

SPECIFICATION

1、 GENERAL This specification defines characteristics of the temperature sensor KWCQ

2、 SENSOR CHARACTERISTICS

Item	Sign.	Char.	Unit	Tol.
2-1 B-value	B _{25/85}	3435	K	±2%
2-2 Resistance	R ₂₅	10.0	k Ω	±2.5%
2-3 Thermal time constant (in water)	τ	10	sec	Circa
2-4 Operating temp.	T _w	-50~+105	°C	
2-5 Dissipation constant (in air)	δ	4	mW/°C	Min
2-6 Dielectric Strength	A. C. 1500V, 1Min in water)			
	No flash over			
2-7 Insulation resistance	D. C. 5 00V (in water)			
	I.R.	100	M Ω	以上 Min

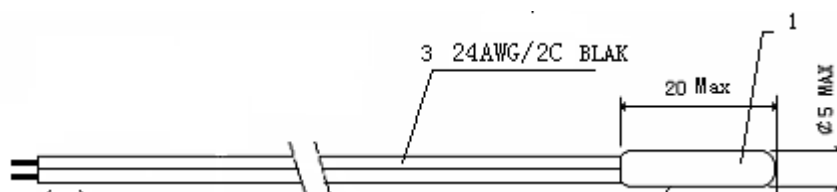
3、 Reliability Characteristics

Item	Testing requirement	Characteristics after test
3-1 High temp. test	105°C in air placed for 1000 hours	B、 Δ R ₂₅ / R ₂₅ ≤ 3%
3-2 Low temp. test	-50°C in air placed for 1000 hours	B、 Δ R ₂₅ / R ₂₅ ≤ 3%
3-3 High temp. humidity test	40°C-95% R.H. placed for 1000 hours	B、 Δ R ₂₅ / R ₂₅ ≤ 3%
3-4 temp. cycle	-50°C 5min (in air) ← → 105°C 5min (in air) 1000 cycles	B、 Δ R ₂₅ / R ₂₅ ≤ 3%

4、 Mechanical Characteristics

Item	Testing requirement	Characteristics after test
5-1 Tensile Strength	When 2Kgf is applied gradually for 1 minute to the lead wire	abnormality shall not be allowed on appearance nor property
5-2 Drop Test	When natural drop is performed 3 times onto the Oak-board of thickness 1cm from the height at 1.0m	abnormality shall not be allowed on appearance nor property

APPROVED	Weiwen NI 08.07.08
CHECKED	
DESIGNED	Hanyan 08.07.08



TEMPERATURE VS RESISTANCE CHARACTERISTICS [ITS-90]

Resistance 10k Ω at 25 ° C

Resistance Tolerance ± 1 %

B Value 3435K at 25/85 ° C

B Value Tolerance ± 1 %

<u>Temp.</u>	<u>Rmax.</u>	<u>Rst.</u>	<u>Rmin.</u>	<u>Tolerance</u>	
<u>(° C)</u>	<u>(kΩ)</u>	<u>(kΩ)</u>	<u>(kΩ)</u>	<u>(° C)</u>	
-50	344.6	329.5	314.9	-0.8	+0.8
-49	325.0	310.9	297.3	-0.8	+0.8
-48	306.6	293.5	280.9	-0.8	+0.8
-47	289.4	277.2	265.4	-0.8	+0.8
-46	273.4	262.0	251.0	-0.8	+0.8
-45	258.3	247.7	237.4	-0.8	+0.8
-44	244.2	234.3	224.7	-0.8	+0.8
-43	231.0	221.7	212.8	-0.8	+0.8
-42	218.6	209.9	201.6	-0.8	+0.8
-41	207.0	198.9	191.0	-0.8	+0.8
-40	196.0	188.5	181.1	-0.8	+0.8
-39	185.5	178.5	171.6	-0.8	+0.8
-38	175.6	169.0	162.6	-0.8	+0.8
-37	166.3	160.2	154.2	-0.8	+0.8
-36	157.6	151.9	146.3	-0.7	+0.8
-35	149.4	144.1	138.8	-0.7	+0.7
-34	141.7	136.7	131.8	-0.7	+0.7
-33	134.5	129.8	125.2	-0.7	+0.7
-32	127.7	123.3	119.0	-0.7	+0.7
-31	121.2	117.1	113.1	-0.7	+0.7
-30	115.2	111.3	107.5	-0.7	+0.7
-29	109.4	105.7	102.2	-0.7	+0.7
-28	103.9	100.5	97.20	-0.7	+0.7
-27	98.68	95.52	92.45	-0.7	+0.7
-26	93.80	90.84	87.97	-0.7	+0.7

