SPECIFICATION FOR APPROVAL

技术规格确认书

客户名称 Customer	
客户料号 Customer PN	
产品类型 Product Model	NTC Thermistor Temperature Sensor
型号规格 Part Number	CWFM0103FC1-xxxM113X
文控编号 Specification file No.	
版本号 Version	V1

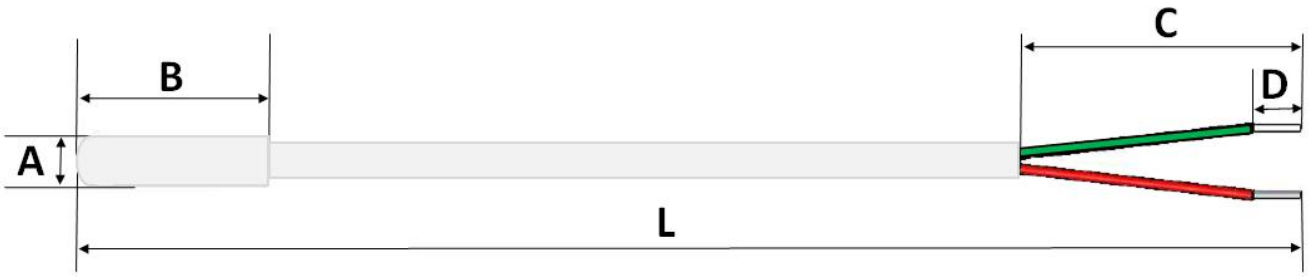
	DES.	CHK.	APP.
Manu.	RH LIANG	HO ZHANG	DZ LIN
User			

SPECIFICATION FOR APPROVAL

Reliable partner for your dream technology.

Date 日期	Version 版本号	Revise Content 修订内容	Make 制作	Approval 批准
2018.01.24	V1		RH Liang	DZ Lin

1、 Dimension （Unit：mm）



Dimension				
A	B	C	D	L
6.5	20	25±5	3±1	as required

2、 Material explanation

NO	Material Name	Material and Specifications
2-1.	Element	R25=10KΩ±1%　B25/50=3950K±1%　DC
2-2.	Coating	NTC encapsulated using PVC over-mold material　(White)
2-3	Cable features	UL2464-22AWG Tin plated copper cable with white PVC flat jacket wire 80℃ 300V
2-4.	Wire ends	Tinned

3、Part Number ：

CWF -×× ××× × × ×××× ×

1 2 3 4 5 6 7 8

(1) NTC Thermistor Mark；

(2) Head shape sign (B:Housing Type,　D:Dip-Coating,　M:Molding)；

(3) Series Type (0:Epoxy coating structure,　1:Epoxy coating structure(high temp))；

(4) Nominal Resistance at 25℃ (previous two digits are significant figures, The last digit specifies the number of zeros to follow.)；

(5) Resistance tolerance（%）；

(6) B Value (1:25/50; 2:25/85; 3:25/100; 4:25/125; 5:0/25; 6:0/50; 7:0/100; 8:50/85; 9:100/200; 0:Other)；

(7) Length Sign (unit is mm)；

(8) Special code ；

4、Performance Specs:

NO	Item	Sign	Test Conditions	Min.	Nor.	Max.	Unit
4-1.	Resistance at 25℃	R25	Ta=25±0.05℃ P_T≦0.1mw	9.9	10.0	10.1	kΩ
4-2.	B Value	B25/50	$B=LN\frac{R_{T1}}{R_{T2}}/(\frac{1}{T1}-\frac{1}{T2})$	3910.5	3950	3989.5	k
4-3.	Dissipation factor	σ	In still air	About 2			mW/℃
4-4.	Time response	τ	In flowing water	About 15			sec
4-5.	Withstanding Voltage	/	1500VAC 2Sec	No breakdown			Sec
4-6.	Insulation Resistance		500VDC	≧100			MΩ
4-7.	Operating temp. range	/	/	-30	/	+105	℃

