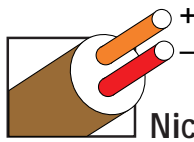




# Revised Thermocouple Reference Tables

# TYPE N

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



Thermocouple Grade

Nickel-14.2% Chromium-1.4% Silicon

VS.  
Nickel-4.4% Silicon-0.1% Magnesium



Extension Grade

## MAXIMUM TEMPERATURE RANGE

Thermocouple Grade

- 450 to 2372°F  
- 270 to 1300°C

Extension Grade

32 to 392°F  
0 to 200°C

## LIMITS OF ERROR

(whichever is greater)

Standard: 2.2°C or 0.75% Above 0°C  
2.2°C or 2.0% Below 0°C

Special: 1.1°C or 0.4%

## COMMENTS, BARE WIRE ENVIRONMENT:

Alternative to Type K; More Stable at High Temperatures

TEMPERATURE IN DEGREES °C  
REFERENCE JUNCTION AT 0°C

Thermoelectric Voltage in Millivolts

°C	0	1	2	3	4	5	6	7	8	9	10	°C	°C	0	1	2	3	4	5	6	7	8	9	10	°C
900	32.371	32.410	32.449	32.488	32.527	32.566	32.605	32.644	32.683	32.722	32.761	900	1150	41.976	42.014	42.052	42.089	42.127	42.164	42.202	42.239	42.277	42.314	42.352	1150
910	32.761	32.800	32.839	32.878	32.917	32.956	32.995	33.034	33.073	33.112	33.151	910	1160	42.352	42.390	42.427	42.465	42.502	42.540	42.577	42.614	42.652	42.689	42.727	1160
920	33.151	33.190	33.229	33.268	33.307	33.346	33.385	33.424	33.463	33.502	33.541	920	1170	42.727	42.764	42.802	42.839	42.877	42.914	42.951	42.989	43.026	43.064	43.101	1170
930	33.541	33.580	33.619	33.658	33.697	33.736	33.774	33.813	33.852	33.891	33.930	930	1180	43.101	43.138	43.176	43.213	43.250	43.288	43.325	43.362	43.399	43.437	43.474	1180
940	33.930	33.969	34.008	34.047	34.086	34.124	34.163	34.202	34.241	34.280	34.319	940	1190	43.474	43.511	43.549	43.586	43.623	43.660	43.698	43.735	43.772	43.809	43.846	1190
950	34.319	34.358	34.396	34.435	34.474	34.513	34.552	34.591	34.629	34.668	34.707	950	1200	43.846	43.884	43.921	43.958	43.995	44.032	44.069	44.106	44.144	44.181	44.218	1200
960	34.707	34.746	34.785	34.823	34.862	34.901	34.940	34.979	35.017	35.056	35.095	960	1210	44.218	44.255	44.292	44.329	44.366	44.403	44.440	44.477	44.514	44.551	44.588	1210
970	35.095	35.134	35.172	35.211	35.250	35.289	35.327	35.366	35.405	35.444	35.482	970	1220	44.588	44.625	44.662	44.699	44.736	44.773	44.810	44.847	44.884	44.921	44.958	1220
980	35.482	35.521	35.560	35.598	35.637	35.676	35.714	35.753	35.792	35.831	35.869	980	1230	44.958	44.995	45.032	45.069	45.105	45.142	45.179	45.216	45.253	45.290	45.326	1230
990	35.869	35.908	35.946	35.985	36.024	36.062	36.101	36.140	36.178	36.217	36.256	990	1240	45.326	45.363	45.400	45.437	45.474	45.510	45.547	45.584	45.621	45.657	45.694	1240
1000	36.256	36.294	36.333	36.371	36.410	36.449	36.487	36.526	36.564	36.603	36.641	1000	1250	45.694	45.731	45.767	45.804	45.841	45.877	45.914	45.951	45.987	46.024	46.060	1250
1010	36.841	36.880	36.918	36.957	36.995	37.034	37.073	37.111	37.150	37.188	37.227	1010	1260	46.060	46.097	46.133	46.170	46.207	46.243	46.280	46.316	46.353	46.389	46.425	1260
1020	37.027	37.065	37.104	37.142	37.181	37.219	37.258	37.296	37.334	37.373	37.411	1020	1270	46.425	46.462	46.498	46.535	46.571	46.608	46.644	46.680	46.717	46.753	46.789	1270
1030	37.411	37.450	37.488	37.527	37.565	37.603	37.642	37.680	37.719	37.757	37.795	1030	1280	46.789	46.826	46.862	46.898	46.935	46.971	47.007	47.043	47.079	47.116	47.152	1280
1040	37.795	37.834	37.872	37.911	37.949	37.987	38.026	38.064	38.102	38.141	38.179	1040	1290	47.152	47.188	47.224	47.260	47.296	47.333	47.369	47.405	47.441	47.477	47.513	1290
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	39.708	39.746	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													



