TABLE 3 Type B Thermocouple — thermoelectric voltage as a function of temperature (°C); reference junctions at 0 °C

2	3	4	5	6	7	8	9	10	°C
Thermoelectric Voltage in Millivolts									
0.000	-0.001	-0.001	-0.001	-0.001	-0.001	-0.002	-0.002	-0.002	0
-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	-0.003	-0.003	-0.003	10
-0.003	-0.003	-0.003	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	20
-0.002	-0.002	-0.002	-0.001	-0.001	-0.001	-0.001	-0.001	0.000	30
0.000	0.000	0.000	0.001	0.001	0.001	0.002	0.002	0.002	40
0.004	0.004	0.004	0.004	0.004	0.005	0.005	0.006	0.006	50
0.008	0.009	0.009	0.009	0.010	0.010	0.011	0.011	0.012	60
0.013	0.014	0.014	0.015	0.015	0.016	0.017	0.017	0.018	70
0.019	0.020	0.021	0.022	0.022	0.023	0.024	0.025	0.026	80
0.027	0.028	0.029	0.030	0.031	0.031	0.032	0.033	0.034	90
0.035	0.036	0.037	0.038	0.039	0.040	0.041	0.042	0.043	100
0.044	0.045	0.046	0.047	0.048	0.050	0.051	0.052	0.053	110
0.054	0.055	0.056	0.058	0.059	0.062	0.063	0.064	0.065	120
0.066	0.067	0.069	0.070	0.072	0.074	0.075	0.077	0.078	130
0.080	0.081	0.083	0.084	0.086	0.087	0.089	0.091	0.092	140
0.094	0.095	0.097	0.098	0.100	0.102	0.104	0.106	0.107	150
0.109	0.111	0.112	0.114	0.116	0.118	0.120	0.122	0.123	160
0.125	0.127	0.129	0.131	0.133	0.135	0.137	0.139	0.141	170
0.143	0.145	0.147	0.149	0.151	0.153	0.155	0.157	0.159	180
0.161	0.163	0.165	0.167	0.169	0.171	0.173	0.176	0.178	190

Temperature vs. Electromotive Force (EMF) Tables
and
Temperature vs. Resistance Tables

Contents

Standard ANSI/ASTM and Non-ANSI/ASTM Thermocouple Color Codes ii

Section 1

Specifications for Standardized Thermocouples 1

Type B Thermocouple, degree Celsius 2
Type B Thermocouple, degree Fahrenheit 6

Type E Thermocouple, degree Celsius 13
Type E Thermocouple, degree Fahrenheit 16

Type J Thermocouple, degree Celsius 21
Type J Thermocouple, degree Fahrenheit 24

Type K Thermocouple, degree Celsius 30
Type K Thermocouple, degree Fahrenheit 34

Type N Thermocouple, degree Celsius 40
Type N Thermocouple, degree Fahrenheit 44

Type R Thermocouple, degree Celsius 50
Type R Thermocouple, degree Fahrenheit 54

Type S Thermocouple, degree Celsius 61
Type S Thermocouple, degree Fahrenheit 65

Type T Thermocouple, degree Celsius 72
Type T Thermocouple, degree Fahrenheit 74

Type C Thermocouple, degree Celsius 77
Type C Thermocouple, degree Fahrenheit 82

Section 2

Specifications for Non-Letter Designated Thermocouples 91

Type M Thermocouple, degree Celsius 92
Type M Thermocouple, degree Fahrenheit 95

Type P Thermocouple, degree Celsius 101
Type P Thermocouple, degree Fahrenheit 104

Section 3

Specifications for Resistance Temperature Detectors 109

100 Ω Platinum RTD - 0.003 85 coefficient, degree Celsius 110
100 Ω Platinum RTD - 0.003 85 coefficient, degree Fahrenheit 112

100 Ω Platinum RTD - 0.003 92 coefficient, degree Celsius 116
100 Ω Platinum RTD - 0.003 92 coefficient, degree Fahrenheit 118

10 Ω Copper RTD - 0.004 27 coefficient, degree Celsius 122
10 Ω Copper RTD - 0.004 27 coefficient, degree Fahrenheit 123

120 Ω Nickel RTD - 0.006 72 coefficient, degree Celsius 125
120 Ω Nickel RTD - 0.006 72 coefficient, degree Fahrenheit 126

604 Ω Nickel-Iron RTD - 0.005 18 coefficient, degree Celsius 128
604 Ω Nickel-Iron RTD - 0.005 18 coefficient, degree Fahrenheit 129

100 Ω Platinum RTD - 0.003 90 coefficient, degree Celsius 131
100 Ω Platinum RTD - 0.003 90 coefficient, degree Fahrenheit 133

507.5 Ω Nickel-Iron RTD - 0.005 20 coefficient, degree Celsius 137
507.5 Ω Nickel-Iron RTD - 0.005 20 coefficient, degree Fahrenheit 138

Standard ANSI/ASTM and Non-ANSI/ASTM Thermocouple Color Codes

T/C Type	POS NEG	GENERIC and TRADE NAMES	MAGNETIC YES	MAGNETIC NO	INSULATION SINGLE CONDUCTOR	INSULATION OVERALL T/C WIRE	INSULATION OVER ALL EXT. GRADE WIRE	PLUG & JACK
B	BP BN	Platinum 30% Rhodium Platinum 6% Rhodium		X X	Gray Red		Gray	White (Uncompensated)
C	CP CN	Tungsten 5% Rhenium Tungsten 26% Rhenium		X X	Green Red		Red	Brown
E	EP EN	Chromel Constantan		X X	Purple Red	Brown	Purple	Purple
J	JP JN	Iron Constantan	X	 X	White Red	Brown	Black	Black
K	KP KN	Chromel Alumel	 X	X 	Yellow Red	Brown	Yellow	Yellow
M*	MP MN	Nickel 18% Molybdenum Nickel 0.8% Carbon		X X	N/A N/A		Note 1	Yellow
N*	NP NN	Nicrosil Nisil		X X	Orange	Brown	Orange	Orange
P*	PP PN	Platinel 5355 Platinel 7674		X X	N/A N/A		Note 2	Yellow/Black
R	RP RN	Platinum 13% Rhodium Platinum		X X	Black Red		Green	Green
S	SP SN	Platinum 10% Rhodium Platinum		X X	Black Red		Green	Green
T	TP TN	Copper Constantan		X X	Blue Red	Brown	Blue	Blue

* *Non-ANSI/ASTM Symbol*

Note 1 — Use of Type K extension grade wire is practical for temperatures under 121 °C [250 °F]. For Temperatures over 121 °C [250 °F], Type M wire should be used for the entire length of the assembly.
Use of Type K connectors is standard practice.

Note 2 — Use of Type K extension grade wire is strongly discouraged. Platinel extension grade wire should be used for the entire length of the assembly.
Use of Type K connectors is standard practice.

Temperature - Electromotive Force (EMF) Tables for Standardized Thermocouples [1]

This reference manual consists of reference tables that give temperature-electromotive force (emf) relationships for Types B, E, J, K, R, S, T and C thermocouples. These are the thermocouple types most commonly used in industry.

These tables give emf values to three decimal places (1 μV) for each degree of temperature. Such tables are satisfactory for most industrial uses but may not be adequate for computer and similar applications. If greater precision is required, the reader should refer to the NIST reference noted below which also includes tables giving emf values to four decimal places (0.1 μV) as well as equations which permit easy and unique generation of the temperature-emf relationship.

[1] All temperature - electromotive force data in Tables 3 to 18 have been extracted from "Temperature-Electromotive Force Reference Functions and Tables for the Letter-Designated Thermocouple Types Based on the ITS-90" *National Institute of Standards and Technology Monograph 175 and ASTM E230.*

List of Tables

Following is a list of the thermocouple tables included in this reference manual.

Table	Type	Range
1	Limits of error	
2	Recommended upper temperature limits for protected thermocouples	
3	B	(0 to 1820) °C
4	B	(32 to 3308) °F
5	E	(-270 to 1000) °C
6	E	(-454 to 1832) °F
7	J	(-210 to 1200) °C
8	J	(-346 to 2192) °F
9	K	(-270 to 1372) °C
10	K	(-454 to 2500) °F
11	N	(-270 to 1300) °C
12	N	(-454 to 2372) °F
13	R	(-50 to 1768) °C
14	R	(-58 to 3214) °F
15	S	(-50 to 1768) °C
16	S	(-58 to 3214) °F
17	T	(-270 to 400) °C
18	T	(-454 to 752) °F
19	C	(0 to 2315) °C
20	C	(32 to 4200) °F

Table 1 — Initial Limits of Error for Thermocouples

	Temperature Range		Tolerances-Reference Junction 0 °C [32 °F]			
			Standard Tolerances		Special Tolerances	
Type	°C	°F	°C	°F	°C	°F
T	0 to 370	32 to 700	± 1.0 or ± 0.75 %	Note 1	± 0.5 or 0.4 %	Note 1
J	0 to 760	32 to1400	± 2.2 or ± 0.75 %		± 1.1 or 0.4 %	
E	0 to 870	32 to1600	± 1.7 or ± 0.5 %		± 1.0 or ± 0.4 %	
K or N	0 to 1260	32 to 2300	± 2.2 or ± 0.75 %		± 1.1 or ± 0.4 %	
R or S	0 to 1480	32 to 2700	± 1.5 or ± 0.25 %		± 0.6 or ± 0.1 %	
B	870 to 1700	1600 to 3100	± 0.5 %		± 0.25 %	
C	0 to 2315	32 to 4200	± 4.4 or ± 1 %			
T[A]	-200 to 0	-328 to 32	± 1.0 or ± 1.5 %		[B]	
E[A]	-200 to 0	-328 to 32	± 1.7 or ± 1 %		[B]	
K[A]	-200 to 0	-328 to 32	± 2.2 or ± 2 %		[B]	

[A] If materials are required to meet the tolerances stated for temperatures below 0 °C the purchase order must so state.

[B] Special tolerances for temperatures below 0°C are difficult to justify, values for Type E and T thermocouples are suggested as a guide.
Type E (-200 to 0) °C ± 1 °C or ± 0.5 %, whichever is greater
Type T (-200 to 0) °C ± 0.5 °C or ± 0.8 %, whichever is greater

Note 1 — The Fahrenheit tolerance is 1.8 times larger than the °C tolerance at the equivalent °C temperature. Note particularly that percentage tolerance apply only to temperature that are expressed in °C

Table 2 — Recommended Upper Temperature Limits for Protected Thermocouples

	Upper Temperature limit for Various Wire Gage Sizes (Awg). °C [°F]					
Type	8 Gage	14 Gage	20 Gage	24 Gage	28 Gage	30 Gage
T		370 [700]	260 [500]	200 [400]	200 [400]	150 [300]
J	760 [1400]	590 [1100]	480 [900]	370 [700]	370 [700]	320 [600]
E	870 [1600]	650 [1200]	540 [1000]	430 [800]	430 [800]	370 [700]
K and N	1260 [2300]	1090 [2000]	980 [1800]	870 [1600]	870 [1600]	760 [1400]
R and S				1480 [2700]	1480 [2700]	
B				1700 [3100]	1700 [3100]	
C				2315 [4200]		

B°C

TABLE 3 ***Type B Thermocouple*** **—** *thermoelectric voltage as a function of temperature (°C); reference junctions at 0 °C*

°C	0	1	2	3	4	5	6	7	8	9	10	°C
						Thermoelectric Voltage in Millivolts						
0	0.000	0.000	0.000	-0.001	-0.001	-0.001	-0.001	-0.001	-0.002	-0.002	-0.002	0
10	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	-0.003	-0.003	-0.003	10
20	-0.003	-0.003	-0.003	-0.003	-0.003	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	20
30	-0.002	-0.002	-0.002	-0.002	-0.002	-0.001	-0.001	-0.001	-0.001	-0.001	0.000	30
40	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.001	0.002	0.002	0.002	40
50	0.002	0.003	0.003	0.003	0.004	0.004	0.004	0.005	0.005	0.006	0.006	50
60	0.006	0.007	0.007	0.008	0.008	0.009	0.009	0.010	0.010	0.011	0.011	60
70	0.011	0.012	0.012	0.013	0.014	0.014	0.015	0.015	0.016	0.017	0.017	70
80	0.017	0.018	0.019	0.020	0.020	0.021	0.022	0.022	0.023	0.024	0.025	80
90	0.025	0.026	0.026	0.027	0.028	0.029	0.030	0.031	0.031	0.032	0.033	90
100	0.033	0.034	0.035	0.036	0.037	0.038	0.039	0.040	0.041	0.042	0.043	100
110	0.043	0.044	0.045	0.046	0.047	0.048	0.049	0.050	0.051	0.052	0.053	110
120	0.053	0.055	0.056	0.057	0.058	0.059	0.060	0.062	0.063	0.064	0.065	120
130	0.065	0.066	0.068	0.069	0.070	0.072	0.073	0.074	0.075	0.077	0.078	130
140	0.078	0.079	0.081	0.082	0.084	0.085	0.086	0.088	0.089	0.091	0.092	140
150	0.092	0.094	0.095	0.096	0.098	0.099	0.101	0.102	0.104	0.106	0.107	150
160	0.107	0.109	0.110	0.112	0.113	0.115	0.117	0.118	0.120	0.122	0.123	160
170	0.123	0.125	0.127	0.128	0.130	0.132	0.134	0.135	0.137	0.139	0.141	170
180	0.141	0.142	0.144	0.146	0.148	0.150	0.151	0.153	0.155	0.157	0.159	180
190	0.159	0.161	0.163	0.165	0.166	0.168	0.170	0.172	0.174	0.176	0.178	190
200	0.178	0.180	0.182	0.184	0.186	0.188	0.190	0.192	0.195	0.197	0.199	200
210	0.199	0.201	0.203	0.205	0.207	0.209	0.212	0.214	0.216	0.218	0.220	210
220	0.220	0.222	0.225	0.227	0.229	0.231	0.234	0.236	0.238	0.241	0.243	220
230	0.243	0.245	0.248	0.250	0.252	0.255	0.257	0.259	0.262	0.264	0.267	230
240	0.267	0.269	0.271	0.274	0.276	0.279	0.281	0.284	0.286	0.289	0.291	240
250	0.291	0.294	0.296	0.299	0.301	0.304	0.307	0.309	0.312	0.314	0.317	250
260	0.317	0.320	0.322	0.325	0.328	0.330	0.333	0.336	0.338	0.341	0.344	260
270	0.344	0.347	0.349	0.352	0.355	0.358	0.360	0.363	0.366	0.369	0.372	270
280	0.372	0.375	0.377	0.380	0.383	0.386	0.389	0.392	0.395	0.398	0.401	280
290	0.401	0.404	0.407	0.410	0.413	0.416	0.419	0.422	0.425	0.428	0.431	290
300	0.431	0.434	0.437	0.440	0.443	0.446	0.449	0.452	0.455	0.458	0.462	300
310	0.462	0.465	0.468	0.471	0.474	0.478	0.481	0.484	0.487	0.490	0.494	310
320	0.494	0.497	0.500	0.503	0.507	0.510	0.513	0.517	0.520	0.523	0.527	320
330	0.527	0.530	0.533	0.537	0.540	0.544	0.547	0.550	0.554	0.557	0.561	330
340	0.561	0.564	0.568	0.571	0.575	0.578	0.582	0.585	0.589	0.592	0.596	340
350	0.596	0.599	0.603	0.607	0.610	0.614	0.617	0.621	0.625	0.628	0.632	350
360	0.632	0.636	0.639	0.643	0.647	0.650	0.654	0.658	0.662	0.665	0.669	360
370	0.669	0.673	0.677	0.680	0.684	0.688	0.692	0.696	0.700	0.703	0.707	370
380	0.707	0.711	0.715	0.719	0.723	0.727	0.731	0.735	0.738	0.742	0.746	380
390	0.746	0.750	0.754	0.758	0.762	0.766	0.770	0.774	0.778	0.782	0.787	390
400	0.787	0.791	0.795	0.799	0.803	0.807	0.811	0.815	0.819	0.824	0.828	400
410	0.828	0.832	0.836	0.840	0.844	0.849	0.853	0.857	0.861	0.866	0.870	410
420	0.870	0.874	0.878	0.883	0.887	0.891	0.896	0.900	0.904	0.909	0.913	420
430	0.913	0.917	0.922	0.926	0.930	0.935	0.939	0.944	0.948	0.953	0.957	430
440	0.957	0.961	0.966	0.970	0.975	0.979	0.984	0.988	0.993	0.997	1.002	440
450	1.002	1.007	1.011	1.016	1.020	1.025	1.030	1.034	1.039	1.043	1.048	450
460	1.048	1.053	1.057	1.062	1.067	1.071	1.076	1.081	1.086	1.090	1.095	460
470	1.095	1.100	1.105	1.109	1.114	1.119	1.124	1.129	1.133	1.138	1.143	470
480	1.143	1.148	1.153	1.158	1.163	1.167	1.172	1.177	1.182	1.187	1.192	480
490	1.192	1.197	1.202	1.207	1.212	1.217	1.222	1.227	1.232	1.237	1.242	490

°C	0	1	2	3	4	5	6	7	8	9	10	°C

TABLE 3 ***Type B Thermocouple*** *— thermoelectric voltage as a function of temperature (°C); reference junctions at 0 °C*

°C	0	1	2	3	4	5	6	7	8	9	10	°C
						Thermoelectric Voltage in Millivolts						
500	1.242	1.247	1.252	1.257	1.262	1.267	1.272	1.277	1.282	1.288	1.293	500
510	1.293	1.298	1.303	1.308	1.313	1.318	1.324	1.329	1.334	1.339	1.344	510
520	1.344	1.350	1.355	1.360	1.365	1.371	1.376	1.381	1.387	1.392	1.397	520
530	1.397	1.402	1.408	1.413	1.418	1.424	1.429	1.435	1.440	1.445	1.451	530
540	1.451	1.456	1.462	1.467	1.472	1.478	1.483	1.489	1.494	1.500	1.505	540
550	1.505	1.511	1.516	1.522	1.527	1.533	1.539	1.544	1.550	1.555	1.561	550
560	1.561	1.566	1.572	1.578	1.583	1.589	1.595	1.600	1.606	1.612	1.617	560
570	1.617	1.623	1.629	1.634	1.640	1.646	1.652	1.657	1.663	1.669	1.675	570
580	1.675	1.680	1.686	1.692	1.698	1.704	1.709	1.715	1.721	1.727	1.733	580
590	1.733	1.739	1.745	1.750	1.756	1.762	1.768	1.774	1.780	1.786	1.792	590
600	1.792	1.798	1.804	1.810	1.816	1.822	1.828	1.834	1.840	1.846	1.852	600
610	1.852	1.858	1.864	1.870	1.876	1.882	1.888	1.894	1.901	1.907	1.913	610
620	1.913	1.919	1.925	1.931	1.937	1.944	1.950	1.956	1.962	1.968	1.975	620
630	1.975	1.981	1.987	1.993	1.999	2.006	2.012	2.018	2.025	2.031	2.037	630
640	2.037	2.043	2.050	2.056	2.062	2.069	2.075	2.082	2.088	2.094	2.101	640
650	2.101	2.107	2.113	2.120	2.126	2.133	2.139	2.146	2.152	2.158	2.165	650
660	2.165	2.171	2.178	2.184	2.191	2.197	2.204	2.210	2.217	2.224	2.230	660
670	2.230	2.237	2.243	2.250	2.256	2.263	2.270	2.276	2.283	2.289	2.296	670
680	2.296	2.303	2.309	2.316	2.323	2.329	2.336	2.343	2.350	2.356	2.363	680
690	2.363	2.370	2.376	2.383	2.390	2.397	2.403	2.410	2.417	2.424	2.431	690
700	2.431	2.437	2.444	2.451	2.458	2.465	2.472	2.479	2.485	2.492	2.499	700
710	2.499	2.506	2.513	2.520	2.527	2.534	2.541	2.548	2.555	2.562	2.569	710
720	2.569	2.576	2.583	2.590	2.597	2.604	2.611	2.618	2.625	2.632	2.639	720
730	2.639	2.646	2.653	2.660	2.667	2.674	2.681	2.688	2.696	2.703	2.710	730
740	2.710	2.717	2.724	2.731	2.738	2.746	2.753	2.760	2.767	2.775	2.782	740
750	2.782	2.789	2.796	2.803	2.811	2.818	2.825	2.833	2.840	2.847	2.854	750
760	2.854	2.862	2.869	2.876	2.884	2.891	2.898	2.906	2.913	2.921	2.928	760
770	2.928	2.935	2.943	2.950	2.958	2.965	2.973	2.980	2.987	2.995	3.002	770
780	3.002	3.010	3.017	3.025	3.032	3.040	3.047	3.055	3.062	3.070	3.078	780
790	3.078	3.085	3.093	3.100	3.108	3.116	3.123	3.131	3.138	3.146	3.154	790
800	3.154	3.161	3.169	3.177	3.184	3.192	3.200	3.207	3.215	3.223	3.230	800
810	3.230	3.238	3.246	3.254	3.261	3.269	3.277	3.285	3.292	3.300	3.308	810
820	3.308	3.316	3.324	3.331	3.339	3.347	3.355	3.363	3.371	3.379	3.386	820
830	3.386	3.394	3.402	3.410	3.418	3.426	3.434	3.442	3.450	3.458	3.466	830
840	3.466	3.474	3.482	3.490	3.498	3.506	3.514	3.522	3.530	3.538	3.546	840
850	3.546	3.554	3.562	3.570	3.578	3.586	3.594	3.602	3.610	3.618	3.626	850
860	3.626	3.634	3.643	3.651	3.659	3.667	3.675	3.683	3.692	3.700	3.708	860
870	3.708	3.716	3.724	3.732	3.741	3.749	3.757	3.765	3.774	3.782	3.790	870
880	3.790	3.798	3.807	3.815	3.823	3.832	3.840	3.848	3.857	3.865	3.873	880
890	3.873	3.882	3.890	3.898	3.907	3.915	3.923	3.932	3.940	3.949	3.957	890
900	3.957	3.965	3.974	3.982	3.991	3.999	4.008	4.016	4.024	4.033	4.041	900
910	4.041	4.050	4.058	4.067	4.075	4.084	4.093	4.101	4.110	4.118	4.127	910
920	4.127	4.135	4.144	4.152	4.161	4.170	4.178	4.187	4.195	4.204	4.213	920
930	4.213	4.221	4.230	4.239	4.247	4.256	4.265	4.273	4.282	4.291	4.299	930
940	4.299	4.308	4.317	4.326	4.334	4.343	4.352	4.360	4.369	4.378	4.387	940
950	4.387	4.396	4.404	4.413	4.422	4.431	4.440	4.448	4.457	4.466	4.475	950
960	4.475	4.484	4.493	4.501	4.510	4.519	4.528	4.537	4.546	4.555	4.564	960
970	4.564	4.573	4.582	4.591	4.599	4.608	4.617	4.626	4.635	4.644	4.653	970
980	4.653	4.662	4.671	4.680	4.689	4.698	4.707	4.716	4.725	4.734	4.743	980
990	4.743	4.753	4.762	4.771	4.780	4.789	4.798	4.807	4.816	4.825	4.834	990
°C	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**°C**

TABLE 3 ***Type B Thermocouple*** *— thermoelectric voltage as a function of temperature (°C); reference junctions at 0 °C*

°C	0	1	2	3	4	5	6	7	8	9	10	°C
						Thermoelectric Voltage in Millivolts						
1000	4.834	4.843	4.853	4.862	4.871	4.880	4.889	4.898	4.908	4.917	4.926	1000
1010	4.926	4.935	4.944	4.954	4.963	4.972	4.981	4.990	5.000	5.009	5.018	1010
1020	5.018	5.027	5.037	5.046	5.055	5.065	5.074	5.083	5.092	5.102	5.111	1020
1030	5.111	5.120	5.130	5.139	5.148	5.158	5.167	5.176	5.186	5.195	5.205	1030
1040	5.205	5.214	5.223	5.233	5.242	5.252	5.261	5.270	5.280	5.289	5.299	1040
1050	5.299	5.308	5.318	5.327	5.337	5.346	5.356	5.365	5.375	5.384	5.394	1050
1060	5.394	5.403	5.413	5.422	5.432	5.441	5.451	5.460	5.470	5.480	5.489	1060
1070	5.489	5.499	5.508	5.518	5.528	5.537	5.547	5.556	5.566	5.576	5.585	1070
1080	5.585	5.595	5.605	5.614	5.624	5.634	5.643	5.653	5.663	5.672	5.682	1080
1090	5.682	5.692	5.702	5.711	5.721	5.731	5.740	5.750	5.760	5.770	5.780	1090
1100	5.780	5.789	5.799	5.809	5.819	5.828	5.838	5.848	5.858	5.868	5.878	1100
1110	5.878	5.887	5.897	5.907	5.917	5.927	5.937	5.947	5.956	5.966	5.976	1110
1120	5.976	5.986	5.996	6.006	6.016	6.026	6.036	6.046	6.055	6.065	6.075	1120
1130	6.075	6.085	6.095	6.105	6.115	6.125	6.135	6.145	6.155	6.165	6.175	1130
1140	6.175	6.185	6.195	6.205	6.215	6.225	6.235	6.245	6.256	6.266	6.276	1140
1150	6.276	6.286	6.296	6.306	6.316	6.326	6.336	6.346	6.356	6.367	6.377	1150
1160	6.377	6.387	6.397	6.407	6.417	6.427	6.438	6.448	6.458	6.468	6.478	1160
1170	6.478	6.488	6.499	6.509	6.519	6.529	6.539	6.550	6.560	6.570	6.580	1170
1180	6.580	6.591	6.601	6.611	6.621	6.632	6.642	6.652	6.663	6.673	6.683	1180
1190	6.683	6.693	6.704	6.714	6.724	6.735	6.745	6.755	6.766	6.776	6.786	1190
1200	6.786	6.797	6.807	6.818	6.828	6.838	6.849	6.859	6.869	6.880	6.890	1200
1210	6.890	6.901	6.911	6.922	6.932	6.942	6.953	6.963	6.974	6.984	6.995	1210
1220	6.995	7.005	7.016	7.026	7.037	7.047	7.058	7.068	7.079	7.089	7.100	1220
1230	7.100	7.110	7.121	7.131	7.142	7.152	7.163	7.173	7.184	7.194	7.205	1230
1240	7.205	7.216	7.226	7.237	7.247	7.258	7.269	7.279	7.290	7.300	7.311	1240
1250	7.311	7.322	7.332	7.343	7.353	7.364	7.375	7.385	7.396	7.407	7.417	1250
1260	7.417	7.428	7.439	7.449	7.460	7.471	7.482	7.492	7.503	7.514	7.524	1260
1270	7.524	7.535	7.546	7.557	7.567	7.578	7.589	7.600	7.610	7.621	7.632	1270
1280	7.632	7.643	7.653	7.664	7.675	7.686	7.697	7.707	7.718	7.729	7.740	1280
1290	7.740	7.751	7.761	7.772	7.783	7.794	7.805	7.816	7.827	7.837	7.848	1290
1300	7.848	7.859	7.870	7.881	7.892	7.903	7.914	7.924	7.935	7.946	7.957	1300
1310	7.957	7.968	7.979	7.990	8.001	8.012	8.023	8.034	8.045	8.056	8.066	1310
1320	8.066	8.077	8.088	8.099	8.110	8.121	8.132	8.143	8.154	8.165	8.176	1320
1330	8.176	8.187	8.198	8.209	8.220	8.231	8.242	8.253	8.264	8.275	8.286	1330
1340	8.286	8.298	8.309	8.320	8.331	8.342	8.353	8.364	8.375	8.386	8.397	1340
1350	8.397	8.408	8.419	8.430	8.441	8.453	8.464	8.475	8.486	8.497	8.508	1350
1360	8.508	8.519	8.530	8.542	8.553	8.564	8.575	8.586	8.597	8.608	8.620	1360
1370	8.620	8.631	8.642	8.653	8.664	8.675	8.687	8.698	8.709	8.720	8.731	1370
1380	8.731	8.743	8.754	8.765	8.776	8.787	8.799	8.810	8.821	8.832	8.844	1380
1390	8.844	8.855	8.866	8.877	8.889	8.900	8.911	8.922	8.934	8.945	8.956	1390
1400	8.956	8.967	8.979	8.990	9.001	9.013	9.024	9.035	9.047	9.058	9.069	1400
1410	9.069	9.080	9.092	9.103	9.114	9.126	9.137	9.148	9.160	9.171	9.182	1410
1420	9.182	9.194	9.205	9.216	9.228	9.239	9.251	9.262	9.273	9.285	9.296	1420
1430	9.296	9.307	9.319	9.330	9.342	9.353	9.364	9.376	9.387	9.398	9.410	1430
1440	9.410	9.421	9.433	9.444	9.456	9.467	9.478	9.490	9.501	9.513	9.524	1440
1450	9.524	9.536	9.547	9.558	9.570	9.581	9.593	9.604	9.616	9.627	9.639	1450
1460	9.639	9.650	9.662	9.673	9.684	9.696	9.707	9.719	9.730	9.742	9.753	1460
1470	9.753	9.765	9.776	9.788	9.799	9.811	9.822	9.834	9.845	9.857	9.868	1470
1480	9.868	9.880	9.891	9.903	9.914	9.926	9.937	9.949	9.961	9.972	9.984	1480
1490	9.984	9.995	10.007	10.018	10.030	10.041	10.053	10.064	10.076	10.088	10.099	1490

°C	0	1	2	3	4	5	6	7	8	9	10	°C

TABLE 3 ***Type B Thermocouple*** *— thermoelectric voltage as a function of temperature (°C); reference junctions at 0 °C*

°C	0	1	2	3	4	5	6	7	8	9	10	°C
						Thermoelectric Voltage in Millivolts						
1500	10.099	10.111	10.122	10.134	10.145	10.157	10.168	10.180	10.192	10.203	10.215	1500
1510	10.215	10.226	10.238	10.249	10.261	10.273	10.284	10.296	10.307	10.319	10.331	1510
1520	10.331	10.342	10.354	10.365	10.377	10.389	10.400	10.412	10.423	10.435	10.447	1520
1530	10.447	10.458	10.470	10.482	10.493	10.505	10.516	10.528	10.540	10.551	10.563	1530
1540	10.563	10.575	10.586	10.598	10.609	10.621	10.633	10.644	10.656	10.668	10.679	1540
1550	10.679	10.691	10.703	10.714	10.726	10.738	10.749	10.761	10.773	10.784	10.796	1550
1560	10.796	10.808	10.819	10.831	10.843	10.854	10.866	10.877	10.889	10.901	10.913	1560
1570	10.913	10.924	10.936	10.948	10.959	10.971	10.983	10.994	11.006	11.018	11.029	1570
1580	11.029	11.041	11.053	11.064	11.076	11.088	11.099	11.111	11.123	11.134	11.146	1580
1590	11.146	11.158	11.169	11.181	11.193	11.205	11.216	11.228	11.240	11.251	11.263	1590
1600	11.263	11.275	11.286	11.298	11.310	11.321	11.333	11.345	11.357	11.368	11.380	1600
1610	11.380	11.392	11.403	11.415	11.427	11.438	11.450	11.462	11.474	11.485	11.497	1610
1620	11.497	11.509	11.520	11.532	11.544	11.555	11.567	11.579	11.591	11.602	11.614	1620
1630	11.614	11.626	11.637	11.649	11.661	11.673	11.684	11.696	11.708	11.719	11.731	1630
1640	11.731	11.743	11.754	11.766	11.778	11.790	11.801	11.813	11.825	11.836	11.848	1640
1650	11.848	11.860	11.871	11.883	11.895	11.907	11.918	11.930	11.942	11.953	11.965	1650
1660	11.965	11.977	11.988	12.000	12.012	12.024	12.035	12.047	12.059	12.070	12.082	1660
1670	12.082	12.094	12.105	12.117	12.129	12.141	12.152	12.164	12.176	12.187	12.199	1670
1680	12.199	12.211	12.222	12.234	12.246	12.257	12.269	12.281	12.292	12.304	12.316	1680
1690	12.316	12.327	12.339	12.351	12.363	12.374	12.386	12.398	12.409	12.421	12.433	1690
1700	12.433	12.444	12.456	12.468	12.479	12.491	12.503	12.514	12.526	12.538	12.549	1700
1710	12.549	12.561	12.572	12.584	12.596	12.607	12.619	12.631	12.642	12.654	12.666	1710
1720	12.666	12.677	12.689	12.701	12.712	12.724	12.736	12.747	12.759	12.770	12.782	1720
1730	12.782	12.794	12.805	12.817	12.829	12.840	12.852	12.863	12.875	12.887	12.898	1730
1740	12.898	12.910	12.921	12.933	12.945	12.956	12.968	12.980	12.991	13.003	13.014	1740
1750	13.014	13.026	13.037	13.049	13.061	13.072	13.084	13.095	13.107	13.119	13.130	1750
1760	13.130	13.142	13.153	13.165	13.176	13.188	13.200	13.211	13.223	13.234	13.246	1760
1770	13.246	13.257	13.269	13.280	13.292	13.304	13.315	13.327	13.338	13.350	13.361	1770
1780	13.361	13.373	13.384	13.396	13.407	13.419	13.430	13.442	13.453	13.465	13.476	1780
1790	13.476	13.488	13.499	13.511	13.522	13.534	13.545	13.557	13.568	13.580	13.591	1790
1800	13.591	13.603	13.614	13.626	13.637	13.649	13.660	13.672	13.683	13.694	13.706	1800
1810	13.706	13.717	13.729	13.740	13.752	13.763	13.775	13.786	13.797	13.809	13.820	1810
1820	13.820											1820

°C	0	1	2	3	4	5	6	7	8	9	10	°C

TABLE 4 ***Type B Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
					Thermoelectric Voltage in Millivolts							
30			0.000	0.000	0.000	0.000	-0.001	-0.001	-0.001	-0.001	-0.001	30
40	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.002	-0.002	-0.002	-0.002	-0.002	40
50	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	50
60	-0.002	-0.002	-0.002	-0.003	-0.003	-0.003	-0.003	-0.003	-0.003	-0.003	-0.003	60
70	-0.003	-0.003	-0.003	-0.003	-0.003	-0.003	-0.003	-0.002	-0.002	-0.002	-0.002	70
80	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	80
90	-0.002	-0.002	-0.002	-0.002	-0.002	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	90
100	-0.001	-0.001	-0.001	-0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	100
110	0.000	0.000	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.002	0.002	110
120	0.002	0.002	0.002	0.002	0.003	0.003	0.003	0.003	0.003	0.004	0.004	120
130	0.004	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.006	0.006	0.006	130
140	0.006	0.006	0.007	0.007	0.007	0.007	0.008	0.008	0.008	0.009	0.009	140
150	0.009	0.009	0.009	0.010	0.010	0.010	0.011	0.011	0.011	0.012	0.012	150
160	0.012	0.012	0.013	0.013	0.013	0.014	0.014	0.014	0.015	0.015	0.015	160
170	0.015	0.016	0.016	0.016	0.017	0.017	0.017	0.018	0.018	0.019	0.019	170
180	0.019	0.019	0.020	0.020	0.021	0.021	0.021	0.022	0.022	0.023	0.023	180
190	0.023	0.023	0.024	0.024	0.025	0.025	0.026	0.026	0.027	0.027	0.027	190
200	0.027	0.028	0.028	0.029	0.029	0.030	0.030	0.031	0.031	0.032	0.032	200
210	0.032	0.033	0.033	0.034	0.034	0.035	0.035	0.036	0.036	0.037	0.037	210
220	0.037	0.038	0.038	0.039	0.039	0.040	0.041	0.041	0.042	0.042	0.043	220
230	0.043	0.043	0.044	0.044	0.045	0.046	0.046	0.047	0.047	0.048	0.049	230
240	0.049	0.049	0.050	0.050	0.051	0.052	0.052	0.053	0.053	0.054	0.055	240
250	0.055	0.055	0.056	0.057	0.057	0.058	0.059	0.059	0.060	0.060	0.061	250
260	0.061	0.062	0.062	0.063	0.064	0.065	0.065	0.066	0.067	0.067	0.068	260
270	0.068	0.069	0.069	0.070	0.071	0.072	0.072	0.073	0.074	0.074	0.075	270
280	0.075	0.076	0.077	0.077	0.078	0.079	0.080	0.080	0.081	0.082	0.083	280
290	0.083	0.083	0.084	0.085	0.086	0.086	0.087	0.088	0.089	0.090	0.090	290
300	0.090	0.091	0.092	0.093	0.094	0.094	0.095	0.096	0.097	0.098	0.099	300
310	0.099	0.099	0.100	0.101	0.102	0.103	0.104	0.105	0.105	0.106	0.107	310
320	0.107	0.108	0.109	0.110	0.111	0.112	0.112	0.113	0.114	0.115	0.116	320
330	0.116	0.117	0.118	0.119	0.120	0.121	0.121	0.122	0.123	0.124	0.125	330
340	0.125	0.126	0.127	0.128	0.129	0.130	0.131	0.132	0.133	0.134	0.135	340
350	0.135	0.136	0.137	0.138	0.139	0.140	0.141	0.142	0.143	0.144	0.145	350
360	0.145	0.146	0.147	0.148	0.149	0.150	0.151	0.152	0.153	0.154	0.155	360
370	0.155	0.156	0.157	0.158	0.159	0.160	0.161	0.162	0.163	0.164	0.165	370
380	0.165	0.166	0.167	0.168	0.170	0.171	0.172	0.173	0.174	0.175	0.176	380
390	0.176	0.177	0.178	0.179	0.180	0.182	0.183	0.184	0.185	0.186	0.187	390
400	0.187	0.188	0.190	0.191	0.192	0.193	0.194	0.195	0.196	0.198	0.199	400
410	0.199	0.200	0.201	0.202	0.203	0.205	0.206	0.207	0.208	0.209	0.211	410
420	0.211	0.212	0.213	0.214	0.215	0.217	0.218	0.219	0.220	0.222	0.223	420
430	0.223	0.224	0.225	0.226	0.228	0.229	0.230	0.231	0.233	0.234	0.235	430
440	0.235	0.236	0.238	0.239	0.240	0.242	0.243	0.244	0.245	0.247	0.248	440
450	0.248	0.249	0.251	0.252	0.253	0.255	0.256	0.257	0.259	0.260	0.261	450
460	0.261	0.263	0.264	0.265	0.267	0.268	0.269	0.271	0.272	0.273	0.275	460
470	0.275	0.276	0.277	0.279	0.280	0.282	0.283	0.284	0.286	0.287	0.288	470
480	0.288	0.290	0.291	0.293	0.294	0.296	0.297	0.298	0.300	0.301	0.303	480
490	0.303	0.304	0.305	0.307	0.308	0.310	0.311	0.313	0.314	0.316	0.317	490

°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 4 ***Type B Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
500	0.317	0.319	0.320	0.321	0.323	0.324	0.326	0.327	0.329	0.330	0.332	500
510	0.332	0.333	0.335	0.336	0.338	0.339	0.341	0.342	0.344	0.345	0.347	510
520	0.347	0.348	0.350	0.352	0.353	0.355	0.356	0.358	0.359	0.361	0.362	520
530	0.362	0.364	0.365	0.367	0.369	0.370	0.372	0.373	0.375	0.377	0.378	530
540	0.378	0.380	0.381	0.383	0.384	0.386	0.388	0.389	0.391	0.393	0.394	540
550	0.394	0.396	0.397	0.399	0.401	0.402	0.404	0.406	0.407	0.409	0.411	550
560	0.411	0.412	0.414	0.416	0.417	0.419	0.421	0.422	0.424	0.426	0.427	560
570	0.427	0.429	0.431	0.432	0.434	0.436	0.437	0.439	0.441	0.443	0.444	570
580	0.444	0.446	0.448	0.449	0.451	0.453	0.455	0.456	0.458	0.460	0.462	580
590	0.462	0.463	0.465	0.467	0.469	0.470	0.472	0.474	0.476	0.478	0.479	590
600	0.479	0.481	0.483	0.485	0.486	0.488	0.490	0.492	0.494	0.495	0.497	600
610	0.497	0.499	0.501	0.503	0.505	0.506	0.508	0.510	0.512	0.514	0.516	610
620	0.516	0.517	0.519	0.521	0.523	0.525	0.527	0.529	0.530	0.532	0.534	620
630	0.534	0.536	0.538	0.540	0.542	0.544	0.546	0.547	0.549	0.551	0.553	630
640	0.553	0.555	0.557	0.559	0.561	0.563	0.565	0.567	0.569	0.570	0.572	640
650	0.572	0.574	0.576	0.578	0.580	0.582	0.584	0.586	0.588	0.590	0.592	650
660	0.592	0.594	0.596	0.598	0.600	0.602	0.604	0.606	0.608	0.610	0.612	660
670	0.612	0.614	0.616	0.618	0.620	0.622	0.624	0.626	0.628	0.630	0.632	670
680	0.632	0.634	0.636	0.638	0.640	0.642	0.644	0.646	0.648	0.650	0.653	680
690	0.653	0.655	0.657	0.659	0.661	0.663	0.665	0.667	0.669	0.671	0.673	690
700	0.673	0.675	0.678	0.680	0.682	0.684	0.686	0.688	0.690	0.692	0.694	700
710	0.694	0.697	0.699	0.701	0.703	0.705	0.707	0.709	0.712	0.714	0.716	710
720	0.716	0.718	0.720	0.722	0.725	0.727	0.729	0.731	0.733	0.735	0.738	720
730	0.738	0.740	0.742	0.744	0.746	0.749	0.751	0.753	0.755	0.757	0.760	730
740	0.760	0.762	0.764	0.766	0.769	0.771	0.773	0.775	0.778	0.780	0.782	740
750	0.782	0.784	0.787	0.789	0.791	0.793	0.796	0.798	0.800	0.802	0.805	750
760	0.805	0.807	0.809	0.812	0.814	0.816	0.818	0.821	0.823	0.825	0.828	760
770	0.828	0.830	0.832	0.835	0.837	0.839	0.842	0.844	0.846	0.849	0.851	770
780	0.851	0.853	0.856	0.858	0.860	0.863	0.865	0.867	0.870	0.872	0.875	780
790	0.875	0.877	0.879	0.882	0.884	0.886	0.889	0.891	0.894	0.896	0.898	790
800	0.898	0.901	0.903	0.906	0.908	0.910	0.913	0.915	0.918	0.920	0.923	800
810	0.923	0.925	0.927	0.930	0.932	0.935	0.937	0.940	0.942	0.945	0.947	810
820	0.947	0.950	0.952	0.955	0.957	0.959	0.962	0.964	0.967	0.969	0.972	820
830	0.972	0.974	0.977	0.979	0.982	0.984	0.987	0.989	0.992	0.994	0.997	830
840	0.997	1.000	1.002	1.005	1.007	1.010	1.012	1.015	1.017	1.020	1.022	840
850	1.022	1.025	1.027	1.030	1.033	1.035	1.038	1.040	1.043	1.045	1.048	850
860	1.048	1.051	1.053	1.056	1.058	1.061	1.064	1.066	1.069	1.071	1.074	860
870	1.074	1.077	1.079	1.082	1.085	1.087	1.090	1.092	1.095	1.098	1.100	870
880	1.100	1.103	1.106	1.108	1.111	1.114	1.116	1.119	1.122	1.124	1.127	880
890	1.127	1.130	1.132	1.135	1.138	1.140	1.143	1.146	1.148	1.151	1.154	890
900	1.154	1.157	1.159	1.162	1.165	1.167	1.170	1.173	1.176	1.178	1.181	900
910	1.181	1.184	1.186	1.189	1.192	1.195	1.197	1.200	1.203	1.206	1.208	910
920	1.208	1.211	1.214	1.217	1.220	1.222	1.225	1.228	1.231	1.233	1.236	920
930	1.236	1.239	1.242	1.245	1.247	1.250	1.253	1.256	1.259	1.262	1.264	930
940	1.264	1.267	1.270	1.273	1.276	1.278	1.281	1.284	1.287	1.290	1.293	940
950	1.293	1.296	1.298	1.301	1.304	1.307	1.310	1.313	1.316	1.318	1.321	950
960	1.321	1.324	1.327	1.330	1.333	1.336	1.339	1.342	1.344	1.347	1.350	960
970	1.350	1.353	1.356	1.359	1.362	1.365	1.368	1.371	1.374	1.377	1.379	970
980	1.379	1.382	1.385	1.388	1.391	1.394	1.397	1.400	1.403	1.406	1.409	980
990	1.409	1.412	1.415	1.418	1.421	1.424	1.427	1.430	1.433	1.436	1.439	990
°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 4 ***Type B Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
1000	1.439	1.442	1.445	1.448	1.451	1.454	1.457	1.460	1.463	1.466	1.469	1000
1010	1.469	1.472	1.475	1.478	1.481	1.484	1.487	1.490	1.493	1.496	1.499	1010
1020	1.499	1.502	1.505	1.508	1.511	1.515	1.518	1.521	1.524	1.527	1.530	1020
1030	1.530	1.533	1.536	1.539	1.542	1.545	1.548	1.552	1.555	1.558	1.561	1030
1040	1.561	1.564	1.567	1.570	1.573	1.576	1.580	1.583	1.586	1.589	1.592	1040
1050	1.592	1.595	1.598	1.601	1.605	1.608	1.611	1.614	1.617	1.620	1.624	1050
1060	1.624	1.627	1.630	1.633	1.636	1.639	1.643	1.646	1.649	1.652	1.655	1060
1070	1.655	1.659	1.662	1.665	1.668	1.671	1.675	1.678	1.681	1.684	1.687	1070
1080	1.687	1.691	1.694	1.697	1.700	1.704	1.707	1.710	1.713	1.716	1.720	1080
1090	1.720	1.723	1.726	1.729	1.733	1.736	1.739	1.743	1.746	1.749	1.752	1090
1100	1.752	1.756	1.759	1.762	1.765	1.769	1.772	1.775	1.779	1.782	1.785	1100
1110	1.785	1.789	1.792	1.795	1.798	1.802	1.805	1.808	1.812	1.815	1.818	1110
1120	1.818	1.822	1.825	1.828	1.832	1.835	1.838	1.842	1.845	1.849	1.852	1120
1130	1.852	1.855	1.859	1.862	1.865	1.869	1.872	1.875	1.879	1.882	1.886	1130
1140	1.886	1.889	1.892	1.896	1.899	1.903	1.906	1.909	1.913	1.916	1.920	1140
1150	1.920	1.923	1.926	1.930	1.933	1.937	1.940	1.944	1.947	1.950	1.954	1150
1160	1.954	1.957	1.961	1.964	1.968	1.971	1.975	1.978	1.981	1.985	1.988	1160
1170	1.988	1.992	1.995	1.999	2.002	2.006	2.009	2.013	2.016	2.020	2.023	1170
1180	2.023	2.027	2.030	2.034	2.037	2.041	2.044	2.048	2.051	2.055	2.058	1180
1190	2.058	2.062	2.065	2.069	2.072	2.076	2.079	2.083	2.086	2.090	2.094	1190
1200	2.094	2.097	2.101	2.104	2.108	2.111	2.115	2.118	2.122	2.126	2.129	1200
1210	2.129	2.133	2.136	2.140	2.143	2.147	2.151	2.154	2.158	2.161	2.165	1210
1220	2.165	2.169	2.172	2.176	2.179	2.183	2.187	2.190	2.194	2.197	2.201	1220
1230	2.201	2.205	2.208	2.212	2.216	2.219	2.223	2.226	2.230	2.234	2.237	1230
1240	2.237	2.241	2.245	2.248	2.252	2.256	2.259	2.263	2.267	2.270	2.274	1240
1250	2.274	2.278	2.281	2.285	2.289	2.292	2.296	2.300	2.303	2.307	2.311	1250
1260	2.311	2.315	2.318	2.322	2.326	2.329	2.333	2.337	2.341	2.344	2.348	1260
1270	2.348	2.352	2.355	2.359	2.363	2.367	2.370	2.374	2.378	2.382	2.385	1270
1280	2.385	2.389	2.393	2.397	2.400	2.404	2.408	2.412	2.416	2.419	2.423	1280
1290	2.423	2.427	2.431	2.434	2.438	2.442	2.446	2.450	2.453	2.457	2.461	1290
1300	2.461	2.465	2.469	2.472	2.476	2.480	2.484	2.488	2.492	2.495	2.499	1300
1310	2.499	2.503	2.507	2.511	2.515	2.518	2.522	2.526	2.530	2.534	2.538	1310
1320	2.538	2.541	2.545	2.549	2.553	2.557	2.561	2.565	2.569	2.572	2.576	1320
1330	2.576	2.580	2.584	2.588	2.592	2.596	2.600	2.604	2.607	2.611	2.615	1330
1340	2.615	2.619	2.623	2.627	2.631	2.635	2.639	2.643	2.647	2.651	2.654	1340
1350	2.654	2.658	2.662	2.666	2.670	2.674	2.678	2.682	2.686	2.690	2.694	1350
1360	2.694	2.698	2.702	2.706	2.710	2.714	2.718	2.722	2.726	2.730	2.734	1360
1370	2.734	2.738	2.742	2.746	2.750	2.754	2.758	2.762	2.766	2.770	2.774	1370
1380	2.774	2.778	2.782	2.786	2.790	2.794	2.798	2.802	2.806	2.810	2.814	1380
1390	2.814	2.818	2.822	2.826	2.830	2.834	2.838	2.842	2.846	2.850	2.854	1390
1400	2.854	2.859	2.863	2.867	2.871	2.875	2.879	2.883	2.887	2.891	2.895	1400
1410	2.895	2.899	2.903	2.908	2.912	2.916	2.920	2.924	2.928	2.932	2.936	1410
1420	2.936	2.940	2.944	2.949	2.953	2.957	2.961	2.965	2.969	2.973	2.978	1420
1430	2.978	2.982	2.986	2.990	2.994	2.998	3.002	3.007	3.011	3.015	3.019	1430
1440	3.019	3.023	3.027	3.032	3.036	3.040	3.044	3.048	3.052	3.057	3.061	1440
1450	3.061	3.065	3.069	3.073	3.078	3.082	3.086	3.090	3.094	3.099	3.103	1450
1460	3.103	3.107	3.111	3.116	3.120	3.124	3.128	3.132	3.137	3.141	3.145	1460
1470	3.145	3.149	3.154	3.158	3.162	3.166	3.171	3.175	3.179	3.183	3.188	1470
1480	3.188	3.192	3.196	3.200	3.205	3.209	3.213	3.218	3.222	3.226	3.230	1480
1490	3.230	3.235	3.239	3.243	3.248	3.252	3.256	3.261	3.265	3.269	3.273	1490
°F	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**°F**

TABLE 4 ***Type B Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
1500	3.273	3.278	3.282	3.286	3.291	3.295	3.299	3.304	3.308	3.312	3.317	1500
1510	3.317	3.321	3.325	3.330	3.334	3.338	3.343	3.347	3.352	3.356	3.360	1510
1520	3.360	3.365	3.369	3.373	3.378	3.382	3.386	3.391	3.395	3.400	3.404	1520
1530	3.404	3.408	3.413	3.417	3.422	3.426	3.430	3.435	3.439	3.444	3.448	1530
1540	3.448	3.452	3.457	3.461	3.466	3.470	3.474	3.479	3.483	3.488	3.492	1540
1550	3.492	3.497	3.501	3.506	3.510	3.514	3.519	3.523	3.528	3.532	3.537	1550
1560	3.537	3.541	3.546	3.550	3.555	3.559	3.563	3.568	3.572	3.577	3.581	1560
1570	3.581	3.586	3.590	3.595	3.599	3.604	3.608	3.613	3.617	3.622	3.626	1570
1580	3.626	3.631	3.635	3.640	3.644	3.649	3.653	3.658	3.662	3.667	3.672	1580
1590	3.672	3.676	3.681	3.685	3.690	3.694	3.699	3.703	3.708	3.712	3.717	1590
1600	3.717	3.722	3.726	3.731	3.735	3.740	3.744	3.749	3.753	3.758	3.763	1600
1610	3.763	3.767	3.772	3.776	3.781	3.786	3.790	3.795	3.799	3.804	3.809	1610
1620	3.809	3.813	3.818	3.822	3.827	3.832	3.836	3.841	3.845	3.850	3.855	1620
1630	3.855	3.859	3.864	3.869	3.873	3.878	3.882	3.887	3.892	3.896	3.901	1630
1640	3.901	3.906	3.910	3.915	3.920	3.924	3.929	3.934	3.938	3.943	3.948	1640
1650	3.948	3.952	3.957	3.962	3.966	3.971	3.976	3.980	3.985	3.990	3.994	1650
1660	3.994	3.999	4.004	4.009	4.013	4.018	4.023	4.027	4.032	4.037	4.041	1660
1670	4.041	4.046	4.051	4.056	4.060	4.065	4.070	4.075	4.079	4.084	4.089	1670
1680	4.089	4.093	4.098	4.103	4.108	4.112	4.117	4.122	4.127	4.131	4.136	1680
1690	4.136	4.141	4.146	4.151	4.155	4.160	4.165	4.170	4.174	4.179	4.184	1690
1700	4.184	4.189	4.194	4.198	4.203	4.208	4.213	4.217	4.222	4.227	4.232	1700
1710	4.232	4.237	4.242	4.246	4.251	4.256	4.261	4.266	4.270	4.275	4.280	1710
1720	4.280	4.285	4.290	4.295	4.299	4.304	4.309	4.314	4.319	4.324	4.328	1720
1730	4.328	4.333	4.338	4.343	4.348	4.353	4.358	4.362	4.367	4.372	4.377	1730
1740	4.377	4.382	4.387	4.392	4.397	4.401	4.406	4.411	4.416	4.421	4.426	1740
1750	4.426	4.431	4.436	4.441	4.445	4.450	4.455	4.460	4.465	4.470	4.475	1750
1760	4.475	4.480	4.485	4.490	4.495	4.500	4.504	4.509	4.514	4.519	4.524	1760
1770	4.524	4.529	4.534	4.539	4.544	4.549	4.554	4.559	4.564	4.569	4.574	1770
1780	4.574	4.579	4.584	4.589	4.593	4.598	4.603	4.608	4.613	4.618	4.623	1780
1790	4.623	4.628	4.633	4.638	4.643	4.648	4.653	4.658	4.663	4.668	4.673	1790
1800	4.673	4.678	4.683	4.688	4.693	4.698	4.703	4.708	4.713	4.718	4.723	1800
1810	4.723	4.728	4.733	4.738	4.743	4.748	4.754	4.759	4.764	4.769	4.774	1810
1820	4.774	4.779	4.784	4.789	4.794	4.799	4.804	4.809	4.814	4.819	4.824	1820
1830	4.824	4.829	4.834	4.839	4.844	4.850	4.855	4.860	4.865	4.870	4.875	1830
1840	4.875	4.880	4.885	4.890	4.895	4.900	4.905	4.911	4.916	4.921	4.926	1840
1850	4.926	4.931	4.936	4.941	4.946	4.951	4.957	4.962	4.967	4.972	4.977	1850
1860	4.977	4.982	4.987	4.992	4.998	5.003	5.008	5.013	5.018	5.023	5.028	1860
1870	5.028	5.034	5.039	5.044	5.049	5.054	5.059	5.065	5.070	5.075	5.080	1870
1880	5.080	5.085	5.090	5.096	5.101	5.106	5.111	5.116	5.121	5.127	5.132	1880
1890	5.132	5.137	5.142	5.147	5.153	5.158	5.163	5.168	5.173	5.179	5.184	1890
1900	5.184	5.189	5.194	5.199	5.205	5.210	5.215	5.220	5.225	5.231	5.236	1900
1910	5.236	5.241	5.246	5.252	5.257	5.262	5.267	5.273	5.278	5.283	5.288	1910
1920	5.288	5.294	5.299	5.304	5.309	5.315	5.320	5.325	5.330	5.336	5.341	1920
1930	5.341	5.346	5.351	5.357	5.362	5.367	5.373	5.378	5.383	5.388	5.394	1930
1940	5.394	5.399	5.404	5.410	5.415	5.420	5.425	5.431	5.436	5.441	5.447	1940
1950	5.447	5.452	5.457	5.463	5.468	5.473	5.479	5.484	5.489	5.495	5.500	1950
1960	5.500	5.505	5.511	5.516	5.521	5.527	5.532	5.537	5.543	5.548	5.553	1960
1970	5.553	5.559	5.564	5.569	5.575	5.580	5.585	5.591	5.596	5.601	5.607	1970
1980	5.607	5.612	5.618	5.623	5.628	5.634	5.639	5.644	5.650	5.655	5.661	1980
1990	5.661	5.666	5.671	5.677	5.682	5.688	5.693	5.698	5.704	5.709	5.715	1990

°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 4 ***Type B Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
2000	5.715	5.720	5.725	5.731	5.736	5.742	5.747	5.752	5.758	5.763	5.769	2000
2010	5.769	5.774	5.780	5.785	5.790	5.796	5.801	5.807	5.812	5.818	5.823	2010
2020	5.823	5.828	5.834	5.839	5.845	5.850	5.856	5.861	5.867	5.872	5.878	2020
2030	5.878	5.883	5.888	5.894	5.899	5.905	5.910	5.916	5.921	5.927	5.932	2030
2040	5.932	5.938	5.943	5.949	5.954	5.960	5.965	5.971	5.976	5.982	5.987	2040
2050	5.987	5.993	5.998	6.004	6.009	6.015	6.020	6.026	6.031	6.037	6.042	2050
2060	6.042	6.048	6.053	6.059	6.064	6.070	6.075	6.081	6.086	6.092	6.098	2060
2070	6.098	6.103	6.109	6.114	6.120	6.125	6.131	6.136	6.142	6.147	6.153	2070
2080	6.153	6.159	6.164	6.170	6.175	6.181	6.186	6.192	6.197	6.203	6.209	2080
2090	6.209	6.214	6.220	6.225	6.231	6.237	6.242	6.248	6.253	6.259	6.264	2090
2100	6.264	6.270	6.276	6.281	6.287	6.292	6.298	6.304	6.309	6.315	6.320	2100
2110	6.320	6.326	6.332	6.337	6.343	6.349	6.354	6.360	6.365	6.371	6.377	2110
2120	6.377	6.382	6.388	6.394	6.399	6.405	6.410	6.416	6.422	6.427	6.433	2120
2130	6.433	6.439	6.444	6.450	6.456	6.461	6.467	6.473	6.478	6.484	6.490	2130
2140	6.490	6.495	6.501	6.507	6.512	6.518	6.524	6.529	6.535	6.541	6.546	2140
2150	6.546	6.552	6.558	6.563	6.569	6.575	6.580	6.586	6.592	6.597	6.603	2150
2160	6.603	6.609	6.615	6.620	6.626	6.632	6.637	6.643	6.649	6.655	6.660	2160
2170	6.660	6.666	6.672	6.677	6.683	6.689	6.695	6.700	6.706	6.712	6.718	2170
2180	6.718	6.723	6.729	6.735	6.740	6.746	6.752	6.758	6.763	6.769	6.775	2180
2190	6.775	6.781	6.786	6.792	6.798	6.804	6.809	6.815	6.821	6.827	6.833	2190
2200	6.833	6.838	6.844	6.850	6.856	6.861	6.867	6.873	6.879	6.884	6.890	2200
2210	6.890	6.896	6.902	6.908	6.913	6.919	6.925	6.931	6.937	6.942	6.948	2210
2220	6.948	6.954	6.960	6.966	6.971	6.977	6.983	6.989	6.995	7.000	7.006	2220
2230	7.006	7.012	7.018	7.024	7.030	7.035	7.041	7.047	7.053	7.059	7.065	2230
2240	7.065	7.070	7.076	7.082	7.088	7.094	7.100	7.105	7.111	7.117	7.123	2240
2250	7.123	7.129	7.135	7.141	7.146	7.152	7.158	7.164	7.170	7.176	7.182	2250
2260	7.182	7.187	7.193	7.199	7.205	7.211	7.217	7.223	7.229	7.234	7.240	2260
2270	7.240	7.246	7.252	7.258	7.264	7.270	7.276	7.281	7.287	7.293	7.299	2270
2280	7.299	7.305	7.311	7.317	7.323	7.329	7.335	7.340	7.346	7.352	7.358	2280
2290	7.358	7.364	7.370	7.376	7.382	7.388	7.394	7.400	7.406	7.412	7.417	2290
2300	7.417	7.423	7.429	7.435	7.441	7.447	7.453	7.459	7.465	7.471	7.477	2300
2310	7.477	7.483	7.489	7.495	7.501	7.507	7.512	7.518	7.524	7.530	7.536	2310
2320	7.536	7.542	7.548	7.554	7.560	7.566	7.572	7.578	7.584	7.590	7.596	2320
2330	7.596	7.602	7.608	7.614	7.620	7.626	7.632	7.638	7.644	7.650	7.656	2330
2340	7.656	7.662	7.668	7.674	7.680	7.686	7.692	7.698	7.704	7.710	7.716	2340
2350	7.716	7.722	7.728	7.734	7.740	7.746	7.752	7.758	7.764	7.770	7.776	2350
2360	7.776	7.782	7.788	7.794	7.800	7.806	7.812	7.818	7.824	7.830	7.836	2360
2370	7.836	7.842	7.848	7.854	7.860	7.866	7.872	7.878	7.884	7.891	7.897	2370
2380	7.897	7.903	7.909	7.915	7.921	7.927	7.933	7.939	7.945	7.951	7.957	2380
2390	7.957	7.963	7.969	7.975	7.981	7.987	7.994	8.000	8.006	8.012	8.018	2390
2400	8.018	8.024	8.030	8.036	8.042	8.048	8.054	8.060	8.066	8.073	8.079	2400
2410	8.079	8.085	8.091	8.097	8.103	8.109	8.115	8.121	8.127	8.134	8.140	2410
2420	8.140	8.146	8.152	8.158	8.164	8.170	8.176	8.182	8.188	8.195	8.201	2420
2430	8.201	8.207	8.213	8.219	8.225	8.231	8.237	8.244	8.250	8.256	8.262	2430
2440	8.262	8.268	8.274	8.280	8.286	8.293	8.299	8.305	8.311	8.317	8.323	2440
2450	8.323	8.329	8.336	8.342	8.348	8.354	8.360	8.366	8.372	8.379	8.385	2450
2460	8.385	8.391	8.397	8.403	8.409	8.416	8.422	8.428	8.434	8.440	8.446	2460
2470	8.446	8.453	8.459	8.465	8.471	8.477	8.483	8.490	8.496	8.502	8.508	2470
2480	8.508	8.514	8.521	8.527	8.533	8.539	8.545	8.551	8.558	8.564	8.570	2480
2490	8.570	8.576	8.582	8.589	8.595	8.601	8.607	8.613	8.620	8.626	8.632	2490
°F	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**°F**

TABLE 4 ***Type B Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
2500	8.632	8.638	8.644	8.651	8.657	8.663	8.669	8.675	8.682	8.688	8.694	2500
2510	8.694	8.700	8.707	8.713	8.719	8.725	8.731	8.738	8.744	8.750	8.756	2510
2520	8.756	8.763	8.769	8.775	8.781	8.787	8.794	8.800	8.806	8.812	8.819	2520
2530	8.819	8.825	8.831	8.837	8.844	8.850	8.856	8.862	8.869	8.875	8.881	2530
2540	8.881	8.887	8.894	8.900	8.906	8.912	8.919	8.925	8.931	8.937	8.944	2540
2550	8.944	8.950	8.956	8.962	8.969	8.975	8.981	8.988	8.994	9.000	9.006	2550
2560	9.006	9.013	9.019	9.025	9.031	9.038	9.044	9.050	9.057	9.063	9.069	2560
2570	9.069	9.075	9.082	9.088	9.094	9.101	9.107	9.113	9.119	9.126	9.132	2570
2580	9.132	9.138	9.145	9.151	9.157	9.164	9.170	9.176	9.182	9.189	9.195	2580
2590	9.195	9.201	9.208	9.214	9.220	9.227	9.233	9.239	9.245	9.252	9.258	2590
2600	9.258	9.264	9.271	9.277	9.283	9.290	9.296	9.302	9.309	9.315	9.321	2600
2610	9.321	9.328	9.334	9.340	9.347	9.353	9.359	9.366	9.372	9.378	9.385	2610
2620	9.385	9.391	9.397	9.404	9.410	9.416	9.423	9.429	9.435	9.442	9.448	2620
2630	9.448	9.454	9.461	9.467	9.473	9.480	9.486	9.492	9.499	9.505	9.511	2630
2640	9.511	9.518	9.524	9.530	9.537	9.543	9.550	9.556	9.562	9.569	9.575	2640
2650	9.575	9.581	9.588	9.594	9.600	9.607	9.613	9.619	9.626	9.632	9.639	2650
2660	9.639	9.645	9.651	9.658	9.664	9.670	9.677	9.683	9.690	9.696	9.702	2660
2670	9.702	9.709	9.715	9.721	9.728	9.734	9.741	9.747	9.753	9.760	9.766	2670
2680	9.766	9.772	9.779	9.785	9.792	9.798	9.804	9.811	9.817	9.824	9.830	2680
2690	9.830	9.836	9.843	9.849	9.856	9.862	9.868	9.875	9.881	9.888	9.894	2690
2700	9.894	9.900	9.907	9.913	9.920	9.926	9.932	9.939	9.945	9.952	9.958	2700
2710	9.958	9.964	9.971	9.977	9.984	9.990	9.996	10.003	10.009	10.016	10.022	2710
2720	10.022	10.028	10.035	10.041	10.048	10.054	10.061	10.067	10.073	10.080	10.086	2720
2730	10.086	10.093	10.099	10.105	10.112	10.118	10.125	10.131	10.138	10.144	10.150	2730
2740	10.150	10.157	10.163	10.170	10.176	10.183	10.189	10.195	10.202	10.208	10.215	2740
2750	10.215	10.221	10.228	10.234	10.240	10.247	10.253	10.260	10.266	10.273	10.279	2750
2760	10.279	10.286	10.292	10.298	10.305	10.311	10.318	10.324	10.331	10.337	10.344	2760
2770	10.344	10.350	10.356	10.363	10.369	10.376	10.382	10.389	10.395	10.402	10.408	2770
2780	10.408	10.414	10.421	10.427	10.434	10.440	10.447	10.453	10.460	10.466	10.473	2780
2790	10.473	10.479	10.485	10.492	10.498	10.505	10.511	10.518	10.524	10.531	10.537	2790
2800	10.537	10.544	10.550	10.556	10.563	10.569	10.576	10.582	10.589	10.595	10.602	2800
2810	10.602	10.608	10.615	10.621	10.628	10.634	10.641	10.647	10.653	10.660	10.666	2810
2820	10.666	10.673	10.679	10.686	10.692	10.699	10.705	10.712	10.718	10.725	10.731	2820
2830	10.731	10.738	10.744	10.751	10.757	10.763	10.770	10.776	10.783	10.789	10.796	2830
2840	10.796	10.802	10.809	10.815	10.822	10.828	10.835	10.841	10.848	10.854	10.861	2840
2850	10.861	10.867	10.874	10.880	10.887	10.893	10.900	10.906	10.913	10.919	10.925	2850
2860	10.925	10.932	10.938	10.945	10.951	10.958	10.964	10.971	10.977	10.984	10.990	2860
2870	10.990	10.997	11.003	11.010	11.016	11.023	11.029	11.036	11.042	11.049	11.055	2870
2880	11.055	11.062	11.068	11.075	11.081	11.088	11.094	11.101	11.107	11.114	11.120	2880
2890	11.120	11.127	11.133	11.140	11.146	11.153	11.159	11.166	11.172	11.179	11.185	2890
2900	11.185	11.192	11.198	11.205	11.211	11.218	11.224	11.231	11.237	11.244	11.250	2900
2910	11.250	11.257	11.263	11.270	11.276	11.282	11.289	11.295	11.302	11.308	11.315	2910
2920	11.315	11.321	11.328	11.334	11.341	11.347	11.354	11.360	11.367	11.373	11.380	2920
2930	11.380	11.386	11.393	11.399	11.406	11.412	11.419	11.425	11.432	11.438	11.445	2930
2940	11.445	11.451	11.458	11.464	11.471	11.477	11.484	11.490	11.497	11.503	11.510	2940
2950	11.510	11.516	11.523	11.529	11.536	11.542	11.549	11.555	11.562	11.568	11.575	2950
2960	11.575	11.582	11.588	11.595	11.601	11.608	11.614	11.621	11.627	11.634	11.640	2960
2970	11.640	11.647	11.653	11.660	11.666	11.673	11.679	11.686	11.692	11.699	11.705	2970
2980	11.705	11.712	11.718	11.725	11.731	11.738	11.744	11.751	11.757	11.764	11.770	2980
2990	11.770	11.777	11.783	11.790	11.796	11.803	11.809	11.816	11.822	11.829	11.835	2990
°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 4 ***Type B Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
3000	11.835	11.842	11.848	11.855	11.861	11.868	11.874	11.881	11.887	11.894	11.900	3000
3010	11.900	11.907	11.913	11.920	11.926	11.933	11.939	11.946	11.952	11.959	11.965	3010
3020	11.965	11.972	11.978	11.985	11.991	11.998	12.004	12.011	12.017	12.024	12.030	3020
3030	12.030	12.037	12.043	12.050	12.056	12.063	12.069	12.076	12.082	12.089	12.095	3030
3040	12.095	12.102	12.108	12.115	12.121	12.128	12.134	12.141	12.147	12.154	12.160	3040
3050	12.160	12.166	12.173	12.179	12.186	12.192	12.199	12.205	12.212	12.218	12.225	3050
3060	12.225	12.231	12.238	12.244	12.251	12.257	12.264	12.270	12.277	12.283	12.290	3060
3070	12.290	12.296	12.303	12.309	12.316	12.322	12.329	12.335	12.342	12.348	12.355	3070
3080	12.355	12.361	12.368	12.374	12.381	12.387	12.394	12.400	12.407	12.413	12.420	3080
3090	12.420	12.426	12.433	12.439	12.446	12.452	12.458	12.465	12.471	12.478	12.484	3090
3100	12.484	12.491	12.497	12.504	12.510	12.517	12.523	12.530	12.536	12.543	12.549	3100
3110	12.549	12.556	12.562	12.569	12.575	12.582	12.588	12.595	12.601	12.607	12.614	3110
3120	12.614	12.620	12.627	12.633	12.640	12.646	12.653	12.659	12.666	12.672	12.679	3120
3130	12.679	12.685	12.692	12.698	12.704	12.711	12.717	12.724	12.730	12.737	12.743	3130
3140	12.743	12.750	12.756	12.763	12.769	12.776	12.782	12.789	12.795	12.801	12.808	3140
3150	12.808	12.814	12.821	12.827	12.834	12.840	12.847	12.853	12.860	12.866	12.872	3150
3160	12.872	12.879	12.885	12.892	12.898	12.905	12.911	12.918	12.924	12.931	12.937	3160
3170	12.937	12.943	12.950	12.956	12.963	12.969	12.976	12.982	12.989	12.995	13.001	3170
3180	13.001	13.008	13.014	13.021	13.027	13.034	13.040	13.047	13.053	13.059	13.066	3180
3190	13.066	13.072	13.079	13.085	13.092	13.098	13.104	13.111	13.117	13.124	13.130	3190
3200	13.130	13.137	13.143	13.149	13.156	13.162	13.169	13.175	13.182	13.188	13.194	3200
3210	13.194	13.201	13.207	13.214	13.220	13.227	13.233	13.239	13.246	13.252	13.259	3210
3220	13.259	13.265	13.271	13.278	13.284	13.291	13.297	13.304	13.310	13.316	13.323	3220
3230	13.323	13.329	13.336	13.342	13.348	13.355	13.361	13.368	13.374	13.380	13.387	3230
3240	13.387	13.393	13.400	13.406	13.412	13.419	13.425	13.432	13.438	13.444	13.451	3240
3250	13.451	13.457	13.464	13.470	13.476	13.483	13.489	13.496	13.502	13.508	13.515	3250
3260	13.515	13.521	13.527	13.534	13.540	13.547	13.553	13.559	13.566	13.572	13.579	3260
3270	13.579	13.585	13.591	13.598	13.604	13.610	13.617	13.623	13.630	13.636	13.642	3270
3280	13.642	13.649	13.655	13.661	13.668	13.674	13.680	13.687	13.693	13.700	13.706	3280
3290	13.706	13.712	13.719	13.725	13.731	13.738	13.744	13.750	13.757	13.763	13.769	3290
3300	13.769	13.776	13.782	13.789	13.795	13.801	13.808	13.814	13.820			3300

°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 5 ***Type E Thermocouple*** *— thermoelectric voltage as a function of temperature (°C); reference junctions at 0 °C*

°C	0	1	2	3	4	5	6	7	8	9	10	°C
					Thermoelectric Voltage in Millivolts							
-270	-9.835											-270
-260	-9.797	-9.802	-9.808	-9.813	-9.817	-9.821	-9.825	-9.828	-9.831	-9.833	-9.835	-260
-250	-9.718	-9.728	-9.737	-9.746	-9.754	-9.762	-9.770	-9.777	-9.784	-9.790	-9.797	-250
-240	-9.604	-9.617	-9.630	-9.642	-9.654	-9.666	-9.677	-9.688	-9.698	-9.709	-9.718	-240
-230	-9.455	-9.471	-9.487	-9.503	-9.519	-9.534	-9.548	-9.563	-9.577	-9.591	-9.604	-230
-220	-9.274	-9.293	-9.313	-9.331	-9.350	-9.368	-9.386	-9.404	-9.421	-9.438	-9.455	-220
-210	-9.063	-9.085	-9.107	-9.129	-9.151	-9.172	-9.193	-9.214	-9.234	-9.254	-9.274	-210
-200	-8.825	-8.850	-8.874	-8.899	-8.923	-8.947	-8.971	-8.994	-9.017	-9.040	-9.063	-200
-190	-8.561	-8.588	-8.616	-8.643	-8.669	-8.696	-8.722	-8.748	-8.774	-8.799	-8.825	-190
-180	-8.273	-8.303	-8.333	-8.362	-8.391	-8.420	-8.449	-8.477	-8.505	-8.533	-8.561	-180
-170	-7.963	-7.995	-8.027	-8.059	-8.090	-8.121	-8.152	-8.183	-8.213	-8.243	-8.273	-170
-160	-7.632	-7.666	-7.700	-7.733	-7.767	-7.800	-7.833	-7.866	-7.899	-7.931	-7.963	-160
-150	-7.279	-7.315	-7.351	-7.387	-7.423	-7.458	-7.493	-7.528	-7.563	-7.597	-7.632	-150
-140	-6.907	-6.945	-6.983	-7.021	-7.058	-7.096	-7.133	-7.170	-7.206	-7.243	-7.279	-140
-130	-6.516	-6.556	-6.596	-6.636	-6.675	-6.714	-6.753	-6.792	-6.831	-6.869	-6.907	-130
-120	-6.107	-6.149	-6.191	-6.232	-6.273	-6.314	-6.355	-6.396	-6.436	-6.476	-6.516	-120
-110	-5.681	-5.724	-5.767	-5.810	-5.853	-5.896	-5.939	-5.981	-6.023	-6.065	-6.107	-110
-100	-5.237	-5.282	-5.327	-5.372	-5.417	-5.461	-5.505	-5.549	-5.593	-5.637	-5.681	-100
-90	-4.777	-4.824	-4.871	-4.917	-4.963	-5.009	-5.055	-5.101	-5.147	-5.192	-5.237	-90
-80	-4.302	-4.350	-4.398	-4.446	-4.494	-4.542	-4.589	-4.636	-4.684	-4.731	-4.777	-80
-70	-3.811	-3.861	-3.911	-3.960	-4.009	-4.058	-4.107	-4.156	-4.205	-4.254	-4.302	-70
-60	-3.306	-3.357	-3.408	-3.459	-3.510	-3.561	-3.611	-3.661	-3.711	-3.761	-3.811	-60
-50	-2.787	-2.840	-2.892	-2.944	-2.996	-3.048	-3.100	-3.152	-3.204	-3.255	-3.306	-50
-40	-2.255	-2.309	-2.362	-2.416	-2.469	-2.523	-2.576	-2.629	-2.682	-2.735	-2.787	-40
-30	-1.709	-1.765	-1.820	-1.874	-1.929	-1.984	-2.038	-2.093	-2.147	-2.201	-2.255	-30
-20	-1.152	-1.208	-1.264	-1.320	-1.376	-1.432	-1.488	-1.543	-1.599	-1.654	-1.709	-20
-10	-0.582	-0.639	-0.697	-0.754	-0.811	-0.868	-0.925	-0.982	-1.039	-1.095	-1.152	-10
0	0.000	-0.059	-0.117	-0.176	-0.234	-0.292	-0.350	-0.408	-0.466	-0.524	-0.582	0
0	0.000	0.059	0.118	0.176	0.235	0.294	0.354	0.413	0.472	0.532	0.591	0
10	0.591	0.651	0.711	0.770	0.830	0.890	0.950	1.010	1.071	1.131	1.192	10
20	1.192	1.252	1.313	1.373	1.434	1.495	1.556	1.617	1.678	1.740	1.801	20
30	1.801	1.862	1.924	1.986	2.047	2.109	2.171	2.233	2.295	2.357	2.420	30
40	2.420	2.482	2.545	2.607	2.670	2.733	2.795	2.858	2.921	2.984	3.048	40
50	3.048	3.111	3.174	3.238	3.301	3.365	3.429	3.492	3.556	3.620	3.685	50
60	3.685	3.749	3.813	3.877	3.942	4.006	4.071	4.136	4.200	4.265	4.330	60
70	4.330	4.395	4.460	4.526	4.591	4.656	4.722	4.788	4.853	4.919	4.985	70
80	4.985	5.051	5.117	5.183	5.249	5.315	5.382	5.448	5.514	5.581	5.648	80
90	5.648	5.714	5.781	5.848	5.915	5.982	6.049	6.117	6.184	6.251	6.319	90
100	6.319	6.386	6.454	6.522	6.590	6.658	6.725	6.794	6.862	6.930	6.998	100
110	6.998	7.066	7.135	7.203	7.272	7.341	7.409	7.478	7.547	7.616	7.685	110
120	7.685	7.754	7.823	7.892	7.962	8.031	8.101	8.170	8.240	8.309	8.379	120
130	8.379	8.449	8.519	8.589	8.659	8.729	8.799	8.869	8.940	9.010	9.081	130
140	9.081	9.151	9.222	9.292	9.363	9.434	9.505	9.576	9.647	9.718	9.789	140
150	9.789	9.860	9.931	10.003	10.074	10.145	10.217	10.288	10.360	10.432	10.503	150
160	10.503	10.575	10.647	10.719	10.791	10.863	10.935	11.007	11.080	11.152	11.224	160
170	11.224	11.297	11.369	11.442	11.514	11.587	11.660	11.733	11.805	11.878	11.951	170
180	11.951	12.024	12.097	12.170	12.243	12.317	12.390	12.463	12.537	12.610	12.684	180
190	12.684	12.757	12.831	12.904	12.978	13.052	13.126	13.199	13.273	13.347	13.421	190

°C	0	1	2	3	4	5	6	7	8	9	10	°C

TABLE 5 ***Type E Thermocouple*** *— thermoelectric voltage as a function of temperature (°C); reference junctions at 0 °C*

°C	0	1	2	3	4	5	6	7	8	9	10	°C
						Thermoelectric Voltage in Millivolts						
200	13.421	13.495	13.569	13.644	13.718	13.792	13.866	13.941	14.015	14.090	14.164	200
210	14.164	14.239	14.313	14.388	14.463	14.537	14.612	14.687	14.762	14.837	14.912	210
220	14.912	14.987	15.062	15.137	15.212	15.287	15.362	15.438	15.513	15.588	15.664	220
230	15.664	15.739	15.815	15.890	15.966	16.041	16.117	16.193	16.269	16.344	16.420	230
240	16.420	16.496	16.572	16.648	16.724	16.800	16.876	16.952	17.028	17.104	17.181	240
250	17.181	17.257	17.333	17.409	17.486	17.562	17.639	17.715	17.792	17.868	17.945	250
260	17.945	18.021	18.098	18.175	18.252	18.328	18.405	18.482	18.559	18.636	18.713	260
270	18.713	18.790	18.867	18.944	19.021	19.098	19.175	19.252	19.330	19.407	19.484	270
280	19.484	19.561	19.639	19.716	19.794	19.871	19.948	20.026	20.103	20.181	20.259	280
290	20.259	20.336	20.414	20.492	20.569	20.647	20.725	20.803	20.880	20.958	21.036	290
300	21.036	21.114	21.192	21.270	21.348	21.426	21.504	21.582	21.660	21.739	21.817	300
310	21.817	21.895	21.973	22.051	22.130	22.208	22.286	22.365	22.443	22.522	22.600	310
320	22.600	22.678	22.757	22.835	22.914	22.993	23.071	23.150	23.228	23.307	23.386	320
330	23.386	23.464	23.543	23.622	23.701	23.780	23.858	23.937	24.016	24.095	24.174	330
340	24.174	24.253	24.332	24.411	24.490	24.569	24.648	24.727	24.806	24.885	24.964	340
350	24.964	25.044	25.123	25.202	25.281	25.360	25.440	25.519	25.598	25.678	25.757	350
360	25.757	25.836	25.916	25.995	26.075	26.154	26.233	26.313	26.392	26.472	26.552	360
370	26.552	26.631	26.711	26.790	26.870	26.950	27.029	27.109	27.189	27.268	27.348	370
380	27.348	27.428	27.507	27.587	27.667	27.747	27.827	27.907	27.986	28.066	28.146	380
390	28.146	28.226	28.306	28.386	28.466	28.546	28.626	28.706	28.786	28.866	28.946	390
400	28.946	29.026	29.106	29.186	29.266	29.346	29.427	29.507	29.587	29.667	29.747	400
410	29.747	29.827	29.908	29.988	30.068	30.148	30.229	30.309	30.389	30.470	30.550	410
420	30.550	30.630	30.711	30.791	30.871	30.952	31.032	31.112	31.193	31.273	31.354	420
430	31.354	31.434	31.515	31.595	31.676	31.756	31.837	31.917	31.998	32.078	32.159	430
440	32.159	32.239	32.320	32.400	32.481	32.562	32.642	32.723	32.803	32.884	32.965	440
450	32.965	33.045	33.126	33.207	33.287	33.368	33.449	33.529	33.610	33.691	33.772	450
460	33.772	33.852	33.933	34.014	34.095	34.175	34.256	34.337	34.418	34.498	34.579	460
470	34.579	34.660	34.741	34.822	34.902	34.983	35.064	35.145	35.226	35.307	35.387	470
480	35.387	35.468	35.549	35.630	35.711	35.792	35.873	35.954	36.034	36.115	36.196	480
490	36.196	36.277	36.358	36.439	36.520	36.601	36.682	36.763	36.843	36.924	37.005	490
500	37.005	37.086	37.167	37.248	37.329	37.410	37.491	37.572	37.653	37.734	37.815	500
510	37.815	37.896	37.977	38.058	38.139	38.220	38.300	38.381	38.462	38.543	38.624	510
520	38.624	38.705	38.786	38.867	38.948	39.029	39.110	39.191	39.272	39.353	39.434	520
530	39.434	39.515	39.596	39.677	39.758	39.839	39.920	40.001	40.082	40.163	40.243	530
540	40.243	40.324	40.405	40.486	40.567	40.648	40.729	40.810	40.891	40.972	41.053	540
550	41.053	41.134	41.215	41.296	41.377	41.457	41.538	41.619	41.700	41.781	41.862	550
560	41.862	41.943	42.024	42.105	42.185	42.266	42.347	42.428	42.509	42.590	42.671	560
570	42.671	42.751	42.832	42.913	42.994	43.075	43.156	43.236	43.317	43.398	43.479	570
580	43.479	43.560	43.640	43.721	43.802	43.883	43.963	44.044	44.125	44.206	44.286	580
590	44.286	44.367	44.448	44.529	44.609	44.690	44.771	44.851	44.932	45.013	45.093	590
600	45.093	45.174	45.255	45.335	45.416	45.497	45.577	45.658	45.738	45.819	45.900	600
610	45.900	45.980	46.061	46.141	46.222	46.302	46.383	46.463	46.544	46.624	46.705	610
620	46.705	46.785	46.866	46.946	47.027	47.107	47.188	47.268	47.349	47.429	47.509	620
630	47.509	47.590	47.670	47.751	47.831	47.911	47.992	48.072	48.152	48.233	48.313	630
640	48.313	48.393	48.474	48.554	48.634	48.715	48.795	48.875	48.955	49.035	49.116	640
650	49.116	49.196	49.276	49.356	49.436	49.517	49.597	49.677	49.757	49.837	49.917	650
660	49.917	49.997	50.077	50.157	50.238	50.318	50.398	50.478	50.558	50.638	50.718	660
670	50.718	50.798	50.878	50.958	51.038	51.118	51.197	51.277	51.357	51.437	51.517	670
680	51.517	51.597	51.677	51.757	51.837	51.916	51.996	52.076	52.156	52.236	52.315	680
690	52.315	52.395	52.475	52.555	52.634	52.714	52.794	52.873	52.953	53.033	53.112	690

°C	0	1	2	3	4	5	6	7	8	9	10	°C

TABLE 5 ***Type E Thermocouple*** *— thermoelectric voltage as a function of temperature (°C); reference junctions at 0 °C*

°C	0	1	2	3	4	5	6	7	8	9	10	°C
	Thermoelectric Voltage in Millivolts											
700	53.112	53.192	53.272	53.351	53.431	53.510	53.590	53.670	53.749	53.829	53.908	700
710	53.908	53.988	54.067	54.147	54.226	54.306	54.385	54.465	54.544	54.624	54.703	710
720	54.703	54.782	54.862	54.941	55.021	55.100	55.179	55.259	55.338	55.417	55.497	720
730	55.497	55.576	55.655	55.734	55.814	55.893	55.972	56.051	56.131	56.210	56.289	730
740	56.289	56.368	56.447	56.526	56.606	56.685	56.764	56.843	56.922	57.001	57.080	740
750	57.080	57.159	57.238	57.317	57.396	57.475	57.554	57.633	57.712	57.791	57.870	750
760	57.870	57.949	58.028	58.107	58.186	58.265	58.343	58.422	58.501	58.580	58.659	760
770	58.659	58.738	58.816	58.895	58.974	59.053	59.131	59.210	59.289	59.367	59.446	770
780	59.446	59.525	59.604	59.682	59.761	59.839	59.918	59.997	60.075	60.154	60.232	780
790	60.232	60.311	60.390	60.468	60.547	60.625	60.704	60.782	60.860	60.939	61.017	790
800	61.017	61.096	61.174	61.253	61.331	61.409	61.488	61.566	61.644	61.723	61.801	800
810	61.801	61.879	61.958	62.036	62.114	62.192	62.271	62.349	62.427	62.505	62.583	810
820	62.583	62.662	62.740	62.818	62.896	62.974	63.052	63.130	63.208	63.286	63.364	820
830	63.364	63.442	63.520	63.598	63.676	63.754	63.832	63.910	63.988	64.066	64.144	830
840	64.144	64.222	64.300	64.377	64.455	64.533	64.611	64.689	64.766	64.844	64.922	840
850	64.922	65.000	65.077	65.155	65.233	65.310	65.388	65.465	65.543	65.621	65.698	850
860	65.698	65.776	65.853	65.931	66.008	66.086	66.163	66.241	66.318	66.396	66.473	860
870	66.473	66.550	66.628	66.705	66.782	66.860	66.937	67.014	67.092	67.169	67.246	870
880	67.246	67.323	67.400	67.478	67.555	67.632	67.709	67.786	67.863	67.940	68.017	880
890	68.017	68.094	68.171	68.248	68.325	68.402	68.479	68.556	68.633	68.710	68.787	890
900	68.787	68.863	68.940	69.017	69.094	69.171	69.247	69.324	69.401	69.477	69.554	900
910	69.554	69.631	69.707	69.784	69.860	69.937	70.013	70.090	70.166	70.243	70.319	910
920	70.319	70.396	70.472	70.548	70.625	70.701	70.777	70.854	70.930	71.006	71.082	920
930	71.082	71.159	71.235	71.311	71.387	71.463	71.539	71.615	71.692	71.768	71.844	930
940	71.844	71.920	71.996	72.072	72.147	72.223	72.299	72.375	72.451	72.527	72.603	940
950	72.603	72.678	72.754	72.830	72.906	72.981	73.057	73.133	73.208	73.284	73.360	950
960	73.360	73.435	73.511	73.586	73.662	73.738	73.813	73.889	73.964	74.040	74.115	960
970	74.115	74.190	74.266	74.341	74.417	74.492	74.567	74.643	74.718	74.793	74.869	970
980	74.869	74.944	75.019	75.095	75.170	75.245	75.320	75.395	75.471	75.546	75.621	980
990	75.621	75.696	75.771	75.847	75.922	75.997	76.072	76.147	76.223	76.298	76.373	990
1000	76.373											1000

TABLE 6 ***Type E Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
-450	-9.830	-9.832	-9.833	-9.834	-9.835							-450
-440	-9.809	-9.812	-9.814	-9.817	-9.819	-9.821	-9.823	-9.825	-9.827	-9.829	-9.830	-440
-430	-9.775	-9.779	-9.782	-9.786	-9.790	-9.793	-9.797	-9.800	-9.803	-9.806	-9.809	-430
-420	-9.729	-9.734	-9.739	-9.744	-9.749	-9.753	-9.758	-9.762	-9.766	-9.771	-9.775	-420
-410	-9.672	-9.678	-9.684	-9.690	-9.696	-9.702	-9.707	-9.713	-9.718	-9.724	-9.729	-410
-400	-9.604	-9.611	-9.618	-9.625	-9.632	-9.639	-9.646	-9.653	-9.659	-9.666	-9.672	-400
-390	-9.525	-9.534	-9.542	-9.550	-9.558	-9.566	-9.574	-9.581	-9.589	-9.597	-9.604	-390
-380	-9.436	-9.446	-9.455	-9.464	-9.473	-9.482	-9.491	-9.500	-9.508	-9.517	-9.525	-380
-370	-9.338	-9.348	-9.358	-9.368	-9.378	-9.388	-9.398	-9.408	-9.417	-9.427	-9.436	-370
-360	-9.229	-9.241	-9.252	-9.263	-9.274	-9.285	-9.295	-9.306	-9.317	-9.327	-9.338	-360
-350	-9.112	-9.124	-9.136	-9.148	-9.160	-9.172	-9.184	-9.195	-9.207	-9.218	-9.229	-350
-340	-8.986	-8.999	-9.012	-9.025	-9.038	-9.050	-9.063	-9.075	-9.088	-9.100	-9.112	-340
-330	-8.852	-8.866	-8.880	-8.893	-8.907	-8.920	-8.934	-8.947	-8.960	-8.973	-8.986	-330
-320	-8.710	-8.725	-8.739	-8.754	-8.768	-8.782	-8.797	-8.811	-8.825	-8.839	-8.852	-320
-310	-8.561	-8.576	-8.591	-8.607	-8.622	-8.637	-8.652	-8.666	-8.681	-8.696	-8.710	-310
-300	-8.404	-8.420	-8.436	-8.452	-8.468	-8.483	-8.499	-8.515	-8.530	-8.546	-8.561	-300
-290	-8.240	-8.257	-8.273	-8.290	-8.307	-8.323	-8.339	-8.356	-8.372	-8.388	-8.404	-290
-280	-8.069	-8.087	-8.104	-8.121	-8.138	-8.155	-8.173	-8.189	-8.206	-8.223	-8.240	-280
-270	-7.891	-7.910	-7.928	-7.945	-7.963	-7.981	-7.999	-8.017	-8.034	-8.052	-8.069	-270
-260	-7.707	-7.726	-7.745	-7.763	-7.782	-7.800	-7.819	-7.837	-7.855	-7.873	-7.891	-260
-250	-7.516	-7.536	-7.555	-7.574	-7.593	-7.613	-7.632	-7.651	-7.670	-7.688	-7.707	-250
-240	-7.319	-7.339	-7.359	-7.379	-7.399	-7.419	-7.438	-7.458	-7.478	-7.497	-7.516	-240
-230	-7.116	-7.137	-7.157	-7.178	-7.198	-7.219	-7.239	-7.259	-7.279	-7.299	-7.319	-230
-220	-6.907	-6.928	-6.950	-6.971	-6.992	-7.013	-7.033	-7.054	-7.075	-7.096	-7.116	-220
-210	-6.692	-6.714	-6.736	-6.757	-6.779	-6.801	-6.822	-6.843	-6.865	-6.886	-6.907	-210
-200	-6.472	-6.494	-6.516	-6.539	-6.561	-6.583	-6.605	-6.627	-6.649	-6.671	-6.692	-200
-190	-6.246	-6.269	-6.291	-6.314	-6.337	-6.359	-6.382	-6.405	-6.427	-6.449	-6.472	-190
-180	-6.014	-6.037	-6.061	-6.084	-6.107	-6.130	-6.154	-6.177	-6.200	-6.223	-6.246	-180
-170	-5.777	-5.801	-5.825	-5.849	-5.872	-5.896	-5.920	-5.943	-5.967	-5.991	-6.014	-170
-160	-5.535	-5.559	-5.584	-5.608	-5.632	-5.656	-5.681	-5.705	-5.729	-5.753	-5.777	-160
-150	-5.287	-5.312	-5.337	-5.362	-5.387	-5.412	-5.436	-5.461	-5.486	-5.510	-5.535	-150
-140	-5.035	-5.060	-5.086	-5.111	-5.136	-5.162	-5.187	-5.212	-5.237	-5.262	-5.287	-140
-130	-4.777	-4.803	-4.829	-4.855	-4.881	-4.907	-4.932	-4.958	-4.984	-5.009	-5.035	-130
-120	-4.515	-4.542	-4.568	-4.594	-4.621	-4.647	-4.673	-4.699	-4.725	-4.751	-4.777	-120
-110	-4.248	-4.275	-4.302	-4.329	-4.355	-4.382	-4.409	-4.436	-4.462	-4.489	-4.515	-110
-100	-3.976	-4.004	-4.031	-4.058	-4.086	-4.113	-4.140	-4.167	-4.194	-4.221	-4.248	-100
-90	-3.700	-3.728	-3.756	-3.784	-3.811	-3.839	-3.867	-3.894	-3.922	-3.949	-3.976	-90
-80	-3.420	-3.448	-3.476	-3.504	-3.532	-3.561	-3.589	-3.617	-3.645	-3.672	-3.700	-80
-70	-3.135	-3.163	-3.192	-3.221	-3.249	-3.278	-3.306	-3.335	-3.363	-3.391	-3.420	-70
-60	-2.846	-2.875	-2.904	-2.933	-2.962	-2.991	-3.020	-3.048	-3.077	-3.106	-3.135	-60
-50	-2.552	-2.582	-2.611	-2.641	-2.670	-2.699	-2.729	-2.758	-2.787	-2.816	-2.846	-50
-40	-2.255	-2.285	-2.315	-2.344	-2.374	-2.404	-2.434	-2.463	-2.493	-2.523	-2.552	-40
-30	-1.953	-1.984	-2.014	-2.044	-2.074	-2.105	-2.135	-2.165	-2.195	-2.225	-2.255	-30
-20	-1.648	-1.679	-1.709	-1.740	-1.771	-1.801	-1.832	-1.862	-1.893	-1.923	-1.953	-20
-10	-1.339	-1.370	-1.401	-1.432	-1.463	-1.494	-1.525	-1.556	-1.587	-1.617	-1.648	-10
0	-1.026	-1.057	-1.089	-1.120	-1.152	-1.183	-1.214	-1.245	-1.277	-1.308	-1.339	0
0	-1.026	-0.994	-0.963	-0.931	-0.900	-0.868	-0.836	-0.805	-0.773	-0.741	-0.709	0
10	-0.709	-0.677	-0.645	-0.614	-0.582	-0.550	-0.517	-0.485	-0.453	-0.421	-0.389	10
20	-0.389	-0.357	-0.324	-0.292	-0.260	-0.227	-0.195	-0.163	-0.130	-0.098	-0.065	20
30	-0.065	-0.033	0.000	0.033	0.065	0.098	0.131	0.163	0.196	0.229	0.262	30
40	0.262	0.294	0.327	0.360	0.393	0.426	0.459	0.492	0.525	0.558	0.591	40
°F	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**°F**

