

Thermocouple Type J

Thermocouple J Reference Table



Reference Table

| °C | Thermoelectric Voltage [mV] | | | | | | | | | |
|------|-----------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | 0 | -1 | -2 | -3 | -4 | -5 | -6 | -7 | -8 | -9 |
| -210 | -8,095 | | | | | | | | | |
| -200 | -7,89 | -7,912 | -7,934 | -7,955 | -7,976 | -7,996 | -8,017 | -8,037 | -8,057 | -8,076 |
| -190 | -7,659 | -7,683 | -7,707 | -7,731 | -7,755 | -7,778 | -7,801 | -7,824 | -7,846 | -7,868 |
| -180 | -7,403 | -7,429 | -7,456 | -7,482 | -7,508 | -7,534 | -7,559 | -7,585 | -7,61 | -7,634 |
| -170 | -7,123 | -7,152 | -7,181 | -7,209 | -7,237 | -7,265 | -7,293 | -7,321 | -7,348 | -7,376 |
| -160 | -6,821 | -6,853 | -6,883 | -6,914 | -6,944 | -6,975 | -7,005 | -7,035 | -7,064 | -7,094 |
| -150 | -6,5 | -6,533 | -6,566 | -6,598 | -6,631 | -6,663 | -6,695 | -6,727 | -6,759 | -6,79 |
| -140 | -6,159 | -6,194 | -6,229 | -6,263 | -6,298 | -6,332 | -6,366 | -6,4 | -6,433 | -6,467 |
| -130 | -5,801 | -5,838 | -5,874 | -5,91 | -5,946 | -5,982 | -6,018 | -6,054 | -6,089 | -6,124 |
| -120 | -5,426 | -5,465 | -5,503 | -5,541 | -5,578 | -5,616 | -5,653 | -5,69 | -5,727 | -5,764 |
| -110 | -5,037 | -5,076 | -5,116 | -5,155 | -5,194 | -5,233 | -5,272 | -5,311 | -5,35 | -5,388 |
| -100 | -4,633 | -4,674 | -4,714 | -4,755 | -4,796 | -4,836 | -4,877 | -4,917 | -4,957 | -4,997 |
| -90 | -4,215 | -4,257 | -4,3 | -4,342 | -4,384 | -4,425 | -4,467 | -4,509 | -4,55 | -4,591 |
| -80 | -3,786 | -3,829 | -3,872 | -3,916 | -3,959 | -4,002 | -4,045 | -4,088 | -4,13 | -4,173 |
| -70 | -3,344 | -3,389 | -3,434 | -3,478 | -3,522 | -3,566 | -3,61 | -3,654 | -3,698 | -3,742 |
| -60 | -2,893 | -2,938 | -2,984 | -3,029 | -3,075 | -3,12 | -3,165 | -3,21 | -3,255 | -3,3 |
| -50 | -2,431 | -2,478 | -2,524 | -2,571 | -2,617 | -2,663 | -2,709 | -2,755 | -2,801 | -2,847 |
| -40 | -1,961 | -2,008 | -2,055 | -2,103 | -2,15 | -2,197 | -2,244 | -2,291 | -2,338 | -2,385 |
| -30 | -1,482 | -1,53 | -1,578 | -1,626 | -1,674 | -1,722 | -1,77 | -1,818 | -1,865 | -1,913 |
| -20 | -0,995 | -1,044 | -1,093 | -1,142 | -1,19 | -1,239 | -1,288 | -1,336 | -1,385 | -1,433 |
| -10 | -0,501 | -0,55 | -0,6 | -0,65 | -0,699 | -0,749 | -0,798 | -0,847 | -0,896 | -0,946 |
| 0 | 0 | -0,05 | -0,101 | -0,151 | -0,201 | -0,251 | -0,301 | -0,351 | -0,401 | -0,451 |