#### UNITED STATES

[www.omega.com](http://www.omega.com)  
1-800-TC-OMEGA  
Stamford, CT.

#### CANADA

[www.omega.ca](http://www.omega.ca)  
Laval(Quebec)  
1-800-TC-OMEGA

#### GERMANY

[www.omega.de](http://www.omega.de)  
Deckenpfronn, Germany  
0800-8266342

#### UNITED KINGDOM

[www.omega.co.uk](http://www.omega.co.uk)  
Manchester, England  
0800-488-488

#### FRANCE

[www.omega.fr](http://www.omega.fr)  
Guyancourt, France  
088-466-342

#### CZECH REPUBLIC

[www.omegaeng.cz](http://www.omegaeng.cz)  
Karviná, Czech Republic  
596-311-899

#### BENELUX

[www.omega.nl](http://www.omega.nl)  
Amstelveen, NL  
0800-099-33-44



## More than 100,000 Products Available!

### • Temperature

Calibrators, Connectors, General Test and Measurement Instruments, Glass Bulb Thermometers, Handheld Instruments for Temperature Measurement, Ice Point References, Indicating Labels, Crayons, Cements and Lacquers, Infrared Temperature Measurement Instruments, Recorders Relative Humidity Measurement Instruments, RTD Probes, Elements and Assemblies, Temperature & Process Meters, Timers and Counters, Temperature and Process Controllers and Power Switching Devices, Thermistor Elements, Probes and Assemblies, Thermocouples Thermowells and Head and Well Assemblies, Transmitters, Wire

### • Flow and Level

Air Velocity Indicators, Doppler Flowmeters, Level Measurement, Magnetic Flowmeters, Mass Flowmeters, Pitot Tubes, Pumps, Rotameters, Turbine and Paddle Wheel Flowmeters, Ultrasonic Flowmeters, Valves, Variable Area Flowmeters, Vortex Shedding Flowmeters

### • pH and Conductivity

Conductivity Instrumentation, Dissolved Oxygen Instrumentation, Environmental Instrumentation, pH Electrodes and Instruments, Water and Soil Analysis Instrumentation

### • Data Acquisition

Auto-Dialers and Alarm Monitoring Systems, Communication Products and Converters, Data Acquisition and Analysis Software, Data Loggers Plug-in Cards, Signal Conditioners, USB, RS232, RS485 and Parallel Port Data Acquisition Systems, Wireless Transmitters and Receivers

### • Pressure, Strain and Force

Displacement Transducers, Dynamic Measurement Force Sensors, Instrumentation for Pressure and Strain Measurements, Load Cells, Pressure Gauges, Pressure Reference Section, Pressure Switches, Pressure Transducers, Proximity Transducers, Regulators, Strain Gages, Torque Transducers, Valves

### • Heaters

Band Heaters, Cartridge Heaters, Circulation Heaters, Comfort Heaters, Controllers, Meters and Switching Devices, Flexible Heaters, General Test and Measurement Instruments, Heater Hook-up Wire, Heating Cable Systems, Immersion Heaters, Process Air and Duct, Heaters, Radiant Heaters, Strip Heaters, Tubular Heaters