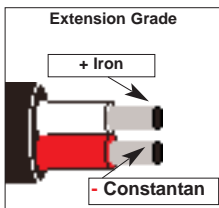




Technical Information Data Bulletin

Type J Thermocouple Iron-Constantan

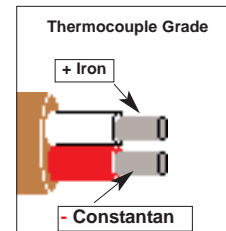
TEMPERATURE & PROCESS INSTRUMENTS - INC.



Temperature vs Millivolt Table Reference Junction 32°F

Temperature Range
Maximum Useful Temperature Range:
Thermocouple Grade: 32 to 1382°F
0 to 750°C
Extension Grade: 32 to 392°F
0 to 200°C

Maximum Thermocouple Grade
Temperature Range
-346 to 2193°F
-210 to 1200°C
Accuracy: Standard: 2.2°C or 0.75%
Special: 1.1°C or 0.4%



Recommended Applications:

Reducing, Vacuum, Inert Environments Limited Use in Oxidizing Environments at High Temperatures Not Recommended for Low Temperatures Applications

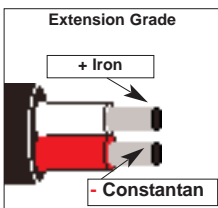
Temp	0	-1	-2	-3	-4	-5	-6	-7	-8	-9
-340	-8.0302	-8.0412	-8.0522	-8.0632	-8.0740	-8.0847	-8.0954			
-330	-7.9146	-7.9265	-7.9384	-7.9502	-7.9618	-7.9734	-7.9850	-7.9964	-8.0077	-8.0190
-320	-7.7908	-7.8035	-7.8162	-7.8288	-7.8413	-7.8537	-7.8660	-7.8783	-7.8905	-7.9026
-310	-7.6589	-7.6725	-7.6859	-7.6993	-7.7126	-7.7258	-7.7390	-7.7520	-7.7650	-7.7779
-300	-7.5194	-7.5337	-7.5480	-7.5621	-7.5762	-7.5901	-7.6041	-7.6179	-7.6317	-7.6453
-290	-7.3726	-7.3876	-7.4025	-7.4174	-7.4322	-7.4469	-7.4616	-7.4761	-7.4907	-7.5051
-280	-7.2185	-7.2343	-7.2499	-7.2655	-7.2810	-7.2964	-7.3118	-7.3271	-7.3423	-7.3575
-270	-7.0577	-7.0741	-7.0904	-7.1066	-7.1228	-7.1389	-7.1550	-7.1710	-7.1869	-7.2028
-260	-6.8902	-6.9072	-6.9242	-6.9411	-6.9580	-6.9748	-6.9915	-7.0081	-7.0247	-7.0412
-250	-6.7164	-6.7341	-6.7517	-6.7692	-6.7867	-6.8041	-6.8214	-6.8387	-6.8559	-6.8731
-240	-6.5365	-6.5547	-6.5729	-6.5911	-6.6092	-6.6272	-6.6451	-6.6631	-6.6809	-6.6987
-230	-6.3507	-6.3695	-6.3883	-6.4070	-6.4257	-6.4443	-6.4629	-6.4813	-6.4998	-6.5182
-220	-6.1592	-6.1786	-6.1980	-6.2172	-6.2365	-6.2557	-6.2748	-6.2938	-6.3128	-6.3318
-210	-5.9624	-5.9823	-6.0022	-6.0220	-6.0417	-6.0615	-6.0811	-6.1007	-6.1203	-6.1398
-200	-5.7602	-5.7807	-5.8011	-5.8214	-5.8417	-5.8619	-5.8821	-5.9023	-5.9223	-5.9424
-190	-5.5531	-5.5740	-5.5949	-5.6158	-5.6366	-5.6573	-5.6780	-5.6986	-5.7192	-5.7398
-180	-5.3411	-5.3625	-5.3839	-5.4052	-5.4265	-5.4477	-5.4689	-5.4900	-5.5111	-5.5321
-170	-5.1245	-5.1464	-5.1682	-5.1900	-5.2117	-5.2334	-5.2550	-5.2766	-5.2982	-5.3197