TABLE 6 ***Type E Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

E°F

°F	0	1	2	3	4	5	6	7	8	9	10	°F
	Thermoelectric Voltage in Millivolts											
50	0.591	0.624	0.657	0.691	0.724	0.757	0.790	0.824	0.857	0.890	0.924	50
60	0.924	0.957	0.990	1.024	1.057	1.091	1.124	1.158	1.192	1.225	1.259	60
70	1.259	1.292	1.326	1.360	1.394	1.427	1.461	1.495	1.529	1.563	1.597	70
80	1.597	1.631	1.665	1.699	1.733	1.767	1.801	1.835	1.869	1.904	1.938	80
90	1.938	1.972	2.006	2.041	2.075	2.109	2.144	2.178	2.212	2.247	2.281	90
100	2.281	2.316	2.351	2.385	2.420	2.454	2.489	2.524	2.558	2.593	2.628	100
110	2.628	2.663	2.698	2.733	2.767	2.802	2.837	2.872	2.907	2.942	2.977	110
120	2.977	3.012	3.048	3.083	3.118	3.153	3.188	3.224	3.259	3.294	3.330	120
130	3.330	3.365	3.400	3.436	3.471	3.507	3.542	3.578	3.613	3.649	3.685	130
140	3.685	3.720	3.756	3.792	3.827	3.863	3.899	3.935	3.970	4.006	4.042	140
150	4.042	4.078	4.114	4.150	4.186	4.222	4.258	4.294	4.330	4.366	4.403	150
160	4.403	4.439	4.475	4.511	4.547	4.584	4.620	4.656	4.693	4.729	4.766	160
170	4.766	4.802	4.839	4.875	4.912	4.948	4.985	5.021	5.058	5.095	5.131	170
180	5.131	5.168	5.205	5.242	5.278	5.315	5.352	5.389	5.426	5.463	5.500	180
190	5.500	5.537	5.574	5.611	5.648	5.685	5.722	5.759	5.796	5.833	5.871	190
200	5.871	5.908	5.945	5.982	6.020	6.057	6.094	6.132	6.169	6.207	6.244	200
210	6.244	6.281	6.319	6.356	6.394	6.432	6.469	6.507	6.544	6.582	6.620	210
220	6.620	6.658	6.695	6.733	6.771	6.809	6.847	6.884	6.922	6.960	6.998	220
230	6.998	7.036	7.074	7.112	7.150	7.188	7.226	7.264	7.302	7.341	7.379	230
240	7.379	7.417	7.455	7.493	7.532	7.570	7.608	7.647	7.685	7.723	7.762	240
250	7.762	7.800	7.839	7.877	7.916	7.954	7.993	8.031	8.070	8.108	8.147	250
260	8.147	8.186	8.224	8.263	8.302	8.340	8.379	8.418	8.457	8.496	8.535	260
270	8.535	8.573	8.612	8.651	8.690	8.729	8.768	8.807	8.846	8.885	8.924	270
280	8.924	8.963	9.002	9.041	9.081	9.120	9.159	9.198	9.237	9.277	9.316	280
290	9.316	9.355	9.395	9.434	9.473	9.513	9.552	9.591	9.631	9.670	9.710	290
300	9.710	9.749	9.789	9.828	9.868	9.907	9.947	9.987	10.026	10.066	10.106	300
310	10.106	10.145	10.185	10.225	10.265	10.304	10.344	10.384	10.424	10.464	10.503	310
320	10.503	10.543	10.583	10.623	10.663	10.703	10.743	10.783	10.823	10.863	10.903	320
330	10.903	10.943	10.983	11.024	11.064	11.104	11.144	11.184	11.224	11.265	11.305	330
340	11.305	11.345	11.385	11.426	11.466	11.506	11.547	11.587	11.627	11.668	11.708	340
350	11.708	11.749	11.789	11.830	11.870	11.911	11.951	11.992	12.032	12.073	12.113	350
360	12.113	12.154	12.195	12.235	12.276	12.317	12.357	12.398	12.439	12.480	12.520	360
370	12.520	12.561	12.602	12.643	12.684	12.724	12.765	12.806	12.847	12.888	12.929	370
380	12.929	12.970	13.011	13.052	13.093	13.134	13.175	13.216	13.257	13.298	13.339	380
390	13.339	13.380	13.421	13.462	13.504	13.545	13.586	13.627	13.668	13.710	13.751	390
400	13.751	13.792	13.833	13.875	13.916	13.957	13.999	14.040	14.081	14.123	14.164	400
410	14.164	14.205	14.247	14.288	14.330	14.371	14.413	14.454	14.496	14.537	14.579	410
420	14.579	14.620	14.662	14.704	14.745	14.787	14.828	14.870	14.912	14.953	14.995	420
430	14.995	15.037	15.078	15.120	15.162	15.204	15.245	15.287	15.329	15.371	15.413	430
440	15.413	15.454	15.496	15.538	15.580	15.622	15.664	15.706	15.748	15.790	15.831	440
450	15.831	15.873	15.915	15.957	15.999	16.041	16.083	16.125	16.168	16.210	16.252	450
460	16.252	16.294	16.336	16.378	16.420	16.462	16.504	16.547	16.589	16.631	16.673	460
470	16.673	16.715	16.758	16.800	16.842	16.884	16.927	16.969	17.011	17.054	17.096	470
480	17.096	17.138	17.181	17.223	17.265	17.308	17.350	17.392	17.435	17.477	17.520	480
490	17.520	17.562	17.605	17.647	17.690	17.732	17.775	17.817	17.860	17.902	17.945	490
500	17.945	17.987	18.030	18.073	18.115	18.158	18.200	18.243	18.286	18.328	18.371	500
510	18.371	18.414	18.456	18.499	18.542	18.585	18.627	18.670	18.713	18.756	18.798	510
520	18.798	18.841	18.884	18.927	18.969	19.012	19.055	19.098	19.141	19.184	19.227	520
530	19.227	19.269	19.312	19.355	19.398	19.441	19.484	19.527	19.570	19.613	19.656	530
540	19.656	19.699	19.742	19.785	19.828	19.871	19.914	19.957	20.000	20.043	20.086	540

°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 6 ***Type E Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
550	20.086	20.129	20.172	20.216	20.259	20.302	20.345	20.388	20.431	20.474	20.517	550
560	20.517	20.561	20.604	20.647	20.690	20.733	20.777	20.820	20.863	20.906	20.950	560
570	20.950	20.993	21.036	21.080	21.123	21.166	21.209	21.253	21.296	21.339	21.383	570
580	21.383	21.426	21.470	21.513	21.556	21.600	21.643	21.686	21.730	21.773	21.817	580
590	21.817	21.860	21.904	21.947	21.991	22.034	22.078	22.121	22.165	22.208	22.252	590
600	22.252	22.295	22.339	22.382	22.426	22.469	22.513	22.556	22.600	22.644	22.687	600
610	22.687	22.731	22.774	22.818	22.862	22.905	22.949	22.993	23.036	23.080	23.124	610
620	23.124	23.167	23.211	23.255	23.298	23.342	23.386	23.429	23.473	23.517	23.561	620
630	23.561	23.604	23.648	23.692	23.736	23.780	23.823	23.867	23.911	23.955	23.999	630
640	23.999	24.042	24.086	24.130	24.174	24.218	24.262	24.305	24.349	24.393	24.437	640
650	24.437	24.481	24.525	24.569	24.613	24.657	24.701	24.745	24.789	24.832	24.876	650
660	24.876	24.920	24.964	25.008	25.052	25.096	25.140	25.184	25.228	25.272	25.316	660
670	25.316	25.360	25.404	25.448	25.493	25.537	25.581	25.625	25.669	25.713	25.757	670
680	25.757	25.801	25.845	25.889	25.933	25.977	26.022	26.066	26.110	26.154	26.198	680
690	26.198	26.242	26.286	26.331	26.375	26.419	26.463	26.507	26.552	26.596	26.640	690
700	26.640	26.684	26.728	26.773	26.817	26.861	26.905	26.950	26.994	27.038	27.082	700
710	27.082	27.127	27.171	27.215	27.259	27.304	27.348	27.392	27.437	27.481	27.525	710
720	27.525	27.570	27.614	27.658	27.703	27.747	27.791	27.836	27.880	27.924	27.969	720
730	27.969	28.013	28.057	28.102	28.146	28.191	28.235	28.279	28.324	28.368	28.413	730
740	28.413	28.457	28.501	28.546	28.590	28.635	28.679	28.724	28.768	28.813	28.857	740
750	28.857	28.901	28.946	28.990	29.035	29.079	29.124	29.168	29.213	29.257	29.302	750
760	29.302	29.346	29.391	29.435	29.480	29.525	29.569	29.614	29.658	29.703	29.747	760
770	29.747	29.792	29.836	29.881	29.925	29.970	30.015	30.059	30.104	30.148	30.193	770
780	30.193	30.238	30.282	30.327	30.371	30.416	30.461	30.505	30.550	30.595	30.639	780
790	30.639	30.684	30.728	30.773	30.818	30.862	30.907	30.952	30.996	31.041	31.086	790
800	31.086	31.130	31.175	31.220	31.264	31.309	31.354	31.398	31.443	31.488	31.533	800
810	31.533	31.577	31.622	31.667	31.711	31.756	31.801	31.846	31.890	31.935	31.980	810
820	31.980	32.025	32.069	32.114	32.159	32.204	32.248	32.293	32.338	32.383	32.427	820
830	32.427	32.472	32.517	32.562	32.606	32.651	32.696	32.741	32.786	32.830	32.875	830
840	32.875	32.920	32.965	33.010	33.054	33.099	33.144	33.189	33.234	33.278	33.323	840
850	33.323	33.368	33.413	33.458	33.503	33.547	33.592	33.637	33.682	33.727	33.772	850
860	33.772	33.816	33.861	33.906	33.951	33.996	34.041	34.086	34.130	34.175	34.220	860
870	34.220	34.265	34.310	34.355	34.400	34.445	34.489	34.534	34.579	34.624	34.669	870
880	34.669	34.714	34.759	34.804	34.849	34.893	34.938	34.983	35.028	35.073	35.118	880
890	35.118	35.163	35.208	35.253	35.298	35.343	35.387	35.432	35.477	35.522	35.567	890
900	35.567	35.612	35.657	35.702	35.747	35.792	35.837	35.882	35.927	35.972	36.016	900
910	36.016	36.061	36.106	36.151	36.196	36.241	36.286	36.331	36.376	36.421	36.466	910
920	36.466	36.511	36.556	36.601	36.646	36.691	36.736	36.781	36.826	36.870	36.915	920
930	36.915	36.960	37.005	37.050	37.095	37.140	37.185	37.230	37.275	37.320	37.365	930
940	37.365	37.410	37.455	37.500	37.545	37.590	37.635	37.680	37.725	37.770	37.815	940
950	37.815	37.860	37.905	37.950	37.995	38.040	38.085	38.130	38.175	38.220	38.265	950
960	38.265	38.309	38.354	38.399	38.444	38.489	38.534	38.579	38.624	38.669	38.714	960
970	38.714	38.759	38.804	38.849	38.894	38.939	38.984	39.029	39.074	39.119	39.164	970
980	39.164	39.209	39.254	39.299	39.344	39.389	39.434	39.479	39.524	39.569	39.614	980
990	39.614	39.659	39.704	39.749	39.794	39.839	39.884	39.929	39.974	40.019	40.064	990
1000	40.064	40.109	40.154	40.199	40.243	40.288	40.333	40.378	40.423	40.468	40.513	1000
1010	40.513	40.558	40.603	40.648	40.693	40.738	40.783	40.828	40.873	40.918	40.963	1010
1020	40.963	41.008	41.053	41.098	41.143	41.188	41.233	41.278	41.323	41.368	41.412	1020
1030	41.412	41.457	41.502	41.547	41.592	41.637	41.682	41.727	41.772	41.817	41.862	1030
1040	41.862	41.907	41.952	41.997	42.042	42.087	42.132	42.176	42.221	42.266	42.311	1040

°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 6 ***Type E Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
1050	42.311	42.356	42.401	42.446	42.491	42.536	42.581	42.626	42.671	42.715	42.760	1050
1060	42.760	42.805	42.850	42.895	42.940	42.985	43.030	43.075	43.120	43.165	43.209	1060
1070	43.209	43.254	43.299	43.344	43.389	43.434	43.479	43.524	43.569	43.613	43.658	1070
1080	43.658	43.703	43.748	43.793	43.838	43.883	43.928	43.972	44.017	44.062	44.107	1080
1090	44.107	44.152	44.197	44.242	44.286	44.331	44.376	44.421	44.466	44.511	44.555	1090
1100	44.555	44.600	44.645	44.690	44.735	44.780	44.824	44.869	44.914	44.959	45.004	1100
1110	45.004	45.049	45.093	45.138	45.183	45.228	45.273	45.317	45.362	45.407	45.452	1110
1120	45.452	45.497	45.541	45.586	45.631	45.676	45.720	45.765	45.810	45.855	45.900	1120
1130	45.900	45.944	45.989	46.034	46.079	46.123	46.168	46.213	46.258	46.302	46.347	1130
1140	46.347	46.392	46.437	46.481	46.526	46.571	46.616	46.660	46.705	46.750	46.794	1140
1150	46.794	46.839	46.884	46.929	46.973	47.018	47.063	47.107	47.152	47.197	47.241	1150
1160	47.241	47.286	47.331	47.375	47.420	47.465	47.509	47.554	47.599	47.643	47.688	1160
1170	47.688	47.733	47.777	47.822	47.867	47.911	47.956	48.001	48.045	48.090	48.135	1170
1180	48.135	48.179	48.224	48.268	48.313	48.358	48.402	48.447	48.492	48.536	48.581	1180
1190	48.581	48.625	48.670	48.715	48.759	48.804	48.848	48.893	48.937	48.982	49.027	1190
1200	49.027	49.071	49.116	49.160	49.205	49.249	49.294	49.338	49.383	49.428	49.472	1200
1210	49.472	49.517	49.561	49.606	49.650	49.695	49.739	49.784	49.828	49.873	49.917	1210
1220	49.917	49.962	50.006	50.051	50.095	50.140	50.184	50.229	50.273	50.318	50.362	1220
1230	50.362	50.407	50.451	50.495	50.540	50.584	50.629	50.673	50.718	50.762	50.807	1230
1240	50.807	50.851	50.895	50.940	50.984	51.029	51.073	51.118	51.162	51.206	51.251	1240
1250	51.251	51.295	51.340	51.384	51.428	51.473	51.517	51.561	51.606	51.650	51.695	1250
1260	51.695	51.739	51.783	51.828	51.872	51.916	51.961	52.005	52.049	52.094	52.138	1260
1270	52.138	52.182	52.227	52.271	52.315	52.360	52.404	52.448	52.493	52.537	52.581	1270
1280	52.581	52.625	52.670	52.714	52.758	52.803	52.847	52.891	52.935	52.980	53.024	1280
1290	53.024	53.068	53.112	53.157	53.201	53.245	53.289	53.334	53.378	53.422	53.466	1290
1300	53.466	53.510	53.555	53.599	53.643	53.687	53.732	53.776	53.820	53.864	53.908	1300
1310	53.908	53.952	53.997	54.041	54.085	54.129	54.173	54.218	54.262	54.306	54.350	1310
1320	54.350	54.394	54.438	54.482	54.527	54.571	54.615	54.659	54.703	54.747	54.791	1320
1330	54.791	54.835	54.879	54.924	54.968	55.012	55.056	55.100	55.144	55.188	55.232	1330
1340	55.232	55.276	55.320	55.364	55.408	55.453	55.497	55.541	55.585	55.629	55.673	1340
1350	55.673	55.717	55.761	55.805	55.849	55.893	55.937	55.981	56.025	56.069	56.113	1350
1360	56.113	56.157	56.201	56.245	56.289	56.333	56.377	56.421	56.465	56.509	56.553	1360
1370	56.553	56.597	56.641	56.685	56.729	56.773	56.816	56.860	56.904	56.948	56.992	1370
1380	56.992	57.036	57.080	57.124	57.168	57.212	57.256	57.300	57.344	57.387	57.431	1380
1390	57.431	57.475	57.519	57.563	57.607	57.651	57.695	57.738	57.782	57.826	57.870	1390
1400	57.870	57.914	57.958	58.002	58.045	58.089	58.133	58.177	58.221	58.265	58.308	1400
1410	58.308	58.352	58.396	58.440	58.484	58.527	58.571	58.615	58.659	58.702	58.746	1410
1420	58.746	58.790	58.834	58.878	58.921	58.965	59.009	59.053	59.096	59.140	59.184	1420
1430	59.184	59.228	59.271	59.315	59.359	59.402	59.446	59.490	59.534	59.577	59.621	1430
1440	59.621	59.665	59.708	59.752	59.796	59.839	59.883	59.927	59.970	60.014	60.058	1440
1450	60.058	60.101	60.145	60.189	60.232	60.276	60.320	60.363	60.407	60.451	60.494	1450
1460	60.494	60.538	60.581	60.625	60.669	60.712	60.756	60.799	60.843	60.887	60.930	1460
1470	60.930	60.974	61.017	61.061	61.105	61.148	61.192	61.235	61.279	61.322	61.366	1470
1480	61.366	61.409	61.453	61.496	61.540	61.583	61.627	61.671	61.714	61.758	61.801	1480
1490	61.801	61.845	61.888	61.932	61.975	62.018	62.062	62.105	62.149	62.192	62.236	1490
1500	62.236	62.279	62.323	62.366	62.410	62.453	62.496	62.540	62.583	62.627	62.670	1500
1510	62.670	62.714	62.757	62.800	62.844	62.887	62.931	62.974	63.017	63.061	63.104	1510
1520	63.104	63.148	63.191	63.234	63.278	63.321	63.364	63.408	63.451	63.494	63.538	1520
1530	63.538	63.581	63.624	63.668	63.711	63.754	63.798	63.841	63.884	63.927	63.971	1530
1540	63.971	64.014	64.057	64.101	64.144	64.187	64.230	64.274	64.317	64.360	64.403	1540
°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 6 ***Type E Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
1550	64.403	64.447	64.490	64.533	64.576	64.619	64.663	64.706	64.749	64.792	64.835	1550
1560	64.835	64.879	64.922	64.965	65.008	65.051	65.094	65.138	65.181	65.224	65.267	1560
1570	65.267	65.310	65.353	65.396	65.440	65.483	65.526	65.569	65.612	65.655	65.698	1570
1580	65.698	65.741	65.784	65.827	65.871	65.914	65.957	66.000	66.043	66.086	66.129	1580
1590	66.129	66.172	66.215	66.258	66.301	66.344	66.387	66.430	66.473	66.516	66.559	1590
1600	66.559	66.602	66.645	66.688	66.731	66.774	66.817	66.860	66.903	66.946	66.989	1600
1610	66.989	67.031	67.074	67.117	67.160	67.203	67.246	67.289	67.332	67.375	67.418	1610
1620	67.418	67.460	67.503	67.546	67.589	67.632	67.675	67.718	67.760	67.803	67.846	1620
1630	67.846	67.889	67.932	67.974	68.017	68.060	68.103	68.146	68.188	68.231	68.274	1630
1640	68.274	68.317	68.359	68.402	68.445	68.488	68.530	68.573	68.616	68.659	68.701	1640
1650	68.701	68.744	68.787	68.829	68.872	68.915	68.957	69.000	69.043	69.085	69.128	1650
1660	69.128	69.171	69.213	69.256	69.298	69.341	69.384	69.426	69.469	69.511	69.554	1660
1670	69.554	69.597	69.639	69.682	69.724	69.767	69.809	69.852	69.894	69.937	69.979	1670
1680	69.979	70.022	70.064	70.107	70.149	70.192	70.234	70.277	70.319	70.362	70.404	1680
1690	70.404	70.447	70.489	70.531	70.574	70.616	70.659	70.701	70.744	70.786	70.828	1690
1700	70.828	70.871	70.913	70.955	70.998	71.040	71.082	71.125	71.167	71.209	71.252	1700
1710	71.252	71.294	71.336	71.379	71.421	71.463	71.506	71.548	71.590	71.632	71.675	1710
1720	71.675	71.717	71.759	71.801	71.844	71.886	71.928	71.970	72.012	72.055	72.097	1720
1730	72.097	72.139	72.181	72.223	72.266	72.308	72.350	72.392	72.434	72.476	72.518	1730
1740	72.518	72.561	72.603	72.645	72.687	72.729	72.771	72.813	72.855	72.897	72.939	1740
1750	72.939	72.981	73.023	73.066	73.108	73.150	73.192	73.234	73.276	73.318	73.360	1750
1760	73.360	73.402	73.444	73.486	73.528	73.570	73.612	73.654	73.696	73.738	73.780	1760
1770	73.780	73.821	73.863	73.905	73.947	73.989	74.031	74.073	74.115	74.157	74.199	1770
1780	74.199	74.241	74.283	74.324	74.366	74.408	74.450	74.492	74.534	74.576	74.618	1780
1790	74.618	74.659	74.701	74.743	74.785	74.827	74.869	74.910	74.952	74.994	75.036	1790
1800	75.036	75.078	75.120	75.161	75.203	75.245	75.287	75.329	75.370	75.412	75.454	1800
1810	75.454	75.496	75.538	75.579	75.621	75.663	75.705	75.746	75.788	75.830	75.872	1810
1820	75.872	75.913	75.955	75.997	76.039	76.081	76.122	76.164	76.206	76.248	76.289	1820
1830	76.289	76.331	76.373									1830

| °F | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | °F |

TABLE 7 ***Type J Thermocouple*** *— thermoelectric voltage as a function of temperature (°C); reference junctions at 0 °C*

°C	0	1	2	3	4	5	6	7	8	9	10	°C
						Thermoelectric Voltage in Millivolts						
-210	-8.095											-210
-200	-7.890	-7.912	-7.934	-7.955	-7.976	-7.996	-8.017	-8.037	-8.057	-8.076	-8.095	-200
-190	-7.659	-7.683	-7.707	-7.731	-7.755	-7.778	-7.801	-7.824	-7.846	-7.868	-7.890	-190
-180	-7.403	-7.429	-7.456	-7.482	-7.508	-7.534	-7.559	-7.585	-7.610	-7.634	-7.659	-180
-170	-7.123	-7.152	-7.181	-7.209	-7.237	-7.265	-7.293	-7.321	-7.348	-7.376	-7.403	-170
-160	-6.821	-6.853	-6.883	-6.914	-6.944	-6.975	-7.005	-7.035	-7.064	-7.094	-7.123	-160
-150	-6.500	-6.533	-6.566	-6.598	-6.631	-6.663	-6.695	-6.727	-6.759	-6.790	-6.821	-150
-140	-6.159	-6.194	-6.229	-6.263	-6.298	-6.332	-6.366	-6.400	-6.433	-6.467	-6.500	-140
-130	-5.801	-5.838	-5.874	-5.910	-5.946	-5.982	-6.018	-6.054	-6.089	-6.124	-6.159	-130
-120	-5.426	-5.465	-5.503	-5.541	-5.578	-5.616	-5.653	-5.690	-5.727	-5.764	-5.801	-120
-110	-5.037	-5.076	-5.116	-5.155	-5.194	-5.233	-5.272	-5.311	-5.350	-5.388	-5.426	-110
-100	-4.633	-4.674	-4.714	-4.755	-4.796	-4.836	-4.877	-4.917	-4.957	-4.997	-5.037	-100
-90	-4.215	-4.257	-4.300	-4.342	-4.384	-4.425	-4.467	-4.509	-4.550	-4.591	-4.633	-90
-80	-3.786	-3.829	-3.872	-3.916	-3.959	-4.002	-4.045	-4.088	-4.130	-4.173	-4.215	-80
-70	-3.344	-3.389	-3.434	-3.478	-3.522	-3.566	-3.610	-3.654	-3.698	-3.742	-3.786	-70
-60	-2.893	-2.938	-2.984	-3.029	-3.075	-3.120	-3.165	-3.210	-3.255	-3.300	-3.344	-60
-50	-2.431	-2.478	-2.524	-2.571	-2.617	-2.663	-2.709	-2.755	-2.801	-2.847	-2.893	-50
-40	-1.961	-2.008	-2.055	-2.103	-2.150	-2.197	-2.244	-2.291	-2.338	-2.385	-2.431	-40
-30	-1.482	-1.530	-1.578	-1.626	-1.674	-1.722	-1.770	-1.818	-1.865	-1.913	-1.961	-30
-20	-0.995	-1.044	-1.093	-1.142	-1.190	-1.239	-1.288	-1.336	-1.385	-1.433	-1.482	-20
-10	-0.501	-0.550	-0.600	-0.650	-0.699	-0.749	-0.798	-0.847	-0.896	-0.946	-0.995	-10
0	0.000	-0.050	-0.101	-0.151	-0.201	-0.251	-0.301	-0.351	-0.401	-0.451	-0.501	0
0	0.000	0.050	0.101	0.151	0.202	0.253	0.303	0.354	0.405	0.456	0.507	0
10	0.507	0.558	0.609	0.660	0.711	0.762	0.814	0.865	0.916	0.968	1.019	10
20	1.019	1.071	1.122	1.174	1.226	1.277	1.329	1.381	1.433	1.485	1.537	20
30	1.537	1.589	1.641	1.693	1.745	1.797	1.849	1.902	1.954	2.006	2.059	30
40	2.059	2.111	2.164	2.216	2.269	2.322	2.374	2.427	2.480	2.532	2.585	40
50	2.585	2.638	2.691	2.744	2.797	2.850	2.903	2.956	3.009	3.062	3.116	50
60	3.116	3.169	3.222	3.275	3.329	3.382	3.436	3.489	3.543	3.596	3.650	60
70	3.650	3.703	3.757	3.810	3.864	3.918	3.971	4.025	4.079	4.133	4.187	70
80	4.187	4.240	4.294	4.348	4.402	4.456	4.510	4.564	4.618	4.672	4.726	80
90	4.726	4.781	4.835	4.889	4.943	4.997	5.052	5.106	5.160	5.215	5.269	90
100	5.269	5.323	5.378	5.432	5.487	5.541	5.595	5.650	5.705	5.759	5.814	100
110	5.814	5.868	5.923	5.977	6.032	6.087	6.141	6.196	6.251	6.306	6.360	110
120	6.360	6.415	6.470	6.525	6.579	6.634	6.689	6.744	6.799	6.854	6.909	120
130	6.909	6.964	7.019	7.074	7.129	7.184	7.239	7.294	7.349	7.404	7.459	130
140	7.459	7.514	7.569	7.624	7.679	7.734	7.789	7.844	7.900	7.955	8.010	140
150	8.010	8.065	8.120	8.175	8.231	8.286	8.341	8.396	8.452	8.507	8.562	150
160	8.562	8.618	8.673	8.728	8.783	8.839	8.894	8.949	9.005	9.060	9.115	160
170	9.115	9.171	9.226	9.282	9.337	9.392	9.448	9.503	9.559	9.614	9.669	170
180	9.669	9.725	9.780	9.836	9.891	9.947	10.002	10.057	10.113	10.168	10.224	180
190	10.224	10.279	10.335	10.390	10.446	10.501	10.557	10.612	10.668	10.723	10.779	190
200	10.779	10.834	10.890	10.945	11.001	11.056	11.112	11.167	11.223	11.278	11.334	200
210	11.334	11.389	11.445	11.501	11.556	11.612	11.667	11.723	11.778	11.834	11.889	210
220	11.889	11.945	12.000	12.056	12.111	12.167	12.222	12.278	12.334	12.389	12.445	220
230	12.445	12.500	12.556	12.611	12.667	12.722	12.778	12.833	12.889	12.944	13.000	230
240	13.000	13.056	13.111	13.167	13.222	13.278	13.333	13.389	13.444	13.500	13.555	240

°C	0	1	2	3	4	5	6	7	8	9	10	°C

TABLE 7 ***Type J Thermocouple*** *— thermoelectric voltage as a function of temperature (°C); reference junctions at 0 °C*

°C	0	1	2	3	4	5	6	7	8	9	10	°C
						Thermoelectric Voltage in Millivolts						
250	13.555	13.611	13.666	13.722	13.777	13.833	13.888	13.944	13.999	14.055	14.110	250
260	14.110	14.166	14.221	14.277	14.332	14.388	14.443	14.499	14.554	14.609	14.665	260
270	14.665	14.720	14.776	14.831	14.887	14.942	14.998	15.053	15.109	15.164	15.219	270
280	15.219	15.275	15.330	15.386	15.441	15.496	15.552	15.607	15.663	15.718	15.773	280
290	15.773	15.829	15.884	15.940	15.995	16.050	16.106	16.161	16.216	16.272	16.327	290
300	16.327	16.383	16.438	16.493	16.549	16.604	16.659	16.715	16.770	16.825	16.881	300
310	16.881	16.936	16.991	17.046	17.102	17.157	17.212	17.268	17.323	17.378	17.434	310
320	17.434	17.489	17.544	17.599	17.655	17.710	17.765	17.820	17.876	17.931	17.986	320
330	17.986	18.041	18.097	18.152	18.207	18.262	18.318	18.373	18.428	18.483	18.538	330
340	18.538	18.594	18.649	18.704	18.759	18.814	18.870	18.925	18.980	19.035	19.090	340
350	19.090	19.146	19.201	19.256	19.311	19.366	19.422	19.477	19.532	19.587	19.642	350
360	19.642	19.697	19.753	19.808	19.863	19.918	19.973	20.028	20.083	20.139	20.194	360
370	20.194	20.249	20.304	20.359	20.414	20.469	20.525	20.580	20.635	20.690	20.745	370
380	20.745	20.800	20.855	20.911	20.966	21.021	21.076	21.131	21.186	21.241	21.297	380
390	21.297	21.352	21.407	21.462	21.517	21.572	21.627	21.683	21.738	21.793	21.848	390
400	21.848	21.903	21.958	22.014	22.069	22.124	22.179	22.234	22.289	22.345	22.400	400
410	22.400	22.455	22.510	22.565	22.620	22.676	22.731	22.786	22.841	22.896	22.952	410
420	22.952	23.007	23.062	23.117	23.172	23.228	23.283	23.338	23.393	23.449	23.504	420
430	23.504	23.559	23.614	23.670	23.725	23.780	23.835	23.891	23.946	24.001	24.057	430
440	24.057	24.112	24.167	24.223	24.278	24.333	24.389	24.444	24.499	24.555	24.610	440
450	24.610	24.665	24.721	24.776	24.832	24.887	24.943	24.998	25.053	25.109	25.164	450
460	25.164	25.220	25.275	25.331	25.386	25.442	25.497	25.553	25.608	25.664	25.720	460
470	25.720	25.775	25.831	25.886	25.942	25.998	26.053	26.109	26.165	26.220	26.276	470
480	26.276	26.332	26.387	26.443	26.499	26.555	26.610	26.666	26.722	26.778	26.834	480
490	26.834	26.889	26.945	27.001	27.057	27.113	27.169	27.225	27.281	27.337	27.393	490
500	27.393	27.449	27.505	27.561	27.617	27.673	27.729	27.785	27.841	27.897	27.953	500
510	27.953	28.010	28.066	28.122	28.178	28.234	28.291	28.347	28.403	28.460	28.516	510
520	28.516	28.572	28.629	28.685	28.741	28.798	28.854	28.911	28.967	29.024	29.080	520
530	29.080	29.137	29.194	29.250	29.307	29.363	29.420	29.477	29.534	29.590	29.647	530
540	29.647	29.704	29.761	29.818	29.874	29.931	29.988	30.045	30.102	30.159	30.216	540
550	30.216	30.273	30.330	30.387	30.444	30.502	30.559	30.616	30.673	30.730	30.788	550
560	30.788	30.845	30.902	30.960	31.017	31.074	31.132	31.189	31.247	31.304	31.362	560
570	31.362	31.419	31.477	31.535	31.592	31.650	31.708	31.766	31.823	31.881	31.939	570
580	31.939	31.997	32.055	32.113	32.171	32.229	32.287	32.345	32.403	32.461	32.519	580
590	32.519	32.577	32.636	32.694	32.752	32.810	32.869	32.927	32.985	33.044	33.102	590
600	33.102	33.161	33.219	33.278	33.337	33.395	33.454	33.513	33.571	33.630	33.689	600
610	33.689	33.748	33.807	33.866	33.925	33.984	34.043	34.102	34.161	34.220	34.279	610
620	34.279	34.338	34.397	34.457	34.516	34.575	34.635	34.694	34.754	34.813	34.873	620
630	34.873	34.932	34.992	35.051	35.111	35.171	35.230	35.290	35.350	35.410	35.470	630
640	35.470	35.530	35.590	35.650	35.710	35.770	35.830	35.890	35.950	36.010	36.071	640
650	36.071	36.131	36.191	36.252	36.312	36.373	36.433	36.494	36.554	36.615	36.675	650
660	36.675	36.736	36.797	36.858	36.918	36.979	37.040	37.101	37.162	37.223	37.284	660
670	37.284	37.345	37.406	37.467	37.528	37.590	37.651	37.712	37.773	37.835	37.896	670
680	37.896	37.958	38.019	38.081	38.142	38.204	38.265	38.327	38.389	38.450	38.512	680
690	38.512	38.574	38.636	38.698	38.760	38.822	38.884	38.946	39.008	39.070	39.132	690
700	39.132	39.194	39.256	39.318	39.381	39.443	39.505	39.568	39.630	39.693	39.755	700
710	39.755	39.818	39.880	39.943	40.005	40.068	40.131	40.193	40.256	40.319	40.382	710
720	40.382	40.445	40.508	40.570	40.633	40.696	40.759	40.822	40.886	40.949	41.012	720
730	41.012	41.075	41.138	41.201	41.265	41.328	41.391	41.455	41.518	41.581	41.645	730
740	41.645	41.708	41.772	41.835	41.899	41.962	42.026	42.090	42.153	42.217	42.281	740
°C	0	1	2	3	4	5	6	7	8	9	10	°C

TABLE 7 ***Type J Thermocouple*** *— thermoelectric voltage as a function of temperature (°C); reference junctions at 0 °C*

°C	0	1	2	3	4	5	6	7	8	9	10	°C
	Thermoelectric Voltage in Millivolts											
750	42.281	42.344	42.408	42.472	42.536	42.599	42.663	42.727	42.791	42.855	42.919	750
760	42.919	42.983	43.047	43.111	43.175	43.239	43.303	43.367	43.431	43.495	43.559	760
770	43.559	43.624	43.688	43.752	43.817	43.881	43.945	44.010	44.074	44.139	44.203	770
780	44.203	44.267	44.332	44.396	44.461	44.525	44.590	44.655	44.719	44.784	44.848	780
790	44.848	44.913	44.977	45.042	45.107	45.171	45.236	45.301	45.365	45.430	45.494	790
800	45.494	45.559	45.624	45.688	45.753	45.818	45.882	45.947	46.011	46.076	46.141	800
810	46.141	46.205	46.270	46.334	46.399	46.464	46.528	46.593	46.657	46.722	46.786	810
820	46.786	46.851	46.915	46.980	47.044	47.109	47.173	47.238	47.302	47.367	47.431	820
830	47.431	47.495	47.560	47.624	47.688	47.753	47.817	47.881	47.946	48.010	48.074	830
840	48.074	48.138	48.202	48.267	48.331	48.395	48.459	48.523	48.587	48.651	48.715	840
850	48.715	48.779	48.843	48.907	48.971	49.034	49.098	49.162	49.226	49.290	49.353	850
860	49.353	49.417	49.481	49.544	49.608	49.672	49.735	49.799	49.862	49.926	49.989	860
870	49.989	50.052	50.116	50.179	50.243	50.306	50.369	50.432	50.495	50.559	50.622	870
880	50.622	50.685	50.748	50.811	50.874	50.937	51.000	51.063	51.126	51.188	51.251	880
890	51.251	51.314	51.377	51.439	51.502	51.565	51.627	51.690	51.752	51.815	51.877	890
900	51.877	51.940	52.002	52.064	52.127	52.189	52.251	52.314	52.376	52.438	52.500	900
910	52.500	52.562	52.624	52.686	52.748	52.810	52.872	52.934	52.996	53.057	53.119	910
920	53.119	53.181	53.243	53.304	53.366	53.427	53.489	53.550	53.612	53.673	53.735	920
930	53.735	53.796	53.857	53.919	53.980	54.041	54.102	54.164	54.225	54.286	54.347	930
940	54.347	54.408	54.469	54.530	54.591	54.652	54.713	54.773	54.834	54.895	54.956	940
950	54.956	55.016	55.077	55.138	55.198	55.259	55.319	55.380	55.440	55.501	55.561	950
960	55.561	55.622	55.682	55.742	55.803	55.863	55.923	55.983	56.043	56.104	56.164	960
970	56.164	56.224	56.284	56.344	56.404	56.464	56.524	56.584	56.643	56.703	56.763	970
980	56.763	56.823	56.883	56.942	57.002	57.062	57.121	57.181	57.240	57.300	57.360	980
990	57.360	57.419	57.479	57.538	57.597	57.657	57.716	57.776	57.835	57.894	57.953	990
1000	57.953	58.013	58.072	58.131	58.190	58.249	58.309	58.368	58.427	58.486	58.545	1000
1010	58.545	58.604	58.663	58.722	58.781	58.840	58.899	58.957	59.016	59.075	59.134	1010
1020	59.134	59.193	59.252	59.310	59.369	59.428	59.487	59.545	59.604	59.663	59.721	1020
1030	59.721	59.780	59.838	59.897	59.956	60.014	60.073	60.131	60.190	60.248	60.307	1030
1040	60.307	60.365	60.423	60.482	60.540	60.599	60.657	60.715	60.774	60.832	60.890	1040
1050	60.890	60.949	61.007	61.065	61.123	61.182	61.240	61.298	61.356	61.415	61.473	1050
1060	61.473	61.531	61.589	61.647	61.705	61.763	61.822	61.880	61.938	61.996	62.054	1060
1070	62.054	62.112	62.170	62.228	62.286	62.344	62.402	62.460	62.518	62.576	62.634	1070
1080	62.634	62.692	62.750	62.808	62.866	62.924	62.982	63.040	63.098	63.156	63.214	1080
1090	63.214	63.271	63.329	63.387	63.445	63.503	63.561	63.619	63.677	63.734	63.792	1090
1100	63.792	63.850	63.908	63.966	64.024	64.081	64.139	64.197	64.255	64.313	64.370	1100
1110	64.370	64.428	64.486	64.544	64.602	64.659	64.717	64.775	64.833	64.890	64.948	1110
1120	64.948	65.006	65.064	65.121	65.179	65.237	65.295	65.352	65.410	65.468	65.525	1120
1130	65.525	65.583	65.641	65.699	65.756	65.814	65.872	65.929	65.987	66.045	66.102	1130
1140	66.102	66.160	66.218	66.275	66.333	66.391	66.448	66.506	66.564	66.621	66.679	1140
1150	66.679	66.737	66.794	66.852	66.910	66.967	67.025	67.082	67.140	67.198	67.255	1150
1160	67.255	67.313	67.370	67.428	67.486	67.543	67.601	67.658	67.716	67.773	67.831	1160
1170	67.831	67.888	67.946	68.003	68.061	68.119	68.176	68.234	68.291	68.348	68.406	1170
1180	68.406	68.463	68.521	68.578	68.636	68.693	68.751	68.808	68.865	68.923	68.980	1180
1190	68.980	69.037	69.095	69.152	69.209	69.267	69.324	69.381	69.439	69.496	69.553	1190
1200	69.553											1200

°C	0	1	2	3	4	5	6	7	8	9	10	°C

TABLE 8 ***Type J Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
-340	-8.030	-8.041	-8.052	-8.063	-8.074	-8.085	-8.095					-340
-330	-7.915	-7.927	-7.938	-7.950	-7.962	-7.973	-7.985	-7.996	-8.008	-8.019	-8.030	-330
-320	-7.791	-7.804	-7.816	-7.829	-7.841	-7.854	-7.866	-7.878	-7.890	-7.903	-7.915	-320
-310	-7.659	-7.672	-7.686	-7.699	-7.713	-7.726	-7.739	-7.752	-7.765	-7.778	-7.791	-310
-300	-7.519	-7.534	-7.548	-7.562	-7.576	-7.590	-7.604	-7.618	-7.632	-7.645	-7.659	-300
-290	-7.373	-7.388	-7.403	-7.417	-7.432	-7.447	-7.462	-7.476	-7.491	-7.505	-7.519	-290
-280	-7.219	-7.234	-7.250	-7.265	-7.281	-7.296	-7.312	-7.327	-7.342	-7.357	-7.373	-280
-270	-7.058	-7.074	-7.090	-7.107	-7.123	-7.139	-7.155	-7.171	-7.187	-7.203	-7.219	-270
-260	-6.890	-6.907	-6.924	-6.941	-6.958	-6.975	-6.991	-7.008	-7.025	-7.041	-7.058	-260
-250	-6.716	-6.734	-6.752	-6.769	-6.787	-6.804	-6.821	-6.839	-6.856	-6.873	-6.890	-250
-240	-6.536	-6.555	-6.573	-6.591	-6.609	-6.627	-6.645	-6.663	-6.681	-6.699	-6.716	-240
-230	-6.351	-6.370	-6.388	-6.407	-6.426	-6.444	-6.463	-6.481	-6.500	-6.518	-6.536	-230
-220	-6.159	-6.179	-6.198	-6.217	-6.236	-6.256	-6.275	-6.294	-6.313	-6.332	-6.351	-220
-210	-5.962	-5.982	-6.002	-6.022	-6.042	-6.061	-6.081	-6.101	-6.120	-6.140	-6.159	-210
-200	-5.760	-5.781	-5.801	-5.821	-5.842	-5.862	-5.882	-5.902	-5.922	-5.942	-5.962	-200
-190	-5.553	-5.574	-5.595	-5.616	-5.637	-5.657	-5.678	-5.699	-5.719	-5.740	-5.760	-190
-180	-5.341	-5.363	-5.384	-5.405	-5.426	-5.448	-5.469	-5.490	-5.511	-5.532	-5.553	-180
-170	-5.125	-5.146	-5.168	-5.190	-5.212	-5.233	-5.255	-5.277	-5.298	-5.320	-5.341	-170
-160	-4.903	-4.926	-4.948	-4.970	-4.992	-5.015	-5.037	-5.059	-5.081	-5.103	-5.125	-160
-150	-4.678	-4.701	-4.724	-4.746	-4.769	-4.791	-4.814	-4.836	-4.859	-4.881	-4.903	-150
-140	-4.449	-4.472	-4.495	-4.518	-4.541	-4.564	-4.587	-4.610	-4.633	-4.655	-4.678	-140
-130	-4.215	-4.239	-4.262	-4.286	-4.309	-4.332	-4.356	-4.379	-4.402	-4.425	-4.449	-130
-120	-3.978	-4.002	-4.026	-4.050	-4.073	-4.097	-4.121	-4.144	-4.168	-4.192	-4.215	-120
-110	-3.737	-3.761	-3.786	-3.810	-3.834	-3.858	-3.882	-3.906	-3.930	-3.954	-3.978	-110
-100	-3.493	-3.517	-3.542	-3.566	-3.591	-3.615	-3.640	-3.664	-3.688	-3.713	-3.737	-100
-90	-3.245	-3.270	-3.295	-3.320	-3.344	-3.369	-3.394	-3.419	-3.443	-3.468	-3.493	-90
-80	-2.994	-3.019	-3.044	-3.070	-3.095	-3.120	-3.145	-3.170	-3.195	-3.220	-3.245	-80
-70	-2.740	-2.766	-2.791	-2.817	-2.842	-2.867	-2.893	-2.918	-2.943	-2.969	-2.994	-70
-60	-2.483	-2.509	-2.535	-2.560	-2.586	-2.612	-2.638	-2.663	-2.689	-2.714	-2.740	-60
-50	-2.223	-2.249	-2.275	-2.301	-2.327	-2.353	-2.379	-2.405	-2.431	-2.457	-2.483	-50
-40	-1.961	-1.987	-2.013	-2.040	-2.066	-2.092	-2.118	-2.145	-2.171	-2.197	-2.223	-40
-30	-1.695	-1.722	-1.749	-1.775	-1.802	-1.828	-1.855	-1.881	-1.908	-1.934	-1.961	-30
-20	-1.428	-1.455	-1.482	-1.508	-1.535	-1.562	-1.589	-1.615	-1.642	-1.669	-1.695	-20
-10	-1.158	-1.185	-1.212	-1.239	-1.266	-1.293	-1.320	-1.347	-1.374	-1.401	-1.428	-10
0	-0.886	-0.913	-0.940	-0.967	-0.995	-1.022	-1.049	-1.076	-1.104	-1.131	-1.158	0
0	-0.886	-0.858	-0.831	-0.803	-0.776	-0.749	-0.721	-0.694	-0.666	-0.639	-0.611	0
10	-0.611	-0.583	-0.556	-0.528	-0.501	-0.473	-0.445	-0.418	-0.390	-0.362	-0.334	10
20	-0.334	-0.307	-0.279	-0.251	-0.223	-0.195	-0.168	-0.140	-0.112	-0.084	-0.056	20
30	-0.056	-0.028	0.000	0.028	0.056	0.084	0.112	0.140	0.168	0.196	0.225	30
40	0.225	0.253	0.281	0.309	0.337	0.365	0.394	0.422	0.450	0.478	0.507	40
50	0.507	0.535	0.563	0.592	0.620	0.649	0.677	0.705	0.734	0.762	0.791	50
60	0.791	0.819	0.848	0.876	0.905	0.933	0.962	0.991	1.019	1.048	1.076	60
70	1.076	1.105	1.134	1.162	1.191	1.220	1.249	1.277	1.306	1.335	1.364	70
80	1.364	1.392	1.421	1.450	1.479	1.508	1.537	1.566	1.594	1.623	1.652	80
90	1.652	1.681	1.710	1.739	1.768	1.797	1.826	1.855	1.884	1.913	1.942	90
100	1.942	1.972	2.001	2.030	2.059	2.088	2.117	2.146	2.175	2.205	2.234	100
110	2.234	2.263	2.292	2.322	2.351	2.380	2.409	2.439	2.468	2.497	2.527	110
120	2.527	2.556	2.585	2.615	2.644	2.673	2.703	2.732	2.762	2.791	2.821	120
130	2.821	2.850	2.880	2.909	2.938	2.968	2.997	3.027	3.057	3.086	3.116	130
140	3.116	3.145	3.175	3.204	3.234	3.264	3.293	3.323	3.353	3.382	3.412	140

°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 8 ***Type J Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

J°F

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
150	3.412	3.442	3.471	3.501	3.531	3.560	3.590	3.620	3.650	3.679	3.709	150
160	3.709	3.739	3.769	3.798	3.828	3.858	3.888	3.918	3.948	3.977	4.007	160
170	4.007	4.037	4.067	4.097	4.127	4.157	4.187	4.217	4.246	4.276	4.306	170
180	4.306	4.336	4.366	4.396	4.426	4.456	4.486	4.516	4.546	4.576	4.606	180
190	4.606	4.636	4.666	4.696	4.726	4.757	4.787	4.817	4.847	4.877	4.907	190
200	4.907	4.937	4.967	4.997	5.028	5.058	5.088	5.118	5.148	5.178	5.209	200
210	5.209	5.239	5.269	5.299	5.329	5.360	5.390	5.420	5.450	5.480	5.511	210
220	5.511	5.541	5.571	5.602	5.632	5.662	5.692	5.723	5.753	5.783	5.814	220
230	5.814	5.844	5.874	5.905	5.935	5.965	5.996	6.026	6.056	6.087	6.117	230
240	6.117	6.147	6.178	6.208	6.239	6.269	6.299	6.330	6.360	6.391	6.421	240
250	6.421	6.452	6.482	6.512	6.543	6.573	6.604	6.634	6.665	6.695	6.726	250
260	6.726	6.756	6.787	6.817	6.848	6.878	6.909	6.939	6.970	7.000	7.031	260
270	7.031	7.061	7.092	7.122	7.153	7.184	7.214	7.245	7.275	7.306	7.336	270
280	7.336	7.367	7.398	7.428	7.459	7.489	7.520	7.550	7.581	7.612	7.642	280
290	7.642	7.673	7.704	7.734	7.765	7.795	7.826	7.857	7.887	7.918	7.949	290
300	7.949	7.979	8.010	8.041	8.071	8.102	8.133	8.163	8.194	8.225	8.255	300
310	8.255	8.286	8.317	8.347	8.378	8.409	8.439	8.470	8.501	8.532	8.562	310
320	8.562	8.593	8.624	8.654	8.685	8.716	8.747	8.777	8.808	8.839	8.869	320
330	8.869	8.900	8.931	8.962	8.992	9.023	9.054	9.085	9.115	9.146	9.177	330
340	9.177	9.208	9.238	9.269	9.300	9.331	9.362	9.392	9.423	9.454	9.485	340
350	9.485	9.515	9.546	9.577	9.608	9.639	9.669	9.700	9.731	9.762	9.793	350
360	9.793	9.823	9.854	9.885	9.916	9.947	9.977	10.008	10.039	10.070	10.101	360
370	10.101	10.131	10.162	10.193	10.224	10.255	10.285	10.316	10.347	10.378	10.409	370
380	10.409	10.440	10.470	10.501	10.532	10.563	10.594	10.625	10.655	10.686	10.717	380
390	10.717	10.748	10.779	10.810	10.840	10.871	10.902	10.933	10.964	10.995	11.025	390
400	11.025	11.056	11.087	11.118	11.149	11.180	11.211	11.241	11.272	11.303	11.334	400
410	11.334	11.365	11.396	11.426	11.457	11.488	11.519	11.550	11.581	11.612	11.642	410
420	11.642	11.673	11.704	11.735	11.766	11.797	11.828	11.858	11.889	11.920	11.951	420
430	11.951	11.982	12.013	12.044	12.074	12.105	12.136	12.167	12.198	12.229	12.260	430
440	12.260	12.290	12.321	12.352	12.383	12.414	12.445	12.476	12.506	12.537	12.568	440
450	12.568	12.599	12.630	12.661	12.691	12.722	12.753	12.784	12.815	12.846	12.877	450
460	12.877	12.907	12.938	12.969	13.000	13.031	13.062	13.093	13.123	13.154	13.185	460
470	13.185	13.216	13.247	13.278	13.308	13.339	13.370	13.401	13.432	13.463	13.494	470
480	13.494	13.524	13.555	13.586	13.617	13.648	13.679	13.709	13.740	13.771	13.802	480
490	13.802	13.833	13.864	13.894	13.925	13.956	13.987	14.018	14.049	14.079	14.110	490
500	14.110	14.141	14.172	14.203	14.233	14.264	14.295	14.326	14.357	14.388	14.418	500
510	14.418	14.449	14.480	14.511	14.542	14.573	14.603	14.634	14.665	14.696	14.727	510
520	14.727	14.757	14.788	14.819	14.850	14.881	14.911	14.942	14.973	15.004	15.035	520
530	15.035	15.065	15.096	15.127	15.158	15.189	15.219	15.250	15.281	15.312	15.343	530
540	15.343	15.373	15.404	15.435	15.466	15.496	15.527	15.558	15.589	15.620	15.650	540
550	15.650	15.681	15.712	15.743	15.773	15.804	15.835	15.866	15.897	15.927	15.958	550
560	15.958	15.989	16.020	16.050	16.081	16.112	16.143	16.173	16.204	16.235	16.266	560
570	16.266	16.296	16.327	16.358	16.389	16.419	16.450	16.481	16.512	16.542	16.573	570
580	16.573	16.604	16.635	16.665	16.696	16.727	16.758	16.788	16.819	16.850	16.881	580
590	16.881	16.911	16.942	16.973	17.003	17.034	17.065	17.096	17.126	17.157	17.188	590
600	17.188	17.219	17.249	17.280	17.311	17.341	17.372	17.403	17.434	17.464	17.495	600
610	17.495	17.526	17.556	17.587	17.618	17.649	17.679	17.710	17.741	17.771	17.802	610
620	17.802	17.833	17.863	17.894	17.925	17.955	17.986	18.017	18.048	18.078	18.109	620
630	18.109	18.140	18.170	18.201	18.232	18.262	18.293	18.324	18.354	18.385	18.416	630
640	18.416	18.446	18.477	18.508	18.538	18.569	18.600	18.630	18.661	18.692	18.722	640
°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 8 ***Type J Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
650	18.722	18.753	18.784	18.814	18.845	18.876	18.906	18.937	18.968	18.998	19.029	650
660	19.029	19.060	19.090	19.121	19.152	19.182	19.213	19.244	19.274	19.305	19.336	660
670	19.336	19.366	19.397	19.428	19.458	19.489	19.520	19.550	19.581	19.612	19.642	670
680	19.642	19.673	19.704	19.734	19.765	19.795	19.826	19.857	19.887	19.918	19.949	680
690	19.949	19.979	20.010	20.041	20.071	20.102	20.132	20.163	20.194	20.224	20.255	690
700	20.255	20.286	20.316	20.347	20.378	20.408	20.439	20.469	20.500	20.531	20.561	700
710	20.561	20.592	20.623	20.653	20.684	20.715	20.745	20.776	20.806	20.837	20.868	710
720	20.868	20.898	20.929	20.960	20.990	21.021	21.052	21.082	21.113	21.143	21.174	720
730	21.174	21.205	21.235	21.266	21.297	21.327	21.358	21.389	21.419	21.450	21.480	730
740	21.480	21.511	21.542	21.572	21.603	21.634	21.664	21.695	21.726	21.756	21.787	740
750	21.787	21.817	21.848	21.879	21.909	21.940	21.971	22.001	22.032	22.063	22.093	750
760	22.093	22.124	22.154	22.185	22.216	22.246	22.277	22.308	22.338	22.369	22.400	760
770	22.400	22.430	22.461	22.492	22.522	22.553	22.584	22.614	22.645	22.676	22.706	770
780	22.706	22.737	22.768	22.798	22.829	22.860	22.890	22.921	22.952	22.982	23.013	780
790	23.013	23.044	23.074	23.105	23.136	23.166	23.197	23.228	23.258	23.289	23.320	790
800	23.320	23.350	23.381	23.412	23.442	23.473	23.504	23.535	23.565	23.596	23.627	800
810	23.627	23.657	23.688	23.719	23.749	23.780	23.811	23.842	23.872	23.903	23.934	810
820	23.934	23.964	23.995	24.026	24.057	24.087	24.118	24.149	24.180	24.210	24.241	820
830	24.241	24.272	24.303	24.333	24.364	24.395	24.426	24.456	24.487	24.518	24.549	830
840	24.549	24.579	24.610	24.641	24.672	24.702	24.733	24.764	24.795	24.826	24.856	840
850	24.856	24.887	24.918	24.949	24.979	25.010	25.041	25.072	25.103	25.134	25.164	850
860	25.164	25.195	25.226	25.257	25.288	25.318	25.349	25.380	25.411	25.442	25.473	860
870	25.473	25.504	25.534	25.565	25.596	25.627	25.658	25.689	25.720	25.750	25.781	870
880	25.781	25.812	25.843	25.874	25.905	25.936	25.967	25.998	26.029	26.059	26.090	880
890	26.090	26.121	26.152	26.183	26.214	26.245	26.276	26.307	26.338	26.369	26.400	890
900	26.400	26.431	26.462	26.493	26.524	26.555	26.586	26.617	26.648	26.679	26.710	900
910	26.710	26.741	26.772	26.803	26.834	26.865	26.896	26.927	26.958	26.989	27.020	910
920	27.020	27.051	27.082	27.113	27.144	27.175	27.206	27.237	27.268	27.299	27.330	920
930	27.330	27.362	27.393	27.424	27.455	27.486	27.517	27.548	27.579	27.610	27.642	930
940	27.642	27.673	27.704	27.735	27.766	27.797	27.829	27.860	27.891	27.922	27.953	940
950	27.953	27.985	28.016	28.047	28.078	28.109	28.141	28.172	28.203	28.234	28.266	950
960	28.266	28.297	28.328	28.359	28.391	28.422	28.453	28.485	28.516	28.547	28.579	960
970	28.579	28.610	28.641	28.672	28.704	28.735	28.767	28.798	28.829	28.861	28.892	970
980	28.892	28.923	28.955	28.986	29.018	29.049	29.080	29.112	29.143	29.175	29.206	980
990	29.206	29.238	29.269	29.301	29.332	29.363	29.395	29.426	29.458	29.489	29.521	990
1000	29.521	29.552	29.584	29.616	29.647	29.679	29.710	29.742	29.773	29.805	29.836	1000
1010	29.836	29.868	29.900	29.931	29.963	29.995	30.026	30.058	30.089	30.121	30.153	1010
1020	30.153	30.184	30.216	30.248	30.279	30.311	30.343	30.375	30.406	30.438	30.470	1020
1030	30.470	30.502	30.533	30.565	30.597	30.629	30.660	30.692	30.724	30.756	30.788	1030
1040	30.788	30.819	30.851	30.883	30.915	30.947	30.979	31.011	31.043	31.074	31.106	1040
1050	31.106	31.138	31.170	31.202	31.234	31.266	31.298	31.330	31.362	31.394	31.426	1050
1060	31.426	31.458	31.490	31.522	31.554	31.586	31.618	31.650	31.682	31.714	31.746	1060
1070	31.746	31.778	31.811	31.843	31.875	31.907	31.939	31.971	32.003	32.035	32.068	1070
1080	32.068	32.100	32.132	32.164	32.196	32.229	32.261	32.293	32.325	32.358	32.390	1080
1090	32.390	32.422	32.455	32.487	32.519	32.551	32.584	32.616	32.648	32.681	32.713	1090
1100	32.713	32.746	32.778	32.810	32.843	32.875	32.908	32.940	32.973	33.005	33.037	1100
1110	33.037	33.070	33.102	33.135	33.167	33.200	33.232	33.265	33.298	33.330	33.363	1110
1120	33.363	33.395	33.428	33.460	33.493	33.526	33.558	33.591	33.624	33.656	33.689	1120
1130	33.689	33.722	33.754	33.787	33.820	33.853	33.885	33.918	33.951	33.984	34.016	1130
1140	34.016	34.049	34.082	34.115	34.148	34.180	34.213	34.246	34.279	34.312	34.345	1140

°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 8 ***Type J Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
	Thermoelectric Voltage in Millivolts											
1150	34.345	34.378	34.411	34.444	34.476	34.509	34.542	34.575	34.608	34.641	34.674	1150
1160	34.674	34.707	34.740	34.773	34.806	34.840	34.873	34.906	34.939	34.972	35.005	1160
1170	35.005	35.038	35.071	35.104	35.138	35.171	35.204	35.237	35.270	35.304	35.337	1170
1180	35.337	35.370	35.403	35.437	35.470	35.503	35.536	35.570	35.603	35.636	35.670	1180
1190	35.670	35.703	35.736	35.770	35.803	35.837	35.870	35.903	35.937	35.970	36.004	1190
1200	36.004	36.037	36.071	36.104	36.138	36.171	36.205	36.238	36.272	36.305	36.339	1200
1210	36.339	36.373	36.406	36.440	36.473	36.507	36.541	36.574	36.608	36.642	36.675	1210
1220	36.675	36.709	36.743	36.777	36.810	36.844	36.878	36.912	36.945	36.979	37.013	1220
1230	37.013	37.047	37.081	37.114	37.148	37.182	37.216	37.250	37.284	37.318	37.352	1230
1240	37.352	37.386	37.420	37.454	37.488	37.522	37.556	37.590	37.624	37.658	37.692	1240
1250	37.692	37.726	37.760	37.794	37.828	37.862	37.896	37.930	37.964	37.999	38.033	1250
1260	38.033	38.067	38.101	38.135	38.169	38.204	38.238	38.272	38.306	38.341	38.375	1260
1270	38.375	38.409	38.444	38.478	38.512	38.546	38.581	38.615	38.650	38.684	38.718	1270
1280	38.718	38.753	38.787	38.822	38.856	38.890	38.925	38.959	38.994	39.028	39.063	1280
1290	39.063	39.097	39.132	39.166	39.201	39.235	39.270	39.305	39.339	39.374	39.408	1290
1300	39.408	39.443	39.478	39.512	39.547	39.582	39.616	39.651	39.686	39.720	39.755	1300
1310	39.755	39.790	39.825	39.859	39.894	39.929	39.964	39.998	40.033	40.068	40.103	1310
1320	40.103	40.138	40.173	40.207	40.242	40.277	40.312	40.347	40.382	40.417	40.452	1320
1330	40.452	40.487	40.522	40.556	40.591	40.626	40.661	40.696	40.731	40.766	40.801	1330
1340	40.801	40.836	40.872	40.907	40.942	40.977	41.012	41.047	41.082	41.117	41.152	1340
1350	41.152	41.187	41.222	41.258	41.293	41.328	41.363	41.398	41.433	41.469	41.504	1350
1360	41.504	41.539	41.574	41.610	41.645	41.680	41.715	41.751	41.786	41.821	41.856	1360
1370	41.856	41.892	41.927	41.962	41.998	42.033	42.068	42.104	42.139	42.174	42.210	1370
1380	42.210	42.245	42.281	42.316	42.351	42.387	42.422	42.458	42.493	42.528	42.564	1380
1390	42.564	42.599	42.635	42.670	42.706	42.741	42.777	42.812	42.848	42.883	42.919	1390
1400	42.919	42.954	42.990	43.025	43.061	43.096	43.132	43.167	43.203	43.239	43.274	1400
1410	43.274	43.310	43.346	43.381	43.417	43.452	43.488	43.524	43.559	43.595	43.631	1410
1420	43.631	43.667	43.702	43.738	43.774	43.809	43.845	43.881	43.917	43.953	43.988	1420
1430	43.988	44.024	44.060	44.096	44.131	44.167	44.203	44.239	44.275	44.310	44.346	1430
1440	44.346	44.382	44.418	44.454	44.490	44.525	44.561	44.597	44.633	44.669	44.705	1440
1450	44.705	44.741	44.777	44.812	44.848	44.884	44.920	44.956	44.992	45.028	45.064	1450
1460	45.064	45.099	45.135	45.171	45.207	45.243	45.279	45.315	45.351	45.387	45.423	1460
1470	45.423	45.458	45.494	45.530	45.566	45.602	45.638	45.674	45.710	45.746	45.782	1470
1480	45.782	45.818	45.853	45.889	45.925	45.961	45.997	46.033	46.069	46.105	46.141	1480
1490	46.141	46.177	46.212	46.248	46.284	46.320	46.356	46.392	46.428	46.464	46.500	1490
1500	46.500	46.535	46.571	46.607	46.643	46.679	46.715	46.751	46.786	46.822	46.858	1500
1510	46.858	46.894	46.930	46.966	47.001	47.037	47.073	47.109	47.145	47.181	47.216	1510
1520	47.216	47.252	47.288	47.324	47.359	47.395	47.431	47.467	47.503	47.538	47.574	1520
1530	47.574	47.610	47.646	47.681	47.717	47.753	47.788	47.824	47.860	47.896	47.931	1530
1540	47.931	47.967	48.003	48.038	48.074	48.110	48.145	48.181	48.217	48.252	48.288	1540
1550	48.288	48.324	48.359	48.395	48.430	48.466	48.502	48.537	48.573	48.608	48.644	1550
1560	48.644	48.679	48.715	48.750	48.786	48.822	48.857	48.893	48.928	48.964	48.999	1560
1570	48.999	49.034	49.070	49.105	49.141	49.176	49.212	49.247	49.283	49.318	49.353	1570
1580	49.353	49.389	49.424	49.460	49.495	49.530	49.566	49.601	49.636	49.672	49.707	1580
1590	49.707	49.742	49.778	49.813	49.848	49.883	49.919	49.954	49.989	50.024	50.060	1590
1600	50.060	50.095	50.130	50.165	50.200	50.235	50.271	50.306	50.341	50.376	50.411	1600
1610	50.411	50.446	50.481	50.517	50.552	50.587	50.622	50.657	50.692	50.727	50.762	1610
1620	50.762	50.797	50.832	50.867	50.902	50.937	50.972	51.007	51.042	51.077	51.112	1620
1630	51.112	51.147	51.181	51.216	51.251	51.286	51.321	51.356	51.391	51.425	51.460	1630
1640	51.460	51.495	51.530	51.565	51.599	51.634	51.669	51.704	51.738	51.773	51.808	1640
°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 8 ***Type J Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
1650	51.808	51.843	51.877	51.912	51.947	51.981	52.016	52.051	52.085	52.120	52.154	1650
1660	52.154	52.189	52.224	52.258	52.293	52.327	52.362	52.396	52.431	52.465	52.500	1660
1670	52.500	52.534	52.569	52.603	52.638	52.672	52.707	52.741	52.776	52.810	52.844	1670
1680	52.844	52.879	52.913	52.947	52.982	53.016	53.050	53.085	53.119	53.153	53.188	1680
1690	53.188	53.222	53.256	53.290	53.325	53.359	53.393	53.427	53.462	53.496	53.530	1690
1700	53.530	53.564	53.598	53.632	53.667	53.701	53.735	53.769	53.803	53.837	53.871	1700
1710	53.871	53.905	53.939	53.973	54.007	54.041	54.075	54.109	54.143	54.177	54.211	1710
1720	54.211	54.245	54.279	54.313	54.347	54.381	54.415	54.449	54.483	54.516	54.550	1720
1730	54.550	54.584	54.618	54.652	54.686	54.719	54.753	54.787	54.821	54.855	54.888	1730
1740	54.888	54.922	54.956	54.990	55.023	55.057	55.091	55.124	55.158	55.192	55.225	1740
1750	55.225	55.259	55.293	55.326	55.360	55.393	55.427	55.461	55.494	55.528	55.561	1750
1760	55.561	55.595	55.628	55.662	55.695	55.729	55.762	55.796	55.829	55.863	55.896	1760
1770	55.896	55.930	55.963	55.997	56.030	56.063	56.097	56.130	56.164	56.197	56.230	1770
1780	56.230	56.264	56.297	56.330	56.364	56.397	56.430	56.464	56.497	56.530	56.564	1780
1790	56.564	56.597	56.630	56.663	56.697	56.730	56.763	56.796	56.829	56.863	56.896	1790
1800	56.896	56.929	56.962	56.995	57.028	57.062	57.095	57.128	57.161	57.194	57.227	1800
1810	57.227	57.260	57.293	57.326	57.360	57.393	57.426	57.459	57.492	57.525	57.558	1810
1820	57.558	57.591	57.624	57.657	57.690	57.723	57.756	57.789	57.822	57.855	57.888	1820
1830	57.888	57.920	57.953	57.986	58.019	58.052	58.085	58.118	58.151	58.184	58.217	1830
1840	58.217	58.249	58.282	58.315	58.348	58.381	58.414	58.446	58.479	58.512	58.545	1840
1850	58.545	58.578	58.610	58.643	58.676	58.709	58.741	58.774	58.807	58.840	58.872	1850
1860	58.872	58.905	58.938	58.971	59.003	59.036	59.069	59.101	59.134	59.167	59.199	1860
1870	59.199	59.232	59.265	59.297	59.330	59.363	59.395	59.428	59.460	59.493	59.526	1870
1880	59.526	59.558	59.591	59.623	59.656	59.689	59.721	59.754	59.786	59.819	59.851	1880
1890	59.851	59.884	59.916	59.949	59.982	60.014	60.047	60.079	60.112	60.144	60.177	1890
1900	60.177	60.209	60.242	60.274	60.307	60.339	60.371	60.404	60.436	60.469	60.501	1900
1910	60.501	60.534	60.566	60.599	60.631	60.663	60.696	60.728	60.761	60.793	60.826	1910
1920	60.826	60.858	60.890	60.923	60.955	60.987	61.020	61.052	61.085	61.117	61.149	1920
1930	61.149	61.182	61.214	61.246	61.279	61.311	61.343	61.376	61.408	61.440	61.473	1930
1940	61.473	61.505	61.537	61.570	61.602	61.634	61.667	61.699	61.731	61.763	61.796	1940
1950	61.796	61.828	61.860	61.893	61.925	61.957	61.989	62.022	62.054	62.086	62.118	1950
1960	62.118	62.151	62.183	62.215	62.247	62.280	62.312	62.344	62.376	62.409	62.441	1960
1970	62.441	62.473	62.505	62.537	62.570	62.602	62.634	62.666	62.699	62.731	62.763	1970
1980	62.763	62.795	62.827	62.860	62.892	62.924	62.956	62.988	63.020	63.053	63.085	1980
1990	63.085	63.117	63.149	63.181	63.214	63.246	63.278	63.310	63.342	63.374	63.406	1990
2000	63.406	63.439	63.471	63.503	63.535	63.567	63.599	63.632	63.664	63.696	63.728	2000
2010	63.728	63.760	63.792	63.824	63.856	63.889	63.921	63.953	63.985	64.017	64.049	2010
2020	64.049	64.081	64.113	64.146	64.178	64.210	64.242	64.274	64.306	64.338	64.370	2020
2030	64.370	64.402	64.435	64.467	64.499	64.531	64.563	64.595	64.627	64.659	64.691	2030
2040	64.691	64.723	64.756	64.788	64.820	64.852	64.884	64.916	64.948	64.980	65.012	2040
2050	65.012	65.044	65.076	65.109	65.141	65.173	65.205	65.237	65.269	65.301	65.333	2050
2060	65.333	65.365	65.397	65.429	65.461	65.493	65.525	65.557	65.590	65.622	65.654	2060
2070	65.654	65.686	65.718	65.750	65.782	65.814	65.846	65.878	65.910	65.942	65.974	2070
2080	65.974	66.006	66.038	66.070	66.102	66.134	66.166	66.199	66.231	66.263	66.295	2080
2090	66.295	66.327	66.359	66.391	66.423	66.455	66.487	66.519	66.551	66.583	66.615	2090
2100	66.615	66.647	66.679	66.711	66.743	66.775	66.807	66.839	66.871	66.903	66.935	2100
2110	66.935	66.967	66.999	67.031	67.063	67.095	67.127	67.159	67.191	67.223	67.255	2110
2120	67.255	67.287	67.319	67.351	67.383	67.415	67.447	67.479	67.511	67.543	67.575	2120
2130	67.575	67.607	67.639	67.671	67.703	67.735	67.767	67.799	67.831	67.863	67.895	2130
2140	67.895	67.927	67.959	67.991	68.023	68.055	68.087	68.119	68.150	68.182	68.214	2140

°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 8 ***Type J Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
					Thermoelectric Voltage in Millivolts							
2150	68.214	68.246	68.278	68.310	68.342	68.374	68.406	68.438	68.470	68.502	68.534	2150
2160	68.534	68.566	68.597	68.629	68.661	68.693	68.725	68.757	68.789	68.821	68.853	2160
2170	68.853	68.884	68.916	68.948	68.980	69.012	69.044	69.076	69.108	69.139	69.171	2170
2180	69.171	69.203	69.235	69.267	69.299	69.330	69.362	69.394	69.426	69.458	69.490	2180
2190	69.490	69.521	69.553									2190

°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 9 ***Type K Thermocouple —*** *thermoelectric voltage as a function of temperature (°C); reference junctions at 0 °C*

°C	0	1	2	3	4	5	6	7	8	9	10	°C
					Thermoelectric Voltage in Millivolts							
-270	-6.458											-270
-260	-6.411	-6.444	-6.446	-6.448	-6.450	-6.452	-6.453	-6.455	-6.456	-6.457	-6.458	-260
-250	-6.404	-6.408	-6.413	-6.417	-6.421	-6.425	-6.429	-6.432	-6.435	-6.438	-6.441	-250
-240	-6.344	-6.351	-6.358	-6.364	-6.370	-6.377	-6.382	-6.388	-6.393	-6.399	-6.404	-240
-230	-6.262	-6.271	-6.280	-6.289	-6.297	-6.306	-6.314	-6.322	-6.329	-6.337	-6.344	-230
-220	-6.158	-6.170	-6.181	-6.192	-6.202	-6.213	-6.223	-6.233	-6.243	-6.252	-6.262	-220
-210	-6.035	-6.048	-6.061	-6.074	-6.087	-6.099	-6.111	-6.123	-6.135	-6.147	-6.158	-210
-200	-5.891	-5.907	-5.922	-5.936	-5.951	-5.965	-5.980	-5.994	-6.007	-6.021	-6.035	-200
-190	-5.730	-5.747	-5.763	-5.780	-5.797	-5.813	-5.829	-5.845	-5.861	-5.876	-5.891	-190
-180	-5.550	-5.569	-5.588	-5.606	-5.624	-5.642	-5.660	-5.678	-5.695	-5.713	-5.730	-180
-170	-5.354	-5.374	-5.395	-5.415	-5.435	-5.454	-5.474	-5.493	-5.512	-5.531	-5.550	-170
-160	-5.141	-5.163	-5.185	-5.207	-5.228	-5.250	-5.271	-5.292	-5.313	-5.333	-5.354	-160
-150	-4.913	-4.936	-4.960	-4.983	-5.006	-5.029	-5.052	-5.074	-5.097	-5.119	-5.141	-150
-140	-4.669	-4.694	-4.719	-4.744	-4.768	-4.793	-4.817	-4.841	-4.865	-4.889	-4.913	-140
-130	-4.411	-4.437	-4.463	-4.490	-4.516	-4.542	-4.567	-4.593	-4.618	-4.644	-4.669	-130
-120	-4.138	-4.166	-4.194	-4.221	-4.249	-4.276	-4.303	-4.330	-4.357	-4.384	-4.411	-120
-110	-3.852	-3.882	-3.911	-3.939	-3.968	-3.997	-4.025	-4.054	-4.082	-4.110	-4.138	-110
-100	-3.554	-3.584	-3.614	-3.645	-3.675	-3.705	-3.734	-3.764	-3.794	-3.823	-3.852	-100
-90	-3.243	-3.274	-3.306	-3.337	-3.368	-3.400	-3.431	-3.462	-3.492	-3.523	-3.554	-90
-80	-2.920	-2.953	-2.986	-3.018	-3.050	-3.083	-3.115	-3.147	-3.179	-3.211	-3.243	-80
-70	-2.587	-2.620	-2.654	-2.688	-2.721	-2.755	-2.788	-2.821	-2.854	-2.887	-2.920	-70
-60	-2.243	-2.278	-2.312	-2.347	-2.382	-2.416	-2.450	-2.485	-2.519	-2.553	-2.587	-60
-50	-1.889	-1.925	-1.961	-1.996	-2.032	-2.067	-2.103	-2.138	-2.173	-2.208	-2.243	-50
-40	-1.527	-1.564	-1.600	-1.637	-1.673	-1.709	-1.745	-1.782	-1.818	-1.854	-1.889	-40
-30	-1.156	-1.194	-1.231	-1.268	-1.305	-1.343	-1.380	-1.417	-1.453	-1.490	-1.527	-30
-20	-0.778	-0.816	-0.854	-0.892	-0.930	-0.968	-1.006	-1.043	-1.081	-1.119	-1.156	-20
-10	-0.392	-0.431	-0.470	-0.508	-0.547	-0.586	-0.624	-0.663	-0.701	-0.739	-0.778	-10
0	0.000	-0.039	-0.079	-0.118	-0.157	-0.197	-0.236	-0.275	-0.314	-0.353	-0.392	0
0	0.000	0.039	0.079	0.119	0.158	0.198	0.238	0.277	0.317	0.357	0.397	0
10	0.397	0.437	0.477	0.517	0.557	0.597	0.637	0.677	0.718	0.758	0.798	10
20	0.798	0.838	0.879	0.919	0.960	1.000	1.041	1.081	1.122	1.163	1.203	20
30	1.203	1.244	1.285	1.326	1.366	1.407	1.448	1.489	1.530	1.571	1.612	30
40	1.612	1.653	1.694	1.735	1.776	1.817	1.858	1.899	1.941	1.982	2.023	40
50	2.023	2.064	2.106	2.147	2.188	2.230	2.271	2.312	2.354	2.395	2.436	50
60	2.436	2.478	2.519	2.561	2.602	2.644	2.685	2.727	2.768	2.810	2.851	60
70	2.851	2.893	2.934	2.976	3.017	3.059	3.100	3.142	3.184	3.225	3.267	70
80	3.267	3.308	3.350	3.391	3.433	3.474	3.516	3.557	3.599	3.640	3.682	80
90	3.682	3.723	3.765	3.806	3.848	3.889	3.931	3.972	4.013	4.055	4.096	90
100	4.096	4.138	4.179	4.220	4.262	4.303	4.344	4.385	4.427	4.468	4.509	100
110	4.509	4.550	4.591	4.633	4.674	4.715	4.756	4.797	4.838	4.879	4.920	110
120	4.920	4.961	5.002	5.043	5.084	5.124	5.165	5.206	5.247	5.288	5.328	120
130	5.328	5.369	5.410	5.450	5.491	5.532	5.572	5.613	5.653	5.694	5.735	130
140	5.735	5.775	5.815	5.856	5.896	5.937	5.977	6.017	6.058	6.098	6.138	140
150	6.138	6.179	6.219	6.259	6.299	6.339	6.380	6.420	6.460	6.500	6.540	150
160	6.540	6.580	6.620	6.660	6.701	6.741	6.781	6.821	6.861	6.901	6.941	160
170	6.941	6.981	7.021	7.060	7.100	7.140	7.180	7.220	7.260	7.300	7.340	170
180	7.340	7.380	7.420	7.460	7.500	7.540	7.579	7.619	7.659	7.699	7.739	180
190	7.739	7.779	7.819	7.859	7.899	7.939	7.979	8.019	8.059	8.099	8.138	190

°C	0	1	2	3	4	5	6	7	8	9	10	°C

TABLE 9 ***Type K Thermocouple*** *— thermoelectric voltage as a function of temperature (°C); reference junctions at 0 °C*

°C	0	1	2	3	4	5	6	7	8	9	10	°C
						Thermoelectric Voltage in Millivolts						
200	8.138	8.178	8.218	8.258	8.298	8.338	8.378	8.418	8.458	8.499	8.539	200
210	8.539	8.579	8.619	8.659	8.699	8.739	8.779	8.819	8.860	8.900	8.940	210
220	8.940	8.980	9.020	9.061	9.101	9.141	9.181	9.222	9.262	9.302	9.343	220
230	9.343	9.383	9.423	9.464	9.504	9.545	9.585	9.626	9.666	9.707	9.747	230
240	9.747	9.788	9.828	9.869	9.909	9.950	9.991	10.031	10.072	10.113	10.153	240
250	10.153	10.194	10.235	10.276	10.316	10.357	10.398	10.439	10.480	10.520	10.561	250
260	10.561	10.602	10.643	10.684	10.725	10.766	10.807	10.848	10.889	10.930	10.971	260
270	10.971	11.012	11.053	11.094	11.135	11.176	11.217	11.259	11.300	11.341	11.382	270
280	11.382	11.423	11.465	11.506	11.547	11.588	11.630	11.671	11.712	11.753	11.795	280
290	11.795	11.836	11.877	11.919	11.960	12.001	12.043	12.084	12.126	12.167	12.209	290
300	12.209	12.250	12.291	12.333	12.374	12.416	12.457	12.499	12.540	12.582	12.624	300
310	12.624	12.665	12.707	12.748	12.790	12.831	12.873	12.915	12.956	12.998	13.040	310
320	13.040	13.081	13.123	13.165	13.206	13.248	13.290	13.331	13.373	13.415	13.457	320
330	13.457	13.498	13.540	13.582	13.624	13.665	13.707	13.749	13.791	13.833	13.874	330
340	13.874	13.916	13.958	14.000	14.042	14.084	14.126	14.167	14.209	14.251	14.293	340
350	14.293	14.335	14.377	14.419	14.461	14.503	14.545	14.587	14.629	14.671	14.713	350
360	14.713	14.755	14.797	14.839	14.881	14.923	14.965	15.007	15.049	15.091	15.133	360
370	15.133	15.175	15.217	15.259	15.301	15.343	15.385	15.427	15.469	15.511	15.554	370
380	15.554	15.596	15.638	15.680	15.722	15.764	15.806	15.849	15.891	15.933	15.975	380
390	15.975	16.017	16.059	16.102	16.144	16.186	16.228	16.270	16.313	16.355	16.397	390
400	16.397	16.439	16.482	16.524	16.566	16.608	16.651	16.693	16.735	16.778	16.820	400
410	16.820	16.862	16.904	16.947	16.989	17.031	17.074	17.116	17.158	17.201	17.243	410
420	17.243	17.285	17.328	17.370	17.413	17.455	17.497	17.540	17.582	17.624	17.667	420
430	17.667	17.709	17.752	17.794	17.837	17.879	17.921	17.964	18.006	18.049	18.091	430
440	18.091	18.134	18.176	18.218	18.261	18.303	18.346	18.388	18.431	18.473	18.516	440
450	18.516	18.558	18.601	18.643	18.686	18.728	18.771	18.813	18.856	18.898	18.941	450
460	18.941	18.983	19.026	19.068	19.111	19.154	19.196	19.239	19.281	19.324	19.366	460
470	19.366	19.409	19.451	19.494	19.537	19.579	19.622	19.664	19.707	19.750	19.792	470
480	19.792	19.835	19.877	19.920	19.962	20.005	20.048	20.090	20.133	20.175	20.218	480
490	20.218	20.261	20.303	20.346	20.389	20.431	20.474	20.516	20.559	20.602	20.644	490
500	20.644	20.687	20.730	20.772	20.815	20.857	20.900	20.943	20.985	21.028	21.071	500
510	21.071	21.113	21.156	21.199	21.241	21.284	21.326	21.369	21.412	21.454	21.497	510
520	21.497	21.540	21.582	21.625	21.668	21.710	21.753	21.796	21.838	21.881	21.924	520
530	21.924	21.966	22.009	22.052	22.094	22.137	22.179	22.222	22.265	22.307	22.350	530
540	22.350	22.393	22.435	22.478	22.521	22.563	22.606	22.649	22.691	22.734	22.776	540
550	22.776	22.819	22.862	22.904	22.947	22.990	23.032	23.075	23.117	23.160	23.203	550
560	23.203	23.245	23.288	23.331	23.373	23.416	23.458	23.501	23.544	23.586	23.629	560
570	23.629	23.671	23.714	23.757	23.799	23.842	23.884	23.927	23.970	24.012	24.055	570
580	24.055	24.097	24.140	24.182	24.225	24.267	24.310	24.353	24.395	24.438	24.480	580
590	24.480	24.523	24.565	24.608	24.650	24.693	24.735	24.778	24.820	24.863	24.905	590
600	24.905	24.948	24.990	25.033	25.075	25.118	25.160	25.203	25.245	25.288	25.330	600
610	25.330	25.373	25.415	25.458	25.500	25.543	25.585	25.627	25.670	25.712	25.755	610
620	25.755	25.797	25.840	25.882	25.924	25.967	26.009	26.052	26.094	26.136	26.179	620
630	26.179	26.221	26.263	26.306	26.348	26.390	26.433	26.475	26.517	26.560	26.602	630
640	26.602	26.644	26.687	26.729	26.771	26.814	26.856	26.898	26.940	26.983	27.025	640
650	27.025	27.067	27.109	27.152	27.194	27.236	27.278	27.320	27.363	27.405	27.447	650
660	27.447	27.489	27.531	27.574	27.616	27.658	27.700	27.742	27.784	27.826	27.869	660
670	27.869	27.911	27.953	27.995	28.037	28.079	28.121	28.163	28.205	28.247	28.289	670
680	28.289	28.332	28.374	28.416	28.458	28.500	28.542	28.584	28.626	28.668	28.710	680
690	28.710	28.752	28.794	28.835	28.877	28.919	28.961	29.003	29.045	29.087	29.129	690
°C	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**°C**

TABLE 9 ***Type K Thermocouple*** *— thermoelectric voltage as a function of temperature (°C); reference junctions at 0 °C*

°C	0	1	2	3	4	5	6	7	8	9	10	°C
						Thermoelectric Voltage in Millivolts						
700	29.129	29.171	29.213	29.255	29.297	29.338	29.380	29.422	29.464	29.506	29.548	700
710	29.548	29.589	29.631	29.673	29.715	29.757	29.798	29.840	29.882	29.924	29.965	710
720	29.965	30.007	30.049	30.090	30.132	30.174	30.216	30.257	30.299	30.341	30.382	720
730	30.382	30.424	30.466	30.507	30.549	30.590	30.632	30.674	30.715	30.757	30.798	730
740	30.798	30.840	30.881	30.923	30.964	31.006	31.047	31.089	31.130	31.172	31.213	740
750	31.213	31.255	31.296	31.338	31.379	31.421	31.462	31.504	31.545	31.586	31.628	750
760	31.628	31.669	31.710	31.752	31.793	31.834	31.876	31.917	31.958	32.000	32.041	760
770	32.041	32.082	32.124	32.165	32.206	32.247	32.289	32.330	32.371	32.412	32.453	770
780	32.453	32.495	32.536	32.577	32.618	32.659	32.700	32.742	32.783	32.824	32.865	780
790	32.865	32.906	32.947	32.988	33.029	33.070	33.111	33.152	33.193	33.234	33.275	790
800	33.275	33.316	33.357	33.398	33.439	33.480	33.521	33.562	33.603	33.644	33.685	800
810	33.685	33.726	33.767	33.808	33.848	33.889	33.930	33.971	34.012	34.053	34.093	810
820	34.093	34.134	34.175	34.216	34.257	34.297	34.338	34.379	34.420	34.460	34.501	820
830	34.501	34.542	34.582	34.623	34.664	34.704	34.745	34.786	34.826	34.867	34.908	830
840	34.908	34.948	34.989	35.029	35.070	35.110	35.151	35.192	35.232	35.273	35.313	840
850	35.313	35.354	35.394	35.435	35.475	35.516	35.556	35.596	35.637	35.677	35.718	850
860	35.718	35.758	35.798	35.839	35.879	35.920	35.960	36.000	36.041	36.081	36.121	860
870	36.121	36.162	36.202	36.242	36.282	36.323	36.363	36.403	36.443	36.484	36.524	870
880	36.524	36.564	36.604	36.644	36.685	36.725	36.765	36.805	36.845	36.885	36.925	880
890	36.925	36.965	37.006	37.046	37.086	37.126	37.166	37.206	37.246	37.286	37.326	890
900	37.326	37.366	37.406	37.446	37.486	37.526	37.566	37.606	37.646	37.686	37.725	900
910	37.725	37.765	37.805	37.845	37.885	37.925	37.965	38.005	38.044	38.084	38.124	910
920	38.124	38.164	38.204	38.243	38.283	38.323	38.363	38.402	38.442	38.482	38.522	920
930	38.522	38.561	38.601	38.641	38.680	38.720	38.760	38.799	38.839	38.878	38.918	930
940	38.918	38.958	38.997	39.037	39.076	39.116	39.155	39.195	39.235	39.274	39.314	940
950	39.314	39.353	39.393	39.432	39.471	39.511	39.550	39.590	39.629	39.669	39.708	950
960	39.708	39.747	39.787	39.826	39.866	39.905	39.944	39.984	40.023	40.062	40.101	960
970	40.101	40.141	40.180	40.219	40.259	40.298	40.337	40.376	40.415	40.455	40.494	970
980	40.494	40.533	40.572	40.611	40.651	40.690	40.729	40.768	40.807	40.846	40.885	980
990	40.885	40.924	40.963	41.002	41.042	41.081	41.120	41.159	41.198	41.237	41.276	990
1000	41.276	41.315	41.354	41.393	41.431	41.470	41.509	41.548	41.587	41.626	41.665	1000
1010	41.665	41.704	41.743	41.781	41.820	41.859	41.898	41.937	41.976	42.014	42.053	1010
1020	42.053	42.092	42.131	42.169	42.208	42.247	42.286	42.324	42.363	42.402	42.440	1020
1030	42.440	42.479	42.518	42.556	42.595	42.633	42.672	42.711	42.749	42.788	42.826	1030
1040	42.826	42.865	42.903	42.942	42.980	43.019	43.057	43.096	43.134	43.173	43.211	1040
1050	43.211	43.250	43.288	43.327	43.365	43.403	43.442	43.480	43.518	43.557	43.595	1050
1060	43.595	43.633	43.672	43.710	43.748	43.787	43.825	43.863	43.901	43.940	43.978	1060
1070	43.978	44.016	44.054	44.092	44.130	44.169	44.207	44.245	44.283	44.321	44.359	1070
1080	44.359	44.397	44.435	44.473	44.512	44.550	44.588	44.626	44.664	44.702	44.740	1080
1090	44.740	44.778	44.816	44.853	44.891	44.929	44.967	45.005	45.043	45.081	45.119	1090
1100	45.119	45.157	45.194	45.232	45.270	45.308	45.346	45.383	45.421	45.459	45.497	1100
1110	45.497	45.534	45.572	45.610	45.647	45.685	45.723	45.760	45.798	45.836	45.873	1110
1120	45.873	45.911	45.948	45.986	46.024	46.061	46.099	46.136	46.174	46.211	46.249	1120
1130	46.249	46.286	46.324	46.361	46.398	46.436	46.473	46.511	46.548	46.585	46.623	1130
1140	46.623	46.660	46.697	46.735	46.772	46.809	46.847	46.884	46.921	46.958	46.995	1140
1150	46.995	47.033	47.070	47.107	47.144	47.181	47.218	47.256	47.293	47.330	47.367	1150
1160	47.367	47.404	47.441	47.478	47.515	47.552	47.589	47.626	47.663	47.700	47.737	1160
1170	47.737	47.774	47.811	47.848	47.884	47.921	47.958	47.995	48.032	48.069	48.105	1170
1180	48.105	48.142	48.179	48.216	48.252	48.289	48.326	48.363	48.399	48.436	48.473	1180
1190	48.473	48.509	48.546	48.582	48.619	48.656	48.692	48.729	48.765	48.802	48.838	1190

°C	0	1	2	3	4	5	6	7	8	9	10	°C

TABLE 9 ***Type K Thermocouple —*** *thermoelectric voltage as a function of temperature (°C); reference junctions at 0 °C*

°C	0	1	2	3	4	5	6	7	8	9	10	°C
					Thermoelectric Voltage in Millivolts							
1200	48.838	48.875	48.911	48.948	48.984	49.021	49.057	49.093	49.130	49.166	49.202	1200
1210	49.202	49.239	49.275	49.311	49.348	49.384	49.420	49.456	49.493	49.529	49.565	1210
1220	49.565	49.601	49.637	49.674	49.710	49.746	49.782	49.818	49.854	49.890	49.926	1220
1230	49.926	49.962	49.998	50.034	50.070	50.106	50.142	50.178	50.214	50.250	50.286	1230
1240	50.286	50.322	50.358	50.393	50.429	50.465	50.501	50.537	50.572	50.608	50.644	1240
1250	50.644	50.680	50.715	50.751	50.787	50.822	50.858	50.894	50.929	50.965	51.000	1250
1260	51.000	51.036	51.071	51.107	51.142	51.178	51.213	51.249	51.284	51.320	51.355	1260
1270	51.355	51.391	51.426	51.461	51.497	51.532	51.567	51.603	51.638	51.673	51.708	1270
1280	51.708	51.744	51.779	51.814	51.849	51.885	51.920	51.955	51.990	52.025	52.060	1280
1290	52.060	52.095	52.130	52.165	52.200	52.235	52.270	52.305	52.340	52.375	52.410	1290
1300	52.410	52.445	52.480	52.515	52.550	52.585	52.620	52.654	52.689	52.724	52.759	1300
1310	52.759	52.794	52.828	52.863	52.898	52.932	52.967	53.002	53.037	53.071	53.106	1310
1320	53.106	53.140	53.175	53.210	53.244	53.279	53.313	53.348	53.382	53.417	53.451	1320
1330	53.451	53.486	53.520	53.555	53.589	53.623	53.658	53.692	53.727	53.761	53.795	1330
1340	53.795	53.830	53.864	53.898	53.932	53.967	54.001	54.035	54.069	54.104	54.138	1340
1350	54.138	54.172	54.206	54.240	54.274	54.308	54.343	54.377	54.411	54.445	54.479	1350
1360	54.479	54.513	54.547	54.581	54.615	54.649	54.683	54.717	54.751	54.785	54.819	1360
1370	54.819	54.852	54.886									1370