(continues)

| °C | Thermoelectric Voltage [mV] | | | | | | | | | |
|-----|-----------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 0 | 0 | 0,05 | 0,101 | 0,151 | 0,202 | 0,253 | 0,303 | 0,354 | 0,405 | 0,456 |
| 10 | 0,507 | 0,558 | 0,609 | 0,66 | 0,711 | 0,762 | 0,814 | 0,865 | 0,916 | 0,968 |
| 20 | 1,019 | 1,071 | 1,122 | 1,174 | 1,226 | 1,277 | 1,329 | 1,381 | 1,433 | 1,485 |
| 30 | 1,537 | 1,589 | 1,641 | 1,693 | 1,745 | 1,797 | 1,849 | 1,902 | 1,954 | 2,006 |
| 40 | 2,059 | 2,111 | 2,164 | 2,216 | 2,269 | 2,322 | 2,374 | 2,427 | 2,48 | 2,532 |
| 50 | 2,585 | 2,638 | 2,691 | 2,744 | 2,797 | 2,85 | 2,903 | 2,956 | 3,009 | 3,062 |
| 60 | 3,116 | 3,169 | 3,222 | 3,275 | 3,329 | 3,382 | 3,436 | 3,489 | 3,543 | 3,596 |
| 70 | 3,65 | 3,703 | 3,757 | 3,81 | 3,864 | 3,918 | 3,971 | 4,025 | 4,079 | 4,133 |
| 80 | 4,187 | 4,24 | 4,294 | 4,348 | 4,402 | 4,456 | 4,51 | 4,564 | 4,618 | 4,672 |
| 90 | 4,726 | 4,781 | 4,835 | 4,889 | 4,943 | 4,997 | 5,052 | 5,106 | 5,16 | 5,215 |
| 100 | 5,269 | 5,323 | 5,378 | 5,432 | 5,487 | 5,541 | 5,595 | 5,65 | 5,705 | 5,759 |
| 110 | 5,814 | 5,868 | 5,923 | 5,977 | 6,032 | 6,087 | 6,141 | 6,196 | 6,251 | 6,306 |
| 120 | 6,36 | 6,415 | 6,47 | 6,525 | 6,579 | 6,634 | 6,689 | 6,744 | 6,799 | 6,854 |
| 130 | 6,909 | 6,964 | 7,019 | 7,074 | 7,129 | 7,184 | 7,239 | 7,294 | 7,349 | 7,404 |
| 140 | 7,459 | 7,514 | 7,569 | 7,624 | 7,679 | 7,734 | 7,789 | 7,844 | 7,9 | 7,955 |
| 150 | 8,01 | 8,065 | 8,12 | 8,175 | 8,231 | 8,286 | 8,341 | 8,396 | 8,452 | 8,507 |
| 160 | 8,562 | 8,618 | 8,673 | 8,728 | 8,783 | 8,839 | 8,894 | 8,949 | 9,005 | 9,06 |
| 170 | 9,115 | 9,171 | 9,226 | 9,282 | 9,337 | 9,392 | 9,448 | 9,503 | 9,559 | 9,614 |
| 180 | 9,669 | 9,725 | 9,78 | 9,836 | 9,891 | 9,947 | 10,002 | 10,057 | 10,113 | 10,168 |
| 190 | 10,224 | 10,279 | 10,335 | 10,39 | 10,446 | 10,501 | 10,557 | 10,612 | 10,668 | 10,723 |
| 200 | 10,779 | 10,834 | 10,89 | 10,945 | 11,001 | 11,056 | 11,112 | 11,167 | 11,223 | 11,278 |
| 210 | 11,334 | 11,389 | 11,445 | 11,501 | 11,556 | 11,612 | 11,667 | 11,723 | 11,778 | 11,834 |
| 220 | 11,889 | 11,945 | 12 | 12,056 | 12,111 | 12,167 | 12,222 | 12,278 | 12,334 | 12,389 |
| 230 | 12,445 | 12,5 | 12,556 | 12,611 | 12,667 | 12,722 | 12,778 | 12,833 | 12,889 | 12,944 |
| 240 | 13 | 13,056 | 13,111 | 13,167 | 13,222 | 13,278 | 13,333 | 13,389 | 13,444 | 13,5 |