-160	-4.9035	-4.9258	-4.9480	-4.9702	-4.9924	-5.0145	-5.0366	-5.0587	-5.0807	-5.1026
-150	-4.6781	-4.7008	-4.7235	-4.7461	-4.7687	-4.7913	-4.8138	-4.8363	-4.8587	-4.8811
-140	-4.4486	-4.4718	-4.4948	-4.5179	-4.5409	-4.5639	-4.5868	-4.6097	-4.6325	-4.6553
-130	-4.2152	-4.2387	-4.2622	-4.2856	-4.3090	-4.3324	-4.3557	-4.3790	-4.4022	-4.4255
-120	-3.9780	-4.0019	-4.0257	-4.0495	-4.0733	-4.0970	-4.1207	-4.1444	-4.1680	-4.1916
-110	-3.7371	-3.7613	-3.7856	-3.8097	-3.8339	-3.8580	-3.8820	-3.9061	-3.9301	-3.9540
-100	-3.4927	-3.5173	-3.5419	-3.5664	-3.5909	-3.6153	-3.6398	-3.6641	-3.6885	-3.7128
-90	-3.2450	-3.2699	-3.2948	-3.3197	-3.3445	-3.3693	-3.3940	-3.4187	-3.4434	-3.4681
-80	-2.9940	-3.0193	-3.0445	-3.0697	-3.0948	-3.1199	-3.1450	-3.1700	-3.1951	-3.2200
-70	-2.7400	-2.7656	-2.7911	-2.8165	-2.8420	-2.8674	-2.8928	-2.9182	-2.9435	-2.9688
-60	-2.4830	-2.5089	-2.5347	-2.5604	-2.5862	-2.6119	-2.6376	-2.6632	-2.6889	-2.7144
-50	-2.2232	-2.2493	-2.2754	-2.3014	-2.3275	-2.3535	-2.3794	-2.4054	-2.4313	-2.4572
-40	-1.9607	-1.9870	-2.0134	-2.0397	-2.0660	-2.0923	-2.1185	-2.1447	-2.1709	-2.1971
-30	-1.6955	-1.7221	-1.7487	-1.7753	-1.8019	-1.8284	-1.8549	-1.8814	-1.9078	-1.9343
-20	-1.4279	-1.4547	-1.4816	-1.5084	-1.5352	-1.5620	-1.5887	-1.6155	-1.6422	-1.6689
-10	-1.1578	-1.1850	-1.2120	-1.2391	-1.2661	-1.2931	-1.3201	-1.3471	-1.3740	-1.4010
0	-0.8855	-0.9129	-0.9402	-0.9675	-0.9947	-1.0220	-1.0492	-1.0764	-1.1036	-1.1307
Temp	0	1	2	3	4	5	6	7	8	9
0	-0.8855	-0.8582	-0.8308	-0.8034	-0.7760	-0.7486	-0.7211	-0.6936	-0.6661	-0.6386
10	-0.6111	-0.5835	-0.5559	-0.5283	-0.5007	-0.4730	-0.4454	-0.4177	-0.3900	-0.3622
20	-0.3345	-0.3067	-0.2789	-0.2511	-0.2233	-0.1955	-0.1676	-0.1397	-0.1118	-0.0839
30	-0.0559	-0.0280	0.0000	0.0280	0.0560	0.0841	0.1121	0.1402	0.1683	0.1964
40	0.2245	0.2527	0.2808	0.3090	0.3372	0.3654	0.3937	0.4219	0.4502	0.4785
50	0.5068	0.5351	0.5634	0.5918	0.6202	0.6486	0.6770	0.7054	0.7338	0.7623
60	0.7908	0.8193	0.8478	0.8763	0.9048	0.9334	0.9620	0.9906	1.0192	1.0478
70	1.0764	1.1051	1.1337	1.1624	1.1911	1.2198	1.2485	1.2773	1.3061	1.3348
80	1.3636	1.3924	1.4212	1.4501	1.4789	1.5078	1.5367	1.5656	1.5945	1.6234
90	1.6523	1.6813	1.7102	1.7392	1.7682	1.7972	1.8262	1.8552	1.8843	1.9134
100	1.9424	1.9715	2.0006	2.0297	2.0589	2.0880	2.1171	2.1463	2.1755	2.2047