5、Reliability Test

NO	Item	Technical requirements	Test conditions and method
5-1.	Dry heat storage	△R25: R25≤±3% △B25/85: B25/85≤±2%	80±2℃，Room temperature storage 1000H.
5-2.	Warm storage		55±2℃，95% RH, Room temperature storage 1000H.
5-3.	Low temperature storage		-30±2℃， Room temperature storage 1000H.
5-4.	Temp. cycle test		-20℃×30min → 25℃×10min →100℃ Water×30min → 25℃×10min, total 10 cycles
5-5	Lead wire pulling test	No visible damage, and are within specification	Fix the product and apply 9.8Nor 1.0kg force on axial direction of each lead wire, for 10 secs.
5-6	Lead wire bending test		Fix the product and apply 100g force on axial direction of each lead wire, then bend both lead wires to same direction slowly, before bending them back to original location, for 10 times
5-7	Welding ability	Tin covered area should be larger than 90%	Soak lead wires with flux, immerse into flux at 230-260, for 3 to 5 secs.

6、Storage Method

6.1 In the process of storage and transportation, per stack height is not more than 4 CTN products.

6.2 Available with all transport method, but avoid the rain, snow of direct or indirect leaching and mechanical damage.

6.3 Products should be stored in the temperature of environment - 10 ℃ / + 40 ℃, relative humidity is not more than 80%, environment should not have acid, alkali and corrosion gas or radioactive source.

7、R—T Table

R—T CONVERSION TABLE

R_{25}=10KΩ±1% $B_{25/50}$=3950K±1%

T/℃	Rmin	Rcen	Rmax	T/℃	Rmin	Rcen	Rmax
-40	335.811	351.495	367.875	-5	41.735	42.774	43.834
-39	314.029	328.472	343.546	-4	39.599	40.563	41.547
-38	293.803	307.110	320.988	-3	37.586	38.480	39.392
-37	275.015	287.279	300.060	-2	35.686	36.517	37.363
-36	257.552	268.859	280.635	-1	33.894	34.665	35.450
-35	241.313	251.741	262.595	0	32.203	32.919	33.646
-34	226.204	235.826	245.832	1	30.607	31.270	31.945
-33	212.141	221.021	230.250	2	29.099	29.715	30.340
-32	199.044	207.242	215.757	3	27.674	28.246	28.826
-31	186.841	194.412	202.270	4	26.328	26.858	27.396
-30	175.465	182.460	189.714	5	25.055	25.547	26.045
-29	164.856	171.320	178.019	6	23.851	24.307	24.769
-28	154.957	160.932	167.120	7	22.712	23.135	23.563
-27	145.716	151.241	156.959	8	21.634	22.026	22.423
-26	137.086	142.196	147.481	9	20.614	20.977	21.345
-25	129.022	133.750	138.636	10	19.650	19.987	20.327
-24	121.485	125.859	130.378	11	18.733	19.044	19.359
-23	114.435	118.485	122.665	12	17.865	18.154	18.445
-22	107.840	111.589	115.457	13	17.043	17.310	17.579
-21	101.667	105.139	108.718	14	16.264	16.510	16.759
-20	95.886	99.102	102.415	15	15.524	15.752	15.982
-19	90.471	93.450	96.518	16	14.823	15.034	15.246
-18	85.395	88.156	90.997	17	14.157	14.352	14.548
-17	80.636	83.195	85.826	18	13.525	13.705	13.885
-16	76.173	78.544	80.982	19	12.925	13.090	13.257
-15	71.984	74.183	76.441	20	12.354	12.507	12.660
-14	68.052	70.091	72.184	21	11.813	11.953	12.094
-13	64.359	66.250	68.189	22	11.298	11.427	11.557
-12	60.889	62.643	64.441	23	10.808	10.927	11.046
-11	57.628	59.255	60.922	24	10.342	10.452	10.561
-10	54.562	56.071	57.617	25	9.900	10.000	10.100
-9	51.677	53.078	54.511	26	9.470	9.570	9.670
-8	48.963	50.263	51.592	27	9.061	9.161	9.260
-7	46.408	47.614	48.847	28	8.672	8.771	8.871
-6	44.002	45.121	46.264	29	8.302	8.401	8.499