| 250 | 13,555 | 13,611 | 13,666 | 13,722 | 13,777 | 13,833 | 13,888 | 13,944 | 13,999 | 14,055 |
| 260 | 14,11 | 14,166 | 14,221 | 14,277 | 14,332 | 14,388 | 14,443 | 14,499 | 14,554 | 14,609 |
| 270 | 14,665 | 14,72 | 14,776 | 14,831 | 14,887 | 14,942 | 14,998 | 15,053 | 15,109 | 15,164 |
| 280 | 15,219 | 15,275 | 15,33 | 15,386 | 15,441 | 15,496 | 15,552 | 15,607 | 15,663 | 15,718 |
| 290 | 15,773 | 15,829 | 15,884 | 15,94 | 15,995 | 16,05 | 16,106 | 16,161 | 16,216 | 16,272 |
| 300 | 16,327 | 16,383 | 16,438 | 16,493 | 16,549 | 16,604 | 16,659 | 16,715 | 16,77 | 16,825 |
| 310 | 16,881 | 16,936 | 16,991 | 17,046 | 17,102 | 17,157 | 17,212 | 17,268 | 17,323 | 17,378 |
| 320 | 17,434 | 17,489 | 17,544 | 17,599 | 17,655 | 17,71 | 17,765 | 17,82 | 17,876 | 17,931 |
| 330 | 17,986 | 18,041 | 18,097 | 18,152 | 18,207 | 18,262 | 18,318 | 18,373 | 18,428 | 18,483 |
| 340 | 18,538 | 18,594 | 18,649 | 18,704 | 18,759 | 18,814 | 18,87 | 18,925 | 18,98 | 19,035 |
| 350 | 19,09 | 19,146 | 19,201 | 19,256 | 19,311 | 19,366 | 19,422 | 19,477 | 19,532 | 19,587 |
| 360 | 19,642 | 19,697 | 19,753 | 19,808 | 19,863 | 19,918 | 19,973 | 20,028 | 20,083 | 20,139 |
| 370 | 20,194 | 20,249 | 20,304 | 20,359 | 20,414 | 20,469 | 20,525 | 20,58 | 20,635 | 20,69 |
| 380 | 20,745 | 20,8 | 20,855 | 20,911 | 20,966 | 21,021 | 21,076 | 21,131 | 21,186 | 21,241 |
| 390 | 21,297 | 21,352 | 21,407 | 21,462 | 21,517 | 21,572 | 21,627 | 21,683 | 21,738 | 21,793 |
| 400 | 21,848 | 21,903 | 21,958 | 22,014 | 22,069 | 22,124 | 22,179 | 22,234 | 22,289 | 22,345 |
| 410 | 22,4 | 22,455 | 22,51 | 22,565 | 22,62 | 22,676 | 22,731 | 22,786 | 22,841 | 22,896 |
| 420 | 22,952 | 23,007 | 23,062 | 23,117 | 23,172 | 23,228 | 23,283 | 23,338 | 23,393 | 23,449 |
| 430 | 23,504 | 23,559 | 23,614 | 23,67 | 23,725 | 23,78 | 23,835 | 23,891 | 23,946 | 24,001 |
| 440 | 24,057 | 24,112 | 24,167 | 24,223 | 24,278 | 24,333 | 24,389 | 24,444 | 24,499 | 24,555 |
| 450 | 24,61 | 24,665 | 24,721 | 24,776 | 24,832 | 24,887 | 24,943 | 24,998 | 25,053 | 25,109 |
| 460 | 25,164 | 25,22 | 25,275 | 25,331 | 25,386 | 25,442 | 25,497 | 25,553 | 25,608 | 25,664 |
| 470 | 25,72 | 25,775 | 25,831 | 25,886 | 25,942 | 25,998 | 26,053 | 26,109 | 26,165 | 26,22 |
| 480 | 26,276 | 26,332 | 26,387 | 26,443 | 26,499 | 26,555 | 26,61 | 26,666 | 26,722 | 26,778 |
| 490 | 26,834 | 26,889 | 26,945 | 27,001 | 27,057 | 27,113 | 27,169 | 27,225 | 27,281 | 27,337 |