Technical Information Data Bulletin

Type J Thermocouple Iron-Constantan

TEMPERATURE & PROCESS INSTRUMENTS - INC.



Temperature vs Millivolt Table Reference Junction 32°F

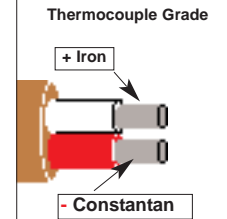
Temperature Range
Maximum Useful Temperature Range:
Thermocouple Grade: 32 to 1382°F
0 to 750°C

Extension Grade: 32 to 392°F
0 to 200°C

Maximum Thermocouple Grade
Temperature Range

-346 to 2193°F
-210 to 1200°C

Accuracy: Standard: 2.2°C or 0.75%
Special: 1.1°C or 0.4%



Recommended Applications:

Reducing, Vacuum, Inert Environments Limited Use in Oxidizing Environments at High Temperatures Not Recommended for Low Temperatures Applications

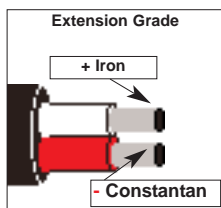
Temp	0	1	2	3	4	5	6	7	8	9
110	2.2339	2.2631	2.2923	2.3216	2.3508	2.3801	2.4094	2.4387	2.4680	2.4973
120	2.5266	2.5560	2.5853	2.6147	2.6441	2.6735	2.7029	2.7323	2.7617	2.7911
130	2.8206	2.8500	2.8795	2.9090	2.9385	2.9680	2.9975	3.0270	3.0566	3.0861
140	3.1157	3.1452	3.1748	3.2044	3.2340	3.2636	3.2933	3.3229	3.3525	3.3822
150	3.4119	3.4415	3.4712	3.5009	3.5306	3.5603	3.5901	3.6198	3.6495	3.6793
160	3.7091	3.7388	3.7686	3.7984	3.8282	3.8580	3.8879	3.9177	3.9475	3.9774
170	4.0072	4.0371	4.0670	4.0969	4.1268	4.1567	4.1866	4.2165	4.2464	4.2764
180	4.3063	4.3363	4.3663	4.3962	4.4262	4.4562	4.4862	4.5162	4.5462	4.5762
190	4.6063	4.6363	4.6664	4.6964	4.7265	4.7566	4.7866	4.8167	4.8468	4.8769
200	4.9070	4.9371	4.9673	4.9974	5.0275	5.0577	5.0878	5.1180	5.1482	5.1784
210	5.2085	5.2387	5.2689	5.2991	5.3293	5.3596	5.3898	5.4200	5.4502	5.4805
220	5.5107	5.5410	5.5713	5.6015	5.6318	5.6621	5.6924	5.7227	5.7530	5.7833
230	5.8136	5.8439	5.8743	5.9046	5.9349	5.9653	5.9956	6.0260	6.0564	6.0867
240	6.1171	6.1475	6.1779	6.2083	6.2387	6.2691	6.2995	6.3299	6.3603	6.3907
250	6.4212	6.4516	6.4820	6.5125	6.5429	6.5734	6.6039	6.6343	6.6648	6.6953
260	6.7258	6.7562	6.7867	6.8172	6.8477	6.8782	6.9087	6.9393	6.9698	7.0003
270	7.0308	7.0614	7.0919	7.1224	7.1530	7.1835	7.2141	7.2447	7.2752	7.3058
280	7.3364	7.3669	7.3975	7.4281	7.4587	7.4893	7.5199	7.5505	7.5811	7.6117
290	7.6423	7.6729	7.7035	7.7341	7.7648	7.7954	7.8260	7.8567	7.8873	7.9180
300	7.9486	7.9793	8.0099	8.0406	8.0712	8.1019	8.1326	8.1632	8.1939	8.2246
310	8.2553	8.2859	8.3166	8.3473	8.3780	8.4087	8.4394	8.4701	8.5008	8.5315
320	8.5622	8.5929	8.6236	8.6544	8.6851	8.7158	8.7465	8.7773	8.8080	8.8387
330	8.8695	8.9002	8.9309	8.9617	8.9924	9.0232	9.0539	9.0847	9.1154	9.1462
340	9.1769	9.2077	9.2385	9.2692	9.3000	9.3308	9.3615	9.3923	9.4231	9.4539
350	9.4846	9.5154	9.5462	9.5770	9.6078	9.6386	9.6694	9.7002	9.7309	9.7617
360	9.7925	9.8233	9.8541	9.8849	9.9157	9.9465	9.9774	10.0082	10.0390	10.0698
370	10.1006	10.1314	10.1622	10.1930	10.2238	10.2547	10.2855	10.3163	10.3471	10.3779
380	10.4088	10.4396	10.4704	10.5013	10.5321	10.5629	10.5937	10.6246	10.6554	10.6862
390	10.7171	10.7479	10.7787	10.8096	10.8404	10.8713	10.9021	10.9329	10.9638	10.9946
400	11.0255	11.0563	11.0872	11.1180	11.1488	11.1797	11.2105	11.2414	11.2722	11.3031
410	11.3339	11.3648	11.3956	11.4265	11.4573	11.4882	11.5190	11.5499	11.5807	11.6116
420	11.6424	11.6733	11.7041	11.7350	11.7658	11.7967	11.8276	11.8584	11.8893	11.9201
430	11.9510	11.9818	12.0127	12.0435	12.0744	12.1052	12.1361	12.1670	12.1978	12.2287
440	12.2595	12.2904	12.3212	12.3521	12.3829	12.4138	12.4446	12.4755	12.5064	12.5372
450	12.5681	12.5989	12.6298	12.6606	12.6915	12.7223	12.7532	12.7840	12.8149	12.8457
460	12.8766	12.9074	12.9383	12.9691	13.0000	13.0308	13.0617	13.0925	13.1234	13.1542
470	13.1851	13.2159	13.2468	13.2776	13.3085	13.3393	13.3701	13.4010	13.4318	13.4627
480	13.4935	13.5244	13.5552	13.5860	13.6169	13.6477	13.6785	13.7094	13.7402	13.7711
490	13.8019	13.8327	13.8636	13.8944	13.9252	13.9561	13.9869	14.0177	14.0485	14.0794
500	14.1102	14.1410	14.1718	14.2027	14.2335	14.2643	14.2951	14.3260	14.3568	14.3876
510	14.4184	14.4492	14.4801	14.5109	14.5417	14.5725	14.6033	14.6341	14.6649	14.6958
520	14.7266	14.7574	14.7882	14.8190	14.8498	14.8806	14.9114	14.9422	14.9730	15.0038
530	15.0346	15.0654	15.0962	15.1270	15.1578	15.1886	15.2194	15.2502	15.2810	15.3118
540	15.3425	15.3733	15.4041	15.4349	15.4657	15.4965	15.5273	15.5580	15.5888	15.6196
550	15.6504	15.6811	15.7119	15.7427	15.7735	15.8042	15.8350	15.8658	15.8966	15.9273
560	15.9581	15.9889	16.0196	16.0504	16.0811	16.1119	16.1427	16.1734	16.2042	16.2349
570	16.2657	16.2965	16.3272	16.3580	16.3887	16.4195	16.4502	16.4810	16.5117	16.5424
580	16.5732	16.6039	16.6347	16.6654	16.6962	16.7269	16.7576	16.7884	16.8191	16.8498



Technical Information Data Bulletin

Type J Thermocouple Iron-Constantan

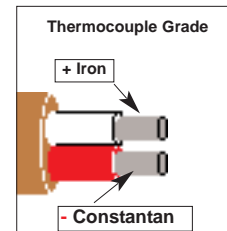
TEMPERATURE & PROCESS INSTRUMENTS - INC.