R—T CONVERSION TABLE

			R_{25}=10KΩ±1%			$B_{25/50}$=3950K±1%	
T/℃	Rmin	Rcen	Rmax	T/℃	Rmin	Rcen	Rmax
30	7.950	8.048	8.146	67	1.881	1.932	1.984
31	7.615	7.712	7.809	68	1.817	1.866	1.917
32	7.295	7.391	7.488	69	1.754	1.803	1.852
33	6.991	7.086	7.182	70	1.695	1.742	1.790
34	6.702	6.795	6.890	71	1.637	1.684	1.731
35	6.425	6.518	6.612	72	1.582	1.627	1.674
36	6.162	6.254	6.346	73	1.529	1.573	1.619
37	5.911	6.001	6.092	74	1.478	1.521	1.566
38	5.672	5.761	5.850	75	1.429	1.471	1.515
39	5.443	5.531	5.619	76	1.382	1.423	1.466
40	5.225	5.311	5.398	77	1.336	1.377	1.419
41	5.017	5.102	5.188	78	1.293	1.332	1.373
42	4.818	4.902	4.986	79	1.251	1.289	1.329
43	4.628	4.710	4.794	80	1.210	1.248	1.287
44	4.447	4.528	4.609	81	1.171	1.208	1.246
45	4.274	4.353	4.433	82	1.134	1.170	1.207
46	4.108	4.186	4.265	83	1.098	1.133	1.170
47	3.950	4.026	4.104	84	1.063	1.097	1.133
48	3.799	3.874	3.950	85	1.029	1.063	1.098
49	3.654	3.728	3.802	86	0.997	1.030	1.064
50	3.515	3.588	3.661	87	0.966	0.998	1.032
51	3.383	3.454	3.526	88	0.936	0.968	1.000
52	3.256	3.326	3.396	89	0.907	0.938	0.970
53	3.135	3.203	3.272	90	0.879	0.909	0.941
54	3.019	3.085	3.153	91	0.852	0.882	0.912
55	2.907	2.973	3.039	92	0.826	0.855	0.885
56	2.801	2.865	2.930	93	0.801	0.829	0.859
57	2.699	2.761	2.825	94	0.777	0.805	0.833
58	2.601	2.662	2.724	95	0.753	0.781	0.809
59	2.507	2.567	2.628	96	0.731	0.758	0.785
60	2.417	2.476	2.535	97	0.709	0.735	0.762
61	2.330	2.388	2.447	98	0.688	0.714	0.740
62	2.248	2.304	2.361	99	0.668	0.693	0.719
63	2.168	2.223	2.280	100	0.648	0.673	0.698
64	2.092	2.146	2.201	101	0.629	0.653	0.678
65	2.019	2.072	2.126	102	0.611	0.635	0.659
66	1.949	2.000	2.053	103	0.593	0.616	0.640

R—T CONVERSION TABLE							
R_{25}=10KΩ±1% $B_{25/50}$=3950K±1%							
T/℃	Rmin	Rcen	Rmax	T/℃	Rmin	Rcen	Rmax
104	0.576	0.599	0.622				
105	0.560	0.582	0.605				
106	0.544	0.565	0.588				
107	0.529	0.550	0.571				
108	0.514	0.534	0.556				
109	0.499	0.519	0.540				
110	0.485	0.505	0.525				

8、Ordering Information

Part Number	Description	@25℃	MOQ
CWFM0103FC1-202M113X	PVC Overmolded Cap Φ6.5*20mm Length 2 meterS	10K Ω	1000
CWFM0103FC1-302M113X	PVC Overmolded Cap Φ6.5*20mm Length 3 meterS	10K Ω	1000
CWFM0103FC1-502M113X	PVC Overmolded Cap Φ6.5*20mm Length 5 meterS	10K Ω	1000

* For quantities less than Minimum Order Quantity - contact distribution.