(continues)

| °C | Thermoelectric Voltage [mV] | | | | | | | | | |
|-----|-----------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 500 | 27,393 | 27,449 | 27,505 | 27,561 | 27,617 | 27,673 | 27,729 | 27,785 | 27,841 | 27,897 |
| 510 | 27,953 | 28,01 | 28,066 | 28,122 | 28,178 | 28,234 | 28,291 | 28,347 | 28,403 | 28,46 |
| 520 | 28,516 | 28,572 | 28,629 | 28,685 | 28,741 | 28,798 | 28,854 | 28,911 | 28,967 | 29,024 |
| 530 | 29,08 | 29,137 | 29,194 | 29,25 | 29,307 | 29,363 | 29,42 | 29,477 | 29,534 | 29,59 |
| 540 | 29,647 | 29,704 | 29,761 | 29,818 | 29,874 | 29,931 | 29,988 | 30,045 | 30,102 | 30,159 |
| 550 | 30,216 | 30,273 | 30,33 | 30,387 | 30,444 | 30,502 | 30,559 | 30,616 | 30,673 | 30,73 |
| 560 | 30,788 | 30,845 | 30,902 | 30,96 | 31,017 | 31,074 | 31,132 | 31,189 | 31,247 | 31,304 |
| 570 | 31,362 | 31,419 | 31,477 | 31,535 | 31,592 | 31,65 | 31,708 | 31,766 | 31,823 | 31,881 |
| 580 | 31,939 | 31,997 | 32,055 | 32,113 | 32,171 | 32,229 | 32,287 | 32,345 | 32,403 | 32,461 |
| 590 | 32,519 | 32,577 | 32,636 | 32,694 | 32,752 | 32,81 | 32,869 | 32,927 | 32,985 | 33,044 |
| 600 | 33,102 | 33,161 | 33,219 | 33,278 | 33,337 | 33,395 | 33,454 | 33,513 | 33,571 | 33,63 |
| 610 | 33,689 | 33,748 | 33,807 | 33,866 | 33,925 | 33,984 | 34,043 | 34,102 | 34,161 | 34,22 |
| 620 | 34,279 | 34,338 | 34,397 | 34,457 | 34,516 | 34,575 | 34,635 | 34,694 | 34,754 | 34,813 |
| 630 | 34,873 | 34,932 | 34,992 | 35,051 | 35,111 | 35,171 | 35,23 | 35,29 | 35,35 | 35,41 |
| 640 | 35,47 | 35,53 | 35,59 | 35,65 | 35,71 | 35,77 | 35,83 | 35,89 | 35,95 | 36,01 |
| 650 | 36,071 | 36,131 | 36,191 | 36,252 | 36,312 | 36,373 | 36,433 | 36,494 | 36,554 | 36,615 |
| 660 | 36,675 | 36,736 | 36,797 | 36,858 | 36,918 | 36,979 | 37,04 | 37,101 | 37,162 | 37,223 |
| 670 | 37,284 | 37,345 | 37,406 | 37,467 | 37,528 | 37,59 | 37,651 | 37,712 | 37,773 | 37,835 |
| 680 | 37,896 | 37,958 | 38,019 | 38,081 | 38,142 | 38,204 | 38,265 | 38,327 | 38,389 | 38,45 |
| 690 | 38,512 | 38,574 | 38,636 | 38,698 | 38,76 | 38,822 | 38,884 | 38,946 | 39,008 | 39,07 |
| 700 | 39,132 | 39,194 | 39,256 | 39,318 | 39,381 | 39,443 | 39,505 | 39,568 | 39,63 | 39,693 |
| 710 | 39,755 | 39,818 | 39,88 | 39,943 | 40,005 | 40,068 | 40,131 | 40,193 | 40,256 | 40,319 |
| 720 | 40,382 | 40,445 | 40,508 | 40,57 | 40,633 | 40,696 | 40,759 | 40,822 | 40,886 | 40,949 |
| 730 | 41,012 | 41,075 | 41,138 | 41,201 | 41,265 | 41,328 | 41,391 | 41,455 | 41,518 | 41,581 |
