

| °C                                  | 0      | -1     | -2     | -3     | -4     | -5     | -6     | -7     | -8     | -9     | -10    |
|-------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| <b>Thermoelectric Voltage in mV</b> |        |        |        |        |        |        |        |        |        |        |        |
| <b>-270</b>                         | -6.258 |        |        |        |        |        |        |        |        |        |        |
| <b>-260</b>                         | -6.232 | -6.236 | -6.239 | -6.242 | -6.245 | -6.248 | -6.251 | -6.253 | -6.255 | -6.256 | -6.258 |
| <b>-250</b>                         | -6.180 | -6.187 | -6.193 | -6.198 | -6.204 | -6.209 | -6.214 | -6.219 | -6.223 | -6.228 | -6.232 |
| <b>-240</b>                         | -6.105 | -6.114 | -6.122 | -6.130 | -6.138 | -6.146 | -6.153 | -6.160 | -6.167 | -6.174 | -6.180 |
| <b>-230</b>                         | -6.007 | -6.017 | -6.028 | -6.038 | -6.049 | -6.059 | -6.068 | -6.078 | -6.087 | -6.096 | -6.105 |
| <b>-220</b>                         | -5.888 | -5.901 | -5.914 | -5.926 | -5.938 | -5.950 | -5.962 | -5.973 | -5.985 | -5.996 | -6.007 |
| <b>-210</b>                         | -5.753 | -5.767 | -5.782 | -5.795 | -5.809 | -5.823 | -5.836 | -5.850 | -5.863 | -5.876 | -5.888 |
| <b>-200</b>                         | -5.603 | -5.619 | -5.634 | -5.650 | -5.665 | -5.680 | -5.695 | -5.710 | -5.724 | -5.739 | -5.753 |
| <b>-190</b>                         | -5.439 | -5.456 | -5.473 | -5.489 | -5.506 | -5.523 | -5.539 | -5.555 | -5.571 | -5.587 | -5.603 |
| <b>-180</b>                         | -5.261 | -5.279 | -5.297 | -5.316 | -5.334 | -5.351 | -5.369 | -5.387 | -5.404 | -5.421 | -5.439 |
| <b>-170</b>                         | -5.070 | -5.089 | -5.109 | -5.128 | -5.148 | -5.167 | -5.186 | -5.205 | -5.224 | -5.242 | -5.261 |
| <b>-160</b>                         | -4.865 | -4.886 | -4.907 | -4.928 | -4.949 | -4.969 | -4.989 | -5.010 | -5.030 | -5.050 | -5.070 |
| <b>-150</b>                         | -4.648 | -4.671 | -4.693 | -4.715 | -4.737 | -4.759 | -4.780 | -4.802 | -4.823 | -4.844 | -4.865 |
| <b>-140</b>                         | -4.419 | -4.443 | -4.466 | -4.489 | -4.512 | -4.535 | -4.558 | -4.581 | -4.604 | -4.626 | -4.648 |
| <b>-130</b>                         | -4.177 | -4.202 | -4.226 | -4.251 | -4.275 | -4.300 | -4.324 | -4.348 | -4.372 | -4.395 | -4.419 |
| <b>-120</b>                         | -3.923 | -3.949 | -3.975 | -4.000 | -4.026 | -4.052 | -4.077 | -4.102 | -4.127 | -4.152 | -4.177 |
| <b>-110</b>                         | -3.657 | -3.684 | -3.711 | -3.738 | -3.765 | -3.791 | -3.818 | -3.844 | -3.871 | -3.897 | -3.923 |
| <b>-100</b>                         | -3.379 | -3.407 | -3.435 | -3.463 | -3.491 | -3.519 | -3.547 | -3.574 | -3.602 | -3.629 | -3.657 |
| <b>-90</b>                          | -3.089 | -3.118 | -3.148 | -3.177 | -3.206 | -3.235 | -3.264 | -3.293 | -3.322 | -3.350 | -3.379 |
| <b>-80</b>                          | -2.788 | -2.818 | -2.849 | -2.879 | -2.910 | -2.940 | -2.970 | -3.000 | -3.030 | -3.059 | -3.089 |
| <b>-70</b>                          | -2.476 | -2.507 | -2.539 | -2.571 | -2.602 | -2.633 | -2.664 | -2.695 | -2.726 | -2.757 | -2.788 |
| <b>-60</b>                          | -2.153 | -2.186 | -2.218 | -2.251 | -2.283 | -2.316 | -2.348 | -2.380 | -2.412 | -2.444 | -2.476 |
| <b>-50</b>                          | -1.819 | -1.853 | -1.887 | -1.920 | -1.954 | -1.987 | -2.021 | -2.054 | -2.087 | -2.120 | -2.153 |
| <b>-40</b>                          | -1.475 | -1.510 | -1.545 | -1.579 | -1.614 | -1.648 | -1.683 | -1.717 | -1.751 | -1.785 | -1.819 |
| <b>-30</b>                          | -1.121 | -1.157 | -1.192 | -1.228 | -1.264 | -1.299 | -1.335 | -1.370 | -1.405 | -1.440 | -1.475 |
| <b>-20</b>                          | -0.757 | -0.794 | -0.830 | -0.867 | -0.904 | -0.940 | -0.976 | -1.013 | -1.049 | -1.085 | -1.121 |
| <b>-10</b>                          | -0.383 | -0.421 | -0.459 | -0.496 | -0.534 | -0.571 | -0.608 | -0.646 | -0.683 | -0.720 | -0.757 |
| <b>0</b>                            | 0.000  | -0.039 | -0.077 | -0.116 | -0.154 | -0.193 | -0.231 | -0.269 | -0.307 | -0.345 | -0.383 |
| °C                                  | 0      | -1     | -2     | -3     | -4     | -5     | -6     | -7     | -8     | -9     | -10    |