Temperature vs Millivolt Table Reference Junction 32°F

Temperature Range
Maximum Useful Temperature Range:
Thermocouple Grade: 32 to 1382°F
0 to 750°C
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Maximum Thermocouple Grade
Temperature Range
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Accuracy: Standard: 2.2°C or 0.75%
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Recommended Applications:

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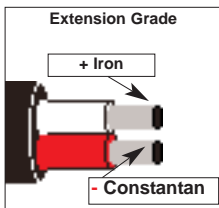
Temp	0	1	2	3	4	5	6	7	8	9
590	16.8806	16.9113	16.9420	16.9728	17.0035	17.0342	17.0649	17.0957	17.1264	17.1571
600	17.1878	17.2185	17.2493	17.2800	17.3107	17.3414	17.3721	17.4028	17.4335	17.4643
610	17.4950	17.5257	17.5564	17.5871	17.6178	17.6485	17.6792	17.7099	17.7406	17.7713
620	17.8020	17.8327	17.8634	17.8941	17.9248	17.9555	17.9862	18.0169	18.0476	18.0782
630	18.1089	18.1396	18.1703	18.2010	18.2317	18.2624	18.2930	18.3237	18.3544	18.3851
640	18.4158	18.4464	18.4771	18.5078	18.5385	18.5691	18.5998	18.6305	18.6612	18.6918
650	18.7225	18.7532	18.7838	18.8145	18.8452	18.8758	18.9065	18.9372	18.9678	18.9985
660	19.0291	19.0598	19.0905	19.1211	19.1518	19.1824	19.2131	19.2437	19.2744	19.3051
670	19.3357	19.3664	19.3970	19.4277	19.4583	19.4890	19.5196	19.5503	19.5809	19.6116
680	19.6422	19.6729	19.7035	19.7341	19.7648	19.7954	19.8261	19.8567	19.8874	19.9180
690	19.9487	19.9793	20.0099	20.0406	20.0712	20.1019	20.1325	20.1631	20.1938	20.2244
700	20.2550	20.2857	20.3163	20.3470	20.3776	20.4082	20.4389	20.4695	20.5001	20.5308
710	20.5614	20.5920	20.6227	20.6533	20.6839	20.7146	20.7452	20.7758	20.8065	20.8371
720	20.8677	20.8984	20.9290	20.9596	20.9903	21.0209	21.0515	21.0822	21.1128	21.1434
730	21.1741	21.2047	21.2353	21.2660	21.2966	21.3272	21.3579	21.3885	21.4191	21.4498
740	21.4804	21.5111	21.5417	21.5723	21.6030	21.6336	21.6642	21.6949	21.7255	21.7561
750	21.7868	21.8174	21.8481	21.8787	21.9093	21.9400	21.9706	22.0013	22.0319	22.0626
760	22.0932	22.1238	22.1545	22.1851	22.2158	22.2464	22.2771	22.3077	22.3384	22.3690
770	22.3997	22.4303	22.4610	22.4916	22.5223	22.5529	22.5836	22.6143	22.6449	22.6756
780	22.7062	22.7369	22.7676	22.7982	22.8289	22.8596	22.8902	22.9209	22.9516	22.9822
790	23.0129	23.0436	23.0743	23.1049	23.1356	23.1663	23.1970	23.2276	23.2583	23.2890
800	23.3197	23.3504	23.3811	23.4118	23.4424	23.4731	23.5038	23.5345	23.5652	23.5959
810	23.6266	23.6573	23.6880	23.7187	23.7494	23.7802	23.8109	23.8416	23.8723	23.9030
820	23.9337	23.9645	23.9952	24.0259	24.0566	24.0874	24.1181	24.1488	24.1796	24.2103
830	24.2410	24.2718	24.3025	24.3333	24.3640	24.3948	24.4255	24.4563	24.4870	24.5178
840	24.5486	24.5793	24.6101	24.6409	24.6716	24.7024	24.7332	24.7640	24.7947	24.8255
850	24.8563	24.8871	24.9179	24.9487	24.9795	25.0103	25.0411	25.0719	25.1027	25.1335
860	25.1643	25.1952	25.2260	25.2568	25.2876	25.3185	25.3493	25.3801	25.4110	25.4418
870	25.4727	25.5035	25.5344	25.5652	25.5961	25.6270	25.6578	25.6887	25.7196	25.7504
880	25.7813	25.8122	25.8431	25.8740	25.9049	25.9358	25.9667	25.9976	26.0285	26.0594
890	26.0903	26.1213	26.1522	26.1831	26.2140	26.2450	26.2759	26.3069	26.3378	26.3688
900	26.3997	26.4307	26.4616	26.4926	26.5236	26.5546	26.5855	26.6165	26.6475	26.6785
910	26.7095	26.7405	26.7715	26.8025	26.8335	26.8646	26.8956	26.9266	26.9577	26.9887
920	27.0197	27.0508	27.0818	27.1129	27.1440	27.1750	27.2061	27.2372	27.2683	27.2993
930	27.3304	27.3615	27.3926	27.4237	27.4548	27.4860	27.5171	27.5482	27.5793	27.6105
940	27.6416	27.6728	27.7039	27.7351	27.7663	27.7974	27.8286	27.8598	27.8910	27.9222
950	27.9534	27.9846	28.0158	28.0470	28.0782	28.1094	28.1407	28.1719	28.2031	28.2344
960	28.2656	28.2969	28.3282	28.3594	28.3907	28.4220	28.4533	28.4846	28.5159	28.5472
970	28.5785	28.6098	28.6412	28.6725	28.7038	28.7352	28.7665	28.7979	28.8292	28.8606
980	28.8920	28.9234	28.9548	28.9862	29.0176	29.0490	29.0804	29.1118	29.1433	29.1747
990	29.2061	29.2376	29.2690	29.3005	29.3320	29.3635	29.3949	29.4264	29.4579	29.4894
1000	29.5210	29.5525	29.5840	29.6155	29.6471	29.6786	29.7102	29.7418	29.7733	29.8049
1010	29.8365	29.8681	29.8997	29.9313	29.9629	29.9945	30.0262	30.0578	30.0894	30.1211
1020	30.1528	30.1844	30.2161	30.2478	30.2795	30.3112	30.3429	30.3746	30.4063	30.4381
1030	30.4698	30.5016	30.5333	30.5651	30.5969	30.6286	30.6604	30.6922	30.7240	30.7558
1040	30.7877	30.8195	30.8513	30.8832	30.9150	30.9469	30.9788	31.0106	31.0425	31.0744
1050	31.1063	31.1383	31.1702	31.2021	31.2341	31.2660	31.2980	31.3299	31.3619	31.3939
1060	31.4259	31.4579	31.4899	31.5219	31.5539	31.5860	31.6180	31.6501	31.6822	31.7142