°C	0	1	2	3	4	5	6	7	8	9	10	°C

TABLE 10 ***Type K Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
-450	-6.456	-6.456	-6.457	-6.457	-6.458							-450
-440	-6.446	-6.448	-6.449	-6.450	-6.451	-6.452	-6.453	-6.454	-6.454	-6.455	-6.456	-440
-430	-6.431	-6.433	-6.435	-6.436	-6.438	-6.440	-6.441	-6.443	-6.444	-6.445	-6.446	-430
-420	-6.409	-6.411	-6.414	-6.416	-6.419	-6.421	-6.423	-6.425	-6.427	-6.429	-6.431	-420
-410	-6.380	-6.383	-6.386	-6.389	-6.392	-6.395	-6.398	-6.401	-6.404	-6.406	-6.409	-410
-400	-6.344	-6.348	-6.352	-6.355	-6.359	-6.363	-6.366	-6.370	-6.373	-6.377	-6.380	-400
-390	-6.301	-6.306	-6.310	-6.315	-6.319	-6.323	-6.328	-6.332	-6.336	-6.340	-6.344	-390
-380	-6.251	-6.257	-6.262	-6.267	-6.272	-6.277	-6.282	-6.287	-6.292	-6.296	-6.301	-380
-370	-6.195	-6.201	-6.207	-6.213	-6.218	-6.224	-6.230	-6.235	-6.241	-6.246	-6.251	-370
-360	-6.133	-6.139	-6.146	-6.152	-6.158	-6.165	-6.171	-6.177	-6.183	-6.189	-6.195	-360
-350	-6.064	-6.071	-6.078	-6.085	-6.092	-6.099	-6.106	-6.113	-6.119	-6.126	-6.133	-350
-340	-5.989	-5.997	-6.004	-6.012	-6.020	-6.027	-6.035	-6.042	-6.049	-6.057	-6.064	-340
-330	-5.908	-5.917	-5.925	-5.933	-5.941	-5.949	-5.957	-5.965	-5.973	-5.981	-5.989	-330
-320	-5.822	-5.831	-5.840	-5.848	-5.857	-5.866	-5.874	-5.883	-5.891	-5.900	-5.908	-320
-310	-5.730	-5.739	-5.749	-5.758	-5.767	-5.776	-5.786	-5.795	-5.804	-5.813	-5.822	-310
-300	-5.632	-5.642	-5.652	-5.662	-5.672	-5.682	-5.691	-5.701	-5.711	-5.720	-5.730	-300
-290	-5.529	-5.540	-5.550	-5.561	-5.571	-5.581	-5.592	-5.602	-5.612	-5.622	-5.632	-290
-280	-5.421	-5.432	-5.443	-5.454	-5.465	-5.476	-5.487	-5.497	-5.508	-5.519	-5.529	-280
-270	-5.308	-5.320	-5.331	-5.343	-5.354	-5.365	-5.377	-5.388	-5.399	-5.410	-5.421	-270
-260	-5.190	-5.202	-5.214	-5.226	-5.238	-5.250	-5.261	-5.273	-5.285	-5.296	-5.308	-260
-250	-5.067	-5.079	-5.092	-5.104	-5.117	-5.129	-5.141	-5.153	-5.166	-5.178	-5.190	-250
-240	-4.939	-4.952	-4.965	-4.978	-4.991	-5.003	-5.016	-5.029	-5.042	-5.054	-5.067	-240
-230	-4.806	-4.820	-4.833	-4.847	-4.860	-4.873	-4.886	-4.900	-4.913	-4.926	-4.939	-230
-220	-4.669	-4.683	-4.697	-4.711	-4.724	-4.738	-4.752	-4.766	-4.779	-4.793	-4.806	-220
-210	-4.527	-4.542	-4.556	-4.570	-4.584	-4.599	-4.613	-4.627	-4.641	-4.655	-4.669	-210
-200	-4.381	-4.396	-4.411	-4.425	-4.440	-4.455	-4.469	-4.484	-4.498	-4.513	-4.527	-200
-190	-4.231	-4.246	-4.261	-4.276	-4.291	-4.306	-4.321	-4.336	-4.351	-4.366	-4.381	-190
-180	-4.076	-4.091	-4.107	-4.123	-4.138	-4.154	-4.169	-4.185	-4.200	-4.215	-4.231	-180
-170	-3.917	-3.933	-3.949	-3.965	-3.981	-3.997	-4.013	-4.029	-4.044	-4.060	-4.076	-170
-160	-3.754	-3.771	-3.787	-3.803	-3.820	-3.836	-3.852	-3.869	-3.885	-3.901	-3.917	-160
-150	-3.587	-3.604	-3.621	-3.638	-3.655	-3.671	-3.688	-3.705	-3.721	-3.738	-3.754	-150
-140	-3.417	-3.434	-3.451	-3.468	-3.486	-3.503	-3.520	-3.537	-3.554	-3.571	-3.587	-140
-130	-3.243	-3.260	-3.278	-3.295	-3.313	-3.330	-3.348	-3.365	-3.382	-3.400	-3.417	-130
-120	-3.065	-3.083	-3.101	-3.119	-3.136	-3.154	-3.172	-3.190	-3.207	-3.225	-3.243	-120
-110	-2.884	-2.902	-2.920	-2.938	-2.957	-2.975	-2.993	-3.011	-3.029	-3.047	-3.065	-110
-100	-2.699	-2.718	-2.736	-2.755	-2.773	-2.792	-2.810	-2.829	-2.847	-2.865	-2.884	-100
-90	-2.511	-2.530	-2.549	-2.568	-2.587	-2.605	-2.624	-2.643	-2.662	-2.680	-2.699	-90
-80	-2.320	-2.339	-2.359	-2.378	-2.397	-2.416	-2.435	-2.454	-2.473	-2.492	-2.511	-80
-70	-2.126	-2.146	-2.165	-2.185	-2.204	-2.223	-2.243	-2.262	-2.282	-2.301	-2.320	-70
-60	-1.929	-1.949	-1.969	-1.988	-2.008	-2.028	-2.048	-2.067	-2.087	-2.106	-2.126	-60
-50	-1.729	-1.749	-1.770	-1.790	-1.810	-1.830	-1.850	-1.869	-1.889	-1.909	-1.929	-50
-40	-1.527	-1.547	-1.568	-1.588	-1.608	-1.628	-1.649	-1.669	-1.689	-1.709	-1.729	-40
-30	-1.322	-1.343	-1.363	-1.384	-1.404	-1.425	-1.445	-1.466	-1.486	-1.507	-1.527	-30
-20	-1.114	-1.135	-1.156	-1.177	-1.198	-1.218	-1.239	-1.260	-1.281	-1.301	-1.322	-20
-10	-0.905	-0.926	-0.947	-0.968	-0.989	-1.010	-1.031	-1.052	-1.073	-1.094	-1.114	-10
0	-0.692	-0.714	-0.735	-0.756	-0.778	-0.799	-0.820	-0.841	-0.862	-0.883	-0.905	0
0	-0.692	-0.671	-0.650	-0.628	-0.607	-0.586	-0.564	-0.543	-0.521	-0.500	-0.478	0
10	-0.478	-0.457	-0.435	-0.413	-0.392	-0.370	-0.349	-0.327	-0.305	-0.284	-0.262	10
20	-0.262	-0.240	-0.218	-0.197	-0.175	-0.153	-0.131	-0.109	-0.088	-0.066	-0.044	20
30	-0.044	-0.022	0.000	0.022	0.044	0.066	0.088	0.110	0.132	0.154	0.176	30
40	0.176	0.198	0.220	0.242	0.264	0.286	0.308	0.330	0.353	0.375	0.397	40
°F	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**°F**

TABLE 10 ***Type K Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

K°F

°F	0	1	2	3	4	5	6	7	8	9	10	°F
	Thermoelectric Voltage in Millivolts											
50	0.397	0.419	0.441	0.463	0.486	0.508	0.530	0.552	0.575	0.597	0.619	50
60	0.619	0.642	0.664	0.686	0.709	0.731	0.753	0.776	0.798	0.821	0.843	60
70	0.843	0.865	0.888	0.910	0.933	0.955	0.978	1.000	1.023	1.045	1.068	70
80	1.068	1.090	1.113	1.136	1.158	1.181	1.203	1.226	1.249	1.271	1.294	80
90	1.294	1.316	1.339	1.362	1.384	1.407	1.430	1.453	1.475	1.498	1.521	90
100	1.521	1.543	1.566	1.589	1.612	1.635	1.657	1.680	1.703	1.726	1.749	100
110	1.749	1.771	1.794	1.817	1.840	1.863	1.886	1.909	1.931	1.954	1.977	110
120	1.977	2.000	2.023	2.046	2.069	2.092	2.115	2.138	2.161	2.184	2.207	120
130	2.207	2.230	2.253	2.276	2.298	2.321	2.344	2.367	2.390	2.413	2.436	130
140	2.436	2.459	2.483	2.506	2.529	2.552	2.575	2.598	2.621	2.644	2.667	140
150	2.667	2.690	2.713	2.736	2.759	2.782	2.805	2.828	2.851	2.874	2.897	150
160	2.897	2.920	2.944	2.967	2.990	3.013	3.036	3.059	3.082	3.105	3.128	160
170	3.128	3.151	3.174	3.197	3.220	3.244	3.267	3.290	3.313	3.336	3.359	170
180	3.359	3.382	3.405	3.428	3.451	3.474	3.497	3.520	3.544	3.567	3.590	180
190	3.590	3.613	3.636	3.659	3.682	3.705	3.728	3.751	3.774	3.797	3.820	190
200	3.820	3.843	3.866	3.889	3.912	3.935	3.958	3.981	4.004	4.027	4.050	200
210	4.050	4.073	4.096	4.119	4.142	4.165	4.188	4.211	4.234	4.257	4.280	210
220	4.280	4.303	4.326	4.349	4.372	4.395	4.417	4.440	4.463	4.486	4.509	220
230	4.509	4.532	4.555	4.578	4.601	4.623	4.646	4.669	4.692	4.715	4.738	230
240	4.738	4.760	4.783	4.806	4.829	4.852	4.874	4.897	4.920	4.943	4.965	240
250	4.965	4.988	5.011	5.034	5.056	5.079	5.102	5.124	5.147	5.170	5.192	250
260	5.192	5.215	5.238	5.260	5.283	5.306	5.328	5.351	5.374	5.396	5.419	260
270	5.419	5.441	5.464	5.487	5.509	5.532	5.554	5.577	5.599	5.622	5.644	270
280	5.644	5.667	5.690	5.712	5.735	5.757	5.779	5.802	5.824	5.847	5.869	280
290	5.869	5.892	5.914	5.937	5.959	5.982	6.004	6.026	6.049	6.071	6.094	290
300	6.094	6.116	6.138	6.161	6.183	6.205	6.228	6.250	6.272	6.295	6.317	300
310	6.317	6.339	6.362	6.384	6.406	6.429	6.451	6.473	6.496	6.518	6.540	310
320	6.540	6.562	6.585	6.607	6.629	6.652	6.674	6.696	6.718	6.741	6.763	320
330	6.763	6.785	6.807	6.829	6.852	6.874	6.896	6.918	6.941	6.963	6.985	330
340	6.985	7.007	7.029	7.052	7.074	7.096	7.118	7.140	7.163	7.185	7.207	340
350	7.207	7.229	7.251	7.273	7.296	7.318	7.340	7.362	7.384	7.407	7.429	350
360	7.429	7.451	7.473	7.495	7.517	7.540	7.562	7.584	7.606	7.628	7.650	360
370	7.650	7.673	7.695	7.717	7.739	7.761	7.783	7.806	7.828	7.850	7.872	370
380	7.872	7.894	7.917	7.939	7.961	7.983	8.005	8.027	8.050	8.072	8.094	380
390	8.094	8.116	8.138	8.161	8.183	8.205	8.227	8.250	8.272	8.294	8.316	390
400	8.316	8.338	8.361	8.383	8.405	8.427	8.450	8.472	8.494	8.516	8.539	400
410	8.539	8.561	8.583	8.605	8.628	8.650	8.672	8.694	8.717	8.739	8.761	410
420	8.761	8.784	8.806	8.828	8.851	8.873	8.895	8.918	8.940	8.962	8.985	420
430	8.985	9.007	9.029	9.052	9.074	9.096	9.119	9.141	9.163	9.186	9.208	430
440	9.208	9.231	9.253	9.275	9.298	9.320	9.343	9.365	9.388	9.410	9.432	440
450	9.432	9.455	9.477	9.500	9.522	9.545	9.567	9.590	9.612	9.635	9.657	450
460	9.657	9.680	9.702	9.725	9.747	9.770	9.792	9.815	9.837	9.860	9.882	460
470	9.882	9.905	9.927	9.950	9.973	9.995	10.018	10.040	10.063	10.086	10.108	470
480	10.108	10.131	10.153	10.176	10.199	10.221	10.244	10.267	10.289	10.312	10.334	480
490	10.334	10.357	10.380	10.402	10.425	10.448	10.471	10.493	10.516	10.539	10.561	490
500	10.561	10.584	10.607	10.629	10.652	10.675	10.698	10.720	10.743	10.766	10.789	500
510	10.789	10.811	10.834	10.857	10.880	10.903	10.925	10.948	10.971	10.994	11.017	510
520	11.017	11.039	11.062	11.085	11.108	11.131	11.154	11.176	11.199	11.222	11.245	520
530	11.245	11.268	11.291	11.313	11.336	11.359	11.382	11.405	11.428	11.451	11.474	530
540	11.474	11.497	11.519	11.542	11.565	11.588	11.611	11.634	11.657	11.680	11.703	540

°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 10 ***Type K Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
550	11.703	11.726	11.749	11.772	11.795	11.818	11.841	11.864	11.887	11.910	11.933	550
560	11.933	11.956	11.978	12.001	12.024	12.047	12.070	12.093	12.116	12.140	12.163	560
570	12.163	12.186	12.209	12.232	12.255	12.278	12.301	12.324	12.347	12.370	12.393	570
580	12.393	12.416	12.439	12.462	12.485	12.508	12.531	12.554	12.577	12.600	12.624	580
590	12.624	12.647	12.670	12.693	12.716	12.739	12.762	12.785	12.808	12.831	12.855	590
600	12.855	12.878	12.901	12.924	12.947	12.970	12.993	13.016	13.040	13.063	13.086	600
610	13.086	13.109	13.132	13.155	13.179	13.202	13.225	13.248	13.271	13.294	13.318	610
620	13.318	13.341	13.364	13.387	13.410	13.433	13.457	13.480	13.503	13.526	13.549	620
630	13.549	13.573	13.596	13.619	13.642	13.665	13.689	13.712	13.735	13.758	13.782	630
640	13.782	13.805	13.828	13.851	13.874	13.898	13.921	13.944	13.967	13.991	14.014	640
650	14.014	14.037	14.060	14.084	14.107	14.130	14.154	14.177	14.200	14.223	14.247	650
660	14.247	14.270	14.293	14.316	14.340	14.363	14.386	14.410	14.433	14.456	14.479	660
670	14.479	14.503	14.526	14.549	14.573	14.596	14.619	14.643	14.666	14.689	14.713	670
680	14.713	14.736	14.759	14.783	14.806	14.829	14.853	14.876	14.899	14.923	14.946	680
690	14.946	14.969	14.993	15.016	15.039	15.063	15.086	15.109	15.133	15.156	15.179	690
700	15.179	15.203	15.226	15.250	15.273	15.296	15.320	15.343	15.366	15.390	15.413	700
710	15.413	15.437	15.460	15.483	15.507	15.530	15.554	15.577	15.600	15.624	15.647	710
720	15.647	15.671	15.694	15.717	15.741	15.764	15.788	15.811	15.834	15.858	15.881	720
730	15.881	15.905	15.928	15.952	15.975	15.998	16.022	16.045	16.069	16.092	16.116	730
740	16.116	16.139	16.163	16.186	16.209	16.233	16.256	16.280	16.303	16.327	16.350	740
750	16.350	16.374	16.397	16.421	16.444	16.468	16.491	16.515	16.538	16.561	16.585	750
760	16.585	16.608	16.632	16.655	16.679	16.702	16.726	16.749	16.773	16.796	16.820	760
770	16.820	16.843	16.867	16.890	16.914	16.937	16.961	16.984	17.008	17.031	17.055	770
780	17.055	17.078	17.102	17.125	17.149	17.173	17.196	17.220	17.243	17.267	17.290	780
790	17.290	17.314	17.337	17.361	17.384	17.408	17.431	17.455	17.478	17.502	17.526	790
800	17.526	17.549	17.573	17.596	17.620	17.643	17.667	17.690	17.714	17.738	17.761	800
810	17.761	17.785	17.808	17.832	17.855	17.879	17.902	17.926	17.950	17.973	17.997	810
820	17.997	18.020	18.044	18.068	18.091	18.115	18.138	18.162	18.185	18.209	18.233	820
830	18.233	18.256	18.280	18.303	18.327	18.351	18.374	18.398	18.421	18.445	18.469	830
840	18.469	18.492	18.516	18.539	18.563	18.587	18.610	18.634	18.657	18.681	18.705	840
850	18.705	18.728	18.752	18.776	18.799	18.823	18.846	18.870	18.894	18.917	18.941	850
860	18.941	18.965	18.988	19.012	19.035	19.059	19.083	19.106	19.130	19.154	19.177	860
870	19.177	19.201	19.224	19.248	19.272	19.295	19.319	19.343	19.366	19.390	19.414	870
880	19.414	19.437	19.461	19.485	19.508	19.532	19.556	19.579	19.603	19.626	19.650	880
890	19.650	19.674	19.697	19.721	19.745	19.768	19.792	19.816	19.839	19.863	19.887	890
900	19.887	19.910	19.934	19.958	19.981	20.005	20.029	20.052	20.076	20.100	20.123	900
910	20.123	20.147	20.171	20.194	20.218	20.242	20.265	20.289	20.313	20.336	20.360	910
920	20.360	20.384	20.407	20.431	20.455	20.479	20.502	20.526	20.550	20.573	20.597	920
930	20.597	20.621	20.644	20.668	20.692	20.715	20.739	20.763	20.786	20.810	20.834	930
940	20.834	20.857	20.881	20.905	20.929	20.952	20.976	21.000	21.023	21.047	21.071	940
950	21.071	21.094	21.118	21.142	21.165	21.189	21.213	21.236	21.260	21.284	21.308	950
960	21.308	21.331	21.355	21.379	21.402	21.426	21.450	21.473	21.497	21.521	21.544	960
970	21.544	21.568	21.592	21.616	21.639	21.663	21.687	21.710	21.734	21.758	21.781	970
980	21.781	21.805	21.829	21.852	21.876	21.900	21.924	21.947	21.971	21.995	22.018	980
990	22.018	22.042	22.066	22.089	22.113	22.137	22.160	22.184	22.208	22.232	22.255	990
1000	22.255	22.279	22.303	22.326	22.350	22.374	22.397	22.421	22.445	22.468	22.492	1000
1010	22.492	22.516	22.540	22.563	22.587	22.611	22.634	22.658	22.682	22.705	22.729	1010
1020	22.729	22.753	22.776	22.800	22.824	22.847	22.871	22.895	22.919	22.942	22.966	1020
1030	22.966	22.990	23.013	23.037	23.061	23.084	23.108	23.132	23.155	23.179	23.203	1030
1040	23.203	23.226	23.250	23.274	23.297	23.321	23.345	23.368	23.392	23.416	23.439	1040

°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 10 ***Type K Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

K°F

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
1050	23.439	23.463	23.487	23.510	23.534	23.558	23.581	23.605	23.629	23.652	23.676	1050
1060	23.676	23.700	23.723	23.747	23.771	23.794	23.818	23.842	23.865	23.889	23.913	1060
1070	23.913	23.936	23.960	23.984	24.007	24.031	24.055	24.078	24.102	24.126	24.149	1070
1080	24.149	24.173	24.197	24.220	24.244	24.267	24.291	24.315	24.338	24.362	24.386	1080
1090	24.386	24.409	24.433	24.457	24.480	24.504	24.527	24.551	24.575	24.598	24.622	1090
1100	24.622	24.646	24.669	24.693	24.717	24.740	24.764	24.787	24.811	24.835	24.858	1100
1110	24.858	24.882	24.905	24.929	24.953	24.976	25.000	25.024	25.047	25.071	25.094	1110
1120	25.094	25.118	25.142	25.165	25.189	25.212	25.236	25.260	25.283	25.307	25.330	1120
1130	25.330	25.354	25.377	25.401	25.425	25.448	25.472	25.495	25.519	25.543	25.566	1130
1140	25.566	25.590	25.613	25.637	25.660	25.684	25.708	25.731	25.755	25.778	25.802	1140
1150	25.802	25.825	25.849	25.873	25.896	25.920	25.943	25.967	25.990	26.014	26.037	1150
1160	26.037	26.061	26.084	26.108	26.132	26.155	26.179	26.202	26.226	26.249	26.273	1160
1170	26.273	26.296	26.320	26.343	26.367	26.390	26.414	26.437	26.461	26.484	26.508	1170
1180	26.508	26.532	26.555	26.579	26.602	26.626	26.649	26.673	26.696	26.720	26.743	1180
1190	26.743	26.767	26.790	26.814	26.837	26.861	26.884	26.907	26.931	26.954	26.978	1190
1200	26.978	27.001	27.025	27.048	27.072	27.095	27.119	27.142	27.166	27.189	27.213	1200
1210	27.213	27.236	27.260	27.283	27.306	27.330	27.353	27.377	27.400	27.424	27.447	1210
1220	27.447	27.471	27.494	27.517	27.541	27.564	27.588	27.611	27.635	27.658	27.681	1220
1230	27.681	27.705	27.728	27.752	27.775	27.798	27.822	27.845	27.869	27.892	27.915	1230
1240	27.915	27.939	27.962	27.986	28.009	28.032	28.056	28.079	28.103	28.126	28.149	1240
1250	28.149	28.173	28.196	28.219	28.243	28.266	28.289	28.313	28.336	28.360	28.383	1250
1260	28.383	28.406	28.430	28.453	28.476	28.500	28.523	28.546	28.570	28.593	28.616	1260
1270	28.616	28.640	28.663	28.686	28.710	28.733	28.756	28.780	28.803	28.826	28.849	1270
1280	28.849	28.873	28.896	28.919	28.943	28.966	28.989	29.013	29.036	29.059	29.082	1280
1290	29.082	29.106	29.129	29.152	29.176	29.199	29.222	29.245	29.269	29.292	29.315	1290
1300	29.315	29.338	29.362	29.385	29.408	29.431	29.455	29.478	29.501	29.524	29.548	1300
1310	29.548	29.571	29.594	29.617	29.640	29.664	29.687	29.710	29.733	29.757	29.780	1310
1320	29.780	29.803	29.826	29.849	29.873	29.896	29.919	29.942	29.965	29.989	30.012	1320
1330	30.012	30.035	30.058	30.081	30.104	30.128	30.151	30.174	30.197	30.220	30.243	1330
1340	30.243	30.267	30.290	30.313	30.336	30.359	30.382	30.405	30.429	30.452	30.475	1340
1350	30.475	30.498	30.521	30.544	30.567	30.590	30.613	30.637	30.660	30.683	30.706	1350
1360	30.706	30.729	30.752	30.775	30.798	30.821	30.844	30.868	30.891	30.914	30.937	1360
1370	30.937	30.960	30.983	31.006	31.029	31.052	31.075	31.098	31.121	31.144	31.167	1370
1380	31.167	31.190	31.213	31.236	31.260	31.283	31.306	31.329	31.352	31.375	31.398	1380
1390	31.398	31.421	31.444	31.467	31.490	31.513	31.536	31.559	31.582	31.605	31.628	1390
1400	31.628	31.651	31.674	31.697	31.720	31.743	31.766	31.789	31.812	31.834	31.857	1400
1410	31.857	31.880	31.903	31.926	31.949	31.972	31.995	32.018	32.041	32.064	32.087	1410
1420	32.087	32.110	32.133	32.156	32.179	32.202	32.224	32.247	32.270	32.293	32.316	1420
1430	32.316	32.339	32.362	32.385	32.408	32.431	32.453	32.476	32.499	32.522	32.545	1430
1440	32.545	32.568	32.591	32.614	32.636	32.659	32.682	32.705	32.728	32.751	32.774	1440
1450	32.774	32.796	32.819	32.842	32.865	32.888	32.911	32.933	32.956	32.979	33.002	1450
1460	33.002	33.025	33.047	33.070	33.093	33.116	33.139	33.161	33.184	33.207	33.230	1460
1470	33.230	33.253	33.275	33.298	33.321	33.344	33.366	33.389	33.412	33.435	33.458	1470
1480	33.458	33.480	33.503	33.526	33.548	33.571	33.594	33.617	33.639	33.662	33.685	1480
1490	33.685	33.708	33.730	33.753	33.776	33.798	33.821	33.844	33.867	33.889	33.912	1490
1500	33.912	33.935	33.957	33.980	34.003	34.025	34.048	34.071	34.093	34.116	34.139	1500
1510	34.139	34.161	34.184	34.207	34.229	34.252	34.275	34.297	34.320	34.343	34.365	1510
1520	34.365	34.388	34.410	34.433	34.456	34.478	34.501	34.524	34.546	34.569	34.591	1520
1530	34.591	34.614	34.637	34.659	34.682	34.704	34.727	34.750	34.772	34.795	34.817	1530
1540	34.817	34.840	34.862	34.885	34.908	34.930	34.953	34.975	34.998	35.020	35.043	1540

°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 10 ***Type K Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
1550	35.043	35.065	35.088	35.110	35.133	35.156	35.178	35.201	35.223	35.246	35.268	1550
1560	35.268	35.291	35.313	35.336	35.358	35.381	35.403	35.426	35.448	35.471	35.493	1560
1570	35.493	35.516	35.538	35.560	35.583	35.605	35.628	35.650	35.673	35.695	35.718	1570
1580	35.718	35.740	35.763	35.785	35.807	35.830	35.852	35.875	35.897	35.920	35.942	1580
1590	35.942	35.964	35.987	36.009	36.032	36.054	36.076	36.099	36.121	36.144	36.166	1590
1600	36.166	36.188	36.211	36.233	36.256	36.278	36.300	36.323	36.345	36.367	36.390	1600
1610	36.390	36.412	36.434	36.457	36.479	36.501	36.524	36.546	36.568	36.591	36.613	1610
1620	36.613	36.635	36.658	36.680	36.702	36.725	36.747	36.769	36.792	36.814	36.836	1620
1630	36.836	36.859	36.881	36.903	36.925	36.948	36.970	36.992	37.014	37.037	37.059	1630
1640	37.059	37.081	37.104	37.126	37.148	37.170	37.193	37.215	37.237	37.259	37.281	1640
1650	37.281	37.304	37.326	37.348	37.370	37.393	37.415	37.437	37.459	37.481	37.504	1650
1660	37.504	37.526	37.548	37.570	37.592	37.615	37.637	37.659	37.681	37.703	37.725	1660
1670	37.725	37.748	37.770	37.792	37.814	37.836	37.858	37.881	37.903	37.925	37.947	1670
1680	37.947	37.969	37.991	38.013	38.036	38.058	38.080	38.102	38.124	38.146	38.168	1680
1690	38.168	38.190	38.212	38.235	38.257	38.279	38.301	38.323	38.345	38.367	38.389	1690
1700	38.389	38.411	38.433	38.455	38.477	38.499	38.522	38.544	38.566	38.588	38.610	1700
1710	38.610	38.632	38.654	38.676	38.698	38.720	38.742	38.764	38.786	38.808	38.830	1710
1720	38.830	38.852	38.874	38.896	38.918	38.940	38.962	38.984	39.006	39.028	39.050	1720
1730	39.050	39.072	39.094	39.116	39.138	39.160	39.182	39.204	39.226	39.248	39.270	1730
1740	39.270	39.292	39.314	39.335	39.357	39.379	39.401	39.423	39.445	39.467	39.489	1740
1750	39.489	39.511	39.533	39.555	39.577	39.599	39.620	39.642	39.664	39.686	39.708	1750
1760	39.708	39.730	39.752	39.774	39.796	39.817	39.839	39.861	39.883	39.905	39.927	1760
1770	39.927	39.949	39.970	39.992	40.014	40.036	40.058	40.080	40.101	40.123	40.145	1770
1780	40.145	40.167	40.189	40.211	40.232	40.254	40.276	40.298	40.320	40.341	40.363	1780
1790	40.363	40.385	40.407	40.429	40.450	40.472	40.494	40.516	40.537	40.559	40.581	1790
1800	40.581	40.603	40.624	40.646	40.668	40.690	40.711	40.733	40.755	40.777	40.798	1800
1810	40.798	40.820	40.842	40.864	40.885	40.907	40.929	40.950	40.972	40.994	41.015	1810
1820	41.015	41.037	41.059	41.081	41.102	41.124	41.146	41.167	41.189	41.211	41.232	1820
1830	41.232	41.254	41.276	41.297	41.319	41.341	41.362	41.384	41.405	41.427	41.449	1830
1840	41.449	41.470	41.492	41.514	41.535	41.557	41.578	41.600	41.622	41.643	41.665	1840
1850	41.665	41.686	41.708	41.730	41.751	41.773	41.794	41.816	41.838	41.859	41.881	1850
1860	41.881	41.902	41.924	41.945	41.967	41.988	42.010	42.032	42.053	42.075	42.096	1860
1870	42.096	42.118	42.139	42.161	42.182	42.204	42.225	42.247	42.268	42.290	42.311	1870
1880	42.311	42.333	42.354	42.376	42.397	42.419	42.440	42.462	42.483	42.505	42.526	1880
1890	42.526	42.548	42.569	42.591	42.612	42.633	42.655	42.676	42.698	42.719	42.741	1890
1900	42.741	42.762	42.783	42.805	42.826	42.848	42.869	42.891	42.912	42.933	42.955	1900
1910	42.955	42.976	42.998	43.019	43.040	43.062	43.083	43.104	43.126	43.147	43.169	1910
1920	43.169	43.190	43.211	43.233	43.254	43.275	43.297	43.318	43.339	43.361	43.382	1920
1930	43.382	43.403	43.425	43.446	43.467	43.489	43.510	43.531	43.552	43.574	43.595	1930
1940	43.595	43.616	43.638	43.659	43.680	43.701	43.723	43.744	43.765	43.787	43.808	1940
1950	43.808	43.829	43.850	43.872	43.893	43.914	43.935	43.957	43.978	43.999	44.020	1950
1960	44.020	44.041	44.063	44.084	44.105	44.126	44.147	44.169	44.190	44.211	44.232	1960
1970	44.232	44.253	44.275	44.296	44.317	44.338	44.359	44.380	44.402	44.423	44.444	1970
1980	44.444	44.465	44.486	44.507	44.528	44.550	44.571	44.592	44.613	44.634	44.655	1980
1990	44.655	44.676	44.697	44.719	44.740	44.761	44.782	44.803	44.824	44.845	44.866	1990
2000	44.866	44.887	44.908	44.929	44.950	44.971	44.992	45.014	45.035	45.056	45.077	2000
2010	45.077	45.098	45.119	45.140	45.161	45.182	45.203	45.224	45.245	45.266	45.287	2010
2020	45.287	45.308	45.329	45.350	45.371	45.392	45.413	45.434	45.455	45.476	45.497	2020
2030	45.497	45.518	45.539	45.560	45.580	45.601	45.622	45.643	45.664	45.685	45.706	2030
2040	45.706	45.727	45.748	45.769	45.790	45.811	45.832	45.852	45.873	45.894	45.915	2040

°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 10 ***Type K Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
2050	45.915	45.936	45.957	45.978	45.999	46.019	46.040	46.061	46.082	46.103	46.124	2050
2060	46.124	46.145	46.165	46.186	46.207	46.228	46.249	46.269	46.290	46.311	46.332	2060
2070	46.332	46.353	46.374	46.394	46.415	46.436	46.457	46.477	46.498	46.519	46.540	2070
2080	46.540	46.560	46.581	46.602	46.623	46.643	46.664	46.685	46.706	46.726	46.747	2080
2090	46.747	46.768	46.789	46.809	46.830	46.851	46.871	46.892	46.913	46.933	46.954	2090
2100	46.954	46.975	46.995	47.016	47.037	47.057	47.078	47.099	47.119	47.140	47.161	2100
2110	47.161	47.181	47.202	47.223	47.243	47.264	47.284	47.305	47.326	47.346	47.367	2110
2120	47.367	47.387	47.408	47.429	47.449	47.470	47.490	47.511	47.531	47.552	47.573	2120
2130	47.573	47.593	47.614	47.634	47.655	47.675	47.696	47.716	47.737	47.757	47.778	2130
2140	47.778	47.798	47.819	47.839	47.860	47.880	47.901	47.921	47.942	47.962	47.983	2140
2150	47.983	48.003	48.024	48.044	48.065	48.085	48.105	48.126	48.146	48.167	48.187	2150
2160	48.187	48.208	48.228	48.248	48.269	48.289	48.310	48.330	48.350	48.371	48.391	2160
2170	48.391	48.411	48.432	48.452	48.473	48.493	48.513	48.534	48.554	48.574	48.595	2170
2180	48.595	48.615	48.635	48.656	48.676	48.696	48.717	48.737	48.757	48.777	48.798	2180
2190	48.798	48.818	48.838	48.859	48.879	48.899	48.919	48.940	48.960	48.980	49.000	2190
2200	49.000	49.021	49.041	49.061	49.081	49.101	49.122	49.142	49.162	49.182	49.202	2200
2210	49.202	49.223	49.243	49.263	49.283	49.303	49.323	49.344	49.364	49.384	49.404	2210
2220	49.404	49.424	49.444	49.465	49.485	49.505	49.525	49.545	49.565	49.585	49.605	2220
2230	49.605	49.625	49.645	49.666	49.686	49.706	49.726	49.746	49.766	49.786	49.806	2230
2240	49.806	49.826	49.846	49.866	49.886	49.906	49.926	49.946	49.966	49.986	50.006	2240
2250	50.006	50.026	50.046	50.066	50.086	50.106	50.126	50.146	50.166	50.186	50.206	2250
2260	50.206	50.226	50.246	50.266	50.286	50.306	50.326	50.346	50.366	50.385	50.405	2260
2270	50.405	50.425	50.445	50.465	50.485	50.505	50.525	50.545	50.564	50.584	50.604	2270
2280	50.604	50.624	50.644	50.664	50.684	50.703	50.723	50.743	50.763	50.783	50.802	2280
2290	50.802	50.822	50.842	50.862	50.882	50.901	50.921	50.941	50.961	50.981	51.000	2290
2300	51.000	51.020	51.040	51.060	51.079	51.099	51.119	51.139	51.158	51.178	51.198	2300
2310	51.198	51.217	51.237	51.257	51.276	51.296	51.316	51.336	51.355	51.375	51.395	2310
2320	51.395	51.414	51.434	51.453	51.473	51.493	51.512	51.532	51.552	51.571	51.591	2320
2330	51.591	51.611	51.630	51.650	51.669	51.689	51.708	51.728	51.748	51.767	51.787	2330
2340	51.787	51.806	51.826	51.845	51.865	51.885	51.904	51.924	51.943	51.963	51.982	2340
2350	51.982	52.002	52.021	52.041	52.060	52.080	52.099	52.119	52.138	52.158	52.177	2350
2360	52.177	52.197	52.216	52.235	52.255	52.274	52.294	52.313	52.333	52.352	52.371	2360
2370	52.371	52.391	52.410	52.430	52.449	52.468	52.488	52.507	52.527	52.546	52.565	2370
2380	52.565	52.585	52.604	52.623	52.643	52.662	52.681	52.701	52.720	52.739	52.759	2380
2390	52.759	52.778	52.797	52.817	52.836	52.855	52.875	52.894	52.913	52.932	52.952	2390
2400	52.952	52.971	52.990	53.010	53.029	53.048	53.067	53.087	53.106	53.125	53.144	2400
2410	53.144	53.163	53.183	53.202	53.221	53.240	53.260	53.279	53.298	53.317	53.336	2410
2420	53.336	53.355	53.375	53.394	53.413	53.432	53.451	53.470	53.490	53.509	53.528	2420
2430	53.528	53.547	53.566	53.585	53.604	53.623	53.643	53.662	53.681	53.700	53.719	2430
2440	53.719	53.738	53.757	53.776	53.795	53.814	53.833	53.852	53.871	53.890	53.910	2440
2450	53.910	53.929	53.948	53.967	53.986	54.005	54.024	54.043	54.062	54.081	54.100	2450
2460	54.100	54.119	54.138	54.157	54.176	54.195	54.214	54.233	54.252	54.271	54.289	2460
2470	54.289	54.308	54.327	54.346	54.365	54.384	54.403	54.422	54.441	54.460	54.479	2470
2480	54.479	54.498	54.517	54.536	54.554	54.573	54.592	54.611	54.630	54.649	54.668	2480
2490	54.668	54.687	54.705	54.724	54.743	54.762	54.781	54.800	54.819	54.837	54.856	2490
2500	54.856											2500

°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 11 ***Type N Thermocouple*** *— thermoelectric voltage as a function of temperature (°C); reference junctions at 0 °C*

°C	0	1	2	3	4	5	6	7	8	9	10	°C
					Thermoelectric Voltage in Millivolts							
-270	-4.345											-270
-260	-4.336	-4.337	-4.339	-4.340	-4.341	-4.342	-4.343	-4.344	-4.344	-4.345	-4.345	-260
-250	-4.313	-4.316	-4.319	-4.321	-4.324	-4.326	-4.328	-4.330	-4.332	-4.334	-4.336	-250
-240	-4.277	-4.281	-4.285	-4.289	-4.293	-4.297	-4.300	-4.304	-4.307	-4.310	-4.313	-240
-230	-4.226	-4.232	-4.238	-4.243	-4.248	-4.254	-4.258	-4.263	-4.268	-4.273	-4.277	-230
-220	-4.162	-4.169	-4.176	-4.183	-4.189	-4.196	-4.202	-4.209	-4.215	-4.221	-4.226	-220
-210	-4.083	-4.091	-4.100	-4.108	-4.116	-4.124	-4.132	-4.140	-4.147	-4.154	-4.162	-210
-200	-3.990	-4.000	-4.010	-4.020	-4.029	-4.038	-4.048	-4.057	-4.066	-4.074	-4.083	-200
-190	-3.884	-3.896	-3.907	-3.918	-3.928	-3.939	-3.950	-3.960	-3.970	-3.980	-3.990	-190
-180	-3.766	-3.778	-3.790	-3.803	-3.815	-3.827	-3.838	-3.850	-3.862	-3.873	-3.884	-180
-170	-3.634	-3.648	-3.662	-3.675	-3.688	-3.702	-3.715	-3.728	-3.740	-3.753	-3.766	-170
-160	-3.491	-3.506	-3.521	-3.535	-3.550	-3.564	-3.578	-3.593	-3.607	-3.621	-3.634	-160
-150	-3.336	-3.352	-3.368	-3.384	-3.400	-3.415	-3.431	-3.446	-3.461	-3.476	-3.491	-150
-140	-3.171	-3.188	-3.205	-3.221	-3.238	-3.255	-3.271	-3.288	-3.304	-3.320	-3.336	-140
-130	-2.994	-3.012	-3.030	-3.048	-3.066	-3.084	-3.101	-3.119	-3.136	-3.153	-3.171	-130
-120	-2.808	-2.827	-2.846	-2.865	-2.883	-2.902	-2.921	-2.939	-2.958	-2.976	-2.994	-120
-110	-2.612	-2.632	-2.652	-2.672	-2.691	-2.711	-2.730	-2.750	-2.769	-2.789	-2.808	-110
-100	-2.407	-2.428	-2.448	-2.469	-2.490	-2.510	-2.531	-2.551	-2.571	-2.592	-2.612	-100
-90	-2.193	-2.215	-2.237	-2.258	-2.280	-2.301	-2.322	-2.344	-2.365	-2.386	-2.407	-90
-80	-1.972	-1.995	-2.017	-2.039	-2.062	-2.084	-2.106	-2.128	-2.150	-2.172	-2.193	-80
-70	-1.744	-1.767	-1.790	-1.813	-1.836	-1.859	-1.882	-1.905	-1.927	-1.950	-1.972	-70
-60	-1.509	-1.533	-1.557	-1.580	-1.604	-1.627	-1.651	-1.674	-1.698	-1.721	-1.744	-60
-50	-1.269	-1.293	-1.317	-1.341	-1.366	-1.390	-1.414	-1.438	-1.462	-1.485	-1.509	-50
-40	-1.023	-1.048	-1.072	-1.097	-1.122	-1.146	-1.171	-1.195	-1.220	-1.244	-1.269	-40
-30	-0.772	-0.798	-0.823	-0.848	-0.873	-0.898	-0.923	-0.948	-0.973	-0.998	-1.023	-30
-20	-0.518	-0.544	-0.569	-0.595	-0.620	-0.646	-0.671	-0.696	-0.722	-0.747	-0.772	-20
-10	-0.260	-0.286	-0.312	-0.338	-0.364	-0.390	-0.415	-0.441	-0.467	-0.492	-0.518	-10
0	0.000	-0.026	-0.052	-0.078	-0.104	-0.131	-0.157	-0.183	-0.209	-0.234	-0.260	0
0	0.000	0.026	0.052	0.078	0.104	0.130	0.156	0.182	0.208	0.235	0.261	0
10	0.261	0.287	0.313	0.340	0.366	0.393	0.419	0.446	0.472	0.499	0.525	10
20	0.525	0.552	0.578	0.605	0.632	0.659	0.685	0.712	0.739	0.766	0.793	20
30	0.793	0.820	0.847	0.874	0.901	0.928	0.955	0.983	1.010	1.037	1.065	30
40	1.065	1.092	1.119	1.147	1.174	1.202	1.229	1.257	1.284	1.312	1.340	40
50	1.340	1.368	1.395	1.423	1.451	1.479	1.507	1.535	1.563	1.591	1.619	50
60	1.619	1.647	1.675	1.703	1.732	1.760	1.788	1.817	1.845	1.873	1.902	60
70	1.902	1.930	1.959	1.988	2.016	2.045	2.074	2.102	2.131	2.160	2.189	70
80	2.189	2.218	2.247	2.276	2.305	2.334	2.363	2.392	2.421	2.450	2.480	80
90	2.480	2.509	2.538	2.568	2.597	2.626	2.656	2.685	2.715	2.744	2.774	90
100	2.774	2.804	2.833	2.863	2.893	2.923	2.953	2.983	3.012	3.042	3.072	100
110	3.072	3.102	3.133	3.163	3.193	3.223	3.253	3.283	3.314	3.344	3.374	110
120	3.374	3.405	3.435	3.466	3.496	3.527	3.557	3.588	3.619	3.649	3.680	120
130	3.680	3.711	3.742	3.772	3.803	3.834	3.865	3.896	3.927	3.958	3.989	130
140	3.989	4.020	4.051	4.083	4.114	4.145	4.176	4.208	4.239	4.270	4.302	140
150	4.302	4.333	4.365	4.396	4.428	4.459	4.491	4.523	4.554	4.586	4.618	150
160	4.618	4.650	4.681	4.713	4.745	4.777	4.809	4.841	4.873	4.905	4.937	160
170	4.937	4.969	5.001	5.033	5.066	5.098	5.130	5.162	5.195	5.227	5.259	170
180	5.259	5.292	5.324	5.357	5.389	5.422	5.454	5.487	5.520	5.552	5.585	180
190	5.585	5.618	5.650	5.683	5.716	5.749	5.782	5.815	5.847	5.880	5.913	190

°C	0	1	2	3	4	5	6	7	8	9	10	°C

TABLE 11 ***Type N Thermocouple*** *— thermoelectric voltage as a function of temperature (°C); reference junctions at 0 °C*

°C	0	1	2	3	4	5	6	7	8	9	10	°C
						Thermoelectric Voltage in Millivolts						
200	5.913	5.946	5.979	6.013	6.046	6.079	6.112	6.145	6.178	6.211	6.245	200
210	6.245	6.278	6.311	6.345	6.378	6.411	6.445	6.478	6.512	6.545	6.579	210
220	6.579	6.612	6.646	6.680	6.713	6.747	6.781	6.814	6.848	6.882	6.916	220
230	6.916	6.949	6.983	7.017	7.051	7.085	7.119	7.153	7.187	7.221	7.255	230
240	7.255	7.289	7.323	7.357	7.392	7.426	7.460	7.494	7.528	7.563	7.597	240
250	7.597	7.631	7.666	7.700	7.734	7.769	7.803	7.838	7.872	7.907	7.941	250
260	7.941	7.976	8.010	8.045	8.080	8.114	8.149	8.184	8.218	8.253	8.288	260
270	8.288	8.323	8.358	8.392	8.427	8.462	8.497	8.532	8.567	8.602	8.637	270
280	8.637	8.672	8.707	8.742	8.777	8.812	8.847	8.882	8.918	8.953	8.988	280
290	8.988	9.023	9.058	9.094	9.129	9.164	9.200	9.235	9.270	9.306	9.341	290
300	9.341	9.377	9.412	9.448	9.483	9.519	9.554	9.590	9.625	9.661	9.696	300
310	9.696	9.732	9.768	9.803	9.839	9.875	9.910	9.946	9.982	10.018	10.054	310
320	10.054	10.089	10.125	10.161	10.197	10.233	10.269	10.305	10.341	10.377	10.413	320
330	10.413	10.449	10.485	10.521	10.557	10.593	10.629	10.665	10.701	10.737	10.774	330
340	10.774	10.810	10.846	10.882	10.918	10.955	10.991	11.027	11.064	11.100	11.136	340
350	11.136	11.173	11.209	11.245	11.282	11.318	11.355	11.391	11.428	11.464	11.501	350
360	11.501	11.537	11.574	11.610	11.647	11.683	11.720	11.757	11.793	11.830	11.867	360
370	11.867	11.903	11.940	11.977	12.013	12.050	12.087	12.124	12.160	12.197	12.234	370
380	12.234	12.271	12.308	12.345	12.382	12.418	12.455	12.492	12.529	12.566	12.603	380
390	12.603	12.640	12.677	12.714	12.751	12.788	12.825	12.862	12.899	12.937	12.974	390
400	12.974	13.011	13.048	13.085	13.122	13.159	13.197	13.234	13.271	13.308	13.346	400
410	13.346	13.383	13.420	13.457	13.495	13.532	13.569	13.607	13.644	13.682	13.719	410
420	13.719	13.756	13.794	13.831	13.869	13.906	13.944	13.981	14.019	14.056	14.094	420
430	14.094	14.131	14.169	14.206	14.244	14.281	14.319	14.356	14.394	14.432	14.469	430
440	14.469	14.507	14.545	14.582	14.620	14.658	14.695	14.733	14.771	14.809	14.846	440
450	14.846	14.884	14.922	14.960	14.998	15.035	15.073	15.111	15.149	15.187	15.225	450
460	15.225	15.262	15.300	15.338	15.376	15.414	15.452	15.490	15.528	15.566	15.604	460
470	15.604	15.642	15.680	15.718	15.756	15.794	15.832	15.870	15.908	15.946	15.984	470
480	15.984	16.022	16.060	16.099	16.137	16.175	16.213	16.251	16.289	16.327	16.366	480
490	16.366	16.404	16.442	16.480	16.518	16.557	16.595	16.633	16.671	16.710	16.748	490
500	16.748	16.786	16.824	16.863	16.901	16.939	16.978	17.016	17.054	17.093	17.131	500
510	17.131	17.169	17.208	17.246	17.285	17.323	17.361	17.400	17.438	17.477	17.515	510
520	17.515	17.554	17.592	17.630	17.669	17.707	17.746	17.784	17.823	17.861	17.900	520
530	17.900	17.938	17.977	18.016	18.054	18.093	18.131	18.170	18.208	18.247	18.286	530
540	18.286	18.324	18.363	18.401	18.440	18.479	18.517	18.556	18.595	18.633	18.672	540
550	18.672	18.711	18.749	18.788	18.827	18.865	18.904	18.943	18.982	19.020	19.059	550
560	19.059	19.098	19.136	19.175	19.214	19.253	19.292	19.330	19.369	19.408	19.447	560
570	19.447	19.485	19.524	19.563	19.602	19.641	19.680	19.718	19.757	19.796	19.835	570
580	19.835	19.874	19.913	19.952	19.990	20.029	20.068	20.107	20.146	20.185	20.224	580
590	20.224	20.263	20.302	20.341	20.379	20.418	20.457	20.496	20.535	20.574	20.613	590
600	20.613	20.652	20.691	20.730	20.769	20.808	20.847	20.886	20.925	20.964	21.003	600
610	21.003	21.042	21.081	21.120	21.159	21.198	21.237	21.276	21.315	21.354	21.393	610
620	21.393	21.432	21.471	21.510	21.549	21.588	21.628	21.667	21.706	21.745	21.784	620
630	21.784	21.823	21.862	21.901	21.940	21.979	22.018	22.058	22.097	22.136	22.175	630
640	22.175	22.214	22.253	22.292	22.331	22.370	22.410	22.449	22.488	22.527	22.566	640
650	22.566	22.605	22.644	22.684	22.723	22.762	22.801	22.840	22.879	22.919	22.958	650
660	22.958	22.997	23.036	23.075	23.115	23.154	23.193	23.232	23.271	23.311	23.350	660
670	23.350	23.389	23.428	23.467	23.507	23.546	23.585	23.624	23.663	23.703	23.742	670
680	23.742	23.781	23.820	23.860	23.899	23.938	23.977	24.016	24.056	24.095	24.134	680
690	24.134	24.173	24.213	24.252	24.291	24.330	24.370	24.409	24.448	24.487	24.527	690
°C	0	1	2	3	4	5	6	7	8	9	10	°C

TABLE 11 ***Type N Thermocouple*** *— thermoelectric voltage as a function of temperature (°C); reference junctions at 0 °C*

°C	0	1	2	3	4	5	6	7	8	9	10	°C
						Thermoelectric Voltage in Millivolts						
700	24.527	24.566	24.605	24.644	24.684	24.723	24.762	24.801	24.841	24.880	24.919	700
710	24.919	24.959	24.998	25.037	25.076	25.116	25.155	25.194	25.233	25.273	25.312	710
720	25.312	25.351	25.391	25.430	25.469	25.508	25.548	25.587	25.626	25.666	25.705	720
730	25.705	25.744	25.783	25.823	25.862	25.901	25.941	25.980	26.019	26.058	26.098	730
740	26.098	26.137	26.176	26.216	26.255	26.294	26.333	26.373	26.412	26.451	26.491	740
750	26.491	26.530	26.569	26.608	26.648	26.687	26.726	26.766	26.805	26.844	26.883	750
760	26.883	26.923	26.962	27.001	27.041	27.080	27.119	27.158	27.198	27.237	27.276	760
770	27.276	27.316	27.355	27.394	27.433	27.473	27.512	27.551	27.591	27.630	27.669	770
780	27.669	27.708	27.748	27.787	27.826	27.866	27.905	27.944	27.983	28.023	28.062	780
790	28.062	28.101	28.140	28.180	28.219	28.258	28.297	28.337	28.376	28.415	28.455	790
800	28.455	28.494	28.533	28.572	28.612	28.651	28.690	28.729	28.769	28.808	28.847	800
810	28.847	28.886	28.926	28.965	29.004	29.043	29.083	29.122	29.161	29.200	29.239	810
820	29.239	29.279	29.318	29.357	29.396	29.436	29.475	29.514	29.553	29.592	29.632	820
830	29.632	29.671	29.710	29.749	29.789	29.828	29.867	29.906	29.945	29.985	30.024	830
840	30.024	30.063	30.102	30.141	30.181	30.220	30.259	30.298	30.337	30.376	30.416	840
850	30.416	30.455	30.494	30.533	30.572	30.611	30.651	30.690	30.729	30.768	30.807	850
860	30.807	30.846	30.886	30.925	30.964	31.003	31.042	31.081	31.120	31.160	31.199	860
870	31.199	31.238	31.277	31.316	31.355	31.394	31.433	31.473	31.512	31.551	31.590	870
880	31.590	31.629	31.668	31.707	31.746	31.785	31.824	31.863	31.903	31.942	31.981	880
890	31.981	32.020	32.059	32.098	32.137	32.176	32.215	32.254	32.293	32.332	32.371	890
900	32.371	32.410	32.449	32.488	32.527	32.566	32.605	32.644	32.683	32.722	32.761	900
910	32.761	32.800	32.839	32.878	32.917	32.956	32.995	33.034	33.073	33.112	33.151	910
920	33.151	33.190	33.229	33.268	33.307	33.346	33.385	33.424	33.463	33.502	33.541	920
930	33.541	33.580	33.619	33.658	33.697	33.736	33.774	33.813	33.852	33.891	33.930	930
940	33.930	33.969	34.008	34.047	34.086	34.124	34.163	34.202	34.241	34.280	34.319	940
950	34.319	34.358	34.396	34.435	34.474	34.513	34.552	34.591	34.629	34.668	34.707	950
960	34.707	34.746	34.785	34.823	34.862	34.901	34.940	34.979	35.017	35.056	35.095	960
970	35.095	35.134	35.172	35.211	35.250	35.289	35.327	35.366	35.405	35.444	35.482	970
980	35.482	35.521	35.560	35.598	35.637	35.676	35.714	35.753	35.792	35.831	35.869	980
990	35.869	35.908	35.946	35.985	36.024	36.062	36.101	36.140	36.178	36.217	36.256	990
1000	36.256	36.294	36.333	36.371	36.410	36.449	36.487	36.526	36.564	36.603	36.641	1000
1010	36.641	36.680	36.718	36.757	36.796	36.834	36.873	36.911	36.950	36.988	37.027	1010
1020	37.027	37.065	37.104	37.142	37.181	37.219	37.258	37.296	37.334	37.373	37.411	1020
1030	37.411	37.450	37.488	37.527	37.565	37.603	37.642	37.680	37.719	37.757	37.795	1030
1040	37.795	37.834	37.872	37.911	37.949	37.987	38.026	38.064	38.102	38.141	38.179	1040
1050	38.179	38.217	38.256	38.294	38.332	38.370	38.409	38.447	38.485	38.524	38.562	1050
1060	38.562	38.600	38.638	38.677	38.715	38.753	38.791	38.829	38.868	38.906	38.944	1060
1070	38.944	38.982	39.020	39.059	39.097	39.135	39.173	39.211	39.249	39.287	39.326	1070
1080	39.326	39.364	39.402	39.440	39.478	39.516	39.554	39.592	39.630	39.668	39.706	1080
1090	39.706	39.744	39.783	39.821	39.859	39.897	39.935	39.973	40.011	40.049	40.087	1090
1100	40.087	40.125	40.163	40.201	40.238	40.276	40.314	40.352	40.390	40.428	40.466	1100
1110	40.466	40.504	40.542	40.580	40.618	40.655	40.693	40.731	40.769	40.807	40.845	1110
1120	40.845	40.883	40.920	40.958	40.996	41.034	41.072	41.109	41.147	41.185	41.223	1120
1130	41.223	41.260	41.298	41.336	41.374	41.411	41.449	41.487	41.525	41.562	41.600	1130
1140	41.600	41.638	41.675	41.713	41.751	41.788	41.826	41.864	41.901	41.939	41.976	1140
1150	41.976	42.014	42.052	42.089	42.127	42.164	42.202	42.239	42.277	42.314	42.352	1150
1160	42.352	42.390	42.427	42.465	42.502	42.540	42.577	42.614	42.652	42.689	42.727	1160
1170	42.727	42.764	42.802	42.839	42.877	42.914	42.951	42.989	43.026	43.064	43.101	1170
1180	43.101	43.138	43.176	43.213	43.250	43.288	43.325	43.362	43.399	43.437	43.474	1180
1190	43.474	43.511	43.549	43.586	43.623	43.660	43.698	43.735	43.772	43.809	43.846	1190

°C	0	1	2	3	4	5	6	7	8	9	10	°C

TABLE 11 ***Type N Thermocouple*** *— thermoelectric voltage as a function of temperature (°C); reference junctions at 0 °C*

°C	0	1	2	3	4	5	6	7	8	9	10	°C
					Thermoelectric Voltage in Millivolts							
1200	43.846	43.884	43.921	43.958	43.995	44.032	44.069	44.106	44.144	44.181	44.218	1200
1210	44.218	44.255	44.292	44.329	44.366	44.403	44.440	44.477	44.514	44.551	44.588	1210
1220	44.588	44.625	44.662	44.699	44.736	44.773	44.810	44.847	44.884	44.921	44.958	1220
1230	44.958	44.995	45.032	45.069	45.105	45.142	45.179	45.216	45.253	45.290	45.326	1230
1240	45.326	45.363	45.400	45.437	45.474	45.510	45.547	45.584	45.621	45.657	45.694	1240
1250	45.694	45.731	45.767	45.804	45.841	45.877	45.914	45.951	45.987	46.024	46.060	1250
1260	46.060	46.097	46.133	46.170	46.207	46.243	46.280	46.316	46.353	46.389	46.425	1260
1270	46.425	46.462	46.498	46.535	46.571	46.608	46.644	46.680	46.717	46.753	46.789	1270
1280	46.789	46.826	46.862	46.898	46.935	46.971	47.007	47.043	47.079	47.116	47.152	1280
1290	47.152	47.188	47.224	47.260	47.296	47.333	47.369	47.405	47.441	47.477	47.513	1290
1300	47.513											1300

°C	0	1	2	3	4	5	6	7	8	9	10	°C

TABLE 12 ***Type N Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
					Thermoelectric Voltage in Millivolts							
-450	-4.344	-4.344	-4.345	-4.345	-4.345							-450
-440	-4.339	-4.340	-4.340	-4.341	-4.341	-4.342	-4.342	-4.343	-4.343	-4.344	-4.344	-440
-430	-4.330	-4.331	-4.332	-4.333	-4.334	-4.335	-4.336	-4.337	-4.337	-4.338	-4.339	-430
-420	-4.316	-4.318	-4.319	-4.321	-4.322	-4.324	-4.325	-4.326	-4.327	-4.329	-4.330	-420
-410	-4.299	-4.301	-4.303	-4.305	-4.306	-4.308	-4.310	-4.312	-4.313	-4.315	-4.316	-410
-400	-4.277	-4.279	-4.282	-4.284	-4.286	-4.288	-4.291	-4.293	-4.295	-4.297	-4.299	-400
-390	-4.251	-4.254	-4.256	-4.259	-4.262	-4.264	-4.267	-4.270	-4.272	-4.275	-4.277	-390
-380	-4.220	-4.223	-4.226	-4.230	-4.233	-4.236	-4.239	-4.242	-4.245	-4.248	-4.251	-380
-370	-4.185	-4.189	-4.192	-4.196	-4.199	-4.203	-4.206	-4.210	-4.213	-4.217	-4.220	-370
-360	-4.145	-4.150	-4.154	-4.158	-4.162	-4.166	-4.170	-4.174	-4.177	-4.181	-4.185	-360
-350	-4.102	-4.106	-4.111	-4.115	-4.120	-4.124	-4.128	-4.133	-4.137	-4.141	-4.145	-350
-340	-4.054	-4.059	-4.064	-4.068	-4.073	-4.078	-4.083	-4.088	-4.092	-4.097	-4.102	-340
-330	-4.001	-4.007	-4.012	-4.017	-4.023	-4.028	-4.033	-4.038	-4.043	-4.049	-4.054	-330
-320	-3.945	-3.951	-3.957	-3.962	-3.968	-3.974	-3.979	-3.985	-3.990	-3.996	-4.001	-320
-310	-3.884	-3.891	-3.897	-3.903	-3.909	-3.915	-3.921	-3.927	-3.933	-3.939	-3.945	-310
-300	-3.820	-3.827	-3.833	-3.840	-3.846	-3.853	-3.859	-3.866	-3.872	-3.878	-3.884	-300
-290	-3.752	-3.759	-3.766	-3.773	-3.779	-3.786	-3.793	-3.800	-3.807	-3.813	-3.820	-290
-280	-3.679	-3.687	-3.694	-3.702	-3.709	-3.716	-3.723	-3.730	-3.738	-3.745	-3.752	-280
-270	-3.604	-3.611	-3.619	-3.627	-3.634	-3.642	-3.650	-3.657	-3.665	-3.672	-3.679	-270
-260	-3.524	-3.532	-3.540	-3.548	-3.556	-3.564	-3.572	-3.580	-3.588	-3.596	-3.604	-260
-250	-3.441	-3.449	-3.458	-3.466	-3.474	-3.483	-3.491	-3.499	-3.508	-3.516	-3.524	-250
-240	-3.354	-3.363	-3.372	-3.380	-3.389	-3.398	-3.407	-3.415	-3.424	-3.432	-3.441	-240
-230	-3.264	-3.273	-3.282	-3.291	-3.300	-3.309	-3.318	-3.327	-3.336	-3.345	-3.354	-230
-220	-3.171	-3.180	-3.189	-3.199	-3.208	-3.218	-3.227	-3.236	-3.246	-3.255	-3.264	-220
-210	-3.074	-3.084	-3.093	-3.103	-3.113	-3.123	-3.132	-3.142	-3.151	-3.161	-3.171	-210
-200	-2.974	-2.984	-2.994	-3.004	-3.014	-3.024	-3.034	-3.044	-3.054	-3.064	-3.074	-200
-190	-2.871	-2.881	-2.892	-2.902	-2.912	-2.923	-2.933	-2.943	-2.954	-2.964	-2.974	-190
-180	-2.765	-2.776	-2.786	-2.797	-2.808	-2.818	-2.829	-2.839	-2.850	-2.860	-2.871	-180
-170	-2.656	-2.667	-2.678	-2.689	-2.700	-2.711	-2.722	-2.733	-2.743	-2.754	-2.765	-170
-160	-2.544	-2.556	-2.567	-2.578	-2.589	-2.601	-2.612	-2.623	-2.634	-2.645	-2.656	-160
-150	-2.430	-2.442	-2.453	-2.465	-2.476	-2.488	-2.499	-2.510	-2.522	-2.533	-2.544	-150
-140	-2.313	-2.325	-2.337	-2.348	-2.360	-2.372	-2.384	-2.395	-2.407	-2.418	-2.430	-140
-130	-2.193	-2.206	-2.218	-2.230	-2.242	-2.254	-2.265	-2.277	-2.289	-2.301	-2.313	-130
-120	-2.072	-2.084	-2.096	-2.108	-2.121	-2.133	-2.145	-2.157	-2.169	-2.181	-2.193	-120
-110	-1.947	-1.960	-1.972	-1.985	-1.997	-2.010	-2.022	-2.035	-2.047	-2.059	-2.072	-110
-100	-1.821	-1.834	-1.846	-1.859	-1.872	-1.884	-1.897	-1.910	-1.922	-1.935	-1.947	-100
-90	-1.692	-1.705	-1.718	-1.731	-1.744	-1.757	-1.770	-1.783	-1.795	-1.808	-1.821	-90
-80	-1.562	-1.575	-1.588	-1.601	-1.614	-1.627	-1.640	-1.653	-1.666	-1.679	-1.692	-80
-70	-1.430	-1.443	-1.456	-1.470	-1.483	-1.496	-1.509	-1.522	-1.536	-1.549	-1.562	-70
-60	-1.296	-1.309	-1.323	-1.336	-1.349	-1.363	-1.376	-1.390	-1.403	-1.416	-1.430	-60
-50	-1.160	-1.174	-1.187	-1.201	-1.214	-1.228	-1.242	-1.255	-1.269	-1.282	-1.296	-50
-40	-1.023	-1.037	-1.050	-1.064	-1.078	-1.092	-1.105	-1.119	-1.133	-1.146	-1.160	-40
-30	-0.884	-0.898	-0.912	-0.926	-0.940	-0.954	-0.967	-0.981	-0.995	-1.009	-1.023	-30
-20	-0.744	-0.758	-0.772	-0.786	-0.800	-0.814	-0.828	-0.842	-0.856	-0.870	-0.884	-20
-10	-0.603	-0.617	-0.632	-0.646	-0.660	-0.674	-0.688	-0.702	-0.716	-0.730	-0.744	-10
0	-0.461	-0.475	-0.490	-0.504	-0.518	-0.532	-0.546	-0.561	-0.575	-0.589	-0.603	0

°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 12 ***Type N Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
0	-0.461	-0.447	-0.433	-0.418	-0.404	-0.390	-0.375	-0.361	-0.347	-0.332	-0.318	0
10	-0.318	-0.304	-0.289	-0.275	-0.260	-0.246	-0.232	-0.217	-0.203	-0.188	-0.174	10
20	-0.174	-0.159	-0.145	-0.131	-0.116	-0.102	-0.087	-0.073	-0.058	-0.044	-0.029	20
30	-0.029	-0.015	0.000	0.014	0.029	0.043	0.058	0.072	0.087	0.101	0.116	30
40	0.116	0.130	0.145	0.159	0.174	0.188	0.203	0.217	0.232	0.246	0.261	40
50	0.261	0.275	0.290	0.305	0.319	0.334	0.349	0.363	0.378	0.393	0.407	50
60	0.407	0.422	0.437	0.451	0.466	0.481	0.496	0.510	0.525	0.540	0.555	60
70	0.555	0.570	0.584	0.599	0.614	0.629	0.644	0.659	0.674	0.688	0.703	70
80	0.703	0.718	0.733	0.748	0.763	0.778	0.793	0.808	0.823	0.838	0.853	80
90	0.853	0.868	0.883	0.898	0.913	0.928	0.943	0.958	0.974	0.989	1.004	90
100	1.004	1.019	1.034	1.049	1.065	1.080	1.095	1.110	1.125	1.141	1.156	100
110	1.156	1.171	1.186	1.202	1.217	1.232	1.248	1.263	1.278	1.294	1.309	110
120	1.309	1.324	1.340	1.355	1.371	1.386	1.402	1.417	1.432	1.448	1.463	120
130	1.463	1.479	1.494	1.510	1.525	1.541	1.557	1.572	1.588	1.603	1.619	130
140	1.619	1.635	1.650	1.666	1.682	1.697	1.713	1.729	1.744	1.760	1.776	140
150	1.776	1.791	1.807	1.823	1.839	1.855	1.870	1.886	1.902	1.918	1.934	150
160	1.934	1.950	1.965	1.981	1.997	2.013	2.029	2.045	2.061	2.077	2.093	160
170	2.093	2.109	2.125	2.141	2.157	2.173	2.189	2.205	2.221	2.237	2.253	170
180	2.253	2.269	2.285	2.301	2.318	2.334	2.350	2.366	2.382	2.398	2.415	180
190	2.415	2.431	2.447	2.463	2.480	2.496	2.512	2.528	2.545	2.561	2.577	190
200	2.577	2.594	2.610	2.626	2.643	2.659	2.676	2.692	2.708	2.725	2.741	200
210	2.741	2.758	2.774	2.791	2.807	2.824	2.840	2.857	2.873	2.890	2.906	210
220	2.906	2.923	2.939	2.956	2.973	2.989	3.006	3.022	3.039	3.056	3.072	220
230	3.072	3.089	3.106	3.123	3.139	3.156	3.173	3.189	3.206	3.223	3.240	230
240	3.240	3.257	3.273	3.290	3.307	3.324	3.341	3.358	3.374	3.391	3.408	240
250	3.408	3.425	3.442	3.459	3.476	3.493	3.510	3.527	3.544	3.561	3.578	250
260	3.578	3.595	3.612	3.629	3.646	3.663	3.680	3.697	3.714	3.731	3.748	260
270	3.748	3.766	3.783	3.800	3.817	3.834	3.851	3.869	3.886	3.903	3.920	270
280	3.920	3.937	3.955	3.972	3.989	4.007	4.024	4.041	4.058	4.076	4.093	280
290	4.093	4.110	4.128	4.145	4.162	4.180	4.197	4.215	4.232	4.250	4.267	290
300	4.267	4.284	4.302	4.319	4.337	4.354	4.372	4.389	4.407	4.424	4.442	300
310	4.442	4.459	4.477	4.495	4.512	4.530	4.547	4.565	4.583	4.600	4.618	310
320	4.618	4.635	4.653	4.671	4.688	4.706	4.724	4.742	4.759	4.777	4.795	320
330	4.795	4.813	4.830	4.848	4.866	4.884	4.901	4.919	4.937	4.955	4.973	330
340	4.973	4.991	5.008	5.026	5.044	5.062	5.080	5.098	5.116	5.134	5.152	340
350	5.152	5.170	5.188	5.206	5.224	5.241	5.259	5.277	5.295	5.314	5.332	350
360	5.332	5.350	5.368	5.386	5.404	5.422	5.440	5.458	5.476	5.494	5.512	360
370	5.512	5.531	5.549	5.567	5.585	5.603	5.621	5.639	5.658	5.676	5.694	370
380	5.694	5.712	5.731	5.749	5.767	5.785	5.804	5.822	5.840	5.858	5.877	380
390	5.877	5.895	5.913	5.932	5.950	5.968	5.987	6.005	6.024	6.042	6.060	390
400	6.060	6.079	6.097	6.116	6.134	6.152	6.171	6.189	6.208	6.226	6.245	400
410	6.245	6.263	6.282	6.300	6.319	6.337	6.356	6.374	6.393	6.411	6.430	410
420	6.430	6.449	6.467	6.486	6.504	6.523	6.542	6.560	6.579	6.597	6.616	420
430	6.616	6.635	6.653	6.672	6.691	6.710	6.728	6.747	6.766	6.784	6.803	430
440	6.803	6.822	6.841	6.859	6.878	6.897	6.916	6.934	6.953	6.972	6.991	440
450	6.991	7.010	7.029	7.047	7.066	7.085	7.104	7.123	7.142	7.161	7.179	450
460	7.179	7.198	7.217	7.236	7.255	7.274	7.293	7.312	7.331	7.350	7.369	460
470	7.369	7.388	7.407	7.426	7.445	7.464	7.483	7.502	7.521	7.540	7.559	470
480	7.559	7.578	7.597	7.616	7.635	7.654	7.673	7.692	7.711	7.731	7.750	480
490	7.750	7.769	7.788	7.807	7.826	7.845	7.865	7.884	7.903	7.922	7.941	490

°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 12 ***Type N Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
500	7.941	7.960	7.980	7.999	8.018	8.037	8.057	8.076	8.095	8.114	8.134	500
510	8.134	8.153	8.172	8.191	8.211	8.230	8.249	8.269	8.288	8.307	8.327	510
520	8.327	8.346	8.365	8.385	8.404	8.423	8.443	8.462	8.482	8.501	8.520	520
530	8.520	8.540	8.559	8.579	8.598	8.617	8.637	8.656	8.676	8.695	8.715	530
540	8.715	8.734	8.754	8.773	8.793	8.812	8.832	8.851	8.871	8.890	8.910	540
550	8.910	8.929	8.949	8.968	8.988	9.008	9.027	9.047	9.066	9.086	9.105	550
560	9.105	9.125	9.145	9.164	9.184	9.204	9.223	9.243	9.262	9.282	9.302	560
570	9.302	9.321	9.341	9.361	9.381	9.400	9.420	9.440	9.459	9.479	9.499	570
580	9.499	9.519	9.538	9.558	9.578	9.598	9.617	9.637	9.657	9.677	9.696	580
590	9.696	9.716	9.736	9.756	9.776	9.795	9.815	9.835	9.855	9.875	9.895	590
600	9.895	9.914	9.934	9.954	9.974	9.994	10.014	10.034	10.054	10.073	10.093	600
610	10.093	10.113	10.133	10.153	10.173	10.193	10.213	10.233	10.253	10.273	10.293	610
620	10.293	10.313	10.333	10.353	10.373	10.393	10.413	10.433	10.453	10.473	10.493	620
630	10.493	10.513	10.533	10.553	10.573	10.593	10.613	10.633	10.653	10.673	10.693	630
640	10.693	10.713	10.733	10.753	10.774	10.794	10.814	10.834	10.854	10.874	10.894	640
650	10.894	10.914	10.934	10.955	10.975	10.995	11.015	11.035	11.055	11.076	11.096	650
660	11.096	11.116	11.136	11.156	11.177	11.197	11.217	11.237	11.257	11.278	11.298	660
670	11.298	11.318	11.338	11.359	11.379	11.399	11.419	11.440	11.460	11.480	11.501	670
680	11.501	11.521	11.541	11.561	11.582	11.602	11.622	11.643	11.663	11.683	11.704	680
690	11.704	11.724	11.744	11.765	11.785	11.805	11.826	11.846	11.867	11.887	11.907	690
700	11.907	11.928	11.948	11.968	11.989	12.009	12.030	12.050	12.071	12.091	12.111	700
710	12.111	12.132	12.152	12.173	12.193	12.214	12.234	12.255	12.275	12.295	12.316	710
720	12.316	12.336	12.357	12.377	12.398	12.418	12.439	12.459	12.480	12.500	12.521	720
730	12.521	12.542	12.562	12.583	12.603	12.624	12.644	12.665	12.685	12.706	12.726	730
740	12.726	12.747	12.768	12.788	12.809	12.829	12.850	12.871	12.891	12.912	12.932	740
750	12.932	12.953	12.974	12.994	13.015	13.036	13.056	13.077	13.098	13.118	13.139	750
760	13.139	13.159	13.180	13.201	13.221	13.242	13.263	13.284	13.304	13.325	13.346	760
770	13.346	13.366	13.387	13.408	13.428	13.449	13.470	13.491	13.511	13.532	13.553	770
780	13.553	13.574	13.594	13.615	13.636	13.657	13.677	13.698	13.719	13.740	13.760	780
790	13.760	13.781	13.802	13.823	13.844	13.864	13.885	13.906	13.927	13.948	13.969	790
800	13.969	13.989	14.010	14.031	14.052	14.073	14.094	14.114	14.135	14.156	14.177	800
810	14.177	14.198	14.219	14.240	14.260	14.281	14.302	14.323	14.344	14.365	14.386	810
820	14.386	14.407	14.428	14.448	14.469	14.490	14.511	14.532	14.553	14.574	14.595	820
830	14.595	14.616	14.637	14.658	14.679	14.700	14.721	14.742	14.763	14.784	14.804	830
840	14.804	14.825	14.846	14.867	14.888	14.909	14.930	14.951	14.972	14.993	15.014	840
850	15.014	15.035	15.056	15.077	15.098	15.119	15.140	15.162	15.183	15.204	15.225	850
860	15.225	15.246	15.267	15.288	15.309	15.330	15.351	15.372	15.393	15.414	15.435	860
870	15.435	15.456	15.477	15.498	15.520	15.541	15.562	15.583	15.604	15.625	15.646	870
880	15.646	15.667	15.688	15.709	15.731	15.752	15.773	15.794	15.815	15.836	15.857	880
890	15.857	15.878	15.900	15.921	15.942	15.963	15.984	16.005	16.027	16.048	16.069	890
900	16.069	16.090	16.111	16.132	16.154	16.175	16.196	16.217	16.238	16.260	16.281	900
910	16.281	16.302	16.323	16.344	16.366	16.387	16.408	16.429	16.450	16.472	16.493	910
920	16.493	16.514	16.535	16.557	16.578	16.599	16.620	16.642	16.663	16.684	16.705	920
930	16.705	16.727	16.748	16.769	16.790	16.812	16.833	16.854	16.875	16.897	16.918	930
940	16.918	16.939	16.961	16.982	17.003	17.025	17.046	17.067	17.088	17.110	17.131	940
950	17.131	17.152	17.174	17.195	17.216	17.238	17.259	17.280	17.302	17.323	17.344	950
960	17.344	17.366	17.387	17.408	17.430	17.451	17.472	17.494	17.515	17.536	17.558	960
970	17.558	17.579	17.601	17.622	17.643	17.665	17.686	17.707	17.729	17.750	17.772	970
980	17.772	17.793	17.814	17.836	17.857	17.879	17.900	17.921	17.943	17.964	17.986	980
990	17.986	18.007	18.028	18.050	18.071	18.093	18.114	18.136	18.157	18.178	18.200	990
°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 12 ***Type N Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
1000	18.200	18.221	18.243	18.264	18.286	18.307	18.328	18.350	18.371	18.393	18.414	1000
1010	18.414	18.436	18.457	18.479	18.500	18.522	18.543	18.565	18.586	18.608	18.629	1010
1020	18.629	18.650	18.672	18.693	18.715	18.736	18.758	18.779	18.801	18.822	18.844	1020
1030	18.844	18.865	18.887	18.908	18.930	18.951	18.973	18.994	19.016	19.037	19.059	1030
1040	19.059	19.081	19.102	19.124	19.145	19.167	19.188	19.210	19.231	19.253	19.274	1040
1050	19.274	19.296	19.317	19.339	19.360	19.382	19.404	19.425	19.447	19.468	19.490	1050
1060	19.490	19.511	19.533	19.554	19.576	19.598	19.619	19.641	19.662	19.684	19.705	1060
1070	19.705	19.727	19.749	19.770	19.792	19.813	19.835	19.857	19.878	19.900	19.921	1070
1080	19.921	19.943	19.964	19.986	20.008	20.029	20.051	20.072	20.094	20.116	20.137	1080
1090	20.137	20.159	20.181	20.202	20.224	20.245	20.267	20.289	20.310	20.332	20.353	1090
1100	20.353	20.375	20.397	20.418	20.440	20.462	20.483	20.505	20.527	20.548	20.570	1100
1110	20.570	20.591	20.613	20.635	20.656	20.678	20.700	20.721	20.743	20.765	20.786	1110
1120	20.786	20.808	20.830	20.851	20.873	20.895	20.916	20.938	20.960	20.981	21.003	1120
1130	21.003	21.025	21.046	21.068	21.090	21.111	21.133	21.155	21.176	21.198	21.220	1130
1140	21.220	21.241	21.263	21.285	21.306	21.328	21.350	21.371	21.393	21.415	21.437	1140
1150	21.437	21.458	21.480	21.502	21.523	21.545	21.567	21.588	21.610	21.632	21.654	1150
1160	21.654	21.675	21.697	21.719	21.740	21.762	21.784	21.806	21.827	21.849	21.871	1160
1170	21.871	21.892	21.914	21.936	21.958	21.979	22.001	22.023	22.044	22.066	22.088	1170
1180	22.088	22.110	22.131	22.153	22.175	22.197	22.218	22.240	22.262	22.284	22.305	1180
1190	22.305	22.327	22.349	22.370	22.392	22.414	22.436	22.457	22.479	22.501	22.523	1190
1200	22.523	22.544	22.566	22.588	22.610	22.631	22.653	22.675	22.697	22.718	22.740	1200
1210	22.740	22.762	22.784	22.805	22.827	22.849	22.871	22.893	22.914	22.936	22.958	1210
1220	22.958	22.980	23.001	23.023	23.045	23.067	23.088	23.110	23.132	23.154	23.176	1220
1230	23.176	23.197	23.219	23.241	23.263	23.284	23.306	23.328	23.350	23.372	23.393	1230
1240	23.393	23.415	23.437	23.459	23.480	23.502	23.524	23.546	23.568	23.589	23.611	1240
1250	23.611	23.633	23.655	23.676	23.698	23.720	23.742	23.764	23.785	23.807	23.829	1250
1260	23.829	23.851	23.873	23.894	23.916	23.938	23.960	23.982	24.003	24.025	24.047	1260
1270	24.047	24.069	24.091	24.112	24.134	24.156	24.178	24.200	24.221	24.243	24.265	1270
1280	24.265	24.287	24.309	24.330	24.352	24.374	24.396	24.418	24.439	24.461	24.483	1280
1290	24.483	24.505	24.527	24.548	24.570	24.592	24.614	24.636	24.658	24.679	24.701	1290
1300	24.701	24.723	24.745	24.767	24.788	24.810	24.832	24.854	24.876	24.897	24.919	1300
1310	24.919	24.941	24.963	24.985	25.007	25.028	25.050	25.072	25.094	25.116	25.137	1310
1320	25.137	25.159	25.181	25.203	25.225	25.247	25.268	25.290	25.312	25.334	25.356	1320
1330	25.356	25.377	25.399	25.421	25.443	25.465	25.487	25.508	25.530	25.552	25.574	1330
1340	25.574	25.596	25.618	25.639	25.661	25.683	25.705	25.727	25.748	25.770	25.792	1340
1350	25.792	25.814	25.836	25.858	25.879	25.901	25.923	25.945	25.967	25.989	26.010	1350
1360	26.010	26.032	26.054	26.076	26.098	26.119	26.141	26.163	26.185	26.207	26.229	1360
1370	26.229	26.250	26.272	26.294	26.316	26.338	26.360	26.381	26.403	26.425	26.447	1370
1380	26.447	26.469	26.491	26.512	26.534	26.556	26.578	26.600	26.622	26.643	26.665	1380
1390	26.665	26.687	26.709	26.731	26.752	26.774	26.796	26.818	26.840	26.862	26.883	1390
1400	26.883	26.905	26.927	26.949	26.971	26.993	27.014	27.036	27.058	27.080	27.102	1400
1410	27.102	27.124	27.145	27.167	27.189	27.211	27.233	27.254	27.276	27.298	27.320	1410
1420	27.320	27.342	27.364	27.385	27.407	27.429	27.451	27.473	27.495	27.516	27.538	1420
1430	27.538	27.560	27.582	27.604	27.625	27.647	27.669	27.691	27.713	27.735	27.756	1430
1440	27.756	27.778	27.800	27.822	27.844	27.866	27.887	27.909	27.931	27.953	27.975	1440
1450	27.975	27.996	28.018	28.040	28.062	28.084	28.105	28.127	28.149	28.171	28.193	1450
1460	28.193	28.215	28.236	28.258	28.280	28.302	28.324	28.345	28.367	28.389	28.411	1460
1470	28.411	28.433	28.455	28.476	28.498	28.520	28.542	28.564	28.585	28.607	28.629	1470
1480	28.629	28.651	28.673	28.694	28.716	28.738	28.760	28.782	28.803	28.825	28.847	1480
1490	28.847	28.869	28.891	28.912	28.934	28.956	28.978	29.000	29.021	29.043	29.065	1490

°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 12 ***Type N Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
1500	29.065	29.087	29.109	29.130	29.152	29.174	29.196	29.218	29.239	29.261	29.283	1500
1510	29.283	29.305	29.327	29.348	29.370	29.392	29.414	29.436	29.457	29.479	29.501	1510
1520	29.501	29.523	29.545	29.566	29.588	29.610	29.632	29.653	29.675	29.697	29.719	1520
1530	29.719	29.741	29.762	29.784	29.806	29.828	29.850	29.871	29.893	29.915	29.937	1530
1540	29.937	29.958	29.980	30.002	30.024	30.046	30.067	30.089	30.111	30.133	30.154	1540
1550	30.154	30.176	30.198	30.220	30.242	30.263	30.285	30.307	30.329	30.350	30.372	1550
1560	30.372	30.394	30.416	30.437	30.459	30.481	30.503	30.524	30.546	30.568	30.590	1560
1570	30.590	30.611	30.633	30.655	30.677	30.699	30.720	30.742	30.764	30.786	30.807	1570
1580	30.807	30.829	30.851	30.873	30.894	30.916	30.938	30.960	30.981	31.003	31.025	1580
1590	31.025	31.047	31.068	31.090	31.112	31.133	31.155	31.177	31.199	31.220	31.242	1590
1600	31.242	31.264	31.286	31.307	31.329	31.351	31.373	31.394	31.416	31.438	31.459	1600
1610	31.459	31.481	31.503	31.525	31.546	31.568	31.590	31.612	31.633	31.655	31.677	1610
1620	31.677	31.698	31.720	31.742	31.764	31.785	31.807	31.829	31.850	31.872	31.894	1620
1630	31.894	31.916	31.937	31.959	31.981	32.002	32.024	32.046	32.068	32.089	32.111	1630
1640	32.111	32.133	32.154	32.176	32.198	32.219	32.241	32.263	32.284	32.306	32.328	1640
1650	32.328	32.350	32.371	32.393	32.415	32.436	32.458	32.480	32.501	32.523	32.545	1650
1660	32.545	32.566	32.588	32.610	32.631	32.653	32.675	32.696	32.718	32.740	32.761	1660
1670	32.761	32.783	32.805	32.826	32.848	32.870	32.891	32.913	32.935	32.956	32.978	1670
1680	32.978	33.000	33.021	33.043	33.065	33.086	33.108	33.130	33.151	33.173	33.195	1680
1690	33.195	33.216	33.238	33.260	33.281	33.303	33.325	33.346	33.368	33.389	33.411	1690
1700	33.411	33.433	33.454	33.476	33.498	33.519	33.541	33.563	33.584	33.606	33.627	1700
1710	33.627	33.649	33.671	33.692	33.714	33.736	33.757	33.779	33.800	33.822	33.844	1710
1720	33.844	33.865	33.887	33.908	33.930	33.952	33.973	33.995	34.016	34.038	34.060	1720
1730	34.060	34.081	34.103	34.124	34.146	34.168	34.189	34.211	34.232	34.254	34.276	1730
1740	34.276	34.297	34.319	34.340	34.362	34.384	34.405	34.427	34.448	34.470	34.491	1740
1750	34.491	34.513	34.535	34.556	34.578	34.599	34.621	34.642	34.664	34.686	34.707	1750
1760	34.707	34.729	34.750	34.772	34.793	34.815	34.836	34.858	34.879	34.901	34.923	1760
1770	34.923	34.944	34.966	34.987	35.009	35.030	35.052	35.073	35.095	35.116	35.138	1770
1780	35.138	35.160	35.181	35.203	35.224	35.246	35.267	35.289	35.310	35.332	35.353	1780
1790	35.353	35.375	35.396	35.418	35.439	35.461	35.482	35.504	35.525	35.547	35.568	1790
1800	35.568	35.590	35.611	35.633	35.654	35.676	35.697	35.719	35.740	35.762	35.783	1800
1810	35.783	35.805	35.826	35.848	35.869	35.891	35.912	35.934	35.955	35.977	35.998	1810
1820	35.998	36.019	36.041	36.062	36.084	36.105	36.127	36.148	36.170	36.191	36.213	1820
1830	36.213	36.234	36.256	36.277	36.298	36.320	36.341	36.363	36.384	36.406	36.427	1830
1840	36.427	36.449	36.470	36.491	36.513	36.534	36.556	36.577	36.599	36.620	36.641	1840
1850	36.641	36.663	36.684	36.706	36.727	36.748	36.770	36.791	36.813	36.834	36.855	1850
1860	36.855	36.877	36.898	36.920	36.941	36.962	36.984	37.005	37.027	37.048	37.069	1860
1870	37.069	37.091	37.112	37.134	37.155	37.176	37.198	37.219	37.240	37.262	37.283	1870
1880	37.283	37.305	37.326	37.347	37.369	37.390	37.411	37.433	37.454	37.475	37.497	1880
1890	37.497	37.518	37.539	37.561	37.582	37.603	37.625	37.646	37.668	37.689	37.710	1890
1900	37.710	37.731	37.753	37.774	37.795	37.817	37.838	37.859	37.881	37.902	37.923	1900
1910	37.923	37.945	37.966	37.987	38.009	38.030	38.051	38.073	38.094	38.115	38.136	1910
1920	38.136	38.158	38.179	38.200	38.222	38.243	38.264	38.285	38.307	38.328	38.349	1920
1930	38.349	38.370	38.392	38.413	38.434	38.456	38.477	38.498	38.519	38.541	38.562	1930
1940	38.562	38.583	38.604	38.626	38.647	38.668	38.689	38.711	38.732	38.753	38.774	1940
1950	38.774	38.795	38.817	38.838	38.859	38.880	38.902	38.923	38.944	38.965	38.986	1950
1960	38.986	39.008	39.029	39.050	39.071	39.093	39.114	39.135	39.156	39.177	39.198	1960
1970	39.198	39.220	39.241	39.262	39.283	39.304	39.326	39.347	39.368	39.389	39.410	1970
1980	39.410	39.431	39.453	39.474	39.495	39.516	39.537	39.558	39.580	39.601	39.622	1980
1990	39.622	39.643	39.664	39.685	39.706	39.728	39.749	39.770	39.791	39.812	39.833	1990

°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 12 ***Type N Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
2000	39.833	39.854	39.875	39.897	39.918	39.939	39.960	39.981	40.002	40.023	40.044	2000
2010	40.044	40.066	40.087	40.108	40.129	40.150	40.171	40.192	40.213	40.234	40.255	2010
2020	40.255	40.276	40.297	40.319	40.340	40.361	40.382	40.403	40.424	40.445	40.466	2020
2030	40.466	40.487	40.508	40.529	40.550	40.571	40.592	40.613	40.634	40.655	40.677	2030
2040	40.677	40.698	40.719	40.740	40.761	40.782	40.803	40.824	40.845	40.866	40.887	2040
2050	40.887	40.908	40.929	40.950	40.971	40.992	41.013	41.034	41.055	41.076	41.097	2050
2060	41.097	41.118	41.139	41.160	41.181	41.202	41.223	41.244	41.265	41.286	41.307	2060
2070	41.307	41.328	41.349	41.370	41.390	41.411	41.432	41.453	41.474	41.495	41.516	2070
2080	41.516	41.537	41.558	41.579	41.600	41.621	41.642	41.663	41.684	41.705	41.725	2080
2090	41.725	41.746	41.767	41.788	41.809	41.830	41.851	41.872	41.893	41.914	41.935	2090
2100	41.935	41.955	41.976	41.997	42.018	42.039	42.060	42.081	42.102	42.123	42.143	2100
2110	42.143	42.164	42.185	42.206	42.227	42.248	42.269	42.289	42.310	42.331	42.352	2110
2120	42.352	42.373	42.394	42.415	42.435	42.456	42.477	42.498	42.519	42.540	42.560	2120
2130	42.560	42.581	42.602	42.623	42.644	42.664	42.685	42.706	42.727	42.748	42.768	2130
2140	42.768	42.789	42.810	42.831	42.852	42.872	42.893	42.914	42.935	42.956	42.976	2140
2150	42.976	42.997	43.018	43.039	43.059	43.080	43.101	43.122	43.142	43.163	43.184	2150
2160	43.184	43.205	43.225	43.246	43.267	43.288	43.308	43.329	43.350	43.370	43.391	2160
2170	43.391	43.412	43.433	43.453	43.474	43.495	43.515	43.536	43.557	43.578	43.598	2170
2180	43.598	43.619	43.640	43.660	43.681	43.702	43.722	43.743	43.764	43.784	43.805	2180
2190	43.805	43.826	43.846	43.867	43.888	43.908	43.929	43.950	43.970	43.991	44.012	2190
2200	44.012	44.032	44.053	44.073	44.094	44.115	44.135	44.156	44.177	44.197	44.218	2200
2210	44.218	44.238	44.259	44.280	44.300	44.321	44.341	44.362	44.383	44.403	44.424	2210
2220	44.424	44.444	44.465	44.485	44.506	44.527	44.547	44.568	44.588	44.609	44.629	2220
2230	44.629	44.650	44.671	44.691	44.712	44.732	44.753	44.773	44.794	44.814	44.835	2230
2240	44.835	44.855	44.876	44.896	44.917	44.937	44.958	44.978	44.999	45.019	45.040	2240
2250	45.040	45.060	45.081	45.101	45.122	45.142	45.163	45.183	45.204	45.224	45.245	2250
2260	45.245	45.265	45.286	45.306	45.326	45.347	45.367	45.388	45.408	45.429	45.449	2260
2270	45.449	45.469	45.490	45.510	45.531	45.551	45.572	45.592	45.612	45.633	45.653	2270
2280	45.653	45.674	45.694	45.714	45.735	45.755	45.775	45.796	45.816	45.837	45.857	2280
2290	45.857	45.877	45.898	45.918	45.938	45.959	45.979	45.999	46.020	46.040	46.060	2290
2300	46.060	46.081	46.101	46.121	46.142	46.162	46.182	46.202	46.223	46.243	46.263	2300
2310	46.263	46.284	46.304	46.324	46.344	46.365	46.385	46.405	46.425	46.446	46.466	2310
2320	46.466	46.486	46.506	46.527	46.547	46.567	46.587	46.608	46.628	46.648	46.668	2320
2330	46.668	46.688	46.709	46.729	46.749	46.769	46.789	46.810	46.830	46.850	46.870	2330
2340	46.870	46.890	46.910	46.931	46.951	46.971	46.991	47.011	47.031	47.051	47.071	2340
2350	47.071	47.092	47.112	47.132	47.152	47.172	47.192	47.212	47.232	47.252	47.272	2350
2360	47.272	47.292	47.312	47.333	47.353	47.373	47.393	47.413	47.433	47.453	47.473	2360
2370	47.473	47.493	47.513									2370

TABLE 13 ***Type R Thermocouple*** *— thermoelectric voltage as a function of temperature (°C); reference junctions at 0 °C*

°C	0	1	2	3	4	5	6	7	8	9	10	°C
						Thermoelectric Voltage in Millivolts						
-50	-0.226											-50
-40	-0.188	-0.192	-0.196	-0.200	-0.204	-0.208	-0.211	-0.215	-0.219	-0.223	-0.226	-40
-30	-0.145	-0.150	-0.154	-0.158	-0.163	-0.167	-0.171	-0.175	-0.180	-0.184	-0.188	-30
-20	-0.100	-0.105	-0.109	-0.114	-0.119	-0.123	-0.128	-0.132	-0.137	-0.141	-0.145	-20
-10	-0.051	-0.056	-0.061	-0.066	-0.071	-0.076	-0.081	-0.086	-0.091	-0.095	-0.100	-10
0	0.000	-0.005	-0.011	-0.016	-0.021	-0.026	-0.031	-0.036	-0.041	-0.046	-0.051	0
0	0.000	0.005	0.011	0.016	0.021	0.027	0.032	0.038	0.043	0.049	0.054	0
10	0.054	0.060	0.065	0.071	0.077	0.082	0.088	0.094	0.100	0.105	0.111	10
20	0.111	0.117	0.123	0.129	0.135	0.141	0.147	0.153	0.159	0.165	0.171	20
30	0.171	0.177	0.183	0.189	0.195	0.201	0.207	0.214	0.220	0.226	0.232	30
40	0.232	0.239	0.245	0.251	0.258	0.264	0.271	0.277	0.284	0.290	0.296	40
50	0.296	0.303	0.310	0.316	0.323	0.329	0.336	0.343	0.349	0.356	0.363	50
60	0.363	0.369	0.376	0.383	0.390	0.397	0.403	0.410	0.417	0.424	0.431	60
70	0.431	0.438	0.445	0.452	0.459	0.466	0.473	0.480	0.487	0.494	0.501	70
80	0.501	0.508	0.516	0.523	0.530	0.537	0.544	0.552	0.559	0.566	0.573	80
90	0.573	0.581	0.588	0.595	0.603	0.610	0.618	0.625	0.632	0.640	0.647	90
100	0.647	0.655	0.662	0.670	0.677	0.685	0.693	0.700	0.708	0.715	0.723	100
110	0.723	0.731	0.738	0.746	0.754	0.761	0.769	0.777	0.785	0.792	0.800	110
120	0.800	0.808	0.816	0.824	0.832	0.839	0.847	0.855	0.863	0.871	0.879	120
130	0.879	0.887	0.895	0.903	0.911	0.919	0.927	0.935	0.943	0.951	0.959	130
140	0.959	0.967	0.976	0.984	0.992	1.000	1.008	1.016	1.025	1.033	1.041	140
150	1.041	1.049	1.058	1.066	1.074	1.082	1.091	1.099	1.107	1.116	1.124	150
160	1.124	1.132	1.141	1.149	1.158	1.166	1.175	1.183	1.191	1.200	1.208	160
170	1.208	1.217	1.225	1.234	1.242	1.251	1.260	1.268	1.277	1.285	1.294	170
180	1.294	1.303	1.311	1.320	1.329	1.337	1.346	1.355	1.363	1.372	1.381	180
190	1.381	1.389	1.398	1.407	1.416	1.425	1.433	1.442	1.451	1.460	1.469	190
200	1.469	1.477	1.486	1.495	1.504	1.513	1.522	1.531	1.540	1.549	1.558	200
210	1.558	1.567	1.575	1.584	1.593	1.602	1.611	1.620	1.629	1.639	1.648	210
220	1.648	1.657	1.666	1.675	1.684	1.693	1.702	1.711	1.720	1.729	1.739	220
230	1.739	1.748	1.757	1.766	1.775	1.784	1.794	1.803	1.812	1.821	1.831	230
240	1.831	1.840	1.849	1.858	1.868	1.877	1.886	1.895	1.905	1.914	1.923	240
250	1.923	1.933	1.942	1.951	1.961	1.970	1.980	1.989	1.998	2.008	2.017	250
260	2.017	2.027	2.036	2.046	2.055	2.064	2.074	2.083	2.093	2.102	2.112	260
270	2.112	2.121	2.131	2.140	2.150	2.159	2.169	2.179	2.188	2.198	2.207	270
280	2.207	2.217	2.226	2.236	2.246	2.255	2.265	2.275	2.284	2.294	2.304	280
290	2.304	2.313	2.323	2.333	2.342	2.352	2.362	2.371	2.381	2.391	2.401	290
300	2.401	2.410	2.420	2.430	2.440	2.449	2.459	2.469	2.479	2.488	2.498	300
310	2.498	2.508	2.518	2.528	2.538	2.547	2.557	2.567	2.577	2.587	2.597	310
320	2.597	2.607	2.617	2.626	2.636	2.646	2.656	2.666	2.676	2.686	2.696	320
330	2.696	2.706	2.716	2.726	2.736	2.746	2.756	2.766	2.776	2.786	2.796	330
340	2.796	2.806	2.816	2.826	2.836	2.846	2.856	2.866	2.876	2.886	2.896	340
350	2.896	2.906	2.916	2.926	2.937	2.947	2.957	2.967	2.977	2.987	2.997	350
360	2.997	3.007	3.018	3.028	3.038	3.048	3.058	3.068	3.079	3.089	3.099	360
370	3.099	3.109	3.119	3.130	3.140	3.150	3.160	3.171	3.181	3.191	3.201	370
380	3.201	3.212	3.222	3.232	3.242	3.253	3.263	3.273	3.284	3.294	3.304	380
390	3.304	3.315	3.325	3.335	3.346	3.356	3.366	3.377	3.387	3.397	3.408	390

