	0.75	± 1	± 0.75%
		-200 0	1.5	± 1	± 1.5%
N	-	0 1,250	0.75	± 2.5	0.75%

: *

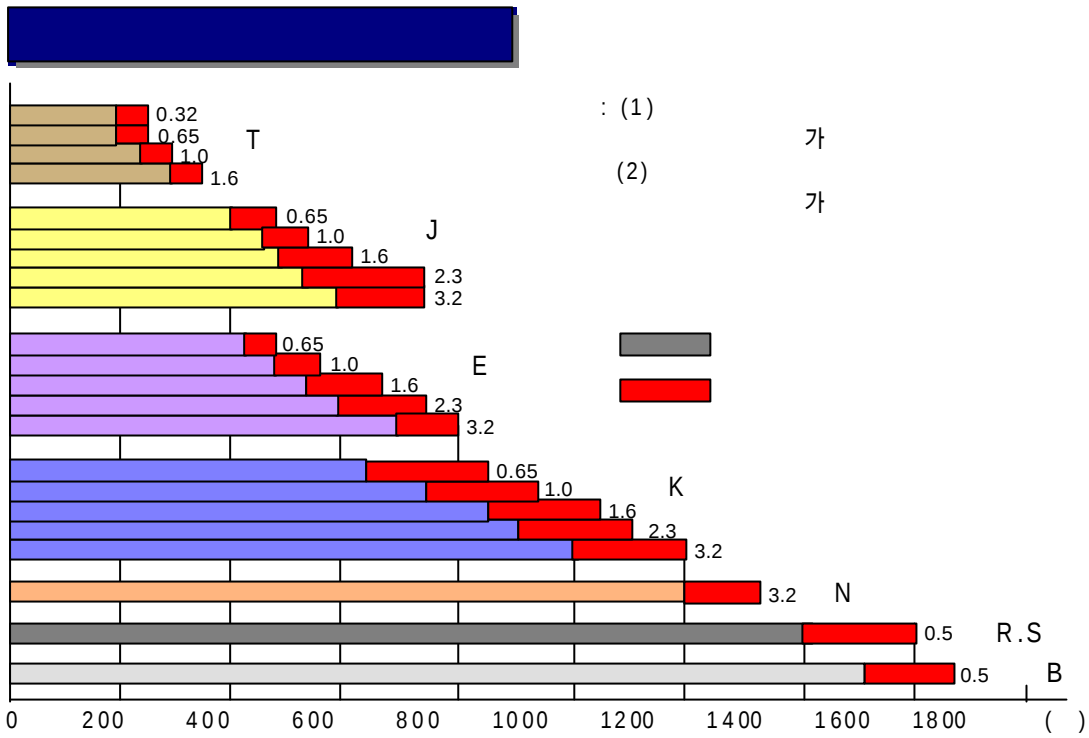


: JIS C 1602-1981
: Ω /m

AWG	Ø mm	JIS	B	R	S	K	E	J	T	N*
			-	PR	-	CA	CRC	IC	CC	-
28	0.32		-	-	-	-	-	-	6.17	16.43
24	0.50		1.75	1.47	1.43	-	-	-	-	6.50
22	0.65		-	-	-	2.95	3.56	1.70	1.50	4.08
18	1.00		-	-	-	1.25	1.50	0.72	0.63	1.62
14	1.60		-	-	-	0.49	0.59	0.28	0.25	0.64
11	2.30		-	-	-	0.24	0.28	0.14	-	0.32
8	3.20		-	-	-	0.12	0.15	0.07	-	0.13

: 0 (+) (-)





	JIS	Ø mm		
B	-	0.5	1,500	1,700
R	PR	0.5	1,400	1,600
S	-	0.5	1,400	1,600
K	CA	0.65	650	850
		1.0	750	950
		1.6	850	1,050
		2.3	900	1,100
		3.2	1,000	1,200
E	CRC	0.65	450	500
		1.0	500	550
		1.6	550	650
		2.3	600	750
		3.2	700	800
J	IC	0.65	400	500
		1.0	450	550
		1.6	500	650
		2.3	550	750
		3.2	600	750
T	CC	0.32	200	250
		0.65	200	250
		1.0	250	300
		1.6	300	350
N	-	1.6	900	1,100
		2.3	1,100	1,200
		3.2	1,200	1,300

Code	
S	, 2
D	, 4
T	, 6

(熱電對) (種類)

B

B型

(Pt · 30%Rh/Pt · 6%Rh) 0 1,700

B

(熔融點)

가

B

1600

B

(精密)

(耐久性)

(推薦)

R

R型

(Pt · 13%Rh/Pt) 0 1,600

R

1,400

(間歇的)

1,600

(非活性)

(眞空),

(蒸氣)