| 740 | 41,645 | 41,708 | 41,772 | 41,835 | 41,899 | 41,962 | 42,026 | 42,09 | 42,153 | 42,217 |
| 750 | 42,281 | 42,344 | 42,408 | 42,472 | 42,536 | 42,599 | 42,663 | 42,727 | 42,791 | 42,855 |
| 760 | 42,919 | 42,983 | 43,047 | 43,111 | 43,175 | 43,239 | 43,303 | 43,367 | 43,431 | 43,495 |
| 770 | 43,559 | 43,624 | 43,688 | 43,752 | 43,817 | 43,881 | 43,945 | 44,01 | 44,074 | 44,139 |
| 780 | 44,203 | 44,267 | 44,332 | 44,396 | 44,461 | 44,525 | 44,59 | 44,655 | 44,719 | 44,784 |
| 790 | 44,848 | 44,913 | 44,977 | 45,042 | 45,107 | 45,171 | 45,236 | 45,301 | 45,365 | 45,43 |
| 800 | 45,494 | 45,559 | 45,624 | 45,688 | 45,753 | 45,818 | 45,882 | 45,947 | 46,011 | 46,076 |
| 810 | 46,141 | 46,205 | 46,27 | 46,334 | 46,399 | 46,464 | 46,528 | 46,593 | 46,657 | 46,722 |
| 820 | 46,786 | 46,851 | 46,915 | 46,98 | 47,044 | 47,109 | 47,173 | 47,238 | 47,302 | 47,367 |
| 830 | 47,431 | 47,495 | 47,56 | 47,624 | 47,688 | 47,753 | 47,817 | 47,881 | 47,946 | 48,01 |
| 840 | 48,074 | 48,138 | 48,202 | 48,267 | 48,331 | 48,395 | 48,459 | 48,523 | 48,587 | 48,651 |
| 850 | 48,715 | 48,779 | 48,843 | 48,907 | 48,971 | 49,034 | 49,098 | 49,162 | 49,226 | 49,29 |
| 860 | 49,353 | 49,417 | 49,481 | 49,544 | 49,608 | 49,672 | 49,735 | 49,799 | 49,862 | 49,926 |
| 870 | 49,989 | 50,052 | 50,116 | 50,179 | 50,243 | 50,306 | 50,369 | 50,432 | 50,495 | 50,559 |
| 880 | 50,622 | 50,685 | 50,748 | 50,811 | 50,874 | 50,937 | 51 | 51,063 | 51,126 | 51,188 |
| 890 | 51,251 | 51,314 | 51,377 | 51,439 | 51,502 | 51,565 | 51,627 | 51,69 | 51,752 | 51,815 |
| 900 | 51,877 | 51,94 | 52,002 | 52,064 | 52,127 | 52,189 | 52,251 | 52,314 | 52,376 | 52,438 |
| 910 | 52,5 | 52,562 | 52,624 | 52,686 | 52,748 | 52,81 | 52,872 | 52,934 | 52,996 | 53,057 |
| 920 | 53,119 | 53,181 | 53,243 | 53,304 | 53,366 | 53,427 | 53,489 | 53,55 | 53,612 | 53,673 |
| 930 | 53,735 | 53,796 | 53,857 | 53,919 | 53,98 | 54,041 | 54,102 | 54,164 | 54,225 | 54,286 |
| 940 | 54,347 | 54,408 | 54,469 | 54,53 | 54,591 | 54,652 | 54,713 | 54,773 | 54,834 | 54,895 |
| 950 | 54,956 | 55,016 | 55,077 | 55,138 | 55,198 | 55,259 | 55,319 | 55,38 | 55,44 | 55,501 |
| 960 | 55,561 | 55,622 | 55,682 | 55,742 | 55,803 | 55,863 | 55,923 | 55,983 | 56,043 | 56,104 |
| 970 | 56,164 | 56,224 | 56,284 | 56,344 | 56,404 | 56,464 | 56,524 | 56,584 | 56,643 | 56,703 |
| 980 | 56,763 | 56,823 | 56,883 | 56,942 | 57,002 | 57,062 | 57,121 | 57,181 | 57,24 | 57,3 |
| 990 | 57,36 | 57,419 | 57,479 | 57,538 | 57,597 | 57,657 | 57,716 | 57,776 | 57,835 | 57,894 |