°C	0	1	2	3	4	5	6	7	8	9	10	°C

TABLE 13 ***Type R Thermocouple*** *— thermoelectric voltage as a function of temperature (°C); reference junctions at 0 °C*

°C	0	1	2	3	4	5	6	7	8	9	10	°C
						Thermoelectric Voltage in Millivolts						
400	3.408	3.418	3.428	3.439	3.449	3.460	3.470	3.480	3.491	3.501	3.512	400
410	3.512	3.522	3.533	3.543	3.553	3.564	3.574	3.585	3.595	3.606	3.616	410
420	3.616	3.627	3.637	3.648	3.658	3.669	3.679	3.690	3.700	3.711	3.721	420
430	3.721	3.732	3.742	3.753	3.764	3.774	3.785	3.795	3.806	3.816	3.827	430
440	3.827	3.838	3.848	3.859	3.869	3.880	3.891	3.901	3.912	3.922	3.933	440
450	3.933	3.944	3.954	3.965	3.976	3.986	3.997	4.008	4.018	4.029	4.040	450
460	4.040	4.050	4.061	4.072	4.083	4.093	4.104	4.115	4.125	4.136	4.147	460
470	4.147	4.158	4.168	4.179	4.190	4.201	4.211	4.222	4.233	4.244	4.255	470
480	4.255	4.265	4.276	4.287	4.298	4.309	4.319	4.330	4.341	4.352	4.363	480
490	4.363	4.373	4.384	4.395	4.406	4.417	4.428	4.439	4.449	4.460	4.471	490
500	4.471	4.482	4.493	4.504	4.515	4.526	4.537	4.548	4.558	4.569	4.580	500
510	4.580	4.591	4.602	4.613	4.624	4.635	4.646	4.657	4.668	4.679	4.690	510
520	4.690	4.701	4.712	4.723	4.734	4.745	4.756	4.767	4.778	4.789	4.800	520
530	4.800	4.811	4.822	4.833	4.844	4.855	4.866	4.877	4.888	4.899	4.910	530
540	4.910	4.922	4.933	4.944	4.955	4.966	4.977	4.988	4.999	5.010	5.021	540
550	5.021	5.033	5.044	5.055	5.066	5.077	5.088	5.099	5.111	5.122	5.133	550
560	5.133	5.144	5.155	5.166	5.178	5.189	5.200	5.211	5.222	5.234	5.245	560
570	5.245	5.256	5.267	5.279	5.290	5.301	5.312	5.323	5.335	5.346	5.357	570
580	5.357	5.369	5.380	5.391	5.402	5.414	5.425	5.436	5.448	5.459	5.470	580
590	5.470	5.481	5.493	5.504	5.515	5.527	5.538	5.549	5.561	5.572	5.583	590
600	5.583	5.595	5.606	5.618	5.629	5.640	5.652	5.663	5.674	5.686	5.697	600
610	5.697	5.709	5.720	5.731	5.743	5.754	5.766	5.777	5.789	5.800	5.812	610
620	5.812	5.823	5.834	5.846	5.857	5.869	5.880	5.892	5.903	5.915	5.926	620
630	5.926	5.938	5.949	5.961	5.972	5.984	5.995	6.007	6.018	6.030	6.041	630
640	6.041	6.053	6.065	6.076	6.088	6.099	6.111	6.122	6.134	6.146	6.157	640
650	6.157	6.169	6.180	6.192	6.204	6.215	6.227	6.238	6.250	6.262	6.273	650
660	6.273	6.285	6.297	6.308	6.320	6.332	6.343	6.355	6.367	6.378	6.390	660
670	6.390	6.402	6.413	6.425	6.437	6.448	6.460	6.472	6.484	6.495	6.507	670
680	6.507	6.519	6.531	6.542	6.554	6.566	6.578	6.589	6.601	6.613	6.625	680
690	6.625	6.636	6.648	6.660	6.672	6.684	6.695	6.707	6.719	6.731	6.743	690
700	6.743	6.755	6.766	6.778	6.790	6.802	6.814	6.826	6.838	6.849	6.861	700
710	6.861	6.873	6.885	6.897	6.909	6.921	6.933	6.945	6.956	6.968	6.980	710
720	6.980	6.992	7.004	7.016	7.028	7.040	7.052	7.064	7.076	7.088	7.100	720
730	7.100	7.112	7.124	7.136	7.148	7.160	7.172	7.184	7.196	7.208	7.220	730
740	7.220	7.232	7.244	7.256	7.268	7.280	7.292	7.304	7.316	7.328	7.340	740
750	7.340	7.352	7.364	7.376	7.389	7.401	7.413	7.425	7.437	7.449	7.461	750
760	7.461	7.473	7.485	7.498	7.510	7.522	7.534	7.546	7.558	7.570	7.583	760
770	7.583	7.595	7.607	7.619	7.631	7.644	7.656	7.668	7.680	7.692	7.705	770
780	7.705	7.717	7.729	7.741	7.753	7.766	7.778	7.790	7.802	7.815	7.827	780
790	7.827	7.839	7.851	7.864	7.876	7.888	7.901	7.913	7.925	7.938	7.950	790
800	7.950	7.962	7.974	7.987	7.999	8.011	8.024	8.036	8.048	8.061	8.073	800
810	8.073	8.086	8.098	8.110	8.123	8.135	8.147	8.160	8.172	8.185	8.197	810
820	8.197	8.209	8.222	8.234	8.247	8.259	8.272	8.284	8.296	8.309	8.321	820
830	8.321	8.334	8.346	8.359	8.371	8.384	8.396	8.409	8.421	8.434	8.446	830
840	8.446	8.459	8.471	8.484	8.496	8.509	8.521	8.534	8.546	8.559	8.571	840
850	8.571	8.584	8.597	8.609	8.622	8.634	8.647	8.659	8.672	8.685	8.697	850
860	8.697	8.710	8.722	8.735	8.748	8.760	8.773	8.785	8.798	8.811	8.823	860
870	8.823	8.836	8.849	8.861	8.874	8.887	8.899	8.912	8.925	8.937	8.950	870
880	8.950	8.963	8.975	8.988	9.001	9.014	9.026	9.039	9.052	9.065	9.077	880
890	9.077	9.090	9.103	9.115	9.128	9.141	9.154	9.167	9.179	9.192	9.205	890

°C	0	1	2	3	4	5	6	7	8	9	10	°C

TABLE 13 ***Type R Thermocouple*** *— thermoelectric voltage as a function of temperature (°C); reference junctions at 0 °C*

°C	0	1	2	3	4	5	6	7	8	9	10	°C
						Thermoelectric Voltage in Millivolts						
900	9.205	9.218	9.230	9.243	9.256	9.269	9.282	9.294	9.307	9.320	9.333	900
910	9.333	9.346	9.359	9.371	9.384	9.397	9.410	9.423	9.436	9.449	9.461	910
920	9.461	9.474	9.487	9.500	9.513	9.526	9.539	9.552	9.565	9.578	9.590	920
930	9.590	9.603	9.616	9.629	9.642	9.655	9.668	9.681	9.694	9.707	9.720	930
940	9.720	9.733	9.746	9.759	9.772	9.785	9.798	9.811	9.824	9.837	9.850	940
950	9.850	9.863	9.876	9.889	9.902	9.915	9.928	9.941	9.954	9.967	9.980	950
960	9.980	9.993	10.006	10.019	10.032	10.046	10.059	10.072	10.085	10.098	10.111	960
970	10.111	10.124	10.137	10.150	10.163	10.177	10.190	10.203	10.216	10.229	10.242	970
980	10.242	10.255	10.268	10.282	10.295	10.308	10.321	10.334	10.347	10.361	10.374	980
990	10.374	10.387	10.400	10.413	10.427	10.440	10.453	10.466	10.480	10.493	10.506	990
1000	10.506	10.519	10.532	10.546	10.559	10.572	10.585	10.599	10.612	10.625	10.638	1000
1010	10.638	10.652	10.665	10.678	10.692	10.705	10.718	10.731	10.745	10.758	10.771	1010
1020	10.771	10.785	10.798	10.811	10.825	10.838	10.851	10.865	10.878	10.891	10.905	1020
1030	10.905	10.918	10.932	10.945	10.958	10.972	10.985	10.998	11.012	11.025	11.039	1030
1040	11.039	11.052	11.065	11.079	11.092	11.106	11.119	11.132	11.146	11.159	11.173	1040
1050	11.173	11.186	11.200	11.213	11.227	11.240	11.253	11.267	11.280	11.294	11.307	1050
1060	11.307	11.321	11.334	11.348	11.361	11.375	11.388	11.402	11.415	11.429	11.442	1060
1070	11.442	11.456	11.469	11.483	11.496	11.510	11.524	11.537	11.551	11.564	11.578	1070
1080	11.578	11.591	11.605	11.618	11.632	11.646	11.659	11.673	11.686	11.700	11.714	1080
1090	11.714	11.727	11.741	11.754	11.768	11.782	11.795	11.809	11.822	11.836	11.850	1090
1100	11.850	11.863	11.877	11.891	11.904	11.918	11.931	11.945	11.959	11.972	11.986	1100
1110	11.986	12.000	12.013	12.027	12.041	12.054	12.068	12.082	12.096	12.109	12.123	1110
1120	12.123	12.137	12.150	12.164	12.178	12.191	12.205	12.219	12.233	12.246	12.260	1120
1130	12.260	12.274	12.288	12.301	12.315	12.329	12.342	12.356	12.370	12.384	12.397	1130
1140	12.397	12.411	12.425	12.439	12.453	12.466	12.480	12.494	12.508	12.521	12.535	1140
1150	12.535	12.549	12.563	12.577	12.590	12.604	12.618	12.632	12.646	12.659	12.673	1150
1160	12.673	12.687	12.701	12.715	12.729	12.742	12.756	12.770	12.784	12.798	12.812	1160
1170	12.812	12.825	12.839	12.853	12.867	12.881	12.895	12.909	12.922	12.936	12.950	1170
1180	12.950	12.964	12.978	12.992	13.006	13.019	13.033	13.047	13.061	13.075	13.089	1180
1190	13.089	13.103	13.117	13.131	13.145	13.158	13.172	13.186	13.200	13.214	13.228	1190
1200	13.228	13.242	13.256	13.270	13.284	13.298	13.311	13.325	13.339	13.353	13.367	1200
1210	13.367	13.381	13.395	13.409	13.423	13.437	13.451	13.465	13.479	13.493	13.507	1210
1220	13.507	13.521	13.535	13.549	13.563	13.577	13.590	13.604	13.618	13.632	13.646	1220
1230	13.646	13.660	13.674	13.688	13.702	13.716	13.730	13.744	13.758	13.772	13.786	1230
1240	13.786	13.800	13.814	13.828	13.842	13.856	13.870	13.884	13.898	13.912	13.926	1240
1250	13.926	13.940	13.954	13.968	13.982	13.996	14.010	14.024	14.038	14.052	14.066	1250
1260	14.066	14.081	14.095	14.109	14.123	14.137	14.151	14.165	14.179	14.193	14.207	1260
1270	14.207	14.221	14.235	14.249	14.263	14.277	14.291	14.305	14.319	14.333	14.347	1270
1280	14.347	14.361	14.375	14.390	14.404	14.418	14.432	14.446	14.460	14.474	14.488	1280
1290	14.488	14.502	14.516	14.530	14.544	14.558	14.572	14.586	14.601	14.615	14.629	1290
1300	14.629	14.643	14.657	14.671	14.685	14.699	14.713	14.727	14.741	14.755	14.770	1300
1310	14.770	14.784	14.798	14.812	14.826	14.840	14.854	14.868	14.882	14.896	14.911	1310
1320	14.911	14.925	14.939	14.953	14.967	14.981	14.995	15.009	15.023	15.037	15.052	1320
1330	15.052	15.066	15.080	15.094	15.108	15.122	15.136	15.150	15.164	15.179	15.193	1330
1340	15.193	15.207	15.221	15.235	15.249	15.263	15.277	15.291	15.306	15.320	15.334	1340
1350	15.334	15.348	15.362	15.376	15.390	15.404	15.419	15.433	15.447	15.461	15.475	1350
1360	15.475	15.489	15.503	15.517	15.531	15.546	15.560	15.574	15.588	15.602	15.616	1360
1370	15.616	15.630	15.645	15.659	15.673	15.687	15.701	15.715	15.729	15.743	15.758	1370
1380	15.758	15.772	15.786	15.800	15.814	15.828	15.842	15.856	15.871	15.885	15.899	1380
1390	15.899	15.913	15.927	15.941	15.955	15.969	15.984	15.998	16.012	16.026	16.040	1390
°C	0	1	2	3	4	5	6	7	8	9	10	°C

TABLE 13 ***Type R Thermocouple*** *— thermoelectric voltage as a function of temperature (°C); reference junctions at 0 °C*

°C	0	1	2	3	4	5	6	7	8	9	10	°C
						Thermoelectric Voltage in Millivolts						
1400	16.040	16.054	16.068	16.082	16.097	16.111	16.125	16.139	16.153	16.167	16.181	1400
1410	16.181	16.196	16.210	16.224	16.238	16.252	16.266	16.280	16.294	16.309	16.323	1410
1420	16.323	16.337	16.351	16.365	16.379	16.393	16.407	16.422	16.436	16.450	16.464	1420
1430	16.464	16.478	16.492	16.506	16.520	16.534	16.549	16.563	16.577	16.591	16.605	1430
1440	16.605	16.619	16.633	16.647	16.662	16.676	16.690	16.704	16.718	16.732	16.746	1440
1450	16.746	16.760	16.774	16.789	16.803	16.817	16.831	16.845	16.859	16.873	16.887	1450
1460	16.887	16.901	16.915	16.930	16.944	16.958	16.972	16.986	17.000	17.014	17.028	1460
1470	17.028	17.042	17.056	17.071	17.085	17.099	17.113	17.127	17.141	17.155	17.169	1470
1480	17.169	17.183	17.197	17.211	17.225	17.240	17.254	17.268	17.282	17.296	17.310	1480
1490	17.310	17.324	17.338	17.352	17.366	17.380	17.394	17.408	17.423	17.437	17.451	1490
1500	17.451	17.465	17.479	17.493	17.507	17.521	17.535	17.549	17.563	17.577	17.591	1500
1510	17.591	17.605	17.619	17.633	17.647	17.661	17.676	17.690	17.704	17.718	17.732	1510
1520	17.732	17.746	17.760	17.774	17.788	17.802	17.816	17.830	17.844	17.858	17.872	1520
1530	17.872	17.886	17.900	17.914	17.928	17.942	17.956	17.970	17.984	17.998	18.012	1530
1540	18.012	18.026	18.040	18.054	18.068	18.082	18.096	18.110	18.124	18.138	18.152	1540
1550	18.152	18.166	18.180	18.194	18.208	18.222	18.236	18.250	18.264	18.278	18.292	1550
1560	18.292	18.306	18.320	18.334	18.348	18.362	18.376	18.390	18.404	18.417	18.431	1560
1570	18.431	18.445	18.459	18.473	18.487	18.501	18.515	18.529	18.543	18.557	18.571	1570
1580	18.571	18.585	18.599	18.613	18.627	18.640	18.654	18.668	18.682	18.696	18.710	1580
1590	18.710	18.724	18.738	18.752	18.766	18.779	18.793	18.807	18.821	18.835	18.849	1590
1600	18.849	18.863	18.877	18.891	18.904	18.918	18.932	18.946	18.960	18.974	18.988	1600
1610	18.988	19.002	19.015	19.029	19.043	19.057	19.071	19.085	19.098	19.112	19.126	1610
1620	19.126	19.140	19.154	19.168	19.181	19.195	19.209	19.223	19.237	19.250	19.264	1620
1630	19.264	19.278	19.292	19.306	19.319	19.333	19.347	19.361	19.375	19.388	19.402	1630
1640	19.402	19.416	19.430	19.444	19.457	19.471	19.485	19.499	19.512	19.526	19.540	1640
1650	19.540	19.554	19.567	19.581	19.595	19.609	19.622	19.636	19.650	19.663	19.677	1650
1660	19.677	19.691	19.705	19.718	19.732	19.746	19.759	19.773	19.787	19.800	19.814	1660
1670	19.814	19.828	19.841	19.855	19.869	19.882	19.896	19.910	19.923	19.937	19.951	1670
1680	19.951	19.964	19.978	19.992	20.005	20.019	20.032	20.046	20.060	20.073	20.087	1680
1690	20.087	20.100	20.114	20.127	20.141	20.154	20.168	20.181	20.195	20.208	20.222	1690
1700	20.222	20.235	20.249	20.262	20.275	20.289	20.302	20.316	20.329	20.342	20.356	1700
1710	20.356	20.369	20.382	20.396	20.409	20.422	20.436	20.449	20.462	20.475	20.488	1710
1720	20.488	20.502	20.515	20.528	20.541	20.554	20.567	20.581	20.594	20.607	20.620	1720
1730	20.620	20.633	20.646	20.659	20.672	20.685	20.698	20.711	20.724	20.736	20.749	1730
1740	20.749	20.762	20.775	20.788	20.801	20.813	20.826	20.839	20.852	20.864	20.877	1740
1750	20.877	20.890	20.902	20.915	20.928	20.940	20.953	20.965	20.978	20.990	21.003	1750
1760	21.003	21.015	21.027	21.040	21.052	21.065	21.077	21.089	21.101			1760

°C	0	1	2	3	4	5	6	7	8	9	10	°C

TABLE 14 ***Type R Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
-50	-0.210	-0.212	-0.214	-0.216	-0.218	-0.220	-0.222	-0.224	-0.226			-50
-40	-0.188	-0.190	-0.192	-0.194	-0.197	-0.199	-0.201	-0.203	-0.205	-0.208	-0.210	-40
-30	-0.165	-0.167	-0.169	-0.172	-0.174	-0.176	-0.179	-0.181	-0.183	-0.185	-0.188	-30
-20	-0.141	-0.143	-0.145	-0.148	-0.150	-0.153	-0.155	-0.158	-0.160	-0.162	-0.165	-20
-10	-0.116	-0.118	-0.121	-0.123	-0.126	-0.128	-0.131	-0.133	-0.136	-0.138	-0.141	-10
0	-0.090	-0.092	-0.095	-0.097	-0.100	-0.103	-0.105	-0.108	-0.110	-0.113	-0.116	0
0	-0.090	-0.087	-0.084	-0.082	-0.079	-0.076	-0.073	-0.071	-0.068	-0.065	-0.063	0
10	-0.063	-0.060	-0.057	-0.054	-0.051	-0.049	-0.046	-0.043	-0.040	-0.037	-0.035	10
20	-0.035	-0.032	-0.029	-0.026	-0.023	-0.020	-0.017	-0.015	-0.012	-0.009	-0.006	20
30	-0.006	-0.003	0.000	0.003	0.006	0.009	0.012	0.015	0.018	0.021	0.024	30
40	0.024	0.027	0.030	0.033	0.036	0.039	0.042	0.045	0.048	0.051	0.054	40
50	0.054	0.057	0.060	0.064	0.067	0.070	0.073	0.076	0.079	0.082	0.086	50
60	0.086	0.089	0.092	0.095	0.098	0.102	0.105	0.108	0.111	0.114	0.118	60
70	0.118	0.121	0.124	0.127	0.131	0.134	0.137	0.141	0.144	0.147	0.151	70
80	0.151	0.154	0.157	0.161	0.164	0.167	0.171	0.174	0.177	0.181	0.184	80
90	0.184	0.188	0.191	0.194	0.198	0.201	0.205	0.208	0.212	0.215	0.218	90
100	0.218	0.222	0.225	0.229	0.232	0.236	0.239	0.243	0.246	0.250	0.254	100
110	0.254	0.257	0.261	0.264	0.268	0.271	0.275	0.278	0.282	0.286	0.289	110
120	0.289	0.293	0.296	0.300	0.304	0.307	0.311	0.315	0.318	0.322	0.326	120
130	0.326	0.329	0.333	0.337	0.340	0.344	0.348	0.352	0.355	0.359	0.363	130
140	0.363	0.366	0.370	0.374	0.378	0.382	0.385	0.389	0.393	0.397	0.400	140
150	0.400	0.404	0.408	0.412	0.416	0.420	0.423	0.427	0.431	0.435	0.439	150
160	0.439	0.443	0.447	0.450	0.454	0.458	0.462	0.466	0.470	0.474	0.478	160
170	0.478	0.482	0.486	0.489	0.493	0.497	0.501	0.505	0.509	0.513	0.517	170
180	0.517	0.521	0.525	0.529	0.533	0.537	0.541	0.545	0.549	0.553	0.557	180
190	0.557	0.561	0.565	0.569	0.573	0.578	0.582	0.586	0.590	0.594	0.598	190
200	0.598	0.602	0.606	0.610	0.614	0.618	0.623	0.627	0.631	0.635	0.639	200
210	0.639	0.643	0.647	0.652	0.656	0.660	0.664	0.668	0.672	0.677	0.681	210
220	0.681	0.685	0.689	0.693	0.698	0.702	0.706	0.710	0.715	0.719	0.723	220
230	0.723	0.727	0.732	0.736	0.740	0.744	0.749	0.753	0.757	0.761	0.766	230
240	0.766	0.770	0.774	0.779	0.783	0.787	0.792	0.796	0.800	0.805	0.809	240
250	0.809	0.813	0.818	0.822	0.826	0.831	0.835	0.839	0.844	0.848	0.853	250
260	0.853	0.857	0.861	0.866	0.870	0.875	0.879	0.883	0.888	0.892	0.897	260
270	0.897	0.901	0.906	0.910	0.915	0.919	0.923	0.928	0.932	0.937	0.941	270
280	0.941	0.946	0.950	0.955	0.959	0.964	0.968	0.973	0.977	0.982	0.986	280
290	0.986	0.991	0.995	1.000	1.005	1.009	1.014	1.018	1.023	1.027	1.032	290
300	1.032	1.036	1.041	1.046	1.050	1.055	1.059	1.064	1.069	1.073	1.078	300
310	1.078	1.082	1.087	1.092	1.096	1.101	1.105	1.110	1.115	1.119	1.124	310
320	1.124	1.129	1.133	1.138	1.143	1.147	1.152	1.157	1.161	1.166	1.171	320
330	1.171	1.175	1.180	1.185	1.190	1.194	1.199	1.204	1.208	1.213	1.218	330
340	1.218	1.223	1.227	1.232	1.237	1.242	1.246	1.251	1.256	1.261	1.265	340
350	1.265	1.270	1.275	1.280	1.284	1.289	1.294	1.299	1.304	1.308	1.313	350
360	1.313	1.318	1.323	1.328	1.332	1.337	1.342	1.347	1.352	1.356	1.361	360
370	1.361	1.366	1.371	1.376	1.381	1.386	1.390	1.395	1.400	1.405	1.410	370
380	1.410	1.415	1.420	1.425	1.429	1.434	1.439	1.444	1.449	1.454	1.459	380
390	1.459	1.464	1.469	1.473	1.478	1.483	1.488	1.493	1.498	1.503	1.508	390
400	1.508	1.513	1.518	1.523	1.528	1.533	1.538	1.543	1.548	1.553	1.558	400
410	1.558	1.563	1.568	1.572	1.577	1.582	1.587	1.592	1.597	1.602	1.607	410
420	1.607	1.612	1.617	1.622	1.627	1.632	1.638	1.643	1.648	1.653	1.658	420
430	1.658	1.663	1.668	1.673	1.678	1.683	1.688	1.693	1.698	1.703	1.708	430
440	1.708	1.713	1.718	1.723	1.728	1.733	1.739	1.744	1.749	1.754	1.759	440
°F	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**°F**

TABLE 14 ***Type R Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
450	1.759	1.764	1.769	1.774	1.779	1.784	1.790	1.795	1.800	1.805	1.810	450
460	1.810	1.815	1.820	1.825	1.831	1.836	1.841	1.846	1.851	1.856	1.861	460
470	1.861	1.867	1.872	1.877	1.882	1.887	1.892	1.898	1.903	1.908	1.913	470
480	1.913	1.918	1.923	1.929	1.934	1.939	1.944	1.949	1.955	1.960	1.965	480
490	1.965	1.970	1.975	1.981	1.986	1.991	1.996	2.002	2.007	2.012	2.017	490
500	2.017	2.022	2.028	2.033	2.038	2.043	2.049	2.054	2.059	2.064	2.070	500
510	2.070	2.075	2.080	2.085	2.091	2.096	2.101	2.107	2.112	2.117	2.122	510
520	2.122	2.128	2.133	2.138	2.144	2.149	2.154	2.159	2.165	2.170	2.175	520
530	2.175	2.181	2.186	2.191	2.197	2.202	2.207	2.213	2.218	2.223	2.229	530
540	2.229	2.234	2.239	2.245	2.250	2.255	2.261	2.266	2.271	2.277	2.282	540
550	2.282	2.287	2.293	2.298	2.304	2.309	2.314	2.320	2.325	2.330	2.336	550
560	2.336	2.341	2.347	2.352	2.357	2.363	2.368	2.374	2.379	2.384	2.390	560
570	2.390	2.395	2.401	2.406	2.411	2.417	2.422	2.428	2.433	2.438	2.444	570
580	2.444	2.449	2.455	2.460	2.466	2.471	2.477	2.482	2.487	2.493	2.498	580
590	2.498	2.504	2.509	2.515	2.520	2.526	2.531	2.537	2.542	2.547	2.553	590
600	2.553	2.558	2.564	2.569	2.575	2.580	2.586	2.591	2.597	2.602	2.608	600
610	2.608	2.613	2.619	2.624	2.630	2.635	2.641	2.646	2.652	2.657	2.663	610
620	2.663	2.668	2.674	2.679	2.685	2.690	2.696	2.701	2.707	2.713	2.718	620
630	2.718	2.724	2.729	2.735	2.740	2.746	2.751	2.757	2.762	2.768	2.773	630
640	2.773	2.779	2.785	2.790	2.796	2.801	2.807	2.812	2.818	2.824	2.829	640
650	2.829	2.835	2.840	2.846	2.851	2.857	2.863	2.868	2.874	2.879	2.885	650
660	2.885	2.891	2.896	2.902	2.907	2.913	2.919	2.924	2.930	2.935	2.941	660
670	2.941	2.947	2.952	2.958	2.964	2.969	2.975	2.980	2.986	2.992	2.997	670
680	2.997	3.003	3.009	3.014	3.020	3.026	3.031	3.037	3.042	3.048	3.054	680
690	3.054	3.059	3.065	3.071	3.076	3.082	3.088	3.093	3.099	3.105	3.110	690
700	3.110	3.116	3.122	3.127	3.133	3.139	3.144	3.150	3.156	3.161	3.167	700
710	3.167	3.173	3.179	3.184	3.190	3.196	3.201	3.207	3.213	3.218	3.224	710
720	3.224	3.230	3.236	3.241	3.247	3.253	3.258	3.264	3.270	3.276	3.281	720
730	3.281	3.287	3.293	3.298	3.304	3.310	3.316	3.321	3.327	3.333	3.339	730
740	3.339	3.344	3.350	3.356	3.362	3.367	3.373	3.379	3.385	3.390	3.396	740
750	3.396	3.402	3.408	3.413	3.419	3.425	3.431	3.437	3.442	3.448	3.454	750
760	3.454	3.460	3.465	3.471	3.477	3.483	3.489	3.494	3.500	3.506	3.512	760
770	3.512	3.517	3.523	3.529	3.535	3.541	3.546	3.552	3.558	3.564	3.570	770
780	3.570	3.576	3.581	3.587	3.593	3.599	3.605	3.610	3.616	3.622	3.628	780
790	3.628	3.634	3.640	3.645	3.651	3.657	3.663	3.669	3.675	3.680	3.686	790
800	3.686	3.692	3.698	3.704	3.710	3.716	3.721	3.727	3.733	3.739	3.745	800
810	3.745	3.751	3.757	3.762	3.768	3.774	3.780	3.786	3.792	3.798	3.803	810
820	3.803	3.809	3.815	3.821	3.827	3.833	3.839	3.845	3.851	3.856	3.862	820
830	3.862	3.868	3.874	3.880	3.886	3.892	3.898	3.904	3.909	3.915	3.921	830
840	3.921	3.927	3.933	3.939	3.945	3.951	3.957	3.963	3.969	3.975	3.980	840
850	3.980	3.986	3.992	3.998	4.004	4.010	4.016	4.022	4.028	4.034	4.040	850
860	4.040	4.046	4.052	4.058	4.064	4.069	4.075	4.081	4.087	4.093	4.099	860
870	4.099	4.105	4.111	4.117	4.123	4.129	4.135	4.141	4.147	4.153	4.159	870
880	4.159	4.165	4.171	4.177	4.183	4.189	4.195	4.201	4.207	4.213	4.219	880
890	4.219	4.225	4.231	4.237	4.243	4.249	4.255	4.261	4.267	4.273	4.279	890
900	4.279	4.285	4.291	4.297	4.303	4.309	4.315	4.321	4.327	4.333	4.339	900
910	4.339	4.345	4.351	4.357	4.363	4.369	4.375	4.381	4.387	4.393	4.399	910
920	4.399	4.405	4.411	4.417	4.423	4.429	4.435	4.441	4.447	4.453	4.459	920
930	4.459	4.465	4.471	4.477	4.483	4.489	4.495	4.502	4.508	4.514	4.520	930
940	4.520	4.526	4.532	4.538	4.544	4.550	4.556	4.562	4.568	4.574	4.580	940

°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 14 ***Type R Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
950	4.580	4.586	4.593	4.599	4.605	4.611	4.617	4.623	4.629	4.635	4.641	950
960	4.641	4.647	4.653	4.659	4.666	4.672	4.678	4.684	4.690	4.696	4.702	960
970	4.702	4.708	4.714	4.720	4.727	4.733	4.739	4.745	4.751	4.757	4.763	970
980	4.763	4.769	4.775	4.782	4.788	4.794	4.800	4.806	4.812	4.818	4.824	980
990	4.824	4.831	4.837	4.843	4.849	4.855	4.861	4.867	4.874	4.880	4.886	990
1000	4.886	4.892	4.898	4.904	4.910	4.917	4.923	4.929	4.935	4.941	4.947	1000
1010	4.947	4.954	4.960	4.966	4.972	4.978	4.984	4.991	4.997	5.003	5.009	1010
1020	5.009	5.015	5.021	5.028	5.034	5.040	5.046	5.052	5.059	5.065	5.071	1020
1030	5.071	5.077	5.083	5.090	5.096	5.102	5.108	5.114	5.121	5.127	5.133	1030
1040	5.133	5.139	5.145	5.152	5.158	5.164	5.170	5.176	5.183	5.189	5.195	1040
1050	5.195	5.201	5.207	5.214	5.220	5.226	5.232	5.239	5.245	5.251	5.257	1050
1060	5.257	5.264	5.270	5.276	5.282	5.289	5.295	5.301	5.307	5.313	5.320	1060
1070	5.320	5.326	5.332	5.338	5.345	5.351	5.357	5.364	5.370	5.376	5.382	1070
1080	5.382	5.389	5.395	5.401	5.407	5.414	5.420	5.426	5.432	5.439	5.445	1080
1090	5.445	5.451	5.458	5.464	5.470	5.476	5.483	5.489	5.495	5.502	5.508	1090
1100	5.508	5.514	5.520	5.527	5.533	5.539	5.546	5.552	5.558	5.565	5.571	1100
1110	5.571	5.577	5.583	5.590	5.596	5.602	5.609	5.615	5.621	5.628	5.634	1110
1120	5.634	5.640	5.647	5.653	5.659	5.666	5.672	5.678	5.685	5.691	5.697	1120
1130	5.697	5.704	5.710	5.716	5.723	5.729	5.735	5.742	5.748	5.754	5.761	1130
1140	5.761	5.767	5.773	5.780	5.786	5.792	5.799	5.805	5.812	5.818	5.824	1140
1150	5.824	5.831	5.837	5.843	5.850	5.856	5.862	5.869	5.875	5.882	5.888	1150
1160	5.888	5.894	5.901	5.907	5.913	5.920	5.926	5.933	5.939	5.945	5.952	1160
1170	5.952	5.958	5.965	5.971	5.977	5.984	5.990	5.997	6.003	6.009	6.016	1170
1180	6.016	6.022	6.029	6.035	6.041	6.048	6.054	6.061	6.067	6.074	6.080	1180
1190	6.080	6.086	6.093	6.099	6.106	6.112	6.119	6.125	6.131	6.138	6.144	1190
1200	6.144	6.151	6.157	6.164	6.170	6.176	6.183	6.189	6.196	6.202	6.209	1200
1210	6.209	6.215	6.222	6.228	6.235	6.241	6.247	6.254	6.260	6.267	6.273	1210
1220	6.273	6.280	6.286	6.293	6.299	6.306	6.312	6.319	6.325	6.332	6.338	1220
1230	6.338	6.345	6.351	6.358	6.364	6.370	6.377	6.383	6.390	6.396	6.403	1230
1240	6.403	6.409	6.416	6.422	6.429	6.435	6.442	6.448	6.455	6.461	6.468	1240
1250	6.468	6.474	6.481	6.488	6.494	6.501	6.507	6.514	6.520	6.527	6.533	1250
1260	6.533	6.540	6.546	6.553	6.559	6.566	6.572	6.579	6.585	6.592	6.598	1260
1270	6.598	6.605	6.612	6.618	6.625	6.631	6.638	6.644	6.651	6.657	6.664	1270
1280	6.664	6.671	6.677	6.684	6.690	6.697	6.703	6.710	6.716	6.723	6.730	1280
1290	6.730	6.736	6.743	6.749	6.756	6.762	6.769	6.776	6.782	6.789	6.795	1290
1300	6.795	6.802	6.809	6.815	6.822	6.828	6.835	6.841	6.848	6.855	6.861	1300
1310	6.861	6.868	6.874	6.881	6.888	6.894	6.901	6.908	6.914	6.921	6.927	1310
1320	6.927	6.934	6.941	6.947	6.954	6.960	6.967	6.974	6.980	6.987	6.994	1320
1330	6.994	7.000	7.007	7.013	7.020	7.027	7.033	7.040	7.047	7.053	7.060	1330
1340	7.060	7.067	7.073	7.080	7.086	7.093	7.100	7.106	7.113	7.120	7.126	1340
1350	7.126	7.133	7.140	7.146	7.153	7.160	7.166	7.173	7.180	7.186	7.193	1350
1360	7.193	7.200	7.206	7.213	7.220	7.226	7.233	7.240	7.247	7.253	7.260	1360
1370	7.260	7.267	7.273	7.280	7.287	7.293	7.300	7.307	7.313	7.320	7.327	1370
1380	7.327	7.334	7.340	7.347	7.354	7.360	7.367	7.374	7.381	7.387	7.394	1380
1390	7.394	7.401	7.407	7.414	7.421	7.428	7.434	7.441	7.448	7.454	7.461	1390
1400	7.461	7.468	7.475	7.481	7.488	7.495	7.502	7.508	7.515	7.522	7.529	1400
1410	7.529	7.535	7.542	7.549	7.556	7.562	7.569	7.576	7.583	7.589	7.596	1410
1420	7.596	7.603	7.610	7.616	7.623	7.630	7.637	7.644	7.650	7.657	7.664	1420
1430	7.664	7.671	7.677	7.684	7.691	7.698	7.705	7.711	7.718	7.725	7.732	1430
1440	7.732	7.739	7.745	7.752	7.759	7.766	7.772	7.779	7.786	7.793	7.800	1440

°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 14 ***Type R Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
1450	7.800	7.807	7.813	7.820	7.827	7.834	7.841	7.847	7.854	7.861	7.868	1450
1460	7.868	7.875	7.882	7.888	7.895	7.902	7.909	7.916	7.922	7.929	7.936	1460
1470	7.936	7.943	7.950	7.957	7.964	7.970	7.977	7.984	7.991	7.998	8.005	1470
1480	8.005	8.011	8.018	8.025	8.032	8.039	8.046	8.053	8.059	8.066	8.073	1480
1490	8.073	8.080	8.087	8.094	8.101	8.108	8.114	8.121	8.128	8.135	8.142	1490
1500	8.142	8.149	8.156	8.163	8.169	8.176	8.183	8.190	8.197	8.204	8.211	1500
1510	8.211	8.218	8.225	8.232	8.238	8.245	8.252	8.259	8.266	8.273	8.280	1510
1520	8.280	8.287	8.294	8.301	8.308	8.314	8.321	8.328	8.335	8.342	8.349	1520
1530	8.349	8.356	8.363	8.370	8.377	8.384	8.391	8.398	8.405	8.411	8.418	1530
1540	8.418	8.425	8.432	8.439	8.446	8.453	8.460	8.467	8.474	8.481	8.488	1540
1550	8.488	8.495	8.502	8.509	8.516	8.523	8.530	8.537	8.544	8.551	8.557	1550
1560	8.557	8.564	8.571	8.578	8.585	8.592	8.599	8.606	8.613	8.620	8.627	1560
1570	8.627	8.634	8.641	8.648	8.655	8.662	8.669	8.676	8.683	8.690	8.697	1570
1580	8.697	8.704	8.711	8.718	8.725	8.732	8.739	8.746	8.753	8.760	8.767	1580
1590	8.767	8.774	8.781	8.788	8.795	8.802	8.809	8.816	8.823	8.830	8.837	1590
1600	8.837	8.844	8.852	8.859	8.866	8.873	8.880	8.887	8.894	8.901	8.908	1600
1610	8.908	8.915	8.922	8.929	8.936	8.943	8.950	8.957	8.964	8.971	8.978	1610
1620	8.978	8.985	8.992	8.999	9.007	9.014	9.021	9.028	9.035	9.042	9.049	1620
1630	9.049	9.056	9.063	9.070	9.077	9.084	9.091	9.098	9.106	9.113	9.120	1630
1640	9.120	9.127	9.134	9.141	9.148	9.155	9.162	9.169	9.176	9.184	9.191	1640
1650	9.191	9.198	9.205	9.212	9.219	9.226	9.233	9.240	9.248	9.255	9.262	1650
1660	9.262	9.269	9.276	9.283	9.290	9.297	9.304	9.312	9.319	9.326	9.333	1660
1670	9.333	9.340	9.347	9.354	9.361	9.369	9.376	9.383	9.390	9.397	9.404	1670
1680	9.404	9.411	9.419	9.426	9.433	9.440	9.447	9.454	9.461	9.469	9.476	1680
1690	9.476	9.483	9.490	9.497	9.504	9.512	9.519	9.526	9.533	9.540	9.547	1690
1700	9.547	9.555	9.562	9.569	9.576	9.583	9.590	9.598	9.605	9.612	9.619	1700
1710	9.619	9.626	9.634	9.641	9.648	9.655	9.662	9.670	9.677	9.684	9.691	1710
1720	9.691	9.698	9.706	9.713	9.720	9.727	9.734	9.742	9.749	9.756	9.763	1720
1730	9.763	9.770	9.778	9.785	9.792	9.799	9.806	9.814	9.821	9.828	9.835	1730
1740	9.835	9.843	9.850	9.857	9.864	9.872	9.879	9.886	9.893	9.900	9.908	1740
1750	9.908	9.915	9.922	9.929	9.937	9.944	9.951	9.958	9.966	9.973	9.980	1750
1760	9.980	9.987	9.995	10.002	10.009	10.016	10.024	10.031	10.038	10.046	10.053	1760
1770	10.053	10.060	10.067	10.075	10.082	10.089	10.096	10.104	10.111	10.118	10.126	1770
1780	10.126	10.133	10.140	10.147	10.155	10.162	10.169	10.177	10.184	10.191	10.198	1780
1790	10.198	10.206	10.213	10.220	10.228	10.235	10.242	10.250	10.257	10.264	10.271	1790
1800	10.271	10.279	10.286	10.293	10.301	10.308	10.315	10.323	10.330	10.337	10.345	1800
1810	10.345	10.352	10.359	10.367	10.374	10.381	10.389	10.396	10.403	10.411	10.418	1810
1820	10.418	10.425	10.433	10.440	10.447	10.455	10.462	10.469	10.477	10.484	10.491	1820
1830	10.491	10.499	10.506	10.513	10.521	10.528	10.535	10.543	10.550	10.557	10.565	1830
1840	10.565	10.572	10.580	10.587	10.594	10.602	10.609	10.616	10.624	10.631	10.638	1840
1850	10.638	10.646	10.653	10.661	10.668	10.675	10.683	10.690	10.698	10.705	10.712	1850
1860	10.712	10.720	10.727	10.734	10.742	10.749	10.757	10.764	10.771	10.779	10.786	1860
1870	10.786	10.794	10.801	10.808	10.816	10.823	10.831	10.838	10.845	10.853	10.860	1870
1880	10.860	10.868	10.875	10.883	10.890	10.897	10.905	10.912	10.920	10.927	10.934	1880
1890	10.934	10.942	10.949	10.957	10.964	10.972	10.979	10.986	10.994	11.001	11.009	1890
1900	11.009	11.016	11.024	11.031	11.039	11.046	11.053	11.061	11.068	11.076	11.083	1900
1910	11.083	11.091	11.098	11.106	11.113	11.121	11.128	11.135	11.143	11.150	11.158	1910
1920	11.158	11.165	11.173	11.180	11.188	11.195	11.203	11.210	11.218	11.225	11.233	1920
1930	11.233	11.240	11.247	11.255	11.262	11.270	11.277	11.285	11.292	11.300	11.307	1930
1940	11.307	11.315	11.322	11.330	11.337	11.345	11.352	11.360	11.367	11.375	11.382	1940

°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 14 ***Type R Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
1950	11.382	11.390	11.397	11.405	11.412	11.420	11.427	11.435	11.442	11.450	11.457	1950
1960	11.457	11.465	11.472	11.480	11.487	11.495	11.502	11.510	11.518	11.525	11.533	1960
1970	11.533	11.540	11.548	11.555	11.563	11.570	11.578	11.585	11.593	11.600	11.608	1970
1980	11.608	11.615	11.623	11.631	11.638	11.646	11.653	11.661	11.668	11.676	11.683	1980
1990	11.683	11.691	11.698	11.706	11.714	11.721	11.729	11.736	11.744	11.751	11.759	1990
2000	11.759	11.766	11.774	11.782	11.789	11.797	11.804	11.812	11.819	11.827	11.835	2000
2010	11.835	11.842	11.850	11.857	11.865	11.872	11.880	11.888	11.895	11.903	11.910	2010
2020	11.910	11.918	11.925	11.933	11.941	11.948	11.956	11.963	11.971	11.979	11.986	2020
2030	11.986	11.994	12.001	12.009	12.016	12.024	12.032	12.039	12.047	12.054	12.062	2030
2040	12.062	12.070	12.077	12.085	12.092	12.100	12.108	12.115	12.123	12.131	12.138	2040
2050	12.138	12.146	12.153	12.161	12.169	12.176	12.184	12.191	12.199	12.207	12.214	2050
2060	12.214	12.222	12.230	12.237	12.245	12.252	12.260	12.268	12.275	12.283	12.291	2060
2070	12.291	12.298	12.306	12.313	12.321	12.329	12.336	12.344	12.352	12.359	12.367	2070
2080	12.367	12.375	12.382	12.390	12.398	12.405	12.413	12.420	12.428	12.436	12.443	2080
2090	12.443	12.451	12.459	12.466	12.474	12.482	12.489	12.497	12.505	12.512	12.520	2090
2100	12.520	12.528	12.535	12.543	12.551	12.558	12.566	12.574	12.581	12.589	12.597	2100
2110	12.597	12.604	12.612	12.620	12.627	12.635	12.643	12.650	12.658	12.666	12.673	2110
2120	12.673	12.681	12.689	12.696	12.704	12.712	12.719	12.727	12.735	12.742	12.750	2120
2130	12.750	12.758	12.765	12.773	12.781	12.788	12.796	12.804	12.812	12.819	12.827	2130
2140	12.827	12.835	12.842	12.850	12.858	12.865	12.873	12.881	12.889	12.896	12.904	2140
2150	12.904	12.912	12.919	12.927	12.935	12.942	12.950	12.958	12.966	12.973	12.981	2150
2160	12.981	12.989	12.996	13.004	13.012	13.019	13.027	13.035	13.043	13.050	13.058	2160
2170	13.058	13.066	13.073	13.081	13.089	13.097	13.104	13.112	13.120	13.128	13.135	2170
2180	13.135	13.143	13.151	13.158	13.166	13.174	13.182	13.189	13.197	13.205	13.213	2180
2190	13.213	13.220	13.228	13.236	13.243	13.251	13.259	13.267	13.274	13.282	13.290	2190
2200	13.290	13.298	13.305	13.313	13.321	13.329	13.336	13.344	13.352	13.359	13.367	2200
2210	13.367	13.375	13.383	13.390	13.398	13.406	13.414	13.421	13.429	13.437	13.445	2210
2220	13.445	13.452	13.460	13.468	13.476	13.483	13.491	13.499	13.507	13.514	13.522	2220
2230	13.522	13.530	13.538	13.545	13.553	13.561	13.569	13.577	13.584	13.592	13.600	2230
2240	13.600	13.608	13.615	13.623	13.631	13.639	13.646	13.654	13.662	13.670	13.677	2240
2250	13.677	13.685	13.693	13.701	13.709	13.716	13.724	13.732	13.740	13.747	13.755	2250
2260	13.755	13.763	13.771	13.778	13.786	13.794	13.802	13.810	13.817	13.825	13.833	2260
2270	13.833	13.841	13.848	13.856	13.864	13.872	13.880	13.887	13.895	13.903	13.911	2270
2280	13.911	13.919	13.926	13.934	13.942	13.950	13.957	13.965	13.973	13.981	13.989	2280
2290	13.989	13.996	14.004	14.012	14.020	14.028	14.035	14.043	14.051	14.059	14.066	2290
2300	14.066	14.074	14.082	14.090	14.098	14.105	14.113	14.121	14.129	14.137	14.144	2300
2310	14.144	14.152	14.160	14.168	14.176	14.183	14.191	14.199	14.207	14.215	14.222	2310
2320	14.222	14.230	14.238	14.246	14.254	14.261	14.269	14.277	14.285	14.293	14.300	2320
2330	14.300	14.308	14.316	14.324	14.332	14.340	14.347	14.355	14.363	14.371	14.379	2330
2340	14.379	14.386	14.394	14.402	14.410	14.418	14.425	14.433	14.441	14.449	14.457	2340
2350	14.457	14.465	14.472	14.480	14.488	14.496	14.504	14.511	14.519	14.527	14.535	2350
2360	14.535	14.543	14.551	14.558	14.566	14.574	14.582	14.590	14.597	14.605	14.613	2360
2370	14.613	14.621	14.629	14.637	14.644	14.652	14.660	14.668	14.676	14.683	14.691	2370
2380	14.691	14.699	14.707	14.715	14.723	14.730	14.738	14.746	14.754	14.762	14.770	2380
2390	14.770	14.777	14.785	14.793	14.801	14.809	14.817	14.824	14.832	14.840	14.848	2390
2400	14.848	14.856	14.864	14.871	14.879	14.887	14.895	14.903	14.911	14.918	14.926	2400
2410	14.926	14.934	14.942	14.950	14.958	14.965	14.973	14.981	14.989	14.997	15.005	2410
2420	15.005	15.012	15.020	15.028	15.036	15.044	15.052	15.059	15.067	15.075	15.083	2420
2430	15.083	15.091	15.099	15.106	15.114	15.122	15.130	15.138	15.146	15.153	15.161	2430
2440	15.161	15.169	15.177	15.185	15.193	15.200	15.208	15.216	15.224	15.232	15.240	2440
°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 14 ***Type R Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
2450	15.240	15.248	15.255	15.263	15.271	15.279	15.287	15.295	15.302	15.310	15.318	2450
2460	15.318	15.326	15.334	15.342	15.349	15.357	15.365	15.373	15.381	15.389	15.397	2460
2470	15.397	15.404	15.412	15.420	15.428	15.436	15.444	15.451	15.459	15.467	15.475	2470
2480	15.475	15.483	15.491	15.499	15.506	15.514	15.522	15.530	15.538	15.546	15.553	2480
2490	15.553	15.561	15.569	15.577	15.585	15.593	15.601	15.608	15.616	15.624	15.632	2490
2500	15.632	15.640	15.648	15.655	15.663	15.671	15.679	15.687	15.695	15.703	15.710	2500
2510	15.710	15.718	15.726	15.734	15.742	15.750	15.758	15.765	15.773	15.781	15.789	2510
2520	15.789	15.797	15.805	15.812	15.820	15.828	15.836	15.844	15.852	15.860	15.867	2520
2530	15.867	15.875	15.883	15.891	15.899	15.907	15.915	15.922	15.930	15.938	15.946	2530
2540	15.946	15.954	15.962	15.969	15.977	15.985	15.993	16.001	16.009	16.017	16.024	2540
2550	16.024	16.032	16.040	16.048	16.056	16.064	16.071	16.079	16.087	16.095	16.103	2550
2560	16.103	16.111	16.119	16.126	16.134	16.142	16.150	16.158	16.166	16.174	16.181	2560
2570	16.181	16.189	16.197	16.205	16.213	16.221	16.228	16.236	16.244	16.252	16.260	2570
2580	16.260	16.268	16.276	16.283	16.291	16.299	16.307	16.315	16.323	16.330	16.338	2580
2590	16.338	16.346	16.354	16.362	16.370	16.378	16.385	16.393	16.401	16.409	16.417	2590
2600	16.417	16.425	16.432	16.440	16.448	16.456	16.464	16.472	16.480	16.487	16.495	2600
2610	16.495	16.503	16.511	16.519	16.527	16.534	16.542	16.550	16.558	16.566	16.574	2610
2620	16.574	16.582	16.589	16.597	16.605	16.613	16.621	16.629	16.636	16.644	16.652	2620
2630	16.652	16.660	16.668	16.676	16.683	16.691	16.699	16.707	16.715	16.723	16.731	2630
2640	16.731	16.738	16.746	16.754	16.762	16.770	16.778	16.785	16.793	16.801	16.809	2640
2650	16.809	16.817	16.825	16.832	16.840	16.848	16.856	16.864	16.872	16.879	16.887	2650
2660	16.887	16.895	16.903	16.911	16.919	16.926	16.934	16.942	16.950	16.958	16.966	2660
2670	16.966	16.973	16.981	16.989	16.997	17.005	17.013	17.020	17.028	17.036	17.044	2670
2680	17.044	17.052	17.060	17.067	17.075	17.083	17.091	17.099	17.107	17.114	17.122	2680
2690	17.122	17.130	17.138	17.146	17.154	17.161	17.169	17.177	17.185	17.193	17.200	2690
2700	17.200	17.208	17.216	17.224	17.232	17.240	17.247	17.255	17.263	17.271	17.279	2700
2710	17.279	17.286	17.294	17.302	17.310	17.318	17.326	17.333	17.341	17.349	17.357	2710
2720	17.357	17.365	17.373	17.380	17.388	17.396	17.404	17.412	17.419	17.427	17.435	2720
2730	17.435	17.443	17.451	17.458	17.466	17.474	17.482	17.490	17.498	17.505	17.513	2730
2740	17.513	17.521	17.529	17.537	17.544	17.552	17.560	17.568	17.576	17.583	17.591	2740
2750	17.591	17.599	17.607	17.615	17.622	17.630	17.638	17.646	17.654	17.661	17.669	2750
2760	17.669	17.677	17.685	17.693	17.700	17.708	17.716	17.724	17.732	17.739	17.747	2760
2770	17.747	17.755	17.763	17.771	17.778	17.786	17.794	17.802	17.810	17.817	17.825	2770
2780	17.825	17.833	17.841	17.849	17.856	17.864	17.872	17.880	17.888	17.895	17.903	2780
2790	17.903	17.911	17.919	17.926	17.934	17.942	17.950	17.958	17.965	17.973	17.981	2790
2800	17.981	17.989	17.997	18.004	18.012	18.020	18.028	18.035	18.043	18.051	18.059	2800
2810	18.059	18.067	18.074	18.082	18.090	18.098	18.105	18.113	18.121	18.129	18.137	2810
2820	18.137	18.144	18.152	18.160	18.168	18.175	18.183	18.191	18.199	18.206	18.214	2820
2830	18.214	18.222	18.230	18.238	18.245	18.253	18.261	18.269	18.276	18.284	18.292	2830
2840	18.292	18.300	18.307	18.315	18.323	18.331	18.338	18.346	18.354	18.362	18.369	2840
2850	18.369	18.377	18.385	18.393	18.400	18.408	18.416	18.424	18.431	18.439	18.447	2850
2860	18.447	18.455	18.462	18.470	18.478	18.486	18.493	18.501	18.509	18.517	18.524	2860
2870	18.524	18.532	18.540	18.548	18.555	18.563	18.571	18.579	18.586	18.594	18.602	2870
2880	18.602	18.610	18.617	18.625	18.633	18.640	18.648	18.656	18.664	18.671	18.679	2880
2890	18.679	18.687	18.695	18.702	18.710	18.718	18.725	18.733	18.741	18.749	18.756	2890
2900	18.756	18.764	18.772	18.779	18.787	18.795	18.803	18.810	18.818	18.826	18.834	2900
2910	18.834	18.841	18.849	18.857	18.864	18.872	18.880	18.887	18.895	18.903	18.911	2910
2920	18.911	18.918	18.926	18.934	18.941	18.949	18.957	18.965	18.972	18.980	18.988	2920
2930	18.988	18.995	19.003	19.011	19.018	19.026	19.034	19.042	19.049	19.057	19.065	2930
2940	19.065	19.072	19.080	19.088	19.095	19.103	19.111	19.118	19.126	19.134	19.141	2940

°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 14 ***Type R Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
2950	19.141	19.149	19.157	19.165	19.172	19.180	19.188	19.195	19.203	19.211	19.218	2950
2960	19.218	19.226	19.234	19.241	19.249	19.257	19.264	19.272	19.280	19.287	19.295	2960
2970	19.295	19.303	19.310	19.318	19.326	19.333	19.341	19.349	19.356	19.364	19.372	2970
2980	19.372	19.379	19.387	19.395	19.402	19.410	19.418	19.425	19.433	19.440	19.448	2980
2990	19.448	19.456	19.463	19.471	19.479	19.486	19.494	19.502	19.509	19.517	19.525	2990
3000	19.525	19.532	19.540	19.547	19.555	19.563	19.570	19.578	19.586	19.593	19.601	3000
3010	19.601	19.609	19.616	19.624	19.631	19.639	19.647	19.654	19.662	19.670	19.677	3010
3020	19.677	19.685	19.692	19.700	19.708	19.715	19.723	19.730	19.738	19.746	19.753	3020
3030	19.753	19.761	19.769	19.776	19.784	19.791	19.799	19.807	19.814	19.822	19.829	3030
3040	19.829	19.837	19.845	19.852	19.860	19.867	19.875	19.882	19.890	19.898	19.905	3040
3050	19.905	19.913	19.920	19.928	19.936	19.943	19.951	19.958	19.966	19.973	19.981	3050
3060	19.981	19.989	19.996	20.004	20.011	20.019	20.026	20.034	20.041	20.049	20.056	3060
3070	20.056	20.064	20.072	20.079	20.087	20.094	20.102	20.109	20.117	20.124	20.132	3070
3080	20.132	20.139	20.147	20.154	20.162	20.169	20.177	20.184	20.192	20.199	20.207	3080
3090	20.207	20.214	20.222	20.229	20.237	20.244	20.252	20.259	20.266	20.274	20.281	3090
3100	20.281	20.289	20.296	20.304	20.311	20.319	20.326	20.333	20.341	20.348	20.356	3100
3110	20.356	20.363	20.371	20.378	20.385	20.393	20.400	20.407	20.415	20.422	20.430	3110
3120	20.430	20.437	20.444	20.452	20.459	20.466	20.474	20.481	20.488	20.496	20.503	3120
3130	20.503	20.510	20.518	20.525	20.532	20.540	20.547	20.554	20.562	20.569	20.576	3130
3140	20.576	20.583	20.591	20.598	20.605	20.612	20.620	20.627	20.634	20.641	20.649	3140
3150	20.649	20.656	20.663	20.670	20.678	20.685	20.692	20.699	20.706	20.714	20.721	3150
3160	20.721	20.728	20.735	20.742	20.749	20.756	20.764	20.771	20.778	20.785	20.792	3160
3170	20.792	20.799	20.806	20.813	20.821	20.828	20.835	20.842	20.849	20.856	20.863	3170
3180	20.863	20.870	20.877	20.884	20.891	20.898	20.905	20.912	20.919	20.926	20.933	3180
3190	20.933	20.940	20.947	20.954	20.961	20.968	20.975	20.982	20.989	20.996	21.003	3190
3200	21.003	21.010	21.016	21.023	21.030	21.037	21.044	21.051	21.058	21.065	21.071	3200
3210	21.071	21.078	21.085	21.092	21.099							3210

| °F | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | °F |

TABLE 15 ***Type S Thermocouple*** *— thermoelectric voltage as a function of temperature (°C); reference junctions at 0 °C*

°C	0	1	2	3	4	5	6	7	8	9	10	°C
					Thermoelectric Voltage in Millivolts							
-50	-0.236											-50
-40	-0.194	-0.199	-0.203	-0.207	-0.211	-0.215	-0.219	-0.224	-0.228	-0.232	-0.236	-40
-30	-0.150	-0.155	-0.159	-0.164	-0.168	-0.173	-0.177	-0.181	-0.186	-0.190	-0.194	-30
-20	-0.103	-0.108	-0.113	-0.117	-0.122	-0.127	-0.132	-0.136	-0.141	-0.146	-0.150	-20
-10	-0.053	-0.058	-0.063	-0.068	-0.073	-0.078	-0.083	-0.088	-0.093	-0.098	-0.103	-10
0	0.000	-0.005	-0.011	-0.016	-0.021	-0.027	-0.032	-0.037	-0.042	-0.048	-0.053	0
0	0.000	0.005	0.011	0.016	0.022	0.027	0.033	0.038	0.044	0.050	0.055	0
10	0.055	0.061	0.067	0.072	0.078	0.084	0.090	0.095	0.101	0.107	0.113	10
20	0.113	0.119	0.125	0.131	0.137	0.143	0.149	0.155	0.161	0.167	0.173	20
30	0.173	0.179	0.185	0.191	0.197	0.204	0.210	0.216	0.222	0.229	0.235	30
40	0.235	0.241	0.248	0.254	0.260	0.267	0.273	0.280	0.286	0.292	0.299	40
50	0.299	0.305	0.312	0.319	0.325	0.332	0.338	0.345	0.352	0.358	0.365	50
60	0.365	0.372	0.378	0.385	0.392	0.399	0.405	0.412	0.419	0.426	0.433	60
70	0.433	0.440	0.446	0.453	0.460	0.467	0.474	0.481	0.488	0.495	0.502	70
80	0.502	0.509	0.516	0.523	0.530	0.538	0.545	0.552	0.559	0.566	0.573	80
90	0.573	0.580	0.588	0.595	0.602	0.609	0.617	0.624	0.631	0.639	0.646	90
100	0.646	0.653	0.661	0.668	0.675	0.683	0.690	0.698	0.705	0.713	0.720	100
110	0.720	0.727	0.735	0.743	0.750	0.758	0.765	0.773	0.780	0.788	0.795	110
120	0.795	0.803	0.811	0.818	0.826	0.834	0.841	0.849	0.857	0.865	0.872	120
130	0.872	0.880	0.888	0.896	0.903	0.911	0.919	0.927	0.935	0.942	0.950	130
140	0.950	0.958	0.966	0.974	0.982	0.990	0.998	1.006	1.013	1.021	1.029	140
150	1.029	1.037	1.045	1.053	1.061	1.069	1.077	1.085	1.094	1.102	1.110	150
160	1.110	1.118	1.126	1.134	1.142	1.150	1.158	1.167	1.175	1.183	1.191	160
170	1.191	1.199	1.207	1.216	1.224	1.232	1.240	1.249	1.257	1.265	1.273	170
180	1.273	1.282	1.290	1.298	1.307	1.315	1.323	1.332	1.340	1.348	1.357	180
190	1.357	1.365	1.373	1.382	1.390	1.399	1.407	1.415	1.424	1.432	1.441	190
200	1.441	1.449	1.458	1.466	1.475	1.483	1.492	1.500	1.509	1.517	1.526	200
210	1.526	1.534	1.543	1.551	1.560	1.569	1.577	1.586	1.594	1.603	1.612	210
220	1.612	1.620	1.629	1.638	1.646	1.655	1.663	1.672	1.681	1.690	1.698	220
230	1.698	1.707	1.716	1.724	1.733	1.742	1.751	1.759	1.768	1.777	1.786	230
240	1.786	1.794	1.803	1.812	1.821	1.829	1.838	1.847	1.856	1.865	1.874	240
250	1.874	1.882	1.891	1.900	1.909	1.918	1.927	1.936	1.944	1.953	1.962	250
260	1.962	1.971	1.980	1.989	1.998	2.007	2.016	2.025	2.034	2.043	2.052	260
270	2.052	2.061	2.070	2.078	2.087	2.096	2.105	2.114	2.123	2.132	2.141	270
280	2.141	2.151	2.160	2.169	2.178	2.187	2.196	2.205	2.214	2.223	2.232	280
290	2.232	2.241	2.250	2.259	2.268	2.277	2.287	2.296	2.305	2.314	2.323	290
300	2.323	2.332	2.341	2.350	2.360	2.369	2.378	2.387	2.396	2.405	2.415	300
310	2.415	2.424	2.433	2.442	2.451	2.461	2.470	2.479	2.488	2.497	2.507	310
320	2.507	2.516	2.525	2.534	2.544	2.553	2.562	2.571	2.581	2.590	2.599	320
330	2.599	2.609	2.618	2.627	2.636	2.646	2.655	2.664	2.674	2.683	2.692	330
340	2.692	2.702	2.711	2.720	2.730	2.739	2.748	2.758	2.767	2.776	2.786	340
350	2.786	2.795	2.805	2.814	2.823	2.833	2.842	2.851	2.861	2.870	2.880	350
360	2.880	2.889	2.899	2.908	2.917	2.927	2.936	2.946	2.955	2.965	2.974	360
370	2.974	2.983	2.993	3.002	3.012	3.021	3.031	3.040	3.050	3.059	3.069	370
380	3.069	3.078	3.088	3.097	3.107	3.116	3.126	3.135	3.145	3.154	3.164	380
390	3.164	3.173	3.183	3.192	3.202	3.212	3.221	3.231	3.240	3.250	3.259	390

°C	0	1	2	3	4	5	6	7	8	9	10	°C

TABLE 15 ***Type S Thermocouple*** *— thermoelectric voltage as a function of temperature (°C); reference junctions at 0 °C*

°C	0	1	2	3	4	5	6	7	8	9	10	°C
						Thermoelectric Voltage in Millivolts						
400	3.259	3.269	3.279	3.288	3.298	3.307	3.317	3.326	3.336	3.346	3.355	400
410	3.355	3.365	3.374	3.384	3.394	3.403	3.413	3.423	3.432	3.442	3.451	410
420	3.451	3.461	3.471	3.480	3.490	3.500	3.509	3.519	3.529	3.538	3.548	420
430	3.548	3.558	3.567	3.577	3.587	3.596	3.606	3.616	3.626	3.635	3.645	430
440	3.645	3.655	3.664	3.674	3.684	3.694	3.703	3.713	3.723	3.732	3.742	440
450	3.742	3.752	3.762	3.771	3.781	3.791	3.801	3.810	3.820	3.830	3.840	450
460	3.840	3.850	3.859	3.869	3.879	3.889	3.898	3.908	3.918	3.928	3.938	460
470	3.938	3.947	3.957	3.967	3.977	3.987	3.997	4.006	4.016	4.026	4.036	470
480	4.036	4.046	4.056	4.065	4.075	4.085	4.095	4.105	4.115	4.125	4.134	480
490	4.134	4.144	4.154	4.164	4.174	4.184	4.194	4.204	4.213	4.223	4.233	490
500	4.233	4.243	4.253	4.263	4.273	4.283	4.293	4.303	4.313	4.323	4.332	500
510	4.332	4.342	4.352	4.362	4.372	4.382	4.392	4.402	4.412	4.422	4.432	510
520	4.432	4.442	4.452	4.462	4.472	4.482	4.492	4.502	4.512	4.522	4.532	520
530	4.532	4.542	4.552	4.562	4.572	4.582	4.592	4.602	4.612	4.622	4.632	530
540	4.632	4.642	4.652	4.662	4.672	4.682	4.692	4.702	4.712	4.722	4.732	540
550	4.732	4.742	4.752	4.762	4.772	4.782	4.793	4.803	4.813	4.823	4.833	550
560	4.833	4.843	4.853	4.863	4.873	4.883	4.893	4.904	4.914	4.924	4.934	560
570	4.934	4.944	4.954	4.964	4.974	4.984	4.995	5.005	5.015	5.025	5.035	570
580	5.035	5.045	5.055	5.066	5.076	5.086	5.096	5.106	5.116	5.127	5.137	580
590	5.137	5.147	5.157	5.167	5.178	5.188	5.198	5.208	5.218	5.228	5.239	590
600	5.239	5.249	5.259	5.269	5.280	5.290	5.300	5.310	5.320	5.331	5.341	600
610	5.341	5.351	5.361	5.372	5.382	5.392	5.402	5.413	5.423	5.433	5.443	610
620	5.443	5.454	5.464	5.474	5.485	5.495	5.505	5.515	5.526	5.536	5.546	620
630	5.546	5.557	5.567	5.577	5.588	5.598	5.608	5.618	5.629	5.639	5.649	630
640	5.649	5.660	5.670	5.680	5.691	5.701	5.712	5.722	5.732	5.743	5.753	640
650	5.753	5.763	5.774	5.784	5.794	5.805	5.815	5.826	5.836	5.846	5.857	650
660	5.857	5.867	5.878	5.888	5.898	5.909	5.919	5.930	5.940	5.950	5.961	660
670	5.961	5.971	5.982	5.992	6.003	6.013	6.024	6.034	6.044	6.055	6.065	670
680	6.065	6.076	6.086	6.097	6.107	6.118	6.128	6.139	6.149	6.160	6.170	680
690	6.170	6.181	6.191	6.202	6.212	6.223	6.233	6.244	6.254	6.265	6.275	690
700	6.275	6.286	6.296	6.307	6.317	6.328	6.338	6.349	6.360	6.370	6.381	700
710	6.381	6.391	6.402	6.412	6.423	6.434	6.444	6.455	6.465	6.476	6.486	710
720	6.486	6.497	6.508	6.518	6.529	6.539	6.550	6.561	6.571	6.582	6.593	720
730	6.593	6.603	6.614	6.624	6.635	6.646	6.656	6.667	6.678	6.688	6.699	730
740	6.699	6.710	6.720	6.731	6.742	6.752	6.763	6.774	6.784	6.795	6.806	740
750	6.806	6.817	6.827	6.838	6.849	6.859	6.870	6.881	6.892	6.902	6.913	750
760	6.913	6.924	6.934	6.945	6.956	6.967	6.977	6.988	6.999	7.010	7.020	760
770	7.020	7.031	7.042	7.053	7.064	7.074	7.085	7.096	7.107	7.117	7.128	770
780	7.128	7.139	7.150	7.161	7.172	7.182	7.193	7.204	7.215	7.226	7.236	780
790	7.236	7.247	7.258	7.269	7.280	7.291	7.302	7.312	7.323	7.334	7.345	790
800	7.345	7.356	7.367	7.378	7.388	7.399	7.410	7.421	7.432	7.443	7.454	800
810	7.454	7.465	7.476	7.487	7.497	7.508	7.519	7.530	7.541	7.552	7.563	810
820	7.563	7.574	7.585	7.596	7.607	7.618	7.629	7.640	7.651	7.662	7.673	820
830	7.673	7.684	7.695	7.706	7.717	7.728	7.739	7.750	7.761	7.772	7.783	830
840	7.783	7.794	7.805	7.816	7.827	7.838	7.849	7.860	7.871	7.882	7.893	840
850	7.893	7.904	7.915	7.926	7.937	7.948	7.959	7.970	7.981	7.992	8.003	850
860	8.003	8.014	8.026	8.037	8.048	8.059	8.070	8.081	8.092	8.103	8.114	860
870	8.114	8.125	8.137	8.148	8.159	8.170	8.181	8.192	8.203	8.214	8.226	870
880	8.226	8.237	8.248	8.259	8.270	8.281	8.293	8.304	8.315	8.326	8.337	880
890	8.337	8.348	8.360	8.371	8.382	8.393	8.404	8.416	8.427	8.438	8.449	890

°C	0	1	2	3	4	5	6	7	8	9	10	°C

TABLE 15 ***Type S Thermocouple*** *— thermoelectric voltage as a function of temperature (°C); reference junctions at 0 °C*

°C	0	1	2	3	4	5	6	7	8	9	10	°C
						Thermoelectric Voltage in Millivolts						
900	8.449	8.460	8.472	8.483	8.494	8.505	8.517	8.528	8.539	8.550	8.562	900
910	8.562	8.573	8.584	8.595	8.607	8.618	8.629	8.640	8.652	8.663	8.674	910
920	8.674	8.685	8.697	8.708	8.719	8.731	8.742	8.753	8.765	8.776	8.787	920
930	8.787	8.798	8.810	8.821	8.832	8.844	8.855	8.866	8.878	8.889	8.900	930
940	8.900	8.912	8.923	8.935	8.946	8.957	8.969	8.980	8.991	9.003	9.014	940
950	9.014	9.025	9.037	9.048	9.060	9.071	9.082	9.094	9.105	9.117	9.128	950
960	9.128	9.139	9.151	9.162	9.174	9.185	9.197	9.208	9.219	9.231	9.242	960
970	9.242	9.254	9.265	9.277	9.288	9.300	9.311	9.323	9.334	9.345	9.357	970
980	9.357	9.368	9.380	9.391	9.403	9.414	9.426	9.437	9.449	9.460	9.472	980
990	9.472	9.483	9.495	9.506	9.518	9.529	9.541	9.552	9.564	9.576	9.587	990
1000	9.587	9.599	9.610	9.622	9.633	9.645	9.656	9.668	9.680	9.691	9.703	1000
1010	9.703	9.714	9.726	9.737	9.749	9.761	9.772	9.784	9.795	9.807	9.819	1010
1020	9.819	9.830	9.842	9.853	9.865	9.877	9.888	9.900	9.911	9.923	9.935	1020
1030	9.935	9.946	9.958	9.970	9.981	9.993	10.005	10.016	10.028	10.040	10.051	1030
1040	10.051	10.063	10.075	10.086	10.098	10.110	10.121	10.133	10.145	10.156	10.168	1040
1050	10.168	10.180	10.191	10.203	10.215	10.227	10.238	10.250	10.262	10.273	10.285	1050
1060	10.285	10.297	10.309	10.320	10.332	10.344	10.356	10.367	10.379	10.391	10.403	1060
1070	10.403	10.414	10.426	10.438	10.450	10.461	10.473	10.485	10.497	10.509	10.520	1070
1080	10.520	10.532	10.544	10.556	10.567	10.579	10.591	10.603	10.615	10.626	10.638	1080
1090	10.638	10.650	10.662	10.674	10.686	10.697	10.709	10.721	10.733	10.745	10.757	1090
1100	10.757	10.768	10.780	10.792	10.804	10.816	10.828	10.839	10.851	10.863	10.875	1100
1110	10.875	10.887	10.899	10.911	10.922	10.934	10.946	10.958	10.970	10.982	10.994	1110
1120	10.994	11.006	11.017	11.029	11.041	11.053	11.065	11.077	11.089	11.101	11.113	1120
1130	11.113	11.125	11.136	11.148	11.160	11.172	11.184	11.196	11.208	11.220	11.232	1130
1140	11.232	11.244	11.256	11.268	11.280	11.291	11.303	11.315	11.327	11.339	11.351	1140
1150	11.351	11.363	11.375	11.387	11.399	11.411	11.423	11.435	11.447	11.459	11.471	1150
1160	11.471	11.483	11.495	11.507	11.519	11.531	11.542	11.554	11.566	11.578	11.590	1160
1170	11.590	11.602	11.614	11.626	11.638	11.650	11.662	11.674	11.686	11.698	11.710	1170
1180	11.710	11.722	11.734	11.746	11.758	11.770	11.782	11.794	11.806	11.818	11.830	1180
1190	11.830	11.842	11.854	11.866	11.878	11.890	11.902	11.914	11.926	11.939	11.951	1190
1200	11.951	11.963	11.975	11.987	11.999	12.011	12.023	12.035	12.047	12.059	12.071	1200
1210	12.071	12.083	12.095	12.107	12.119	12.131	12.143	12.155	12.167	12.179	12.191	1210
1220	12.191	12.203	12.216	12.228	12.240	12.252	12.264	12.276	12.288	12.300	12.312	1220
1230	12.312	12.324	12.336	12.348	12.360	12.372	12.384	12.397	12.409	12.421	12.433	1230
1240	12.433	12.445	12.457	12.469	12.481	12.493	12.505	12.517	12.529	12.542	12.554	1240
1250	12.554	12.566	12.578	12.590	12.602	12.614	12.626	12.638	12.650	12.662	12.675	1250
1260	12.675	12.687	12.699	12.711	12.723	12.735	12.747	12.759	12.771	12.783	12.796	1260
1270	12.796	12.808	12.820	12.832	12.844	12.856	12.868	12.880	12.892	12.905	12.917	1270
1280	12.917	12.929	12.941	12.953	12.965	12.977	12.989	13.001	13.014	13.026	13.038	1280
1290	13.038	13.050	13.062	13.074	13.086	13.098	13.111	13.123	13.135	13.147	13.159	1290
1300	13.159	13.171	13.183	13.195	13.208	13.220	13.232	13.244	13.256	13.268	13.280	1300
1310	13.280	13.292	13.305	13.317	13.329	13.341	13.353	13.365	13.377	13.390	13.402	1310
1320	13.402	13.414	13.426	13.438	13.450	13.462	13.474	13.487	13.499	13.511	13.523	1320
1330	13.523	13.535	13.547	13.559	13.572	13.584	13.596	13.608	13.620	13.632	13.644	1330
1340	13.644	13.657	13.669	13.681	13.693	13.705	13.717	13.729	13.742	13.754	13.766	1340
1350	13.766	13.778	13.790	13.802	13.814	13.826	13.839	13.851	13.863	13.875	13.887	1350
1360	13.887	13.899	13.911	13.924	13.936	13.948	13.960	13.972	13.984	13.996	14.009	1360
1370	14.009	14.021	14.033	14.045	14.057	14.069	14.081	14.094	14.106	14.118	14.130	1370
1380	14.130	14.142	14.154	14.166	14.178	14.191	14.203	14.215	14.227	14.239	14.251	1380
1390	14.251	14.263	14.276	14.288	14.300	14.312	14.324	14.336	14.348	14.360	14.373	1390

°C	0	1	2	3	4	5	6	7	8	9	10	°C

TABLE 15 ***Type S Thermocouple*** *— thermoelectric voltage as a function of temperature (°C); reference junctions at 0 °C*

°C	0	1	2	3	4	5	6	7	8	9	10	°C
						Thermoelectric Voltage in Millivolts						
1400	14.373	14.385	14.397	14.409	14.421	14.433	14.445	14.457	14.470	14.482	14.494	1400
1410	14.494	14.506	14.518	14.530	14.542	14.554	14.567	14.579	14.591	14.603	14.615	1410
1420	14.615	14.627	14.639	14.651	14.664	14.676	14.688	14.700	14.712	14.724	14.736	1420
1430	14.736	14.748	14.760	14.773	14.785	14.797	14.809	14.821	14.833	14.845	14.857	1430
1440	14.857	14.869	14.881	14.894	14.906	14.918	14.930	14.942	14.954	14.966	14.978	1440
1450	14.978	14.990	15.002	15.015	15.027	15.039	15.051	15.063	15.075	15.087	15.099	1450
1460	15.099	15.111	15.123	15.135	15.148	15.160	15.172	15.184	15.196	15.208	15.220	1460
1470	15.220	15.232	15.244	15.256	15.268	15.280	15.292	15.304	15.317	15.329	15.341	1470
1480	15.341	15.353	15.365	15.377	15.389	15.401	15.413	15.425	15.437	15.449	15.461	1480
1490	15.461	15.473	15.485	15.497	15.509	15.521	15.534	15.546	15.558	15.570	15.582	1490
1500	15.582	15.594	15.606	15.618	15.630	15.642	15.654	15.666	15.678	15.690	15.702	1500
1510	15.702	15.714	15.726	15.738	15.750	15.762	15.774	15.786	15.798	15.810	15.822	1510
1520	15.822	15.834	15.846	15.858	15.870	15.882	15.894	15.906	15.918	15.930	15.942	1520
1530	15.942	15.954	15.966	15.978	15.990	16.002	16.014	16.026	16.038	16.050	16.062	1530
1540	16.062	16.074	16.086	16.098	16.110	16.122	16.134	16.146	16.158	16.170	16.182	1540
1550	16.182	16.194	16.205	16.217	16.229	16.241	16.253	16.265	16.277	16.289	16.301	1550
1560	16.301	16.313	16.325	16.337	16.349	16.361	16.373	16.385	16.396	16.408	16.420	1560
1570	16.420	16.432	16.444	16.456	16.468	16.480	16.492	16.504	16.516	16.527	16.539	1570
1580	16.539	16.551	16.563	16.575	16.587	16.599	16.611	16.623	16.634	16.646	16.658	1580
1590	16.658	16.670	16.682	16.694	16.706	16.718	16.729	16.741	16.753	16.765	16.777	1590
1600	16.777	16.789	16.801	16.812	16.824	16.836	16.848	16.860	16.872	16.883	16.895	1600
1610	16.895	16.907	16.919	16.931	16.943	16.954	16.966	16.978	16.990	17.002	17.013	1610
1620	17.013	17.025	17.037	17.049	17.061	17.072	17.084	17.096	17.108	17.120	17.131	1620
1630	17.131	17.143	17.155	17.167	17.178	17.190	17.202	17.214	17.225	17.237	17.249	1630
1640	17.249	17.261	17.272	17.284	17.296	17.308	17.319	17.331	17.343	17.355	17.366	1640
1650	17.366	17.378	17.390	17.401	17.413	17.425	17.437	17.448	17.460	17.472	17.483	1650
1660	17.483	17.495	17.507	17.518	17.530	17.542	17.553	17.565	17.577	17.588	17.600	1660
1670	17.600	17.612	17.623	17.635	17.647	17.658	17.670	17.682	17.693	17.705	17.717	1670
1680	17.717	17.728	17.740	17.751	17.763	17.775	17.786	17.798	17.809	17.821	17.832	1680
1690	17.832	17.844	17.855	17.867	17.878	17.890	17.901	17.913	17.924	17.936	17.947	1690
1700	17.947	17.959	17.970	17.982	17.993	18.004	18.016	18.027	18.039	18.050	18.061	1700
1710	18.061	18.073	18.084	18.095	18.107	18.118	18.129	18.140	18.152	18.163	18.174	1710
1720	18.174	18.185	18.196	18.208	18.219	18.230	18.241	18.252	18.263	18.274	18.285	1720
1730	18.285	18.297	18.308	18.319	18.330	18.341	18.352	18.362	18.373	18.384	18.395	1730
1740	18.395	18.406	18.417	18.428	18.439	18.449	18.460	18.471	18.482	18.493	18.503	1740
1750	18.503	18.514	18.525	18.535	18.546	18.557	18.567	18.578	18.588	18.599	18.609	1750
1760	18.609	18.620	18.630	18.641	18.651	18.661	18.672	18.682	18.693			1760

°C	0	1	2	3	4	5	6	7	8	9	10	°C

TABLE 16 ***Type S Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
-50	-0.218	-0.220	-0.222	-0.224	-0.227	-0.229	-0.231	-0.233	-0.236			-50
-40	-0.194	-0.197	-0.199	-0.201	-0.204	-0.206	-0.208	-0.211	-0.213	-0.215	-0.218	-40
-30	-0.170	-0.173	-0.175	-0.178	-0.180	-0.182	-0.185	-0.187	-0.190	-0.192	-0.194	-30
-20	-0.145	-0.148	-0.150	-0.153	-0.155	-0.158	-0.160	-0.163	-0.165	-0.168	-0.170	-20
-10	-0.119	-0.122	-0.124	-0.127	-0.129	-0.132	-0.135	-0.137	-0.140	-0.142	-0.145	-10
0	-0.092	-0.095	-0.097	-0.100	-0.103	-0.106	-0.108	-0.111	-0.114	-0.116	-0.119	0
0	-0.092	-0.089	-0.086	-0.084	-0.081	-0.078	-0.075	-0.073	-0.070	-0.067	-0.064	0
10	-0.064	-0.061	-0.058	-0.056	-0.053	-0.050	-0.047	-0.044	-0.041	-0.038	-0.035	10
20	-0.035	-0.033	-0.030	-0.027	-0.024	-0.021	-0.018	-0.015	-0.012	-0.009	-0.006	20
30	-0.006	-0.003	0.000	0.003	0.006	0.009	0.012	0.015	0.018	0.021	0.024	30
40	0.024	0.027	0.030	0.033	0.037	0.040	0.043	0.046	0.049	0.052	0.055	40
50	0.055	0.058	0.062	0.065	0.068	0.071	0.074	0.077	0.081	0.084	0.087	50
60	0.087	0.090	0.093	0.097	0.100	0.103	0.106	0.110	0.113	0.116	0.119	60
70	0.119	0.123	0.126	0.129	0.133	0.136	0.139	0.143	0.146	0.149	0.153	70
80	0.153	0.156	0.159	0.163	0.166	0.169	0.173	0.176	0.180	0.183	0.186	80
90	0.186	0.190	0.193	0.197	0.200	0.204	0.207	0.210	0.214	0.217	0.221	90
100	0.221	0.224	0.228	0.231	0.235	0.238	0.242	0.245	0.249	0.252	0.256	100
110	0.256	0.260	0.263	0.267	0.270	0.274	0.277	0.281	0.285	0.288	0.292	110
120	0.292	0.295	0.299	0.303	0.306	0.310	0.313	0.317	0.321	0.324	0.328	120
130	0.328	0.332	0.335	0.339	0.343	0.346	0.350	0.354	0.357	0.361	0.365	130
140	0.365	0.369	0.372	0.376	0.380	0.384	0.387	0.391	0.395	0.399	0.402	140
150	0.402	0.406	0.410	0.414	0.417	0.421	0.425	0.429	0.433	0.436	0.440	150
160	0.440	0.444	0.448	0.452	0.456	0.459	0.463	0.467	0.471	0.475	0.479	160
170	0.479	0.483	0.487	0.490	0.494	0.498	0.502	0.506	0.510	0.514	0.518	170
180	0.518	0.522	0.526	0.530	0.534	0.538	0.541	0.545	0.549	0.553	0.557	180
190	0.557	0.561	0.565	0.569	0.573	0.577	0.581	0.585	0.589	0.593	0.597	190
200	0.597	0.601	0.605	0.609	0.613	0.617	0.622	0.626	0.630	0.634	0.638	200
210	0.638	0.642	0.646	0.650	0.654	0.658	0.662	0.666	0.670	0.675	0.679	210
220	0.679	0.683	0.687	0.691	0.695	0.699	0.703	0.708	0.712	0.716	0.720	220
230	0.720	0.724	0.728	0.732	0.737	0.741	0.745	0.749	0.753	0.758	0.762	230
240	0.762	0.766	0.770	0.774	0.779	0.783	0.787	0.791	0.795	0.800	0.804	240
250	0.804	0.808	0.812	0.817	0.821	0.825	0.829	0.834	0.838	0.842	0.847	250
260	0.847	0.851	0.855	0.859	0.864	0.868	0.872	0.877	0.881	0.885	0.889	260
270	0.889	0.894	0.898	0.902	0.907	0.911	0.915	0.920	0.924	0.928	0.933	270
280	0.933	0.937	0.942	0.946	0.950	0.955	0.959	0.963	0.968	0.972	0.977	280
290	0.977	0.981	0.985	0.990	0.994	0.998	1.003	1.007	1.012	1.016	1.021	290
300	1.021	1.025	1.029	1.034	1.038	1.043	1.047	1.052	1.056	1.061	1.065	300
310	1.065	1.069	1.074	1.078	1.083	1.087	1.092	1.096	1.101	1.105	1.110	310
320	1.110	1.114	1.119	1.123	1.128	1.132	1.137	1.141	1.146	1.150	1.155	320
330	1.155	1.159	1.164	1.168	1.173	1.177	1.182	1.186	1.191	1.196	1.200	330
340	1.200	1.205	1.209	1.214	1.218	1.223	1.227	1.232	1.237	1.241	1.246	340
350	1.246	1.250	1.255	1.260	1.264	1.269	1.273	1.278	1.283	1.287	1.292	350
360	1.292	1.296	1.301	1.306	1.310	1.315	1.319	1.324	1.329	1.333	1.338	360
370	1.338	1.343	1.347	1.352	1.357	1.361	1.366	1.371	1.375	1.380	1.385	370
380	1.385	1.389	1.394	1.399	1.403	1.408	1.413	1.417	1.422	1.427	1.431	380
390	1.431	1.436	1.441	1.445	1.450	1.455	1.460	1.464	1.469	1.474	1.478	390
400	1.478	1.483	1.488	1.493	1.497	1.502	1.507	1.512	1.516	1.521	1.526	400
410	1.526	1.531	1.535	1.540	1.545	1.550	1.554	1.559	1.564	1.569	1.573	410
420	1.573	1.578	1.583	1.588	1.592	1.597	1.602	1.607	1.612	1.616	1.621	420
430	1.621	1.626	1.631	1.636	1.640	1.645	1.650	1.655	1.660	1.664	1.669	430
440	1.669	1.674	1.679	1.684	1.689	1.693	1.698	1.703	1.708	1.713	1.718	440
°F	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**°F**

TABLE 16 ***Type S Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
450	1.718	1.722	1.727	1.732	1.737	1.742	1.747	1.752	1.756	1.761	1.766	450
460	1.766	1.771	1.776	1.781	1.786	1.790	1.795	1.800	1.805	1.810	1.815	460
470	1.815	1.820	1.825	1.829	1.834	1.839	1.844	1.849	1.854	1.859	1.864	470
480	1.864	1.869	1.874	1.878	1.883	1.888	1.893	1.898	1.903	1.908	1.913	480
490	1.913	1.918	1.923	1.928	1.933	1.938	1.942	1.947	1.952	1.957	1.962	490
500	1.962	1.967	1.972	1.977	1.982	1.987	1.992	1.997	2.002	2.007	2.012	500
510	2.012	2.017	2.022	2.027	2.032	2.037	2.042	2.047	2.052	2.057	2.062	510
520	2.062	2.067	2.072	2.076	2.081	2.086	2.091	2.096	2.101	2.106	2.111	520
530	2.111	2.116	2.121	2.126	2.131	2.136	2.141	2.147	2.152	2.157	2.162	530
540	2.162	2.167	2.172	2.177	2.182	2.187	2.192	2.197	2.202	2.207	2.212	540
550	2.212	2.217	2.222	2.227	2.232	2.237	2.242	2.247	2.252	2.257	2.262	550
560	2.262	2.267	2.272	2.277	2.283	2.288	2.293	2.298	2.303	2.308	2.313	560
570	2.313	2.318	2.323	2.328	2.333	2.338	2.343	2.348	2.354	2.359	2.364	570
580	2.364	2.369	2.374	2.379	2.384	2.389	2.394	2.399	2.404	2.410	2.415	580
590	2.415	2.420	2.425	2.430	2.435	2.440	2.445	2.450	2.455	2.461	2.466	590
600	2.466	2.471	2.476	2.481	2.486	2.491	2.496	2.502	2.507	2.512	2.517	600
610	2.517	2.522	2.527	2.532	2.538	2.543	2.548	2.553	2.558	2.563	2.568	610
620	2.568	2.574	2.579	2.584	2.589	2.594	2.599	2.604	2.610	2.615	2.620	620
630	2.620	2.625	2.630	2.635	2.641	2.646	2.651	2.656	2.661	2.666	2.672	630
640	2.672	2.677	2.682	2.687	2.692	2.697	2.703	2.708	2.713	2.718	2.723	640
650	2.723	2.729	2.734	2.739	2.744	2.749	2.755	2.760	2.765	2.770	2.775	650
660	2.775	2.781	2.786	2.791	2.796	2.801	2.807	2.812	2.817	2.822	2.827	660
670	2.827	2.833	2.838	2.843	2.848	2.854	2.859	2.864	2.869	2.874	2.880	670
680	2.880	2.885	2.890	2.895	2.901	2.906	2.911	2.916	2.922	2.927	2.932	680
690	2.932	2.937	2.943	2.948	2.953	2.958	2.964	2.969	2.974	2.979	2.985	690
700	2.985	2.990	2.995	3.000	3.006	3.011	3.016	3.021	3.027	3.032	3.037	700
710	3.037	3.042	3.048	3.053	3.058	3.063	3.069	3.074	3.079	3.085	3.090	710
720	3.090	3.095	3.100	3.106	3.111	3.116	3.122	3.127	3.132	3.137	3.143	720
730	3.143	3.148	3.153	3.159	3.164	3.169	3.174	3.180	3.185	3.190	3.196	730
740	3.196	3.201	3.206	3.212	3.217	3.222	3.227	3.233	3.238	3.243	3.249	740
750	3.249	3.254	3.259	3.265	3.270	3.275	3.281	3.286	3.291	3.297	3.302	750
760	3.302	3.307	3.313	3.318	3.323	3.329	3.334	3.339	3.345	3.350	3.355	760
770	3.355	3.361	3.366	3.371	3.377	3.382	3.387	3.393	3.398	3.403	3.409	770
780	3.409	3.414	3.419	3.425	3.430	3.435	3.441	3.446	3.451	3.457	3.462	780
790	3.462	3.468	3.473	3.478	3.484	3.489	3.494	3.500	3.505	3.510	3.516	790
800	3.516	3.521	3.527	3.532	3.537	3.543	3.548	3.553	3.559	3.564	3.570	800
810	3.570	3.575	3.580	3.586	3.591	3.596	3.602	3.607	3.613	3.618	3.623	810
820	3.623	3.629	3.634	3.640	3.645	3.650	3.656	3.661	3.667	3.672	3.677	820
830	3.677	3.683	3.688	3.694	3.699	3.704	3.710	3.715	3.721	3.726	3.731	830
840	3.731	3.737	3.742	3.748	3.753	3.758	3.764	3.769	3.775	3.780	3.786	840
850	3.786	3.791	3.796	3.802	3.807	3.813	3.818	3.823	3.829	3.834	3.840	850
860	3.840	3.845	3.851	3.856	3.862	3.867	3.872	3.878	3.883	3.889	3.894	860
870	3.894	3.900	3.905	3.910	3.916	3.921	3.927	3.932	3.938	3.943	3.949	870
880	3.949	3.954	3.959	3.965	3.970	3.976	3.981	3.987	3.992	3.998	4.003	880
890	4.003	4.009	4.014	4.020	4.025	4.030	4.036	4.041	4.047	4.052	4.058	890
900	4.058	4.063	4.069	4.074	4.080	4.085	4.091	4.096	4.102	4.107	4.113	900
910	4.113	4.118	4.123	4.129	4.134	4.140	4.145	4.151	4.156	4.162	4.167	910
920	4.167	4.173	4.178	4.184	4.189	4.195	4.200	4.206	4.211	4.217	4.222	920
930	4.222	4.228	4.233	4.239	4.244	4.250	4.255	4.261	4.266	4.272	4.277	930
940	4.277	4.283	4.288	4.294	4.299	4.305	4.310	4.316	4.321	4.327	4.332	940

°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 16 ***Type S Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
950	4.332	4.338	4.343	4.349	4.355	4.360	4.366	4.371	4.377	4.382	4.388	950
960	4.388	4.393	4.399	4.404	4.410	4.415	4.421	4.426	4.432	4.437	4.443	960
970	4.443	4.449	4.454	4.460	4.465	4.471	4.476	4.482	4.487	4.493	4.498	970
980	4.498	4.504	4.510	4.515	4.521	4.526	4.532	4.537	4.543	4.548	4.554	980
990	4.554	4.559	4.565	4.571	4.576	4.582	4.587	4.593	4.598	4.604	4.610	990
1000	4.610	4.615	4.621	4.626	4.632	4.637	4.643	4.648	4.654	4.660	4.665	1000
1010	4.665	4.671	4.676	4.682	4.688	4.693	4.699	4.704	4.710	4.715	4.721	1010
1020	4.721	4.727	4.732	4.738	4.743	4.749	4.755	4.760	4.766	4.771	4.777	1020
1030	4.777	4.782	4.788	4.794	4.799	4.805	4.810	4.816	4.822	4.827	4.833	1030
1040	4.833	4.838	4.844	4.850	4.855	4.861	4.866	4.872	4.878	4.883	4.889	1040
1050	4.889	4.895	4.900	4.906	4.911	4.917	4.923	4.928	4.934	4.939	4.945	1050
1060	4.945	4.951	4.956	4.962	4.968	4.973	4.979	4.984	4.990	4.996	5.001	1060
1070	5.001	5.007	5.013	5.018	5.024	5.030	5.035	5.041	5.046	5.052	5.058	1070
1080	5.058	5.063	5.069	5.075	5.080	5.086	5.092	5.097	5.103	5.109	5.114	1080
1090	5.114	5.120	5.125	5.131	5.137	5.142	5.148	5.154	5.159	5.165	5.171	1090
1100	5.171	5.176	5.182	5.188	5.193	5.199	5.205	5.210	5.216	5.222	5.227	1100
1110	5.227	5.233	5.239	5.244	5.250	5.256	5.261	5.267	5.273	5.278	5.284	1110
1120	5.284	5.290	5.295	5.301	5.307	5.312	5.318	5.324	5.330	5.335	5.341	1120
1130	5.341	5.347	5.352	5.358	5.364	5.369	5.375	5.381	5.386	5.392	5.398	1130
1140	5.398	5.404	5.409	5.415	5.421	5.426	5.432	5.438	5.443	5.449	5.455	1140
1150	5.455	5.461	5.466	5.472	5.478	5.483	5.489	5.495	5.501	5.506	5.512	1150
1160	5.512	5.518	5.523	5.529	5.535	5.541	5.546	5.552	5.558	5.563	5.569	1160
1170	5.569	5.575	5.581	5.586	5.592	5.598	5.604	5.609	5.615	5.621	5.627	1170
1180	5.627	5.632	5.638	5.644	5.649	5.655	5.661	5.667	5.672	5.678	5.684	1180
1190	5.684	5.690	5.695	5.701	5.707	5.713	5.718	5.724	5.730	5.736	5.741	1190
1200	5.741	5.747	5.753	5.759	5.764	5.770	5.776	5.782	5.788	5.793	5.799	1200
1210	5.799	5.805	5.811	5.816	5.822	5.828	5.834	5.839	5.845	5.851	5.857	1210
1220	5.857	5.863	5.868	5.874	5.880	5.886	5.891	5.897	5.903	5.909	5.915	1220
1230	5.915	5.920	5.926	5.932	5.938	5.944	5.949	5.955	5.961	5.967	5.972	1230
1240	5.972	5.978	5.984	5.990	5.996	6.001	6.007	6.013	6.019	6.025	6.030	1240
1250	6.030	6.036	6.042	6.048	6.054	6.060	6.065	6.071	6.077	6.083	6.089	1250
1260	6.089	6.094	6.100	6.106	6.112	6.118	6.124	6.129	6.135	6.141	6.147	1260
1270	6.147	6.153	6.158	6.164	6.170	6.176	6.182	6.188	6.193	6.199	6.205	1270
1280	6.205	6.211	6.217	6.223	6.228	6.234	6.240	6.246	6.252	6.258	6.264	1280
1290	6.264	6.269	6.275	6.281	6.287	6.293	6.299	6.305	6.310	6.316	6.322	1290
1300	6.322	6.328	6.334	6.340	6.346	6.351	6.357	6.363	6.369	6.375	6.381	1300
1310	6.381	6.387	6.392	6.398	6.404	6.410	6.416	6.422	6.428	6.434	6.439	1310
1320	6.439	6.445	6.451	6.457	6.463	6.469	6.475	6.481	6.486	6.492	6.498	1320
1330	6.498	6.504	6.510	6.516	6.522	6.528	6.534	6.539	6.545	6.551	6.557	1330
1340	6.557	6.563	6.569	6.575	6.581	6.587	6.593	6.598	6.604	6.610	6.616	1340
1350	6.616	6.622	6.628	6.634	6.640	6.646	6.652	6.658	6.664	6.669	6.675	1350
1360	6.675	6.681	6.687	6.693	6.699	6.705	6.711	6.717	6.723	6.729	6.735	1360
1370	6.735	6.741	6.746	6.752	6.758	6.764	6.770	6.776	6.782	6.788	6.794	1370
1380	6.794	6.800	6.806	6.812	6.818	6.824	6.830	6.836	6.842	6.847	6.853	1380
1390	6.853	6.859	6.865	6.871	6.877	6.883	6.889	6.895	6.901	6.907	6.913	1390
1400	6.913	6.919	6.925	6.931	6.937	6.943	6.949	6.955	6.961	6.967	6.973	1400
1410	6.973	6.979	6.985	6.991	6.997	7.003	7.008	7.014	7.020	7.026	7.032	1410
1420	7.032	7.038	7.044	7.050	7.056	7.062	7.068	7.074	7.080	7.086	7.092	1420
1430	7.092	7.098	7.104	7.110	7.116	7.122	7.128	7.134	7.140	7.146	7.152	1430
1440	7.152	7.158	7.164	7.170	7.176	7.182	7.188	7.194	7.200	7.206	7.212	1440

