



SCZ 系列直流非快换充电插座 温度传感器介绍

郑州赛川电子科技有限公司

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7. 温度传感器

NTC10K温度监测原理:

2 个温度传感器布于 DC+与 DC-端子之内

温度传感器型号: NTC R25℃=10KΩ ±1%, 曲线系数 B25℃/50℃=3950, 允许工作电流: 2mA max。

按照GB/T 18487.1-2015第9.1规定, 充电电流>16A时, 供电插座和车辆插座应具备温度监控装置。该充电插座的DC+和DC-孔位中布置有温度传感器, 交流充电插座中具有一根温度传感器。客户可根据温度反馈, 制定充电策略。

建议温度控制: 温度达到 100℃时进行限流处理, 温度达到 120℃停止充电。

要求理由: GB/T20234 规定充电产品使用温度为-30℃~+50℃, 端子温升最大 50℃, 温度达到 100℃应该对电流进行限制, 避免温度持续升高。为避免充电产品内部零件及电缆在高温情况下出现老化, 温度达到 120℃充电机应停止充电。

R-T 表

T(°C)	Rmin(KΩ)	Rcent(KΩ)	Rmax(KΩ)	DR(%)	DT(°C)
-40	321.60	336.47	351.99	4.61%	0.67
-39	301.23	314.95	329.27	4.55%	0.66
-38	282.27	294.93	308.13	4.48%	0.66
-37	264.60	276.30	288.48	4.41%	0.65
-36	248.15	258.95	270.19	4.34%	0.65
-35	232.81	242.79	253.16	4.27%	0.64
-34	218.51	227.73	237.31	4.21%	0.64
-33	205.18	213.69	222.54	4.14%	0.63
-32	192.73	200.61	208.78	4.07%	0.63
-31	181.12	188.40	195.95	4.01%	0.62
-30	170.27	177.00	183.98	3.94%	0.62
-29	160.14	166.37	172.82	3.88%	0.61
-28	150.67	156.43	162.40	3.82%	0.60
-27	141.81	147.15	152.67	3.75%	0.60
-26	133.54	138.48	143.58	3.69%	0.59
-25	125.79	130.36	135.09	3.63%	0.59
-24	118.54	122.78	127.15	3.56%	0.58
-23	111.75	115.68	119.73	3.50%	0.58
-22	105.39	109.03	112.78	3.44%	0.57
-21	99.436	102.81	106.28	3.38%	0.56
-20	93.851	96.977	100.20	3.32%	0.56

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-19	88.614	91.513	94.497	3.26%	0.55
-18	83.701	86.389	89.155	3.20%	0.55
-17	79.090	81.584	84.148	3.14%	0.54
-16	74.762	77.075	79.452	3.08%	0.53
-15	70.696	72.842	75.046	3.03%	0.53
-14	66.877	68.868	70.912	2.97%	0.52
-13	63.286	65.135	67.031	2.91%	0.51
-12	59.911	61.627	63.385	2.85%	0.51
-11	56.736	58.329	59.960	2.80%	0.50
-10	53.748	55.227	56.741	2.74%	0.50
-9	50.936	52.309	53.713	2.69%	0.49
-8	48.288	49.563	50.866	2.63%	0.48
-7	45.794	46.977	48.187	2.57%	0.48
-6	43.443	44.542	45.665	2.52%	0.47
-5	41.227	42.248	43.290	2.47%	0.46
-4	39.138	40.086	41.052	2.41%	0.45
-3	37.166	38.047	38.944	2.36%	0.45
-2	35.306	36.124	36.957	2.31%	0.44
-1	33.550	34.310	35.082	2.25%	0.43
0	31.892	32.597	33.314	2.20%	0.43
1	30.326	30.980	31.646	2.15%	0.42
2	28.845	29.453	30.071	2.10%	0.41
3	27.446	28.010	28.583	2.05%	0.40
4	26.123	26.646	27.178	1.99%	0.40
5	24.871	25.357	25.850	1.94%	0.39
6	23.687	24.138	24.595	1.89%	0.38
7	22.565	22.984	23.408	1.84%	0.37
8	21.504	21.892	22.285	1.79%	0.37
9	20.498	20.858	21.222	1.75%	0.36
10	19.546	19.879	20.216	1.70%	0.35
11	18.643	18.952	19.264	1.65%	0.34
12	17.787	18.073	18.362	1.60%	0.34
13	16.975	17.240	17.507	1.55%	0.33
14	16.205	16.450	16.697	1.50%	0.32
15	15.474	15.701	15.929	1.46%	0.31
16	14.780	14.990	15.201	1.41%	0.30
17	14.121	14.315	14.510	1.36%	0.30
18	13.495	13.674	13.854	1.32%	0.29
19	12.901	13.066	13.232	1.27%	0.28
20	12.336	12.488	12.641	1.22%	0.27
21	11.799	11.939	12.080	1.18%	0.26