Technical Information Data Bulletin

Type J Thermocouple Iron-Constantan

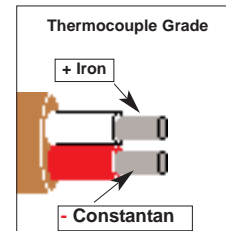
TEMPERATURE & PROCESS INSTRUMENTS - INC.



Temperature vs Millivolt Table Reference Junction 32°F

Temperature Range
Maximum Useful Temperature Range:
Thermocouple Grade: 32 to 1382°F
0 to 750°C
Extension Grade: 32 to 392°F
0 to 200°C

Maximum Thermocouple Grade
Temperature Range
-346 to 2193°F
-210 to 1200°C
Accuracy: Standard: 2.2°C or 0.75%
Special: 1.1°C or 0.4%



Recommended Applications:

Reducing, Vacuum, Inert Environments Limited Use in Oxidizing Environments at High Temperatures Not Recommended for Low Temperatures Applications

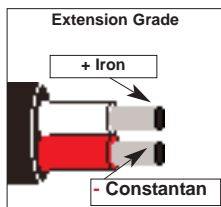
Temp	0	1	2	3	4	5	6	7	8	9
1070	31.7463	31.7784	31.8105	31.8426	31.8747	31.9069	31.9390	31.9712	32.0033	32.0355
1080	32.0677	32.0998	32.1320	32.1642	32.1965	32.2287	32.2609	32.2932	32.3254	32.3577
1090	32.3899	32.4222	32.4545	32.4868	32.5191	32.5514	32.5838	32.6161	32.6485	32.6808
1100	32.7132	32.7456	32.7780	32.8104	32.8428	32.8752	32.9076	32.9401	32.9725	33.0050
1110	33.0374	33.0699	33.1024	33.1349	33.1674	33.1999	33.2325	33.2650	33.2976	33.3301
1120	33.3627	33.3953	33.4279	33.4605	33.4931	33.5257	33.5584	33.5910	33.6237	33.6563
1130	33.6890	33.7217	33.7544	33.7871	33.8198	33.8526	33.8853	33.9180	33.9508	33.9836
1140	34.0164	34.0492	34.0820	34.1148	34.1476	34.1804	34.2133	34.2462	34.2790	34.3119
1150	34.3448	34.3777	34.4106	34.4436	34.4765	34.5094	34.5424	34.5754	34.6083	34.6413
1160	34.6743	34.7074	34.7404	34.7734	34.8065	34.8395	34.8726	34.9057	34.9388	34.9719
1170	35.0050	35.0381	35.0713	35.1044	35.1376	35.1707	35.2039	35.2371	35.2703	35.3035
1180	35.3368	35.3700	35.4033	35.4365	35.4698	35.5031	35.5364	35.5697	35.6030	35.6364
1190	35.6697	35.7031	35.7364	35.7698	35.8032	35.8366	35.8700	35.9034	35.9369	35.9703
1200	36.0038	36.0372	36.0707	36.1042	36.1377	36.1712	36.2048	36.2383	36.2719	36.3054
1210	36.3390	36.3726	36.4062	36.4398	36.4734	36.5071	36.5407	36.5744	36.6080	36.6417
1220	36.6754	36.7091	36.7428	36.7766	36.8103	36.8440	36.8778	36.9116	36.9454	36.9792
1230	37.0130	37.0468	37.0806	37.1145	37.1483	37.1822	37.2161	37.2500	37.2839	37.3178
1240	37.3517	37.3857	37.4196	37.4536	37.4875	37.5215	37.5555	37.5895	37.6235	37.6576
1250	37.6916	37.7257	37.7597	37.7938	37.8279	37.8620	37.8961	37.9302	37.9644	37.9985
1260	38.0327	38.0669	38.1010	38.1352	38.1694	38.2037	38.2379	38.2721	38.3064	38.3406
1270	38.3749	38.4092	38.4435	38.4778	38.5121	38.5465	38.5808	38.6152	38.6495	38.6839
1280	38.7183	38.7527	38.7871	38.8215	38.8560	38.8904	38.9249	38.9593	38.9938	39.0283
1290	39.0628	39.0973	39.1318	39.1664	39.2009	39.2355	39.2700	39.3046	39.3392	39.3738
