

**MAXIMUM TEMPERATURE RANGE**

**Thermocouple Grade**

32 to 2642°F  
0 to 1450°C

**Extension Grade**

32 to 300°F  
0 to 150°C

**LIMITS OF ERROR**

(whichever is greater)

Standard: 1.5°C or 0.25%

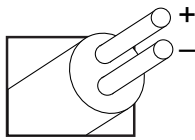
Special: 0.6°C or 0.1%

**COMMENTS, BARE WIRE ENVIRONMENT:**

Oxidizing or Inert; Do Not Insert in Metal Tubes;  
Beware of Contamination; High Temperature

**TEMPERATURE IN DEGREES °C**

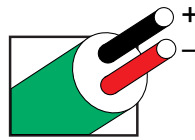
**REFERENCE JUNCTION AT 0°C**



**Thermocouple Grade**

NONE ESTABLISHED

**Platinum-10% Rhodium vs. Platinum**



**Extension Grade**

**Revised Thermocouple Reference Tables**

**TYPE**

**Reference Tables  
N.I.S.T.  
Monograph 175  
Revised to  
ITS-90**



**Thermoelectric Voltage in Millivolts**

°C	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	°C	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350	360	370	380	390	400	410	420	430	440	450	460	470	480	490	500	510	520	530	540	°C																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
-40	-0.236	-0.232	-0.228	-0.224	-0.219	-0.215	-0.211	-0.207	-0.203	-0.199	-0.194	-40	550	4.732	4.742	4.752	4.762	4.772	4.782	4.793	4.803	4.813	4.823	4.833	550	550	4.833	4.843	4.853	4.863	4.873	4.883	4.893	4.904	4.914	4.924	4.934	4.944	4.954	4.964	4.974	4.984	4.995	5.005	5.015	5.025	5.035	5.045	5.055	5.066	5.076	5.086	5.096	5.106	5.116	5.127	5.137	5.147	5.157	5.167	5.178	5.188	5.198	5.208	5.218	5.228	5.239	5.249	5.259	5.269	5.279	5.289	5.299	5.309	5.319	5.329	5.339	5.349	5.359	5.369	5.379	5.389	5.399	5.409	5.419	5.429	5.439	5.449	5.459	5.469	5.479	5.489	5.499	5.509	5.519	5.529	5.539	5.549	5.559	5.569	5.579	5.589	5.599	5.609	5.619	5.629	5.639	5.649	5.659	5.669	5.679	5.689	5.699	5.709	5.719	5.729	5.739	5.749	5.759	5.769	5.779	5.789	5.799	5.809	5.819	5.829	5.839	5.849	5.859	5.869	5.879	5.889	5.899	5.909	5.919	5.929	5.939	5.949	5.959	5.969	5.979	5.989	5.999	6.009	6.019	6.029	6.039	6.049	6.059	6.069	6.079	6.089	6.099	6.109	6.119	6.129	6.139	6.149	6.159	6.169	6.179	6.189	6.199	6.209	6.219	6.229	6.239	6.249	6.259	6.269	6.279	6.289	6.299	6.309	6.319	6.329	6.339	6.349	6.359	6.369	6.379	6.389	6.399	6.409	6.419	6.429	6.439	6.449	6.459	6.469	6.479	6.489	6.499	6.509	6.519	6.529	6.539	6.549	6.559	6.569	6.579	6.589	6.599	6.609	6.619	6.629	6.639	6.649	6.659	6.669	6.679	6.689	6.699	6.709	6.719	6.729	6.739	6.749	6.759	6.769	6.779	6.789	6.799	6.809	6.819	6.829	6.839	6.849	6.859	6.869	6.879	6.889	6.899	6.909	6.919	6.929	6.939	6.949	6.959	6.969	6.979	6.989	6.999	7.009	7.019	7.029	7.039	7.049	7.059	7.069	7.079	7.089	7.099	7.109	7.119	7.129	7.139	7.149	7.159	7.169	7.179	7.189	7.199	7.209	7.219	7.229	7.239	7.249	7.259	7.269	7.279	7.289	7.299	7.309	7.319	7.329	7.339	7.349	7.359	7.369	7.379	7.389	7.399	7.409	7.419	7.429	7.439	7.449	7.459	7.469	7.479	7.489	7.499	7.509	7.519	7.529	7.539	7.549	7.559	7.569	7.579	7.589	7.599	7.609	7.619	7.629	7.639	7.649	7.659	7.669	7.679	7.689	7.699	7.709	7.719	7.729	7.739	7.749	7.759	7.769	7.779	7.789	7.799	7.809	7.819	7.829	7.839	7.849	7.859	7.869	7.879	7.889	7.899	7.909	7.919	7.929	7.939	7.949	7.959	7.969	7.979	7.989	7.999	8.009	8.019	8.029	8.039	8.049	8.059	8.069	8.079	8.089	8.099	8.109	8.119	8.129	8.139	8.149	8.159	8.169	8.179	8.189	8.199	8.209	8.219	8.229	8.239	8.249	8.259	8.269	8.279	8.289	8.299	8.309	8.319	8.329	8.339	8.349	8.359	8.369	8.379	8.389	8.399	8.409	8.419	8.429	8.439	8.449	8.459	8.469	8.479	8.489	8.499	8.509	8.519	8.529	8.539	8.549	8.559	8.569	8.579	8.589	8.599	8.609	8.619	8.629	8.639	8.649	8.659	8.669	8.679	8.689	8.699	8.709	8.719	8.729	8.739	8.749	8.759	8.769	8.779	8.789	8.799	8.809	8.819	8.829	8.839	8.849	8.859	8.869	8.879	8.889	8.899	8.909	8.919	8.929	8.939	8.949	8.959	8.969	8.979	8.989	8.999	9.009	9.019	9.029	9.039	9.049	9.059	9.069	9.079	9.089	9.099	9.109	9.119	9.129	9.139	9.149	9.159	9.169	9.179	9.189	