-25	89.20	86.43	83.73	-0.7	+0.7
-24	84.85	82.26	79.74	-0.7	+0.7
-23	80.76	78.33	75.96	-0.7	+0.7
-22	76.89	74.61	72.39	-0.7	+0.7
-21	73.23	71.10	69.01	-0.7	+0.7
-20	69.77	67.77	65.82	-0.6	+0.7
-19	66.44	64.57	62.74	-0.6	+0.6
-18	63.30	61.54	59.83	-0.6	+0.6
-17	60.32	58.68	57.07	-0.6	+0.6
-16	57.51	55.97	54.46	-0.6	+0.6
-15	54.85	53.41	51.99	-0.6	+0.6
-14	52.33	50.98	49.65	-0.6	+0.6
-13	49.95	48.68	47.43	-0.6	+0.6
-12	47.69	46.50	45.32	-0.6	+0.6
-11	45.55	44.43	43.33	-0.6	+0.6
-10	43.52	42.47	41.43	-0.6	+0.6
-9	41.55	40.57	39.60	-0.6	+0.6
-8	39.69	38.77	37.86	-0.6	+0.6
-7	37.92	37.06	36.21	-0.6	+0.6
-6	36.25	35.44	34.64	-0.6	+0.6
-5	34.66	33.90	33.15	-0.6	+0.6
-4	33.15	32.44	31.73	-0.5	+0.5
-3	31.72	31.05	30.39	-0.5	+0.5
-2	30.36	29.73	29.11	-0.5	+0.5
-1	29.06	28.48	27.89	-0.5	+0.5
0	27.83	27.28	26.74	-0.5	+0.5
0	27.83	27.28	26.74	-0.5	+0.5
1	26.65	26.13	25.62	-0.5	+0.5
2	25.52	25.03	24.55	-0.5	+0.5
3	24.44	23.99	23.54	-0.5	+0.5
4	23.42	23.00	22.57	-0.5	+0.5
5	22.45	22.05	21.66	-0.5	+0.5
6	21.53	21.15	20.78	-0.5	+0.5
7	20.64	20.30	19.95	-0.5	+0.5
8	19.81	19.48	19.15	-0.5	+0.5
9	19.01	18.70	18.39	-0.4	+0.5
10	18.25	17.96	17.67	-0.4	+0.4
11	17.51	17.24	16.97	-0.4	+0.4
12	16.81	16.56	16.30	-0.4	+0.4
13	16.14	15.90	15.67	-0.4	+0.4
14	15.50	15.28	15.06	-0.4	+0.4
15	14.89	14.69	14.48	-0.4	+0.4
16	14.31	14.12	13.92	-0.4	+0.4
17	13.75	13.58	13.39	-0.4	+0.4
18	13.22	13.06	12.89	-0.4	+0.4
19	12.72	12.56	12.40	-0.4	+0.4
20	12.24	12.09	11.94	-0.4	+0.4
21	11.77	11.63	11.50	-0.3	+0.4