1300	39.4084	39.4430	39.4777	39.5123	39.5470	39.5816	39.6163	39.6510	39.6857	39.7204
1310	39.7551	39.7898	39.8246	39.8593	39.8941	39.9289	39.9636	39.9984	40.0332	40.0680
1320	40.1029	40.1377	40.1725	40.2074	40.2423	40.2771	40.3120	40.3469	40.3818	40.4167
1330	40.4517	40.4866	40.5215	40.5565	40.5915	40.6264	40.6614	40.6964	40.7314	40.7664
1340	40.8015	40.8365	40.8715	40.9066	40.9416	40.9767	41.0118	41.0469	41.0820	41.1171
1350	41.1522	41.1873	41.2225	41.2576	41.2928	41.3279	41.3631	41.3983	41.4335	41.4687
1360	41.5039	41.5391	41.5743	41.6095	41.6448	41.6800	41.7153	41.7506	41.7858	41.8211
1370	41.8564	41.8917	41.9270	41.9623	41.9977	42.0330	42.0683	42.1037	42.1390	42.1744
1380	42.2098	42.2451	42.2805	42.3159	42.3513	42.3867	42.4221	42.4575	42.4930	42.5284
1390	42.5639	42.5993	42.6348	42.6702	42.7057	42.7412	42.7766	42.8121	42.8476	42.8831
1400	42.9186	42.9542	42.9897	43.0252	43.0608	43.0963	43.1319	43.1675	43.2031	43.2387
1410	43.2743	43.3099	43.3455	43.3812	43.4168	43.4525	43.4881	43.5238	43.5595	43.5952
1420	43.6309	43.6666	43.7023	43.7380	43.7738	43.8095	43.8452	43.8810	43.9167	43.9525
1430	43.9883	44.0240	44.0598	44.0956	44.1314	44.1672	44.2030	44.2388	44.2746	44.3105
1440	44.3463	44.3821	44.4179	44.4538	44.4896	44.5255	44.5613	44.5972	44.6330	44.6689
1450	44.7048	44.7406	44.7765	44.8124	44.8483	44.8841	44.9200	44.9559	44.9918	45.0277
1460	45.0636	45.0995	45.1354	45.1713	45.2072	45.2431	45.2790	45.3149	45.3508	45.3867
1470	45.4226	45.4585	45.4944	45.5303	45.5662	45.6021	45.6380	45.6739	45.7098	45.7457
1480	45.7817	45.8176	45.8535	45.8894	45.9253	45.9612	45.9971	46.0330	46.0689	46.1048
1490	46.1407	46.1766	46.2125	46.2483	46.2842	46.3201	46.3560	46.3919	46.4278	46.4636
1500	46.4995	46.5354	46.5713	46.6071	46.6430	46.6789	46.7147	46.7506	46.7864	46.8223
1510	46.8581	46.8939	46.9298	46.9656	47.0014	47.0373	47.0731	47.1089	47.1447	47.1805
1520	47.2163	47.2521	47.2879	47.3237	47.3595	47.3953	47.4311	47.4668	47.5026	47.5383
1530	47.5741	47.6098	47.6456	47.6813	47.7170	47.7528	47.7885	47.8242	47.8599	47.8956



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Type J Thermocouple Iron-Constantan

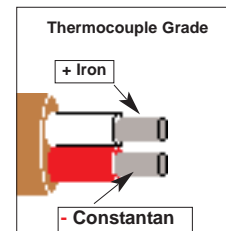
TEMPERATURE & PROCESS INSTRUMENTS - INC.



Temperature vs Millivolt Table Reference Junction 32°F

Temperature Range
Maximum Useful Temperature Range:
Thermocouple Grade: 32 to 1382°F
0 to 750°C
Extension Grade: 32 to 392°F
0 to 200°C

Maximum Thermocouple Grade
Temperature Range
-346 to 2193°F
-210 to 1200°C
Accuracy: Standard: 2.2°C or 0.75%
Special: 1.1°C or 0.4%



Recommended Applications:

Reducing, Vacuum, Inert Environments Limited Use in Oxidizing Environments at High Temperatures Not Recommended for Low Temperatures Applications