°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 16 ***Type S Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
1450	7.212	7.218	7.224	7.230	7.236	7.242	7.249	7.255	7.261	7.267	7.273	1450
1460	7.273	7.279	7.285	7.291	7.297	7.303	7.309	7.315	7.321	7.327	7.333	1460
1470	7.333	7.339	7.345	7.351	7.357	7.363	7.369	7.375	7.381	7.387	7.393	1470
1480	7.393	7.399	7.405	7.411	7.418	7.424	7.430	7.436	7.442	7.448	7.454	1480
1490	7.454	7.460	7.466	7.472	7.478	7.484	7.490	7.496	7.502	7.508	7.514	1490
1500	7.514	7.521	7.527	7.533	7.539	7.545	7.551	7.557	7.563	7.569	7.575	1500
1510	7.575	7.581	7.587	7.593	7.600	7.606	7.612	7.618	7.624	7.630	7.636	1510
1520	7.636	7.642	7.648	7.654	7.660	7.667	7.673	7.679	7.685	7.691	7.697	1520
1530	7.697	7.703	7.709	7.715	7.721	7.728	7.734	7.740	7.746	7.752	7.758	1530
1540	7.758	7.764	7.770	7.776	7.783	7.789	7.795	7.801	7.807	7.813	7.819	1540
1550	7.819	7.825	7.832	7.838	7.844	7.850	7.856	7.862	7.868	7.874	7.881	1550
1560	7.881	7.887	7.893	7.899	7.905	7.911	7.917	7.923	7.930	7.936	7.942	1560
1570	7.942	7.948	7.954	7.960	7.966	7.973	7.979	7.985	7.991	7.997	8.003	1570
1580	8.003	8.010	8.016	8.022	8.028	8.034	8.040	8.047	8.053	8.059	8.065	1580
1590	8.065	8.071	8.077	8.083	8.090	8.096	8.102	8.108	8.114	8.121	8.127	1590
1600	8.127	8.133	8.139	8.145	8.151	8.158	8.164	8.170	8.176	8.182	8.189	1600
1610	8.189	8.195	8.201	8.207	8.213	8.219	8.226	8.232	8.238	8.244	8.250	1610
1620	8.250	8.257	8.263	8.269	8.275	8.281	8.288	8.294	8.300	8.306	8.312	1620
1630	8.312	8.319	8.325	8.331	8.337	8.343	8.350	8.356	8.362	8.368	8.375	1630
1640	8.375	8.381	8.387	8.393	8.399	8.406	8.412	8.418	8.424	8.431	8.437	1640
1650	8.437	8.443	8.449	8.455	8.462	8.468	8.474	8.480	8.487	8.493	8.499	1650
1660	8.499	8.505	8.512	8.518	8.524	8.530	8.537	8.543	8.549	8.555	8.562	1660
1670	8.562	8.568	8.574	8.580	8.587	8.593	8.599	8.605	8.612	8.618	8.624	1670
1680	8.624	8.630	8.637	8.643	8.649	8.655	8.662	8.668	8.674	8.680	8.687	1680
1690	8.687	8.693	8.699	8.706	8.712	8.718	8.724	8.731	8.737	8.743	8.749	1690
1700	8.749	8.756	8.762	8.768	8.775	8.781	8.787	8.793	8.800	8.806	8.812	1700
1710	8.812	8.819	8.825	8.831	8.837	8.844	8.850	8.856	8.863	8.869	8.875	1710
1720	8.875	8.882	8.888	8.894	8.900	8.907	8.913	8.919	8.926	8.932	8.938	1720
1730	8.938	8.945	8.951	8.957	8.964	8.970	8.976	8.983	8.989	8.995	9.001	1730
1740	9.001	9.008	9.014	9.020	9.027	9.033	9.039	9.046	9.052	9.058	9.065	1740
1750	9.065	9.071	9.077	9.084	9.090	9.096	9.103	9.109	9.115	9.122	9.128	1750
1760	9.128	9.134	9.141	9.147	9.153	9.160	9.166	9.172	9.179	9.185	9.192	1760
1770	9.192	9.198	9.204	9.211	9.217	9.223	9.230	9.236	9.242	9.249	9.255	1770
1780	9.255	9.261	9.268	9.274	9.281	9.287	9.293	9.300	9.306	9.312	9.319	1780
1790	9.319	9.325	9.331	9.338	9.344	9.351	9.357	9.363	9.370	9.376	9.382	1790
1800	9.382	9.389	9.395	9.402	9.408	9.414	9.421	9.427	9.434	9.440	9.446	1800
1810	9.446	9.453	9.459	9.465	9.472	9.478	9.485	9.491	9.497	9.504	9.510	1810
1820	9.510	9.517	9.523	9.529	9.536	9.542	9.549	9.555	9.561	9.568	9.574	1820
1830	9.574	9.581	9.587	9.594	9.600	9.606	9.613	9.619	9.626	9.632	9.638	1830
1840	9.638	9.645	9.651	9.658	9.664	9.671	9.677	9.683	9.690	9.696	9.703	1840
1850	9.703	9.709	9.716	9.722	9.728	9.735	9.741	9.748	9.754	9.761	9.767	1850
1860	9.767	9.773	9.780	9.786	9.793	9.799	9.806	9.812	9.819	9.825	9.831	1860
1870	9.831	9.838	9.844	9.851	9.857	9.864	9.870	9.877	9.883	9.889	9.896	1870
1880	9.896	9.902	9.909	9.915	9.922	9.928	9.935	9.941	9.948	9.954	9.961	1880
1890	9.961	9.967	9.973	9.980	9.986	9.993	9.999	10.006	10.012	10.019	10.025	1890
1900	10.025	10.032	10.038	10.045	10.051	10.058	10.064	10.071	10.077	10.084	10.090	1900
1910	10.090	10.097	10.103	10.110	10.116	10.123	10.129	10.136	10.142	10.149	10.155	1910
1920	10.155	10.162	10.168	10.175	10.181	10.188	10.194	10.201	10.207	10.214	10.220	1920
1930	10.220	10.227	10.233	10.240	10.246	10.253	10.259	10.266	10.272	10.279	10.285	1930
1940	10.285	10.292	10.298	10.305	10.311	10.318	10.324	10.331	10.337	10.344	10.350	1940

°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 16 ***Type S Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
1950	10.350	10.357	10.363	10.370	10.376	10.383	10.390	10.396	10.403	10.409	10.416	1950
1960	10.416	10.422	10.429	10.435	10.442	10.448	10.455	10.461	10.468	10.475	10.481	1960
1970	10.481	10.488	10.494	10.501	10.507	10.514	10.520	10.527	10.533	10.540	10.547	1970
1980	10.547	10.553	10.560	10.566	10.573	10.579	10.586	10.592	10.599	10.606	10.612	1980
1990	10.612	10.619	10.625	10.632	10.638	10.645	10.651	10.658	10.665	10.671	10.678	1990
2000	10.678	10.684	10.691	10.697	10.704	10.711	10.717	10.724	10.730	10.737	10.743	2000
2010	10.743	10.750	10.757	10.763	10.770	10.776	10.783	10.789	10.796	10.803	10.809	2010
2020	10.809	10.816	10.822	10.829	10.836	10.842	10.849	10.855	10.862	10.868	10.875	2020
2030	10.875	10.882	10.888	10.895	10.901	10.908	10.915	10.921	10.928	10.934	10.941	2030
2040	10.941	10.948	10.954	10.961	10.967	10.974	10.981	10.987	10.994	11.000	11.007	2040
2050	11.007	11.014	11.020	11.027	11.033	11.040	11.047	11.053	11.060	11.066	11.073	2050
2060	11.073	11.080	11.086	11.093	11.099	11.106	11.113	11.119	11.126	11.132	11.139	2060
2070	11.139	11.146	11.152	11.159	11.166	11.172	11.179	11.185	11.192	11.199	11.205	2070
2080	11.205	11.212	11.219	11.225	11.232	11.238	11.245	11.252	11.258	11.265	11.272	2080
2090	11.272	11.278	11.285	11.291	11.298	11.305	11.311	11.318	11.325	11.331	11.338	2090
2100	11.338	11.345	11.351	11.358	11.364	11.371	11.378	11.384	11.391	11.398	11.404	2100
2110	11.404	11.411	11.418	11.424	11.431	11.437	11.444	11.451	11.457	11.464	11.471	2110
2120	11.471	11.477	11.484	11.491	11.497	11.504	11.511	11.517	11.524	11.531	11.537	2120
2130	11.537	11.544	11.550	11.557	11.564	11.570	11.577	11.584	11.590	11.597	11.604	2130
2140	11.604	11.610	11.617	11.624	11.630	11.637	11.644	11.650	11.657	11.664	11.670	2140
2150	11.670	11.677	11.684	11.690	11.697	11.704	11.710	11.717	11.724	11.730	11.737	2150
2160	11.737	11.744	11.750	11.757	11.764	11.770	11.777	11.784	11.790	11.797	11.804	2160
2170	11.804	11.810	11.817	11.824	11.830	11.837	11.844	11.850	11.857	11.864	11.870	2170
2180	11.870	11.877	11.884	11.890	11.897	11.904	11.910	11.917	11.924	11.931	11.937	2180
2190	11.937	11.944	11.951	11.957	11.964	11.971	11.977	11.984	11.991	11.997	12.004	2190
2200	12.004	12.011	12.017	12.024	12.031	12.037	12.044	12.051	12.058	12.064	12.071	2200
2210	12.071	12.078	12.084	12.091	12.098	12.104	12.111	12.118	12.124	12.131	12.138	2210
2220	12.138	12.145	12.151	12.158	12.165	12.171	12.178	12.185	12.191	12.198	12.205	2220
2230	12.205	12.211	12.218	12.225	12.232	12.238	12.245	12.252	12.258	12.265	12.272	2230
2240	12.272	12.278	12.285	12.292	12.299	12.305	12.312	12.319	12.325	12.332	12.339	2240
2250	12.339	12.346	12.352	12.359	12.366	12.372	12.379	12.386	12.392	12.399	12.406	2250
2260	12.406	12.413	12.419	12.426	12.433	12.439	12.446	12.453	12.460	12.466	12.473	2260
2270	12.473	12.480	12.486	12.493	12.500	12.507	12.513	12.520	12.527	12.533	12.540	2270
2280	12.540	12.547	12.554	12.560	12.567	12.574	12.580	12.587	12.594	12.601	12.607	2280
2290	12.607	12.614	12.621	12.627	12.634	12.641	12.648	12.654	12.661	12.668	12.675	2290
2300	12.675	12.681	12.688	12.695	12.701	12.708	12.715	12.722	12.728	12.735	12.742	2300
2310	12.742	12.748	12.755	12.762	12.769	12.775	12.782	12.789	12.796	12.802	12.809	2310
2320	12.809	12.816	12.822	12.829	12.836	12.843	12.849	12.856	12.863	12.870	12.876	2320
2330	12.876	12.883	12.890	12.896	12.903	12.910	12.917	12.923	12.930	12.937	12.944	2330
2340	12.944	12.950	12.957	12.964	12.971	12.977	12.984	12.991	12.997	13.004	13.011	2340
2350	13.011	13.018	13.024	13.031	13.038	13.045	13.051	13.058	13.065	13.072	13.078	2350
2360	13.078	13.085	13.092	13.098	13.105	13.112	13.119	13.125	13.132	13.139	13.146	2360
2370	13.146	13.152	13.159	13.166	13.173	13.179	13.186	13.193	13.199	13.206	13.213	2370
2380	13.213	13.220	13.226	13.233	13.240	13.247	13.253	13.260	13.267	13.274	13.280	2380
2390	13.280	13.287	13.294	13.301	13.307	13.314	13.321	13.328	13.334	13.341	13.348	2390
2400	13.348	13.354	13.361	13.368	13.375	13.381	13.388	13.395	13.402	13.408	13.415	2400
2410	13.415	13.422	13.429	13.435	13.442	13.449	13.456	13.462	13.469	13.476	13.483	2410
2420	13.483	13.489	13.496	13.503	13.510	13.516	13.523	13.530	13.537	13.543	13.550	2420
2430	13.550	13.557	13.563	13.570	13.577	13.584	13.590	13.597	13.604	13.611	13.617	2430
2440	13.617	13.624	13.631	13.638	13.644	13.651	13.658	13.665	13.671	13.678	13.685	2440

°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 16 ***Type S Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
2450	13.685	13.692	13.698	13.705	13.712	13.719	13.725	13.732	13.739	13.746	13.752	2450
2460	13.752	13.759	13.766	13.773	13.779	13.786	13.793	13.800	13.806	13.813	13.820	2460
2470	13.820	13.826	13.833	13.840	13.847	13.853	13.860	13.867	13.874	13.880	13.887	2470
2480	13.887	13.894	13.901	13.907	13.914	13.921	13.928	13.934	13.941	13.948	13.955	2480
2490	13.955	13.961	13.968	13.975	13.982	13.988	13.995	14.002	14.009	14.015	14.022	2490
2500	14.022	14.029	14.036	14.042	14.049	14.056	14.063	14.069	14.076	14.083	14.089	2500
2510	14.089	14.096	14.103	14.110	14.116	14.123	14.130	14.137	14.143	14.150	14.157	2510
2520	14.157	14.164	14.170	14.177	14.184	14.191	14.197	14.204	14.211	14.218	14.224	2520
2530	14.224	14.231	14.238	14.245	14.251	14.258	14.265	14.272	14.278	14.285	14.292	2530
2540	14.292	14.298	14.305	14.312	14.319	14.325	14.332	14.339	14.346	14.352	14.359	2540
2550	14.359	14.366	14.373	14.379	14.386	14.393	14.400	14.406	14.413	14.420	14.426	2550
2560	14.426	14.433	14.440	14.447	14.453	14.460	14.467	14.474	14.480	14.487	14.494	2560
2570	14.494	14.501	14.507	14.514	14.521	14.528	14.534	14.541	14.548	14.554	14.561	2570
2580	14.561	14.568	14.575	14.581	14.588	14.595	14.602	14.608	14.615	14.622	14.629	2580
2590	14.629	14.635	14.642	14.649	14.655	14.662	14.669	14.676	14.682	14.689	14.696	2590
2600	14.696	14.703	14.709	14.716	14.723	14.729	14.736	14.743	14.750	14.756	14.763	2600
2610	14.763	14.770	14.777	14.783	14.790	14.797	14.803	14.810	14.817	14.824	14.830	2610
2620	14.830	14.837	14.844	14.851	14.857	14.864	14.871	14.877	14.884	14.891	14.898	2620
2630	14.898	14.904	14.911	14.918	14.925	14.931	14.938	14.945	14.951	14.958	14.965	2630
2640	14.965	14.972	14.978	14.985	14.992	14.998	15.005	15.012	15.019	15.025	15.032	2640
2650	15.032	15.039	15.045	15.052	15.059	15.066	15.072	15.079	15.086	15.092	15.099	2650
2660	15.099	15.106	15.113	15.119	15.126	15.133	15.139	15.146	15.153	15.160	15.166	2660
2670	15.166	15.173	15.180	15.186	15.193	15.200	15.207	15.213	15.220	15.227	15.233	2670
2680	15.233	15.240	15.247	15.254	15.260	15.267	15.274	15.280	15.287	15.294	15.300	2680
2690	15.300	15.307	15.314	15.321	15.327	15.334	15.341	15.347	15.354	15.361	15.367	2690
2700	15.367	15.374	15.381	15.388	15.394	15.401	15.408	15.414	15.421	15.428	15.434	2700
2710	15.434	15.441	15.448	15.455	15.461	15.468	15.475	15.481	15.488	15.495	15.501	2710
2720	15.501	15.508	15.515	15.521	15.528	15.535	15.542	15.548	15.555	15.562	15.568	2720
2730	15.568	15.575	15.582	15.588	15.595	15.602	15.608	15.615	15.622	15.628	15.635	2730
2740	15.635	15.642	15.649	15.655	15.662	15.669	15.675	15.682	15.689	15.695	15.702	2740
2750	15.702	15.709	15.715	15.722	15.729	15.735	15.742	15.749	15.755	15.762	15.769	2750
2760	15.769	15.775	15.782	15.789	15.795	15.802	15.809	15.815	15.822	15.829	15.835	2760
2770	15.835	15.842	15.849	15.855	15.862	15.869	15.875	15.882	15.889	15.895	15.902	2770
2780	15.902	15.909	15.915	15.922	15.929	15.935	15.942	15.949	15.955	15.962	15.969	2780
2790	15.969	15.975	15.982	15.989	15.995	16.002	16.009	16.015	16.022	16.029	16.035	2790
2800	16.035	16.042	16.049	16.055	16.062	16.069	16.075	16.082	16.089	16.095	16.102	2800
2810	16.102	16.108	16.115	16.122	16.128	16.135	16.142	16.148	16.155	16.162	16.168	2810
2820	16.168	16.175	16.182	16.188	16.195	16.202	16.208	16.215	16.221	16.228	16.235	2820
2830	16.235	16.241	16.248	16.255	16.261	16.268	16.275	16.281	16.288	16.294	16.301	2830
2840	16.301	16.308	16.314	16.321	16.328	16.334	16.341	16.347	16.354	16.361	16.367	2840
2850	16.367	16.374	16.381	16.387	16.394	16.400	16.407	16.414	16.420	16.427	16.434	2850
2860	16.434	16.440	16.447	16.453	16.460	16.467	16.473	16.480	16.486	16.493	16.500	2860
2870	16.500	16.506	16.513	16.520	16.526	16.533	16.539	16.546	16.553	16.559	16.566	2870
2880	16.566	16.572	16.579	16.586	16.592	16.599	16.605	16.612	16.619	16.625	16.632	2880
2890	16.632	16.638	16.645	16.652	16.658	16.665	16.671	16.678	16.685	16.691	16.698	2890
2900	16.698	16.704	16.711	16.718	16.724	16.731	16.737	16.744	16.751	16.757	16.764	2900
2910	16.764	16.770	16.777	16.783	16.790	16.797	16.803	16.810	16.816	16.823	16.829	2910
2920	16.829	16.836	16.843	16.849	16.856	16.862	16.869	16.876	16.882	16.889	16.895	2920
2930	16.895	16.902	16.908	16.915	16.922	16.928	16.935	16.941	16.948	16.954	16.961	2930
2940	16.961	16.967	16.974	16.981	16.987	16.994	17.000	17.007	17.013	17.020	17.026	2940

°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 16 ***Type S Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
2950	17.026	17.033	17.040	17.046	17.053	17.059	17.066	17.072	17.079	17.085	17.092	2950
2960	17.092	17.099	17.105	17.112	17.118	17.125	17.131	17.138	17.144	17.151	17.157	2960
2970	17.157	17.164	17.171	17.177	17.184	17.190	17.197	17.203	17.210	17.216	17.223	2970
2980	17.223	17.229	17.236	17.242	17.249	17.255	17.262	17.268	17.275	17.282	17.288	2980
2990	17.288	17.295	17.301	17.308	17.314	17.321	17.327	17.334	17.340	17.347	17.353	2990
3000	17.353	17.360	17.366	17.373	17.379	17.386	17.392	17.399	17.405	17.412	17.418	3000
3010	17.418	17.425	17.431	17.438	17.444	17.451	17.457	17.464	17.470	17.477	17.483	3010
3020	17.483	17.490	17.496	17.503	17.509	17.516	17.522	17.529	17.535	17.542	17.548	3020
3030	17.548	17.555	17.561	17.568	17.574	17.581	17.587	17.594	17.600	17.607	17.613	3030
3040	17.613	17.620	17.626	17.633	17.639	17.645	17.652	17.658	17.665	17.671	17.678	3040
3050	17.678	17.684	17.691	17.697	17.704	17.710	17.717	17.723	17.729	17.736	17.742	3050
3060	17.742	17.749	17.755	17.762	17.768	17.775	17.781	17.787	17.794	17.800	17.807	3060
3070	17.807	17.813	17.819	17.826	17.832	17.839	17.845	17.852	17.858	17.864	17.871	3070
3080	17.871	17.877	17.884	17.890	17.896	17.903	17.909	17.915	17.922	17.928	17.935	3080
3090	17.935	17.941	17.947	17.954	17.960	17.966	17.973	17.979	17.985	17.992	17.998	3090
3100	17.998	18.004	18.011	18.017	18.023	18.030	18.036	18.042	18.049	18.055	18.061	3100
3110	18.061	18.068	18.074	18.080	18.086	18.093	18.099	18.105	18.112	18.118	18.124	3110
3120	18.124	18.130	18.137	18.143	18.149	18.155	18.162	18.168	18.174	18.180	18.187	3120
3130	18.187	18.193	18.199	18.205	18.211	18.218	18.224	18.230	18.236	18.242	18.249	3130
3140	18.249	18.255	18.261	18.267	18.273	18.279	18.285	18.292	18.298	18.304	18.310	3140
3150	18.310	18.316	18.322	18.328	18.334	18.341	18.347	18.353	18.359	18.365	18.371	3150
3160	18.371	18.377	18.383	18.389	18.395	18.401	18.407	18.413	18.419	18.425	18.431	3160
3170	18.431	18.437	18.443	18.449	18.455	18.461	18.467	18.473	18.479	18.485	18.491	3170
3180	18.491	18.497	18.503	18.509	18.515	18.521	18.527	18.533	18.539	18.545	18.551	3180
3190	18.551	18.557	18.562	18.568	18.574	18.580	18.586	18.592	18.598	18.603	18.609	3190
3200	18.609	18.615	18.621	18.627	18.633	18.638	18.644	18.650	18.656	18.661	18.667	3200
3210	18.667	18.673	18.679	18.684	18.690							3210

°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 17 ***Type T Thermocouple*** *— thermoelectric voltage as a function of temperature (°C); reference junctions at 0 °C*

°C	0	1	2	3	4	5	6	7	8	9	10	°C
					Thermoelectric Voltage in Millivolts							
-270	-6.258											-270
-260	-6.232	-6.236	-6.239	-6.242	-6.245	-6.248	-6.251	-6.253	-6.255	-6.256	-6.258	-260
-250	-6.180	-6.187	-6.193	-6.198	-6.204	-6.209	-6.214	-6.219	-6.223	-6.228	-6.232	-250
-240	-6.105	-6.114	-6.122	-6.130	-6.138	-6.146	-6.153	-6.160	-6.167	-6.174	-6.180	-240
-230	-6.007	-6.017	-6.028	-6.038	-6.049	-6.059	-6.068	-6.078	-6.087	-6.096	-6.105	-230
-220	-5.888	-5.901	-5.914	-5.926	-5.938	-5.950	-5.962	-5.973	-5.985	-5.996	-6.007	-220
-210	-5.753	-5.767	-5.782	-5.795	-5.809	-5.823	-5.836	-5.850	-5.863	-5.876	-5.888	-210
-200	-5.603	-5.619	-5.634	-5.650	-5.665	-5.680	-5.695	-5.710	-5.724	-5.739	-5.753	-200
-190	-5.439	-5.456	-5.473	-5.489	-5.506	-5.523	-5.539	-5.555	-5.571	-5.587	-5.603	-190
-180	-5.261	-5.279	-5.297	-5.316	-5.334	-5.351	-5.369	-5.387	-5.404	-5.421	-5.439	-180
-170	-5.070	-5.089	-5.109	-5.128	-5.148	-5.167	-5.186	-5.205	-5.224	-5.242	-5.261	-170
-160	-4.865	-4.886	-4.907	-4.928	-4.949	-4.969	-4.989	-5.010	-5.030	-5.050	-5.070	-160
-150	-4.648	-4.671	-4.693	-4.715	-4.737	-4.759	-4.780	-4.802	-4.823	-4.844	-4.865	-150
-140	-4.419	-4.443	-4.466	-4.489	-4.512	-4.535	-4.558	-4.581	-4.604	-4.626	-4.648	-140
-130	-4.177	-4.202	-4.226	-4.251	-4.275	-4.300	-4.324	-4.348	-4.372	-4.395	-4.419	-130
-120	-3.923	-3.949	-3.975	-4.000	-4.026	-4.052	-4.077	-4.102	-4.127	-4.152	-4.177	-120
-110	-3.657	-3.684	-3.711	-3.738	-3.765	-3.791	-3.818	-3.844	-3.871	-3.897	-3.923	-110
-100	-3.379	-3.407	-3.435	-3.463	-3.491	-3.519	-3.547	-3.574	-3.602	-3.629	-3.657	-100
-90	-3.089	-3.118	-3.148	-3.177	-3.206	-3.235	-3.264	-3.293	-3.322	-3.350	-3.379	-90
-80	-2.788	-2.818	-2.849	-2.879	-2.910	-2.940	-2.970	-3.000	-3.030	-3.059	-3.089	-80
-70	-2.476	-2.507	-2.539	-2.571	-2.602	-2.633	-2.664	-2.695	-2.726	-2.757	-2.788	-70
-60	-2.153	-2.186	-2.218	-2.251	-2.283	-2.316	-2.348	-2.380	-2.412	-2.444	-2.476	-60
-50	-1.819	-1.853	-1.887	-1.920	-1.954	-1.987	-2.021	-2.054	-2.087	-2.120	-2.153	-50
-40	-1.475	-1.510	-1.545	-1.579	-1.614	-1.648	-1.683	-1.717	-1.751	-1.785	-1.819	-40
-30	-1.121	-1.157	-1.192	-1.228	-1.264	-1.299	-1.335	-1.370	-1.405	-1.440	-1.475	-30
-20	-0.757	-0.794	-0.830	-0.867	-0.904	-0.940	-0.976	-1.013	-1.049	-1.085	-1.121	-20
-10	-0.383	-0.421	-0.459	-0.496	-0.534	-0.571	-0.608	-0.646	-0.683	-0.720	-0.757	-10
0	0.000	-0.039	-0.077	-0.116	-0.154	-0.193	-0.231	-0.269	-0.307	-0.345	-0.383	0
0	0.000	0.039	0.078	0.117	0.156	0.195	0.234	0.273	0.312	0.352	0.391	0
10	0.391	0.431	0.470	0.510	0.549	0.589	0.629	0.669	0.709	0.749	0.790	10
20	0.790	0.830	0.870	0.911	0.951	0.992	1.033	1.074	1.114	1.155	1.196	20
30	1.196	1.238	1.279	1.320	1.362	1.403	1.445	1.486	1.528	1.570	1.612	30
40	1.612	1.654	1.696	1.738	1.780	1.823	1.865	1.908	1.950	1.993	2.036	40
50	2.036	2.079	2.122	2.165	2.208	2.251	2.294	2.338	2.381	2.425	2.468	50
60	2.468	2.512	2.556	2.600	2.643	2.687	2.732	2.776	2.820	2.864	2.909	60
70	2.909	2.953	2.998	3.043	3.087	3.132	3.177	3.222	3.267	3.312	3.358	70
80	3.358	3.403	3.448	3.494	3.539	3.585	3.631	3.677	3.722	3.768	3.814	80
90	3.814	3.860	3.907	3.953	3.999	4.046	4.092	4.138	4.185	4.232	4.279	90
100	4.279	4.325	4.372	4.419	4.466	4.513	4.561	4.608	4.655	4.702	4.750	100
110	4.750	4.798	4.845	4.893	4.941	4.988	5.036	5.084	5.132	5.180	5.228	110
120	5.228	5.277	5.325	5.373	5.422	5.470	5.519	5.567	5.616	5.665	5.714	120
130	5.714	5.763	5.812	5.861	5.910	5.959	6.008	6.057	6.107	6.156	6.206	130
140	6.206	6.255	6.305	6.355	6.404	6.454	6.504	6.554	6.604	6.654	6.704	140
150	6.704	6.754	6.805	6.855	6.905	6.956	7.006	7.057	7.107	7.158	7.209	150
160	7.209	7.260	7.310	7.361	7.412	7.463	7.515	7.566	7.617	7.668	7.720	160
170	7.720	7.771	7.823	7.874	7.926	7.977	8.029	8.081	8.133	8.185	8.237	170
180	8.237	8.289	8.341	8.393	8.445	8.497	8.550	8.602	8.654	8.707	8.759	180
190	8.759	8.812	8.865	8.917	8.970	9.023	9.076	9.129	9.182	9.235	9.288	190

°C	0	1	2	3	4	5	6	7	8	9	10	°C

TABLE 17 ***Type T Thermocouple*** *— thermoelectric voltage as a function of temperature (°C); reference junctions at 0 °C*

°C	0	1	2	3	4	5	6	7	8	9	10	°C
					Thermoelectric Voltage in Millivolts							
200	9.288	9.341	9.395	9.448	9.501	9.555	9.608	9.662	9.715	9.769	9.822	200
210	9.822	9.876	9.930	9.984	10.038	10.092	10.146	10.200	10.254	10.308	10.362	210
220	10.362	10.417	10.471	10.525	10.580	10.634	10.689	10.743	10.798	10.853	10.907	220
230	10.907	10.962	11.017	11.072	11.127	11.182	11.237	11.292	11.347	11.403	11.458	230
240	11.458	11.513	11.569	11.624	11.680	11.735	11.791	11.846	11.902	11.958	12.013	240
250	12.013	12.069	12.125	12.181	12.237	12.293	12.349	12.405	12.461	12.518	12.574	250
260	12.574	12.630	12.687	12.743	12.799	12.856	12.912	12.969	13.026	13.082	13.139	260
270	13.139	13.196	13.253	13.310	13.366	13.423	13.480	13.537	13.595	13.652	13.709	270
280	13.709	13.766	13.823	13.881	13.938	13.995	14.053	14.110	14.168	14.226	14.283	280
290	14.283	14.341	14.399	14.456	14.514	14.572	14.630	14.688	14.746	14.804	14.862	290
300	14.862	14.920	14.978	15.036	15.095	15.153	15.211	15.270	15.328	15.386	15.445	300
310	15.445	15.503	15.562	15.621	15.679	15.738	15.797	15.856	15.914	15.973	16.032	310
320	16.032	16.091	16.150	16.209	16.268	16.327	16.387	16.446	16.505	16.564	16.624	320
330	16.624	16.683	16.742	16.802	16.861	16.921	16.980	17.040	17.100	17.159	17.219	330
340	17.219	17.279	17.339	17.399	17.458	17.518	17.578	17.638	17.698	17.759	17.819	340
350	17.819	17.879	17.939	17.999	18.060	18.120	18.180	18.241	18.301	18.362	18.422	350
360	18.422	18.483	18.543	18.604	18.665	18.725	18.786	18.847	18.908	18.969	19.030	360
370	19.030	19.091	19.152	19.213	19.274	19.335	19.396	19.457	19.518	19.579	19.641	370
380	19.641	19.702	19.763	19.825	19.886	19.947	20.009	20.070	20.132	20.193	20.255	380
390	20.255	20.317	20.378	20.440	20.502	20.563	20.625	20.687	20.748	20.810	20.872	390
400	20.872											400

| °C | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | °C |

TABLE 18 ***Type T Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
					Thermoelectric Voltage in Millivolts							
-450	-6.254	-6.255	-6.256	-6.257	-6.258							-450
-440	-6.240	-6.242	-6.243	-6.245	-6.247	-6.248	-6.250	-6.251	-6.252	-6.253	-6.254	-440
-430	-6.217	-6.220	-6.222	-6.225	-6.227	-6.230	-6.232	-6.234	-6.236	-6.238	-6.240	-430
-420	-6.187	-6.191	-6.194	-6.197	-6.200	-6.203	-6.206	-6.209	-6.212	-6.215	-6.217	-420
-410	-6.150	-6.154	-6.158	-6.162	-6.166	-6.170	-6.173	-6.177	-6.180	-6.184	-6.187	-410
-400	-6.105	-6.110	-6.115	-6.119	-6.124	-6.128	-6.133	-6.137	-6.141	-6.146	-6.150	-400
-390	-6.053	-6.059	-6.064	-6.069	-6.075	-6.080	-6.085	-6.090	-6.095	-6.100	-6.105	-390
-380	-5.994	-6.001	-6.007	-6.013	-6.019	-6.025	-6.030	-6.036	-6.042	-6.047	-6.053	-380
-370	-5.930	-5.937	-5.943	-5.950	-5.956	-5.963	-5.969	-5.976	-5.982	-5.988	-5.994	-370
-360	-5.860	-5.867	-5.874	-5.881	-5.888	-5.896	-5.902	-5.909	-5.916	-5.923	-5.930	-360
-350	-5.785	-5.792	-5.800	-5.808	-5.815	-5.823	-5.830	-5.838	-5.845	-5.853	-5.860	-350
-340	-5.705	-5.713	-5.721	-5.729	-5.737	-5.745	-5.753	-5.761	-5.769	-5.777	-5.785	-340
-330	-5.620	-5.629	-5.638	-5.646	-5.655	-5.663	-5.672	-5.680	-5.688	-5.697	-5.705	-330
-320	-5.532	-5.541	-5.550	-5.559	-5.568	-5.577	-5.585	-5.594	-5.603	-5.612	-5.620	-320
-310	-5.439	-5.448	-5.458	-5.467	-5.476	-5.486	-5.495	-5.504	-5.513	-5.523	-5.532	-310
-300	-5.341	-5.351	-5.361	-5.371	-5.381	-5.391	-5.400	-5.410	-5.420	-5.429	-5.439	-300
-290	-5.240	-5.250	-5.261	-5.271	-5.281	-5.291	-5.301	-5.312	-5.322	-5.332	-5.341	-290
-280	-5.135	-5.145	-5.156	-5.167	-5.177	-5.188	-5.198	-5.209	-5.219	-5.230	-5.240	-280
-270	-5.025	-5.036	-5.048	-5.059	-5.070	-5.081	-5.091	-5.102	-5.113	-5.124	-5.135	-270
-260	-4.912	-4.923	-4.935	-4.946	-4.958	-4.969	-4.980	-4.992	-5.003	-5.014	-5.025	-260
-250	-4.794	-4.806	-4.818	-4.830	-4.842	-4.854	-4.865	-4.877	-4.889	-4.900	-4.912	-250
-240	-4.673	-4.685	-4.698	-4.710	-4.722	-4.734	-4.746	-4.759	-4.771	-4.783	-4.794	-240
-230	-4.548	-4.561	-4.573	-4.586	-4.599	-4.611	-4.624	-4.636	-4.648	-4.661	-4.673	-230
-220	-4.419	-4.432	-4.445	-4.458	-4.471	-4.484	-4.497	-4.510	-4.523	-4.535	-4.548	-220
-210	-4.286	-4.300	-4.313	-4.326	-4.340	-4.353	-4.366	-4.380	-4.393	-4.406	-4.419	-210
-200	-4.149	-4.163	-4.177	-4.191	-4.205	-4.218	-4.232	-4.246	-4.259	-4.273	-4.286	-200
-190	-4.009	-4.023	-4.037	-4.052	-4.066	-4.080	-4.094	-4.108	-4.122	-4.136	-4.149	-190
-180	-3.865	-3.879	-3.894	-3.908	-3.923	-3.937	-3.952	-3.966	-3.980	-3.995	-4.009	-180
-170	-3.717	-3.732	-3.747	-3.762	-3.777	-3.791	-3.806	-3.821	-3.836	-3.850	-3.865	-170
-160	-3.565	-3.581	-3.596	-3.611	-3.626	-3.642	-3.657	-3.672	-3.687	-3.702	-3.717	-160
-150	-3.410	-3.426	-3.441	-3.457	-3.473	-3.488	-3.504	-3.519	-3.535	-3.550	-3.565	-150
-140	-3.251	-3.267	-3.283	-3.299	-3.315	-3.331	-3.347	-3.363	-3.379	-3.394	-3.410	-140
-130	-3.089	-3.105	-3.122	-3.138	-3.154	-3.171	-3.187	-3.203	-3.219	-3.235	-3.251	-130
-120	-2.923	-2.940	-2.956	-2.973	-2.990	-3.006	-3.023	-3.040	-3.056	-3.072	-3.089	-120
-110	-2.754	-2.771	-2.788	-2.805	-2.822	-2.839	-2.856	-2.873	-2.889	-2.906	-2.923	-110
-100	-2.581	-2.598	-2.616	-2.633	-2.651	-2.668	-2.685	-2.702	-2.719	-2.737	-2.754	-100
-90	-2.405	-2.423	-2.440	-2.458	-2.476	-2.493	-2.511	-2.529	-2.546	-2.564	-2.581	-90
-80	-2.225	-2.244	-2.262	-2.280	-2.298	-2.316	-2.334	-2.351	-2.369	-2.387	-2.405	-80
-70	-2.043	-2.061	-2.079	-2.098	-2.116	-2.134	-2.153	-2.171	-2.189	-2.207	-2.225	-70
-60	-1.857	-1.875	-1.894	-1.913	-1.931	-1.950	-1.969	-1.987	-2.006	-2.024	-2.043	-60
-50	-1.667	-1.686	-1.705	-1.724	-1.743	-1.762	-1.781	-1.800	-1.819	-1.838	-1.857	-50
-40	-1.475	-1.494	-1.514	-1.533	-1.552	-1.572	-1.591	-1.610	-1.629	-1.648	-1.667	-40
-30	-1.279	-1.299	-1.319	-1.338	-1.358	-1.378	-1.397	-1.417	-1.436	-1.456	-1.475	-30
-20	-1.081	-1.101	-1.121	-1.141	-1.161	-1.181	-1.200	-1.220	-1.240	-1.260	-1.279	-20
-10	-0.879	-0.900	-0.920	-0.940	-0.960	-0.980	-1.001	-1.021	-1.041	-1.061	-1.081	-10
0	-0.675	-0.695	-0.716	-0.736	-0.757	-0.777	-0.798	-0.818	-0.839	-0.859	-0.879	0

°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 18 ***Type T Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

T°F

°F	0	1	2	3	4	5	6	7	8	9	10	°F
	Thermoelectric Voltage in Millivolts											
0	-0.675	-0.654	-0.633	-0.613	-0.592	-0.571	-0.550	-0.530	-0.509	-0.488	-0.467	0
10	-0.467	-0.446	-0.425	-0.404	-0.383	-0.362	-0.341	-0.320	-0.299	-0.278	-0.256	10
20	-0.256	-0.235	-0.214	-0.193	-0.171	-0.150	-0.129	-0.107	-0.086	-0.064	-0.043	20
30	-0.043	-0.022	0.000	0.022	0.043	0.065	0.086	0.108	0.130	0.151	0.173	30
40	0.173	0.195	0.216	0.238	0.260	0.282	0.303	0.325	0.347	0.369	0.391	40
50	0.391	0.413	0.435	0.457	0.479	0.501	0.523	0.545	0.567	0.589	0.611	50
60	0.611	0.634	0.656	0.678	0.700	0.723	0.745	0.767	0.790	0.812	0.834	60
70	0.834	0.857	0.879	0.902	0.924	0.947	0.969	0.992	1.015	1.037	1.060	70
80	1.060	1.083	1.105	1.128	1.151	1.174	1.196	1.219	1.242	1.265	1.288	80
90	1.288	1.311	1.334	1.357	1.380	1.403	1.426	1.449	1.472	1.496	1.519	90
100	1.519	1.542	1.565	1.588	1.612	1.635	1.658	1.682	1.705	1.729	1.752	100
110	1.752	1.776	1.799	1.823	1.846	1.870	1.893	1.917	1.941	1.964	1.988	110
120	1.988	2.012	2.036	2.060	2.083	2.107	2.131	2.155	2.179	2.203	2.227	120
130	2.227	2.251	2.275	2.299	2.323	2.347	2.371	2.395	2.420	2.444	2.468	130
140	2.468	2.492	2.517	2.541	2.565	2.590	2.614	2.639	2.663	2.687	2.712	140
150	2.712	2.737	2.761	2.786	2.810	2.835	2.860	2.884	2.909	2.934	2.958	150
160	2.958	2.983	3.008	3.033	3.058	3.082	3.107	3.132	3.157	3.182	3.207	160
170	3.207	3.232	3.257	3.282	3.307	3.333	3.358	3.383	3.408	3.433	3.459	170
180	3.459	3.484	3.509	3.534	3.560	3.585	3.610	3.636	3.661	3.687	3.712	180
190	3.712	3.738	3.763	3.789	3.814	3.840	3.866	3.891	3.917	3.943	3.968	190
200	3.968	3.994	4.020	4.046	4.071	4.097	4.123	4.149	4.175	4.201	4.227	200
210	4.227	4.253	4.279	4.305	4.331	4.357	4.383	4.409	4.435	4.461	4.487	210
220	4.487	4.513	4.540	4.566	4.592	4.618	4.645	4.671	4.697	4.724	4.750	220
230	4.750	4.776	4.803	4.829	4.856	4.882	4.909	4.935	4.962	4.988	5.015	230
240	5.015	5.042	5.068	5.095	5.122	5.148	5.175	5.202	5.228	5.255	5.282	240
250	5.282	5.309	5.336	5.363	5.389	5.416	5.443	5.470	5.497	5.524	5.551	250
260	5.551	5.578	5.605	5.632	5.660	5.687	5.714	5.741	5.768	5.795	5.823	260
270	5.823	5.850	5.877	5.904	5.932	5.959	5.986	6.014	6.041	6.068	6.096	270
280	6.096	6.123	6.151	6.178	6.206	6.233	6.261	6.288	6.316	6.343	6.371	280
290	6.371	6.399	6.426	6.454	6.482	6.510	6.537	6.565	6.593	6.621	6.648	290
300	6.648	6.676	6.704	6.732	6.760	6.788	6.816	6.844	6.872	6.900	6.928	300
310	6.928	6.956	6.984	7.012	7.040	7.068	7.096	7.124	7.152	7.181	7.209	310
320	7.209	7.237	7.265	7.294	7.322	7.350	7.378	7.407	7.435	7.463	7.492	320
330	7.492	7.520	7.549	7.577	7.606	7.634	7.663	7.691	7.720	7.748	7.777	330
340	7.777	7.805	7.834	7.863	7.891	7.920	7.949	7.977	8.006	8.035	8.064	340
350	8.064	8.092	8.121	8.150	8.179	8.208	8.237	8.266	8.294	8.323	8.352	350
360	8.352	8.381	8.410	8.439	8.468	8.497	8.526	8.555	8.585	8.614	8.643	360
370	8.643	8.672	8.701	8.730	8.759	8.789	8.818	8.847	8.876	8.906	8.935	370
380	8.935	8.964	8.994	9.023	9.052	9.082	9.111	9.141	9.170	9.200	9.229	380
390	9.229	9.259	9.288	9.318	9.347	9.377	9.406	9.436	9.466	9.495	9.525	390
400	9.525	9.555	9.584	9.614	9.644	9.673	9.703	9.733	9.763	9.793	9.822	400
410	9.822	9.852	9.882	9.912	9.942	9.972	10.002	10.032	10.062	10.092	10.122	410
420	10.122	10.152	10.182	10.212	10.242	10.272	10.302	10.332	10.362	10.392	10.423	420
430	10.423	10.453	10.483	10.513	10.543	10.574	10.604	10.634	10.664	10.695	10.725	430
440	10.725	10.755	10.786	10.816	10.847	10.877	10.907	10.938	10.968	10.999	11.029	440
450	11.029	11.060	11.090	11.121	11.151	11.182	11.213	11.243	11.274	11.304	11.335	450
460	11.335	11.366	11.396	11.427	11.458	11.489	11.519	11.550	11.581	11.612	11.643	460
470	11.643	11.673	11.704	11.735	11.766	11.797	11.828	11.859	11.890	11.920	11.951	470
480	11.951	11.982	12.013	12.044	12.075	12.106	12.138	12.169	12.200	12.231	12.262	480
490	12.262	12.293	12.324	12.355	12.386	12.418	12.449	12.480	12.511	12.543	12.574	490

°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 18 ***Type T Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
500	12.574	12.605	12.636	12.668	12.699	12.730	12.762	12.793	12.824	12.856	12.887	500
510	12.887	12.919	12.950	12.982	13.013	13.045	13.076	13.108	13.139	13.171	13.202	510
520	13.202	13.234	13.265	13.297	13.328	13.360	13.392	13.423	13.455	13.487	13.518	520
530	13.518	13.550	13.582	13.614	13.645	13.677	13.709	13.741	13.772	13.804	13.836	530
540	13.836	13.868	13.900	13.932	13.964	13.995	14.027	14.059	14.091	14.123	14.155	540
550	14.155	14.187	14.219	14.251	14.283	14.315	14.347	14.379	14.411	14.444	14.476	550
560	14.476	14.508	14.540	14.572	14.604	14.636	14.669	14.701	14.733	14.765	14.797	560
570	14.797	14.830	14.862	14.894	14.926	14.959	14.991	15.023	15.056	15.088	15.121	570
580	15.121	15.153	15.185	15.218	15.250	15.283	15.315	15.347	15.380	15.412	15.445	580
590	15.445	15.477	15.510	15.543	15.575	15.608	15.640	15.673	15.705	15.738	15.771	590
600	15.771	15.803	15.836	15.869	15.901	15.934	15.967	15.999	16.032	16.065	16.098	600
610	16.098	16.130	16.163	16.196	16.229	16.262	16.295	16.327	16.360	16.393	16.426	610
620	16.426	16.459	16.492	16.525	16.558	16.591	16.624	16.657	16.690	16.723	16.756	620
630	16.756	16.789	16.822	16.855	16.888	16.921	16.954	16.987	17.020	17.053	17.086	630
640	17.086	17.120	17.153	17.186	17.219	17.252	17.286	17.319	17.352	17.385	17.418	640
650	17.418	17.452	17.485	17.518	17.552	17.585	17.618	17.652	17.685	17.718	17.752	650
660	17.752	17.785	17.819	17.852	17.886	17.919	17.952	17.986	18.019	18.053	18.086	660
670	18.086	18.120	18.154	18.187	18.221	18.254	18.288	18.321	18.355	18.389	18.422	670
680	18.422	18.456	18.490	18.523	18.557	18.591	18.624	18.658	18.692	18.725	18.759	680
690	18.759	18.793	18.827	18.861	18.894	18.928	18.962	18.996	19.030	19.064	19.097	690
700	19.097	19.131	19.165	19.199	19.233	19.267	19.301	19.335	19.369	19.403	19.437	700
710	19.437	19.471	19.505	19.539	19.573	19.607	19.641	19.675	19.709	19.743	19.777	710
720	19.777	19.811	19.845	19.879	19.913	19.947	19.982	20.016	20.050	20.084	20.118	720
730	20.118	20.152	20.187	20.221	20.255	20.289	20.323	20.358	20.392	20.426	20.460	730
740	20.460	20.495	20.529	20.563	20.597	20.632	20.666	20.700	20.735	20.769	20.803	740
750	20.803	20.838	20.872									750

| °F | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | °F |

TABLE 21 ***Type C Thermocouple*** *— thermoelectric voltage as a function of temperature (°C); reference junctions at 0 °C*

C°C

°C	0	1	2	3	4	5	6	7	8	9	10	°C
	Thermoelectric Voltage in Millivolts											
0	0.000	0.013	0.027	0.040	0.054	0.067	0.081	0.094	0.108	0.122	0.135	0
10	0.135	0.149	0.163	0.176	0.190	0.204	0.218	0.231	0.245	0.259	0.273	10
20	0.273	0.287	0.301	0.315	0.329	0.342	0.356	0.370	0.385	0.399	0.413	20
30	0.413	0.427	0.441	0.455	0.469	0.483	0.498	0.512	0.526	0.540	0.555	30
40	0.555	0.569	0.583	0.598	0.612	0.627	0.641	0.656	0.670	0.685	0.699	40
50	0.699	0.714	0.728	0.743	0.757	0.772	0.787	0.801	0.816	0.831	0.846	50
60	0.846	0.860	0.875	0.890	0.905	0.920	0.934	0.949	0.964	0.979	0.994	60
70	0.994	1.009	1.024	1.039	1.054	1.069	1.084	1.099	1.114	1.129	1.145	70
80	1.145	1.160	1.175	1.190	1.205	1.221	1.236	1.251	1.266	1.282	1.297	80
90	1.297	1.312	1.328	1.343	1.359	1.374	1.389	1.405	1.420	1.436	1.451	90
100	1.451	1.467	1.483	1.498	1.514	1.529	1.545	1.561	1.576	1.592	1.608	100
110	1.608	1.624	1.639	1.655	1.671	1.687	1.702	1.718	1.734	1.750	1.766	110
120	1.766	1.782	1.798	1.814	1.830	1.846	1.862	1.878	1.894	1.910	1.926	120
130	1.926	1.942	1.958	1.974	1.990	2.006	2.023	2.039	2.055	2.071	2.087	130
140	2.087	2.104	2.120	2.136	2.152	2.169	2.185	2.201	2.218	2.234	2.251	140
150	2.251	2.267	2.283	2.300	2.316	2.333	2.349	2.366	2.382	2.399	2.415	150
160	2.415	2.432	2.449	2.465	2.482	2.498	2.515	2.532	2.548	2.565	2.582	160
170	2.582	2.599	2.615	2.632	2.649	2.666	2.682	2.699	2.716	2.733	2.750	170
180	2.750	2.767	2.784	2.800	2.817	2.834	2.851	2.868	2.885	2.902	2.919	180
190	2.919	2.936	2.953	2.970	2.987	3.004	3.021	3.039	3.056	3.073	3.090	190
200	3.090	3.107	3.124	3.141	3.159	3.176	3.193	3.210	3.228	3.245	3.262	200
210	3.262	3.279	3.297	3.314	3.331	3.349	3.366	3.383	3.401	3.418	3.436	210
220	3.436	3.453	3.470	3.488	3.505	3.523	3.540	3.558	3.575	3.593	3.610	220
230	3.610	3.628	3.645	3.663	3.680	3.698	3.716	3.733	3.751	3.768	3.786	230
240	3.786	3.804	3.821	3.839	3.857	3.875	3.892	3.910	3.928	3.945	3.963	240
250	3.963	3.981	3.999	4.017	4.034	4.052	4.070	4.088	4.106	4.124	4.141	250
260	4.141	4.159	4.177	4.195	4.213	4.231	4.249	4.267	4.285	4.303	4.321	260
270	4.321	4.339	4.357	4.375	4.393	4.411	4.429	4.447	4.465	4.483	4.501	270
280	4.501	4.519	4.537	4.555	4.573	4.592	4.610	4.628	4.646	4.664	4.682	280
290	4.682	4.701	4.719	4.737	4.755	4.773	4.792	4.810	4.828	4.846	4.865	290
300	4.865	4.883	4.901	4.920	4.938	4.956	4.974	4.993	5.011	5.030	5.048	300
310	5.048	5.066	5.085	5.103	5.121	5.140	5.158	5.177	5.195	5.214	5.232	310
320	5.232	5.250	5.269	5.287	5.306	5.324	5.343	5.361	5.380	5.398	5.417	320
330	5.417	5.435	5.454	5.473	5.491	5.510	5.528	5.547	5.565	5.584	5.603	330
340	5.603	5.621	5.640	5.658	5.677	5.696	5.714	5.733	5.752	5.770	5.789	340
350	5.789	5.808	5.827	5.845	5.864	5.883	5.901	5.920	5.939	5.958	5.976	350
360	5.976	5.995	6.014	6.033	6.051	6.070	6.089	6.108	6.127	6.145	6.164	360
370	6.164	6.183	6.202	6.221	6.240	6.259	6.277	6.296	6.315	6.334	6.353	370
380	6.353	6.372	6.391	6.410	6.429	6.447	6.466	6.485	6.504	6.523	6.542	380
390	6.542	6.561	6.580	6.599	6.618	6.637	6.656	6.675	6.694	6.713	6.732	390
400	6.732	6.751	6.770	6.789	6.808	6.827	6.846	6.865	6.884	6.903	6.922	400
410	6.922	6.941	6.961	6.980	6.999	7.018	7.037	7.056	7.075	7.094	7.113	410
420	7.113	7.132	7.152	7.171	7.190	7.209	7.228	7.247	7.267	7.286	7.305	420
430	7.305	7.324	7.343	7.362	7.382	7.401	7.420	7.439	7.458	7.478	7.497	430
440	7.497	7.516	7.535	7.554	7.574	7.593	7.612	7.631	7.651	7.670	7.689	440
450	7.689	7.708	7.728	7.747	7.766	7.786	7.805	7.824	7.843	7.863	7.882	450
460	7.882	7.901	7.921	7.940	7.959	7.979	7.998	8.017	8.037	8.056	8.075	460
470	8.075	8.095	8.114	8.133	8.153	8.172	8.191	8.211	8.230	8.249	8.269	470
480	8.269	8.288	8.308	8.327	8.346	8.366	8.385	8.404	8.424	8.443	8.463	480
490	8.463	8.482	8.502	8.521	8.540	8.560	8.579	8.599	8.618	8.637	8.657	490

°C	0	1	2	3	4	5	6	7	8	9	10	°C

TABLE 21 ***Type C Thermocouple*** *— thermoelectric voltage as a function of temperature (°C); reference junctions at 0 °C*

°C	0	1	2	3	4	5	6	7	8	9	10	°C
						Thermoelectric Voltage in Millivolts						
500	8.657	8.676	8.696	8.715	8.735	8.754	8.774	8.793	8.812	8.832	8.851	500
510	8.851	8.871	8.890	8.910	8.929	8.949	8.968	8.988	9.007	9.027	9.046	510
520	9.046	9.066	9.085	9.105	9.124	9.144	9.163	9.183	9.202	9.222	9.241	520
530	9.241	9.261	9.280	9.300	9.319	9.339	9.358	9.378	9.397	9.417	9.436	530
540	9.436	9.456	9.475	9.495	9.514	9.534	9.553	9.573	9.592	9.612	9.631	540
550	9.631	9.651	9.670	9.690	9.710	9.729	9.749	9.768	9.788	9.807	9.827	550
560	9.827	9.846	9.866	9.885	9.905	9.925	9.944	9.964	9.983	10.003	10.022	560
570	10.022	10.042	10.061	10.081	10.100	10.120	10.140	10.159	10.179	10.198	10.218	570
580	10.218	10.237	10.257	10.276	10.296	10.316	10.335	10.355	10.374	10.394	10.413	580
590	10.413	10.433	10.452	10.472	10.491	10.511	10.531	10.550	10.570	10.589	10.609	590
600	10.609	10.628	10.648	10.667	10.687	10.706	10.726	10.746	10.765	10.785	10.804	600
610	10.804	10.824	10.843	10.863	10.882	10.902	10.921	10.941	10.960	10.980	10.999	610
620	10.999	11.019	11.038	11.058	11.077	11.097	11.117	11.136	11.156	11.175	11.195	620
630	11.195	11.214	11.234	11.253	11.273	11.292	11.312	11.331	11.351	11.370	11.390	630
640	11.390	11.409	11.429	11.448	11.468	11.487	11.507	11.526	11.546	11.565	11.585	640
650	11.585	11.604	11.624	11.643	11.663	11.682	11.702	11.721	11.741	11.760	11.780	650
660	11.780	11.799	11.818	11.838	11.857	11.877	11.896	11.916	11.935	11.955	11.974	660
670	11.974	11.994	12.013	12.033	12.052	12.072	12.091	12.111	12.130	12.150	12.169	670
680	12.169	12.189	12.208	12.228	12.247	12.267	12.286	12.306	12.325	12.344	12.364	680
690	12.364	12.383	12.403	12.422	12.442	12.461	12.481	12.500	12.520	12.539	12.559	690
700	12.559	12.578	12.597	12.617	12.636	12.656	12.675	12.695	12.714	12.734	12.753	700
710	12.753	12.772	12.792	12.811	12.831	12.850	12.870	12.889	12.908	12.928	12.947	710
720	12.947	12.967	12.986	13.006	13.025	13.044	13.064	13.083	13.103	13.122	13.141	720
730	13.141	13.161	13.180	13.200	13.219	13.238	13.258	13.277	13.297	13.316	13.335	730
740	13.335	13.355	13.374	13.393	13.413	13.432	13.452	13.471	13.490	13.510	13.529	740
750	13.529	13.548	13.568	13.587	13.606	13.626	13.645	13.665	13.684	13.703	13.723	750
760	13.723	13.742	13.761	13.781	13.800	13.819	13.839	13.858	13.877	13.896	13.916	760
770	13.916	13.935	13.954	13.974	13.993	14.012	14.032	14.051	14.070	14.089	14.109	770
780	14.109	14.128	14.147	14.167	14.186	14.205	14.224	14.244	14.263	14.282	14.301	780
790	14.301	14.321	14.340	14.359	14.378	14.398	14.417	14.436	14.455	14.475	14.494	790
800	14.494	14.513	14.532	14.551	14.571	14.590	14.609	14.628	14.647	14.667	14.686	800
810	14.686	14.705	14.724	14.743	14.763	14.782	14.801	14.820	14.839	14.858	14.878	810
820	14.878	14.897	14.916	14.935	14.954	14.973	14.993	15.012	15.031	15.050	15.069	820
830	15.069	15.088	15.107	15.126	15.146	15.165	15.184	15.203	15.222	15.241	15.260	830
840	15.260	15.279	15.298	15.317	15.336	15.356	15.375	15.394	15.413	15.432	15.451	840
850	15.451	15.470	15.489	15.508	15.527	15.546	15.565	15.584	15.603	15.622	15.641	850
860	15.641	15.660	15.679	15.698	15.717	15.736	15.755	15.774	15.793	15.812	15.831	860
870	15.831	15.850	15.869	15.888	15.907	15.926	15.945	15.964	15.983	16.002	16.021	870
880	16.021	16.040	16.058	16.077	16.096	16.115	16.134	16.153	16.172	16.191	16.210	880
890	16.210	16.229	16.248	16.266	16.285	16.304	16.323	16.342	16.361	16.380	16.398	890
900	16.398	16.417	16.436	16.455	16.474	16.493	16.511	16.530	16.549	16.568	16.587	900
910	16.587	16.606	16.624	16.643	16.662	16.681	16.699	16.718	16.737	16.756	16.775	910
920	16.775	16.793	16.812	16.831	16.850	16.868	16.887	16.906	16.924	16.943	16.962	920
930	16.962	16.981	16.999	17.018	17.037	17.055	17.074	17.093	17.111	17.130	17.149	930
940	17.149	17.167	17.186	17.205	17.223	17.242	17.261	17.279	17.298	17.317	17.335	940
950	17.335	17.354	17.373	17.391	17.410	17.428	17.447	17.465	17.484	17.503	17.521	950
960	17.521	17.540	17.558	17.577	17.595	17.614	17.633	17.651	17.670	17.688	17.707	960
970	17.707	17.725	17.744	17.762	17.781	17.799	17.818	17.836	17.855	17.873	17.892	970
980	17.892	17.910	17.929	17.947	17.966	17.984	18.002	18.021	18.039	18.058	18.076	980
990	18.076	18.095	18.113	18.131	18.150	18.168	18.187	18.205	18.223	18.242	18.260	990

°C	0	1	2	3	4	5	6	7	8	9	10	°C

TABLE 21 ***Type C Thermocouple*** *— thermoelectric voltage as a function of temperature (°C); reference junctions at 0 °C*

°C	0	1	2	3	4	5	6	7	8	9	10	°C
						Thermoelectric Voltage in Millivolts						
1000	18.260	18.279	18.297	18.315	18.334	18.352	18.370	18.389	18.407	18.425	18.444	1000
1010	18.444	18.462	18.480	18.499	18.517	18.535	18.553	18.572	18.590	18.608	18.627	1010
1020	18.627	18.645	18.663	18.681	18.700	18.718	18.736	18.754	18.773	18.791	18.809	1020
1030	18.809	18.827	18.845	18.864	18.882	18.900	18.918	18.936	18.955	18.973	18.991	1030
1040	18.991	19.009	19.027	19.045	19.064	19.082	19.100	19.118	19.136	19.154	19.172	1040
1050	19.172	19.190	19.208	19.227	19.245	19.263	19.281	19.299	19.317	19.335	19.353	1050
1060	19.353	19.371	19.389	19.407	19.425	19.443	19.461	19.479	19.497	19.515	19.533	1060
1070	19.533	19.551	19.569	19.587	19.605	19.623	19.641	19.659	19.677	19.695	19.713	1070
1080	19.713	19.731	19.749	19.767	19.785	19.803	19.821	19.839	19.856	19.874	19.892	1080
1090	19.892	19.910	19.928	19.946	19.964	19.982	19.999	20.017	20.035	20.053	20.071	1090
1100	20.071	20.089	20.106	20.124	20.142	20.160	20.178	20.195	20.213	20.231	20.249	1100
1110	20.249	20.267	20.284	20.302	20.320	20.338	20.355	20.373	20.391	20.409	20.426	1110
1120	20.426	20.444	20.462	20.479	20.497	20.515	20.532	20.550	20.568	20.585	20.603	1120
1130	20.603	20.621	20.638	20.656	20.674	20.691	20.709	20.727	20.744	20.762	20.779	1130
1140	20.779	20.797	20.815	20.832	20.850	20.867	20.885	20.902	20.920	20.938	20.955	1140
1150	20.955	20.973	20.990	21.008	21.025	21.043	21.060	21.078	21.095	21.113	21.130	1150
1160	21.130	21.148	21.165	21.183	21.200	21.218	21.235	21.253	21.270	21.287	21.305	1160
1170	21.305	21.322	21.340	21.357	21.375	21.392	21.409	21.427	21.444	21.461	21.479	1170
1180	21.479	21.496	21.514	21.531	21.548	21.566	21.583	21.600	21.618	21.635	21.652	1180
1190	21.652	21.670	21.687	21.704	21.721	21.739	21.756	21.773	21.790	21.808	21.825	1190
1200	21.825	21.842	21.859	21.877	21.894	21.911	21.928	21.946	21.963	21.980	21.997	1200
1210	21.997	22.014	22.032	22.049	22.066	22.083	22.100	22.117	22.135	22.152	22.169	1210
1220	22.169	22.186	22.203	22.220	22.237	22.254	22.271	22.289	22.306	22.323	22.340	1220
1230	22.340	22.357	22.374	22.391	22.408	22.425	22.442	22.459	22.476	22.493	22.510	1230
1240	22.510	22.527	22.544	22.561	22.578	22.595	22.612	22.629	22.646	22.663	22.680	1240
1250	22.680	22.697	22.714	22.731	22.748	22.765	22.782	22.799	22.815	22.832	22.849	1250
1260	22.849	22.866	22.883	22.900	22.917	22.934	22.950	22.967	22.984	23.001	23.018	1260
1270	23.018	23.035	23.052	23.068	23.085	23.102	23.119	23.136	23.152	23.169	23.186	1270
1280	23.186	23.203	23.219	23.236	23.253	23.270	23.286	23.303	23.320	23.337	23.353	1280
1290	23.353	23.370	23.387	23.403	23.420	23.437	23.453	23.470	23.487	23.503	23.520	1290
1300	23.520	23.537	23.553	23.570	23.587	23.603	23.620	23.636	23.653	23.670	23.686	1300
1310	23.686	23.703	23.719	23.736	23.753	23.769	23.786	23.802	23.819	23.835	23.852	1310
1320	23.852	23.868	23.885	23.901	23.918	23.934	23.951	23.967	23.984	24.000	24.017	1320
1330	24.017	24.033	24.050	24.066	24.083	24.099	24.116	24.132	24.148	24.165	24.181	1330
1340	24.181	24.198	24.214	24.230	24.247	24.263	24.280	24.296	24.312	24.329	24.345	1340
1350	24.345	24.361	24.378	24.394	24.410	24.427	24.443	24.459	24.476	24.492	24.508	1350
1360	24.508	24.524	24.541	24.557	24.573	24.590	24.606	24.622	24.638	24.655	24.671	1360
1370	24.671	24.687	24.703	24.719	24.736	24.752	24.768	24.784	24.800	24.817	24.833	1370
1380	24.833	24.849	24.865	24.881	24.897	24.913	24.930	24.946	24.962	24.978	24.994	1380
1390	24.994	25.010	25.026	25.042	25.058	25.075	25.091	25.107	25.123	25.139	25.155	1390
1400	25.155	25.171	25.187	25.203	25.219	25.235	25.251	25.267	25.283	25.299	25.315	1400
1410	25.315	25.331	25.347	25.363	25.379	25.395	25.411	25.427	25.443	25.459	25.475	1410
1420	25.475	25.490	25.506	25.522	25.538	25.554	25.570	25.586	25.602	25.618	25.633	1420
1430	25.633	25.649	25.665	25.681	25.697	25.713	25.729	25.744	25.760	25.776	25.792	1430
1440	25.792	25.808	25.823	25.839	25.855	25.871	25.886	25.902	25.918	25.934	25.949	1440
1450	25.949	25.965	25.981	25.997	26.012	26.028	26.044	26.060	26.075	26.091	26.107	1450
1460	26.107	26.122	26.138	26.154	26.169	26.185	26.201	26.216	26.232	26.248	26.263	1460
1470	26.263	26.279	26.294	26.310	26.326	26.341	26.357	26.372	26.388	26.403	26.419	1470
1480	26.419	26.435	26.450	26.466	26.481	26.497	26.512	26.528	26.543	26.559	26.574	1480
1490	26.574	26.590	26.605	26.621	26.636	26.652	26.667	26.683	26.698	26.714	26.729	1490

°C	0	1	2	3	4	5	6	7	8	9	10	°C

TABLE 21 ***Type C Thermocouple*** *— thermoelectric voltage as a function of temperature (°C); reference junctions at 0 °C*

°C	0	1	2	3	4	5	6	7	8	9	10	°C
						Thermoelectric Voltage in Millivolts						
1500	26.729	26.744	26.760	26.775	26.791	26.806	26.822	26.837	26.852	26.868	26.883	1500
1510	26.883	26.899	26.914	26.929	26.945	26.960	26.975	26.991	27.006	27.021	27.037	1510
1520	27.037	27.052	27.067	27.083	27.098	27.113	27.128	27.144	27.159	27.174	27.190	1520
1530	27.190	27.205	27.220	27.235	27.250	27.266	27.281	27.296	27.311	27.327	27.342	1530
1540	27.342	27.357	27.372	27.387	27.403	27.418	27.433	27.448	27.463	27.478	27.493	1540
1550	27.493	27.509	27.524	27.539	27.554	27.569	27.584	27.599	27.614	27.629	27.645	1550
1560	27.645	27.660	27.675	27.690	27.705	27.720	27.735	27.750	27.765	27.780	27.795	1560
1570	27.795	27.810	27.825	27.840	27.855	27.870	27.885	27.900	27.915	27.930	27.945	1570
1580	27.945	27.960	27.975	27.990	28.005	28.020	28.034	28.049	28.064	28.079	28.094	1580
1590	28.094	28.109	28.124	28.139	28.154	28.169	28.183	28.198	28.213	28.228	28.243	1590
1600	28.243	28.258	28.272	28.287	28.302	28.317	28.332	28.346	28.361	28.376	28.391	1600
1610	28.391	28.406	28.420	28.435	28.450	28.465	28.479	28.494	28.509	28.524	28.538	1610
1620	28.538	28.553	28.568	28.582	28.597	28.612	28.626	28.641	28.656	28.670	28.685	1620
1630	28.685	28.700	28.714	28.729	28.744	28.758	28.773	28.787	28.802	28.817	28.831	1630
1640	28.831	28.846	28.860	28.875	28.890	28.904	28.919	28.933	28.948	28.962	28.977	1640
1650	28.977	28.991	29.006	29.020	29.035	29.049	29.064	29.078	29.093	29.107	29.122	1650
1660	29.122	29.136	29.151	29.165	29.180	29.194	29.209	29.223	29.237	29.252	29.266	1660
1670	29.266	29.281	29.295	29.309	29.324	29.338	29.353	29.367	29.381	29.396	29.410	1670
1680	29.410	29.424	29.439	29.453	29.467	29.482	29.496	29.510	29.525	29.539	29.553	1680
1690	29.553	29.567	29.582	29.596	29.610	29.625	29.639	29.653	29.667	29.681	29.696	1690
1700	29.696	29.710	29.724	29.738	29.753	29.767	29.781	29.795	29.809	29.823	29.838	1700
1710	29.838	29.852	29.866	29.880	29.894	29.908	29.922	29.937	29.951	29.965	29.979	1710
1720	29.979	29.993	30.007	30.021	30.035	30.049	30.063	30.077	30.091	30.106	30.120	1720
1730	30.120	30.134	30.148	30.162	30.176	30.190	30.204	30.218	30.232	30.246	30.260	1730
1740	30.260	30.274	30.288	30.302	30.315	30.329	30.343	30.357	30.371	30.385	30.399	1740
1750	30.399	30.413	30.427	30.441	30.455	30.469	30.482	30.496	30.510	30.524	30.538	1750
1760	30.538	30.552	30.565	30.579	30.593	30.607	30.621	30.635	30.648	30.662	30.676	1760
1770	30.676	30.690	30.704	30.717	30.731	30.745	30.759	30.772	30.786	30.800	30.813	1770
1780	30.813	30.827	30.841	30.855	30.868	30.882	30.896	30.909	30.923	30.937	30.950	1780
1790	30.950	30.964	30.978	30.991	31.005	31.019	31.032	31.046	31.059	31.073	31.087	1790
1800	31.087	31.100	31.114	31.127	31.141	31.154	31.168	31.182	31.195	31.209	31.222	1800
1810	31.222	31.236	31.249	31.263	31.276	31.290	31.303	31.317	31.330	31.344	31.357	1810
1820	31.357	31.371	31.384	31.397	31.411	31.424	31.438	31.451	31.465	31.478	31.491	1820
1830	31.491	31.505	31.518	31.532	31.545	31.558	31.572	31.585	31.598	31.612	31.625	1830
1840	31.625	31.638	31.652	31.665	31.678	31.692	31.705	31.718	31.731	31.745	31.758	1840
1850	31.758	31.771	31.784	31.798	31.811	31.824	31.837	31.851	31.864	31.877	31.890	1850
1860	31.890	31.903	31.917	31.930	31.943	31.956	31.969	31.982	31.996	32.009	32.022	1860
1870	32.022	32.035	32.048	32.061	32.074	32.087	32.101	32.114	32.127	32.140	32.153	1870
1880	32.153	32.166	32.179	32.192	32.205	32.218	32.231	32.244	32.257	32.270	32.283	1880
1890	32.283	32.296	32.309	32.322	32.335	32.348	32.361	32.374	32.387	32.400	32.413	1890
1900	32.413	32.426	32.439	32.451	32.464	32.477	32.490	32.503	32.516	32.529	32.542	1900
1910	32.542	32.554	32.567	32.580	32.593	32.606	32.619	32.631	32.644	32.657	32.670	1910
1920	32.670	32.683	32.695	32.708	32.721	32.734	32.746	32.759	32.772	32.784	32.797	1920
1930	32.797	32.810	32.823	32.835	32.848	32.861	32.873	32.886	32.899	32.911	32.924	1930
1940	32.924	32.937	32.949	32.962	32.974	32.987	33.000	33.012	33.025	33.037	33.050	1940
1950	33.050	33.063	33.075	33.088	33.100	33.113	33.125	33.138	33.150	33.163	33.175	1950
1960	33.175	33.188	33.200	33.213	33.225	33.238	33.250	33.263	33.275	33.287	33.300	1960
1970	33.300	33.312	33.325	33.337	33.350	33.362	33.374	33.387	33.399	33.411	33.424	1970
1980	33.424	33.436	33.448	33.461	33.473	33.485	33.498	33.510	33.522	33.535	33.547	1980
1990	33.547	33.559	33.571	33.584	33.596	33.608	33.620	33.632	33.645	33.657	33.669	1990

°C	0	1	2	3	4	5	6	7	8	9	10	°C

TABLE 21 ***Type C Thermocouple*** *— thermoelectric voltage as a function of temperature (°C); reference junctions at 0 °C*

°C	0	1	2	3	4	5	6	7	8	9	10	°C
						Thermoelectric Voltage in Millivolts						
2000	33.669	33.681	33.693	33.706	33.718	33.730	33.742	33.754	33.766	33.779	33.791	2000
2010	33.791	33.803	33.815	33.827	33.839	33.851	33.863	33.875	33.887	33.899	33.911	2010
2020	33.911	33.923	33.936	33.948	33.960	33.972	33.984	33.996	34.008	34.019	34.031	2020
2030	34.031	34.043	34.055	34.067	34.079	34.091	34.103	34.115	34.127	34.139	34.151	2030
2040	34.151	34.163	34.174	34.186	34.198	34.210	34.222	34.234	34.245	34.257	34.269	2040
2050	34.269	34.281	34.293	34.304	34.316	34.328	34.340	34.351	34.363	34.375	34.387	2050
2060	34.387	34.398	34.410	34.422	34.433	34.445	34.457	34.468	34.480	34.492	34.503	2060
2070	34.503	34.515	34.527	34.538	34.550	34.561	34.573	34.585	34.596	34.608	34.619	2070
2080	34.619	34.631	34.642	34.654	34.665	34.677	34.688	34.700	34.711	34.723	34.734	2080
2090	34.734	34.746	34.757	34.769	34.780	34.792	34.803	34.814	34.826	34.837	34.849	2090
2100	34.849	34.860	34.871	34.883	34.894	34.905	34.917	34.928	34.939	34.951	34.962	2100
2110	34.962	34.973	34.984	34.996	35.007	35.018	35.029	35.041	35.052	35.063	35.074	2110
2120	35.074	35.085	35.097	35.108	35.119	35.130	35.141	35.152	35.164	35.175	35.186	2120
2130	35.186	35.197	35.208	35.219	35.230	35.241	35.252	35.263	35.274	35.285	35.296	2130
2140	35.296	35.307	35.318	35.329	35.340	35.351	35.362	35.373	35.384	35.395	35.406	2140
2150	35.406	35.417	35.428	35.439	35.450	35.461	35.472	35.482	35.493	35.504	35.515	2150
2160	35.515	35.526	35.537	35.547	35.558	35.569	35.580	35.591	35.601	35.612	35.623	2160
2170	35.623	35.634	35.644	35.655	35.666	35.676	35.687	35.698	35.708	35.719	35.730	2170
2180	35.730	35.740	35.751	35.762	35.772	35.783	35.793	35.804	35.814	35.825	35.836	2180
2190	35.836	35.846	35.857	35.867	35.878	35.888	35.899	35.909	35.920	35.930	35.940	2190
2200	35.940	35.951	35.961	35.972	35.982	35.993	36.003	36.013	36.024	36.034	36.044	2200
2210	36.044	36.055	36.065	36.075	36.086	36.096	36.106	36.116	36.127	36.137	36.147	2210
2220	36.147	36.157	36.168	36.178	36.188	36.198	36.208	36.219	36.229	36.239	36.249	2220
2230	36.249	36.259	36.269	36.279	36.289	36.300	36.310	36.320	36.330	36.340	36.350	2230
2240	36.350	36.360	36.370	36.380	36.390	36.400	36.410	36.420	36.430	36.440	36.449	2240
2250	36.449	36.459	36.469	36.479	36.489	36.499	36.509	36.519	36.528	36.538	36.548	2250
2260	36.548	36.558	36.568	36.577	36.587	36.597	36.607	36.616	36.626	36.636	36.645	2260
2270	36.645	36.655	36.665	36.675	36.684	36.694	36.703	36.713	36.723	36.732	36.742	2270
2280	36.742	36.751	36.761	36.771	36.780	36.790	36.799	36.809	36.818	36.828	36.837	2280
2290	36.837	36.846	36.856	36.865	36.875	36.884	36.894	36.903	36.912	36.922	36.931	2290
2300	36.931	36.940	36.950	36.959	36.968	36.978	36.987	36.996	37.005	37.015	37.024	2300
2310	37.024	37.033	37.042	37.051	37.061	37.070						

°C	0	1	2	3	4	5	6	7	8	9	10	°C

TABLE 22 ***Type C Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
					Thermoelectric Voltage in Millivolts							
30			0.000	0.007	0.015	0.022	0.030	0.037	0.045	0.052	0.060	30
40	0.060	0.067	0.075	0.082	0.090	0.097	0.105	0.113	0.120	0.128	0.135	40
50	0.135	0.143	0.150	0.158	0.166	0.173	0.181	0.188	0.196	0.204	0.211	50
60	0.211	0.219	0.227	0.234	0.242	0.250	0.257	0.265	0.273	0.281	0.288	60
70	0.288	0.296	0.304	0.311	0.319	0.327	0.335	0.342	0.350	0.358	0.366	70
80	0.366	0.374	0.381	0.389	0.397	0.405	0.413	0.421	0.428	0.436	0.444	80
90	0.444	0.452	0.460	0.468	0.476	0.483	0.491	0.499	0.507	0.515	0.523	90
100	0.523	0.531	0.539	0.547	0.555	0.563	0.571	0.579	0.587	0.595	0.603	100
110	0.603	0.611	0.619	0.627	0.635	0.643	0.651	0.659	0.667	0.675	0.683	110
120	0.683	0.691	0.699	0.707	0.715	0.723	0.731	0.740	0.748	0.756	0.764	120
130	0.764	0.772	0.780	0.788	0.796	0.805	0.813	0.821	0.829	0.837	0.846	130
140	0.846	0.854	0.862	0.870	0.878	0.887	0.895	0.903	0.911	0.920	0.928	140
150	0.928	0.936	0.944	0.953	0.961	0.969	0.977	0.986	0.994	1.002	1.011	150
160	1.011	1.019	1.027	1.036	1.044	1.052	1.061	1.069	1.077	1.086	1.094	160
170	1.094	1.103	1.111	1.119	1.128	1.136	1.145	1.153	1.161	1.170	1.178	170
180	1.178	1.187	1.195	1.204	1.212	1.221	1.229	1.238	1.246	1.254	1.263	180
190	1.263	1.272	1.280	1.289	1.297	1.306	1.314	1.323	1.331	1.340	1.348	190
200	1.348	1.357	1.365	1.374	1.383	1.391	1.400	1.408	1.417	1.426	1.434	200
210	1.434	1.443	1.451	1.460	1.469	1.477	1.486	1.495	1.503	1.512	1.521	210
220	1.521	1.529	1.538	1.547	1.555	1.564	1.573	1.582	1.590	1.599	1.608	220
230	1.608	1.617	1.625	1.634	1.643	1.652	1.660	1.669	1.678	1.687	1.695	230
240	1.695	1.704	1.713	1.722	1.731	1.739	1.748	1.757	1.766	1.775	1.784	240
250	1.784	1.792	1.801	1.810	1.819	1.828	1.837	1.846	1.855	1.863	1.872	250
260	1.872	1.881	1.890	1.899	1.908	1.917	1.926	1.935	1.944	1.953	1.962	260
270	1.962	1.970	1.979	1.988	1.997	2.006	2.015	2.024	2.033	2.042	2.051	270
280	2.051	2.060	2.069	2.078	2.087	2.096	2.105	2.114	2.124	2.133	2.142	280
290	2.142	2.151	2.160	2.169	2.178	2.187	2.196	2.205	2.214	2.223	2.232	290
300	2.232	2.242	2.251	2.260	2.269	2.278	2.287	2.296	2.305	2.315	2.324	300
310	2.324	2.333	2.342	2.351	2.360	2.370	2.379	2.388	2.397	2.406	2.415	310
320	2.415	2.425	2.434	2.443	2.452	2.462	2.471	2.480	2.489	2.498	2.508	320
330	2.508	2.517	2.526	2.536	2.545	2.554	2.563	2.573	2.582	2.591	2.600	330
340	2.600	2.610	2.619	2.628	2.638	2.647	2.656	2.666	2.675	2.684	2.694	340
350	2.694	2.703	2.712	2.722	2.731	2.740	2.750	2.759	2.769	2.778	2.787	350
360	2.787	2.797	2.806	2.815	2.825	2.834	2.844	2.853	2.863	2.872	2.881	360
370	2.881	2.891	2.900	2.910	2.919	2.929	2.938	2.948	2.957	2.966	2.976	370
380	2.976	2.985	2.995	3.004	3.014	3.023	3.033	3.042	3.052	3.061	3.071	380
390	3.071	3.080	3.090	3.099	3.109	3.119	3.128	3.138	3.147	3.157	3.166	390
400	3.166	3.176	3.185	3.195	3.205	3.214	3.224	3.233	3.243	3.252	3.262	400
410	3.262	3.272	3.281	3.291	3.301	3.310	3.320	3.329	3.339	3.349	3.358	410
420	3.358	3.368	3.378	3.387	3.397	3.407	3.416	3.426	3.436	3.445	3.455	420
430	3.455	3.465	3.474	3.484	3.494	3.503	3.513	3.523	3.532	3.542	3.552	430
440	3.552	3.562	3.571	3.581	3.591	3.600	3.610	3.620	3.630	3.639	3.649	440
450	3.649	3.659	3.669	3.678	3.688	3.698	3.708	3.718	3.727	3.737	3.747	450
460	3.747	3.757	3.767	3.776	3.786	3.796	3.806	3.816	3.825	3.835	3.845	460
470	3.845	3.855	3.865	3.875	3.884	3.894	3.904	3.914	3.924	3.934	3.943	470
480	3.943	3.953	3.963	3.973	3.983	3.993	4.003	4.013	4.022	4.032	4.042	480
490	4.042	4.052	4.062	4.072	4.082	4.092	4.102	4.112	4.122	4.131	4.141	490

°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 22 ***Type C Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

C°F

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
500	4.141	4.151	4.161	4.171	4.181	4.191	4.201	4.211	4.221	4.231	4.241	500
510	4.241	4.251	4.261	4.271	4.281	4.291	4.301	4.311	4.321	4.331	4.341	510
520	4.341	4.351	4.361	4.371	4.381	4.391	4.401	4.411	4.421	4.431	4.441	520
530	4.441	4.451	4.461	4.471	4.481	4.491	4.501	4.511	4.521	4.531	4.541	530
540	4.541	4.551	4.561	4.571	4.582	4.592	4.602	4.612	4.622	4.632	4.642	540
550	4.642	4.652	4.662	4.672	4.682	4.692	4.703	4.713	4.723	4.733	4.743	550
560	4.743	4.753	4.763	4.773	4.784	4.794	4.804	4.814	4.824	4.834	4.844	560
570	4.844	4.855	4.865	4.875	4.885	4.895	4.905	4.915	4.926	4.936	4.946	570
580	4.946	4.956	4.966	4.977	4.987	4.997	5.007	5.017	5.027	5.038	5.048	580
590	5.048	5.058	5.068	5.078	5.089	5.099	5.109	5.119	5.130	5.140	5.150	590
600	5.150	5.160	5.170	5.181	5.191	5.201	5.211	5.222	5.232	5.242	5.252	600
610	5.252	5.263	5.273	5.283	5.294	5.304	5.314	5.324	5.335	5.345	5.355	610
620	5.355	5.365	5.376	5.386	5.396	5.407	5.417	5.427	5.437	5.448	5.458	620
630	5.458	5.468	5.479	5.489	5.499	5.510	5.520	5.530	5.541	5.551	5.561	630
640	5.561	5.572	5.582	5.592	5.603	5.613	5.623	5.634	5.644	5.654	5.665	640
650	5.665	5.675	5.685	5.696	5.706	5.717	5.727	5.737	5.748	5.758	5.768	650
660	5.768	5.779	5.789	5.800	5.810	5.820	5.831	5.841	5.851	5.862	5.872	660
670	5.872	5.883	5.893	5.903	5.914	5.924	5.935	5.945	5.956	5.966	5.976	670
680	5.976	5.987	5.997	6.008	6.018	6.028	6.039	6.049	6.060	6.070	6.081	680
690	6.081	6.091	6.102	6.112	6.122	6.133	6.143	6.154	6.164	6.175	6.185	690
700	6.185	6.196	6.206	6.217	6.227	6.238	6.248	6.259	6.269	6.279	6.290	700
710	6.290	6.300	6.311	6.321	6.332	6.342	6.353	6.363	6.374	6.384	6.395	710
720	6.395	6.405	6.416	6.426	6.437	6.447	6.458	6.468	6.479	6.490	6.500	720
730	6.500	6.511	6.521	6.532	6.542	6.553	6.563	6.574	6.584	6.595	6.605	730
740	6.605	6.616	6.626	6.637	6.648	6.658	6.669	6.679	6.690	6.700	6.711	740
750	6.711	6.721	6.732	6.743	6.753	6.764	6.774	6.785	6.795	6.806	6.817	750
760	6.817	6.827	6.838	6.848	6.859	6.869	6.880	6.891	6.901	6.912	6.922	760
770	6.922	6.933	6.944	6.954	6.965	6.975	6.986	6.997	7.007	7.018	7.028	770
780	7.028	7.039	7.050	7.060	7.071	7.082	7.092	7.103	7.113	7.124	7.135	780
790	7.135	7.145	7.156	7.167	7.177	7.188	7.198	7.209	7.220	7.230	7.241	790
800	7.241	7.252	7.262	7.273	7.284	7.294	7.305	7.315	7.326	7.337	7.347	800
810	7.347	7.358	7.369	7.379	7.390	7.401	7.411	7.422	7.433	7.443	7.454	810
820	7.454	7.465	7.475	7.486	7.497	7.507	7.518	7.529	7.540	7.550	7.561	820
830	7.561	7.572	7.582	7.593	7.604	7.614	7.625	7.636	7.646	7.657	7.668	830
840	7.668	7.678	7.689	7.700	7.711	7.721	7.732	7.743	7.753	7.764	7.775	840
850	7.775	7.786	7.796	7.807	7.818	7.828	7.839	7.850	7.861	7.871	7.882	850
860	7.882	7.893	7.903	7.914	7.925	7.936	7.946	7.957	7.968	7.979	7.989	860
870	7.989	8.000	8.011	8.022	8.032	8.043	8.054	8.064	8.075	8.086	8.097	870
880	8.097	8.107	8.118	8.129	8.140	8.150	8.161	8.172	8.183	8.193	8.204	880
890	8.204	8.215	8.226	8.236	8.247	8.258	8.269	8.280	8.290	8.301	8.312	890
900	8.312	8.323	8.333	8.344	8.355	8.366	8.376	8.387	8.398	8.409	8.420	900
910	8.420	8.430	8.441	8.452	8.463	8.473	8.484	8.495	8.506	8.517	8.527	910
920	8.527	8.538	8.549	8.560	8.571	8.581	8.592	8.603	8.614	8.625	8.635	920
930	8.635	8.646	8.657	8.668	8.678	8.689	8.700	8.711	8.722	8.732	8.743	930
940	8.743	8.754	8.765	8.776	8.787	8.797	8.808	8.819	8.830	8.841	8.851	940
950	8.851	8.862	8.873	8.884	8.895	8.905	8.916	8.927	8.938	8.949	8.960	950
960	8.960	8.970	8.981	8.992	9.003	9.014	9.024	9.035	9.046	9.057	9.068	960
970	9.068	9.079	9.089	9.100	9.111	9.122	9.133	9.144	9.154	9.165	9.176	970
980	9.176	9.187	9.198	9.209	9.219	9.230	9.241	9.252	9.263	9.274	9.284	980
990	9.284	9.295	9.306	9.317	9.328	9.339	9.349	9.360	9.371	9.382	9.393	990
°F	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**°F**

TABLE 22 ***Type C Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
1000	9.393	9.404	9.414	9.425	9.436	9.447	9.458	9.469	9.480	9.490	9.501	1000
1010	9.501	9.512	9.523	9.534	9.545	9.555	9.566	9.577	9.588	9.599	9.610	1010
1020	9.610	9.621	9.631	9.642	9.653	9.664	9.675	9.686	9.697	9.707	9.718	1020
1030	9.718	9.729	9.740	9.751	9.762	9.773	9.783	9.794	9.805	9.816	9.827	1030
1040	9.827	9.838	9.849	9.859	9.870	9.881	9.892	9.903	9.914	9.925	9.935	1040
1050	9.935	9.946	9.957	9.968	9.979	9.990	10.001	10.011	10.022	10.033	10.044	1050
1060	10.044	10.055	10.066	10.077	10.087	10.098	10.109	10.120	10.131	10.142	10.153	1060
1070	10.153	10.163	10.174	10.185	10.196	10.207	10.218	10.229	10.239	10.250	10.261	1070
1080	10.261	10.272	10.283	10.294	10.305	10.316	10.326	10.337	10.348	10.359	10.370	1080
1090	10.370	10.381	10.392	10.402	10.413	10.424	10.435	10.446	10.457	10.468	10.478	1090
1100	10.478	10.489	10.500	10.511	10.522	10.533	10.544	10.554	10.565	10.576	10.587	1100
1110	10.587	10.598	10.609	10.620	10.630	10.641	10.652	10.663	10.674	10.685	10.696	1110
1120	10.696	10.706	10.717	10.728	10.739	10.750	10.761	10.772	10.782	10.793	10.804	1120
1130	10.804	10.815	10.826	10.837	10.848	10.858	10.869	10.880	10.891	10.902	10.913	1130
1140	10.913	10.923	10.934	10.945	10.956	10.967	10.978	10.989	10.999	11.010	11.021	1140
1150	11.021	11.032	11.043	11.054	11.064	11.075	11.086	11.097	11.108	11.119	11.130	1150
1160	11.130	11.140	11.151	11.162	11.173	11.184	11.195	11.205	11.216	11.227	11.238	1160
1170	11.238	11.249	11.260	11.270	11.281	11.292	11.303	11.314	11.325	11.335	11.346	1170
1180	11.346	11.357	11.368	11.379	11.390	11.400	11.411	11.422	11.433	11.444	11.455	1180
1190	11.455	11.465	11.476	11.487	11.498	11.509	11.520	11.530	11.541	11.552	11.563	1190
1200	11.563	11.574	11.585	11.595	11.606	11.617	11.628	11.639	11.650	11.660	11.671	1200
1210	11.671	11.682	11.693	11.704	11.715	11.725	11.736	11.747	11.758	11.769	11.780	1210
1220	11.780	11.790	11.801	11.812	11.823	11.834	11.844	11.855	11.866	11.877	11.888	1220
1230	11.888	11.899	11.909	11.920	11.931	11.942	11.953	11.964	11.974	11.985	11.996	1230
1240	11.996	12.007	12.018	12.029	12.039	12.050	12.061	12.072	12.083	12.093	12.104	1240
1250	12.104	12.115	12.126	12.137	12.148	12.158	12.169	12.180	12.191	12.202	12.213	1250
1260	12.213	12.223	12.234	12.245	12.256	12.267	12.277	12.288	12.299	12.310	12.321	1260
1270	12.321	12.332	12.342	12.353	12.364	12.375	12.386	12.396	12.407	12.418	12.429	1270
1280	12.429	12.440	12.450	12.461	12.472	12.483	12.494	12.505	12.515	12.526	12.537	1280
1290	12.537	12.548	12.559	12.569	12.580	12.591	12.602	12.613	12.623	12.634	12.645	1290
1300	12.645	12.656	12.667	12.677	12.688	12.699	12.710	12.721	12.731	12.742	12.753	1300
1310	12.753	12.764	12.775	12.785	12.796	12.807	12.818	12.829	12.839	12.850	12.861	1310
1320	12.861	12.872	12.883	12.893	12.904	12.915	12.926	12.937	12.947	12.958	12.969	1320
1330	12.969	12.980	12.990	13.001	13.012	13.023	13.034	13.044	13.055	13.066	13.077	1330
1340	13.077	13.088	13.098	13.109	13.120	13.131	13.141	13.152	13.163	13.174	13.185	1340
1350	13.185	13.195	13.206	13.217	13.228	13.238	13.249	13.260	13.271	13.282	13.292	1350
1360	13.292	13.303	13.314	13.325	13.335	13.346	13.357	13.368	13.378	13.389	13.400	1360
1370	13.400	13.411	13.421	13.432	13.443	13.454	13.465	13.475	13.486	13.497	13.508	1370
1380	13.508	13.518	13.529	13.540	13.551	13.561	13.572	13.583	13.594	13.604	13.615	1380
1390	13.615	13.626	13.637	13.647	13.658	13.669	13.680	13.690	13.701	13.712	13.723	1390
1400	13.723	13.733	13.744	13.755	13.766	13.776	13.787	13.798	13.808	13.819	13.830	1400
1410	13.830	13.841	13.851	13.862	13.873	13.884	13.894	13.905	13.916	13.926	13.937	1410
1420	13.937	13.948	13.959	13.969	13.980	13.991	14.002	14.012	14.023	14.034	14.044	1420
1430	14.044	14.055	14.066	14.077	14.087	14.098	14.109	14.119	14.130	14.141	14.152	1430
1440	14.152	14.162	14.173	14.184	14.194	14.205	14.216	14.227	14.237	14.248	14.259	1440
1450	14.259	14.269	14.280	14.291	14.301	14.312	14.323	14.333	14.344	14.355	14.366	1450
1460	14.366	14.376	14.387	14.398	14.408	14.419	14.430	14.440	14.451	14.462	14.472	1460
1470	14.472	14.483	14.494	14.504	14.515	14.526	14.537	14.547	14.558	14.569	14.579	1470
1480	14.579	14.590	14.601	14.611	14.622	14.633	14.643	14.654	14.665	14.675	14.686	1480
1490	14.686	14.697	14.707	14.718	14.729	14.739	14.750	14.760	14.771	14.782	14.792	1490
°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 22 ***Type C Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