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22	11.288	11.417	11.547	1.13%	0.25
23	10.802	10.921	11.040	1.09%	0.25
24	10.340	10.449	10.558	1.04%	0.24
25	9.900	10.000	10.100	1.00%	0.23
26	9.473	9.573	9.673	1.04%	0.24
27	9.067	9.166	9.266	1.09%	0.25
28	8.680	8.779	8.878	1.13%	0.26
29	8.312	8.410	8.509	1.18%	0.28
30	7.961	8.059	8.157	1.22%	0.29
31	7.627	7.724	7.822	1.26%	0.30
32	7.309	7.405	7.502	1.30%	0.31
33	7.006	7.101	7.197	1.35%	0.32
34	6.717	6.811	6.906	1.39%	0.34
35	6.442	6.535	6.628	1.43%	0.35
36	6.179	6.271	6.363	1.47%	0.36
37	5.929	6.019	6.110	1.51%	0.37
38	5.690	5.779	5.869	1.56%	0.38
39	5.461	5.549	5.638	1.60%	0.40
40	5.244	5.330	5.417	1.64%	0.41
41	5.035	5.121	5.206	1.68%	0.42
42	4.837	4.920	5.005	1.72%	0.44
43	4.647	4.729	4.812	1.76%	0.45
44	4.466	4.546	4.628	1.80%	0.46
45	4.292	4.372	4.452	1.84%	0.47
46	4.127	4.205	4.284	1.88%	0.49
47	3.968	4.045	4.122	1.92%	0.50
48	3.817	3.892	3.968	1.96%	0.51
49	3.672	3.745	3.820	2.00%	0.53
50	3.533	3.605	3.678	2.04%	0.54
51	3.400	3.471	3.543	2.07%	0.55
52	3.273	3.342	3.413	2.11%	0.57
53	3.151	3.219	3.289	2.15%	0.58
54	3.035	3.101	3.169	2.19%	0.60
55	2.923	2.988	3.055	2.23%	0.61
56	2.816	2.880	2.945	2.27%	0.62
57	2.713	2.776	2.840	2.30%	0.64
58	2.615	2.677	2.739	2.34%	0.65
59	2.521	2.581	2.643	2.38%	0.66
60	2.431	2.490	2.550	2.41%	0.68
61	2.344	2.402	2.461	2.45%	0.69