S

S型

(Pt · 10%Rh/Pt) 0 1,600

S

1886

Le Chatelier

IPTS(International Practical Temperature Scale :)

630.74

Antimony() 1064.43 Gold() ()

K

K型

(Chromel/Alumel) - 200 1,250

K

1906

Hoskins

A.L.Marsh 가

가

1260

K

(Dew - point) - 42

"Green - rot"

"Green - rot"

(經)

(換氣)

가

"getter(가

)"



E

E 型

(Chromel/Constantan)- 200 900

E (EMF) 가 .
1964 ANSI 1974 JIS (採擇) (需要)가 가
. 750 ,
, E K
E 가
가

J

J 型

(Iron/Constantan) 0 750

J E (EMF) , 750 , , ,
가 , 538
, J
T

T

T 型

(Copper/Constantan)- 200 350

T , 0 . 400
,
T 0
(Tolerance)가 가

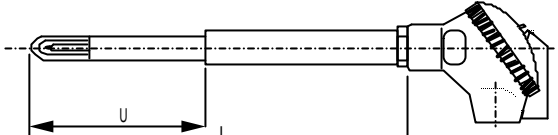
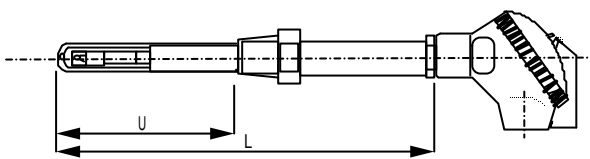
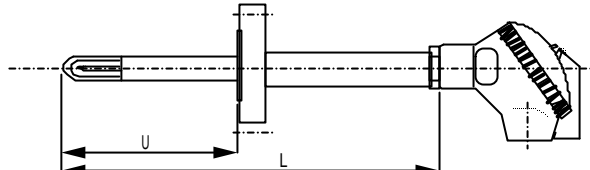
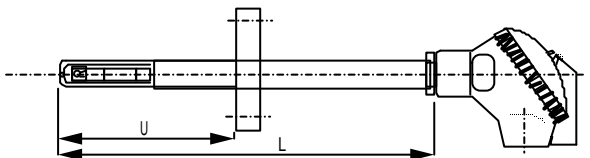
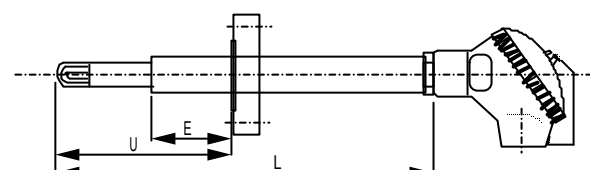
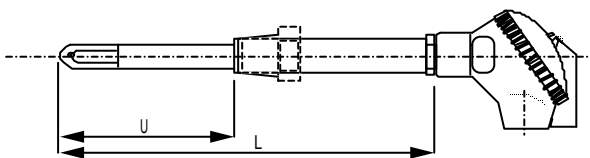
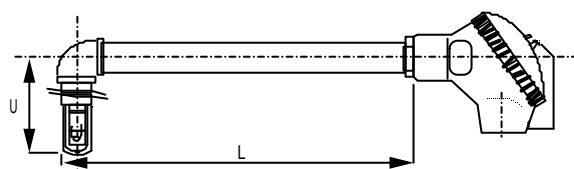
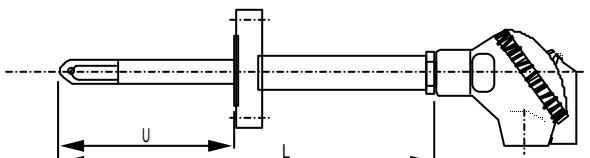
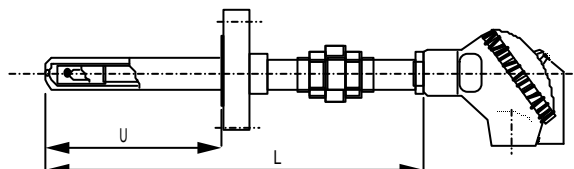
N

N 型

(Nicrosil/Nisil) 0 1,300

N 84%Ni-14.2%Cr-1.4%Si / 95.5%Ni-4.4%Si-0.1%Mg
. NBA, ASTM
(EMF)
N 600 1,250 K
Si Mg 가 Cr(Chromium :) , "Short range ordering"
(EMF) 가 "Green Rot"
K (EMF) 1,000 1/3
1,000 1,200
: E, J, T (-) Cu - Ni(Constantan :) (EMF)
(+) Cu Ni
(互換性)

() 山里(Yamari) Tungsten(W)/Rhenium(Re) ,
Platinel , Chromel/Gold+Iron

	() 
() 	(1) 
() 	(2) 
() 	L 
() 	
(+) 