C°F

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
1500	14.792	14.803	14.814	14.824	14.835	14.846	14.856	14.867	14.878	14.888	14.899	1500
1510	14.899	14.910	14.920	14.931	14.941	14.952	14.963	14.973	14.984	14.995	15.005	1510
1520	15.005	15.016	15.027	15.037	15.048	15.058	15.069	15.080	15.090	15.101	15.112	1520
1530	15.112	15.122	15.133	15.143	15.154	15.165	15.175	15.186	15.196	15.207	15.218	1530
1540	15.218	15.228	15.239	15.250	15.260	15.271	15.281	15.292	15.303	15.313	15.324	1540
1550	15.324	15.334	15.345	15.356	15.366	15.377	15.387	15.398	15.408	15.419	15.430	1550
1560	15.430	15.440	15.451	15.461	15.472	15.483	15.493	15.504	15.514	15.525	15.535	1560
1570	15.535	15.546	15.557	15.567	15.578	15.588	15.599	15.609	15.620	15.631	15.641	1570
1580	15.641	15.652	15.662	15.673	15.683	15.694	15.704	15.715	15.726	15.736	15.747	1580
1590	15.747	15.757	15.768	15.778	15.789	15.799	15.810	15.821	15.831	15.842	15.852	1590
1600	15.852	15.863	15.873	15.884	15.894	15.905	15.915	15.926	15.936	15.947	15.957	1600
1610	15.957	15.968	15.979	15.989	16.000	16.010	16.021	16.031	16.042	16.052	16.063	1610
1620	16.063	16.073	16.084	16.094	16.105	16.115	16.126	16.136	16.147	16.157	16.168	1620
1630	16.168	16.178	16.189	16.199	16.210	16.220	16.231	16.241	16.252	16.262	16.273	1630
1640	16.273	16.283	16.294	16.304	16.315	16.325	16.336	16.346	16.357	16.367	16.377	1640
1650	16.377	16.388	16.398	16.409	16.419	16.430	16.440	16.451	16.461	16.472	16.482	1650
1660	16.482	16.493	16.503	16.514	16.524	16.534	16.545	16.555	16.566	16.576	16.587	1660
1670	16.587	16.597	16.608	16.618	16.628	16.639	16.649	16.660	16.670	16.681	16.691	1670
1680	16.691	16.702	16.712	16.722	16.733	16.743	16.754	16.764	16.775	16.785	16.795	1680
1690	16.795	16.806	16.816	16.827	16.837	16.847	16.858	16.868	16.879	16.889	16.899	1690
1700	16.899	16.910	16.920	16.931	16.941	16.952	16.962	16.972	16.983	16.993	17.003	1700
1710	17.003	17.014	17.024	17.035	17.045	17.055	17.066	17.076	17.087	17.097	17.107	1710
1720	17.107	17.118	17.128	17.138	17.149	17.159	17.170	17.180	17.190	17.201	17.211	1720
1730	17.211	17.221	17.232	17.242	17.252	17.263	17.273	17.284	17.294	17.304	17.315	1730
1740	17.315	17.325	17.335	17.346	17.356	17.366	17.377	17.387	17.397	17.408	17.418	1740
1750	17.418	17.428	17.439	17.449	17.459	17.470	17.480	17.490	17.501	17.511	17.521	1750
1760	17.521	17.532	17.542	17.552	17.563	17.573	17.583	17.593	17.604	17.614	17.624	1760
1770	17.624	17.635	17.645	17.655	17.666	17.676	17.686	17.696	17.707	17.717	17.727	1770
1780	17.727	17.738	17.748	17.758	17.768	17.779	17.789	17.799	17.810	17.820	17.830	1780
1790	17.830	17.840	17.851	17.861	17.871	17.881	17.892	17.902	17.912	17.922	17.933	1790
1800	17.933	17.943	17.953	17.964	17.974	17.984	17.994	18.005	18.015	18.025	18.035	1800
1810	18.035	18.045	18.056	18.066	18.076	18.086	18.097	18.107	18.117	18.127	18.138	1810
1820	18.138	18.148	18.158	18.168	18.178	18.189	18.199	18.209	18.219	18.230	18.240	1820
1830	18.240	18.250	18.260	18.270	18.281	18.291	18.301	18.311	18.321	18.332	18.342	1830
1840	18.342	18.352	18.362	18.372	18.383	18.393	18.403	18.413	18.423	18.433	18.444	1840
1850	18.444	18.454	18.464	18.474	18.484	18.495	18.505	18.515	18.525	18.535	18.545	1850
1860	18.545	18.556	18.566	18.576	18.586	18.596	18.606	18.616	18.627	18.637	18.647	1860
1870	18.647	18.657	18.667	18.677	18.687	18.698	18.708	18.718	18.728	18.738	18.748	1870
1880	18.748	18.758	18.769	18.779	18.789	18.799	18.809	18.819	18.829	18.839	18.849	1880
1890	18.849	18.860	18.870	18.880	18.890	18.900	18.910	18.920	18.930	18.940	18.951	1890
1900	18.951	18.961	18.971	18.981	18.991	19.001	19.011	19.021	19.031	19.041	19.051	1900
1910	19.051	19.062	19.072	19.082	19.092	19.102	19.112	19.122	19.132	19.142	19.152	1910
1920	19.152	19.162	19.172	19.182	19.192	19.202	19.212	19.223	19.233	19.243	19.253	1920
1930	19.253	19.263	19.273	19.283	19.293	19.303	19.313	19.323	19.333	19.343	19.353	1930
1940	19.353	19.363	19.373	19.383	19.393	19.403	19.413	19.423	19.433	19.443	19.453	1940
1950	19.453	19.463	19.473	19.483	19.493	19.503	19.513	19.523	19.533	19.543	19.553	1950
1960	19.553	19.563	19.573	19.583	19.593	19.603	19.613	19.623	19.633	19.643	19.653	1960
1970	19.653	19.663	19.673	19.683	19.693	19.703	19.713	19.723	19.733	19.743	19.753	1970
1980	19.753	19.763	19.773	19.783	19.793	19.803	19.813	19.823	19.833	19.842	19.852	1980
1990	19.852	19.862	19.872	19.882	19.892	19.902	19.912	19.922	19.932	19.942	19.952	1990
°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 22 ***Type C Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
2000	19.952	19.962	19.972	19.982	19.991	20.001	20.011	20.021	20.031	20.041	20.051	2000
2010	20.051	20.061	20.071	20.081	20.091	20.100	20.110	20.120	20.130	20.140	20.150	2010
2020	20.150	20.160	20.170	20.180	20.190	20.199	20.209	20.219	20.229	20.239	20.249	2020
2030	20.249	20.259	20.269	20.278	20.288	20.298	20.308	20.318	20.328	20.338	20.347	2030
2040	20.347	20.357	20.367	20.377	20.387	20.397	20.407	20.416	20.426	20.436	20.446	2040
2050	20.446	20.456	20.466	20.475	20.485	20.495	20.505	20.515	20.525	20.534	20.544	2050
2060	20.544	20.554	20.564	20.574	20.584	20.593	20.603	20.613	20.623	20.633	20.642	2060
2070	20.642	20.652	20.662	20.672	20.682	20.691	20.701	20.711	20.721	20.731	20.740	2070
2080	20.740	20.750	20.760	20.770	20.779	20.789	20.799	20.809	20.819	20.828	20.838	2080
2090	20.838	20.848	20.858	20.867	20.877	20.887	20.897	20.906	20.916	20.926	20.936	2090
2100	20.936	20.945	20.955	20.965	20.975	20.984	20.994	21.004	21.014	21.023	21.033	2100
2110	21.033	21.043	21.053	21.062	21.072	21.082	21.091	21.101	21.111	21.121	21.130	2110
2120	21.130	21.140	21.150	21.159	21.169	21.179	21.189	21.198	21.208	21.218	21.227	2120
2130	21.227	21.237	21.247	21.256	21.266	21.276	21.285	21.295	21.305	21.315	21.324	2130
2140	21.324	21.334	21.344	21.353	21.363	21.373	21.382	21.392	21.402	21.411	21.421	2140
2150	21.421	21.431	21.440	21.450	21.460	21.469	21.479	21.488	21.498	21.508	21.517	2150
2160	21.517	21.527	21.537	21.546	21.556	21.566	21.575	21.585	21.594	21.604	21.614	2160
2170	21.614	21.623	21.633	21.643	21.652	21.662	21.671	21.681	21.691	21.700	21.710	2170
2180	21.710	21.719	21.729	21.739	21.748	21.758	21.767	21.777	21.787	21.796	21.806	2180
2190	21.806	21.815	21.825	21.835	21.844	21.854	21.863	21.873	21.882	21.892	21.902	2190
2200	21.902	21.911	21.921	21.930	21.940	21.949	21.959	21.969	21.978	21.988	21.997	2200
2210	21.997	22.007	22.016	22.026	22.035	22.045	22.054	22.064	22.074	22.083	22.093	2210
2220	22.093	22.102	22.112	22.121	22.131	22.140	22.150	22.159	22.169	22.178	22.188	2220
2230	22.188	22.197	22.207	22.216	22.226	22.235	22.245	22.254	22.264	22.273	22.283	2230
2240	22.283	22.292	22.302	22.311	22.321	22.330	22.340	22.349	22.359	22.368	22.378	2240
2250	22.378	22.387	22.397	22.406	22.416	22.425	22.435	22.444	22.453	22.463	22.472	2250
2260	22.472	22.482	22.491	22.501	22.510	22.520	22.529	22.539	22.548	22.557	22.567	2260
2270	22.567	22.576	22.586	22.595	22.605	22.614	22.624	22.633	22.642	22.652	22.661	2270
2280	22.661	22.671	22.680	22.689	22.699	22.708	22.718	22.727	22.737	22.746	22.755	2280
2290	22.755	22.765	22.774	22.784	22.793	22.802	22.812	22.821	22.830	22.840	22.849	2290
2300	22.849	22.859	22.868	22.877	22.887	22.896	22.906	22.915	22.924	22.934	22.943	2300
2310	22.943	22.952	22.962	22.971	22.980	22.990	22.999	23.009	23.018	23.027	23.037	2310
2320	23.037	23.046	23.055	23.065	23.074	23.083	23.093	23.102	23.111	23.121	23.130	2320
2330	23.130	23.139	23.149	23.158	23.167	23.177	23.186	23.195	23.205	23.214	23.223	2330
2340	23.223	23.232	23.242	23.251	23.260	23.270	23.279	23.288	23.298	23.307	23.316	2340
2350	23.316	23.325	23.335	23.344	23.353	23.363	23.372	23.381	23.390	23.400	23.409	2350
2360	23.409	23.418	23.427	23.437	23.446	23.455	23.465	23.474	23.483	23.492	23.502	2360
2370	23.502	23.511	23.520	23.529	23.539	23.548	23.557	23.566	23.576	23.585	23.594	2370
2380	23.594	23.603	23.612	23.622	23.631	23.640	23.649	23.659	23.668	23.677	23.686	2380
2390	23.686	23.695	23.705	23.714	23.723	23.732	23.742	23.751	23.760	23.769	23.778	2390
2400	23.778	23.788	23.797	23.806	23.815	23.824	23.834	23.843	23.852	23.861	23.870	2400
2410	23.870	23.879	23.889	23.898	23.907	23.916	23.925	23.934	23.944	23.953	23.962	2410
2420	23.962	23.971	23.980	23.989	23.999	24.008	24.017	24.026	24.035	24.044	24.053	2420
2430	24.053	24.063	24.072	24.081	24.090	24.099	24.108	24.117	24.127	24.136	24.145	2430
2440	24.145	24.154	24.163	24.172	24.181	24.190	24.199	24.209	24.218	24.227	24.236	2440
2450	24.236	24.245	24.254	24.263	24.272	24.281	24.290	24.300	24.309	24.318	24.327	2450
2460	24.327	24.336	24.345	24.354	24.363	24.372	24.381	24.390	24.399	24.409	24.418	2460
2470	24.418	24.427	24.436	24.445	24.454	24.463	24.472	24.481	24.490	24.499	24.508	2470
2480	24.508	24.517	24.526	24.535	24.544	24.553	24.562	24.571	24.581	24.590	24.599	2480
2490	24.599	24.608	24.617	24.626	24.635	24.644	24.653	24.662	24.671	24.680	24.689	2490
°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 22 ***Type C Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
	Thermoelectric Voltage in Millivolts											
2500	24.689	24.698	24.707	24.716	24.725	24.734	24.743	24.752	24.761	24.770	24.779	2500
2510	24.779	24.788	24.797	24.806	24.815	24.824	24.833	24.842	24.851	24.860	24.869	2510
2520	24.869	24.878	24.887	24.896	24.905	24.913	24.922	24.931	24.940	24.949	24.958	2520
2530	24.958	24.967	24.976	24.985	24.994	25.003	25.012	25.021	25.030	25.039	25.048	2530
2540	25.048	25.057	25.066	25.075	25.083	25.092	25.101	25.110	25.119	25.128	25.137	2540
2550	25.137	25.146	25.155	25.164	25.173	25.182	25.190	25.199	25.208	25.217	25.226	2550
2560	25.226	25.235	25.244	25.253	25.262	25.271	25.279	25.288	25.297	25.306	25.315	2560
2570	25.315	25.324	25.333	25.342	25.350	25.359	25.368	25.377	25.386	25.395	25.404	2570
2580	25.404	25.413	25.421	25.430	25.439	25.448	25.457	25.466	25.475	25.483	25.492	2580
2590	25.492	25.501	25.510	25.519	25.528	25.536	25.545	25.554	25.563	25.572	25.581	2590
2600	25.581	25.589	25.598	25.607	25.616	25.625	25.633	25.642	25.651	25.660	25.669	2600
2610	25.669	25.677	25.686	25.695	25.704	25.713	25.721	25.730	25.739	25.748	25.757	2610
2620	25.757	25.765	25.774	25.783	25.792	25.801	25.809	25.818	25.827	25.836	25.844	2620
2630	25.844	25.853	25.862	25.871	25.879	25.888	25.897	25.906	25.915	25.923	25.932	2630
2640	25.932	25.941	25.949	25.958	25.967	25.976	25.984	25.993	26.002	26.011	26.019	2640
2650	26.019	26.028	26.037	26.046	26.054	26.063	26.072	26.080	26.089	26.098	26.107	2650
2660	26.107	26.115	26.124	26.133	26.141	26.150	26.159	26.168	26.176	26.185	26.194	2660
2670	26.194	26.202	26.211	26.220	26.228	26.237	26.246	26.254	26.263	26.272	26.280	2670
2680	26.280	26.289	26.298	26.306	26.315	26.324	26.332	26.341	26.350	26.358	26.367	2680
2690	26.367	26.376	26.384	26.393	26.402	26.410	26.419	26.428	26.436	26.445	26.454	2690
2700	26.454	26.462	26.471	26.480	26.488	26.497	26.505	26.514	26.523	26.531	26.540	2700
2710	26.540	26.548	26.557	26.566	26.574	26.583	26.592	26.600	26.609	26.617	26.626	2710
2720	26.626	26.635	26.643	26.652	26.660	26.669	26.678	26.686	26.695	26.703	26.712	2720
2730	26.712	26.720	26.729	26.738	26.746	26.755	26.763	26.772	26.780	26.789	26.798	2730
2740	26.798	26.806	26.815	26.823	26.832	26.840	26.849	26.857	26.866	26.875	26.883	2740
2750	26.883	26.892	26.900	26.909	26.917	26.926	26.934	26.943	26.951	26.960	26.968	2750
2760	26.968	26.977	26.986	26.994	27.003	27.011	27.020	27.028	27.037	27.045	27.054	2760
2770	27.054	27.062	27.071	27.079	27.088	27.096	27.105	27.113	27.122	27.130	27.139	2770
2780	27.139	27.147	27.156	27.164	27.173	27.181	27.190	27.198	27.206	27.215	27.223	2780
2790	27.223	27.232	27.240	27.249	27.257	27.266	27.274	27.283	27.291	27.300	27.308	2790
2800	27.308	27.316	27.325	27.333	27.342	27.350	27.359	27.367	27.376	27.384	27.392	2800
2810	27.392	27.401	27.409	27.418	27.426	27.435	27.443	27.451	27.460	27.468	27.477	2810
2820	27.477	27.485	27.493	27.502	27.510	27.519	27.527	27.535	27.544	27.552	27.561	2820
2830	27.561	27.569	27.577	27.586	27.594	27.603	27.611	27.619	27.628	27.636	27.645	2830
2840	27.645	27.653	27.661	27.670	27.678	27.686	27.695	27.703	27.711	27.720	27.728	2840
2850	27.728	27.737	27.745	27.753	27.762	27.770	27.778	27.787	27.795	27.803	27.812	2850
2860	27.812	27.820	27.828	27.837	27.845	27.853	27.862	27.870	27.878	27.887	27.895	2860
2870	27.895	27.903	27.912	27.920	27.928	27.937	27.945	27.953	27.961	27.970	27.978	2870
2880	27.978	27.986	27.995	28.003	28.011	28.020	28.028	28.036	28.044	28.053	28.061	2880
2890	28.061	28.069	28.078	28.086	28.094	28.102	28.111	28.119	28.127	28.135	28.144	2890
2900	28.144	28.152	28.160	28.169	28.177	28.185	28.193	28.202	28.210	28.218	28.226	2900
2910	28.226	28.235	28.243	28.251	28.259	28.267	28.276	28.284	28.292	28.300	28.309	2910
2920	28.309	28.317	28.325	28.333	28.342	28.350	28.358	28.366	28.374	28.383	28.391	2920
2930	28.391	28.399	28.407	28.415	28.424	28.432	28.440	28.448	28.456	28.465	28.473	2930
2940	28.473	28.481	28.489	28.497	28.506	28.514	28.522	28.530	28.538	28.546	28.555	2940
2950	28.555	28.563	28.571	28.579	28.587	28.595	28.604	28.612	28.620	28.628	28.636	2950
2960	28.636	28.644	28.652	28.661	28.669	28.677	28.685	28.693	28.701	28.709	28.718	2960
2970	28.718	28.726	28.734	28.742	28.750	28.758	28.766	28.774	28.783	28.791	28.799	2970
2980	28.799	28.807	28.815	28.823	28.831	28.839	28.847	28.856	28.864	28.872	28.880	2980
2990	28.880	28.888	28.896	28.904	28.912	28.920	28.928	28.936	28.945	28.953	28.961	2990
°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 22 ***Type C Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
3000	28.961	28.969	28.977	28.985	28.993	29.001	29.009	29.017	29.025	29.033	29.041	3000
3010	29.041	29.049	29.058	29.066	29.074	29.082	29.090	29.098	29.106	29.114	29.122	3010
3020	29.122	29.130	29.138	29.146	29.154	29.162	29.170	29.178	29.186	29.194	29.202	3020
3030	29.202	29.210	29.218	29.226	29.234	29.242	29.250	29.258	29.266	29.274	29.282	3030
3040	29.282	29.290	29.298	29.306	29.314	29.322	29.330	29.338	29.346	29.354	29.362	3040
3050	29.362	29.370	29.378	29.386	29.394	29.402	29.410	29.418	29.426	29.434	29.442	3050
3060	29.442	29.450	29.458	29.466	29.474	29.482	29.490	29.498	29.506	29.513	29.521	3060
3070	29.521	29.529	29.537	29.545	29.553	29.561	29.569	29.577	29.585	29.593	29.601	3070
3080	29.601	29.609	29.617	29.625	29.632	29.640	29.648	29.656	29.664	29.672	29.680	3080
3090	29.680	29.688	29.696	29.704	29.711	29.719	29.727	29.735	29.743	29.751	29.759	3090
3100	29.759	29.767	29.775	29.782	29.790	29.798	29.806	29.814	29.822	29.830	29.838	3100
3110	29.838	29.845	29.853	29.861	29.869	29.877	29.885	29.893	29.900	29.908	29.916	3110
3120	29.916	29.924	29.932	29.940	29.948	29.955	29.963	29.971	29.979	29.987	29.995	3120
3130	29.995	30.002	30.010	30.018	30.026	30.034	30.041	30.049	30.057	30.065	30.073	3130
3140	30.073	30.081	30.088	30.096	30.104	30.112	30.120	30.127	30.135	30.143	30.151	3140
3150	30.151	30.159	30.166	30.174	30.182	30.190	30.197	30.205	30.213	30.221	30.229	3150
3160	30.229	30.236	30.244	30.252	30.260	30.267	30.275	30.283	30.291	30.298	30.306	3160
3170	30.306	30.314	30.322	30.329	30.337	30.345	30.353	30.360	30.368	30.376	30.384	3170
3180	30.384	30.391	30.399	30.407	30.414	30.422	30.430	30.438	30.445	30.453	30.461	3180
3190	30.461	30.469	30.476	30.484	30.492	30.499	30.507	30.515	30.522	30.530	30.538	3190
3200	30.538	30.546	30.553	30.561	30.569	30.576	30.584	30.592	30.599	30.607	30.615	3200
3210	30.615	30.622	30.630	30.638	30.645	30.653	30.661	30.668	30.676	30.684	30.691	3210
3220	30.691	30.699	30.707	30.714	30.722	30.730	30.737	30.745	30.752	30.760	30.768	3220
3230	30.768	30.775	30.783	30.791	30.798	30.806	30.813	30.821	30.829	30.836	30.844	3230
3240	30.844	30.852	30.859	30.867	30.874	30.882	30.890	30.897	30.905	30.912	30.920	3240
3250	30.920	30.928	30.935	30.943	30.950	30.958	30.966	30.973	30.981	30.988	30.996	3250
3260	30.996	31.003	31.011	31.019	31.026	31.034	31.041	31.049	31.056	31.064	31.071	3260
3270	31.071	31.079	31.087	31.094	31.102	31.109	31.117	31.124	31.132	31.139	31.147	3270
3280	31.147	31.154	31.162	31.170	31.177	31.185	31.192	31.200	31.207	31.215	31.222	3280
3290	31.222	31.230	31.237	31.245	31.252	31.260	31.267	31.275	31.282	31.290	31.297	3290
3300	31.297	31.305	31.312	31.320	31.327	31.335	31.342	31.350	31.357	31.365	31.372	3300
3310	31.372	31.380	31.387	31.394	31.402	31.409	31.417	31.424	31.432	31.439	31.447	3310
3320	31.447	31.454	31.462	31.469	31.477	31.484	31.491	31.499	31.506	31.514	31.521	3320
3330	31.521	31.529	31.536	31.543	31.551	31.558	31.566	31.573	31.581	31.588	31.595	3330
3340	31.595	31.603	31.610	31.618	31.625	31.632	31.640	31.647	31.655	31.662	31.669	3340
3350	31.669	31.677	31.684	31.692	31.699	31.706	31.714	31.721	31.728	31.736	31.743	3350
3360	31.743	31.751	31.758	31.765	31.773	31.780	31.787	31.795	31.802	31.810	31.817	3360
3370	31.817	31.824	31.832	31.839	31.846	31.854	31.861	31.868	31.876	31.883	31.890	3370
3380	31.890	31.898	31.905	31.912	31.920	31.927	31.934	31.942	31.949	31.956	31.963	3380
3390	31.963	31.971	31.978	31.985	31.993	32.000	32.007	32.015	32.022	32.029	32.036	3390
3400	32.036	32.044	32.051	32.058	32.066	32.073	32.080	32.087	32.095	32.102	32.109	3400
3410	32.109	32.117	32.124	32.131	32.138	32.146	32.153	32.160	32.167	32.175	32.182	3410
3420	32.182	32.189	32.196	32.204	32.211	32.218	32.225	32.233	32.240	32.247	32.254	3420
3430	32.254	32.261	32.269	32.276	32.283	32.290	32.298	32.305	32.312	32.319	32.326	3430
3440	32.326	32.334	32.341	32.348	32.355	32.362	32.370	32.377	32.384	32.391	32.398	3440
3450	32.398	32.405	32.413	32.420	32.427	32.434	32.441	32.449	32.456	32.463	32.470	3450
3460	32.470	32.477	32.484	32.492	32.499	32.506	32.513	32.520	32.527	32.534	32.542	3460
3470	32.542	32.549	32.556	32.563	32.570	32.577	32.584	32.591	32.599	32.606	32.613	3470
3480	32.613	32.620	32.627	32.634	32.641	32.648	32.656	32.663	32.670	32.677	32.684	3480
3490	32.684	32.691	32.698	32.705	32.712	32.719	32.726	32.734	32.741	32.748	32.755	3490

°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 22 ***Type C Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

C°F

°F	0	1	2	3	4	5	6	7	8	9	10	°F
	Thermoelectric Voltage in Millivolts											
3500	32.755	32.762	32.769	32.776	32.783	32.790	32.797	32.804	32.811	32.818	32.825	3500
3510	32.825	32.832	32.840	32.847	32.854	32.861	32.868	32.875	32.882	32.889	32.896	3510
3520	32.896	32.903	32.910	32.917	32.924	32.931	32.938	32.945	32.952	32.959	32.966	3520
3530	32.966	32.973	32.980	32.987	32.994	33.001	33.008	33.015	33.022	33.029	33.036	3530
3540	33.036	33.043	33.050	33.057	33.064	33.071	33.078	33.085	33.092	33.099	33.106	3540
3550	33.106	33.113	33.120	33.127	33.134	33.141	33.148	33.154	33.161	33.168	33.175	3550
3560	33.175	33.182	33.189	33.196	33.203	33.210	33.217	33.224	33.231	33.238	33.245	3560
3570	33.245	33.252	33.258	33.265	33.272	33.279	33.286	33.293	33.300	33.307	33.314	3570
3580	33.314	33.321	33.327	33.334	33.341	33.348	33.355	33.362	33.369	33.376	33.383	3580
3590	33.383	33.389	33.396	33.403	33.410	33.417	33.424	33.431	33.437	33.444	33.451	3590
3600	33.451	33.458	33.465	33.472	33.479	33.485	33.492	33.499	33.506	33.513	33.520	3600
3610	33.520	33.526	33.533	33.540	33.547	33.554	33.560	33.567	33.574	33.581	33.588	3610
3620	33.588	33.594	33.601	33.608	33.615	33.622	33.628	33.635	33.642	33.649	33.656	3620
3630	33.656	33.662	33.669	33.676	33.683	33.689	33.696	33.703	33.710	33.716	33.723	3630
3640	33.723	33.730	33.737	33.743	33.750	33.757	33.764	33.770	33.777	33.784	33.791	3640
3650	33.791	33.797	33.804	33.811	33.818	33.824	33.831	33.838	33.844	33.851	33.858	3650
3660	33.858	33.865	33.871	33.878	33.885	33.891	33.898	33.905	33.911	33.918	33.925	3660
3670	33.925	33.931	33.938	33.945	33.952	33.958	33.965	33.972	33.978	33.985	33.992	3670
3680	33.992	33.998	34.005	34.011	34.018	34.025	34.031	34.038	34.045	34.051	34.058	3680
3690	34.058	34.065	34.071	34.078	34.085	34.091	34.098	34.104	34.111	34.118	34.124	3690
3700	34.124	34.131	34.137	34.144	34.151	34.157	34.164	34.170	34.177	34.184	34.190	3700
3710	34.190	34.197	34.203	34.210	34.217	34.223	34.230	34.236	34.243	34.249	34.256	3710
3720	34.256	34.262	34.269	34.276	34.282	34.289	34.295	34.302	34.308	34.315	34.321	3720
3730	34.321	34.328	34.334	34.341	34.347	34.354	34.361	34.367	34.374	34.380	34.387	3730
3740	34.387	34.393	34.400	34.406	34.413	34.419	34.426	34.432	34.439	34.445	34.452	3740
3750	34.452	34.458	34.465	34.471	34.477	34.484	34.490	34.497	34.503	34.510	34.516	3750
3760	34.516	34.523	34.529	34.536	34.542	34.549	34.555	34.561	34.568	34.574	34.581	3760
3770	34.581	34.587	34.594	34.600	34.606	34.613	34.619	34.626	34.632	34.638	34.645	3770
3780	34.645	34.651	34.658	34.664	34.670	34.677	34.683	34.690	34.696	34.702	34.709	3780
3790	34.709	34.715	34.722	34.728	34.734	34.741	34.747	34.753	34.760	34.766	34.772	3790
3800	34.772	34.779	34.785	34.792	34.798	34.804	34.811	34.817	34.823	34.830	34.836	3800
3810	34.836	34.842	34.849	34.855	34.861	34.867	34.874	34.880	34.886	34.893	34.899	3810
3820	34.899	34.905	34.912	34.918	34.924	34.930	34.937	34.943	34.949	34.956	34.962	3820
3830	34.962	34.968	34.974	34.981	34.987	34.993	34.999	35.006	35.012	35.018	35.024	3830
3840	35.024	35.031	35.037	35.043	35.049	35.056	35.062	35.068	35.074	35.081	35.087	3840
3850	35.087	35.093	35.099	35.105	35.112	35.118	35.124	35.130	35.136	35.143	35.149	3850
3860	35.149	35.155	35.161	35.167	35.173	35.180	35.186	35.192	35.198	35.204	35.211	3860
3870	35.211	35.217	35.223	35.229	35.235	35.241	35.247	35.254	35.260	35.266	35.272	3870
3880	35.272	35.278	35.284	35.290	35.296	35.303	35.309	35.315	35.321	35.327	35.333	3880
3890	35.333	35.339	35.345	35.351	35.358	35.364	35.370	35.376	35.382	35.388	35.394	3890
3900	35.394	35.400	35.406	35.412	35.418	35.424	35.430	35.437	35.443	35.449	35.455	3900
3910	35.455	35.461	35.467	35.473	35.479	35.485	35.491	35.497	35.503	35.509	35.515	3910
3920	35.515	35.521	35.527	35.533	35.539	35.545	35.551	35.557	35.563	35.569	35.575	3920
3930	35.575	35.581	35.587	35.593	35.599	35.605	35.611	35.617	35.623	35.629	35.635	3930
3940	35.635	35.641	35.647	35.653	35.659	35.664	35.670	35.676	35.682	35.688	35.694	3940
3950	35.694	35.700	35.706	35.712	35.718	35.724	35.730	35.736	35.741	35.747	35.753	3950
3960	35.753	35.759	35.765	35.771	35.777	35.783	35.789	35.794	35.800	35.806	35.812	3960
3970	35.812	35.818	35.824	35.830	35.836	35.841	35.847	35.853	35.859	35.865	35.871	3970
3980	35.871	35.876	35.882	35.888	35.894	35.900	35.906	35.911	35.917	35.923	35.929	3980
3990	35.929	35.935	35.940	35.946	35.952	35.958	35.964	35.969	35.975	35.981	35.987	3990
°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 22 ***Type C Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
4000	35.987	35.993	35.998	36.004	36.010	36.016	36.021	36.027	36.033	36.039	36.044	4000
4010	36.044	36.050	36.056	36.062	36.067	36.073	36.079	36.084	36.090	36.096	36.102	4010
4020	36.102	36.107	36.113	36.119	36.124	36.130	36.136	36.142	36.147	36.153	36.159	4020
4030	36.159	36.164	36.170	36.176	36.181	36.187	36.193	36.198	36.204	36.210	36.215	4030
4040	36.215	36.221	36.226	36.232	36.238	36.243	36.249	36.255	36.260	36.266	36.271	4040
4050	36.271	36.277	36.283	36.288	36.294	36.300	36.305	36.311	36.316	36.322	36.327	4050
4060	36.327	36.333	36.339	36.344	36.350	36.355	36.361	36.366	36.372	36.378	36.383	4060
4070	36.383	36.389	36.394	36.400	36.405	36.411	36.416	36.422	36.427	36.433	36.438	4070
4080	36.438	36.444	36.449	36.455	36.460	36.466	36.471	36.477	36.482	36.488	36.493	4080
4090	36.493	36.499	36.504	36.510	36.515	36.521	36.526	36.532	36.537	36.543	36.548	4090
4100	36.548	36.553	36.559	36.564	36.570	36.575	36.581	36.586	36.591	36.597	36.602	4100
4110	36.602	36.608	36.613	36.619	36.624	36.629	36.635	36.640	36.645	36.651	36.656	4110
4120	36.656	36.662	36.667	36.672	36.678	36.683	36.688	36.694	36.699	36.704	36.710	4120
4130	36.710	36.715	36.721	36.726	36.731	36.737	36.742	36.747	36.752	36.758	36.763	4130
4140	36.763	36.768	36.774	36.779	36.784	36.790	36.795	36.800	36.805	36.811	36.816	4140
4150	36.816	36.821	36.826	36.832	36.837	36.842	36.848	36.853	36.858	36.863	36.868	4150
4160	36.868	36.874	36.879	36.884	36.889	36.895	36.900	36.905	36.910	36.915	36.921	4160
4170	36.921	36.926	36.931	36.936	36.941	36.947	36.952	36.957	36.962	36.967	36.972	4170
4180	36.972	36.978	36.983	36.988	36.993	36.998	37.003	37.008	37.014	37.019	37.024	4180
4190	37.024	37.029	37.034	37.039	37.044	37.049	37.055	37.060	37.065	37.070	37.075	4190
4200	37.075											

Temperature - Electromotive Force (EMF) Tables for Non-Letter Designated Thermocouples [1]

This reference manual consists of reference tables that give temperature-electromotive force (emf) relationships for Pyromation, Inc. Types M and P thermocouples. These are not ANSI/ASTM recognized coded thermocouple types

These tables give emf values to three decimal places (1 μV) for each degree of temperature. Such tables are satisfactory for most industrial uses but may not be adequate for computer and similar applications. If greater precision is required, the reader should contact the manufacturer for equations which permit easy and unique generation of the temperature-emf relationship.

[1] All temperature - electromotive force data in Tables 23 to 26 have been developed from wire manufacturers' data. The data in these tables are based upon the International Temperature Scale of 1990 (ITS-90).

List of Tables

Following is a list of the thermocouple tables included in this reference manual.

Table	Type	Range
21	Limits of error	
22	Recommended upper temperature limits for protected thermocouples	
23	M Ni - Ni,18%Moly	(-50 to 1410) °C
24	M Ni - Ni,18%Moly	(-58 to 2570) °F
25	P Platinel II	(0 to 1395) °C
26	P Platinel II	(32 to 2543) °F

Table 21 — Initial Limits of Error for Thermocouples

	Temperature Range		Tolerances-Reference Junction 0 °C [32 °F]			
			Standard Tolerances		Special Tolerances	
Type	°C	°F	°C	°F	°C	°F
M	-50 to 277	-58 to 530	± 2.2		±1.1	
M	277 to 1410	530 to 2570	± 0.75 %		± 0.4 %	
P	0 to 1395	32 to 2543	± 1.0 %		n/a	

Note 1 — The Fahrenheit tolerance is 1.8 times larger than the °C tolerance at the equivalent °C temperature. Note particularly that percentage tolerance apply only to temperature that are expressed in °C

Table 22 — Recommended Upper Temperature Limits for Thermocouples

	Upper Temperature limit for Various Wire Gage Sizes (Awg). °C [°F]				
Type	8 Gage	18 Gage	20 Gage	24 Gage	28 Gage
M	1260 [2300][A]	1204 [2200][A]			
P			1250 [2280]	1250 [2280]	1250 [2280]

[A] Note that the upper temperature limits only apply in a protected sheath

TABLE 23 ***Type M Thermocouple*** *— thermoelectric voltage as a function of temperature (°C); reference junctions at 0 °C*

°C	0	1	2	3	4	5	6	7	8	9	10	°C
						Thermoelectric Voltage in Millivolts						
-50	-1.732											-50
-40	-1.404	-1.437	-1.470	-1.503	-1.536	-1.569	-1.602	-1.634	-1.667	-1.699	-1.732	-40
-30	-1.067	-1.101	-1.135	-1.169	-1.203	-1.236	-1.270	-1.304	-1.337	-1.370	-1.404	-30
-20	-0.720	-0.755	-0.790	-0.825	-0.860	-0.895	-0.929	-0.964	-0.998	-1.032	-1.067	-20
-10	-0.365	-0.401	-0.436	-0.472	-0.508	-0.543	-0.579	-0.614	-0.650	-0.685	-0.720	-10
0	0.000	-0.037	-0.074	-0.110	-0.147	-0.183	-0.220	-0.256	-0.292	-0.329	-0.365	0
0	0.000	0.037	0.074	0.111	0.148	0.186	0.223	0.260	0.298	0.336	0.373	0
10	0.373	0.411	0.449	0.487	0.525	0.563	0.602	0.640	0.678	0.717	0.755	10
20	0.755	0.794	0.833	0.872	0.911	0.950	0.989	1.028	1.067	1.106	1.146	20
30	1.146	1.185	1.225	1.264	1.304	1.344	1.384	1.424	1.464	1.504	1.544	30
40	1.544	1.585	1.625	1.665	1.706	1.747	1.787	1.828	1.869	1.910	1.951	40
50	1.951	1.992	2.033	2.074	2.115	2.157	2.198	2.240	2.281	2.323	2.365	50
60	2.365	2.407	2.448	2.490	2.532	2.575	2.617	2.659	2.701	2.744	2.786	60
70	2.786	2.829	2.871	2.914	2.957	2.999	3.042	3.085	3.128	3.171	3.215	70
80	3.215	3.258	3.301	3.344	3.388	3.431	3.475	3.518	3.562	3.606	3.650	80
90	3.650	3.693	3.737	3.781	3.825	3.869	3.914	3.958	4.002	4.047	4.091	90
100	4.091	4.135	4.180	4.225	4.269	4.314	4.359	4.404	4.448	4.493	4.538	100
110	4.538	4.583	4.629	4.674	4.719	4.764	4.810	4.855	4.900	4.946	4.992	110
120	4.992	5.037	5.083	5.129	5.174	5.220	5.266	5.312	5.358	5.404	5.450	120
130	5.450	5.496	5.542	5.589	5.635	5.681	5.727	5.774	5.820	5.867	5.913	130
140	5.913	5.960	6.007	6.053	6.100	6.147	6.194	6.241	6.287	6.334	6.381	140
150	6.381	6.428	6.476	6.523	6.570	6.617	6.664	6.712	6.759	6.806	6.854	150
160	6.854	6.901	6.949	6.996	7.044	7.091	7.139	7.186	7.234	7.282	7.330	160
170	7.330	7.377	7.425	7.473	7.521	7.569	7.617	7.665	7.713	7.761	7.809	170
180	7.809	7.857	7.905	7.954	8.002	8.050	8.098	8.147	8.195	8.243	8.292	180
190	8.292	8.340	8.388	8.437	8.485	8.534	8.582	8.631	8.679	8.728	8.777	190
200	8.777	8.825	8.874	8.923	8.971	9.020	9.069	9.118	9.166	9.215	9.264	200
210	9.264	9.313	9.362	9.410	9.459	9.508	9.557	9.606	9.655	9.704	9.753	210
220	9.753	9.802	9.851	9.900	9.949	9.998	10.047	10.096	10.145	10.194	10.243	220
230	10.243	10.292	10.341	10.390	10.439	10.488	10.537	10.586	10.636	10.685	10.734	230
240	10.734	10.783	10.832	10.881	10.930	10.979	11.028	11.078	11.127	11.176	11.225	240
250	11.225	11.274	11.323	11.372	11.421	11.470	11.519	11.568	11.618	11.667	11.716	250
260	11.716	11.765	11.814	11.863	11.912	11.961	12.010	12.059	12.108	12.156	12.205	260
270	12.205	12.254	12.303	12.352	12.401	12.450	12.499	12.547	12.596	12.645	12.694	270
280	12.694	12.742	12.791	12.840	12.888	12.937	12.985	13.034	13.083	13.131	13.180	280
290	13.180	13.228	13.276	13.325	13.373	13.421	13.470	13.518	13.566	13.614	13.663	290
300	13.663	13.711	13.759	13.807	13.855	13.903	13.951	13.998	14.046	14.094	14.142	300
310	14.142	14.189	14.237	14.285	14.332	14.380	14.427	14.474	14.522	14.569	14.616	310
320	14.616	14.663	14.711	14.758	14.805	14.852	14.898	14.945	14.992	15.039	15.085	320
330	15.085	15.132	15.178	15.225	15.271	15.317	15.364	15.410	15.456	15.502	15.548	330
340	15.548	15.594	15.639	15.685	15.731	15.776	15.822	15.867	15.912	15.957	16.002	340
350	16.002	16.047	16.092	16.137	16.182	16.227	16.271	16.316	16.360	16.404	16.448	350
360	16.448	16.492	16.536	16.580	16.624	16.667	16.711	16.754	16.798	16.841	16.884	360
370	16.884	16.927	16.970	17.013	17.056	17.099	17.142	17.185	17.228	17.271	17.314	370
380	17.314	17.357	17.400	17.443	17.487	17.530	17.573	17.616	17.659	17.703	17.746	380
390	17.746	17.789	17.833	17.876	17.920	17.963	18.007	18.050	18.094	18.137	18.181	390
400	18.181	18.225	18.268	18.312	18.356	18.399	18.443	18.487	18.531	18.575	18.618	400
410	18.618	18.662	18.706	18.750	18.794	18.838	18.882	18.926	18.971	19.015	19.059	410
420	19.059	19.103	19.147	19.192	19.236	19.280	19.325	19.369	19.413	19.458	19.502	420
430	19.502	19.547	19.592	19.636	19.681	19.725	19.770	19.815	19.860	19.904	19.949	430
440	19.949	19.994	20.039	20.084	20.129	20.174	20.219	20.264	20.309	20.354	20.399	440
°C	0	1	2	3	4	5	6	7	8	9	10	°C

TABLE 23 ***Type M Thermocouple*** *— thermoelectric voltage as a function of temperature (°C); reference junctions at 0 °C*

°C	0	1	2	3	4	5	6	7	8	9	10	°C
						Thermoelectric Voltage in Millivolts						
450	20.399	20.445	20.490	20.535	20.580	20.626	20.671	20.717	20.762	20.808	20.853	450
460	20.853	20.899	20.944	20.990	21.035	21.081	21.127	21.173	21.218	21.264	21.310	460
470	21.310	21.356	21.402	21.448	21.494	21.540	21.586	21.632	21.678	21.725	21.771	470
480	21.771	21.817	21.863	21.910	21.956	22.002	22.049	22.095	22.142	22.188	22.235	480
490	22.235	22.282	22.328	22.375	22.422	22.468	22.515	22.562	22.609	22.656	22.703	490
500	22.703	22.750	22.797	22.844	22.891	22.938	22.985	23.032	23.080	23.127	23.174	500
510	23.174	23.221	23.269	23.316	23.364	23.411	23.459	23.506	23.554	23.601	23.649	510
520	23.649	23.697	23.744	23.792	23.840	23.888	23.936	23.984	24.032	24.079	24.127	520
530	24.127	24.176	24.224	24.272	24.320	24.368	24.416	24.465	24.513	24.561	24.610	530
540	24.610	24.658	24.706	24.755	24.803	24.852	24.900	24.949	24.998	25.046	25.095	540
550	25.095	25.144	25.193	25.241	25.290	25.339	25.388	25.437	25.486	25.535	25.584	550
560	25.584	25.633	25.682	25.732	25.781	25.830	25.879	25.929	25.978	26.027	26.077	560
570	26.077	26.126	26.176	26.225	26.275	26.324	26.374	26.423	26.473	26.523	26.573	570
580	26.573	26.622	26.672	26.722	26.772	26.822	26.872	26.922	26.972	27.022	27.072	580
590	27.072	27.122	27.172	27.222	27.272	27.323	27.373	27.423	27.474	27.524	27.574	590
600	27.574	27.625	27.675	27.726	27.776	27.827	27.877	27.928	27.979	28.029	28.080	600
610	28.080	28.131	28.182	28.232	28.283	28.334	28.385	28.436	28.487	28.538	28.589	610
620	28.589	28.640	28.691	28.742	28.794	28.845	28.896	28.947	28.999	29.050	29.101	620
630	29.101	29.153	29.204	29.256	29.307	29.358	29.410	29.462	29.513	29.565	29.616	630
640	29.616	29.668	29.720	29.772	29.823	29.875	29.927	29.979	30.031	30.083	30.135	640
650	30.135	30.187	30.239	30.291	30.343	30.395	30.447	30.499	30.552	30.604	30.656	650
660	30.656	30.708	30.761	30.813	30.865	30.918	30.970	31.023	31.075	31.128	31.180	660
670	31.180	31.233	31.285	31.338	31.391	31.443	31.496	31.549	31.601	31.654	31.707	670
680	31.707	31.760	31.813	31.866	31.919	31.972	32.025	32.078	32.131	32.184	32.237	680
690	32.237	32.290	32.343	32.396	32.450	32.503	32.556	32.609	32.663	32.716	32.769	690
700	32.769	32.823	32.876	32.930	32.983	33.037	33.090	33.144	33.197	33.251	33.304	700
710	33.304	33.358	33.412	33.465	33.519	33.573	33.627	33.681	33.734	33.788	33.842	710
720	33.842	33.896	33.950	34.004	34.058	34.112	34.166	34.220	34.274	34.328	34.382	720
730	34.382	34.436	34.491	34.545	34.599	34.653	34.708	34.762	34.816	34.871	34.925	730
740	34.925	34.979	35.034	35.088	35.143	35.197	35.252	35.306	35.361	35.415	35.470	740
750	35.470	35.525	35.579	35.634	35.689	35.743	35.798	35.853	35.908	35.962	36.017	750
760	36.017	36.072	36.127	36.182	36.237	36.292	36.347	36.402	36.457	36.512	36.567	760
770	36.567	36.622	36.677	36.732	36.787	36.842	36.898	36.953	37.008	37.063	37.119	770
780	37.119	37.174	37.229	37.284	37.340	37.395	37.451	37.506	37.561	37.617	37.672	780
790	37.672	37.728	37.783	37.839	37.894	37.950	38.006	38.061	38.117	38.173	38.228	790
800	38.228	38.284	38.340	38.395	38.451	38.507	38.563	38.618	38.674	38.730	38.786	800
810	38.786	38.842	38.898	38.954	39.010	39.066	39.122	39.178	39.234	39.290	39.346	810
820	39.346	39.402	39.458	39.514	39.570	39.626	39.682	39.739	39.795	39.851	39.907	820
830	39.907	39.964	40.020	40.076	40.132	40.189	40.245	40.301	40.358	40.414	40.471	830
840	40.471	40.527	40.583	40.640	40.696	40.753	40.809	40.866	40.923	40.979	41.036	840
850	41.036	41.092	41.149	41.205	41.262	41.319	41.375	41.432	41.489	41.546	41.602	850
860	41.602	41.659	41.716	41.773	41.829	41.886	41.943	42.000	42.057	42.114	42.171	860
870	42.171	42.228	42.284	42.341	42.398	42.455	42.512	42.569	42.626	42.683	42.740	870
880	42.740	42.797	42.855	42.912	42.969	43.026	43.083	43.140	43.197	43.255	43.312	880
890	43.312	43.369	43.426	43.483	43.541	43.598	43.655	43.712	43.770	43.827	43.884	890
900	43.884	43.942	43.999	44.057	44.114	44.171	44.229	44.286	44.344	44.401	44.459	900
910	44.459	44.516	44.574	44.631	44.689	44.746	44.804	44.861	44.919	44.976	45.034	910
920	45.034	45.092	45.149	45.207	45.264	45.322	45.380	45.438	45.495	45.553	45.611	920
930	45.611	45.668	45.726	45.784	45.842	45.899	45.957	46.015	46.073	46.131	46.189	930
940	46.189	46.246	46.304	46.362	46.420	46.478	46.536	46.594	46.652	46.710	46.768	940
°C	0	1	2	3	4	5	6	7	8	9	10	°C

TABLE 23 ***Type M Thermocouple*** *— thermoelectric voltage as a function of temperature (°C); reference junctions at 0 °C*

°C	0	1	2	3	4	5	6	7	8	9	10	°C
						Thermoelectric Voltage in Millivolts						
950	46.768	46.826	46.884	46.942	47.000	47.058	47.116	47.174	47.232	47.290	47.348	950
960	47.348	47.406	47.464	47.522	47.580	47.639	47.697	47.755	47.813	47.871	47.929	960
970	47.929	47.988	48.046	48.104	48.162	48.220	48.279	48.337	48.395	48.454	48.512	970
980	48.512	48.570	48.628	48.687	48.745	48.803	48.862	48.920	48.979	49.037	49.095	980
990	49.095	49.154	49.212	49.271	49.329	49.387	49.446	49.504	49.563	49.621	49.680	990
1000	49.680	49.738	49.797	49.855	49.914	49.972	50.031	50.090	50.148	50.207	50.265	1000
1010	50.265	50.324	50.383	50.441	50.500	50.558	50.617	50.676	50.734	50.793	50.852	1010
1020	50.852	50.911	50.969	51.028	51.087	51.145	51.204	51.263	51.322	51.380	51.439	1020
1030	51.439	51.498	51.557	51.616	51.674	51.733	51.792	51.851	51.910	51.969	52.027	1030
1040	52.027	52.086	52.145	52.204	52.263	52.322	52.381	52.440	52.499	52.558	52.617	1040
1050	52.617	52.676	52.735	52.793	52.852	52.911	52.970	53.029	53.089	53.148	53.207	1050
1060	53.207	53.266	53.325	53.384	53.443	53.502	53.561	53.620	53.679	53.738	53.797	1060
1070	53.797	53.856	53.916	53.975	54.034	54.093	54.152	54.211	54.271	54.330	54.389	1070
1080	54.389	54.448	54.507	54.567	54.626	54.685	54.744	54.803	54.863	54.922	54.981	1080
1090	54.981	55.041	55.100	55.159	55.218	55.278	55.337	55.396	55.456	55.515	55.574	1090
1100	55.574	55.634	55.693	55.752	55.812	55.871	55.930	55.990	56.049	56.109	56.168	1100
1110	56.168	56.227	56.287	56.346	56.406	56.465	56.525	56.584	56.644	56.703	56.762	1110
1120	56.762	56.822	56.881	56.941	57.000	57.060	57.119	57.179	57.238	57.298	57.357	1120
1130	57.357	57.417	57.477	57.536	57.596	57.655	57.715	57.774	57.834	57.894	57.953	1130
1140	57.953	58.013	58.072	58.132	58.191	58.251	58.311	58.370	58.430	58.490	58.549	1140
1150	58.549	58.609	58.669	58.728	58.788	58.848	58.907	58.967	59.027	59.086	59.146	1150
1160	59.146	59.206	59.265	59.325	59.385	59.444	59.504	59.564	59.624	59.683	59.743	1160
1170	59.743	59.803	59.863	59.922	59.982	60.042	60.102	60.161	60.221	60.281	60.341	1170
1180	60.341	60.400	60.460	60.520	60.580	60.640	60.699	60.759	60.819	60.879	60.939	1180
1190	60.939	60.998	61.058	61.118	61.178	61.238	61.297	61.357	61.417	61.477	61.537	1190
1200	61.537	61.597	61.656	61.716	61.776	61.836	61.896	61.956	62.015	62.075	62.135	1200
1210	62.135	62.195	62.255	62.315	62.375	62.434	62.494	62.554	62.614	62.674	62.734	1210
1220	62.734	62.794	62.854	62.913	62.973	63.033	63.093	63.153	63.213	63.273	63.333	1220
1230	63.333	63.392	63.452	63.512	63.572	63.632	63.692	63.752	63.812	63.872	63.931	1230
1240	63.931	63.991	64.051	64.111	64.171	64.231	64.291	64.351	64.411	64.470	64.530	1240
1250	64.530	64.590	64.650	64.710	64.770	64.830	64.890	64.950	65.009	65.069	65.129	1250
1260	65.129	65.189	65.249	65.309	65.369	65.429	65.488	65.548	65.608	65.668	65.728	1260
1270	65.728	65.788	65.848	65.907	65.967	66.027	66.087	66.147	66.207	66.267	66.326	1270
1280	66.326	66.386	66.446	66.506	66.566	66.626	66.686	66.745	66.805	66.865	66.925	1280
1290	66.925	66.985	67.045	67.104	67.164	67.224	67.284	67.344	67.404	67.463	67.523	1290
1300	67.523	67.583	67.643	67.703	67.762	67.822	67.882	67.942	68.002	68.061	68.121	1300
1310	68.121	68.181	68.241	68.301	68.360	68.420	68.480	68.540	68.599	68.659	68.719	1310
1320	68.719	68.779	68.839	68.898	68.958	69.018	69.078	69.137	69.197	69.257	69.317	1320
1330	69.317	69.376	69.436	69.496	69.556	69.615	69.675	69.735	69.795	69.854	69.914	1330
1340	69.914	69.974	70.034	70.093	70.153	70.213	70.272	70.332	70.392	70.452	70.511	1340
1350	70.511	70.571	70.631	70.691	70.750	70.810	70.870	70.930	70.989	71.049	71.109	1350
1360	71.109	71.169	71.228	71.288	71.348	71.408	71.467	71.527	71.587	71.647	71.707	1360
1370	71.707	71.766	71.826	71.886	71.946	72.005	72.065	72.125	72.185	72.245	72.305	1370
1380	72.305	72.364	72.424	72.484	72.544	72.604	72.664	72.724	72.783	72.843	72.903	1380
1390	72.903	72.963	73.023	73.083	73.143	73.203	73.263	73.323	73.383	73.443	73.503	1390
1400	73.503	73.563	73.623	73.683	73.743	73.803	73.863	73.923	73.984	74.044	74.104	1400
1410	74.104											1410

| °C | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | °C |

TABLE 24 ***Type M Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
-50	-1.587	-1.605	-1.623	-1.641	-1.660	-1.678	-1.696	-1.714	-1.732			-50
-40	-1.404	-1.422	-1.441	-1.459	-1.477	-1.496	-1.514	-1.532	-1.551	-1.569	-1.587	-40
-30	-1.218	-1.236	-1.255	-1.274	-1.292	-1.311	-1.330	-1.348	-1.367	-1.385	-1.404	-30
-20	-1.029	-1.048	-1.067	-1.086	-1.105	-1.123	-1.142	-1.161	-1.180	-1.199	-1.218	-20
-10	-0.837	-0.856	-0.875	-0.895	-0.914	-0.933	-0.952	-0.971	-0.990	-1.009	-1.029	-10
0	-0.642	-0.662	-0.681	-0.701	-0.720	-0.740	-0.759	-0.779	-0.798	-0.817	-0.837	0
0	-0.642	-0.622	-0.603	-0.583	-0.563	-0.543	-0.524	-0.504	-0.484	-0.464	-0.444	0
10	-0.444	-0.424	-0.405	-0.385	-0.365	-0.345	-0.325	-0.304	-0.284	-0.264	-0.244	10
20	-0.244	-0.224	-0.204	-0.183	-0.163	-0.143	-0.123	-0.102	-0.082	-0.061	-0.041	20
30	-0.041	-0.020	0.000	0.021	0.041	0.062	0.082	0.103	0.123	0.144	0.165	30
40	0.165	0.186	0.206	0.227	0.248	0.269	0.290	0.311	0.331	0.352	0.373	40
50	0.373	0.394	0.415	0.436	0.458	0.479	0.500	0.521	0.542	0.563	0.585	50
60	0.585	0.606	0.627	0.648	0.670	0.691	0.713	0.734	0.755	0.777	0.798	60
70	0.798	0.820	0.841	0.863	0.885	0.906	0.928	0.950	0.971	0.993	1.015	70
80	1.015	1.037	1.058	1.080	1.102	1.124	1.146	1.168	1.190	1.212	1.234	80
90	1.234	1.256	1.278	1.300	1.322	1.344	1.366	1.388	1.411	1.433	1.455	90
100	1.455	1.477	1.500	1.522	1.544	1.567	1.589	1.612	1.634	1.656	1.679	100
110	1.679	1.701	1.724	1.747	1.769	1.792	1.814	1.837	1.860	1.882	1.905	110
120	1.905	1.928	1.951	1.974	1.996	2.019	2.042	2.065	2.088	2.111	2.134	120
130	2.134	2.157	2.180	2.203	2.226	2.249	2.272	2.295	2.318	2.342	2.365	130
140	2.365	2.388	2.411	2.435	2.458	2.481	2.504	2.528	2.551	2.575	2.598	140
150	2.598	2.621	2.645	2.668	2.692	2.715	2.739	2.763	2.786	2.810	2.833	150
160	2.833	2.857	2.881	2.904	2.928	2.952	2.976	2.999	3.023	3.047	3.071	160
170	3.071	3.095	3.119	3.143	3.167	3.191	3.215	3.238	3.263	3.287	3.311	170
180	3.311	3.335	3.359	3.383	3.407	3.431	3.455	3.480	3.504	3.528	3.552	180
190	3.552	3.577	3.601	3.625	3.650	3.674	3.698	3.723	3.747	3.772	3.796	190
200	3.796	3.820	3.845	3.869	3.894	3.919	3.943	3.968	3.992	4.017	4.042	200
210	4.042	4.066	4.091	4.116	4.140	4.165	4.190	4.215	4.239	4.264	4.289	210
220	4.289	4.314	4.339	4.364	4.389	4.414	4.438	4.463	4.488	4.513	4.538	220
230	4.538	4.563	4.588	4.614	4.639	4.664	4.689	4.714	4.739	4.764	4.789	230
240	4.789	4.815	4.840	4.865	4.890	4.916	4.941	4.966	4.992	5.017	5.042	240
250	5.042	5.068	5.093	5.118	5.144	5.169	5.195	5.220	5.246	5.271	5.297	250
260	5.297	5.322	5.348	5.373	5.399	5.424	5.450	5.476	5.501	5.527	5.553	260
270	5.553	5.578	5.604	5.630	5.655	5.681	5.707	5.733	5.758	5.784	5.810	270
280	5.810	5.836	5.862	5.888	5.913	5.939	5.965	5.991	6.017	6.043	6.069	280
290	6.069	6.095	6.121	6.147	6.173	6.199	6.225	6.251	6.277	6.303	6.329	290
300	6.329	6.355	6.381	6.408	6.434	6.460	6.486	6.512	6.538	6.565	6.591	300
310	6.591	6.617	6.643	6.670	6.696	6.722	6.748	6.775	6.801	6.827	6.854	310
320	6.854	6.880	6.906	6.933	6.959	6.985	7.012	7.038	7.065	7.091	7.118	320
330	7.118	7.144	7.171	7.197	7.224	7.250	7.277	7.303	7.330	7.356	7.383	330
340	7.383	7.409	7.436	7.463	7.489	7.516	7.542	7.569	7.596	7.622	7.649	340
350	7.649	7.676	7.702	7.729	7.756	7.782	7.809	7.836	7.863	7.889	7.916	350
360	7.916	7.943	7.970	7.996	8.023	8.050	8.077	8.104	8.130	8.157	8.184	360
370	8.184	8.211	8.238	8.265	8.292	8.318	8.345	8.372	8.399	8.426	8.453	370
380	8.453	8.480	8.507	8.534	8.561	8.588	8.615	8.642	8.669	8.696	8.723	380
390	8.723	8.750	8.777	8.804	8.831	8.858	8.885	8.912	8.939	8.966	8.993	390
400	8.993	9.020	9.047	9.074	9.101	9.128	9.155	9.183	9.210	9.237	9.264	400
410	9.264	9.291	9.318	9.345	9.372	9.400	9.427	9.454	9.481	9.508	9.535	410
420	9.535	9.562	9.590	9.617	9.644	9.671	9.698	9.726	9.753	9.780	9.807	420
430	9.807	9.834	9.862	9.889	9.916	9.943	9.971	9.998	10.025	10.052	10.079	430
440	10.079	10.107	10.134	10.161	10.188	10.216	10.243	10.270	10.297	10.325	10.352	440
°F	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**°F**

TABLE 24 ***Type M Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
450	10.352	10.379	10.406	10.434	10.461	10.488	10.516	10.543	10.570	10.597	10.625	450
460	10.625	10.652	10.679	10.707	10.734	10.761	10.788	10.816	10.843	10.870	10.898	460
470	10.898	10.925	10.952	10.979	11.007	11.034	11.061	11.088	11.116	11.143	11.170	470
480	11.170	11.198	11.225	11.252	11.279	11.307	11.334	11.361	11.389	11.416	11.443	480
490	11.443	11.470	11.498	11.525	11.552	11.579	11.607	11.634	11.661	11.688	11.716	490
500	11.716	11.743	11.770	11.797	11.825	11.852	11.879	11.906	11.933	11.961	11.988	500
510	11.988	12.015	12.042	12.069	12.097	12.124	12.151	12.178	12.205	12.233	12.260	510
520	12.260	12.287	12.314	12.341	12.368	12.395	12.423	12.450	12.477	12.504	12.531	520
530	12.531	12.558	12.585	12.612	12.639	12.667	12.694	12.721	12.748	12.775	12.802	530
540	12.802	12.829	12.856	12.883	12.910	12.937	12.964	12.991	13.018	13.045	13.072	540
550	13.072	13.099	13.126	13.153	13.180	13.206	13.233	13.260	13.287	13.314	13.341	550
560	13.341	13.368	13.395	13.421	13.448	13.475	13.502	13.529	13.555	13.582	13.609	560
570	13.609	13.636	13.663	13.689	13.716	13.743	13.769	13.796	13.823	13.849	13.876	570
580	13.876	13.903	13.929	13.956	13.982	14.009	14.036	14.062	14.089	14.115	14.142	580
590	14.142	14.168	14.195	14.221	14.248	14.274	14.300	14.327	14.353	14.380	14.406	590
600	14.406	14.432	14.459	14.485	14.511	14.538	14.564	14.590	14.616	14.643	14.669	600
610	14.669	14.695	14.721	14.747	14.773	14.799	14.825	14.852	14.878	14.904	14.930	610
620	14.930	14.956	14.982	15.008	15.033	15.059	15.085	15.111	15.137	15.163	15.189	620
630	15.189	15.214	15.240	15.266	15.292	15.317	15.343	15.369	15.394	15.420	15.446	630
640	15.446	15.471	15.497	15.522	15.548	15.573	15.599	15.624	15.649	15.675	15.700	640
650	15.700	15.726	15.751	15.776	15.801	15.827	15.852	15.877	15.902	15.927	15.952	650
660	15.952	15.977	16.002	16.027	16.052	16.077	16.102	16.127	16.152	16.177	16.202	660
670	16.202	16.227	16.251	16.276	16.301	16.325	16.350	16.375	16.399	16.424	16.448	670
680	16.448	16.473	16.497	16.522	16.546	16.570	16.595	16.619	16.643	16.667	16.692	680
690	16.692	16.716	16.740	16.764	16.788	16.812	16.836	16.860	16.884	16.908	16.932	690
700	16.932	16.955	16.979	17.003	17.027	17.051	17.075	17.099	17.123	17.146	17.170	700
710	17.170	17.194	17.218	17.242	17.266	17.290	17.314	17.338	17.362	17.386	17.410	710
720	17.410	17.434	17.458	17.482	17.506	17.530	17.554	17.578	17.602	17.626	17.650	720
730	17.650	17.674	17.698	17.722	17.746	17.770	17.794	17.818	17.843	17.867	17.891	730
740	17.891	17.915	17.939	17.963	17.987	18.011	18.036	18.060	18.084	18.108	18.132	740
750	18.132	18.157	18.181	18.205	18.229	18.254	18.278	18.302	18.326	18.351	18.375	750
760	18.375	18.399	18.424	18.448	18.472	18.497	18.521	18.545	18.570	18.594	18.618	760
770	18.618	18.643	18.667	18.692	18.716	18.740	18.765	18.789	18.814	18.838	18.863	770
780	18.863	18.887	18.912	18.936	18.961	18.985	19.010	19.034	19.059	19.083	19.108	780
790	19.108	19.133	19.157	19.182	19.206	19.231	19.256	19.280	19.305	19.330	19.354	790
800	19.354	19.379	19.404	19.428	19.453	19.478	19.502	19.527	19.552	19.577	19.601	800
810	19.601	19.626	19.651	19.676	19.701	19.725	19.750	19.775	19.800	19.825	19.850	810
820	19.850	19.875	19.899	19.924	19.949	19.974	19.999	20.024	20.049	20.074	20.099	820
830	20.099	20.124	20.149	20.174	20.199	20.224	20.249	20.274	20.299	20.324	20.349	830
840	20.349	20.374	20.399	20.425	20.450	20.475	20.500	20.525	20.550	20.575	20.601	840
850	20.601	20.626	20.651	20.676	20.701	20.727	20.752	20.777	20.802	20.828	20.853	850
860	20.853	20.878	20.904	20.929	20.954	20.980	21.005	21.030	21.056	21.081	21.107	860
870	21.107	21.132	21.157	21.183	21.208	21.234	21.259	21.285	21.310	21.336	21.361	870
880	21.361	21.387	21.412	21.438	21.463	21.489	21.514	21.540	21.566	21.591	21.617	880
890	21.617	21.642	21.668	21.694	21.719	21.745	21.771	21.796	21.822	21.848	21.874	890
900	21.874	21.899	21.925	21.951	21.977	22.002	22.028	22.054	22.080	22.106	22.131	900
910	22.131	22.157	22.183	22.209	22.235	22.261	22.287	22.313	22.339	22.365	22.390	910
920	22.390	22.416	22.442	22.468	22.494	22.520	22.546	22.572	22.598	22.624	22.651	920
930	22.651	22.677	22.703	22.729	22.755	22.781	22.807	22.833	22.859	22.886	22.912	930
940	22.912	22.938	22.964	22.990	23.017	23.043	23.069	23.095	23.122	23.148	23.174	940

°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 24 ***Type M Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
950	23.174	23.200	23.227	23.253	23.279	23.306	23.332	23.358	23.385	23.411	23.437	950
960	23.437	23.464	23.490	23.517	23.543	23.570	23.596	23.623	23.649	23.675	23.702	960
970	23.702	23.728	23.755	23.782	23.808	23.835	23.861	23.888	23.914	23.941	23.968	970
980	23.968	23.994	24.021	24.047	24.074	24.101	24.127	24.154	24.181	24.208	24.234	980
990	24.234	24.261	24.288	24.315	24.341	24.368	24.395	24.422	24.448	24.475	24.502	990
1000	24.502	24.529	24.556	24.583	24.610	24.636	24.663	24.690	24.717	24.744	24.771	1000
1010	24.771	24.798	24.825	24.852	24.879	24.906	24.933	24.960	24.987	25.014	25.041	1010
1020	25.041	25.068	25.095	25.122	25.149	25.176	25.203	25.231	25.258	25.285	25.312	1020
1030	25.312	25.339	25.366	25.394	25.421	25.448	25.475	25.502	25.530	25.557	25.584	1030
1040	25.584	25.611	25.639	25.666	25.693	25.721	25.748	25.775	25.803	25.830	25.857	1040
1050	25.857	25.885	25.912	25.939	25.967	25.994	26.022	26.049	26.077	26.104	26.132	1050
1060	26.132	26.159	26.187	26.214	26.242	26.269	26.297	26.324	26.352	26.379	26.407	1060
1070	26.407	26.434	26.462	26.490	26.517	26.545	26.573	26.600	26.628	26.655	26.683	1070
1080	26.683	26.711	26.739	26.766	26.794	26.822	26.849	26.877	26.905	26.933	26.961	1080
1090	26.961	26.988	27.016	27.044	27.072	27.100	27.127	27.155	27.183	27.211	27.239	1090
1100	27.239	27.267	27.295	27.323	27.351	27.378	27.406	27.434	27.462	27.490	27.518	1100
1110	27.518	27.546	27.574	27.602	27.630	27.658	27.686	27.714	27.743	27.771	27.799	1110
1120	27.799	27.827	27.855	27.883	27.911	27.939	27.967	27.996	28.024	28.052	28.080	1120
1130	28.080	28.108	28.136	28.165	28.193	28.221	28.249	28.278	28.306	28.334	28.362	1130
1140	28.362	28.391	28.419	28.447	28.476	28.504	28.532	28.561	28.589	28.617	28.646	1140
1150	28.646	28.674	28.703	28.731	28.759	28.788	28.816	28.845	28.873	28.902	28.930	1150
1160	28.930	28.959	28.987	29.016	29.044	29.073	29.101	29.130	29.158	29.187	29.215	1160
1170	29.215	29.244	29.273	29.301	29.330	29.358	29.387	29.416	29.444	29.473	29.502	1170
1180	29.502	29.530	29.559	29.588	29.616	29.645	29.674	29.703	29.731	29.760	29.789	1180
1190	29.789	29.818	29.846	29.875	29.904	29.933	29.962	29.991	30.019	30.048	30.077	1190
1200	30.077	30.106	30.135	30.164	30.193	30.221	30.250	30.279	30.308	30.337	30.366	1200
1210	30.366	30.395	30.424	30.453	30.482	30.511	30.540	30.569	30.598	30.627	30.656	1210
1220	30.656	30.685	30.714	30.743	30.772	30.801	30.830	30.859	30.889	30.918	30.947	1220
1230	30.947	30.976	31.005	31.034	31.063	31.093	31.122	31.151	31.180	31.209	31.239	1230
1240	31.239	31.268	31.297	31.326	31.355	31.385	31.414	31.443	31.473	31.502	31.531	1240
1250	31.531	31.560	31.590	31.619	31.648	31.678	31.707	31.736	31.766	31.795	31.825	1250
1260	31.825	31.854	31.883	31.913	31.942	31.972	32.001	32.031	32.060	32.089	32.119	1260
1270	32.119	32.148	32.178	32.207	32.237	32.266	32.296	32.325	32.355	32.385	32.414	1270
1280	32.414	32.444	32.473	32.503	32.532	32.562	32.592	32.621	32.651	32.680	32.710	1280
1290	32.710	32.740	32.769	32.799	32.829	32.858	32.888	32.918	32.947	32.977	33.007	1290
1300	33.007	33.037	33.066	33.096	33.126	33.156	33.185	33.215	33.245	33.275	33.304	1300
1310	33.304	33.334	33.364	33.394	33.424	33.454	33.483	33.513	33.543	33.573	33.603	1310
1320	33.603	33.633	33.663	33.693	33.722	33.752	33.782	33.812	33.842	33.872	33.902	1320
1330	33.902	33.932	33.962	33.992	34.022	34.052	34.082	34.112	34.142	34.172	34.202	1330
1340	34.202	34.232	34.262	34.292	34.322	34.352	34.382	34.412	34.442	34.473	34.503	1340
1350	34.503	34.533	34.563	34.593	34.623	34.653	34.683	34.714	34.744	34.774	34.804	1350
1360	34.804	34.834	34.865	34.895	34.925	34.955	34.985	35.016	35.046	35.076	35.106	1360
1370	35.106	35.137	35.167	35.197	35.227	35.258	35.288	35.318	35.349	35.379	35.409	1370
1380	35.409	35.440	35.470	35.500	35.531	35.561	35.591	35.622	35.652	35.683	35.713	1380
1390	35.713	35.743	35.774	35.804	35.835	35.865	35.895	35.926	35.956	35.987	36.017	1390
1400	36.017	36.048	36.078	36.109	36.139	36.170	36.200	36.231	36.261	36.292	36.322	1400
1410	36.322	36.353	36.383	36.414	36.445	36.475	36.506	36.536	36.567	36.597	36.628	1410
1420	36.628	36.659	36.689	36.720	36.750	36.781	36.812	36.842	36.873	36.904	36.934	1420
1430	36.934	36.965	36.996	37.026	37.057	37.088	37.119	37.149	37.180	37.211	37.241	1430
1440	37.241	37.272	37.303	37.334	37.364	37.395	37.426	37.457	37.488	37.518	37.549	1440

°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 24 ***Type M Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
1450	37.549	37.580	37.611	37.642	37.672	37.703	37.734	37.765	37.796	37.827	37.857	1450
1460	37.857	37.888	37.919	37.950	37.981	38.012	38.043	38.074	38.105	38.135	38.166	1460
1470	38.166	38.197	38.228	38.259	38.290	38.321	38.352	38.383	38.414	38.445	38.476	1470
1480	38.476	38.507	38.538	38.569	38.600	38.631	38.662	38.693	38.724	38.755	38.786	1480
1490	38.786	38.817	38.848	38.879	38.910	38.941	38.972	39.003	39.035	39.066	39.097	1490
1500	39.097	39.128	39.159	39.190	39.221	39.252	39.283	39.315	39.346	39.377	39.408	1500
1510	39.408	39.439	39.470	39.502	39.533	39.564	39.595	39.626	39.657	39.689	39.720	1510
1520	39.720	39.751	39.782	39.814	39.845	39.876	39.907	39.939	39.970	40.001	40.032	1520
1530	40.032	40.064	40.095	40.126	40.157	40.189	40.220	40.251	40.283	40.314	40.345	1530
1540	40.345	40.377	40.408	40.439	40.471	40.502	40.533	40.565	40.596	40.627	40.659	1540
1550	40.659	40.690	40.722	40.753	40.784	40.816	40.847	40.879	40.910	40.941	40.973	1550
1560	40.973	41.004	41.036	41.067	41.099	41.130	41.161	41.193	41.224	41.256	41.287	1560
1570	41.287	41.319	41.350	41.382	41.413	41.445	41.476	41.508	41.539	41.571	41.602	1570
1580	41.602	41.634	41.665	41.697	41.728	41.760	41.792	41.823	41.855	41.886	41.918	1580
1590	41.918	41.949	41.981	42.013	42.044	42.076	42.107	42.139	42.171	42.202	42.234	1590
1600	42.234	42.265	42.297	42.329	42.360	42.392	42.424	42.455	42.487	42.519	42.550	1600
1610	42.550	42.582	42.614	42.645	42.677	42.709	42.740	42.772	42.804	42.836	42.867	1610
1620	42.867	42.899	42.931	42.962	42.994	43.026	43.058	43.089	43.121	43.153	43.185	1620
1630	43.185	43.216	43.248	43.280	43.312	43.344	43.375	43.407	43.439	43.471	43.502	1630
1640	43.502	43.534	43.566	43.598	43.630	43.662	43.693	43.725	43.757	43.789	43.821	1640
1650	43.821	43.853	43.884	43.916	43.948	43.980	44.012	44.044	44.076	44.108	44.139	1650
1660	44.139	44.171	44.203	44.235	44.267	44.299	44.331	44.363	44.395	44.427	44.459	1660
1670	44.459	44.490	44.522	44.554	44.586	44.618	44.650	44.682	44.714	44.746	44.778	1670
1680	44.778	44.810	44.842	44.874	44.906	44.938	44.970	45.002	45.034	45.066	45.098	1680
1690	45.098	45.130	45.162	45.194	45.226	45.258	45.290	45.322	45.354	45.386	45.418	1690
1700	45.418	45.450	45.482	45.514	45.547	45.579	45.611	45.643	45.675	45.707	45.739	1700
1710	45.739	45.771	45.803	45.835	45.867	45.899	45.932	45.964	45.996	46.028	46.060	1710
1720	46.060	46.092	46.124	46.156	46.189	46.221	46.253	46.285	46.317	46.349	46.381	1720
1730	46.381	46.414	46.446	46.478	46.510	46.542	46.575	46.607	46.639	46.671	46.703	1730
1740	46.703	46.735	46.768	46.800	46.832	46.864	46.897	46.929	46.961	46.993	47.025	1740
1750	47.025	47.058	47.090	47.122	47.154	47.187	47.219	47.251	47.283	47.316	47.348	1750
1760	47.348	47.380	47.413	47.445	47.477	47.509	47.542	47.574	47.606	47.639	47.671	1760
1770	47.671	47.703	47.735	47.768	47.800	47.832	47.865	47.897	47.929	47.962	47.994	1770
1780	47.994	48.026	48.059	48.091	48.123	48.156	48.188	48.220	48.253	48.285	48.318	1780
1790	48.318	48.350	48.382	48.415	48.447	48.479	48.512	48.544	48.577	48.609	48.641	1790
1800	48.641	48.674	48.706	48.739	48.771	48.803	48.836	48.868	48.901	48.933	48.966	1800
1810	48.966	48.998	49.030	49.063	49.095	49.128	49.160	49.193	49.225	49.258	49.290	1810
1820	49.290	49.323	49.355	49.387	49.420	49.452	49.485	49.517	49.550	49.582	49.615	1820
1830	49.615	49.647	49.680	49.712	49.745	49.777	49.810	49.842	49.875	49.907	49.940	1830
1840	49.940	49.972	50.005	50.038	50.070	50.103	50.135	50.168	50.200	50.233	50.265	1840
1850	50.265	50.298	50.330	50.363	50.396	50.428	50.461	50.493	50.526	50.558	50.591	1850
1860	50.591	50.624	50.656	50.689	50.721	50.754	50.787	50.819	50.852	50.884	50.917	1860
1870	50.917	50.950	50.982	51.015	51.048	51.080	51.113	51.145	51.178	51.211	51.243	1870
1880	51.243	51.276	51.309	51.341	51.374	51.407	51.439	51.472	51.505	51.537	51.570	1880
1890	51.570	51.603	51.635	51.668	51.701	51.733	51.766	51.799	51.831	51.864	51.897	1890
1900	51.897	51.929	51.962	51.995	52.027	52.060	52.093	52.126	52.158	52.191	52.224	1900
1910	52.224	52.256	52.289	52.322	52.355	52.387	52.420	52.453	52.486	52.518	52.551	1910
1920	52.551	52.584	52.617	52.649	52.682	52.715	52.748	52.780	52.813	52.846	52.879	1920
1930	52.879	52.911	52.944	52.977	53.010	53.043	53.075	53.108	53.141	53.174	53.207	1930
1940	53.207	53.239	53.272	53.305	53.338	53.371	53.403	53.436	53.469	53.502	53.535	1940
°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 24 ***Type M Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
1950	53.535	53.568	53.600	53.633	53.666	53.699	53.732	53.765	53.797	53.830	53.863	1950
1960	53.863	53.896	53.929	53.962	53.994	54.027	54.060	54.093	54.126	54.159	54.192	1960
1970	54.192	54.225	54.257	54.290	54.323	54.356	54.389	54.422	54.455	54.488	54.520	1970
1980	54.520	54.553	54.586	54.619	54.652	54.685	54.718	54.751	54.784	54.817	54.850	1980
1990	54.850	54.882	54.915	54.948	54.981	55.014	55.047	55.080	55.113	55.146	55.179	1990
2000	55.179	55.212	55.245	55.278	55.311	55.344	55.377	55.409	55.442	55.475	55.508	2000
2010	55.508	55.541	55.574	55.607	55.640	55.673	55.706	55.739	55.772	55.805	55.838	2010
2020	55.838	55.871	55.904	55.937	55.970	56.003	56.036	56.069	56.102	56.135	56.168	2020
2030	56.168	56.201	56.234	56.267	56.300	56.333	56.366	56.399	56.432	56.465	56.498	2030
2040	56.498	56.531	56.564	56.597	56.630	56.663	56.696	56.729	56.762	56.795	56.829	2040
2050	56.829	56.862	56.895	56.928	56.961	56.994	57.027	57.060	57.093	57.126	57.159	2050
2060	57.159	57.192	57.225	57.258	57.291	57.324	57.357	57.391	57.424	57.457	57.490	2060
2070	57.490	57.523	57.556	57.589	57.622	57.655	57.688	57.721	57.754	57.788	57.821	2070
2080	57.821	57.854	57.887	57.920	57.953	57.986	58.019	58.052	58.086	58.119	58.152	2080
2090	58.152	58.185	58.218	58.251	58.284	58.317	58.350	58.384	58.417	58.450	58.483	2090
2100	58.483	58.516	58.549	58.582	58.616	58.649	58.682	58.715	58.748	58.781	58.814	2100
2110	58.814	58.848	58.881	58.914	58.947	58.980	59.013	59.046	59.080	59.113	59.146	2110
2120	59.146	59.179	59.212	59.245	59.279	59.312	59.345	59.378	59.411	59.444	59.478	2120
2130	59.478	59.511	59.544	59.577	59.610	59.644	59.677	59.710	59.743	59.776	59.809	2130
2140	59.809	59.843	59.876	59.909	59.942	59.975	60.009	60.042	60.075	60.108	60.141	2140
2150	60.141	60.175	60.208	60.241	60.274	60.307	60.341	60.374	60.407	60.440	60.473	2150
2160	60.473	60.507	60.540	60.573	60.606	60.640	60.673	60.706	60.739	60.772	60.806	2160
2170	60.806	60.839	60.872	60.905	60.939	60.972	61.005	61.038	61.071	61.105	61.138	2170
2180	61.138	61.171	61.204	61.238	61.271	61.304	61.337	61.371	61.404	61.437	61.470	2180
2190	61.470	61.503	61.537	61.570	61.603	61.636	61.670	61.703	61.736	61.769	61.803	2190
2200	61.803	61.836	61.869	61.902	61.936	61.969	62.002	62.035	62.069	62.102	62.135	2200
2210	62.135	62.168	62.202	62.235	62.268	62.301	62.335	62.368	62.401	62.434	62.468	2210
2220	62.468	62.501	62.534	62.568	62.601	62.634	62.667	62.701	62.734	62.767	62.800	2220
2230	62.800	62.834	62.867	62.900	62.933	62.967	63.000	63.033	63.066	63.100	63.133	2230
2240	63.133	63.166	63.200	63.233	63.266	63.299	63.333	63.366	63.399	63.432	63.466	2240
2250	63.466	63.499	63.532	63.565	63.599	63.632	63.665	63.699	63.732	63.765	63.798	2250
2260	63.798	63.832	63.865	63.898	63.931	63.965	63.998	64.031	64.065	64.098	64.131	2260
2270	64.131	64.164	64.198	64.231	64.264	64.297	64.331	64.364	64.397	64.431	64.464	2270
2280	64.464	64.497	64.530	64.564	64.597	64.630	64.663	64.697	64.730	64.763	64.796	2280
2290	64.796	64.830	64.863	64.896	64.930	64.963	64.996	65.029	65.063	65.096	65.129	2290
2300	65.129	65.162	65.196	65.229	65.262	65.295	65.329	65.362	65.395	65.429	65.462	2300
2310	65.462	65.495	65.528	65.562	65.595	65.628	65.661	65.695	65.728	65.761	65.794	2310
2320	65.794	65.828	65.861	65.894	65.927	65.961	65.994	66.027	66.060	66.094	66.127	2320
2330	66.127	66.160	66.193	66.227	66.260	66.293	66.326	66.360	66.393	66.426	66.459	2330
2340	66.459	66.493	66.526	66.559	66.592	66.626	66.659	66.692	66.725	66.759	66.792	2340
2350	66.792	66.825	66.858	66.892	66.925	66.958	66.991	67.025	67.058	67.091	67.124	2350
2360	67.124	67.158	67.191	67.224	67.257	67.291	67.324	67.357	67.390	67.423	67.457	2360
2370	67.457	67.490	67.523	67.556	67.590	67.623	67.656	67.689	67.723	67.756	67.789	2370
2380	67.789	67.822	67.855	67.889	67.922	67.955	67.988	68.022	68.055	68.088	68.121	2380
2390	68.121	68.154	68.188	68.221	68.254	68.287	68.320	68.354	68.387	68.420	68.453	2390
2400	68.453	68.487	68.520	68.553	68.586	68.619	68.653	68.686	68.719	68.752	68.785	2400
2410	68.785	68.819	68.852	68.885	68.918	68.951	68.985	69.018	69.051	69.084	69.117	2410
2420	69.117	69.151	69.184	69.217	69.250	69.283	69.317	69.350	69.383	69.416	69.449	2420
2430	69.449	69.483	69.516	69.549	69.582	69.615	69.649	69.682	69.715	69.748	69.781	2430
2440	69.781	69.814	69.848	69.881	69.914	69.947	69.980	70.014	70.047	70.080	70.113	2440

°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 24 ***Type M Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
2450	70.113	70.146	70.180	70.213	70.246	70.279	70.312	70.345	70.379	70.412	70.445	2450
2460	70.445	70.478	70.511	70.545	70.578	70.611	70.644	70.677	70.711	70.744	70.777	2460
2470	70.777	70.810	70.843	70.877	70.910	70.943	70.976	71.009	71.042	71.076	71.109	2470
2480	71.109	71.142	71.175	71.208	71.242	71.275	71.308	71.341	71.374	71.408	71.441	2480
2490	71.441	71.474	71.507	71.540	71.574	71.607	71.640	71.673	71.707	71.740	71.773	2490
2500	71.773	71.806	71.839	71.873	71.906	71.939	71.972	72.005	72.039	72.072	72.105	2500
2510	72.105	72.138	72.172	72.205	72.238	72.271	72.305	72.338	72.371	72.404	72.438	2510
2520	72.438	72.471	72.504	72.537	72.571	72.604	72.637	72.670	72.704	72.737	72.770	2520
2530	72.770	72.803	72.837	72.870	72.903	72.937	72.970	73.003	73.036	73.070	73.103	2530
2540	73.103	73.136	73.170	73.203	73.236	73.270	73.303	73.336	73.370	73.403	73.436	2540
2550	73.436	73.470	73.503	73.536	73.570	73.603	73.636	73.670	73.703	73.736	73.770	2550
2560	73.770	73.803	73.837	73.870	73.903	73.937	73.970	74.004	74.037	74.070	74.104	2560
2570	74.104											2570

°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 25 ***Type P Thermocouple*** *— thermoelectric voltage as a function of temperature (°C); reference junctions at 0 °C*

P°C

°C	0	1	2	3	4	5	6	7	8	9	10	°C
						Thermoelectric Voltage in Millivolts						
0	0.000	0.030	0.060	0.090	0.120	0.150	0.180	0.210	0.241	0.271	0.302	0
10	0.302	0.332	0.363	0.394	0.424	0.455	0.486	0.517	0.548	0.579	0.610	10
20	0.610	0.641	0.673	0.704	0.735	0.767	0.798	0.830	0.862	0.894	0.925	20
30	0.925	0.957	0.989	1.021	1.053	1.085	1.117	1.150	1.182	1.214	1.247	30
40	1.247	1.279	1.312	1.345	1.377	1.410	1.443	1.476	1.509	1.542	1.575	40
50	1.575	1.608	1.641	1.674	1.707	1.741	1.774	1.808	1.841	1.875	1.908	50
60	1.908	1.942	1.976	2.010	2.044	2.078	2.112	2.146	2.180	2.214	2.248	60
70	2.248	2.282	2.317	2.351	2.386	2.420	2.455	2.489	2.524	2.559	2.593	70
80	2.593	2.628	2.663	2.698	2.733	2.768	2.803	2.838	2.874	2.909	2.944	80
90	2.944	2.980	3.015	3.050	3.086	3.122	3.157	3.193	3.229	3.264	3.300	90
100	3.300	3.336	3.372	3.408	3.444	3.480	3.516	3.553	3.589	3.625	3.661	100
110	3.661	3.698	3.734	3.771	3.807	3.844	3.881	3.917	3.954	3.991	4.028	110
120	4.028	4.064	4.101	4.138	4.175	4.212	4.250	4.287	4.324	4.361	4.399	120
130	4.399	4.436	4.473	4.511	4.548	4.586	4.623	4.661	4.699	4.736	4.774	130
140	4.774	4.812	4.850	4.888	4.925	4.963	5.001	5.039	5.078	5.116	5.154	140
150	5.154	5.192	5.230	5.269	5.307	5.346	5.384	5.422	5.461	5.500	5.538	150
160	5.538	5.577	5.615	5.654	5.693	5.732	5.771	5.810	5.848	5.887	5.926	160
170	5.926	5.965	6.005	6.044	6.083	6.122	6.161	6.201	6.240	6.279	6.319	170
180	6.319	6.358	6.398	6.437	6.477	6.516	6.556	6.596	6.635	6.675	6.715	180
190	6.715	6.755	6.794	6.834	6.874	6.914	6.954	6.994	7.034	7.074	7.115	190
200	7.115	7.155	7.195	7.235	7.275	7.316	7.356	7.396	7.437	7.477	7.518	200
210	7.518	7.558	7.599	7.639	7.680	7.721	7.761	7.802	7.843	7.884	7.924	210
220	7.924	7.965	8.006	8.047	8.088	8.129	8.170	8.211	8.252	8.293	8.334	220
230	8.334	8.375	8.416	8.458	8.499	8.540	8.582	8.623	8.664	8.706	8.747	230
240	8.747	8.788	8.830	8.871	8.913	8.955	8.996	9.038	9.079	9.121	9.163	240
250	9.163	9.205	9.246	9.288	9.330	9.372	9.414	9.456	9.498	9.540	9.581	250
260	9.581	9.624	9.666	9.708	9.750	9.792	9.834	9.876	9.918	9.961	10.003	260
270	10.003	10.045	10.087	10.130	10.172	10.214	10.257	10.299	10.342	10.384	10.427	270
280	10.427	10.469	10.512	10.554	10.597	10.639	10.682	10.725	10.767	10.810	10.853	280
290	10.853	10.896	10.938	10.981	11.024	11.067	11.110	11.153	11.196	11.238	11.281	290
300	11.281	11.324	11.367	11.410	11.453	11.497	11.540	11.583	11.626	11.669	11.712	300
310	11.712	11.755	11.799	11.842	11.885	11.928	11.972	12.015	12.058	12.102	12.145	310
320	12.145	12.188	12.232	12.275	12.319	12.362	12.405	12.449	12.492	12.536	12.580	320
330	12.580	12.623	12.667	12.710	12.754	12.798	12.841	12.885	12.929	12.972	13.016	330
340	13.016	13.060	13.104	13.147	13.191	13.235	13.279	13.323	13.366	13.410	13.454	340
350	13.454	13.498	13.542	13.586	13.630	13.674	13.718	13.762	13.806	13.850	13.894	350
360	13.894	13.938	13.982	14.026	14.070	14.114	14.159	14.203	14.247	14.291	14.335	360
370	14.335	14.379	14.424	14.468	14.512	14.556	14.601	14.645	14.689	14.733	14.778	370
380	14.778	14.822	14.866	14.911	14.955	15.000	15.044	15.088	15.133	15.177	15.222	380
390	15.222	15.266	15.311	15.355	15.400	15.444	15.489	15.533	15.578	15.622	15.667	390
400	15.667	15.711	15.756	15.800	15.845	15.890	15.934	15.979	16.023	16.068	16.113	400
410	16.113	16.157	16.202	16.247	16.291	16.336	16.381	16.425	16.470	16.515	16.560	410
420	16.560	16.604	16.649	16.694	16.739	16.784	16.828	16.873	16.918	16.963	17.008	420
430	17.008	17.052	17.097	17.142	17.187	17.232	17.277	17.321	17.366	17.411	17.456	430
440	17.456	17.501	17.546	17.591	17.636	17.681	17.726	17.771	17.816	17.860	17.905	440
450	17.905	17.950	17.995	18.040	18.085	18.130	18.175	18.220	18.265	18.310	18.355	450
460	18.355	18.400	18.445	18.490	18.535	18.580	18.625	18.670	18.715	18.760	18.806	460
470	18.806	18.851	18.896	18.941	18.986	19.031	19.076	19.121	19.166	19.211	19.256	470
480	19.256	19.301	19.346	19.391	19.437	19.482	19.527	19.572	19.617	19.662	19.707	480
490	19.707	19.752	19.797	19.843	19.888	19.933	19.978	20.023	20.068	20.113	20.158	490

°C	0	1	2	3	4	5	6	7	8	9	10	°C

TABLE 25 ***Type P Thermocouple*** *— thermoelectric voltage as a function of temperature (°C); reference junctions at 0 °C*

°C	0	1	2	3	4	5	6	7	8	9	10	°C
						Thermoelectric Voltage in Millivolts						
500	20.158	20.204	20.249	20.294	20.339	20.384	20.429	20.474	20.519	20.565	20.610	500
510	20.610	20.655	20.700	20.745	20.790	20.835	20.880	20.926	20.971	21.016	21.061	510
520	21.061	21.106	21.151	21.196	21.242	21.287	21.332	21.377	21.422	21.467	21.512	520
530	21.512	21.557	21.603	21.648	21.693	21.738	21.783	21.828	21.873	21.918	21.963	530
540	21.963	22.009	22.054	22.099	22.144	22.189	22.234	22.279	22.324	22.369	22.414	540
550	22.414	22.459	22.504	22.550	22.595	22.640	22.685	22.730	22.775	22.820	22.865	550
560	22.865	22.910	22.955	23.000	23.045	23.090	23.135	23.180	23.225	23.270	23.315	560
570	23.315	23.360	23.405	23.450	23.495	23.540	23.585	23.630	23.675	23.720	23.765	570
580	23.765	23.810	23.855	23.900	23.945	23.990	24.035	24.080	24.125	24.169	24.214	580
590	24.214	24.259	24.304	24.349	24.394	24.439	24.484	24.528	24.573	24.618	24.663	590
600	24.663	24.708	24.753	24.797	24.842	24.887	24.932	24.977	25.021	25.066	25.111	600
610	25.111	25.156	25.201	25.245	25.290	25.335	25.379	25.424	25.469	25.514	25.558	610
620	25.558	25.603	25.648	25.692	25.737	25.782	25.826	25.871	25.915	25.960	26.005	620
630	26.005	26.049	26.094	26.138	26.183	26.228	26.272	26.317	26.361	26.406	26.450	630
640	26.450	26.495	26.539	26.584	26.628	26.673	26.717	26.762	26.806	26.850	26.895	640
650	26.895	26.939	26.984	27.028	27.072	27.117	27.161	27.205	27.250	27.294	27.338	650
660	27.338	27.383	27.427	27.471	27.515	27.560	27.604	27.648	27.692	27.737	27.781	660
670	27.781	27.825	27.869	27.913	27.957	28.002	28.046	28.090	28.134	28.178	28.222	670
680	28.222	28.266	28.310	28.354	28.398	28.442	28.486	28.530	28.574	28.618	28.662	680
690	28.662	28.706	28.750	28.794	28.838	28.882	28.925	28.969	29.013	29.057	29.101	690
700	29.101	29.145	29.188	29.232	29.276	29.320	29.363	29.407	29.451	29.494	29.538	700
710	29.538	29.582	29.625	29.669	29.713	29.756	29.800	29.843	29.887	29.930	29.974	710
720	29.974	30.017	30.061	30.104	30.148	30.191	30.235	30.278	30.322	30.365	30.408	720
730	30.408	30.452	30.495	30.538	30.582	30.625	30.668	30.711	30.755	30.798	30.841	730
740	30.841	30.884	30.928	30.971	31.014	31.057	31.100	31.143	31.186	31.229	31.272	740
750	31.272	31.315	31.358	31.401	31.444	31.487	31.530	31.573	31.616	31.659	31.702	750
760	31.702	31.745	31.788	31.831	31.874	31.916	31.959	32.002	32.045	32.088	32.130	760
770	32.130	32.173	32.216	32.258	32.301	32.344	32.387	32.429	32.472	32.514	32.557	770
780	32.557	32.600	32.642	32.685	32.727	32.770	32.812	32.855	32.897	32.940	32.982	780
790	32.982	33.025	33.067	33.110	33.152	33.195	33.237	33.279	33.322	33.364	33.406	790
800	33.406	33.449	33.491	33.533	33.575	33.618	33.660	33.702	33.744	33.786	33.828	800
810	33.828	33.871	33.913	33.955	33.997	34.039	34.081	34.123	34.165	34.207	34.249	810
820	34.249	34.291	34.333	34.375	34.417	34.459	34.501	34.543	34.585	34.626	34.668	820
830	34.668	34.710	34.752	34.794	34.836	34.877	34.919	34.961	35.002	35.044	35.086	830
840	35.086	35.127	35.169	35.211	35.252	35.294	35.336	35.377	35.419	35.460	35.502	840
850	35.502	35.543	35.585	35.626	35.668	35.709	35.750	35.792	35.833	35.875	35.916	850
860	35.916	35.957	35.999	36.040	36.081	36.122	36.164	36.205	36.246	36.287	36.328	860
870	36.328	36.370	36.411	36.452	36.493	36.534	36.575	36.616	36.657	36.698	36.739	870
880	36.739	36.780	36.821	36.862	36.903	36.944	36.985	37.026	37.067	37.108	37.148	880
890	37.148	37.189	37.230	37.271	37.312	37.352	37.393	37.434	37.474	37.515	37.556	890
900	37.556	37.596	37.637	37.678	37.718	37.759	37.799	37.840	37.880	37.921	37.961	900
910	37.961	38.002	38.042	38.083	38.123	38.163	38.204	38.244	38.284	38.325	38.365	910
920	38.365	38.405	38.446	38.486	38.526	38.566	38.606	38.647	38.687	38.727	38.767	920
930	38.767	38.807	38.847	38.887	38.927	38.967	39.007	39.047	39.087	39.127	39.167	930
940	39.167	39.207	39.247	39.287	39.327	39.367	39.406	39.446	39.486	39.526	39.565	940
950	39.565	39.605	39.645	39.685	39.724	39.764	39.804	39.843	39.883	39.922	39.962	950
960	39.962	40.001	40.041	40.080	40.120	40.159	40.199	40.238	40.278	40.317	40.356	960
970	40.356	40.396	40.435	40.474	40.514	40.553	40.592	40.631	40.671	40.710	40.749	970
980	40.749	40.788	40.827	40.866	40.906	40.945	40.984	41.023	41.062	41.101	41.140	980
990	41.140	41.179	41.218	41.257	41.295	41.334	41.373	41.412	41.451	41.490	41.529	990