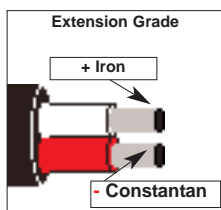
Temp	0	1	2	3	4	5	6	7	8	9
1540	47.9313	47.9670	48.0027	48.0384	48.0740	48.1097	48.1454	48.1810	48.2166	48.2523
1550	48.2879	48.3235	48.3592	48.3948	48.4304	48.4660	48.5016	48.5371	48.5727	48.6083
1560	48.6438	48.6794	48.7149	48.7505	48.7860	48.8215	48.8570	48.8925	48.9280	48.9635
1570	48.9990	49.0345	49.0700	49.1054	49.1409	49.1763	49.2117	49.2472	49.2826	49.3180
1580	49.3534	49.3888	49.4242	49.4595	49.4949	49.5303	49.5656	49.6009	49.6363	49.6716
1590	49.7069	49.7422	49.7775	49.8128	49.8481	49.8833	49.9186	49.9538	49.9891	50.0243
1600	50.0595	50.0947	50.1299	50.1651	50.2003	50.2355	50.2706	50.3058	50.3409	50.3761
1610	50.4112	50.4463	50.4814	50.5165	50.5516	50.5867	50.6217	50.6568	50.6918	50.7269
1620	50.7619	50.7969	50.8319	50.8669	50.9019	50.9369	50.9718	51.0068	51.0417	51.0767
1630	51.1116	51.1465	51.1814	51.2163	51.2512	51.2861	51.3209	51.3558	51.3906	51.4254
1640	51.4603	51.4951	51.5299	51.5647	51.5994	51.6342	51.6690	51.7037	51.7384	51.7732
1650	51.8079	51.8426	51.8773	51.9120	51.9466	51.9813	52.0160	52.0506	52.0852	52.1198
1660	52.1544	52.1890	52.2236	52.2582	52.2928	52.3273	52.3619	52.3964	52.4309	52.4654
1670	52.4999	52.5344	52.5689	52.6034	52.6378	52.6723	52.7067	52.7411	52.7755	52.8100
1680	52.8443	52.8787	52.9131	52.9475	52.9818	53.0161	53.0505	53.0848	53.1191	53.1534
1690	53.1877	53.2219	53.2562	53.2905	53.3247	53.3589	53.3932	53.4274	53.4616	53.4957
1700	53.5299	53.5641	53.5982	53.6324	53.6665	53.7006	53.7348	53.7689	53.8030	53.8370
1710	53.8711	53.9052	53.9392	53.9732	54.0073	54.0413	54.0753	54.1093	54.1433	54.1773
1720	54.2112	54.2452	54.2791	54.3130	54.3470	54.3809	54.4148	54.4487	54.4825	54.5164
1730	54.5503	54.5841	54.6180	54.6518	54.6856	54.7194	54.7532	54.7870	54.8208	54.8545
1740	54.8883	54.9220	54.9558	54.9895	55.0232	55.0569	55.0906	55.1243	55.1580	55.1916
1750	55.2253	55.2589	55.2926	55.3262	55.3598	55.3934	55.4270	55.4606	55.4942	55.5277
1760	55.5613	55.5948	55.6284	55.6619	55.6954	55.7289	55.7624	55.7959	55.8294	55.8629
1770	55.8963	55.9298	55.9632	55.9967	56.0301	56.0635	56.0969	56.1303	56.1637	56.1970
1780	56.2304	56.2638	56.2971	56.3304	56.3638	56.3971	56.4304	56.4637	56.4970	56.5303
1790	56.5636	56.5968	56.6301	56.6633	56.6966	56.7298	56.7630	56.7962	56.8294	56.8626
1800	56.8958	56.9290	56.9622	56.9953	57.0285	57.0616	57.0948	57.1279	57.1610	57.1941
1810	57.2272	57.2603	57.2934	57.3265	57.3595	57.3926	57.4257	57.4587	57.4917	57.5248
1820	57.5578	57.5908	57.6238	57.6568	57.6898	57.7228	57.7557	57.7887	57.8217	57.8546
1830	57.8875	57.9205	57.9534	57.9863	58.0192	58.0521	58.0850	58.1179	58.1508	58.1837
1840	58.2166	58.2494	58.2823	58.3151	58.3480	58.3808	58.4136	58.4464	58.4792	58.5120
1850	58.5448	58.5776	58.6104	58.6432	58.6759	58.7087	58.7415	58.7742	58.8070	58.8397
1860	58.8724	58.9051	58.9379	58.9706	59.0033	59.0360	59.0687	59.1013	59.1340	59.1667
1870	59.1994	59.2320	59.2647	59.2973	59.3300	59.3626	59.3952	59.4278	59.4605	59.4931
1880	59.5257	59.5583	59.5909	59.6235	59.6560	59.6886	59.7212	59.7537	59.7863	59.8189
1890	59.8514	59.8840	59.9165	59.9490	59.9815	60.0141	60.0466	60.0791	60.1116	60.1441
1900	60.1766	60.2091	60.2416	60.2741	60.3065	60.3390	60.3715	60.4039	60.4364	60.4688
1910	60.5013	60.5337	60.5662	60.5986	60.6310	60.6635	60.6959	60.7283	60.7607	60.7931
1920	60.8255	60.8579	60.8903	60.9227	60.9551	60.9875	61.0198	61.0522	61.0846	61.1169
1930	61.1493	61.1817	61.2140	61.2464	61.2787	61.3110	61.3434	61.3757	61.4080	61.4404
1940	61.4727	61.5050	61.5373	61.5696	61.6019	61.6343	61.6666	61.6988	61.7311	61.7634
1950	61.7957	61.8280	61.8603	61.8926	61.9248	61.9571	61.9894	62.0216	62.0539	62.0862
1960	62.1184	62.1507	62.1829	62.2152	62.2474	62.2796	62.3119	62.3441	62.3764	62.4086
1970	62.4408	62.4730	62.5053	62.5375	62.5697	62.6019	62.6341	62.6663	62.6985	62.7307
1980	62.7629	62.7951	62.8273	62.8595	62.8917	62.9239	62.9561	62.9883	63.0205	63.0526
1990	63.0848	63.1170	63.1492	63.1813	63.2135	63.2457	63.2778	63.3100	63.3422	63.3743
2000	63.4065	63.4386	63.4708	63.5029	63.5351	63.5672	63.5994	63.6315	63.6637	63.6958
2010	63.7279	63.7601	63.7922	63.8244	63.8565	63.8886	63.9207	63.9529	63.9850	64.0171