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62	2.261	2.317	2.375	2.49%	0.71
63	2.181	2.236	2.293	2.52%	0.72
64	2.105	2.159	2.214	2.56%	0.74
65	2.031	2.084	2.138	2.60%	0.75
66	1.961	2.012	2.065	2.63%	0.77
67	1.893	1.944	1.995	2.67%	0.78
68	1.828	1.877	1.928	2.70%	0.80
69	1.765	1.814	1.863	2.74%	0.81
70	1.705	1.753	1.801	2.77%	0.83
71	1.647	1.694	1.742	2.81%	0.84
72	1.592	1.637	1.684	2.84%	0.86
73	1.539	1.583	1.629	2.88%	0.87
74	1.487	1.531	1.575	2.91%	0.89
75	1.438	1.481	1.524	2.95%	0.90
76	1.391	1.432	1.475	2.98%	0.92
77	1.345	1.386	1.428	3.02%	0.93
78	1.301	1.341	1.382	3.05%	0.95
79	1.259	1.298	1.338	3.08%	0.96
80	1.218	1.256	1.295	3.12%	0.98
81	1.179	1.216	1.255	3.15%	0.99
82	1.141	1.178	1.215	3.18%	1.01
83	1.105	1.141	1.177	3.22%	1.03
84	1.070	1.105	1.141	3.25%	1.04
85	1.036	1.070	1.105	3.28%	1.06
86	1.004	1.037	1.071	3.31%	1.07
87	0.9724	1.005	1.039	3.35%	1.09
88	0.9422	0.9741	1.007	3.38%	1.11
89	0.9131	0.9443	0.9766	3.41%	1.12
90	0.8850	0.9156	0.9471	3.44%	1.14
91	0.8580	0.8879	0.9187	3.48%	1.16
92	0.8318	0.8611	0.8913	3.51%	1.17
93	0.8067	0.8353	0.8648	3.54%	1.19
94	0.7824	0.8104	0.8393	3.57%	1.21
95	0.7589	0.7863	0.8146	3.60%	1.22
96	0.7363	0.7631	0.7908	3.63%	1.24
97	0.7144	0.7406	0.7678	3.66%	1.26
98	0.6933	0.7190	0.7455	3.69%	1.28
99	0.6729	0.6980	0.7240	3.72%	1.29
100	0.6532	0.6778	0.7033	3.76%	1.31
101	0.6342	0.6583	0.6832	3.79%	1.33
102	0.6158	0.6394	0.6638	3.82%	1.34

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103	0.5981	0.6211	0.6450	3.85%	1.36
104	0.5809	0.6035	0.6269	3.88%	1.38
105	0.5643	0.5864	0.6093	3.91%	1.40
106	0.5483	0.5699	0.5924	3.94%	1.41
107	0.5328	0.5540	0.5759	3.96%	1.43
108	0.5178	0.5385	0.5600	3.99%	1.45
109	0.5033	0.5236	0.5447	4.02%	1.47
110	0.4893	0.5091	0.5298	4.05%	1.49
111	0.4757	0.4952	0.5154	4.08%	1.50
112	0.4626	0.4816	0.5014	4.11%	1.52
113	0.4498	0.4685	0.4879	4.14%	1.54
114	0.4375	0.4558	0.4748	4.17%	1.56
115	0.4256	0.4435	0.4622	4.20%	1.58
116	0.4141	0.4316	0.4499	4.22%	1.60
117	0.4029	0.4201	0.4380	4.25%	1.62
118	0.3921	0.4090	0.4265	4.28%	1.63
119	0.3816	0.3981	0.4153	4.31%	1.65
120	0.3715	0.3877	0.4045	4.34%	1.67
121	0.3617	0.3775	0.3940	4.36%	1.69
122	0.3521	0.3676	0.3838	4.39%	1.71
123	0.3429	0.3581	0.3739	4.42%	1.73
124	0.3340	0.3488	0.3644	4.45%	1.75
125	0.3253	0.3399	0.3551	4.47%	1.77
126	0.3169	0.3312	0.3461	4.50%	1.79
127	0.3087	0.3227	0.3373	4.53%	1.81
128	0.3008	0.3145	0.3289	4.55%	1.82
129	0.2931	0.3066	0.3206	4.58%	1.84
130	0.2857	0.2989	0.3127	4.61%	1.86
131	0.2785	0.2914	0.3049	4.63%	1.88
132	0.2715	0.2841	0.2974	4.66%	1.90
133	0.2647	0.2771	0.2901	4.69%	1.92
134	0.2581	0.2703	0.2830	4.71%	1.94
135	0.2517	0.2636	0.2761	4.74%	1.96
136	0.2454	0.2572	0.2694	4.77%	1.98
137	0.2394	0.2509	0.2629	4.79%	2.00
138	0.2335	0.2448	0.2566	4.82%	2.02
139	0.2278	0.2389	0.2505	4.84%	2.04
140	0.2223	0.2332	0.2445	4.87%	2.06
141	0.2169	0.2276	0.2387	4.9%	2.08
142	0.2117	0.2222	0.2331	4.9%	2.11