°C	0	1	2	3	4	5	6	7	8	9	10	°C

TABLE 25 ***Type P Thermocouple*** *— thermoelectric voltage as a function of temperature (°C); reference junctions at 0 °C*

°C	0	1	2	3	4	5	6	7	8	9	10	°C
						Thermoelectric Voltage in Millivolts						
1000	41.529	41.567	41.606	41.645	41.684	41.722	41.761	41.800	41.838	41.877	41.915	1000
1010	41.915	41.954	41.993	42.031	42.070	42.108	42.147	42.185	42.223	42.262	42.300	1010
1020	42.300	42.339	42.377	42.415	42.454	42.492	42.530	42.569	42.607	42.645	42.683	1020
1030	42.683	42.721	42.760	42.798	42.836	42.874	42.912	42.950	42.988	43.026	43.064	1030
1040	43.064	43.102	43.140	43.178	43.216	43.254	43.292	43.330	43.368	43.405	43.443	1040
1050	43.443	43.481	43.519	43.557	43.594	43.632	43.670	43.707	43.745	43.783	43.820	1050
1060	43.820	43.858	43.895	43.933	43.971	44.008	44.046	44.083	44.120	44.158	44.195	1060
1070	44.195	44.233	44.270	44.307	44.345	44.382	44.419	44.457	44.494	44.531	44.568	1070
1080	44.568	44.605	44.643	44.680	44.717	44.754	44.791	44.828	44.865	44.902	44.939	1080
1090	44.939	44.976	45.013	45.050	45.087	45.124	45.161	45.198	45.235	45.272	45.308	1090
1100	45.308	45.345	45.382	45.419	45.455	45.492	45.529	45.565	45.602	45.639	45.675	1100
1110	45.675	45.712	45.748	45.785	45.822	45.858	45.895	45.931	45.967	46.004	46.040	1110
1120	46.040	46.077	46.113	46.149	46.186	46.222	46.258	46.295	46.331	46.367	46.403	1120
1130	46.403	46.439	46.476	46.512	46.548	46.584	46.620	46.656	46.692	46.728	46.764	1130
1140	46.764	46.800	46.836	46.872	46.908	46.944	46.980	47.016	47.051	47.087	47.123	1140
1150	47.123	47.159	47.194	47.230	47.266	47.302	47.337	47.373	47.409	47.444	47.480	1150
1160	47.480	47.515	47.551	47.586	47.622	47.657	47.693	47.728	47.764	47.799	47.835	1160
1170	47.835	47.870	47.905	47.941	47.976	48.011	48.046	48.082	48.117	48.152	48.187	1170
1180	48.187	48.222	48.258	48.293	48.328	48.363	48.398	48.433	48.468	48.503	48.538	1180
1190	48.538	48.573	48.608	48.643	48.678	48.713	48.747	48.782	48.817	48.852	48.887	1190
1200	48.887	48.921	48.956	48.991	49.026	49.060	49.095	49.129	49.164	49.199	49.233	1200
1210	49.233	49.268	49.302	49.337	49.371	49.406	49.440	49.475	49.509	49.543	49.578	1210
1220	49.578	49.612	49.646	49.681	49.715	49.749	49.783	49.818	49.852	49.886	49.920	1220
1230	49.920	49.954	49.988	50.023	50.057	50.091	50.125	50.159	50.193	50.227	50.261	1230
1240	50.261	50.294	50.328	50.362	50.396	50.430	50.464	50.498	50.531	50.565	50.599	1240
1250	50.599	50.632	50.666	50.700	50.733	50.767	50.801	50.834	50.868	50.901	50.935	1250
1260	50.935	50.968	51.002	51.035	51.069	51.102	51.136	51.169	51.202	51.236	51.269	1260
1270	51.269	51.302	51.336	51.369	51.402	51.435	51.468	51.502	51.535	51.568	51.601	1270
1280	51.601	51.634	51.667	51.700	51.733	51.766	51.799	51.832	51.865	51.898	51.931	1280
1290	51.931	51.963	51.996	52.029	52.062	52.095	52.127	52.160	52.193	52.226	52.258	1290
1300	52.258	52.291	52.323	52.356	52.389	52.421	52.454	52.486	52.519	52.551	52.584	1300
1310	52.584	52.616	52.648	52.681	52.713	52.745	52.778	52.810	52.842	52.875	52.907	1310
1320	52.907	52.939	52.971	53.003	53.035	53.067	53.100	53.132	53.164	53.196	53.228	1320
1330	53.228	53.260	53.292	53.323	53.355	53.387	53.419	53.451	53.483	53.515	53.546	1330
1340	53.546	53.578	53.610	53.641	53.673	53.705	53.736	53.768	53.800	53.831	53.863	1340
1350	53.863	53.894	53.926	53.957	53.989	54.020	54.051	54.083	54.114	54.145	54.177	1350
1360	54.177	54.208	54.239	54.270	54.302	54.333	54.364	54.395	54.426	54.457	54.488	1360
1370	54.488	54.519	54.550	54.581	54.612	54.643	54.674	54.705	54.736	54.767	54.798	1370
1380	54.798	54.828	54.859	54.890	54.921	54.951	54.982	55.013	55.043	55.074	55.104	1380
1390	55.104	55.135	55.165	55.196	55.226	55.257						1390

°C	0	1	2	3	4	5	6	7	8	9	10	°C

TABLE 26 ***Type P Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
					Thermoelectric Voltage in Millivolts							
30			0.000	0.017	0.033	0.050	0.066	0.083	0.100	0.116	0.133	30
40	0.133	0.150	0.167	0.184	0.200	0.217	0.234	0.251	0.268	0.285	0.302	40
50	0.302	0.319	0.336	0.353	0.370	0.387	0.404	0.421	0.438	0.455	0.472	50
60	0.472	0.489	0.507	0.524	0.541	0.558	0.576	0.593	0.610	0.628	0.645	60
70	0.645	0.662	0.680	0.697	0.715	0.732	0.749	0.767	0.784	0.802	0.820	70
80	0.820	0.837	0.855	0.872	0.890	0.908	0.925	0.943	0.961	0.978	0.996	80
90	0.996	1.014	1.032	1.050	1.067	1.085	1.103	1.121	1.139	1.157	1.175	90
100	1.175	1.193	1.211	1.229	1.247	1.265	1.283	1.301	1.319	1.337	1.355	100
110	1.355	1.374	1.392	1.410	1.428	1.446	1.465	1.483	1.501	1.520	1.538	110
120	1.538	1.556	1.575	1.593	1.611	1.630	1.648	1.667	1.685	1.704	1.722	120
130	1.722	1.741	1.759	1.778	1.797	1.815	1.834	1.852	1.871	1.890	1.908	130
140	1.908	1.927	1.946	1.965	1.983	2.002	2.021	2.040	2.059	2.078	2.096	140
150	2.096	2.115	2.134	2.153	2.172	2.191	2.210	2.229	2.248	2.267	2.286	150
160	2.286	2.305	2.324	2.343	2.363	2.382	2.401	2.420	2.439	2.458	2.478	160
170	2.478	2.497	2.516	2.536	2.555	2.574	2.593	2.613	2.632	2.652	2.671	170
180	2.671	2.690	2.710	2.729	2.749	2.768	2.788	2.807	2.827	2.846	2.866	180
190	2.866	2.885	2.905	2.925	2.944	2.964	2.984	3.003	3.023	3.043	3.062	190
200	3.062	3.082	3.102	3.122	3.141	3.161	3.181	3.201	3.221	3.241	3.260	200
210	3.260	3.280	3.300	3.320	3.340	3.360	3.380	3.400	3.420	3.440	3.460	210
220	3.460	3.480	3.500	3.520	3.541	3.561	3.581	3.601	3.621	3.641	3.661	220
230	3.661	3.682	3.702	3.722	3.742	3.763	3.783	3.803	3.824	3.844	3.864	230
240	3.864	3.885	3.905	3.925	3.946	3.966	3.987	4.007	4.028	4.048	4.069	240
250	4.069	4.089	4.110	4.130	4.151	4.171	4.192	4.212	4.233	4.254	4.274	250
260	4.274	4.295	4.316	4.336	4.357	4.378	4.399	4.419	4.440	4.461	4.482	260
270	4.482	4.502	4.523	4.544	4.565	4.586	4.607	4.627	4.648	4.669	4.690	270
280	4.690	4.711	4.732	4.753	4.774	4.795	4.816	4.837	4.858	4.879	4.900	280
290	4.900	4.921	4.942	4.963	4.985	5.006	5.027	5.048	5.069	5.090	5.111	290
300	5.111	5.133	5.154	5.175	5.196	5.218	5.239	5.260	5.282	5.303	5.324	300
310	5.324	5.346	5.367	5.388	5.410	5.431	5.452	5.474	5.495	5.517	5.538	310
320	5.538	5.560	5.581	5.603	5.624	5.646	5.667	5.689	5.710	5.732	5.753	320
330	5.753	5.775	5.797	5.818	5.840	5.861	5.883	5.905	5.926	5.948	5.970	330
340	5.970	5.992	6.013	6.035	6.057	6.079	6.100	6.122	6.144	6.166	6.188	340
350	6.188	6.209	6.231	6.253	6.275	6.297	6.319	6.341	6.363	6.384	6.406	350
360	6.406	6.428	6.450	6.472	6.494	6.516	6.538	6.560	6.582	6.604	6.626	360
370	6.626	6.649	6.671	6.693	6.715	6.737	6.759	6.781	6.803	6.825	6.848	370
380	6.848	6.870	6.892	6.914	6.936	6.959	6.981	7.003	7.025	7.048	7.070	380
390	7.070	7.092	7.115	7.137	7.159	7.181	7.204	7.226	7.249	7.271	7.293	390
400	7.293	7.316	7.338	7.361	7.383	7.405	7.428	7.450	7.473	7.495	7.518	400
410	7.518	7.540	7.563	7.585	7.608	7.630	7.653	7.675	7.698	7.721	7.743	410
420	7.743	7.766	7.788	7.811	7.834	7.856	7.879	7.902	7.924	7.947	7.970	420
430	7.970	7.992	8.015	8.038	8.061	8.083	8.106	8.129	8.152	8.174	8.197	430
440	8.197	8.220	8.243	8.266	8.288	8.311	8.334	8.357	8.380	8.403	8.426	440
450	8.426	8.449	8.471	8.494	8.517	8.540	8.563	8.586	8.609	8.632	8.655	450
460	8.655	8.678	8.701	8.724	8.747	8.770	8.793	8.816	8.839	8.862	8.885	460
470	8.885	8.908	8.931	8.955	8.978	9.001	9.024	9.047	9.070	9.093	9.117	470
480	9.117	9.140	9.163	9.186	9.209	9.232	9.256	9.279	9.302	9.325	9.349	480
490	9.349	9.372	9.395	9.418	9.442	9.465	9.488	9.512	9.535	9.558	9.581	490
500	9.581	9.605	9.628	9.652	9.675	9.698	9.722	9.745	9.768	9.792	9.815	500
510	9.815	9.839	9.862	9.885	9.909	9.932	9.956	9.979	10.003	10.026	10.050	510
520	10.050	10.073	10.097	10.120	10.144	10.167	10.191	10.214	10.238	10.262	10.285	520
530	10.285	10.309	10.332	10.356	10.379	10.403	10.427	10.450	10.474	10.498	10.521	530
540	10.521	10.545	10.568	10.592	10.616	10.639	10.663	10.687	10.711	10.734	10.758	540
°F	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**°F**

TABLE 26 ***Type P Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
550	10.758	10.782	10.805	10.829	10.853	10.877	10.900	10.924	10.948	10.972	10.995	550
560	10.995	11.019	11.043	11.067	11.091	11.114	11.138	11.162	11.186	11.210	11.234	560
570	11.234	11.258	11.281	11.305	11.329	11.353	11.377	11.401	11.425	11.449	11.473	570
580	11.473	11.497	11.520	11.544	11.568	11.592	11.616	11.640	11.664	11.688	11.712	580
590	11.712	11.736	11.760	11.784	11.808	11.832	11.856	11.880	11.904	11.928	11.952	590
600	11.952	11.976	12.000	12.024	12.049	12.073	12.097	12.121	12.145	12.169	12.193	600
610	12.193	12.217	12.241	12.265	12.290	12.314	12.338	12.362	12.386	12.410	12.434	610
620	12.434	12.459	12.483	12.507	12.531	12.555	12.580	12.604	12.628	12.652	12.676	620
630	12.676	12.701	12.725	12.749	12.773	12.798	12.822	12.846	12.870	12.895	12.919	630
640	12.919	12.943	12.967	12.992	13.016	13.040	13.065	13.089	13.113	13.138	13.162	640
650	13.162	13.186	13.211	13.235	13.259	13.284	13.308	13.332	13.357	13.381	13.405	650
660	13.405	13.430	13.454	13.479	13.503	13.527	13.552	13.576	13.601	13.625	13.649	660
670	13.649	13.674	13.698	13.723	13.747	13.772	13.796	13.821	13.845	13.869	13.894	670
680	13.894	13.918	13.943	13.967	13.992	14.016	14.041	14.065	14.090	14.114	14.139	680
690	14.139	14.163	14.188	14.212	14.237	14.262	14.286	14.311	14.335	14.360	14.384	690
700	14.384	14.409	14.433	14.458	14.483	14.507	14.532	14.556	14.581	14.606	14.630	700
710	14.630	14.655	14.679	14.704	14.729	14.753	14.778	14.802	14.827	14.852	14.876	710
720	14.876	14.901	14.926	14.950	14.975	15.000	15.024	15.049	15.074	15.098	15.123	720
730	15.123	15.148	15.172	15.197	15.222	15.246	15.271	15.296	15.320	15.345	15.370	730
740	15.370	15.395	15.419	15.444	15.469	15.493	15.518	15.543	15.568	15.592	15.617	740
750	15.617	15.642	15.667	15.691	15.716	15.741	15.766	15.790	15.815	15.840	15.865	750
760	15.865	15.890	15.914	15.939	15.964	15.989	16.013	16.038	16.063	16.088	16.113	760
770	16.113	16.137	16.162	16.187	16.212	16.237	16.262	16.286	16.311	16.336	16.361	770
780	16.361	16.386	16.411	16.435	16.460	16.485	16.510	16.535	16.560	16.585	16.609	780
790	16.609	16.634	16.659	16.684	16.709	16.734	16.759	16.784	16.808	16.833	16.858	790
800	16.858	16.883	16.908	16.933	16.958	16.983	17.008	17.032	17.057	17.082	17.107	800
810	17.107	17.132	17.157	17.182	17.207	17.232	17.257	17.282	17.307	17.331	17.356	810
820	17.356	17.381	17.406	17.431	17.456	17.481	17.506	17.531	17.556	17.581	17.606	820
830	17.606	17.631	17.656	17.681	17.706	17.731	17.756	17.781	17.806	17.830	17.855	830
840	17.855	17.880	17.905	17.930	17.955	17.980	18.005	18.030	18.055	18.080	18.105	840
850	18.105	18.130	18.155	18.180	18.205	18.230	18.255	18.280	18.305	18.330	18.355	850
860	18.355	18.380	18.405	18.430	18.455	18.480	18.505	18.530	18.555	18.580	18.605	860
870	18.605	18.630	18.655	18.680	18.705	18.730	18.755	18.781	18.806	18.831	18.856	870
880	18.856	18.881	18.906	18.931	18.956	18.981	19.006	19.031	19.056	19.081	19.106	880
890	19.106	19.131	19.156	19.181	19.206	19.231	19.256	19.281	19.306	19.331	19.356	890
900	19.356	19.381	19.407	19.432	19.457	19.482	19.507	19.532	19.557	19.582	19.607	900
910	19.607	19.632	19.657	19.682	19.707	19.732	19.757	19.782	19.807	19.833	19.858	910
920	19.858	19.883	19.908	19.933	19.958	19.983	20.008	20.033	20.058	20.083	20.108	920
930	20.108	20.133	20.158	20.183	20.209	20.234	20.259	20.284	20.309	20.334	20.359	930
940	20.359	20.384	20.409	20.434	20.459	20.484	20.509	20.534	20.560	20.585	20.610	940
950	20.610	20.635	20.660	20.685	20.710	20.735	20.760	20.785	20.810	20.835	20.860	950
960	20.860	20.885	20.911	20.936	20.961	20.986	21.011	21.036	21.061	21.086	21.111	960
970	21.111	21.136	21.161	21.186	21.211	21.237	21.262	21.287	21.312	21.337	21.362	970
980	21.362	21.387	21.412	21.437	21.462	21.487	21.512	21.537	21.562	21.587	21.613	980
990	21.613	21.638	21.663	21.688	21.713	21.738	21.763	21.788	21.813	21.838	21.863	990
1000	21.863	21.888	21.913	21.938	21.963	21.988	22.014	22.039	22.064	22.089	22.114	1000
1010	22.114	22.139	22.164	22.189	22.214	22.239	22.264	22.289	22.314	22.339	22.364	1010
1020	22.364	22.389	22.414	22.439	22.464	22.489	22.515	22.540	22.565	22.590	22.615	1020
1030	22.615	22.640	22.665	22.690	22.715	22.740	22.765	22.790	22.815	22.840	22.865	1030
1040	22.865	22.890	22.915	22.940	22.965	22.990	23.015	23.040	23.065	23.090	23.115	1040

°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 26 ***Type P Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
1050	23.115	23.140	23.165	23.190	23.215	23.240	23.265	23.290	23.315	23.340	23.365	1050
1060	23.365	23.390	23.415	23.440	23.465	23.490	23.515	23.540	23.565	23.590	23.615	1060
1070	23.615	23.640	23.665	23.690	23.715	23.740	23.765	23.790	23.815	23.840	23.865	1070
1080	23.865	23.890	23.915	23.940	23.965	23.990	24.015	24.040	24.065	24.090	24.115	1080
1090	24.115	24.139	24.164	24.189	24.214	24.239	24.264	24.289	24.314	24.339	24.364	1090
1100	24.364	24.389	24.414	24.439	24.464	24.489	24.514	24.538	24.563	24.588	24.613	1100
1110	24.613	24.638	24.663	24.688	24.713	24.738	24.763	24.788	24.812	24.837	24.862	1110
1120	24.862	24.887	24.912	24.937	24.962	24.987	25.012	25.036	25.061	25.086	25.111	1120
1130	25.111	25.136	25.161	25.186	25.210	25.235	25.260	25.285	25.310	25.335	25.360	1130
1140	25.360	25.384	25.409	25.434	25.459	25.484	25.509	25.533	25.558	25.583	25.608	1140
1150	25.608	25.633	25.658	25.682	25.707	25.732	25.757	25.782	25.806	25.831	25.856	1150
1160	25.856	25.881	25.906	25.930	25.955	25.980	26.005	26.029	26.054	26.079	26.104	1160
1170	26.104	26.129	26.153	26.178	26.203	26.228	26.252	26.277	26.302	26.327	26.351	1170
1180	26.351	26.376	26.401	26.426	26.450	26.475	26.500	26.524	26.549	26.574	26.599	1180
1190	26.599	26.623	26.648	26.673	26.697	26.722	26.747	26.771	26.796	26.821	26.845	1190
1200	26.845	26.870	26.895	26.919	26.944	26.969	26.993	27.018	27.043	27.067	27.092	1200
1210	27.092	27.117	27.141	27.166	27.191	27.215	27.240	27.265	27.289	27.314	27.338	1210
1220	27.338	27.363	27.388	27.412	27.437	27.461	27.486	27.511	27.535	27.560	27.584	1220
1230	27.584	27.609	27.633	27.658	27.683	27.707	27.732	27.756	27.781	27.805	27.830	1230
1240	27.830	27.854	27.879	27.903	27.928	27.953	27.977	28.002	28.026	28.051	28.075	1240
1250	28.075	28.100	28.124	28.149	28.173	28.198	28.222	28.247	28.271	28.295	28.320	1250
1260	28.320	28.344	28.369	28.393	28.418	28.442	28.467	28.491	28.516	28.540	28.564	1260
1270	28.564	28.589	28.613	28.638	28.662	28.686	28.711	28.735	28.760	28.784	28.808	1270
1280	28.808	28.833	28.857	28.882	28.906	28.930	28.955	28.979	29.003	29.028	29.052	1280
1290	29.052	29.076	29.101	29.125	29.149	29.174	29.198	29.222	29.247	29.271	29.295	1290
1300	29.295	29.320	29.344	29.368	29.392	29.417	29.441	29.465	29.490	29.514	29.538	1300
1310	29.538	29.562	29.587	29.611	29.635	29.659	29.684	29.708	29.732	29.756	29.780	1310
1320	29.780	29.805	29.829	29.853	29.877	29.901	29.926	29.950	29.974	29.998	30.022	1320
1330	30.022	30.046	30.071	30.095	30.119	30.143	30.167	30.191	30.215	30.240	30.264	1330
1340	30.264	30.288	30.312	30.336	30.360	30.384	30.408	30.432	30.457	30.481	30.505	1340
1350	30.505	30.529	30.553	30.577	30.601	30.625	30.649	30.673	30.697	30.721	30.745	1350
1360	30.745	30.769	30.793	30.817	30.841	30.865	30.889	30.913	30.937	30.961	30.985	1360
1370	30.985	31.009	31.033	31.057	31.081	31.105	31.129	31.153	31.177	31.201	31.225	1370
1380	31.225	31.248	31.272	31.296	31.320	31.344	31.368	31.392	31.416	31.440	31.463	1380
1390	31.463	31.487	31.511	31.535	31.559	31.583	31.607	31.631	31.654	31.678	31.702	1390
1400	31.702	31.726	31.750	31.774	31.797	31.821	31.845	31.869	31.893	31.916	31.940	1400
1410	31.940	31.964	31.988	32.011	32.035	32.059	32.083	32.107	32.130	32.154	32.178	1410
1420	32.178	32.202	32.225	32.249	32.273	32.296	32.320	32.344	32.368	32.391	32.415	1420
1430	32.415	32.439	32.462	32.486	32.510	32.533	32.557	32.581	32.604	32.628	32.652	1430
1440	32.652	32.675	32.699	32.723	32.746	32.770	32.794	32.817	32.841	32.864	32.888	1440
1450	32.888	32.912	32.935	32.959	32.982	33.006	33.030	33.053	33.077	33.100	33.124	1450
1460	33.124	33.147	33.171	33.195	33.218	33.242	33.265	33.289	33.312	33.336	33.359	1460
1470	33.359	33.383	33.406	33.430	33.453	33.477	33.500	33.524	33.547	33.571	33.594	1470
1480	33.594	33.618	33.641	33.664	33.688	33.711	33.735	33.758	33.782	33.805	33.828	1480
1490	33.828	33.852	33.875	33.899	33.922	33.946	33.969	33.992	34.016	34.039	34.062	1490
1500	34.062	34.086	34.109	34.132	34.156	34.179	34.203	34.226	34.249	34.273	34.296	1500
1510	34.296	34.319	34.342	34.366	34.389	34.412	34.436	34.459	34.482	34.506	34.529	1510
1520	34.529	34.552	34.575	34.599	34.622	34.645	34.668	34.692	34.715	34.738	34.761	1520
1530	34.761	34.784	34.808	34.831	34.854	34.877	34.900	34.924	34.947	34.970	34.993	1530
1540	34.993	35.016	35.040	35.063	35.086	35.109	35.132	35.155	35.178	35.202	35.225	1540
°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 26 ***Type P Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
1550	35.225	35.248	35.271	35.294	35.317	35.340	35.363	35.386	35.409	35.433	35.456	1550
1560	35.456	35.479	35.502	35.525	35.548	35.571	35.594	35.617	35.640	35.663	35.686	1560
1570	35.686	35.709	35.732	35.755	35.778	35.801	35.824	35.847	35.870	35.893	35.916	1570
1580	35.916	35.939	35.962	35.985	36.008	36.031	36.054	36.077	36.099	36.122	36.145	1580
1590	36.145	36.168	36.191	36.214	36.237	36.260	36.283	36.306	36.328	36.351	36.374	1590
1600	36.374	36.397	36.420	36.443	36.466	36.488	36.511	36.534	36.557	36.580	36.603	1600
1610	36.603	36.625	36.648	36.671	36.694	36.716	36.739	36.762	36.785	36.808	36.830	1610
1620	36.830	36.853	36.876	36.899	36.921	36.944	36.967	36.989	37.012	37.035	37.058	1620
1630	37.058	37.080	37.103	37.126	37.148	37.171	37.194	37.216	37.239	37.262	37.284	1630
1640	37.284	37.307	37.330	37.352	37.375	37.398	37.420	37.443	37.465	37.488	37.511	1640
1650	37.511	37.533	37.556	37.578	37.601	37.623	37.646	37.669	37.691	37.714	37.736	1650
1660	37.736	37.759	37.781	37.804	37.826	37.849	37.871	37.894	37.916	37.939	37.961	1660
1670	37.961	37.984	38.006	38.029	38.051	38.074	38.096	38.119	38.141	38.163	38.186	1670
1680	38.186	38.208	38.231	38.253	38.275	38.298	38.320	38.343	38.365	38.387	38.410	1680
1690	38.410	38.432	38.455	38.477	38.499	38.522	38.544	38.566	38.589	38.611	38.633	1690
1700	38.633	38.656	38.678	38.700	38.722	38.745	38.767	38.789	38.812	38.834	38.856	1700
1710	38.856	38.878	38.901	38.923	38.945	38.967	38.990	39.012	39.034	39.056	39.078	1710
1720	39.078	39.101	39.123	39.145	39.167	39.189	39.211	39.234	39.256	39.278	39.300	1720
1730	39.300	39.322	39.344	39.367	39.389	39.411	39.433	39.455	39.477	39.499	39.521	1730
1740	39.521	39.543	39.565	39.588	39.610	39.632	39.654	39.676	39.698	39.720	39.742	1740
1750	39.742	39.764	39.786	39.808	39.830	39.852	39.874	39.896	39.918	39.940	39.962	1750
1760	39.962	39.984	40.006	40.028	40.050	40.072	40.094	40.116	40.137	40.159	40.181	1760
1770	40.181	40.203	40.225	40.247	40.269	40.291	40.313	40.335	40.356	40.378	40.400	1770
1780	40.400	40.422	40.444	40.466	40.487	40.509	40.531	40.553	40.575	40.597	40.618	1780
1790	40.618	40.640	40.662	40.684	40.705	40.727	40.749	40.771	40.793	40.814	40.836	1790
1800	40.836	40.858	40.879	40.901	40.923	40.945	40.966	40.988	41.010	41.031	41.053	1800
1810	41.053	41.075	41.096	41.118	41.140	41.161	41.183	41.205	41.226	41.248	41.270	1810
1820	41.270	41.291	41.313	41.334	41.356	41.378	41.399	41.421	41.442	41.464	41.485	1820
1830	41.485	41.507	41.529	41.550	41.572	41.593	41.615	41.636	41.658	41.679	41.701	1830
1840	41.701	41.722	41.744	41.765	41.787	41.808	41.830	41.851	41.873	41.894	41.915	1840
1850	41.915	41.937	41.958	41.980	42.001	42.023	42.044	42.065	42.087	42.108	42.129	1850
1860	42.129	42.151	42.172	42.194	42.215	42.236	42.258	42.279	42.300	42.322	42.343	1860
1870	42.343	42.364	42.386	42.407	42.428	42.449	42.471	42.492	42.513	42.535	42.556	1870
1880	42.556	42.577	42.598	42.620	42.641	42.662	42.683	42.704	42.726	42.747	42.768	1880
1890	42.768	42.789	42.810	42.832	42.853	42.874	42.895	42.916	42.937	42.959	42.980	1890
1900	42.980	43.001	43.022	43.043	43.064	43.085	43.106	43.128	43.149	43.170	43.191	1900
1910	43.191	43.212	43.233	43.254	43.275	43.296	43.317	43.338	43.359	43.380	43.401	1910
1920	43.401	43.422	43.443	43.464	43.485	43.506	43.527	43.548	43.569	43.590	43.611	1920
1930	43.611	43.632	43.653	43.674	43.695	43.716	43.737	43.758	43.778	43.799	43.820	1930
1940	43.820	43.841	43.862	43.883	43.904	43.925	43.945	43.966	43.987	44.008	44.029	1940
1950	44.029	44.050	44.070	44.091	44.112	44.133	44.154	44.175	44.195	44.216	44.237	1950
1960	44.237	44.258	44.278	44.299	44.320	44.341	44.361	44.382	44.403	44.423	44.444	1960
1970	44.444	44.465	44.486	44.506	44.527	44.548	44.568	44.589	44.610	44.630	44.651	1970
1980	44.651	44.672	44.692	44.713	44.733	44.754	44.775	44.795	44.816	44.836	44.857	1980
1990	44.857	44.878	44.898	44.919	44.939	44.960	44.980	45.001	45.021	45.042	45.063	1990
2000	45.063	45.083	45.104	45.124	45.145	45.165	45.186	45.206	45.226	45.247	45.267	2000
2010	45.267	45.288	45.308	45.329	45.349	45.370	45.390	45.410	45.431	45.451	45.472	2010
2020	45.472	45.492	45.512	45.533	45.553	45.574	45.594	45.614	45.635	45.655	45.675	2020
2030	45.675	45.696	45.716	45.736	45.757	45.777	45.797	45.817	45.838	45.858	45.878	2030
2040	45.878	45.899	45.919	45.939	45.959	45.980	46.000	46.020	46.040	46.060	46.081	2040

°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 26 ***Type P Thermocouple*** *— thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F*

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Thermoelectric Voltage in Millivolts						
2050	46.081	46.101	46.121	46.141	46.161	46.182	46.202	46.222	46.242	46.262	46.282	2050
2060	46.282	46.303	46.323	46.343	46.363	46.383	46.403	46.423	46.443	46.463	46.484	2060
2070	46.484	46.504	46.524	46.544	46.564	46.584	46.604	46.624	46.644	46.664	46.684	2070
2080	46.684	46.704	46.724	46.744	46.764	46.784	46.804	46.824	46.844	46.864	46.884	2080
2090	46.884	46.904	46.924	46.944	46.964	46.984	47.004	47.023	47.043	47.063	47.083	2090
2100	47.083	47.103	47.123	47.143	47.163	47.183	47.202	47.222	47.242	47.262	47.282	2100
2110	47.282	47.302	47.321	47.341	47.361	47.381	47.401	47.420	47.440	47.460	47.480	2110
2120	47.480	47.500	47.519	47.539	47.559	47.579	47.598	47.618	47.638	47.657	47.677	2120
2130	47.677	47.697	47.717	47.736	47.756	47.776	47.795	47.815	47.835	47.854	47.874	2130
2140	47.874	47.894	47.913	47.933	47.952	47.972	47.992	48.011	48.031	48.050	48.070	2140
2150	48.070	48.090	48.109	48.129	48.148	48.168	48.187	48.207	48.226	48.246	48.265	2150
2160	48.265	48.285	48.304	48.324	48.343	48.363	48.382	48.402	48.421	48.441	48.460	2160
2170	48.460	48.480	48.499	48.519	48.538	48.557	48.577	48.596	48.616	48.635	48.654	2170
2180	48.654	48.674	48.693	48.713	48.732	48.751	48.771	48.790	48.809	48.829	48.848	2180
2190	48.848	48.867	48.887	48.906	48.925	48.945	48.964	48.983	49.002	49.022	49.041	2190
2200	49.041	49.060	49.079	49.099	49.118	49.137	49.156	49.176	49.195	49.214	49.233	2200
2210	49.233	49.252	49.272	49.291	49.310	49.329	49.348	49.367	49.387	49.406	49.425	2210
2220	49.425	49.444	49.463	49.482	49.501	49.520	49.540	49.559	49.578	49.597	49.616	2220
2230	49.616	49.635	49.654	49.673	49.692	49.711	49.730	49.749	49.768	49.787	49.806	2230
2240	49.806	49.825	49.844	49.863	49.882	49.901	49.920	49.939	49.958	49.977	49.996	2240
2250	49.996	50.015	50.034	50.053	50.072	50.091	50.110	50.128	50.147	50.166	50.185	2250
2260	50.185	50.204	50.223	50.242	50.261	50.279	50.298	50.317	50.336	50.355	50.374	2260
2270	50.374	50.392	50.411	50.430	50.449	50.467	50.486	50.505	50.524	50.543	50.561	2270
2280	50.561	50.580	50.599	50.618	50.636	50.655	50.674	50.692	50.711	50.730	50.748	2280
2290	50.748	50.767	50.786	50.804	50.823	50.842	50.860	50.879	50.898	50.916	50.935	2290
2300	50.935	50.954	50.972	50.991	51.009	51.028	51.047	51.065	51.084	51.102	51.121	2300
2310	51.121	51.139	51.158	51.176	51.195	51.213	51.232	51.250	51.269	51.287	51.306	2310
2320	51.306	51.324	51.343	51.361	51.380	51.398	51.417	51.435	51.454	51.472	51.490	2320
2330	51.490	51.509	51.527	51.546	51.564	51.582	51.601	51.619	51.638	51.656	51.674	2330
2340	51.674	51.693	51.711	51.729	51.748	51.766	51.784	51.803	51.821	51.839	51.858	2340
2350	51.858	51.876	51.894	51.912	51.931	51.949	51.967	51.985	52.004	52.022	52.040	2350
2360	52.040	52.058	52.076	52.095	52.113	52.131	52.149	52.167	52.186	52.204	52.222	2360
2370	52.222	52.240	52.258	52.276	52.294	52.313	52.331	52.349	52.367	52.385	52.403	2370
2380	52.403	52.421	52.439	52.457	52.475	52.493	52.511	52.529	52.548	52.566	52.584	2380
2390	52.584	52.602	52.620	52.638	52.656	52.674	52.692	52.710	52.727	52.745	52.763	2390
2400	52.763	52.781	52.799	52.817	52.835	52.853	52.871	52.889	52.907	52.925	52.943	2400
2410	52.943	52.960	52.978	52.996	53.014	53.032	53.050	53.067	53.085	53.103	53.121	2410
2420	53.121	53.139	53.157	53.174	53.192	53.210	53.228	53.245	53.263	53.281	53.299	2420
2430	53.299	53.316	53.334	53.352	53.370	53.387	53.405	53.423	53.440	53.458	53.476	2430
2440	53.476	53.493	53.511	53.529	53.546	53.564	53.582	53.599	53.617	53.634	53.652	2440
2450	53.652	53.670	53.687	53.705	53.722	53.740	53.757	53.775	53.793	53.810	53.828	2450
2460	53.828	53.845	53.863	53.880	53.898	53.915	53.933	53.950	53.968	53.985	54.003	2460
2470	54.003	54.020	54.037	54.055	54.072	54.090	54.107	54.125	54.142	54.159	54.177	2470
2480	54.177	54.194	54.211	54.229	54.246	54.264	54.281	54.298	54.316	54.333	54.350	2480
2490	54.350	54.367	54.385	54.402	54.419	54.437	54.454	54.471	54.488	54.506	54.523	2490
2500	54.523	54.540	54.557	54.574	54.592	54.609	54.626	54.643	54.660	54.678	54.695	2500
2510	54.695	54.712	54.729	54.746	54.763	54.780	54.798	54.815	54.832	54.849	54.866	2510
2520	54.866	54.883	54.900	54.917	54.934	54.951	54.968	54.985	55.002	55.019	55.036	2520
2530	55.036	55.053	55.070	55.087	55.104	55.121	55.138	55.155	55.172	55.189	55.206	2530
2540	55.206	55.223	55.240	55.257								2540

°F	0	1	2	3	4	5	6	7	8	9	10	°F

Temperature vs. Resistance Tables for Resistance Temperature Detectors (RTD) [1]

This reference manual consists of reference tables that give temperature vs. resistance relationships for resistance temperature detectors for Platinum, Copper, Nickel, and Nickel-Iron sensors.

These tables give ohm values from one to three decimal places for each degree of temperature. Such tables are satisfactory for most industrial uses but may not be adequate for computer and similar applications. If greater precision is required, the reader should contact the manufacturer for equations which permit easy and unique generation of the temperature vs. resistance relationship.

[1] Temperature vs. resistance data in Tables 29 and 30 have been developed from ASTM E1137 and IEC 60751. All other temperature vs. resistance data in Tables 31 to 38 have been developed from wire manufacturers' data.

List of Tables

Following is a list of the resistance temperature detectors tables included in this reference manual.

Table	Type		alpha	Range
27	Limits of Error			
28	Classification of Tolerances			
29	Pt	Platinum	α=0.003 85	(-200 to 850) °C
30	Pt	Platinum	α=0.003 85	(-328 to 1562) °F
31	Pt	Platinum	α=0.003 92	(-200 to 660) °C
32	Pt	Platinum	α=0.003 92	(-328 to 1220) °F
33	Cu	Copper	α=0.004 27	(-200 to 260) °C
34	Cu	Copper	α=0.004 27	(-328 to 500) °F
35	Ni	Nickel	α=0.006 72	(-80 to 260) °C
36	Ni	Nickel	α=0.006 72	(-112 to 500) °F
37	Ni-Fe	Nickel-Iron	α=0.005 18	(-200 to 204) °C
38	Ni-Fe	Nickel-Iron	α=0.005 18	(-328 to 400) °F
39	Pt	Platinum	α=0.003 90	(-200 to 660) °C
40	Pt	Platinum	α=0.003 90	(-328 to 1220) °F
41	Ni-Fe	Nickel-Iron	α=0.005 20	(-80 to 260) °C
42	Ni-Fe	Nickel-Iron	α=0.005 20	(-112 to 500) °F

Table 27 — Limits of Error for RTDs

	Tolerance @ 0 °C						
Type	±0.02%	±0.04%	±0.06%	±0.1%	±0.12%	±0.2%	±0.5%
Pt[1]	● *1/5*	● *AA*	● *A*	● B^{ASTM}	● B^{IEC}		
Cu						●	
Ni							●
Ni-Fe							●

1 see Table 28

Table 28 — Classification of Tolerances[2]

Use given equations to calculate tolerances at specified temperatures:

$$\textit{(1/5) IEC Class B} = \pm [\ 0.06 + 0.001\,|t|\ ]\ °C$$
$$\textit{IEC Class AA} = \pm [\ 0.1 + 0.0017\,|t|\ ]\ °C$$
$$\textit{IEC Class A} = \pm [\ 0.15 + 0.002\,|t|\ ]\ °C$$
$$\textit{ASTM Grade B} = \pm [\ 0.25 + 0.0042\,|t|\ ]\ °C$$
$$\textit{IEC Class B} = \pm [\ 0.3 + 0.005\,|t|\ ]\ °C$$

where:
$|t|$ = value of temperature without regard to sign, °C.

Note 2 — The equations represent values for 3 and 4-wire PRTs. Caution must be exercised with 2-wire PRTs due to lead resistance.

Figure 1 — Pyromation's Standard Element Connections

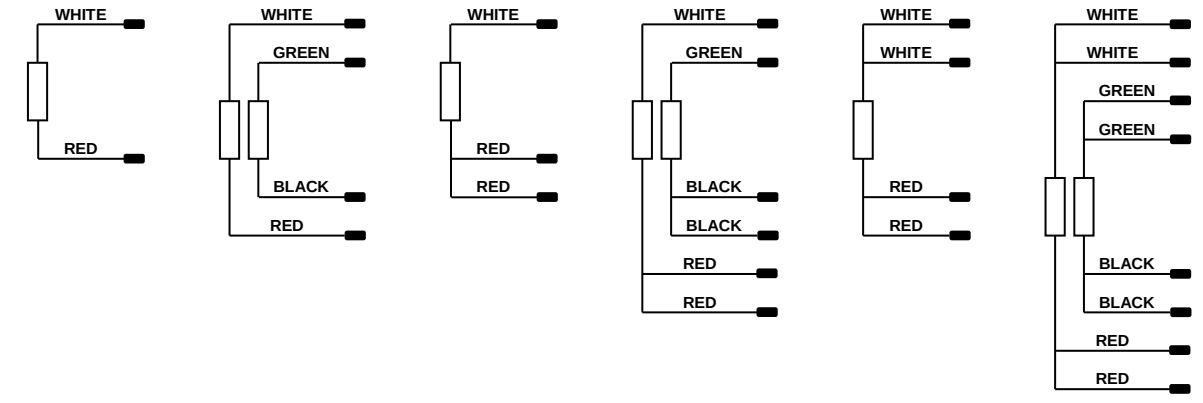

TABLE 29 100 Ω *Platinum RTD* — *0.003 85 coefficient*
temperature in ℃

°C	0	1	2	3	4	5	6	7	8	9	10	°C
						Resistance in Ohms						
-200	18.52											-200
-190	22.83	22.40	21.97	21.54	21.11	20.68	20.25	19.82	19.38	18.95	18.52	-190
-180	27.10	26.67	26.24	25.82	25.39	24.97	24.54	24.11	23.68	23.25	22.83	-180
-170	31.34	30.91	30.49	30.07	29.64	29.22	28.80	28.37	27.95	27.52	27.10	-170
-160	35.54	35.12	34.70	34.28	33.86	33.44	33.02	32.60	32.18	31.76	31.34	-160
-150	39.72	39.31	38.89	38.47	38.05	37.64	37.22	36.80	36.38	35.96	35.54	-150
-140	43.88	43.46	43.05	42.63	42.22	41.80	41.39	40.97	40.56	40.14	39.72	-140
-130	48.00	47.59	47.18	46.77	46.36	45.94	45.53	45.12	44.70	44.29	43.88	-130
-120	52.11	51.70	51.29	50.88	50.47	50.06	49.65	49.24	48.83	48.42	48.00	-120
-110	56.19	55.79	55.38	54.97	54.56	54.15	53.75	53.34	52.93	52.52	52.11	-110
-100	60.26	59.85	59.44	59.04	58.63	58.23	57.82	57.41	57.01	56.60	56.19	-100
-90	64.30	63.90	63.49	63.09	62.68	62.28	61.88	61.47	61.07	60.66	60.26	-90
-80	68.33	67.92	67.52	67.12	66.72	66.31	65.91	65.51	65.11	64.70	64.30	-80
-70	72.33	71.93	71.53	71.13	70.73	70.33	69.93	69.53	69.13	68.73	68.33	-70
-60	76.33	75.93	75.53	75.13	74.73	74.33	73.93	73.53	73.13	72.73	72.33	-60
-50	80.31	79.91	79.51	79.11	78.72	78.32	77.92	77.52	77.12	76.73	76.33	-50
-40	84.27	83.87	83.48	83.08	82.69	82.29	81.89	81.50	81.10	80.70	80.31	-40
-30	88.22	87.83	87.43	87.04	86.64	86.25	85.85	85.46	85.06	84.67	84.27	-30
-20	92.16	91.77	91.37	90.98	90.59	90.19	89.80	89.40	89.01	88.62	88.22	-20
-10	96.09	95.69	95.30	94.91	94.52	94.12	93.73	93.34	92.95	92.55	92.16	-10
0	100.00	99.61	99.22	98.83	98.44	98.04	97.65	97.26	96.87	96.48	96.09	0
0	100.00	100.39	100.78	101.17	101.56	101.95	102.34	102.73	103.12	103.51	103.90	0
10	103.90	104.29	104.68	105.07	105.46	105.85	106.24	106.63	107.02	107.40	107.79	10
20	107.79	108.18	108.57	108.96	109.35	109.73	110.12	110.51	110.90	111.29	111.67	20
30	111.67	112.06	112.45	112.83	113.22	113.61	114.00	114.38	114.77	115.15	115.54	30
40	115.54	115.93	116.31	116.70	117.08	117.47	117.86	118.24	118.63	119.01	119.40	40
50	119.40	119.78	120.17	120.55	120.94	121.32	121.71	122.09	122.47	122.86	123.24	50
60	123.24	123.63	124.01	124.39	124.78	125.16	125.54	125.93	126.31	126.69	127.08	60
70	127.08	127.46	127.84	128.22	128.61	128.99	129.37	129.75	130.13	130.52	130.90	70
80	130.90	131.28	131.66	132.04	132.42	132.80	133.18	133.57	133.95	134.33	134.71	80
90	134.71	135.09	135.47	135.85	136.23	136.61	136.99	137.37	137.75	138.13	138.51	90
100	138.51	138.88	139.26	139.64	140.02	140.40	140.78	141.16	141.54	141.91	142.29	100
110	142.29	142.67	143.05	143.43	143.80	144.18	144.56	144.94	145.31	145.69	146.07	110
120	146.07	146.44	146.82	147.20	147.57	147.95	148.33	148.70	149.08	149.46	149.83	120
130	149.83	150.21	150.58	150.96	151.33	151.71	152.08	152.46	152.83	153.21	153.58	130
140	153.58	153.96	154.33	154.71	155.08	155.46	155.83	156.20	156.58	156.95	157.33	140
150	157.33	157.70	158.07	158.45	158.82	159.19	159.56	159.94	160.31	160.68	161.05	150
160	161.05	161.43	161.80	162.17	162.54	162.91	163.29	163.66	164.03	164.40	164.77	160
170	164.77	165.14	165.51	165.89	166.26	166.63	167.00	167.37	167.74	168.11	168.48	170
180	168.48	168.85	169.22	169.59	169.96	170.33	170.70	171.07	171.43	171.80	172.17	180
190	172.17	172.54	172.91	173.28	173.65	174.02	174.38	174.75	175.12	175.49	175.86	190
200	175.86	176.22	176.59	176.96	177.33	177.69	178.06	178.43	178.79	179.16	179.53	200
210	179.53	179.89	180.26	180.63	180.99	181.36	181.72	182.09	182.46	182.82	183.19	210
220	183.19	183.55	183.92	184.28	184.65	185.01	185.38	185.74	186.11	186.47	186.84	220
230	186.84	187.20	187.56	187.93	188.29	188.66	189.02	189.38	189.75	190.11	190.47	230
240	190.47	190.84	191.20	191.56	191.92	192.29	192.65	193.01	193.37	193.74	194.10	240
250	194.10	194.46	194.82	195.18	195.55	195.91	196.27	196.63	196.99	197.35	197.71	250
260	197.71	198.07	198.43	198.79	199.15	199.51	199.87	200.23	200.59	200.95	201.31	260
270	201.31	201.67	202.03	202.39	202.75	203.11	203.47	203.83	204.19	204.55	204.90	270
280	204.90	205.26	205.62	205.98	206.34	206.70	207.05	207.41	207.77	208.13	208.48	280
290	208.48	208.84	209.20	209.56	209.91	210.27	210.63	210.98	211.34	211.70	212.05	290
°C	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**°C**

TABLE 29 ***100 Ω Platinum RTD*** *— 0.003 85 coefficient*
temperature in ℃

°C	0	1	2	3	4	5	6	7	8	9	10	°C
						Resistance in Ohms						
300	212.05	212.41	212.76	213.12	213.48	213.83	214.19	214.54	214.90	215.25	215.61	300
310	215.61	215.96	216.32	216.67	217.03	217.38	217.74	218.09	218.44	218.80	219.15	310
320	219.15	219.51	219.86	220.21	220.57	220.92	221.27	221.63	221.98	222.33	222.68	320
330	222.68	223.04	223.39	223.74	224.09	224.45	224.80	225.15	225.50	225.85	226.21	330
340	226.21	226.56	226.91	227.26	227.61	227.96	228.31	228.66	229.02	229.37	229.72	340
350	229.72	230.07	230.42	230.77	231.12	231.47	231.82	232.17	232.52	232.87	233.21	350
360	233.21	233.56	233.91	234.26	234.61	234.96	235.31	235.66	236.00	236.35	236.70	360
370	236.70	237.05	237.40	237.74	238.09	238.44	238.79	239.13	239.48	239.83	240.18	370
380	240.18	240.52	240.87	241.22	241.56	241.91	242.26	242.60	242.95	243.29	243.64	380
390	243.64	243.99	244.33	244.68	245.02	245.37	245.71	246.06	246.40	246.75	247.09	390
400	247.09	247.44	247.78	248.13	248.47	248.81	249.16	249.50	249.85	250.19	250.53	400
410	250.53	250.88	251.22	251.56	251.91	252.25	252.59	252.93	253.28	253.62	253.96	410
420	253.96	254.30	254.65	254.99	255.33	255.67	256.01	256.35	256.70	257.04	257.38	420
430	257.38	257.72	258.06	258.40	258.74	259.08	259.42	259.76	260.10	260.44	260.78	430
440	260.78	261.12	261.46	261.80	262.14	262.48	262.82	263.16	263.50	263.84	264.18	440
450	264.18	264.52	264.86	265.20	265.53	265.87	266.21	266.55	266.89	267.22	267.56	450
460	267.56	267.90	268.24	268.57	268.91	269.25	269.59	269.92	270.26	270.60	270.93	460
470	270.93	271.27	271.61	271.94	272.28	272.61	272.95	273.29	273.62	273.96	274.29	470
480	274.29	274.63	274.96	275.30	275.63	275.97	276.30	276.64	276.97	277.31	277.64	480
490	277.64	277.98	278.31	278.64	278.98	279.31	279.64	279.98	280.31	280.64	280.98	490
500	280.98	281.31	281.64	281.98	282.31	282.64	282.97	283.31	283.64	283.97	284.30	500
510	284.30	284.63	284.97	285.30	285.63	285.96	286.29	286.62	286.95	287.29	287.62	510
520	287.62	287.95	288.28	288.61	288.94	289.27	289.60	289.93	290.26	290.59	290.92	520
530	290.92	291.25	291.58	291.91	292.24	292.56	292.89	293.22	293.55	293.88	294.21	530
540	294.21	294.54	294.86	295.19	295.52	295.85	296.18	296.50	296.83	297.16	297.49	540
550	297.49	297.81	298.14	298.47	298.80	299.12	299.45	299.78	300.10	300.43	300.75	550
560	300.75	301.08	301.41	301.73	302.06	302.38	302.71	303.03	303.36	303.69	304.01	560
570	304.01	304.34	304.66	304.98	305.31	305.63	305.96	306.28	306.61	306.93	307.25	570
580	307.25	307.58	307.90	308.23	308.55	308.87	309.20	309.52	309.84	310.16	310.49	580
590	310.49	310.81	311.13	311.45	311.78	312.10	312.42	312.74	313.06	313.39	313.71	590
600	313.71	314.03	314.35	314.67	314.99	315.31	315.64	315.96	316.28	316.60	316.92	600
610	316.92	317.24	317.56	317.88	318.20	318.52	318.84	319.16	319.48	319.80	320.12	610
620	320.12	320.43	320.75	321.07	321.39	321.71	322.03	322.35	322.67	322.98	323.30	620
630	323.30	323.62	323.94	324.26	324.57	324.89	325.21	325.53	325.84	326.16	326.48	630
640	326.48	326.79	327.11	327.43	327.74	328.06	328.38	328.69	329.01	329.32	329.64	640
650	329.64	329.96	330.27	330.59	330.90	331.22	331.53	331.85	332.16	332.48	332.79	650
660	332.79	333.11	333.42	333.74	334.05	334.36	334.68	334.99	335.31	335.62	335.93	660
670	335.93	336.25	336.56	336.87	337.18	337.50	337.81	338.12	338.44	338.75	339.06	670
680	339.06	339.37	339.69	340.00	340.31	340.62	340.93	341.24	341.56	341.87	342.18	680
690	342.18	342.49	342.80	343.11	343.42	343.73	344.04	344.35	344.66	344.97	345.28	690
700	345.28	345.59	345.90	346.21	346.52	346.83	347.14	347.45	347.76	348.07	348.38	700
710	348.38	348.69	348.99	349.30	349.61	349.92	350.23	350.54	350.84	351.15	351.46	710
720	351.46	351.77	352.08	352.38	352.69	353.00	353.30	353.61	353.92	354.22	354.53	720
730	354.53	354.84	355.14	355.45	355.76	356.06	356.37	356.67	356.98	357.28	357.59	730
740	357.59	357.90	358.20	358.51	358.81	359.12	359.42	359.72	360.03	360.33	360.64	740
750	360.64	360.94	361.25	361.55	361.85	362.16	362.46	362.76	363.07	363.37	363.67	750
760	363.67	363.98	364.28	364.58	364.89	365.19	365.49	365.79	366.10	366.40	366.70	760
770	366.70	367.00	367.30	367.60	367.91	368.21	368.51	368.81	369.11	369.41	369.71	770
780	369.71	370.01	370.31	370.61	370.91	371.21	371.51	371.81	372.11	372.41	372.71	780
790	372.71	373.01	373.31	373.61	373.91	374.21	374.51	374.81	375.11	375.41	375.70	790

°C	0	1	2	3	4	5	6	7	8	9	10	°C

TABLE 29 100 Ω *Platinum RTD* — *0.003 85 coefficient*
temperature in ℃

°C	0	1	2	3	4	5	6	7	8	9	10	°C
						Resistance in Ohms						
800	375.70	376.00	376.30	376.60	376.90	377.19	377.49	377.79	378.09	378.39	378.68	800
810	378.68	378.98	379.28	379.57	379.87	380.17	380.46	380.76	381.06	381.35	381.65	810
820	381.65	381.95	382.24	382.54	382.83	383.13	383.42	383.72	384.01	384.31	384.60	820
830	384.60	384.90	385.19	385.49	385.78	386.08	386.37	386.67	386.96	387.25	387.55	830
840	387.55	387.84	388.14	388.43	388.72	389.02	389.31	389.60	389.90	390.19	390.48	840
850	390.48											850

°C	0	1	2	3	4	5	6	7	8	9	10	°C

TABLE 30 ***100 Ω Platinum RTD*** *— 0.003 85 coefficient*
temperature in °F

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Resistance in Ohms						
-320	20.44	20.20	19.96	19.72	19.48	19.24	19.00	18.76	18.52			-320
-310	22.83	22.59	22.35	22.11	21.87	21.63	21.39	21.16	20.92	20.68	20.44	-310
-300	25.20	24.97	24.73	24.49	24.25	24.02	23.78	23.54	23.30	23.06	22.83	-300
-290	27.57	27.33	27.10	26.86	26.62	26.39	26.15	25.91	25.68	25.44	25.20	-290
-280	29.93	29.69	29.46	29.22	28.98	28.75	28.51	28.28	28.04	27.81	27.57	-280
-270	32.27	32.04	31.80	31.57	31.34	31.10	30.87	30.63	30.40	30.16	29.93	-270
-260	34.61	34.38	34.14	33.91	33.68	33.44	33.21	32.98	32.74	32.51	32.27	-260
-250	36.94	36.71	36.47	36.24	36.01	35.78	35.54	35.31	35.08	34.84	34.61	-250
-240	39.26	39.03	38.80	38.56	38.33	38.10	37.87	37.64	37.40	37.17	36.94	-240
-230	41.57	41.34	41.11	40.88	40.65	40.42	40.19	39.95	39.72	39.49	39.26	-230
-220	43.88	43.65	43.42	43.19	42.96	42.73	42.49	42.26	42.03	41.80	41.57	-220
-210	46.17	45.94	45.71	45.48	45.26	45.03	44.80	44.57	44.34	44.11	43.88	-210
-200	48.46	48.23	48.00	47.78	47.55	47.32	47.09	46.86	46.63	46.40	46.17	-200
-190	50.74	50.52	50.29	50.06	49.83	49.60	49.38	49.15	48.92	48.69	48.46	-190
-180	53.02	52.79	52.56	52.34	52.11	51.88	51.65	51.43	51.20	50.97	50.74	-180
-170	55.29	55.06	54.83	54.61	54.38	54.15	53.93	53.70	53.47	53.25	53.02	-170
-160	57.55	57.32	57.10	56.87	56.65	56.42	56.19	55.97	55.74	55.51	55.29	-160
-150	59.81	59.58	59.35	59.13	58.90	58.68	58.45	58.23	58.00	57.78	57.55	-150
-140	62.06	61.83	61.61	61.38	61.16	60.93	60.71	60.48	60.26	60.03	59.81	-140
-130	64.30	64.08	63.85	63.63	63.40	63.18	62.95	62.73	62.50	62.28	62.06	-130
-120	66.54	66.31	66.09	65.87	65.64	65.42	65.20	64.97	64.75	64.52	64.30	-120
-110	68.77	68.55	68.33	68.10	67.88	67.66	67.43	67.21	66.99	66.76	66.54	-110
-100	71.00	70.78	70.55	70.33	70.11	69.89	69.66	69.44	69.22	68.99	68.77	-100
-90	73.22	73.00	72.78	72.56	72.33	72.11	71.89	71.67	71.45	71.22	71.00	-90
-80	75.44	75.22	75.00	74.78	74.55	74.33	74.11	73.89	73.67	73.45	73.22	-80
-70	77.66	77.43	77.21	76.99	76.77	76.55	76.33	76.11	75.88	75.66	75.44	-70
-60	79.86	79.64	79.42	79.20	78.98	78.76	78.54	78.32	78.10	77.88	77.66	-60
-50	82.07	81.85	81.63	81.41	81.19	80.97	80.75	80.53	80.31	80.09	79.86	-50
-40	84.27	84.05	83.83	83.61	83.39	83.17	82.95	82.73	82.51	82.29	82.07	-40
-30	86.47	86.25	86.03	85.81	85.59	85.37	85.15	84.93	84.71	84.49	84.27	-30
-20	88.66	88.44	88.22	88.00	87.78	87.56	87.34	87.13	86.91	86.69	86.47	-20
-10	90.85	90.63	90.41	90.19	89.97	89.75	89.54	89.32	89.10	88.88	88.66	-10
0	93.03	92.82	92.60	92.38	92.16	91.94	91.72	91.50	91.29	91.07	90.85	0
0	93.03	93.25	93.47	93.69	93.91	94.12	94.34	94.56	94.78	95.00	95.21	0
10	95.21	95.43	95.65	95.87	96.09	96.30	96.52	96.74	96.96	97.17	97.39	10
20	97.39	97.61	97.83	98.04	98.26	98.48	98.70	98.91	99.13	99.35	99.57	20
30	99.57	99.78	100.00	100.22	100.43	100.65	100.87	101.09	101.30	101.52	101.74	30
40	101.74	101.95	102.17	102.39	102.60	102.82	103.04	103.25	103.47	103.69	103.90	40
50	103.90	104.12	104.34	104.55	104.77	104.98	105.20	105.42	105.63	105.85	106.07	50
60	106.07	106.28	106.50	106.71	106.93	107.15	107.36	107.58	107.79	108.01	108.23	60
70	108.23	108.44	108.66	108.87	109.09	109.30	109.52	109.73	109.95	110.17	110.38	70
80	110.38	110.60	110.81	111.03	111.24	111.46	111.67	111.89	112.10	112.32	112.53	80
90	112.53	112.75	112.96	113.18	113.39	113.61	113.82	114.04	114.25	114.47	114.68	90
100	114.68	114.90	115.11	115.33	115.54	115.76	115.97	116.18	116.40	116.61	116.83	100
110	116.83	117.04	117.26	117.47	117.68	117.90	118.11	118.33	118.54	118.76	118.97	110
120	118.97	119.18	119.40	119.61	119.82	120.04	120.25	120.47	120.68	120.89	121.11	120
130	121.11	121.32	121.53	121.75	121.96	122.18	122.39	122.60	122.82	123.03	123.24	130
140	123.24	123.46	123.67	123.88	124.09	124.31	124.52	124.73	124.95	125.16	125.37	140

°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 30 100 Ω *Platinum RTD* — *0.003 85 coefficient*
temperature in °F

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Resistance in Ohms						
150	125.37	125.59	125.80	126.01	126.22	126.44	126.65	126.86	127.08	127.29	127.50	150
160	127.50	127.71	127.93	128.14	128.35	128.56	128.78	128.99	129.20	129.41	129.62	160
170	129.62	129.84	130.05	130.26	130.47	130.68	130.90	131.11	131.32	131.53	131.74	170
180	131.74	131.96	132.17	132.38	132.59	132.80	133.01	133.23	133.44	133.65	133.86	180
190	133.86	134.07	134.28	134.50	134.71	134.92	135.13	135.34	135.55	135.76	135.97	190
200	135.97	136.19	136.40	136.61	136.82	137.03	137.24	137.45	137.66	137.87	138.08	200
210	138.08	138.29	138.51	138.72	138.93	139.14	139.35	139.56	139.77	139.98	140.19	210
220	140.19	140.40	140.61	140.82	141.03	141.24	141.45	141.66	141.87	142.08	142.29	220
230	142.29	142.50	142.71	142.92	143.13	143.34	143.55	143.76	143.97	144.18	144.39	230
240	144.39	144.60	144.81	145.02	145.23	145.44	145.65	145.86	146.07	146.28	146.49	240
250	146.49	146.70	146.91	147.11	147.32	147.53	147.74	147.95	148.16	148.37	148.58	250
260	148.58	148.79	149.00	149.21	149.41	149.62	149.83	150.04	150.25	150.46	150.67	260
270	150.67	150.88	151.08	151.29	151.50	151.71	151.92	152.13	152.33	152.54	152.75	270
280	152.75	152.96	153.17	153.38	153.58	153.79	154.00	154.21	154.42	154.62	154.83	280
290	154.83	155.04	155.25	155.46	155.66	155.87	156.08	156.29	156.49	156.70	156.91	290
300	156.91	157.12	157.33	157.53	157.74	157.95	158.15	158.36	158.57	158.78	158.98	300
310	158.98	159.19	159.40	159.61	159.81	160.02	160.23	160.43	160.64	160.85	161.05	310
320	161.05	161.26	161.47	161.67	161.88	162.09	162.29	162.50	162.71	162.91	163.12	320
330	163.12	163.33	163.53	163.74	163.95	164.15	164.36	164.57	164.77	164.98	165.18	330
340	165.18	165.39	165.60	165.80	166.01	166.21	166.42	166.63	166.83	167.04	167.24	340
350	167.24	167.45	167.66	167.86	168.07	168.27	168.48	168.68	168.89	169.09	169.30	350
360	169.30	169.51	169.71	169.92	170.12	170.33	170.53	170.74	170.94	171.15	171.35	360
370	171.35	171.56	171.76	171.97	172.17	172.38	172.58	172.79	172.99	173.20	173.40	370
380	173.40	173.61	173.81	174.02	174.22	174.43	174.63	174.83	175.04	175.24	175.45	380
390	175.45	175.65	175.86	176.06	176.26	176.47	176.67	176.88	177.08	177.29	177.49	390
400	177.49	177.69	177.90	178.10	178.30	178.51	178.71	178.92	179.12	179.32	179.53	400
410	179.53	179.73	179.93	180.14	180.34	180.55	180.75	180.95	181.16	181.36	181.56	410
420	181.56	181.77	181.97	182.17	182.38	182.58	182.78	182.98	183.19	183.39	183.59	420
430	183.59	183.80	184.00	184.20	184.40	184.61	184.81	185.01	185.22	185.42	185.62	430
440	185.62	185.82	186.03	186.23	186.43	186.63	186.84	187.04	187.24	187.44	187.65	440
450	187.65	187.85	188.05	188.25	188.45	188.66	188.86	189.06	189.26	189.46	189.67	450
460	189.67	189.87	190.07	190.27	190.47	190.67	190.88	191.08	191.28	191.48	191.68	460
470	191.68	191.88	192.09	192.29	192.49	192.69	192.89	193.09	193.29	193.49	193.70	470
480	193.70	193.90	194.10	194.30	194.50	194.70	194.90	195.10	195.30	195.50	195.71	480
490	195.71	195.91	196.11	196.31	196.51	196.71	196.91	197.11	197.31	197.51	197.71	490
500	197.71	197.91	198.11	198.31	198.51	198.71	198.91	199.11	199.31	199.51	199.71	500
510	199.71	199.91	200.11	200.31	200.51	200.71	200.91	201.11	201.31	201.51	201.71	510
520	201.71	201.91	202.11	202.31	202.51	202.71	202.91	203.11	203.31	203.51	203.71	520
530	203.71	203.91	204.11	204.31	204.51	204.71	204.90	205.10	205.30	205.50	205.70	530
540	205.70	205.90	206.10	206.30	206.50	206.70	206.89	207.09	207.29	207.49	207.69	540
550	207.69	207.89	208.09	208.29	208.48	208.68	208.88	209.08	209.28	209.48	209.67	550
560	209.67	209.87	210.07	210.27	210.47	210.67	210.86	211.06	211.26	211.46	211.66	560
570	211.66	211.85	212.05	212.25	212.45	212.64	212.84	213.04	213.24	213.44	213.63	570
580	213.63	213.83	214.03	214.23	214.42	214.62	214.82	215.02	215.21	215.41	215.61	580
590	215.61	215.80	216.00	216.20	216.40	216.59	216.79	216.99	217.18	217.38	217.58	590
600	217.58	217.77	217.97	218.17	218.37	218.56	218.76	218.96	219.15	219.35	219.55	600
610	219.55	219.74	219.94	220.13	220.33	220.53	220.72	220.92	221.12	221.31	221.51	610
620	221.51	221.70	221.90	222.10	222.29	222.49	222.68	222.88	223.08	223.27	223.47	620
630	223.47	223.66	223.86	224.06	224.25	224.45	224.64	224.84	225.03	225.23	225.42	630
640	225.42	225.62	225.82	226.01	226.21	226.40	226.60	226.79	226.99	227.18	227.38	640
°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 30 ***100 Ω Platinum RTD*** *— 0.003 85 coefficient*
temperature in °F

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Resistance in Ohms						
650	227.38	227.57	227.77	227.96	228.16	228.35	228.55	228.74	228.94	229.13	229.33	650
660	229.33	229.52	229.72	229.91	230.11	230.30	230.49	230.69	230.88	231.08	231.27	660
670	231.27	231.47	231.66	231.86	232.05	232.24	232.44	232.63	232.83	233.02	233.21	670
680	233.21	233.41	233.60	233.80	233.99	234.18	234.38	234.57	234.77	234.96	235.15	680
690	235.15	235.35	235.54	235.73	235.93	236.12	236.31	236.51	236.70	236.89	237.09	690
700	237.09	237.28	237.47	237.67	237.86	238.05	238.25	238.44	238.63	238.83	239.02	700
710	239.02	239.21	239.41	239.60	239.79	239.98	240.18	240.37	240.56	240.75	240.95	710
720	240.95	241.14	241.33	241.52	241.72	241.91	242.10	242.29	242.49	242.68	242.87	720
730	242.87	243.06	243.26	243.45	243.64	243.83	244.02	244.22	244.41	244.60	244.79	730
740	244.79	244.98	245.18	245.37	245.56	245.75	245.94	246.13	246.33	246.52	246.71	740
750	246.71	246.90	247.09	247.28	247.47	247.67	247.86	248.05	248.24	248.43	248.62	750
760	248.62	248.81	249.00	249.20	249.39	249.58	249.77	249.96	250.15	250.34	250.53	760
770	250.53	250.72	250.91	251.10	251.30	251.49	251.68	251.87	252.06	252.25	252.44	770
780	252.44	252.63	252.82	253.01	253.20	253.39	253.58	253.77	253.96	254.15	254.34	780
790	254.34	254.53	254.72	254.91	255.10	255.29	255.48	255.67	255.86	256.05	256.24	790
800	256.24	256.43	256.62	256.81	257.00	257.19	257.38	257.57	257.76	257.95	258.14	800
810	258.14	258.33	258.52	258.70	258.89	259.08	259.27	259.46	259.65	259.84	260.03	810
820	260.03	260.22	260.41	260.60	260.78	260.97	261.16	261.35	261.54	261.73	261.92	820
830	261.92	262.11	262.29	262.48	262.67	262.86	263.05	263.24	263.43	263.61	263.80	830
840	263.80	263.99	264.18	264.37	264.56	264.74	264.93	265.12	265.31	265.50	265.68	840
850	265.68	265.87	266.06	266.25	266.44	266.62	266.81	267.00	267.19	267.37	267.56	850
860	267.56	267.75	267.94	268.12	268.31	268.50	268.69	268.87	269.06	269.25	269.44	860
870	269.44	269.62	269.81	270.00	270.18	270.37	270.56	270.75	270.93	271.12	271.31	870
880	271.31	271.49	271.68	271.87	272.05	272.24	272.43	272.61	272.80	272.99	273.17	880
890	273.17	273.36	273.55	273.73	273.92	274.11	274.29	274.48	274.67	274.85	275.04	890
900	275.04	275.22	275.41	275.60	275.78	275.97	276.15	276.34	276.53	276.71	276.90	900
910	276.90	277.08	277.27	277.46	277.64	277.83	278.01	278.20	278.38	278.57	278.75	910
920	278.75	278.94	279.13	279.31	279.50	279.68	279.87	280.05	280.24	280.42	280.61	920
930	280.61	280.79	280.98	281.16	281.35	281.53	281.72	281.90	282.09	282.27	282.46	930
940	282.46	282.64	282.83	283.01	283.20	283.38	283.56	283.75	283.93	284.12	284.30	940
950	284.30	284.49	284.67	284.86	285.04	285.22	285.41	285.59	285.78	285.96	286.14	950
960	286.14	286.33	286.51	286.70	286.88	287.06	287.25	287.43	287.62	287.80	287.98	960
970	287.98	288.17	288.35	288.53	288.72	288.90	289.08	289.27	289.45	289.64	289.82	970
980	289.82	290.00	290.19	290.37	290.55	290.73	290.92	291.10	291.28	291.47	291.65	980
990	291.65	291.83	292.02	292.20	292.38	292.56	292.75	292.93	293.11	293.30	293.48	990
1000	293.48	293.66	293.84	294.03	294.21	294.39	294.57	294.76	294.94	295.12	295.30	1000
1010	295.30	295.48	295.67	295.85	296.03	296.21	296.40	296.58	296.76	296.94	297.12	1010
1020	297.12	297.31	297.49	297.67	297.85	298.03	298.21	298.40	298.58	298.76	298.94	1020
1030	298.94	299.12	299.30	299.49	299.67	299.85	300.03	300.21	300.39	300.57	300.75	1030
1040	300.75	300.94	301.12	301.30	301.48	301.66	301.84	302.02	302.20	302.38	302.56	1040
1050	302.56	302.75	302.93	303.11	303.29	303.47	303.65	303.83	304.01	304.19	304.37	1050
1060	304.37	304.55	304.73	304.91	305.09	305.27	305.45	305.63	305.81	305.99	306.17	1060
1070	306.17	306.35	306.53	306.71	306.89	307.07	307.25	307.43	307.61	307.79	307.97	1070
1080	307.97	308.15	308.33	308.51	308.69	308.87	309.05	309.23	309.41	309.59	309.77	1080
1090	309.77	309.95	310.13	310.31	310.49	310.67	310.85	311.02	311.20	311.38	311.56	1090
1100	311.56	311.74	311.92	312.10	312.28	312.46	312.64	312.81	312.99	313.17	313.35	1100
1110	313.35	313.53	313.71	313.89	314.07	314.24	314.42	314.60	314.78	314.96	315.14	1110
1120	315.14	315.31	315.49	315.67	315.85	316.03	316.21	316.38	316.56	316.74	316.92	1120
1130	316.92	317.10	317.27	317.45	317.63	317.81	317.98	318.16	318.34	318.52	318.70	1130
1140	318.70	318.87	319.05	319.23	319.41	319.58	319.76	319.94	320.12	320.29	320.47	1140

°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 30 100 Ω *Platinum RTD* — *0.003 85 coefficient*
temperature in °F

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Resistance in Ohms						
1150	320.47	320.65	320.82	321.00	321.18	321.36	321.53	321.71	321.89	322.06	322.24	1150
1160	322.24	322.42	322.59	322.77	322.95	323.13	323.30	323.48	323.66	323.83	324.01	1160
1170	324.01	324.18	324.36	324.54	324.71	324.89	325.07	325.24	325.42	325.60	325.77	1170
1180	325.77	325.95	326.12	326.30	326.48	326.65	326.83	327.00	327.18	327.36	327.53	1180
1190	327.53	327.71	327.88	328.06	328.24	328.41	328.59	328.76	328.94	329.11	329.29	1190
1200	329.29	329.46	329.64	329.82	329.99	330.17	330.34	330.52	330.69	330.87	331.04	1200
1210	331.04	331.22	331.39	331.57	331.74	331.92	332.09	332.27	332.44	332.62	332.79	1210
1220	332.79	332.97	333.14	333.32	333.49	333.67	333.84	334.01	334.19	334.36	334.54	1220
1230	334.54	334.71	334.89	335.06	335.24	335.41	335.58	335.76	335.93	336.11	336.28	1230
1240	336.28	336.45	336.63	336.80	336.98	337.15	337.32	337.50	337.67	337.85	338.02	1240
1250	338.02	338.19	338.37	338.54	338.71	338.89	339.06	339.23	339.41	339.58	339.75	1250
1260	339.75	339.93	340.10	340.27	340.45	340.62	340.79	340.97	341.14	341.31	341.49	1260
1270	341.49	341.66	341.83	342.01	342.18	342.35	342.52	342.70	342.87	343.04	343.21	1270
1280	343.21	343.39	343.56	343.73	343.90	344.08	344.25	344.42	344.59	344.77	344.94	1280
1290	344.94	345.11	345.28	345.46	345.63	345.80	345.97	346.14	346.32	346.49	346.66	1290
1300	346.66	346.83	347.00	347.18	347.35	347.52	347.69	347.86	348.03	348.21	348.38	1300
1310	348.38	348.55	348.72	348.89	349.06	349.23	349.41	349.58	349.75	349.92	350.09	1310
1320	350.09	350.26	350.43	350.60	350.78	350.95	351.12	351.29	351.46	351.63	351.80	1320
1330	351.80	351.97	352.14	352.31	352.48	352.66	352.83	353.00	353.17	353.34	353.51	1330
1340	353.51	353.68	353.85	354.02	354.19	354.36	354.53	354.70	354.87	355.04	355.21	1340
1350	355.21	355.38	355.55	355.72	355.89	356.06	356.23	356.40	356.57	356.74	356.91	1350
1360	356.91	357.08	357.25	357.42	357.59	357.76	357.93	358.10	358.27	358.44	358.61	1360
1370	358.61	358.78	358.95	359.12	359.28	359.45	359.62	359.79	359.96	360.13	360.30	1370
1380	360.30	360.47	360.64	360.81	360.98	361.14	361.31	361.48	361.65	361.82	361.99	1380
1390	361.99	362.16	362.33	362.49	362.66	362.83	363.00	363.17	363.34	363.51	363.67	1390
1400	363.67	363.84	364.01	364.18	364.35	364.52	364.68	364.85	365.02	365.19	365.36	1400
1410	365.36	365.52	365.69	365.86	366.03	366.20	366.36	366.53	366.70	366.87	367.03	1410
1420	367.03	367.20	367.37	367.54	367.70	367.87	368.04	368.21	368.37	368.54	368.71	1420
1430	368.71	368.88	369.04	369.21	369.38	369.55	369.71	369.88	370.05	370.21	370.38	1430
1440	370.38	370.55	370.71	370.88	371.05	371.21	371.38	371.55	371.71	371.88	372.05	1440
1450	372.05	372.21	372.38	372.55	372.71	372.88	373.05	373.21	373.38	373.55	373.71	1450
1460	373.71	373.88	374.04	374.21	374.38	374.54	374.71	374.87	375.04	375.21	375.37	1460
1470	375.37	375.54	375.70	375.87	376.04	376.20	376.37	376.53	376.70	376.86	377.03	1470
1480	377.03	377.19	377.36	377.53	377.69	377.86	378.02	378.19	378.35	378.52	378.68	1480
1490	378.68	378.85	379.01	379.18	379.34	379.51	379.67	379.84	380.00	380.17	380.33	1490
1500	380.33	380.50	380.66	380.83	380.99	381.16	381.32	381.48	381.65	381.81	381.98	1500
1510	381.98	382.14	382.31	382.47	382.64	382.80	382.96	383.13	383.29	383.46	383.62	1510
1520	383.62	383.79	383.95	384.11	384.28	384.44	384.60	384.77	384.93	385.10	385.26	1520
1530	385.26	385.42	385.59	385.75	385.91	386.08	386.24	386.41	386.57	386.73	386.90	1530
1540	386.90	387.06	387.22	387.39	387.55	387.71	387.88	388.04	388.20	388.36	388.53	1540
1550	388.53	388.69	388.85	389.02	389.18	389.34	389.50	389.67	389.83	389.99	390.16	1550
1560	390.16	390.32	390.48									1560

°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 31 100 Ω *Platinum RTD* — *0.003 92 coefficient*
temperature in ℃

°C	0	1	2	3	4	5	6	7	8	9	10	°C
						Resistance in Ohms						
-200	17.08											-200
-190	21.46	21.02	20.58	20.15	19.71	19.27	18.83	18.40	17.96	17.52	17.08	-190
-180	25.80	25.37	24.94	24.50	24.07	23.63	23.20	22.76	22.33	21.89	21.46	-180
-170	30.11	29.68	29.25	28.82	28.39	27.96	27.53	27.10	26.67	26.23	25.80	-170
-160	34.39	33.97	33.54	33.11	32.69	32.26	31.83	31.40	30.97	30.54	30.11	-160
-150	38.65	38.22	37.80	37.37	36.95	36.52	36.10	35.67	35.25	34.82	34.39	-150
-140	42.87	42.45	42.03	41.61	41.19	40.76	40.34	39.92	39.49	39.07	38.65	-140
-130	47.07	46.66	46.24	45.82	45.40	44.98	44.56	44.14	43.72	43.29	42.87	-130
-120	51.25	50.84	50.42	50.00	49.58	49.17	48.75	48.33	47.91	47.49	47.07	-120
-110	55.41	54.99	54.58	54.16	53.75	53.33	52.92	52.50	52.09	51.67	51.25	-110
-100	59.54	59.13	58.72	58.30	57.89	57.48	57.06	56.65	56.24	55.82	55.41	-100
-90	63.66	63.25	62.84	62.43	62.01	61.60	61.19	60.78	60.37	59.96	59.54	-90
-80	67.76	67.35	66.94	66.53	66.12	65.71	65.30	64.89	64.48	64.07	63.66	-80
-70	71.84	71.43	71.02	70.61	70.21	69.80	69.39	68.98	68.57	68.17	67.76	-70
-60	75.90	75.50	75.09	74.68	74.28	73.87	73.47	73.06	72.65	72.24	71.84	-60
-50	79.95	79.55	79.14	78.74	78.33	77.93	77.52	77.12	76.71	76.31	75.90	-50
-40	83.99	83.58	83.18	82.78	82.38	81.97	81.57	81.16	80.76	80.36	79.95	-40
-30	88.01	87.61	87.21	86.80	86.40	86.00	85.60	85.20	84.79	84.39	83.99	-30
-20	92.02	91.62	91.22	90.82	90.42	90.02	89.61	89.21	88.81	88.41	88.01	-20
-10	96.02	95.62	95.22	94.82	94.42	94.02	93.62	93.22	92.82	92.42	92.02	-10
0	100.00	99.60	99.20	98.81	98.41	98.01	97.61	97.21	96.81	96.41	96.02	0
0	100.00	100.40	100.80	101.19	101.59	101.99	102.39	102.78	103.18	103.58	103.97	0
10	103.97	104.37	104.77	105.16	105.56	105.95	106.35	106.75	107.14	107.54	107.93	10
20	107.93	108.33	108.72	109.12	109.52	109.91	110.30	110.70	111.09	111.49	111.88	20
30	111.88	112.28	112.67	113.07	113.46	113.85	114.25	114.64	115.03	115.43	115.82	30
40	115.82	116.21	116.61	117.00	117.39	117.79	118.18	118.57	118.96	119.35	119.75	40
50	119.75	120.14	120.53	120.92	121.31	121.71	122.10	122.49	122.88	123.27	123.66	50
60	123.66	124.05	124.44	124.83	125.22	125.61	126.00	126.39	126.78	127.17	127.56	60
70	127.56	127.95	128.34	128.73	129.12	129.51	129.90	130.29	130.68	131.07	131.45	70
80	131.45	131.84	132.23	132.62	133.01	133.39	133.78	134.17	134.56	134.95	135.33	80
90	135.33	135.72	136.11	136.49	136.88	137.27	137.65	138.04	138.43	138.81	139.20	90
100	139.20	139.59	139.97	140.36	140.74	141.13	141.51	141.90	142.29	142.67	143.06	100
110	143.06	143.44	143.83	144.21	144.59	144.98	145.36	145.75	146.13	146.52	146.90	110
120	146.90	147.28	147.67	148.05	148.43	148.82	149.20	149.58	149.97	150.35	150.73	120
130	150.73	151.11	151.50	151.88	152.26	152.64	153.02	153.41	153.79	154.17	154.55	130
140	154.55	154.93	155.31	155.70	156.08	156.46	156.84	157.22	157.60	157.98	158.36	140
150	158.36	158.74	159.12	159.50	159.88	160.26	160.64	161.02	161.40	161.78	162.16	150
160	162.16	162.54	162.91	163.29	163.67	164.05	164.43	164.81	165.19	165.56	165.94	160
170	165.94	166.32	166.70	167.07	167.45	167.83	168.21	168.58	168.96	169.34	169.71	170
180	169.71	170.09	170.47	170.84	171.22	171.60	171.97	172.35	172.73	173.10	173.48	180
190	173.48	173.85	174.23	174.60	174.98	175.35	175.73	176.10	176.48	176.85	177.23	190
200	177.23	177.60	177.97	178.35	178.72	179.10	179.47	179.84	180.22	180.59	180.96	200
210	180.96	181.34	181.71	182.08	182.46	182.83	183.20	183.57	183.95	184.32	184.69	210
220	184.69	185.06	185.43	185.81	186.18	186.55	186.92	187.29	187.66	188.03	188.41	220
230	188.41	188.78	189.15	189.52	189.89	190.26	190.63	191.00	191.37	191.74	192.11	230
240	192.11	192.48	192.85	193.22	193.59	193.96	194.32	194.69	195.06	195.43	195.80	240
250	195.80	196.17	196.54	196.90	197.27	197.64	198.01	198.38	198.74	199.11	199.48	250
260	199.48	199.85	200.21	200.58	200.95	201.31	201.68	202.05	202.41	202.78	203.15	260
270	203.15	203.51	203.88	204.24	204.61	204.98	205.34	205.71	206.07	206.44	206.80	270
280	206.80	207.17	207.53	207.90	208.26	208.63	208.99	209.35	209.72	210.08	210.45	280
290	210.45	210.81	211.17	211.54	211.90	212.26	212.63	212.99	213.35	213.72	214.08	290
°C	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**°C**

TABLE 31 100 Ω *Platinum RTD* — *0.003 92 coefficient*
temperature in ℃

°C	0	1	2	3	4	5	6	7	8	9	10	°C
						Resistance in Ohms						
300	214.08	214.44	214.80	215.17	215.53	215.89	216.25	216.61	216.98	217.34	217.70	300
310	217.70	218.06	218.42	218.78	219.14	219.51	219.87	220.23	220.59	220.95	221.31	310
320	221.31	221.67	222.03	222.39	222.75	223.11	223.47	223.83	224.19	224.55	224.91	320
330	224.91	225.26	225.62	225.98	226.34	226.70	227.06	227.42	227.78	228.13	228.49	330
340	228.49	228.85	229.21	229.56	229.92	230.28	230.64	230.99	231.35	231.71	232.07	340
350	232.07	232.42	232.78	233.13	233.49	233.85	234.20	234.56	234.92	235.27	235.63	350
360	235.63	235.98	236.34	236.69	237.05	237.40	237.76	238.11	238.47	238.82	239.18	360
370	239.18	239.53	239.89	240.24	240.59	240.95	241.30	241.66	242.01	242.36	242.72	370
380	242.72	243.07	243.42	243.78	244.13	244.48	244.83	245.19	245.54	245.89	246.24	380
390	246.24	246.59	246.95	247.30	247.65	248.00	248.35	248.70	249.06	249.41	249.76	390
400	249.76	250.11	250.46	250.81	251.16	251.51	251.86	252.21	252.56	252.91	253.26	400
410	253.26	253.61	253.96	254.31	254.66	255.01	255.36	255.71	256.06	256.40	256.75	410
420	256.75	257.10	257.45	257.80	258.15	258.49	258.84	259.19	259.54	259.89	260.23	420
430	260.23	260.58	260.93	261.27	261.62	261.97	262.31	262.66	263.01	263.35	263.70	430
440	263.70	264.05	264.39	264.74	265.08	265.43	265.78	266.12	266.47	266.81	267.16	440
450	267.16	267.50	267.85	268.19	268.54	268.88	269.23	269.57	269.91	270.26	270.60	450
460	270.60	270.95	271.29	271.63	271.98	272.32	272.66	273.01	273.35	273.69	274.03	460
470	274.03	274.38	274.72	275.06	275.40	275.75	276.09	276.43	276.77	277.11	277.46	470
480	277.46	277.80	278.14	278.48	278.82	279.16	279.50	279.84	280.18	280.52	280.87	480
490	280.87	281.21	281.55	281.89	282.23	282.57	282.91	283.24	283.58	283.92	284.26	490
500	284.26	284.60	284.94	285.28	285.62	285.96	286.30	286.63	286.97	287.31	287.65	500
510	287.65	287.99	288.32	288.66	289.00	289.34	289.67	290.01	290.35	290.69	291.02	510
520	291.02	291.36	291.70	292.03	292.37	292.71	293.04	293.38	293.71	294.05	294.39	520
530	294.39	294.72	295.06	295.39	295.73	296.06	296.40	296.73	297.07	297.40	297.74	530
540	297.74	298.07	298.41	298.74	299.07	299.41	299.74	300.07	300.41	300.74	301.08	540
550	301.08	301.41	301.74	302.07	302.41	302.74	303.07	303.41	303.74	304.07	304.40	550
560	304.40	304.73	305.07	305.40	305.73	306.06	306.39	306.72	307.06	307.39	307.72	560
570	307.72	308.05	308.38	308.71	309.04	309.37	309.70	310.03	310.36	310.69	311.02	570
580	311.02	311.35	311.68	312.01	312.34	312.67	313.00	313.33	313.66	313.99	314.31	580
590	314.31	314.64	314.97	315.30	315.63	315.96	316.28	316.61	316.94	317.27	317.59	590
600	317.59	317.92	318.25	318.58	318.90	319.23	319.56	319.88	320.21	320.54	320.86	600
610	320.86	321.19	321.52	321.84	322.17	322.49	322.82	323.14	323.47	323.79	324.12	610
620	324.12	324.44	324.77	325.09	325.42	325.74	326.07	326.39	326.72	327.04	327.36	620
630	327.36	327.69	328.01	328.34	328.66	328.98	329.31	329.63	329.95	330.28	330.60	630
640	330.60	330.92	331.24	331.57	331.89	332.21	332.53	332.85	333.18	333.50	333.82	640
650	333.82	334.14	334.46	334.78	335.11	335.43	335.75	336.07	336.39	336.71	337.03	650
660	337.03											660

°C	0	1	2	3	4	5	6	7	8	9	10	°C

TABLE 32 100 Ω *Platinum RTD* — *0.003 92 coefficient*
temperature in °F

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Resistance in Ohms						
-320	19.03	18.79	18.54	18.30	18.05	17.81	17.57	17.32	17.08			-320
-310	21.46	21.22	20.97	20.73	20.49	20.24	20.00	19.76	19.52	19.27	19.03	-310
-300	23.88	23.63	23.39	23.15	22.91	22.67	22.43	22.18	21.94	21.70	21.46	-300
-290	26.28	26.04	25.80	25.56	25.32	25.08	24.84	24.60	24.36	24.12	23.88	-290
-280	28.68	28.44	28.20	27.96	27.72	27.48	27.24	27.00	26.76	26.52	26.28	-280
-270	31.07	30.83	30.59	30.35	30.11	29.87	29.64	29.40	29.16	28.92	28.68	-270
-260	33.45	33.21	32.97	32.73	32.50	32.26	32.02	31.78	31.54	31.31	31.07	-260
-250	35.82	35.58	35.34	35.11	34.87	34.63	34.39	34.16	33.92	33.68	33.45	-250
-240	38.18	37.94	37.70	37.47	37.23	37.00	36.76	36.52	36.29	36.05	35.82	-240
-230	40.53	40.29	40.06	39.82	39.59	39.35	39.12	38.88	38.65	38.41	38.18	-230
-220	42.87	42.64	42.41	42.17	41.94	41.70	41.47	41.23	41.00	40.76	40.53	-220
-210	45.21	44.98	44.74	44.51	44.28	44.04	43.81	43.58	43.34	43.11	42.87	-210
-200	47.54	47.31	47.07	46.84	46.61	46.38	46.14	45.91	45.68	45.44	45.21	-200
-190	49.86	49.63	49.40	49.17	48.93	48.70	48.47	48.24	48.00	47.77	47.54	-190
-180	52.18	51.95	51.72	51.48	51.25	51.02	50.79	50.56	50.33	50.09	49.86	-180
-170	54.49	54.26	54.02	53.79	53.56	53.33	53.10	52.87	52.64	52.41	52.18	-170
-160	56.79	56.56	56.33	56.10	55.87	55.64	55.41	55.18	54.95	54.72	54.49	-160
-150	59.08	58.86	58.63	58.40	58.17	57.94	57.71	57.48	57.25	57.02	56.79	-150
-140	61.37	61.15	60.92	60.69	60.46	60.23	60.00	59.77	59.54	59.31	59.08	-140
-130	63.66	63.43	63.20	62.97	62.75	62.52	62.29	62.06	61.83	61.60	61.37	-130
-120	65.94	65.71	65.48	65.25	65.03	64.80	64.57	64.34	64.11	63.89	63.66	-120
-110	68.21	67.98	67.76	67.53	67.30	67.07	66.85	66.62	66.39	66.16	65.94	-110
-100	70.48	70.25	70.03	69.80	69.57	69.35	69.12	68.89	68.66	68.44	68.21	-100
-90	72.74	72.52	72.29	72.06	71.84	71.61	71.38	71.16	70.93	70.71	70.48	-90
-80	75.00	74.77	74.55	74.32	74.10	73.87	73.65	73.42	73.19	72.97	72.74	-80
-70	77.25	77.03	76.80	76.58	76.35	76.13	75.90	75.68	75.45	75.23	75.00	-70
-60	79.50	79.28	79.05	78.83	78.60	78.38	78.15	77.93	77.70	77.48	77.25	-60
-50	81.75	81.52	81.30	81.07	80.85	80.63	80.40	80.18	79.95	79.73	79.50	-50
-40	83.99	83.76	83.54	83.32	83.09	82.87	82.64	82.42	82.20	81.97	81.75	-40
-30	86.22	86.00	85.78	85.55	85.33	85.11	84.88	84.66	84.44	84.21	83.99	-30
-20	88.46	88.23	88.01	87.79	87.56	87.34	87.12	86.89	86.67	86.45	86.22	-20
-10	90.68	90.46	90.24	90.02	89.79	89.57	89.35	89.12	88.90	88.68	88.46	-10
0	92.91	92.69	92.46	92.24	92.02	91.80	91.57	91.35	91.13	90.91	90.68	0
0	92.91	93.13	93.35	93.57	93.80	94.02	94.24	94.46	94.68	94.91	95.13	0
10	95.13	95.35	95.57	95.79	96.02	96.24	96.46	96.68	96.90	97.12	97.34	10
20	97.34	97.57	97.79	98.01	98.23	98.45	98.67	98.89	99.12	99.34	99.56	20
30	99.56	99.78	100.00	100.22	100.44	100.66	100.88	101.10	101.33	101.55	101.77	30
40	101.77	101.99	102.21	102.43	102.65	102.87	103.09	103.31	103.53	103.75	103.97	40
50	103.97	104.19	104.41	104.63	104.85	105.07	105.29	105.51	105.73	105.95	106.17	50
60	106.17	106.39	106.61	106.83	107.05	107.27	107.49	107.71	107.93	108.15	108.37	60
70	108.37	108.59	108.81	109.03	109.25	109.47	109.69	109.91	110.13	110.35	110.57	70
80	110.57	110.79	111.01	111.23	111.45	111.66	111.88	112.10	112.32	112.54	112.76	80
90	112.76	112.98	113.20	113.42	113.63	113.85	114.07	114.29	114.51	114.73	114.95	90
100	114.95	115.17	115.38	115.60	115.82	116.04	116.26	116.48	116.69	116.91	117.13	100
110	117.13	117.35	117.57	117.79	118.00	118.22	118.44	118.66	118.88	119.09	119.31	110
120	119.31	119.53	119.75	119.96	120.18	120.40	120.62	120.84	121.05	121.27	121.49	120
130	121.49	121.71	121.92	122.14	122.36	122.57	122.79	123.01	123.23	123.44	123.66	130
140	123.66	123.88	124.10	124.31	124.53	124.75	124.96	125.18	125.40	125.61	125.83	140

°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 32 100 Ω *Platinum RTD* — *0.003 92 coefficient*
temperature in °F