T



ITS-90 Table for Type T Thermocouple (Ref Junction 0°C)

<http://iseinc.com>

| °C                                  | 0      | 1      | 2      | 3      | 4      | 5      | 6      | 7      | 8      | 9      | 10     |
|-------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| <b>Thermoelectric Voltage in mV</b> |        |        |        |        |        |        |        |        |        |        |        |
| <b>0</b>                            | 0.000  | 0.039  | 0.078  | 0.117  | 0.156  | 0.195  | 0.234  | 0.273  | 0.312  | 0.352  | 0.391  |
| <b>10</b>                           | 0.391  | 0.431  | 0.470  | 0.510  | 0.549  | 0.589  | 0.629  | 0.669  | 0.709  | 0.749  | 0.790  |
| <b>20</b>                           | 0.790  | 0.830  | 0.870  | 0.911  | 0.951  | 0.992  | 1.033  | 1.074  | 1.114  | 1.155  | 1.196  |
| <b>30</b>                           | 1.196  | 1.238  | 1.279  | 1.320  | 1.362  | 1.403  | 1.445  | 1.486  | 1.528  | 1.570  | 1.612  |
| <b>40</b>                           | 1.612  | 1.654  | 1.696  | 1.738  | 1.780  | 1.823  | 1.865  | 1.908  | 1.950  | 1.993  | 2.036  |
| <b>50</b>                           | 2.036  | 2.079  | 2.122  | 2.165  | 2.208  | 2.251  | 2.294  | 2.338  | 2.381  | 2.425  | 2.468  |
| <b>60</b>                           | 2.468  | 2.512  | 2.556  | 2.600  | 2.643  | 2.687  | 2.732  | 2.776  | 2.820  | 2.864  | 2.909  |
| <b>70</b>                           | 2.909  | 2.953  | 2.998  | 3.043  | 3.087  | 3.132  | 3.177  | 3.222  | 3.267  | 3.312  | 3.358  |
| <b>80</b>                           | 3.358  | 3.403  | 3.448  | 3.494  | 3.539  | 3.585  | 3.631  | 3.677  | 3.722  | 3.768  | 3.814  |
| <b>90</b>                           | 3.814  | 3.860  | 3.907  | 3.953  | 3.999  | 4.046  | 4.092  | 4.138  | 4.185  | 4.232  | 4.279  |
| <b>100</b>                          | 4.279  | 4.325  | 4.372  | 4.419  | 4.466  | 4.513  | 4.561  | 4.608  | 4.655  | 4.702  | 4.750  |
| <b>110</b>                          | 4.750  | 4.798  | 4.845  | 4.893  | 4.941  | 4.988  | 5.036  | 5.084  | 5.132  | 5.180  | 5.228  |
| <b>120</b>                          | 5.228  | 5.277  | 5.325  | 5.373  | 5.422  | 5.470  | 5.519  | 5.567  | 5.616  | 5.665  | 5.714  |
| <b>130</b>                          | 5.714  | 5.763  | 5.812  | 5.861  | 5.910  | 5.959  | 6.008  | 6.057  | 6.107  | 6.156  | 6.206  |
| <b>140</b>                          | 6.206  | 6.255  | 6.305  | 6.355  | 6.404  | 6.454  | 6.504  | 6.554  | 6.604  | 6.654  | 6.704  |
| <b>150</b>                          | 6.704  | 6.754  | 6.805  | 6.855  | 6.905  | 6.956  | 7.006  | 7.057  | 7.107  | 7.158  | 7.209  |
| <b>160</b>                          | 7.209  | 7.260  | 7.310  | 7.361  | 7.412  | 7.463  | 7.515  | 7.566  | 7.617  | 7.668  | 7.720  |
| <b>170</b>                          | 7.720  | 7.771  | 7.823  | 7.874  | 7.926  | 7.977  | 8.029  | 8.081  | 8.133  | 8.185  | 8.237  |
| <b>180</b>                          | 8.237  | 8.289  | 8.341  | 8.393  | 8.445  | 8.497  | 8.550  | 8.602  | 8.654  | 8.707  | 8.759  |
| <b>190</b>                          | 8.759  | 8.812  | 8.865  | 8.917  | 8.970  | 9.023  | 9.076  | 9.129  | 9.182  | 9.235  | 9.288  |
