

10J Series



The 10J series is a lead-wired temperature measurement sensor with a cost effective plastic shell. Custom designs can be developed if needed to meet complex application requirements. Complete or partial plastic designs can be developed with customized mounting features to fit various applications. Alternate materials and UL recognized models available upon request.

Specifications

- Typical thermal time constant 10 sec. (measured: 25°C air to 85°C stirred water, 63.2% ΔT)
- Typical operating temperature range -40°C to 80°C or -20° to 105°C (dependant on wire rating)
- Insulation strength 500VAC/0.5mA/2sec. (inquire for others)
- Stable performance with high degree of accuracy

Applications

- Heat Pumps
- HVAC
- Furnace



APPLICATION NOTES

Technical Data

Typical Resistance/Temperature

T (°C)	Grade 1	Grade 5	Grade 9	Grade 15	Grade 18	Grade 19	Grade 25
	B25/85=3977K	B25/85=4107K	B25/85=3435K	B25/85=3740K	B25/85=4269K	B25/85=3468K	B25/85=3680K
Multiplier							
-40	33.73	37.25	19.58	25.79	43.67	21.65	24.87
-35	24.32	26.63	14.83	19.12	30.73	16.23	18.34
-30	17.74	19.26	11.34	14.31	21.89	12.30	13.69
-25	13.08	14.07	8.76	10.81	15.77	9.41	10.33
-20	9.74	10.38	6.83	8.23	11.48	7.27	7.88
-15	7.321	7.74	5.37	6.33	8.45	5.66	6.07
-10	5.55	5.83	4.25	4.90	6.28	4.45	4.72
-5	4.25	4.42	3.39	3.83	4.71	3.52	3.71
0	3.27	3.38	2.72	3.01	3.56	2.81	2.93
5	2.54	2.61	2.20	2.38	2.72	2.26	2.34
10	1.99	2.03	1.79	1.90	2.09	1.82	1.87
15	1.57	1.59	1.47	1.52	1.62	1.48	1.51
20	1.25	1.26	1.21	1.23	1.27	1.21	1.23
25	1	1	1	1	1	1	1
30	0.81	0.80	0.83	0.82	0.79	0.83	0.82
35	0.65	0.84	0.69	0.67	0.63	0.69	0.68
40	0.53	0.52	0.58	0.55	0.51	0.58	0.56
45	0.44	0.43	0.49	0.46	0.41	0.49	0.47
50	0.36	0.35	0.41	0.38	0.33	0.41	0.39
55	0.30	0.29	0.35	0.32	0.27	0.35	0.33
60	0.25	0.24	0.30	0.27	0.22	0.30	0.28
65	0.21	0.20	0.26	0.23	0.19	0.25	0.23
70	0.18	0.17	0.22	0.19	0.15	0.22	0.20
75	0.15	0.14	0.13	0.17	0.13	0.19	0.17
80	0.13	0.12	0.17	0.14	0.11	0.16	0.14
85	0.11	0.10	0.15	0.12	0.09	0.14	0.12
90	0.09	0.08	0.13	0.11	0.08	0.12	0.11
95	0.08	0.07	0.11	0.09	0.07	0.11	0.09
100	0.07	0.06	0.10	0.08	0.06	0.10	0.08
105	0.06	0.05	0.09	0.07	0.05	0.08	0.07
110	0.05	0.05	0.08	0.06	0.04	0.07	0.06
115	0.04	0.04	0.07	0.05	0.04	0.07	0.05
120	0.04	0.03	0.06	0.05	0.03	0.06	0.05
125	0.03	0.03	0.05	0.04	0.03	0.05	0.04
130	0.03	0.03	0.05	0.04	0.02	0.05	0.04
135	0.03	0.02	0.04	0.03	0.02	0.04	0.03
140	0.02	0.02	0.04	0.03	0.02	0.04	0.03
145	0.02	0.02	0.03	0.03	0.02	0.03	0.02
150	0.02	0.02	0.03	0.02	0.01	0.03	0.02

Other values are available upon request. For higher temp values, contact a Therm-O-Disc Sales Engineer.

APPLICATION NOTES

Product Nomenclature Thermistors

Model Designation System

XXJ		1B		XXXXX
I		II		III

I – Series designator, where X is any numeral between 0-9

II – Grade and NTC type (Ex: 1B, 1E, 1G, 1H, 1M, 1R, 1S, etc.)

III – Customer specific numbers (4 or 5 digits)

Product Nomenclature Thermistors – UL Recognized

Model Designation System

XXJ		1B		A		M		Z		XXXXX
I		II		III		IV		V		VI

I – Series designator, where X is any change to numeral between 0-9

II – Grade and NTC type (Ex: 1B, 1E, 1G, 1H, 1M, 1R, etc.)

III – Temperature rating – A, B, C etc. – See table below for details

III	Max Op Temp	III	Max Op Temp
A	80	F	130
B	90	G	150
C	105	H	180
D	120	K	200
E	125		

IV – Construction

E - Plastic shell with epoxy fill

M - Metal shell

R - Molded in plastic

X - Not insulated with or without shell

V – Investigation Standard Code

Z - NTC elements tested to UL60730-1
Without Z - NTC elements tested to UL1434

VI – Customer specific numbers (4 or 5 digits)

Part # - J Probes Not UL Recognized Using RTD Sensors

Model Designation System

XXJ		PT		102		XXXXX
I		II		III		VI

I – Product Series Designator

II – Material of RTD: PT = Platinum RTD, NI = Nickel RTD

III – Resistance: 201 = 200 ohms, 501 = 500 ohms, 102 = 1,000 ohms

VI – Customer specific numbers (4 or 5 digits)

Product Nomenclature RTD Sensors

Model Designation System

XXJ		PT		103		XX		X		XXXXX
I		II		III		IV		V		VI

I – Series designator

II – Material of RTD: PT = Platinum RTD, NI = Nickel RTD

III – Resistance: 201 = 200 ohms, 501 = 500 ohms, 102 = 1,000 ohms

IV – Max Temperature Rating Designator – A, B, C etc. - See table below for details (1 or 2 letters)

III	Max Op Temp	III	Max Op Temp
A	80	M	300
B	90	N	350
C	105	P	400
D	120	Q	450
E	125	R	500
F	130	S	520
G	150	T	540
H	180	U	560
K	200	V	580
L	250	W	600

V- Construction Designator:

E- Plastic shell with epoxy fill (shrink tube does not need to be UL recognized if plastic is the insulator)

M- Dead metal shell

R- Molded in plastic

X- Not insulated with or without shell

VI – Customer specific numbers (4 or 5 digits)