

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



| °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 |

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 |