9.199	9.209	9.219	9.229	9.239	9.249	9.259	9.269	9.279	9.289	9.299	9.309	9.319	9.329	9.339	9.349	9.359	9.369	9.379	9.389	9.399	9.409	9.419	9.429	9.439	9.449	9.459	9.469	9.479	9.489	9.499	9.509	9.519	9.529	9.539	9.549	9.559	9.569	9.579	9.589	9.599	9.609	9.619	9.629	9.639	9.649	9.659	9.669	9.679	9.689	9.699	9.709	9.719	9.729	9.739	9.749	9.759	9.769	9.779	9.789	9.799	9.809	9.819	9.829	9.839	9.849	9.859	9.869	9.879	9.889	9.899	9.909	9.919	9.929	9.939	9.949	9.959	9.969	9.979	9.989	9.999	10.009	10.019	10.029	10.039	10.049	10.059	10.069	10.079	10.089	10.099	10.109	10.119	10.129	10.139	10.149	10.159	10.169	10.179	10.189	10.199	10.209	10.219	10.229	10.239	10.249	10.259	10.269	10.279	10.289	10.299	10.309	10.319	10.329	10.339	10.349	10.359	10.369	10.379	10.389	10.399	10.409	10.419	10.429	10.439	10.449	10.459	10.469	10.479	10.489	10.499	10.509	10.519	10.529	10.539	10.549	10.559	10.569	10.579	10.589	10.599	10.609	10.619	10.629	10.639	10.649	10.659	10.669	10.679	10.689	10.699	10.709	10.719	10.729	10.739	10.749	10.759	10.769	10.779	10.789	10.799	10.809	10.819	10.829	10.839	10.849	10.859	10.869	10.879	10.889	10.899	10.909	10.919	10.929	10.939	10.949	10.959	10.969	10.979	10.989	10.999	11.009	11.019	11.029	11.039	11.049	11.059	11.069	11.079	11.089	11.099	11.109	11.119	11.129	11.139	11.149	11.159	11.169	11.179	11.189	11.199	11.209	11.219	11.229	11.239	11.249	11.259	11.269	11.279	11.289	11.299	11.309	11.319	11.329	11.339	11.349	11.359	11.369	11.379	11.389	11.399	11.409	11.419	11.429	11.439	11.449	11.459	11.469	11.479	11.489	11.499	11.509	11.519	11.529	11.539	11.549	11.559	11.569	11.579	11.589	11.599	11.609	11.619	11.629	11.639	11.649	11.659	11.669	11.679	11.689	11.699	11.709	11.719	11.729	11.739	11.749	11.759	11.769	11.779	11.789	11.799	11.809	11.819	11.829	11.839	11.849	11.859	11.869	11.879	11.889	11.899	11.909	11.919	11.929	11.939	11.949	11.959	11.969	11.979	11.989	11.999	12.009	12.019	12.029	12.039	12.049	12.059	12.069	12.079	12.089	12.099	12.109	12.119	12.129	12.139	12.149	12.159	12.169	12.179	12.189	12.199	12.209	12.219	12.229	12.239	12.249	12.259	12.269	12.279	12.289	12.299	12.309	12.319	12.329	12.339	12.349	12.359	12.369	12.379	12.389	12.399	12.409	12.419	12.429	12.439	12.449	12.459	12.469	12.479	12.489	12.499	12.509	12.519	12.529	12.539	12.549	12.559	12.569	12.579	12.589	12.599	12.609	12.619	12.629	12.639	12.649	12.659	12.669	12.679	12.689	12.699	12.709	12.719	12.729	12.739	12.749	12.759	12.769	12.779	12.789	12.799	12.809	12.819	12.829	12.839	12.849	12.859	12.869	12.879	12.889	12.899	12.909	12.919	12.929	12.939	12.949	12.959	12.969	12.979	12.989	12.999	13.009	13.019	13.029	13.039	13.049	13.059	13.069	13.079	13.089	13.099	13.109	13.119	13.129	13.139	13.149	13.159	13.169	13.179	13.189	13.199	13.209	13.219	13.229	13.239	13.249	13.259	13.269	13.279	13.289	13.299	13.309	13.319	13.329	13.339	13.349	13.359	13.369	13.379	13.389	13.399	13.409	13.419	13.429	13.439	13.449	13.459	13.469	13.479	13.489	13.499	13.509	13.519	13.529	13.539	13.549	13.559	13.569	13.579	13.589	13.599	13.609	13.619	13.629	13.639	13.649	13.659	13.669	13.679	13.689	13.699	13.709	13.719	13.729	13.739	13.749	13.759	13.769	13.779	13.789	13.799	13.809	13.819	13.829	13.839	13.849	13.859	13.869	13.879	13.889	13.899	13.909	13.919	13.929	13.939	13.949	13.959	13.969	13.979	13.989	13.999	14.009	14.019	14.029	14.039	14.049	14.059	14.069	14.079	14.089	14.099	14.109	14.119	14.129	14.139	14.149	14.159	14.169	14.179	14.189	14.199	14.209	14.219	14.229	14.239	14.249	14.259	14.269	14.279	14.289	14.299	14.309	14.319	14.329	14.339	14.349	14.359	14.369	14.379	14.389	14.399	14.409	14.419	14.429	14.439	14.449	14.459	14.469	14.479	14.489	14.499	14.509	14.519	14.529	14.539	14.549	14.559	14.569	14.579	14.589	14.599	14.609	14.619	14.629	14.639	14.649	14.659	14.669	14.679	14.689	14.699	14.709	14.719	14.729	14.739	14.749	14.759