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Resistance in Ohms						
150	125.83	126.05	126.26	126.48	126.70	126.91	127.13	127.35	127.56	127.78	128.00	150
160	128.00	128.21	128.43	128.65	128.86	129.08	129.29	129.51	129.73	129.94	130.16	160
170	130.16	130.37	130.59	130.81	131.02	131.24	131.45	131.67	131.89	132.10	132.32	170
180	132.32	132.53	132.75	132.96	133.18	133.39	133.61	133.83	134.04	134.26	134.47	180
190	134.47	134.69	134.90	135.12	135.33	135.55	135.76	135.98	136.19	136.41	136.62	190
200	136.62	136.84	137.05	137.27	137.48	137.70	137.91	138.13	138.34	138.56	138.77	200
210	138.77	138.99	139.20	139.41	139.63	139.84	140.06	140.27	140.49	140.70	140.92	210
220	140.92	141.13	141.34	141.56	141.77	141.99	142.20	142.41	142.63	142.84	143.06	220
230	143.06	143.27	143.48	143.70	143.91	144.12	144.34	144.55	144.77	144.98	145.19	230
240	145.19	145.41	145.62	145.83	146.05	146.26	146.47	146.69	146.90	147.11	147.33	240
250	147.33	147.54	147.75	147.96	148.18	148.39	148.60	148.82	149.03	149.24	149.46	250
260	149.46	149.67	149.88	150.09	150.31	150.52	150.73	150.94	151.16	151.37	151.58	260
270	151.58	151.79	152.01	152.22	152.43	152.64	152.85	153.07	153.28	153.49	153.70	270
280	153.70	153.92	154.13	154.34	154.55	154.76	154.98	155.19	155.40	155.61	155.82	280
290	155.82	156.03	156.25	156.46	156.67	156.88	157.09	157.30	157.51	157.73	157.94	290
300	157.94	158.15	158.36	158.57	158.78	158.99	159.20	159.42	159.63	159.84	160.05	300
310	160.05	160.26	160.47	160.68	160.89	161.10	161.31	161.52	161.74	161.95	162.16	310
320	162.16	162.37	162.58	162.79	163.00	163.21	163.42	163.63	163.84	164.05	164.26	320
330	164.26	164.47	164.68	164.89	165.10	165.31	165.52	165.73	165.94	166.15	166.36	330
340	166.36	166.57	166.78	166.99	167.20	167.41	167.62	167.83	168.04	168.25	168.46	340
350	168.46	168.67	168.88	169.09	169.30	169.51	169.71	169.92	170.13	170.34	170.55	350
360	170.55	170.76	170.97	171.18	171.39	171.60	171.81	172.02	172.22	172.43	172.64	360
370	172.64	172.85	173.06	173.27	173.48	173.69	173.89	174.10	174.31	174.52	174.73	370
380	174.73	174.94	175.14	175.35	175.56	175.77	175.98	176.19	176.39	176.60	176.81	380
390	176.81	177.02	177.23	177.43	177.64	177.85	178.06	178.27	178.47	178.68	178.89	390
400	178.89	179.10	179.30	179.51	179.72	179.93	180.13	180.34	180.55	180.76	180.96	400
410	180.96	181.17	181.38	181.59	181.79	182.00	182.21	182.41	182.62	182.83	183.04	410
420	183.04	183.24	183.45	183.66	183.86	184.07	184.28	184.48	184.69	184.90	185.10	420
430	185.10	185.31	185.52	185.72	185.93	186.14	186.34	186.55	186.76	186.96	187.17	430
440	187.17	187.37	187.58	187.79	187.99	188.20	188.41	188.61	188.82	189.02	189.23	440
450	189.23	189.44	189.64	189.85	190.05	190.26	190.46	190.67	190.88	191.08	191.29	450
460	191.29	191.49	191.70	191.90	192.11	192.31	192.52	192.72	192.93	193.13	193.34	460
470	193.34	193.55	193.75	193.96	194.16	194.37	194.57	194.78	194.98	195.18	195.39	470
480	195.39	195.59	195.80	196.00	196.21	196.41	196.62	196.82	197.03	197.23	197.44	480
490	197.44	197.64	197.84	198.05	198.25	198.46	198.66	198.87	199.07	199.27	199.48	490
500	199.48	199.68	199.89	200.09	200.29	200.50	200.70	200.91	201.11	201.31	201.52	500
510	201.52	201.72	201.93	202.13	202.33	202.54	202.74	202.94	203.15	203.35	203.55	510
520	203.55	203.76	203.96	204.16	204.37	204.57	204.77	204.98	205.18	205.38	205.58	520
530	205.58	205.79	205.99	206.19	206.40	206.60	206.80	207.01	207.21	207.41	207.61	530
540	207.61	207.82	208.02	208.22	208.42	208.63	208.83	209.03	209.23	209.44	209.64	540
550	209.64	209.84	210.04	210.24	210.45	210.65	210.85	211.05	211.25	211.46	211.66	550
560	211.66	211.86	212.06	212.26	212.47	212.67	212.87	213.07	213.27	213.47	213.68	560
570	213.68	213.88	214.08	214.28	214.48	214.68	214.88	215.09	215.29	215.49	215.69	570
580	215.69	215.89	216.09	216.29	216.49	216.70	216.90	217.10	217.30	217.50	217.70	580
590	217.70	217.90	218.10	218.30	218.50	218.70	218.90	219.10	219.31	219.51	219.71	590
600	219.71	219.91	220.11	220.31	220.51	220.71	220.91	221.11	221.31	221.51	221.71	600
610	221.71	221.91	222.11	222.31	222.51	222.71	222.91	223.11	223.31	223.51	223.71	610
620	223.71	223.91	224.11	224.31	224.51	224.71	224.91	225.11	225.30	225.50	225.70	620
630	225.70	225.90	226.10	226.30	226.50	226.70	226.90	227.10	227.30	227.50	227.70	630
640	227.70	227.89	228.09	228.29	228.49	228.69	228.89	229.09	229.29	229.49	229.68	640

°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 32 100 Ω *Platinum RTD* — *0.003 92 coefficient*
temperature in °F

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Resistance in Ohms						
650	229.68	229.88	230.08	230.28	230.48	230.68	230.88	231.07	231.27	231.47	231.67	650
660	231.67	231.87	232.07	232.26	232.46	232.66	232.86	233.06	233.25	233.45	233.65	660
670	233.65	233.85	234.05	234.24	234.44	234.64	234.84	235.03	235.23	235.43	235.63	670
680	235.63	235.82	236.02	236.22	236.42	236.61	236.81	237.01	237.21	237.40	237.60	680
690	237.60	237.80	238.00	238.19	238.39	238.59	238.78	238.98	239.18	239.37	239.57	690
700	239.57	239.77	239.96	240.16	240.36	240.55	240.75	240.95	241.14	241.34	241.54	700
710	241.54	241.73	241.93	242.13	242.32	242.52	242.72	242.91	243.11	243.30	243.50	710
720	243.50	243.70	243.89	244.09	244.28	244.48	244.68	244.87	245.07	245.26	245.46	720
730	245.46	245.66	245.85	246.05	246.24	246.44	246.63	246.83	247.02	247.22	247.42	730
740	247.42	247.61	247.81	248.00	248.20	248.39	248.59	248.78	248.98	249.17	249.37	740
750	249.37	249.56	249.76	249.95	250.15	250.34	250.54	250.73	250.93	251.12	251.32	750
760	251.32	251.51	251.71	251.90	252.09	252.29	252.48	252.68	252.87	253.07	253.26	760
770	253.26	253.46	253.65	253.84	254.04	254.23	254.43	254.62	254.81	255.01	255.20	770
780	255.20	255.40	255.59	255.78	255.98	256.17	256.37	256.56	256.75	256.95	257.14	780
790	257.14	257.33	257.53	257.72	257.91	258.11	258.30	258.49	258.69	258.88	259.07	790
800	259.07	259.27	259.46	259.65	259.85	260.04	260.23	260.43	260.62	260.81	261.00	800
810	261.00	261.20	261.39	261.58	261.78	261.97	262.16	262.35	262.55	262.74	262.93	810
820	262.93	263.12	263.32	263.51	263.70	263.89	264.09	264.28	264.47	264.66	264.85	820
830	264.85	265.05	265.24	265.43	265.62	265.81	266.01	266.20	266.39	266.58	266.77	830
840	266.77	266.97	267.16	267.35	267.54	267.73	267.92	268.12	268.31	268.50	268.69	840
850	268.69	268.88	269.07	269.26	269.45	269.65	269.84	270.03	270.22	270.41	270.60	850
860	270.60	270.79	270.98	271.17	271.37	271.56	271.75	271.94	272.13	272.32	272.51	860
870	272.51	272.70	272.89	273.08	273.27	273.46	273.65	273.84	274.03	274.23	274.42	870
880	274.42	274.61	274.80	274.99	275.18	275.37	275.56	275.75	275.94	276.13	276.32	880
890	276.32	276.51	276.70	276.89	277.08	277.27	277.46	277.65	277.84	278.02	278.21	890
900	278.21	278.40	278.59	278.78	278.97	279.16	279.35	279.54	279.73	279.92	280.11	900
910	280.11	280.30	280.49	280.68	280.87	281.05	281.24	281.43	281.62	281.81	282.00	910
920	282.00	282.19	282.38	282.57	282.75	282.94	283.13	283.32	283.51	283.70	283.89	920
930	283.89	284.07	284.26	284.45	284.64	284.83	285.02	285.20	285.39	285.58	285.77	930
940	285.77	285.96	286.15	286.33	286.52	286.71	286.90	287.09	287.27	287.46	287.65	940
950	287.65	287.84	288.02	288.21	288.40	288.59	288.77	288.96	289.15	289.34	289.52	950
960	289.52	289.71	289.90	290.09	290.27	290.46	290.65	290.84	291.02	291.21	291.40	960
970	291.40	291.58	291.77	291.96	292.15	292.33	292.52	292.71	292.89	293.08	293.27	970
980	293.27	293.45	293.64	293.83	294.01	294.20	294.39	294.57	294.76	294.94	295.13	980
990	295.13	295.32	295.50	295.69	295.88	296.06	296.25	296.43	296.62	296.81	296.99	990
1000	296.99	297.18	297.36	297.55	297.74	297.92	298.11	298.29	298.48	298.67	298.85	1000
1010	298.85	299.04	299.22	299.41	299.59	299.78	299.96	300.15	300.33	300.52	300.70	1010
1020	300.70	300.89	301.08	301.26	301.45	301.63	301.82	302.00	302.19	302.37	302.56	1020
1030	302.56	302.74	302.93	303.11	303.29	303.48	303.66	303.85	304.03	304.22	304.40	1030
1040	304.40	304.59	304.77	304.96	305.14	305.32	305.51	305.69	305.88	306.06	306.25	1040
1050	306.25	306.43	306.61	306.80	306.98	307.17	307.35	307.53	307.72	307.90	308.09	1050
1060	308.09	308.27	308.45	308.64	308.82	309.00	309.19	309.37	309.56	309.74	309.92	1060
1070	309.92	310.11	310.29	310.47	310.66	310.84	311.02	311.21	311.39	311.57	311.75	1070
1080	311.75	311.94	312.12	312.30	312.49	312.67	312.85	313.04	313.22	313.40	313.58	1080
1090	313.58	313.77	313.95	314.13	314.31	314.50	314.68	314.86	315.04	315.23	315.41	1090
1100	315.41	315.59	315.77	315.96	316.14	316.32	316.50	316.68	316.87	317.05	317.23	1100
1110	317.23	317.41	317.59	317.78	317.96	318.14	318.32	318.50	318.69	318.87	319.05	1110
1120	319.05	319.23	319.41	319.59	319.77	319.96	320.14	320.32	320.50	320.68	320.86	1120
1130	320.86	321.04	321.23	321.41	321.59	321.77	321.95	322.13	322.31	322.49	322.67	1130
1140	322.67	322.85	323.04	323.22	323.40	323.58	323.76	323.94	324.12	324.30	324.48	1140

°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 32 100 Ω *Platinum RTD* — *0.003 92 coefficient*
temperature in °F

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Resistance in Ohms						
1150	324.48	324.66	324.84	325.02	325.20	325.38	325.56	325.74	325.92	326.10	326.28	1150
1160	326.28	326.46	326.64	326.82	327.00	327.18	327.36	327.54	327.72	327.90	328.08	1160
1170	328.08	328.26	328.44	328.62	328.80	328.98	329.16	329.34	329.52	329.70	329.88	1170
1180	329.88	330.06	330.24	330.42	330.60	330.78	330.96	331.14	331.32	331.49	331.67	1180
1190	331.67	331.85	332.03	332.21	332.39	332.57	332.75	332.93	333.10	333.28	333.46	1190
1200	333.46	333.64	333.82	334.00	334.18	334.36	334.53	334.71	334.89	335.07	335.25	1200
1210	335.25	335.43	335.60	335.78	335.96	336.14	336.32	336.50	336.67	336.85	337.03	1210
1220	337.03											1220

°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 33 10 Ω *Copper RTD* — *0.004 27 coefficient*
temperature in ℃

Cu°C

°C	0	1	2	3	4	5	6	7	8	9	10	°C
						Resistance in Ohms						
-200	1.058											200
-190	1.472	1.430	1.389	1.348	1.306	1.265	1.223	1.182	1.141	1.099	1.058	-190
-180	1.884	1.843	1.802	1.761	1.719	1.678	1.637	1.596	1.554	1.513	1.472	-180
-170	2.295	2.254	2.213	2.172	2.131	2.090	2.049	2.008	1.967	1.925	1.884	-170
-160	2.705	2.664	2.623	2.582	2.541	2.500	2.459	2.418	2.377	2.336	2.295	-160
-150	3.113	3.072	3.031	2.990	2.950	2.909	2.868	2.827	2.786	2.746	2.705	-150
-140	3.519	3.478	3.438	3.397	3.356	3.316	3.275	3.235	3.194	3.153	3.113	-140
-130	3.923	3.883	3.843	3.802	3.762	3.721	3.681	3.640	3.600	3.559	3.519	-130
-120	4.327	4.286	4.246	4.206	4.165	4.125	4.085	4.045	4.004	3.964	3.923	-120
-110	4.728	4.688	4.648	4.608	4.568	4.527	4.487	4.447	4.407	4.367	4.327	-110
-100	5.128	5.088	5.048	5.008	4.968	4.928	4.888	4.848	4.808	4.768	4.728	-100
-90	5.526	5.487	5.447	5.407	5.367	5.327	5.288	5.248	5.208	5.168	5.128	-90
-80	5.923	5.884	5.844	5.804	5.765	5.725	5.685	5.646	5.606	5.566	5.526	-80
-70	6.318	6.279	6.239	6.200	6.160	6.121	6.081	6.042	6.002	5.963	5.923	-70
-60	6.712	6.673	6.633	6.594	6.555	6.515	6.476	6.437	6.397	6.358	6.318	-60
-50	7.104	7.065	7.026	6.987	6.947	6.908	6.869	6.830	6.791	6.751	6.712	-50
-40	7.490	7.452	7.413	7.374	7.336	7.297	7.259	7.220	7.181	7.143	7.104	-40
-30	7.876	7.838	7.799	7.761	7.722	7.683	7.645	7.606	7.568	7.529	7.490	-30
-20	8.263	8.224	8.185	8.147	8.108	8.070	8.031	7.992	7.954	7.915	7.876	-20
-10	8.649	8.610	8.572	8.533	8.494	8.456	8.417	8.378	8.340	8.301	8.263	-10
0	9.035	8.996	8.958	8.919	8.881	8.842	8.803	8.765	8.726	8.687	8.649	0
0	9.035	9.074	9.112	9.151	9.189	9.228	9.267	9.305	9.344	9.383	9.421	0
10	9.421	9.460	9.498	9.537	9.576	9.614	9.653	9.692	9.730	9.769	9.807	10
20	9.807	9.846	9.885	9.923	9.962	10.000	10.039	10.078	10.116	10.155	10.194	20
30	10.194	10.232	10.271	10.309	10.348	10.387	10.425	10.464	10.502	10.541	10.580	30
40	10.580	10.618	10.657	10.696	10.734	10.773	10.811	10.850	10.889	10.927	10.966	40
50	10.966	11.005	11.043	11.082	11.120	11.159	11.198	11.236	11.275	11.313	11.352	50
60	11.352	11.391	11.429	11.468	11.507	11.545	11.584	11.622	11.661	11.700	11.738	60
70	11.738	11.777	11.816	11.854	11.893	11.931	11.970	12.009	12.047	12.086	12.124	70
80	12.124	12.163	12.202	12.240	12.279	12.318	12.356	12.395	12.433	12.472	12.511	80
90	12.511	12.549	12.588	12.627	12.665	12.704	12.742	12.781	12.820	12.858	12.897	90
100	12.897	12.935	12.974	13.013	13.051	13.090	13.129	13.167	13.206	13.244	13.283	100
110	13.283	13.322	13.360	13.399	13.437	13.476	13.515	13.553	13.592	13.631	13.669	110
120	13.669	13.708	13.746	13.785	13.824	13.862	13.901	13.940	13.978	14.017	14.055	120
130	14.055	14.094	14.133	14.171	14.210	14.248	14.287	14.326	14.364	14.403	14.442	130
140	14.442	14.480	14.519	14.557	14.596	14.635	14.673	14.712	14.751	14.789	14.828	140
150	14.828	14.867	14.906	14.945	14.984	15.022	15.061	15.100	15.139	15.178	15.217	150
160	15.217	15.256	15.295	15.334	15.373	15.412	15.451	15.490	15.529	15.568	15.607	160
170	15.607	15.646	15.685	15.724	15.763	15.802	15.840	15.879	15.918	15.957	15.996	170
180	15.996	16.035	16.074	16.113	16.152	16.191	16.230	16.269	16.308	16.347	16.386	180
190	16.386	16.425	16.464	16.503	16.542	16.581	16.620	16.659	16.698	16.737	16.776	190
200	16.776	16.815	16.854	16.893	16.932	16.971	17.010	17.049	17.088	17.127	17.166	200
210	17.166	17.205	17.244	17.283	17.322	17.360	17.399	17.438	17.477	17.516	17.555	210
220	17.555	17.594	17.633	17.672	17.711	17.750	17.789	17.828	17.867	17.906	17.945	220
230	17.945	17.984	18.023	18.062	18.101	18.140	18.179	18.218	18.257	18.296	18.335	230
240	18.335	18.374	18.413	18.452	18.491	18.530	18.569	18.609	18.648	18.687	18.726	240
250	18.726	18.765	18.804	18.843	18.882	18.921	18.960	18.999	19.038	19.077	19.116	250
260	19.116											260

°C	0	1	2	3	4	5	6	7	8	9	10	°C

TABLE 34 10 Ω *Copper RTD* — *0.004 27 coefficient*
temperature in °F

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Resistance in Ohms						
-320	1.242	1.219	1.196	1.173	1.150	1.127	1.104	1.081	1.058			-320
-310	1.472	1.449	1.426	1.403	1.380	1.357	1.334	1.311	1.288	1.265	1.242	-310
-300	1.701	1.678	1.655	1.632	1.609	1.587	1.564	1.541	1.518	1.495	1.472	-300
-290	1.930	1.907	1.884	1.861	1.839	1.816	1.793	1.770	1.747	1.724	1.701	-290
-280	2.158	2.136	2.113	2.090	2.067	2.044	2.021	1.999	1.976	1.953	1.930	-280
-270	2.386	2.364	2.341	2.318	2.295	2.272	2.250	2.227	2.204	2.181	2.158	-270
-260	2.614	2.591	2.568	2.546	2.523	2.500	2.477	2.455	2.432	2.409	2.386	-260
-250	2.841	2.818	2.795	2.773	2.750	2.727	2.705	2.682	2.659	2.637	2.614	-250
-240	3.067	3.045	3.022	2.999	2.977	2.954	2.931	2.909	2.886	2.863	2.841	-240
-230	3.293	3.271	3.248	3.226	3.203	3.180	3.158	3.135	3.113	3.090	3.067	-230
-220	3.519	3.496	3.474	3.451	3.429	3.406	3.384	3.361	3.338	3.316	3.293	-220
-210	3.744	3.721	3.699	3.676	3.654	3.631	3.609	3.586	3.564	3.541	3.519	-210
-200	3.968	3.946	3.923	3.901	3.879	3.856	3.834	3.811	3.789	3.766	3.744	-200
-190	4.192	4.170	4.148	4.125	4.103	4.080	4.058	4.036	4.013	3.991	3.968	-190
-180	4.416	4.394	4.371	4.349	4.327	4.304	4.282	4.259	4.237	4.215	4.192	-180
-170	4.639	4.617	4.594	4.572	4.550	4.527	4.505	4.483	4.461	4.438	4.416	-170
-160	4.862	4.839	4.817	4.795	4.773	4.750	4.728	4.706	4.684	4.661	4.639	-160
-150	5.084	5.061	5.039	5.017	4.995	4.973	4.950	4.928	4.906	4.884	4.862	-150
-140	5.305	5.283	5.261	5.239	5.217	5.195	5.172	5.150	5.128	5.106	5.084	-140
-130	5.526	5.504	5.482	5.460	5.438	5.416	5.394	5.372	5.350	5.327	5.305	-130
-120	5.747	5.725	5.703	5.681	5.659	5.637	5.615	5.593	5.571	5.548	5.526	-120
-110	5.967	5.945	5.923	5.901	5.879	5.857	5.835	5.813	5.791	5.769	5.747	-110
-100	6.187	6.165	6.143	6.121	6.099	6.077	6.055	6.033	6.011	5.989	5.967	-100
-90	6.406	6.384	6.362	6.340	6.318	6.296	6.275	6.253	6.231	6.209	6.187	-90
-80	6.625	6.603	6.581	6.559	6.537	6.515	6.494	6.472	6.450	6.428	6.406	-80
-70	6.843	6.821	6.799	6.777	6.756	6.734	6.712	6.690	6.668	6.647	6.625	-70
-60	7.061	7.039	7.017	6.995	6.974	6.952	6.930	6.908	6.886	6.865	6.843	-60
-50	7.276	7.254	7.233	7.211	7.190	7.168	7.147	7.126	7.104	7.082	7.061	-50
-40	7.490	7.469	7.447	7.426	7.404	7.383	7.362	7.340	7.319	7.297	7.276	-40
-30	7.705	7.683	7.662	7.640	7.619	7.598	7.576	7.555	7.533	7.512	7.490	-30
-20	7.919	7.898	7.876	7.855	7.834	7.812	7.791	7.769	7.748	7.726	7.705	-20
-10	8.134	8.112	8.091	8.070	8.048	8.027	8.005	7.984	7.962	7.941	7.919	-10
0	8.348	8.327	8.306	8.284	8.263	8.241	8.220	8.198	8.177	8.155	8.134	0
0	8.348	8.370	8.391	8.413	8.434	8.456	8.477	8.499	8.520	8.542	8.563	0
10	8.563	8.584	8.606	8.627	8.649	8.670	8.692	8.713	8.735	8.756	8.778	10
20	8.778	8.799	8.820	8.842	8.863	8.885	8.906	8.928	8.949	8.971	8.992	20
30	8.992	9.014	9.035	9.056	9.078	9.099	9.121	9.142	9.164	9.185	9.207	30
40	9.207	9.228	9.250	9.271	9.292	9.314	9.335	9.357	9.378	9.400	9.421	40
50	9.421	9.443	9.464	9.486	9.507	9.528	9.550	9.571	9.593	9.614	9.636	50
60	9.636	9.657	9.679	9.700	9.722	9.743	9.764	9.786	9.807	9.829	9.850	60
70	9.850	9.872	9.893	9.915	9.936	9.958	9.979	10.000	10.022	10.043	10.065	70
80	10.065	10.086	10.108	10.129	10.151	10.172	10.194	10.215	10.236	10.258	10.279	80
90	10.279	10.301	10.322	10.344	10.365	10.387	10.408	10.430	10.451	10.472	10.494	90
100	10.494	10.515	10.537	10.558	10.580	10.601	10.623	10.644	10.666	10.687	10.708	100
110	10.708	10.730	10.751	10.773	10.794	10.816	10.837	10.859	10.880	10.902	10.923	110
120	10.923	10.944	10.966	10.987	11.009	11.030	11.052	11.073	11.095	11.116	11.138	120
130	11.138	11.159	11.180	11.202	11.223	11.245	11.266	11.288	11.309	11.331	11.352	130
140	11.352	11.374	11.395	11.416	11.438	11.459	11.481	11.502	11.524	11.545	11.567	140

°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 34 ***10 Ω Copper RTD*** **—** *0.004 27 coefficient*
temperature in °F

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Resistance in Ohms						
150	11.567	11.588	11.610	11.631	11.652	11.674	11.695	11.717	11.738	11.760	11.781	150
160	11.781	11.803	11.824	11.846	11.867	11.888	11.910	11.931	11.953	11.974	11.996	160
170	11.996	12.017	12.039	12.060	12.082	12.103	12.124	12.146	12.167	12.189	12.210	170
180	12.210	12.232	12.253	12.275	12.296	12.318	12.339	12.360	12.382	12.403	12.425	180
190	12.425	12.446	12.468	12.489	12.511	12.532	12.554	12.575	12.596	12.618	12.639	190
200	12.639	12.661	12.682	12.704	12.725	12.747	12.768	12.790	12.811	12.832	12.854	200
210	12.854	12.875	12.897	12.918	12.940	12.961	12.983	13.004	13.026	13.047	13.068	210
220	13.068	13.090	13.111	13.133	13.154	13.176	13.197	13.219	13.240	13.262	13.283	220
230	13.283	13.304	13.326	13.347	13.369	13.390	13.412	13.433	13.455	13.476	13.498	230
240	13.498	13.519	13.540	13.562	13.583	13.605	13.626	13.648	13.669	13.691	13.712	240
250	13.712	13.734	13.755	13.776	13.798	13.819	13.841	13.862	13.884	13.905	13.927	250
260	13.927	13.948	13.970	13.991	14.012	14.034	14.055	14.077	14.098	14.120	14.141	260
270	14.141	14.163	14.184	14.206	14.227	14.248	14.270	14.291	14.313	14.334	14.356	270
280	14.356	14.377	14.399	14.420	14.442	14.463	14.484	14.506	14.527	14.549	14.570	280
290	14.570	14.592	14.613	14.635	14.656	14.678	14.699	14.720	14.742	14.763	14.785	290
300	14.785	14.806	14.828	14.849	14.871	14.893	14.914	14.936	14.958	14.979	15.001	300
310	15.001	15.022	15.044	15.066	15.087	15.109	15.131	15.152	15.174	15.196	15.217	310
320	15.217	15.239	15.260	15.282	15.304	15.325	15.347	15.369	15.390	15.412	15.434	320
330	15.434	15.455	15.477	15.499	15.520	15.542	15.563	15.585	15.607	15.628	15.650	330
340	15.650	15.672	15.693	15.715	15.737	15.758	15.780	15.802	15.823	15.845	15.866	340
350	15.866	15.888	15.910	15.931	15.953	15.975	15.996	16.018	16.040	16.061	16.083	350
360	16.083	16.105	16.126	16.148	16.170	16.191	16.213	16.234	16.256	16.278	16.299	360
370	16.299	16.321	16.343	16.364	16.386	16.408	16.429	16.451	16.473	16.494	16.516	370
380	16.516	16.538	16.559	16.581	16.603	16.624	16.646	16.667	16.689	16.711	16.732	380
390	16.732	16.754	16.776	16.797	16.819	16.841	16.862	16.884	16.906	16.927	16.949	390
400	16.949	16.971	16.992	17.014	17.036	17.057	17.079	17.101	17.122	17.144	17.166	400
410	17.166	17.187	17.209	17.231	17.252	17.274	17.296	17.317	17.339	17.360	17.382	410
420	17.382	17.404	17.425	17.447	17.469	17.490	17.512	17.534	17.555	17.577	17.599	420
430	17.599	17.620	17.642	17.664	17.685	17.707	17.729	17.750	17.772	17.794	17.815	430
440	17.815	17.837	17.859	17.880	17.902	17.924	17.945	17.967	17.989	18.010	18.032	440
450	18.032	18.054	18.075	18.097	18.119	18.140	18.162	18.184	18.205	18.227	18.249	450
460	18.249	18.270	18.292	18.314	18.335	18.357	18.379	18.400	18.422	18.444	18.465	460
470	18.465	18.487	18.509	18.530	18.552	18.574	18.595	18.617	18.639	18.661	18.682	470
480	18.682	18.704	18.726	18.747	18.769	18.791	18.812	18.834	18.856	18.877	18.899	480
490	18.899	18.921	18.942	18.964	18.986	19.007	19.029	19.051	19.072	19.094	19.116	490
500	19.116											500

°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 35 120 Ω *Nickel RTD* — *0.006 72 coefficient*
temperature in ℃

°C	0	1	2	3	4	5	6	7	8	9	10	°C
						Resistance in Ohms						
-80	66.60											-80
-70	73.10	72.45	71.80	71.15	70.50	69.85	69.20	68.55	67.90	67.25	66.60	-70
-60	79.62	78.97	78.31	77.66	77.01	76.36	75.71	75.06	74.41	73.75	73.10	-60
-50	86.16	85.51	84.85	84.20	83.54	82.89	82.23	81.58	80.93	80.27	79.62	-50
-40	92.76	92.09	91.43	90.77	90.11	89.45	88.79	88.14	87.48	86.82	86.16	-40
-30	99.41	98.74	98.07	97.41	96.74	96.07	95.41	94.74	94.08	93.42	92.76	-30
-20	106.15	105.47	104.79	104.12	103.44	102.77	102.09	101.42	100.75	100.08	99.41	-20
-10	113.00	112.31	111.62	110.93	110.25	109.56	108.88	108.19	107.51	106.83	106.15	-10
0	120.00	119.29	118.59	117.88	117.18	116.48	115.78	115.09	114.39	113.70	113.00	0
0	120.00	120.71	121.42	122.13	122.85	123.56	124.28	125.00	125.72	126.44	127.17	0
10	127.17	127.89	128.62	129.35	130.09	130.82	131.56	132.29	133.03	133.77	134.52	10
20	134.52	135.26	136.01	136.76	137.51	138.26	139.02	139.78	140.54	141.30	142.06	20
30	142.06	142.82	143.59	144.36	145.13	145.90	146.68	147.46	148.24	149.02	149.80	30
40	149.80	150.59	151.37	152.16	152.95	153.75	154.54	155.34	156.14	156.94	157.75	40
50	157.75	158.55	159.36	160.17	160.98	161.80	162.61	163.43	164.25	165.07	165.90	50
60	165.90	166.73	167.56	168.39	169.22	170.06	170.90	171.74	172.58	173.42	174.27	60
70	174.27	175.12	175.97	176.82	177.68	178.53	179.39	180.25	181.12	181.98	182.85	70
80	182.85	183.72	184.59	185.46	186.34	187.22	188.10	188.98	189.87	190.75	191.64	80
90	191.64	192.53	193.42	194.32	195.21	196.11	197.01	197.92	198.82	199.73	200.64	90
100	200.64	201.55	202.47	203.38	204.30	205.22	206.14	207.07	207.99	208.92	209.85	100
110	209.85	210.79	211.72	212.66	213.60	214.54	215.49	216.43	217.38	218.34	219.29	110
120	219.29	220.25	221.20	222.16	223.13	224.09	225.06	226.03	227.00	227.97	228.95	120
130	228.95	229.93	230.91	231.89	232.88	233.86	234.85	235.85	236.84	237.84	238.84	130
140	238.84	239.84	240.84	241.85	242.85	243.86	244.88	245.89	246.91	247.93	248.95	140
150	248.95	249.97	251.00	252.03	253.06	254.09	255.13	256.17	257.21	258.25	259.30	150
160	259.30	260.34	261.39	262.45	263.50	264.56	265.62	266.69	267.75	268.82	269.89	160
170	269.89	270.97	272.05	273.13	274.21	275.30	276.38	277.48	278.57	279.67	280.77	170
180	280.77	281.87	282.98	284.09	285.20	286.32	287.44	288.56	289.69	290.82	291.95	180
190	291.95	293.08	294.22	295.37	296.51	297.66	298.81	299.97	301.13	302.29	303.45	190
200	303.45	304.62	305.80	306.97	308.15	309.34	310.52	311.72	312.91	314.11	315.31	200
210	315.31	316.52	317.73	318.94	320.16	321.38	322.60	323.83	325.06	326.30	327.54	210
220	327.54	328.78	330.03	331.28	332.53	333.79	335.05	336.32	337.59	338.87	340.14	220
230	340.14	341.43	342.71	344.00	345.29	346.59	347.89	349.20	350.51	351.82	353.14	230
240	353.14	354.46	355.79	357.12	358.45	359.79	361.13	362.47	363.82	365.17	366.53	240
250	366.53	367.89	369.26	370.62	372.00	373.37	374.75	376.14	377.52	378.91	380.31	250
260	380.31											260

| °C | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | °C |

TABLE 36 ***120 Ω Nickel RTD*** *— 0.006 72 coefficient*
temperature in °F

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Resistance in Ohms						
-110	67.32	66.96	66.60									-110
-100	70.93	70.57	70.21	69.85	69.49	69.13	68.77	68.41	68.04	67.68	67.32	-100
-90	74.55	74.19	73.83	73.46	73.10	72.74	72.38	72.02	71.66	71.30	70.93	-90
-80	78.17	77.81	77.45	77.08	76.72	76.36	76.00	75.64	75.27	74.91	74.55	-80
-70	81.80	81.43	81.07	80.71	80.35	79.98	79.62	79.26	78.89	78.53	78.17	-70
-60	85.44	85.07	84.71	84.34	83.98	83.62	83.25	82.89	82.52	82.16	81.80	-60
-50	89.09	88.72	88.36	87.99	87.62	87.26	86.89	86.53	86.16	85.80	85.44	-50
-40	92.76	92.39	92.02	91.65	91.29	90.92	90.55	90.19	89.82	89.45	89.09	-40
-30	96.44	96.07	95.70	95.33	94.97	94.60	94.23	93.86	93.49	93.12	92.76	-30
-20	100.15	99.78	99.41	99.04	98.67	98.30	97.92	97.55	97.18	96.81	96.44	-20
-10	103.89	103.52	103.14	102.77	102.39	102.02	101.65	101.27	100.90	100.53	100.15	-10
0	107.66	107.28	106.91	106.53	106.15	105.77	105.40	105.02	104.64	104.27	103.89	0
0	107.66	108.04	108.42	108.80	109.18	109.56	109.94	110.32	110.70	111.09	111.47	0
10	111.47	111.85	112.23	112.62	113.00	113.39	113.77	114.16	114.54	114.93	115.32	10
20	115.32	115.71	116.09	116.48	116.87	117.26	117.65	118.04	118.43	118.82	119.21	20
30	119.21	119.61	120.00	120.39	120.79	121.18	121.58	121.97	122.37	122.77	123.16	30
40	123.16	123.56	123.96	124.36	124.76	125.16	125.56	125.96	126.36	126.76	127.17	40
50	127.17	127.57	127.98	128.38	128.79	129.19	129.60	130.00	130.41	130.82	131.23	50
60	131.23	131.64	132.05	132.46	132.87	133.28	133.69	134.11	134.52	134.93	135.35	60
70	135.35	135.76	136.18	136.59	137.01	137.43	137.85	138.26	138.68	139.10	139.52	70
80	139.52	139.95	140.37	140.79	141.21	141.64	142.06	142.48	142.91	143.34	143.76	80
90	143.76	144.19	144.62	145.05	145.48	145.90	146.34	146.77	147.20	147.63	148.06	90
100	148.06	148.50	148.93	149.37	149.80	150.24	150.67	151.11	151.55	151.99	152.43	100
110	152.43	152.87	153.31	153.75	154.19	154.63	155.07	155.52	155.96	156.41	156.85	110
120	156.85	157.30	157.75	158.19	158.64	159.09	159.54	159.99	160.44	160.89	161.34	120
130	161.34	161.80	162.25	162.70	163.16	163.61	164.07	164.53	164.98	165.44	165.90	130
140	165.90	166.36	166.82	167.28	167.74	168.20	168.67	169.13	169.59	170.06	170.52	140
150	170.52	170.99	171.46	171.92	172.39	172.86	173.33	173.80	174.27	174.74	175.21	150
160	175.21	175.68	176.16	176.63	177.10	177.58	178.06	178.53	179.01	179.49	179.97	160
170	179.97	180.44	180.92	181.40	181.89	182.37	182.85	183.33	183.82	184.30	184.78	170
180	184.78	185.27	185.76	186.24	186.73	187.22	187.71	188.20	188.69	189.18	189.67	180
190	189.67	190.16	190.65	191.15	191.64	192.13	192.63	193.12	193.62	194.12	194.62	190
200	194.62	195.11	195.61	196.11	196.61	197.11	197.62	198.12	198.62	199.12	199.63	200
210	199.63	200.13	200.64	201.15	201.65	202.16	202.67	203.18	203.69	204.20	204.71	210
220	204.71	205.22	205.73	206.24	206.76	207.27	207.79	208.30	208.82	209.34	209.85	220
230	209.85	210.37	210.89	211.41	211.93	212.45	212.97	213.50	214.02	214.54	215.07	230
240	215.07	215.59	216.12	216.65	217.17	217.70	218.23	218.76	219.29	219.82	220.35	240
250	220.35	220.88	221.42	221.95	222.48	223.02	223.56	224.09	224.63	225.17	225.70	250
260	225.70	226.24	226.78	227.32	227.87	228.41	228.95	229.49	230.04	230.58	231.13	260
270	231.13	231.67	232.22	232.77	233.32	233.86	234.41	234.96	235.52	236.07	236.62	270
280	236.62	237.17	237.73	238.28	238.84	239.39	239.95	240.51	241.06	241.62	242.18	280
290	242.18	242.74	243.30	243.86	244.43	244.99	245.55	246.12	246.68	247.25	247.82	290
300	247.82	248.38	248.95	249.52	250.09	250.66	251.23	251.80	252.37	252.94	253.52	300
310	253.52	254.09	254.67	255.24	255.82	256.40	256.98	257.55	258.13	258.71	259.30	310
320	259.30	259.88	260.46	261.04	261.63	262.21	262.80	263.39	263.97	264.56	265.15	320
330	265.15	265.74	266.33	266.92	267.52	268.11	268.70	269.30	269.89	270.49	271.09	330
340	271.09	271.69	272.29	272.89	273.49	274.09	274.69	275.30	275.90	276.51	277.11	340

°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 36 120 Ω *Nickel RTD* — *0.006 72 coefficient*
temperature in °F

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Resistance in Ohms						
350	277.11	277.72	278.33	278.94	279.55	280.16	280.77	281.38	282.00	282.61	283.23	350
360	283.23	283.84	284.46	285.08	285.70	286.32	286.94	287.56	288.19	288.81	289.44	360
370	289.44	290.06	290.69	291.32	291.95	292.58	293.21	293.84	294.48	295.11	295.75	370
380	295.75	296.38	297.02	297.66	298.30	298.94	299.58	300.22	300.87	301.51	302.16	380
390	302.16	302.81	303.45	304.10	304.75	305.41	306.06	306.71	307.37	308.02	308.68	390
400	308.68	309.34	310.00	310.66	311.32	311.98	312.64	313.31	313.97	314.64	315.31	400
410	315.31	315.98	316.65	317.32	317.99	318.67	319.34	320.02	320.70	321.38	322.06	410
420	322.06	322.74	323.42	324.10	324.79	325.47	326.16	326.85	327.54	328.23	328.92	420
430	328.92	329.61	330.30	331.00	331.70	332.39	333.09	333.79	334.49	335.19	335.90	430
440	335.90	336.60	337.31	338.02	338.72	339.43	340.14	340.86	341.57	342.28	343.00	440
450	343.00	343.71	344.43	345.15	345.87	346.59	347.32	348.04	348.76	349.49	350.22	450
460	350.22	350.95	351.68	352.41	353.14	353.87	354.61	355.34	356.08	356.82	357.56	460
470	357.56	358.30	359.04	359.79	360.53	361.28	362.02	362.77	363.52	364.27	365.02	470
480	365.02	365.78	366.53	367.29	368.04	368.80	369.56	370.32	371.08	371.84	372.61	480
490	372.61	373.37	374.14	374.91	375.67	376.44	377.21	377.99	378.76	379.53	380.31	490
500	380.31											500

°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 37 604 Ω *Nickel - Iron RTD* — *0.005 18 coefficient*
temperature in ℃

Ni-Fe°C

°C	0	1	2	3	4	5	6	7	8	9	10	°C
					Resistance in Ohms							
-200	245.34											-200
-190	253.42	252.56	251.72	250.89	250.06	249.25	248.45	247.66	246.88	246.10	245.34	-190
-180	262.53	261.57	260.63	259.69	258.76	257.85	256.94	256.04	255.16	254.28	253.42	-180
-170	272.68	271.62	270.57	269.53	268.50	267.48	266.47	265.47	264.48	263.50	262.53	-170
-160	283.87	282.70	281.55	280.40	279.27	278.15	277.03	275.93	274.84	273.75	272.68	-160
-150	296.10	294.83	293.57	292.32	291.08	289.85	288.64	287.43	286.23	285.05	283.87	-150
-140	309.36	307.99	306.62	305.27	303.93	302.60	301.28	299.97	298.67	297.38	296.10	-140
-130	323.66	322.18	320.72	319.26	317.82	316.38	314.95	313.54	312.14	310.74	309.36	-130
-120	339.00	337.42	335.85	334.29	332.74	331.20	329.67	328.15	326.64	325.15	323.66	-120
-110	355.37	353.69	352.02	350.35	348.70	347.06	345.42	343.80	342.19	340.59	339.00	-110
-100	372.79	371.00	369.22	367.46	365.70	363.95	362.22	360.49	358.77	357.07	355.37	-100
-90	391.24	389.35	387.47	385.60	383.74	381.89	380.05	378.22	376.40	374.59	372.79	-90
-80	410.73	408.73	406.75	404.77	402.81	400.86	398.91	396.98	395.06	393.14	391.24	-80
-70	431.26	429.16	427.07	424.99	422.92	420.86	418.82	416.78	414.75	412.74	410.73	-70
-60	452.82	450.62	448.43	446.24	444.07	441.91	439.76	437.62	435.49	433.37	431.26	-60
-50	475.42	473.12	470.82	468.53	466.26	463.99	461.74	459.49	457.26	455.03	452.82	-50
-40	499.06	496.65	494.25	491.86	489.48	487.11	484.76	482.41	480.07	477.74	475.42	-40
-30	523.74	521.23	518.72	516.23	513.75	511.27	508.81	506.36	503.92	501.48	499.06	-30
-20	549.46	546.84	544.23	541.63	539.05	536.47	533.90	531.35	528.80	526.27	523.74	-20
-10	576.21	573.49	570.78	568.07	565.38	562.70	560.03	557.37	554.72	552.09	549.46	-10
0	604.00	601.17	598.36	595.55	592.76	589.97	587.20	584.44	581.68	578.94	576.21	0
0	604.00	606.78	609.57	612.36	615.17	617.98	620.79	623.62	626.45	629.28	632.13	0
10	632.13	634.98	637.84	640.71	643.58	646.46	649.35	652.24	655.14	658.05	660.97	10
20	660.97	663.89	666.82	669.76	672.71	675.66	678.62	681.58	684.56	687.54	690.52	20
30	690.52	693.52	696.52	699.53	702.54	705.57	708.60	711.63	714.68	717.73	720.79	30
40	720.79	723.85	726.93	730.01	733.09	736.19	739.29	742.40	745.51	748.64	751.77	40
50	751.77	754.90	758.05	761.20	764.36	767.52	770.69	773.87	777.06	780.25	783.45	50
60	783.45	786.66	789.88	793.10	796.33	799.57	802.81	806.06	809.32	812.58	815.86	60
70	815.86	819.13	822.42	825.71	829.01	832.32	835.64	838.96	842.29	845.62	848.97	70
80	848.97	852.32	855.68	859.04	862.41	865.79	869.18	872.57	875.97	879.38	882.79	80
90	882.79	886.21	889.64	893.08	896.52	899.97	903.43	906.89	910.37	913.84	917.33	90
100	917.33	920.82	924.32	927.83	931.34	934.87	938.39	941.93	945.47	949.02	952.58	100
110	952.58	956.14	959.71	963.29	966.88	970.47	974.07	977.68	981.29	984.91	988.54	110
120	988.54	992.18	995.82	999.47	1003.1	1006.8	1010.5	1014.1	1017.8	1021.5	1025.2	120
130	1025.2	1028.9	1032.6	1036.4	1040.1	1043.8	1047.6	1051.3	1055.1	1058.8	1062.6	130
140	1062.6	1066.4	1070.2	1074.0	1077.8	1081.6	1085.4	1089.2	1093.0	1096.9	1100.7	140
150	1100.7	1104.5	1108.4	1112.3	1116.1	1120.0	1123.9	1127.8	1131.7	1135.6	1139.5	150
160	1139.5	1143.4	1147.4	1151.3	1155.2	1159.2	1163.1	1167.1	1171.1	1175.0	1179.0	160
170	1179.0	1183.0	1187.0	1191.0	1195.0	1199.1	1203.1	1207.1	1211.2	1215.2	1219.3	170
180	1219.3	1223.3	1227.4	1231.5	1235.6	1239.6	1243.7	1247.8	1252.0	1256.1	1260.2	180
190	1260.2	1264.3	1268.5	1272.6	1276.8	1280.9	1285.1	1289.3	1293.5	1297.7	1301.9	190
200	1301.9	1306.1	1310.3	1314.5	1318.7							200

°C	0	1	2	3	4	5	6	7	8	9	10	°C

Ni-Fe°F

TABLE 38 604 Ω *Nickel - Iron RTD* — *0.005 18 coefficient*
temperature in °F

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Resistance in Ohms						
-320	248.80	248.36	247.92	247.48	247.05	246.62	246.19	245.77	245.34			-320
-310	253.42	252.94	252.47	252.00	251.53	251.07	250.61	250.16	249.70	249.25	248.80	-310
-300	258.35	257.85	257.34	256.84	256.34	255.85	255.35	254.87	254.38	253.90	253.42	-300
-290	263.61	263.07	262.53	262.00	261.47	260.94	260.42	259.90	259.38	258.86	258.35	-290
-280	269.18	268.61	268.04	267.48	266.91	266.36	265.80	265.25	264.70	264.15	263.61	-280
-270	275.08	274.47	273.87	273.28	272.68	272.09	271.50	270.92	270.34	269.76	269.18	-270
-260	281.29	280.66	280.03	279.40	278.77	278.15	277.53	276.91	276.30	275.69	275.08	-260
-250	287.83	287.16	286.50	285.84	285.18	284.52	283.87	283.22	282.58	281.93	281.29	-250
-240	294.69	293.99	293.29	292.60	291.91	291.22	290.53	289.85	289.18	288.50	287.83	-240
-230	301.86	301.13	300.40	299.68	298.95	298.23	297.52	296.81	296.10	295.39	294.69	-230
-220	309.36	308.59	307.83	307.08	306.32	305.57	304.82	304.08	303.34	302.60	301.86	-220
-210	317.18	316.38	315.59	314.80	314.01	313.23	312.45	311.67	310.90	310.13	309.36	-210
-200	325.31	324.48	323.66	322.84	322.02	321.20	320.39	319.58	318.78	317.98	317.18	-200
-190	333.77	332.91	332.05	331.20	330.35	329.50	328.66	327.82	326.98	326.14	325.31	-190
-180	342.55	341.66	340.77	339.88	339.00	338.12	337.24	336.37	335.50	334.63	333.77	-180
-170	351.65	350.72	349.80	348.88	347.97	347.06	346.15	345.24	344.34	343.44	342.55	-170
-160	361.06	360.11	359.16	358.21	357.26	356.32	355.37	354.44	353.50	352.57	351.65	-160
-150	370.80	369.81	368.83	367.85	366.87	365.89	364.92	363.95	362.99	362.02	361.06	-150
-140	380.86	379.84	378.82	377.81	376.80	375.79	374.79	373.79	372.79	371.79	370.80	-140
-130	391.24	390.19	389.14	388.09	387.05	386.01	384.97	383.94	382.91	381.89	380.86	-130
-120	401.94	400.86	399.77	398.70	397.62	396.55	395.48	394.42	393.35	392.30	391.24	-120
-110	412.96	411.84	410.73	409.62	408.51	407.41	406.31	405.21	404.12	403.03	401.94	-110
-100	424.30	423.15	422.01	420.86	419.72	418.59	417.46	416.33	415.20	414.08	412.96	-100
-90	435.96	434.78	433.60	432.43	431.26	430.09	428.92	427.76	426.61	425.45	424.30	-90
-80	447.94	446.73	445.52	444.31	443.11	441.91	440.71	439.52	438.33	437.14	435.96	-80
-70	460.24	459.00	457.75	456.52	455.28	454.05	452.82	451.60	450.37	449.16	447.94	-70
-60	472.86	471.58	470.31	469.04	467.77	466.51	465.25	463.99	462.74	461.49	460.24	-60
-50	485.80	484.49	483.19	481.89	480.59	479.29	478.00	476.71	475.42	474.14	472.86	-50
-40	499.06	497.72	496.39	495.05	493.72	492.39	491.07	489.75	488.43	487.11	485.80	-40
-30	512.65	511.27	509.90	508.54	507.17	505.81	504.46	503.10	501.75	500.41	499.06	-30
-20	526.55	525.14	523.74	522.34	520.95	519.56	518.17	516.78	515.40	514.02	512.65	-20
-10	540.77	539.33	537.90	536.47	535.04	533.62	532.20	530.78	529.37	527.96	526.55	-10
0	555.31	553.84	552.38	550.92	549.46	548.00	546.55	545.10	543.65	542.21	540.77	0
0	555.31	556.78	558.26	559.74	561.22	562.70	564.19	565.68	567.18	568.67	570.17	0
10	570.17	571.68	573.19	574.70	576.21	577.73	579.25	580.77	582.30	583.82	585.36	10
20	585.36	586.89	588.43	589.97	591.52	593.07	594.62	596.18	597.73	599.30	600.86	20
30	600.86	602.43	604.00	605.54	607.09	608.64	610.19	611.74	613.30	614.85	616.41	30
40	616.41	617.98	619.54	621.11	622.67	624.24	625.82	627.39	628.97	630.55	632.13	40
50	632.13	633.71	635.30	636.89	638.48	640.07	641.66	643.26	644.86	646.46	648.06	50
60	648.06	649.67	651.28	652.89	654.50	656.11	657.73	659.35	660.97	662.59	664.22	60
70	664.22	665.85	667.48	669.11	670.74	672.38	674.02	675.66	677.30	678.95	680.59	70
80	680.59	682.24	683.89	685.55	687.20	688.86	690.52	692.19	693.85	695.52	697.19	80
90	697.19	698.86	700.53	702.21	703.89	705.57	707.25	708.93	710.62	712.31	714.00	90
100	714.00	715.69	717.39	719.09	720.79	722.49	724.19	725.90	727.61	729.32	731.03	100
110	731.03	732.75	734.47	736.19	737.91	739.63	741.36	743.09	744.82	746.55	748.29	110
120	748.29	750.03	751.77	753.51	755.25	757.00	758.75	760.50	762.25	764.00	765.76	120
130	765.76	767.52	769.28	771.05	772.81	774.58	776.35	778.12	779.90	781.67	783.45	130
140	783.45	785.24	787.02	788.80	790.59	792.38	794.18	795.97	797.77	799.57	801.37	140

°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 38 ***604 Ω Nickel - Iron RTD*** *— 0.005 18 coefficient temperature in °F*

Ni-Fe°F

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Resistance in Ohms						
150	801.37	803.17	804.98	806.78	808.59	810.41	812.22	814.04	815.86	817.68	819.50	150
160	819.50	821.32	823.15	824.98	826.81	828.65	830.48	832.32	834.16	836.01	837.85	160
170	837.85	839.70	841.55	843.40	845.25	847.11	848.97	850.83	852.69	854.56	856.42	170
180	856.42	858.29	860.16	862.04	863.91	865.79	867.67	869.55	871.44	873.33	875.21	180
190	875.21	877.11	879.00	880.90	882.79	884.69	886.60	888.50	890.41	892.32	894.23	190
200	894.23	896.14	898.05	899.97	901.89	903.81	905.74	907.67	909.59	911.52	913.46	200
210	913.46	915.39	917.33	919.27	921.21	923.16	925.10	927.05	929.00	930.95	932.91	210
220	932.91	934.87	936.82	938.79	940.75	942.72	944.68	946.65	948.63	950.60	952.58	220
230	952.58	954.56	956.54	958.52	960.51	962.50	964.49	966.48	968.47	970.47	972.47	230
240	972.47	974.47	976.47	978.48	980.49	982.50	984.51	986.52	988.54	990.56	992.58	240
250	992.58	994.60	996.63	998.66	1000.7	1002.7	1004.8	1006.8	1008.8	1010.9	1012.9	250
260	1012.9	1015.0	1017.0	1019.1	1021.1	1023.2	1025.2	1027.3	1029.3	1031.4	1033.5	260
270	1033.5	1035.5	1037.6	1039.7	1041.7	1043.8	1045.9	1048.0	1050.1	1052.1	1054.2	270
280	1054.2	1056.3	1058.4	1060.5	1062.6	1064.7	1066.8	1068.9	1071.0	1073.1	1075.2	280
290	1075.2	1077.3	1079.4	1081.6	1083.7	1085.8	1087.9	1090.0	1092.2	1094.3	1096.4	290
300	1096.4	1098.6	1100.7	1102.8	1105.0	1107.1	1109.3	1111.4	1113.6	1115.7	1117.9	300
310	1117.9	1120.0	1122.2	1124.3	1126.5	1128.7	1130.8	1133.0	1135.2	1137.3	1139.5	310
320	1139.5	1141.7	1143.9	1146.0	1148.2	1150.4	1152.6	1154.8	1157.0	1159.2	1161.4	320
330	1161.4	1163.6	1165.8	1168.0	1170.2	1172.4	1174.6	1176.8	1179.0	1181.2	1183.5	330
340	1183.5	1185.7	1187.9	1190.1	1192.4	1194.6	1196.8	1199.1	1201.3	1203.5	1205.8	340
350	1205.8	1208.0	1210.3	1212.5	1214.8	1217.0	1219.3	1221.5	1223.8	1226.0	1228.3	350
360	1228.3	1230.6	1232.8	1235.1	1237.4	1239.6	1241.9	1244.2	1246.5	1248.8	1251.0	360
370	1251.0	1253.3	1255.6	1257.9	1260.2	1262.5	1264.8	1267.1	1269.4	1271.7	1274.0	370
380	1274.0	1276.3	1278.6	1280.9	1283.3	1285.6	1287.9	1290.2	1292.5	1294.9	1297.2	380
390	1297.2	1299.5	1301.9	1304.2	1306.5	1308.9	1311.2	1313.6	1315.9	1318.3	1320.6	390
400	1320.6											400

°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 39 100 Ω *Platinum RTD* — *0.003 90 coefficient*
temperature in °C

°C	0	1	2	3	4	5	6	7	8	9	10	°C
						Resistance in Ohms						
-200	17.47											-200
-190	21.83	21.40	20.96	20.53	20.09	19.66	19.22	18.78	18.35	17.91	17.47	-190
-180	26.16	25.73	25.30	24.86	24.43	24.00	23.57	23.13	22.70	22.27	21.83	-180
-170	30.45	30.03	29.60	29.17	28.74	28.31	27.88	27.45	27.02	26.59	26.16	-170
-160	34.72	34.29	33.87	33.44	33.01	32.59	32.16	31.74	31.31	30.88	30.45	-160
-150	38.95	38.53	38.11	37.68	37.26	36.84	36.41	35.99	35.57	35.14	34.72	-150
-140	43.16	42.74	42.32	41.90	41.48	41.06	40.64	40.22	39.79	39.37	38.95	-140
-130	47.34	46.92	46.50	46.09	45.67	45.25	44.83	44.41	44.00	43.58	43.16	-130
-120	51.50	51.08	50.67	50.25	49.84	49.42	49.00	48.59	48.17	47.76	47.34	-120
-110	55.63	55.22	54.81	54.39	53.98	53.57	53.15	52.74	52.33	51.91	51.50	-110
-100	59.75	59.34	58.93	58.52	58.10	57.69	57.28	56.87	56.46	56.04	55.63	-100
-90	63.84	63.43	63.03	62.62	62.21	61.80	61.39	60.98	60.57	60.16	59.75	-90
-80	67.92	67.51	67.11	66.70	66.29	65.88	65.48	65.07	64.66	64.25	63.84	-80
-70	71.98	71.58	71.17	70.76	70.36	69.95	69.55	69.14	68.73	68.33	67.92	-70
-60	76.03	75.62	75.22	74.81	74.41	74.00	73.60	73.20	72.79	72.39	71.98	-60
-50	80.05	79.65	79.25	78.85	78.44	78.04	77.64	77.24	76.83	76.43	76.03	-50
-40	84.07	83.67	83.27	82.87	82.47	82.06	81.66	81.26	80.86	80.46	80.05	-40
-30	88.07	87.67	87.27	86.87	86.47	86.07	85.67	85.27	84.87	84.47	84.07	-30
-20	92.06	91.66	91.26	90.86	90.47	90.07	89.67	89.27	88.87	88.47	88.07	-20
-10	96.04	95.64	95.24	94.84	94.45	94.05	93.65	93.25	92.86	92.46	92.06	-10
0	100.00	99.60	99.21	98.81	98.42	98.02	97.62	97.23	96.83	96.43	96.04	0
0	100.00	100.40	100.79	101.19	101.58	101.98	102.37	102.77	103.16	103.56	103.95	0
10	103.95	104.35	104.74	105.14	105.53	105.92	106.32	106.71	107.11	107.50	107.89	10
20	107.89	108.29	108.68	109.07	109.47	109.86	110.25	110.64	111.04	111.43	111.82	20
30	111.82	112.21	112.61	113.00	113.39	113.78	114.17	114.57	114.96	115.35	115.74	30
40	115.74	116.13	116.52	116.91	117.30	117.69	118.08	118.48	118.87	119.26	119.65	40
50	119.65	120.04	120.43	120.82	121.20	121.59	121.98	122.37	122.76	123.15	123.54	50
60	123.54	123.93	124.32	124.71	125.09	125.48	125.87	126.26	126.65	127.03	127.42	60
70	127.42	127.81	128.20	128.58	128.97	129.36	129.75	130.13	130.52	130.91	131.29	70
80	131.29	131.68	132.07	132.45	132.84	133.22	133.61	134.00	134.38	134.77	135.15	80
90	135.15	135.54	135.92	136.31	136.69	137.08	137.46	137.85	138.23	138.62	139.00	90
100	139.00	139.38	139.77	140.15	140.54	140.92	141.30	141.69	142.07	142.45	142.84	100
110	142.84	143.22	143.60	143.98	144.37	144.75	145.13	145.51	145.90	146.28	146.66	110
120	146.66	147.04	147.42	147.80	148.19	148.57	148.95	149.33	149.71	150.09	150.47	120
130	150.47	150.85	151.23	151.61	151.99	152.37	152.75	153.13	153.51	153.89	154.27	130
140	154.27	154.65	155.03	155.41	155.79	156.17	156.55	156.93	157.31	157.68	158.06	140
150	158.06	158.44	158.82	159.20	159.57	159.95	160.33	160.71	161.09	161.46	161.84	150
160	161.84	162.22	162.59	162.97	163.35	163.72	164.10	164.48	164.85	165.23	165.61	160
170	165.61	165.98	166.36	166.73	167.11	167.48	167.86	168.23	168.61	168.99	169.36	170
180	169.36	169.73	170.11	170.48	170.86	171.23	171.61	171.98	172.35	172.73	173.10	180
190	173.10	173.48	173.85	174.22	174.60	174.97	175.34	175.72	176.09	176.46	176.83	190
200	176.83	177.21	177.58	177.95	178.32	178.69	179.07	179.44	179.81	180.18	180.55	200
210	180.55	180.92	181.29	181.67	182.04	182.41	182.78	183.15	183.52	183.89	184.26	210
220	184.26	184.63	185.00	185.37	185.74	186.11	186.48	186.85	187.22	187.59	187.96	220
230	187.96	188.32	188.69	189.06	189.43	189.80	190.17	190.54	190.90	191.27	191.64	230
240	191.64	192.01	192.38	192.74	193.11	193.48	193.84	194.21	194.58	194.95	195.31	240
250	195.31	195.68	196.05	196.41	196.78	197.14	197.51	197.88	198.24	198.61	198.97	250
260	198.97	199.34	199.70	200.07	200.43	200.80	201.16	201.53	201.89	202.26	202.62	260
270	202.62	202.99	203.35	203.71	204.08	204.44	204.81	205.17	205.53	205.90	206.26	270
280	206.26	206.62	206.99	207.35	207.71	208.07	208.44	208.80	209.16	209.52	209.89	280
290	209.89	210.25	210.61	210.97	211.33	211.69	212.06	212.42	212.78	213.14	213.50	290
°C	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**°C**

TABLE 39 100 Ω *Platinum RTD* — *0.003 90 coefficient*
temperature in ℃

°C	0	1	2	3	4	5	6	7	8	9	10	°C
						Resistance in Ohms						
300	213.50	213.86	214.22	214.58	214.94	215.30	215.66	216.02	216.38	216.74	217.10	300
310	217.10	217.46	217.82	218.18	218.54	218.90	219.26	219.62	219.98	220.33	220.69	310
320	220.69	221.05	221.41	221.77	222.13	222.48	222.84	223.20	223.56	223.91	224.27	320
330	224.27	224.63	224.99	225.34	225.70	226.06	226.41	226.77	227.13	227.48	227.84	330
340	227.84	228.20	228.55	228.91	229.26	229.62	229.97	230.33	230.69	231.04	231.40	340
350	231.40	231.75	232.11	232.46	232.81	233.17	233.52	233.88	234.23	234.59	234.94	350
360	234.94	235.29	235.65	236.00	236.35	236.71	237.06	237.41	237.77	238.12	238.47	360
370	238.47	238.82	239.18	239.53	239.88	240.23	240.59	240.94	241.29	241.64	241.99	370
380	241.99	242.34	242.70	243.05	243.40	243.75	244.10	244.45	244.80	245.15	245.50	380
390	245.50	245.85	246.20	246.55	246.90	247.25	247.60	247.95	248.30	248.65	249.00	390
400	249.00	249.35	249.70	250.05	250.39	250.74	251.09	251.44	251.79	252.14	252.49	400
410	252.49	252.83	253.18	253.53	253.88	254.22	254.57	254.92	255.27	255.61	255.96	410
420	255.96	256.31	256.65	257.00	257.35	257.69	258.04	258.38	258.73	259.08	259.42	420
430	259.42	259.77	260.11	260.46	260.80	261.15	261.49	261.84	262.18	262.53	262.87	430
440	262.87	263.22	263.56	263.91	264.25	264.59	264.94	265.28	265.62	265.97	266.31	440
450	266.31	266.65	267.00	267.34	267.68	268.03	268.37	268.71	269.05	269.40	269.74	450
460	269.74	270.08	270.42	270.76	271.11	271.45	271.79	272.13	272.47	272.81	273.15	460
470	273.15	273.50	273.84	274.18	274.52	274.86	275.20	275.54	275.88	276.22	276.56	470
480	276.56	276.90	277.24	277.58	277.92	278.26	278.60	278.93	279.27	279.61	279.95	480
490	279.95	280.29	280.63	280.97	281.31	281.64	281.98	282.32	282.66	282.99	283.33	490
500	283.33	283.67	284.01	284.34	284.68	285.02	285.35	285.69	286.03	286.36	286.70	500
510	286.70	287.04	287.37	287.71	288.05	288.38	288.72	289.05	289.39	289.72	290.06	510
520	290.06	290.39	290.73	291.06	291.40	291.73	292.07	292.40	292.74	293.07	293.40	520
530	293.40	293.74	294.07	294.41	294.74	295.07	295.41	295.74	296.07	296.41	296.74	530
540	296.74	297.07	297.40	297.74	298.07	298.40	298.73	299.07	299.40	299.73	300.06	540
550	300.06	300.39	300.72	301.06	301.39	301.72	302.05	302.38	302.71	303.04	303.37	550
560	303.37	303.70	304.03	304.36	304.69	305.02	305.35	305.68	306.01	306.34	306.67	560
570	306.67	307.00	307.33	307.66	307.99	308.32	308.64	308.97	309.30	309.63	309.96	570
580	309.96	310.29	310.61	310.94	311.27	311.60	311.93	312.25	312.58	312.91	313.23	580
590	313.23	313.56	313.89	314.21	314.54	314.87	315.19	315.52	315.85	316.17	316.50	590
600	316.50	316.82	317.15	317.48	317.80	318.13	318.45	318.78	319.10	319.43	319.75	600
610	319.75	320.08	320.40	320.72	321.05	321.37	321.70	322.02	322.34	322.67	322.99	610
620	322.99	323.31	323.64	323.96	324.28	324.61	324.93	325.25	325.58	325.90	326.22	620
630	326.22	326.54	326.86	327.19	327.51	327.83	328.15	328.47	328.80	329.12	329.44	630
640	329.44	329.76	330.08	330.40	330.72	331.04	331.36	331.68	332.00	332.32	332.64	640
650	332.64	332.96	333.28	333.60	333.92	334.24	334.56	334.88	335.20	335.52	335.84	650
660	335.84											660

°C	0	1	2	3	4	5	6	7	8	9	10	°C

TABLE 40 100 Ω *Platinum RTD* — *0.003 90 coefficient*
temperature in °F

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Resistance in Ohms						
-320	19.41	19.17	18.93	18.69	18.44	18.20	17.96	17.71	17.47			-320
-310	21.83	21.59	21.35	21.11	20.87	20.62	20.38	20.14	19.90	19.66	19.41	-310
-300	24.24	24.00	23.76	23.52	23.28	23.04	22.80	22.56	22.31	22.07	21.83	-300
-290	26.64	26.40	26.16	25.92	25.68	25.44	25.20	24.96	24.72	24.48	24.24	-290
-280	29.03	28.79	28.55	28.31	28.07	27.83	27.59	27.36	27.12	26.88	26.64	-280
-270	31.40	31.17	30.93	30.69	30.45	30.22	29.98	29.74	29.50	29.26	29.03	-270
-260	33.77	33.53	33.30	33.06	32.83	32.59	32.35	32.11	31.88	31.64	31.40	-260
-250	36.13	35.90	35.66	35.42	35.19	34.95	34.72	34.48	34.24	34.01	33.77	-250
-240	38.48	38.25	38.01	37.78	37.54	37.31	37.07	36.84	36.60	36.37	36.13	-240
-230	40.82	40.59	40.36	40.12	39.89	39.65	39.42	39.18	38.95	38.72	38.48	-230
-220	43.16	42.92	42.69	42.46	42.22	41.99	41.76	41.52	41.29	41.06	40.82	-220
-210	45.48	45.25	45.02	44.79	44.55	44.32	44.09	43.86	43.62	43.39	43.16	-210
-200	47.80	47.57	47.34	47.11	46.88	46.64	46.41	46.18	45.95	45.72	45.48	-200
-190	50.11	49.88	49.65	49.42	49.19	48.96	48.73	48.50	48.26	48.03	47.80	-190
-180	52.42	52.19	51.96	51.73	51.50	51.27	51.04	50.81	50.57	50.34	50.11	-180
-170	54.72	54.49	54.26	54.03	53.80	53.57	53.34	53.11	52.88	52.65	52.42	-170
-160	57.01	56.78	56.55	56.32	56.09	55.86	55.63	55.40	55.17	54.94	54.72	-160
-150	59.29	59.06	58.83	58.61	58.38	58.15	57.92	57.69	57.46	57.24	57.01	-150
-140	61.57	61.34	61.11	60.89	60.66	60.43	60.20	59.98	59.75	59.52	59.29	-140
-130	63.84	63.62	63.39	63.16	62.93	62.71	62.48	62.25	62.03	61.80	61.57	-130
-120	66.11	65.88	65.66	65.43	65.20	64.98	64.75	64.52	64.30	64.07	63.84	-120
-110	68.37	68.15	67.92	67.69	67.47	67.24	67.02	66.79	66.56	66.34	66.11	-110
-100	70.63	70.40	70.18	69.95	69.73	69.50	69.28	69.05	68.82	68.60	68.37	-100
-90	72.88	72.66	72.43	72.21	71.98	71.76	71.53	71.31	71.08	70.85	70.63	-90
-80	75.13	74.90	74.68	74.45	74.23	74.00	73.78	73.56	73.33	73.11	72.88	-80
-70	77.37	77.15	76.92	76.70	76.47	76.25	76.03	75.80	75.58	75.35	75.13	-70
-60	79.61	79.38	79.16	78.94	78.71	78.49	78.27	78.04	77.82	77.59	77.37	-60
-50	81.84	81.62	81.39	81.17	80.95	80.72	80.50	80.28	80.05	79.83	79.61	-50
-40	84.07	83.85	83.62	83.40	83.18	82.96	82.73	82.51	82.29	82.06	81.84	-40
-30	86.29	86.07	85.85	85.63	85.40	85.18	84.96	84.74	84.51	84.29	84.07	-30
-20	88.51	88.29	88.07	87.85	87.63	87.40	87.18	86.96	86.74	86.52	86.29	-20
-10	90.73	90.51	90.29	90.07	89.85	89.62	89.40	89.18	88.96	88.74	88.51	-10
0	92.94	92.72	92.50	92.28	92.06	91.84	91.62	91.40	91.17	90.95	90.73	0
0	92.94	93.17	93.39	93.61	93.83	94.05	94.27	94.49	94.71	94.93	95.15	0
10	95.15	95.37	95.59	95.82	96.04	96.26	96.48	96.70	96.92	97.14	97.36	10
20	97.36	97.58	97.80	98.02	98.24	98.46	98.68	98.90	99.12	99.34	99.56	20
30	99.56	99.78	100.00	100.22	100.44	100.66	100.88	101.10	101.32	101.54	101.76	30
40	101.76	101.98	102.20	102.42	102.64	102.86	103.08	103.29	103.51	103.73	103.95	40
50	103.95	104.17	104.39	104.61	104.83	105.05	105.27	105.49	105.71	105.92	106.14	50
60	106.14	106.36	106.58	106.80	107.02	107.24	107.46	107.67	107.89	108.11	108.33	60
70	108.33	108.55	108.77	108.99	109.20	109.42	109.64	109.86	110.08	110.30	110.51	70
80	110.51	110.73	110.95	111.17	111.39	111.60	111.82	112.04	112.26	112.48	112.69	80
90	112.69	112.91	113.13	113.35	113.57	113.78	114.00	114.22	114.44	114.65	114.87	90
100	114.87	115.09	115.31	115.52	115.74	115.96	116.17	116.39	116.61	116.83	117.04	100
110	117.04	117.26	117.48	117.69	117.91	118.13	118.35	118.56	118.78	119.00	119.21	110
120	119.21	119.43	119.65	119.86	120.08	120.30	120.51	120.73	120.95	121.16	121.38	120
130	121.38	121.59	121.81	122.03	122.24	122.46	122.68	122.89	123.11	123.32	123.54	130
140	123.54	123.76	123.97	124.19	124.40	124.62	124.84	125.05	125.27	125.48	125.70	140

°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 40 100 Ω *Platinum RTD* — *0.003 90 coefficient*
temperature in °F

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Resistance in Ohms						
150	125.70	125.91	126.13	126.35	126.56	126.78	126.99	127.21	127.42	127.64	127.85	150
160	127.85	128.07	128.28	128.50	128.71	128.93	129.14	129.36	129.57	129.79	130.00	160
170	130.00	130.22	130.43	130.65	130.86	131.08	131.29	131.51	131.72	131.94	132.15	170
180	132.15	132.37	132.58	132.80	133.01	133.22	133.44	133.65	133.87	134.08	134.30	180
190	134.30	134.51	134.72	134.94	135.15	135.37	135.58	135.79	136.01	136.22	136.44	190
200	136.44	136.65	136.86	137.08	137.29	137.51	137.72	137.93	138.15	138.36	138.57	200
210	138.57	138.79	139.00	139.21	139.43	139.64	139.85	140.07	140.28	140.49	140.71	210
220	140.71	140.92	141.13	141.35	141.56	141.77	141.98	142.20	142.41	142.62	142.84	220
230	142.84	143.05	143.26	143.47	143.69	143.90	144.11	144.32	144.54	144.75	144.96	230
240	144.96	145.17	145.39	145.60	145.81	146.02	146.24	146.45	146.66	146.87	147.08	240
250	147.08	147.30	147.51	147.72	147.93	148.14	148.36	148.57	148.78	148.99	149.20	250
260	149.20	149.41	149.63	149.84	150.05	150.26	150.47	150.68	150.90	151.11	151.32	260
270	151.32	151.53	151.74	151.95	152.16	152.37	152.59	152.80	153.01	153.22	153.43	270
280	153.43	153.64	153.85	154.06	154.27	154.48	154.69	154.91	155.12	155.33	155.54	280
290	155.54	155.75	155.96	156.17	156.38	156.59	156.80	157.01	157.22	157.43	157.64	290
300	157.64	157.85	158.06	158.27	158.48	158.69	158.90	159.11	159.32	159.53	159.74	300
310	159.74	159.95	160.16	160.37	160.58	160.79	161.00	161.21	161.42	161.63	161.84	310
320	161.84	162.05	162.26	162.47	162.68	162.89	163.10	163.31	163.52	163.72	163.93	320
330	163.93	164.14	164.35	164.56	164.77	164.98	165.19	165.40	165.61	165.81	166.02	330
340	166.02	166.23	166.44	166.65	166.86	167.07	167.28	167.48	167.69	167.90	168.11	340
350	168.11	168.32	168.53	168.74	168.94	169.15	169.36	169.57	169.78	169.98	170.19	350
360	170.19	170.40	170.61	170.82	171.02	171.23	171.44	171.65	171.86	172.06	172.27	360
370	172.27	172.48	172.69	172.89	173.10	173.31	173.52	173.73	173.93	174.14	174.35	370
380	174.35	174.55	174.76	174.97	175.18	175.38	175.59	175.80	176.01	176.21	176.42	380
390	176.42	176.63	176.83	177.04	177.25	177.45	177.66	177.87	178.07	178.28	178.49	390
400	178.49	178.69	178.90	179.11	179.31	179.52	179.73	179.93	180.14	180.35	180.55	400
410	180.55	180.76	180.96	181.17	181.38	181.58	181.79	182.00	182.20	182.41	182.61	410
420	182.61	182.82	183.03	183.23	183.44	183.64	183.85	184.05	184.26	184.47	184.67	420
430	184.67	184.88	185.08	185.29	185.49	185.70	185.90	186.11	186.31	186.52	186.73	430
440	186.73	186.93	187.14	187.34	187.55	187.75	187.96	188.16	188.37	188.57	188.78	440
450	188.78	188.98	189.18	189.39	189.59	189.80	190.00	190.21	190.41	190.62	190.82	450
460	190.82	191.03	191.23	191.44	191.64	191.84	192.05	192.25	192.46	192.66	192.87	460
470	192.87	193.07	193.27	193.48	193.68	193.89	194.09	194.29	194.50	194.70	194.90	470
480	194.90	195.11	195.31	195.52	195.72	195.92	196.13	196.33	196.53	196.74	196.94	480
490	196.94	197.14	197.35	197.55	197.75	197.96	198.16	198.36	198.57	198.77	198.97	490
500	198.97	199.18	199.38	199.58	199.79	199.99	200.19	200.39	200.60	200.80	201.00	500
510	201.00	201.20	201.41	201.61	201.81	202.01	202.22	202.42	202.62	202.82	203.03	510
520	203.03	203.23	203.43	203.63	203.84	204.04	204.24	204.44	204.64	204.85	205.05	520
530	205.05	205.25	205.45	205.65	205.86	206.06	206.26	206.46	206.66	206.86	207.07	530
540	207.07	207.27	207.47	207.67	207.87	208.07	208.28	208.48	208.68	208.88	209.08	540
550	209.08	209.28	209.48	209.68	209.89	210.09	210.29	210.49	210.69	210.89	211.09	550
560	211.09	211.29	211.49	211.69	211.89	212.10	212.30	212.50	212.70	212.90	213.10	560
570	213.10	213.30	213.50	213.70	213.90	214.10	214.30	214.50	214.70	214.90	215.10	570
580	215.10	215.30	215.50	215.70	215.90	216.10	216.30	216.50	216.70	216.90	217.10	580
590	217.10	217.30	217.50	217.70	217.90	218.10	218.30	218.50	218.70	218.90	219.10	590
600	219.10	219.30	219.50	219.70	219.90	220.10	220.29	220.49	220.69	220.89	221.09	600
610	221.09	221.29	221.49	221.69	221.89	222.09	222.29	222.48	222.68	222.88	223.08	610
620	223.08	223.28	223.48	223.68	223.87	224.07	224.27	224.47	224.67	224.87	225.07	620
630	225.07	225.26	225.46	225.66	225.86	226.06	226.26	226.45	226.65	226.85	227.05	630
640	227.05	227.25	227.44	227.64	227.84	228.04	228.24	228.43	228.63	228.83	229.03	640
°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 40 100 Ω *Platinum RTD* — *0.003 90 coefficient*
temperature in °F

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Resistance in Ohms						
650	229.03	229.22	229.42	229.62	229.82	230.01	230.21	230.41	230.61	230.80	231.00	650
660	231.00	231.20	231.40	231.59	231.79	231.99	232.18	232.38	232.58	232.77	232.97	660
670	232.97	233.17	233.37	233.56	233.76	233.96	234.15	234.35	234.55	234.74	234.94	670
680	234.94	235.14	235.33	235.53	235.73	235.92	236.12	236.31	236.51	236.71	236.90	680
690	236.90	237.10	237.30	237.49	237.69	237.88	238.08	238.28	238.47	238.67	238.86	690
700	238.86	239.06	239.26	239.45	239.65	239.84	240.04	240.23	240.43	240.62	240.82	700
710	240.82	241.02	241.21	241.41	241.60	241.80	241.99	242.19	242.38	242.58	242.77	710
720	242.77	242.97	243.16	243.36	243.55	243.75	243.94	244.14	244.33	244.53	244.72	720
730	244.72	244.92	245.11	245.31	245.50	245.70	245.89	246.09	246.28	246.47	246.67	730
740	246.67	246.86	247.06	247.25	247.45	247.64	247.83	248.03	248.22	248.42	248.61	740
750	248.61	248.81	249.00	249.19	249.39	249.58	249.77	249.97	250.16	250.36	250.55	750
760	250.55	250.74	250.94	251.13	251.32	251.52	251.71	251.90	252.10	252.29	252.49	760
770	252.49	252.68	252.87	253.06	253.26	253.45	253.64	253.84	254.03	254.22	254.42	770
780	254.42	254.61	254.80	255.00	255.19	255.38	255.57	255.77	255.96	256.15	256.34	780
790	256.34	256.54	256.73	256.92	257.11	257.31	257.50	257.69	257.88	258.08	258.27	790
800	258.27	258.46	258.65	258.85	259.04	259.23	259.42	259.61	259.81	260.00	260.19	800
810	260.19	260.38	260.57	260.76	260.96	261.15	261.34	261.53	261.72	261.92	262.11	810
820	262.11	262.30	262.49	262.68	262.87	263.06	263.26	263.45	263.64	263.83	264.02	820
830	264.02	264.21	264.40	264.59	264.78	264.98	265.17	265.36	265.55	265.74	265.93	830
840	265.93	266.12	266.31	266.50	266.69	266.88	267.07	267.26	267.46	267.65	267.84	840
850	267.84	268.03	268.22	268.41	268.60	268.79	268.98	269.17	269.36	269.55	269.74	850
860	269.74	269.93	270.12	270.31	270.50	270.69	270.88	271.07	271.26	271.45	271.64	860
870	271.64	271.83	272.02	272.21	272.40	272.59	272.78	272.97	273.15	273.34	273.53	870
880	273.53	273.72	273.91	274.10	274.29	274.48	274.67	274.86	275.05	275.24	275.43	880
890	275.43	275.61	275.80	275.99	276.18	276.37	276.56	276.75	276.94	277.13	277.31	890
900	277.31	277.50	277.69	277.88	278.07	278.26	278.44	278.63	278.82	279.01	279.20	900
910	279.20	279.39	279.57	279.76	279.95	280.14	280.33	280.52	280.70	280.89	281.08	910
920	281.08	281.27	281.46	281.64	281.83	282.02	282.21	282.39	282.58	282.77	282.96	920
930	282.96	283.14	283.33	283.52	283.71	283.89	284.08	284.27	284.46	284.64	284.83	930
940	284.83	285.02	285.21	285.39	285.58	285.77	285.95	286.14	286.33	286.51	286.70	940
950	286.70	286.89	287.07	287.26	287.45	287.63	287.82	288.01	288.19	288.38	288.57	950
960	288.57	288.75	288.94	289.13	289.31	289.50	289.69	289.87	290.06	290.24	290.43	960
970	290.43	290.62	290.80	290.99	291.18	291.36	291.55	291.73	291.92	292.10	292.29	970
980	292.29	292.48	292.66	292.85	293.03	293.22	293.40	293.59	293.78	293.96	294.15	980
990	294.15	294.33	294.52	294.70	294.89	295.07	295.26	295.44	295.63	295.81	296.00	990
1000	296.00	296.18	296.37	296.55	296.74	296.92	297.11	297.29	297.48	297.66	297.85	1000
1010	297.85	298.03	298.22	298.40	298.59	298.77	298.95	299.14	299.32	299.51	299.69	1010
1020	299.69	299.88	300.06	300.25	300.43	300.61	300.80	300.98	301.17	301.35	301.53	1020
1030	301.53	301.72	301.90	302.09	302.27	302.45	302.64	302.82	303.00	303.19	303.37	1030
1040	303.37	303.56	303.74	303.92	304.11	304.29	304.47	304.66	304.84	305.02	305.21	1040
1050	305.21	305.39	305.57	305.76	305.94	306.12	306.30	306.49	306.67	306.85	307.04	1050
1060	307.04	307.22	307.40	307.59	307.77	307.95	308.13	308.32	308.50	308.68	308.86	1060
1070	308.86	309.05	309.23	309.41	309.59	309.78	309.96	310.14	310.32	310.51	310.69	1070
1080	310.69	310.87	311.05	311.23	311.42	311.60	311.78	311.96	312.14	312.33	312.51	1080
1090	312.51	312.69	312.87	313.05	313.23	313.42	313.60	313.78	313.96	314.14	314.32	1090
1100	314.32	314.50	314.69	314.87	315.05	315.23	315.41	315.59	315.77	315.95	316.14	1100
1110	316.14	316.32	316.50	316.68	316.86	317.04	317.22	317.40	317.58	317.76	317.95	1110
1120	317.95	318.13	318.31	318.49	318.67	318.85	319.03	319.21	319.39	319.57	319.75	1120
1130	319.75	319.93	320.11	320.29	320.47	320.65	320.83	321.01	321.19	321.37	321.55	1130
1140	321.55	321.73	321.91	322.09	322.27	322.45	322.63	322.81	322.99	323.17	323.35	1140

°F	0	1	2	3	4	5	6	7	8	9	10	°F

TABLE 40 100 Ω *Platinum RTD* — *0.003 90 coefficient*
temperature in °F

°F	0	1	2	3	4	5	6	7	8	9	10	°F
					Resistance in Ohms							
1150	323.35	323.53	323.71	323.89	324.07	324.25	324.43	324.61	324.79	324.97	325.15	1150
1160	325.15	325.32	325.50	325.68	325.86	326.04	326.22	326.40	326.58	326.76	326.94	1160
1170	326.94	327.12	327.29	327.47	327.65	327.83	328.01	328.19	328.37	328.55	328.72	1170
1180	328.72	328.90	329.08	329.26	329.44	329.62	329.79	329.97	330.15	330.33	330.51	1180
1190	330.51	330.69	330.86	331.04	331.22	331.40	331.58	331.75	331.93	332.11	332.29	1190
1200	332.29	332.47	332.64	332.82	333.00	333.18	333.35	333.53	333.71	333.89	334.06	1200
1210	334.06	334.24	334.42	334.60	334.77	334.95	335.13	335.31	335.48	335.66	335.84	1210
1220	335.84											1220

°F	0	1	2	3	4	5	6	7	8	9	10	°F

Ni-Fe°C

TABLE 41 507.5 Ω *Nickel - iron RTD* — *0.005 20 coefficient*
temperature in ℃

°C	0	1	2	3	4	5	6	7	8	9	10	°C
					Resistance in Ohms							
-80	344.10											-80
-70	362.05	360.22	358.40	356.59	354.78	352.98	351.19	349.41	347.63	345.86	344.10	-70
-60	380.74	378.84	376.94	375.06	373.18	371.30	369.44	367.58	365.73	363.89	362.05	-60
-50	400.14	398.17	396.20	394.24	392.29	390.35	388.41	386.48	384.56	382.65	380.74	-50
-40	420.25	418.20	416.17	414.14	412.12	410.11	408.10	406.10	404.10	402.12	400.14	-40
-30	441.05	438.94	436.83	434.74	432.64	430.56	428.48	426.41	424.35	422.30	420.25	-30
-20	462.53	460.35	458.18	456.02	453.86	451.70	449.56	447.42	445.29	443.17	441.05	-20
-10	484.69	482.44	480.20	477.97	475.74	473.53	471.31	469.11	466.91	464.72	462.53	-10
0	507.50	505.19	502.88	500.59	498.30	496.01	493.73	491.46	489.20	486.94	484.69	0
0	507.50	509.82	512.14	514.47	516.81	519.15	521.50	523.86	526.22	528.59	530.96	0
10	530.96	533.35	535.73	538.13	540.53	542.94	545.35	547.77	550.20	552.64	555.08	10
20	555.08	557.52	559.98	562.44	564.90	567.37	569.85	572.34	574.83	577.33	579.84	20
30	579.84	582.35	584.87	587.39	589.92	592.46	595.00	597.55	600.11	602.67	605.24	30
40	605.24	607.82	610.40	612.99	615.59	618.19	620.80	623.41	626.04	628.66	631.30	40
50	631.30	633.94	636.59	639.24	641.90	644.57	647.24	649.92	652.61	655.30	658.00	50
60	658.00	660.71	663.42	666.14	668.87	671.60	674.34	677.08	679.83	682.59	685.36	60
70	685.36	688.13	690.90	693.69	696.48	699.27	702.08	704.89	707.70	710.53	713.35	70
80	713.35	716.19	719.03	721.88	724.74	727.60	730.47	733.34	736.22	739.11	742.00	80
90	742.00	744.90	747.81	750.72	753.64	756.57	759.50	762.44	765.39	768.34	771.30	90
100	771.30	774.26	777.24	780.21	783.20	786.19	789.19	792.19	795.20	798.22	801.24	100
110	801.24	804.27	807.31	810.35	813.40	816.46	819.52	822.59	825.66	828.75	831.83	110
120	831.83	834.93	838.03	841.14	844.25	847.37	850.50	853.63	856.77	859.92	863.07	120
130	863.07	866.23	869.40	872.57	875.75	878.94	882.13	885.33	888.53	891.74	894.96	130
140	894.96	898.19	901.42	904.65	907.90	911.15	914.40	917.67	920.94	924.21	927.50	140
150	927.50	930.79	934.08	937.38	940.69	944.01	947.33	950.66	953.99	957.33	960.68	150
160	960.68	964.03	967.39	970.76	974.14	977.52	980.90	984.29	987.69	991.10	994.51	160
170	994.51	997.93	1001.36	1004.79	1008.23	1011.67	1015.12	1018.58	1022.04	1025.51	1028.99	170
180	1028.99	1032.48	1035.97	1039.46	1042.96	1046.47	1049.99	1053.51	1057.04	1060.58	1064.12	180
190	1064.12	1067.67	1071.22	1074.78	1078.35	1081.93	1085.51	1089.09	1092.69	1096.29	1099.89	190
200	1099.89	1103.51	1107.13	1110.75	1114.39	1118.03	1121.67	1125.32	1128.98	1132.65	1136.32	200
210	1136.32	1140.00	1143.68	1147.37	1151.07	1154.77	1158.48	1162.20	1165.92	1169.65	1173.39	210
220	1173.39	1177.13	1180.88	1184.64	1188.40	1192.17	1195.94	1199.73	1203.51	1207.31	1211.11	220
230	1211.11	1214.92	1218.73	1222.55	1226.38	1230.21	1234.05	1237.90	1241.75	1245.61	1249.48	230
240	1249.48	1253.35	1257.23	1261.11	1265.00	1268.90	1272.81	1276.72	1280.64	1284.56	1288.49	240
250	1288.49	1292.43	1296.37	1300.32	1304.28	1308.24	1312.21	1316.19	1320.17	1324.16	1328.16	250
260	1328.16											260

°C	0	1	2	3	4	5	6	7	8	9	10	°C

TABLE 42 507.5 Ω *Nickel - Iron RTD* — *0.005 20 coefficient*
temperature in °F

Ni-Fe°F

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Resistance in Ohms						
-110	345.96	344.97	343.99									-110
-100	355.91	354.90	353.90	352.90	351.90	350.90	349.91	348.92	347.93	346.94	345.96	-100
-90	366.08	365.05	364.03	363.00	361.98	360.96	359.95	358.93	357.92	356.91	355.91	-90
-80	376.47	375.42	374.38	373.33	372.29	371.25	370.21	369.17	368.14	367.11	366.08	-80
-70	387.09	386.02	384.95	383.88	382.82	381.75	380.69	379.64	378.58	377.53	376.47	-70
-60	397.92	396.83	395.74	394.65	393.56	392.48	391.40	390.32	389.24	388.16	387.09	-60
-50	408.97	407.86	406.74	405.63	404.52	403.42	402.32	401.21	400.11	399.02	397.92	-50
-40	420.23	419.10	417.96	416.83	415.70	414.58	413.45	412.33	411.21	410.09	408.97	-40
-30	431.71	430.55	429.40	428.24	427.09	425.95	424.80	423.65	422.51	421.37	420.23	-30
-20	443.40	442.22	441.04	439.87	438.70	437.53	436.36	435.19	434.03	432.87	431.71	-20
-10	455.29	454.09	452.90	451.70	450.51	449.32	448.13	446.94	445.76	444.58	443.40	-10
0	467.40	466.18	464.96	463.74	462.53	461.32	460.11	458.90	457.70	456.49	455.29	0
0	467.40	468.62	469.84	471.07	472.29	473.52	474.76	475.99	477.23	478.46	479.70	0
10	479.70	480.95	482.19	483.44	484.69	485.94	487.19	488.44	489.70	490.96	492.22	10
20	492.22	493.48	494.74	496.01	497.28	498.55	499.82	501.10	502.37	503.65	504.93	20
30	504.93	506.22	507.50	508.79	510.08	511.37	512.66	513.95	515.25	516.55	517.85	30
40	517.85	519.15	520.46	521.76	523.07	524.38	525.69	527.01	528.32	529.64	530.96	40
50	530.96	532.28	533.61	534.93	536.26	537.59	538.93	540.26	541.60	542.93	544.27	50
60	544.27	545.61	546.96	548.30	549.65	551.00	552.35	553.71	555.06	556.42	557.78	60
70	557.78	559.14	560.50	561.87	563.24	564.60	565.98	567.35	568.72	570.10	571.48	70
80	571.48	572.86	574.24	575.63	577.01	578.40	579.79	581.18	582.58	583.97	585.43	80
90	585.43	586.83	588.23	589.64	591.05	592.46	593.87	595.29	596.70	598.12	599.54	90
100	599.54	600.96	602.39	603.82	605.24	606.67	608.11	609.54	610.98	612.42	613.86	100
110	613.86	615.30	616.74	618.19	619.64	621.09	622.54	624.00	625.45	626.91	628.37	110
120	628.37	629.84	631.30	632.77	634.23	635.71	637.18	638.65	640.13	641.61	643.09	120
130	643.09	644.57	646.06	647.54	649.03	650.52	652.01	653.51	655.00	656.50	658.00	130
140	658.00	659.51	661.01	662.52	664.03	665.54	667.05	668.56	670.08	671.60	673.12	140
150	673.12	674.64	676.17	677.69	679.22	680.75	682.28	683.82	685.36	686.89	688.43	150
160	688.43	689.98	691.52	693.07	694.62	696.17	697.72	699.27	700.83	702.39	703.95	160
170	703.95	705.51	707.08	708.64	710.21	711.78	713.35	714.93	716.51	718.08	719.67	170
180	719.67	721.25	722.83	724.42	726.01	727.60	729.19	730.78	732.38	733.98	735.58	180
190	735.58	737.18	738.79	740.39	742.00	743.61	745.23	746.84	748.46	750.08	751.70	190
200	751.70	753.32	754.94	756.57	758.20	759.83	761.46	763.10	764.73	766.37	768.01	200
210	768.01	769.65	771.30	772.95	774.59	776.24	777.90	779.55	781.21	782.87	784.53	210
220	784.53	786.19	787.85	789.52	791.19	792.86	794.53	796.21	797.88	799.56	801.24	220
230	801.24	802.92	804.61	806.30	807.98	809.67	811.37	813.06	814.76	816.46	818.16	230
240	818.16	819.86	821.56	823.27	824.98	826.69	828.40	830.12	831.83	833.55	835.27	240
250	835.27	837.00	838.72	840.45	842.18	843.91	845.64	847.37	849.11	850.85	852.59	250
260	852.59	854.33	856.08	857.82	859.57	861.32	863.07	864.83	866.58	868.34	870.10	260
270	870.10	871.87	873.63	875.40	877.17	878.94	880.71	882.48	884.26	886.04	887.82	270
280	887.82	889.60	891.39	893.17	894.96	896.75	898.54	900.34	902.14	903.93	905.73	280
290	905.73	907.54	909.34	911.15	912.96	914.77	916.58	918.39	920.21	922.03	923.85	290
300	923.85	925.67	927.50	929.32	931.15	932.98	934.82	936.65	938.49	940.32	942.17	300
310	942.17	944.01	945.85	947.70	949.55	951.40	953.25	955.10	956.96	958.82	960.68	310
320	960.68	962.54	964.41	966.27	968.14	970.01	971.89	973.76	975.64	977.52	979.40	320
330	979.40	981.28	983.16	985.05	986.94	988.83	990.72	992.62	994.51	996.41	998.31	330
340	998.31	1000.21	1002.12	1004.02	1005.93	1007.84	1009.76	1011.67	1013.59	1015.51	1017.43	340

°F	0	1	2	3	4	5	6	7	8	9	10	°F

Ni-Fe°F

TABLE 42 507.5 Ω *Nickel - iron RTD* — *0.005 20 coefficient*
temperature in °F

°F	0	1	2	3	4	5	6	7	8	9	10	°F
						Resistance in Ohms						
350	1017.43	1019.35	1021.27	1023.20	1025.13	1027.06	1028.99	1030.93	1032.86	1034.80	1036.74	350
360	1036.74	1038.68	1040.63	1042.58	1044.52	1046.47	1048.43	1050.38	1052.34	1054.30	1056.26	360
370	1056.26	1058.22	1060.18	1062.15	1064.12	1066.09	1068.06	1070.04	1072.01	1073.99	1075.97	370
380	1075.97	1077.95	1079.94	1081.93	1083.91	1085.90	1087.90	1089.89	1091.89	1093.89	1095.89	380
390	1095.89	1097.89	1099.89	1101.90	1103.91	1105.92	1107.93	1109.95	1111.96	1113.98	1116.00	390
400	1116.00	1118.03	1120.05	1122.08	1124.10	1126.14	1128.17	1130.20	1132.24	1134.28	1136.32	400
410	1136.32	1138.36	1140.41	1142.45	1144.50	1146.55	1148.60	1150.66	1152.71	1154.77	1156.83	410
420	1156.83	1158.90	1160.96	1163.03	1165.10	1167.17	1169.24	1171.31	1173.39	1175.47	1177.55	420
430	1177.55	1179.63	1181.72	1183.80	1185.89	1187.98	1190.07	1192.17	1194.26	1196.36	1198.46	430
440	1198.46	1200.57	1202.67	1204.78	1206.89	1209.00	1211.11	1213.22	1215.34	1217.46	1219.58	440
450	1219.58	1221.70	1223.83	1225.95	1228.08	1230.21	1232.34	1234.48	1236.62	1238.75	1240.89	450
460	1240.89	1243.04	1245.18	1247.33	1249.48	1251.63	1253.78	1255.93	1258.09	1260.25	1262.41	460
470	1262.41	1264.57	1266.74	1268.90	1271.07	1273.24	1275.41	1277.59	1279.77	1281.94	1284.12	470
480	1284.12	1286.31	1288.49	1290.68	1292.87	1295.06	1297.25	1299.44	1301.64	1303.84	1306.04	480
490	1306.04	1308.24	1310.45	1312.65	1314.86	1317.07	1319.29	1321.50	1323.72	1325.93	1328.16	490
500	1328.16											500

°F	0	1	2	3	4	5	6	7	8	9	10	°F

5211 Industrial Road, Fort Wayne, IN 46825 USA
Tel: (260) 484-2580 Fax: (800) 837-6805 or (260) 482-6805
www.pyromation.com

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