Technical Information Data Bulletin

Type J Thermocouple Iron-Constantan

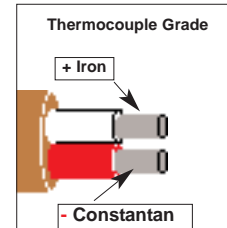
TEMPERATURE & PROCESS INSTRUMENTS - INC



Temperature vs Millivolt Table Reference Junction 32°F

Temperature Range
Maximum Useful Temperature Range:
Thermocouple Grade: 32 to 1382°F
0 to 750°C
Extension Grade: 32 to 392°F
0 to 200°C

Maximum Thermocouple Grade
Temperature Range
-346 to 2193°F
-210 to 1200°C
Accuracy: Standard: 2.2°C or 0.75%
Special: 1.1°C or 0.4%



Recommended Applications:

Reducing, Vacuum, Inert Environments Limited Use in Oxidizing Environments at High Temperatures Not Recommended for Low Temperatures Applications

Temp	0	1	2	3	4	5	6	7	8	9
2020	64.0492	64.0814	64.1135	64.1456	64.1777	64.2098	64.2419	64.2741	64.3062	64.3383
2030	64.3704	64.4025	64.4346	64.4667	64.4988	64.5309	64.5630	64.5951	64.6272	64.6593
2040	64.6914	64.7235	64.7556	64.7877	64.8198	64.8518	64.8839	64.9160	64.9481	64.9802
2050	65.0123	65.0443	65.0764	65.1085	65.1406	65.1727	65.2047	65.2368	65.2689	65.3010
2060	65.3330	65.3651	65.3972	65.4292	65.4613	65.4934	65.5254	65.5575	65.5896	65.6216
2070	65.6537	65.6857	65.7178	65.7498	65.7819	65.8140	65.8460	65.8781	65.9101	65.9422
2080	65.9742	66.0063	66.0383	66.0704	66.1024	66.1344	66.1665	66.1985	66.2306	66.2626
2090	66.2946	66.3267	66.3587	66.3908	66.4228	66.4548	66.4869	66.5189	66.5509	66.5829
2100	66.6150	66.6470	66.6790	66.7110	66.7431	66.7751	66.8071	66.8391	66.8711	66.9031
2110	66.9352	66.9672	66.9992	67.0312	67.0632	67.0952	67.1272	67.1592	67.1912	67.2232
2120	67.2552	67.2872	67.3192	67.3512	67.3832	67.4152	67.4472	67.4792	67.5111	67.5431
2130	67.5751	67.6071	67.6391	67.6711	67.7030	67.7350	67.7670	67.7989	67.8309	67.8629
2140	67.8948	67.9268	67.9588	67.9907	68.0227	68.0546	68.0866	68.1185	68.1505	68.1824
2150	68.2143	68.2463	68.2782	68.3102	68.3421	68.3740	68.4059	68.4379	68.4698	68.5017
2160	68.5336	68.5655	68.5974	68.6293	68.6612	68.6932	68.7250	68.7569	68.7888	68.8207
2170	68.8526	68.8845	68.9164	68.9482	68.9801	69.0120	69.0439	69.0757	69.1076	69.1394
2180	69.1713	69.2031	69.2350	69.2668	69.2986	69.3305	69.3623	69.3941	69.4259	69.4578
2190	69.4896	69.5214	69.5532							

MicroCal 200/200+ Two Channel High Accuracy Portable or Benchtop Laboratory Multifunction Calibrator

Features

- Compatible with 14 thermocouple types
- Resistance thermometers 2, 3, and 4 wire connections (Pt100/200/500/1000, Cu 10/100, and Ni100/120)
- High accuracy ($\pm 0.02\%$ / $\pm 0.01\%$ of reading)
- Two insulated and independent channels
- Menu-driven procedures
- Ideal tool for measuring and simulating: Thermocouple, mV, V, mA, and Ohms



MC1000 High Accuracy Multifunction Process Calibrator

Features

- Read and source modes
- Eight (8) RTD types (Pt100/200/500/1000, Cu10, and Ni120)
- Thermocouple, mV, V, mA, and Ohmsplus YSI 400 Thermistors
- Direct keyboard entry enables quick output changes
- Store up to nine (9) setpoints for each output function
- RTD function compatible with all pulsed transmitters
- RS-232 interface