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143	0.2066	0.2169	0.2276	4.9%	2.13
144	0.2017	0.2118	0.2223	5.0%	2.15
145	0.1969	0.2068	0.2171	5.0%	2.17
146	0.1923	0.2019	0.2121	5.0%	2.19
147	0.1877	0.1972	0.2072	5.0%	2.21
148	0.1833	0.1927	0.2024	5.1%	2.23
149	0.1791	0.1882	0.1978	5.1%	2.25
150	0.1749	0.1839	0.1933	5.1%	2.27
151	0.1709	0.1797	0.1889	5.1%	2.29
152	0.1669	0.1756	0.1846	5.2%	2.31
153	0.1631	0.1716	0.1805	5.2%	2.34
154	0.1594	0.1677	0.1765	5.2%	2.36
155	0.1558	0.1639	0.1725	5.2%	2.38
156	0.1522	0.1603	0.1687	5.3%	2.40
157	0.1488	0.1567	0.1650	5.3%	2.42
158	0.1455	0.1532	0.1613	5.3%	2.44
159	0.1422	0.1498	0.1578	5.3%	2.47
160	0.1391	0.1465	0.1544	5.4%	2.49
161	0.1360	0.1433	0.1510	5.4%	2.51
162	0.1330	0.1402	0.1478	5.4%	2.53
163	0.1301	0.1371	0.1446	5.4%	2.55
164	0.1272	0.1342	0.1415	5.4%	2.58
165	0.1245	0.1313	0.1385	5.5%	2.60
166	0.1218	0.1285	0.1355	5.5%	2.62
167	0.1191	0.1257	0.1327	5.5%	2.64
168	0.1166	0.1230	0.1299	5.5%	2.67
169	0.1141	0.1204	0.1271	5.6%	2.69
170	0.1117	0.1179	0.1245	5.6%	2.71
171	0.1093	0.1154	0.1219	5.6%	2.73
172	0.1070	0.1130	0.1194	5.6%	2.76
173	0.1047	0.1107	0.1169	5.7%	2.78
174	0.1025	0.1084	0.1145	5.7%	2.80
175	0.1004	0.1061	0.1122	5.7%	2.83
176	0.0983	0.1039	0.1099	5.7%	2.85
177	0.0963	0.1018	0.1077	5.7%	2.87
178	0.0943	0.0997	0.1055	5.8%	2.90
179	0.0924	0.0977	0.1034	5.8%	2.92
180	0.0905	0.0958	0.1013	5.8%	2.94
181	0.0887	0.0938	0.0993	5.8%	2.97
182	0.0869	0.0920	0.0973	5.8%	2.99
183	0.0851	0.0901	0.0954	5.9%	3.01

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184	0.0834	0.0883	0.0935	5.9%	3.04
185	0.0817	0.0866	0.0917	5.9%	3.06
186	0.0801	0.0849	0.0899	5.9%	3.08
187	0.0785	0.0832	0.0882	6.0%	3.11
188	0.0770	0.0816	0.0865	6.0%	3.13
189	0.0755	0.0800	0.0848	6.0%	3.16
190	0.0740	0.0785	0.0832	6.0%	3.18
191	0.0726	0.0770	0.0816	6.0%	3.21
192	0.0712	0.0755	0.0801	6.1%	3.23
193	0.0698	0.0740	0.0785	6.1%	3.25
194	0.0685	0.0726	0.0771	6.1%	3.28
195	0.0671	0.0713	0.0756	6.1%	3.30
196	0.0659	0.0699	0.0742	6.1%	3.33
197	0.0646	0.0686	0.0728	6.2%	3.35
198	0.0634	0.0673	0.0715	6.2%	3.38
199	0.0622	0.0661	0.0702	6.2%	3.40
200	0.0610	0.0649	0.0689	6.2%	3.43