

Table 6. Resistance Tables for Solid Thermocouple Wires

Individual Wires								Loop			
B&S Guage	Dia. In.	Circ. Mils	Copper	Iron	Constantan	Chromel	Alumel	B&S Ga.	Iron/Const.	Copper/Const.	Chromel/Alumel
1	0.289300	83690	0.01239	0.07186	0.3513	0.5078	0.2115	1	0.4232	0.3637	0.7193
2	0.257600	66360	0.01563	0.09063	0.443	0.6404	0.2667	2	0.5336	0.4586	0.9071
3	0.229400	52620	0.01971	0.1143	0.5587	0.8077	0.3364	3	0.673	0.5784	1.144
4	0.204300	41740	0.02484	0.1441	0.7044	1.018	0.4241	4	0.8485	0.7292	1.442
5	0.181900	33090	0.03134	0.1817	0.8885	1.284	0.5349	5	1.07	0.9198	1.819
6	0.162000	26240	0.03952	0.2292	1.12	1.62	0.6745	6	1.349	1.156	2.295
7	0.144300	20820	0.04981	0.2889	1.412	2.041	0.8501	7	1.701	1.91	2.891
8	0.128500	16510	0.06281	0.3643	1.781	2.574	1.072	8	2.145	2.409	3.646
9	0.114400	13090	0.07922	0.4594	2.246	3.247	1.352	9	2.705	2.325	4.599
10	0.101900	10380	0.0999	0.5794	2.832	4.094	1.705	10	3.411	2.932	5.799
11	0.090740	8234	0.1260	0.7304	3.571	5.162	2.15	11	4.301	3.697	7.312
12	0.080810	6530	0.1588	0.921	4.502	6.508	2.711	12	5.423	4.661	9.219
13	0.071960	5178	0.2003	1.161	5.678	8.208	3.418	13	6.839	5.878	11.63
14	0.064080	4106	0.2526	1.465	7.16	10.35	4.311	14	8.625	7.413	14.66
15	0.057070	3257	0.3184	1.846	9.027	13.05	5.434	15	10.87	9.345	18.48
16	0.050820	2583	0.4015	2.328	11.38	16.45	6.853	16	13.71	11.78	23.3
17	0.045260	2048	0.5063	2.937	14.36	20.75	8.643	17	17.3	14.87	29.39
18	0.040300	1624	0.6385	3.703	18.1	26.17	10.9	18	21.8	18.74	37.07
19	0.035890	1288	0.8051	4.669	22.83	33	13.74	19	27.5	23.64	46.74
20	0.031960	1022	1.016	6.89	28.8	41.63	17.34	20	35.69	29.82	58.97
21	0.028460	810.0	1.280	7.425	36.3	52.47	21.85	21	43.73	37.58	74.32
22	0.025350	642.6	1.614	9.359	45.75	66.14	27.54	22	55.11	46.91	93.68
23	0.022570	509.4	2.036	11.81	57.71	83.43	34.75	23	69.52	59.75	118.2
24	0.020100	404.0	2.567	14.89	72.77	105.2	43.81	24	87.66	75.34	149
25	0.017900	320.4	3.237	18.77	91.76	132.7	55.24	25	100.5	95	187.9
26	0.015940	254.1	4.081	23.67	115.7	167.3	69.66	26	139.4	119.8	237
27	0.014200	201.6	5.144	29.83	145.8	210.8	87.8	27	175.6	150.9	298.6
28	0.012640	159.8	6.489	37.63	184	266	110.8	28	221.6	190.5	376.8
29	0.011260	126.8	8.178	47.43	231.9	335.2	139.6	29	279.3	240.1	464.8
30	0.010030	100.6	10.31	59.78	292.2	422.5	175.9	30	352	302.5	598.4
31	0.008928	79.71	13.01	75.45	368.8	533.2	222.1	31	443.3	381.8	755.3
32	0.007950	63.20	16.41	95.16	465.2	672.5	280.1	32	560.4	481.6	952.6
33	0.007080	50.13	20.69	120	586.5	847.8	353.1	33	706.5	601.2	1201
34	0.006305	39.75	26.09	151.3	739.6	1069	445.3	34	890.9	765.7	1524
35	0.005616	31.53	32.89	190.7	932.4	1348	561.4	35	1123	965.3	1909
36	0.005000	25.00	41.48	240.6	1176	1700	708	36	1417	1217	2408
37	0.004453	19.83	52.29	303.3	1483	2143	892.6	37	1786	1535	3036
38	0.003965	15.72	65.97	382.6	1870	2704	1126	38	2253	1936	3830
39	0.003531	12.47	83.16	482.3	2358	3408	1419	39	2840	2441	4827
40	0.003145	9.891	104.8	608	2972	4297	1790	40	3580	3077	6087