22	11.32	11.20	11.07	-0.3	+0.3
23	10.90	10.78	10.66	-0.3	+0.3
24	10.49	10.38	10.27	-0.3	+0.3
25	10.10	10.00	9.900	-0.3	+0.3
26	9.732	9.632	9.532	-0.3	+0.3
27	9.380	9.281	9.180	-0.3	+0.3
28	9.043	8.944	8.844	-0.4	+0.4
29	8.721	8.622	8.522	-0.4	+0.4
30	8.411	8.313	8.214	-0.4	+0.4
31	8.112	8.014	7.916	-0.4	+0.4
32	7.826	7.728	7.631	-0.4	+0.4
33	7.551	7.454	7.358	-0.4	+0.4
34	7.288	7.192	7.096	-0.4	+0.4
35	7.035	6.940	6.845	-0.4	+0.4
36	6.793	6.699	6.605	-0.4	+0.4
37	6.560	6.467	6.374	-0.5	+0.5
38	6.337	6.245	6.153	-0.5	+0.5
39	6.123	6.032	5.941	-0.5	+0.5
40	5.918	5.827	5.738	-0.5	+0.5
41	5.718	5.629	5.540	-0.5	+0.5
42	5.526	5.438	5.351	-0.5	+0.5
43	5.342	5.255	5.169	-0.5	+0.5
44	5.165	5.080	4.994	-0.5	+0.5
45	4.995	4.911	4.827	-0.6	+0.6
46	4.832	4.749	4.666	-0.6	+0.6
47	4.675	4.593	4.511	-0.6	+0.6
48	4.524	4.443	4.363	-0.6	+0.6
49	4.379	4.299	4.220	-0.6	+0.6
50	4.239	4.160	4.082	-0.6	+0.6
50	4.239	4.160	4.082	-0.6	+0.6
51	4.103	4.026	3.949	-0.6	+0.6
52	3.972	3.896	3.820	-0.6	+0.6
53	3.846	3.771	3.697	-0.7	+0.7
54	3.725	3.651	3.578	-0.7	+0.7
55	3.609	3.536	3.464	-0.7	+0.7
56	3.496	3.425	3.354	-0.7	+0.7
57	3.388	3.318	3.248	-0.7	+0.7
58	3.284	3.215	3.146	-0.7	+0.7
59	3.184	3.116	3.048	-0.7	+0.7
60	3.087	3.020	2.954	-0.7	+0.8
61	2.993	2.927	2.862	-0.8	+0.8
62	2.902	2.838	2.774	-0.8	+0.8
63	2.815	2.751	2.688	-0.8	+0.8
64	2.731	2.668	2.606	-0.8	+0.8
65	2.650	2.588	2.527	-0.8	+0.8
66	2.571	2.511	2.451	-0.8	+0.8
67	2.496	2.436	2.378	-0.8	+0.9
68	2.423	2.364	2.307	-0.9	+0.9

69	2.352	2.295	2.238	-0.9	+0.9
70	2.284	2.228	2.172	-0.9	+0.9
71	2.218	2.163	2.108	-0.9	+0.9
72	2.154	2.100	2.046	-0.9	+0.9
73	2.092	2.039	1.986	-0.9	+0.9
74	2.033	1.980	1.929	-0.9	+1.0
75	1.975	1.924	1.873	-1.0	+1.0
76	1.920	1.869	1.819	-1.0	+1.0
77	1.866	1.816	1.767	-1.0	+1.0
78	1.814	1.765	1.717	-1.0	+1.0
79	1.764	1.716	1.668	-1.0	+1.0
80	1.715	1.668	1.621	-1.0	+1.0
81	1.668	1.622	1.576	-1.0	+1.1
82	1.622	1.577	1.532	-1.1	+1.1
83	1.578	1.533	1.489	-1.1	+1.1
84	1.535	1.492	1.448	-1.1	+1.1
85	1.494	1.451	1.409	-1.1	+1.1
86	1.454	1.412	1.370	-1.1	+1.1
87	1.415	1.373	1.332	-1.1	+1.1
88	1.377	1.336	1.296	-1.2	+1.2
89	1.341	1.301	1.261	-1.2	+1.2
90	1.305	1.266	1.227	-1.2	+1.2
91	1.271	1.232	1.194	-1.2	+1.2
92	1.238	1.200	1.162	-1.2	+1.2
93	1.205	1.168	1.131	-1.2	+1.2
94	1.174	1.137	1.101	-1.2	+1.3
95	1.144	1.108	1.072	-1.3	+1.3
96	1.115	1.079	1.044	-1.3	+1.3
97	1.086	1.051	1.017	-1.3	+1.3
98	1.059	1.024	0.9913	-1.3	+1.3
99	1.032	0.9984	0.9658	-1.3	+1.3
100	1.006	0.9731	0.9411	-1.3	+1.4
100	1.006	0.9731	0.9411	-1.3	+1.4
101	0.9808	0.9484	0.9170	-1.4	+1.4
102	0.9563	0.9246	0.8937	-1.4	+1.4
103	0.9326	0.9014	0.8711	-1.4	+1.4
104	0.9096	0.8789	0.8492	-1.4	+1.4
105	0.8873	0.8572	0.8279	-1.4	+1.4
106	0.8656	0.8360	0.8073	-1.4	+1.5
107	0.8446	0.8155	0.7873	-1.5	+1.5
108	0.8242	0.7956	0.7679	-1.5	+1.5
109	0.8044	0.7763	0.7491	-1.5	+1.5
110	0.7851	0.7576	0.7308	-1.5	+1.5