| <b>200</b>                          | 9.288  | 9.341  | 9.395  | 9.448  | 9.501  | 9.555  | 9.608  | 9.662  | 9.715  | 9.769  | 9.822  |
| <b>210</b>                          | 9.822  | 9.876  | 9.930  | 9.984  | 10.038 | 10.092 | 10.146 | 10.200 | 10.254 | 10.308 | 10.362 |
| <b>220</b>                          | 10.362 | 10.417 | 10.471 | 10.525 | 10.580 | 10.634 | 10.689 | 10.743 | 10.798 | 10.853 | 10.907 |
| <b>230</b>                          | 10.907 | 10.962 | 11.017 | 11.072 | 11.127 | 11.182 | 11.237 | 11.292 | 11.347 | 11.403 | 11.458 |
| <b>240</b>                          | 11.458 | 11.513 | 11.569 | 11.624 | 11.680 | 11.735 | 11.791 | 11.846 | 11.902 | 11.958 | 12.013 |
| <b>250</b>                          | 12.013 | 12.069 | 12.125 | 12.181 | 12.237 | 12.293 | 12.349 | 12.405 | 12.461 | 12.518 | 12.574 |
| <b>260</b>                          | 12.574 | 12.630 | 12.687 | 12.743 | 12.799 | 12.856 | 12.912 | 12.969 | 13.026 | 13.082 | 13.139 |
| <b>270</b>                          | 13.139 | 13.196 | 13.253 | 13.310 | 13.366 | 13.423 | 13.480 | 13.537 | 13.595 | 13.652 | 13.709 |
| <b>280</b>                          | 13.709 | 13.766 | 13.823 | 13.881 | 13.938 | 13.995 | 14.053 | 14.110 | 14.168 | 14.226 | 14.283 |
| <b>290</b>                          | 14.283 | 14.341 | 14.399 | 14.456 | 14.514 | 14.572 | 14.630 | 14.688 | 14.746 | 14.804 | 14.862 |
| <b>300</b>                          | 14.862 | 14.920 | 14.978 | 15.036 | 15.095 | 15.153 | 15.211 | 15.270 | 15.328 | 15.386 | 15.445 |
| <b>310</b>                          | 15.445 | 15.503 | 15.562 | 15.621 | 15.679 | 15.738 | 15.797 | 15.856 | 15.914 | 15.973 | 16.032 |
| <b>320</b>                          | 16.032 | 16.091 | 16.150 | 16.209 | 16.268 | 16.327 | 16.387 | 16.446 | 16.505 | 16.564 | 16.624 |
| <b>330</b>                          | 16.624 | 16.683 | 16.742 | 16.802 | 16.861 | 16.921 | 16.980 | 17.040 | 17.100 | 17.159 | 17.219 |
| <b>340</b>                          | 17.219 | 17.279 | 17.339 | 17.399 | 17.458 | 17.518 | 17.578 | 17.638 | 17.698 | 17.759 | 17.819 |
| <b>350</b>                          | 17.819 | 17.879 | 17.939 | 17.999 | 18.060 | 18.120 | 18.180 | 18.241 | 18.301 | 18.362 | 18.422 |
| <b>360</b>                          | 18.422 | 18.483 | 18.543 | 18.604 | 18.665 | 18.725 | 18.786 | 18.847 | 18.908 | 18.969 | 19.030 |
| <b>370</b>                          | 19.030 | 19.091 | 19.152 | 19.213 | 19.274 | 19.335 | 19.396 | 19.457 | 19.518 | 19.579 | 19.641 |
| <b>380</b>                          | 19.641 | 19.702 | 19.763 | 19.825 | 19.886 | 19.947 | 20.009 | 20.070 | 20.132 | 20.193 | 20.255 |
| <b>390</b>                          | 20.255 | 20.317 | 20.378 | 20.440 | 20.502 | 20.563 | 20.625 | 20.687 | 20.748 | 20.810 | 20.872 |
| <b>400</b>                          | 20.872 |        |        |        |        |        |        |        |        |        |        |
| °C                                  | 0      | 1      | 2      | 3      | 4      | 5      | 6      | 7      | 8      | 9      | 10     |

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