(continues)

| °C | Thermoelectric Voltage [mV] | | | | | | | | | |
|------|-----------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 1000 | 57,953 | 58,013 | 58,072 | 58,131 | 58,19 | 58,249 | 58,309 | 58,368 | 58,427 | 58,486 |
| 1010 | 58,545 | 58,604 | 58,663 | 58,722 | 58,781 | 58,84 | 58,899 | 58,957 | 59,016 | 59,075 |
| 1020 | 59,134 | 59,193 | 59,252 | 59,31 | 59,369 | 59,428 | 59,487 | 59,545 | 59,604 | 59,663 |
| 1030 | 59,721 | 59,78 | 59,838 | 59,897 | 59,956 | 60,014 | 60,073 | 60,131 | 60,19 | 60,248 |
| 1040 | 60,307 | 60,365 | 60,423 | 60,482 | 60,54 | 60,599 | 60,657 | 60,715 | 60,774 | 60,832 |
| 1050 | 60,89 | 60,949 | 61,007 | 61,065 | 61,123 | 61,182 | 61,24 | 61,298 | 61,356 | 61,415 |
| 1060 | 61,473 | 61,531 | 61,589 | 61,647 | 61,705 | 61,763 | 61,822 | 61,88 | 61,938 | 61,996 |
| 1070 | 62,054 | 62,112 | 62,17 | 62,228 | 62,286 | 62,344 | 62,402 | 62,46 | 62,518 | 62,576 |
| 1080 | 62,634 | 62,692 | 62,75 | 62,808 | 62,866 | 62,924 | 62,982 | 63,04 | 63,098 | 63,156 |
| 1090 | 63,214 | 63,271 | 63,329 | 63,387 | 63,445 | 63,503 | 63,561 | 63,619 | 63,677 | 63,734 |
| 1100 | 63,792 | 63,85 | 63,908 | 63,966 | 64,024 | 64,081 | 64,139 | 64,197 | 64,255 | 64,313 |
| 1110 | 64,37 | 64,428 | 64,486 | 64,544 | 64,602 | 64,659 | 64,717 | 64,775 | 64,833 | 64,89 |
| 1120 | 64,948 | 65,006 | 65,064 | 65,121 | 65,179 | 65,237 | 65,295 | 65,352 | 65,41 | 65,468 |
| 1130 | 65,525 | 65,583 | 65,641 | 65,699 | 65,756 | 65,814 | 65,872 | 65,929 | 65,987 | 66,045 |
| 1140 | 66,102 | 66,16 | 66,218 | 66,275 | 66,333 | 66,391 | 66,448 | 66,506 | 66,564 | 66,621 |
| 1150 | 66,679 | 66,737 | 66,794 | 66,852 | 66,91 | 66,967 | 67,025 | 67,082 | 67,14 | 67,198 |
| 1160 | 67,255 | 67,313 | 67,37 | 67,428 | 67,486 | 67,543 | 67,601 | 67,658 | 67,716 | 67,773 |
| 1170 | 67,831 | 67,888 | 67,946 | 68,003 | 68,061 | 68,119 | 68,176 | 68,234 | 68,291 | 68,348 |
| 1180 | 68,406 | 68,463 | 68,521 | 68,578 | 68,636 | 68,693 | 68,751 | 68,808 | 68,865 | 68,923 |
| 1190 | 68,98 | 69,037 | 69,095 | 69,152 | 69,209 | 69,267 | 69,324 | 69,381 | 69,439 | 69,496 |
| 1200 | 69,553 | | | | | | | | | |

| | |
|---|----------------|
|  | Contact |
|---|----------------|

| | | | |
|---|--|--|--|
|  | Parque Empresarial Baia do Tejo, Rua 48 N°11 Apartado 5056 2830-571 Barreiro, Portugal |  | +351 212 070 802 +351 212 070 803 +351 210 900 148 |
|  | 38.663817, -9.066176 |  | +351 212 070 804 |
|  | www.deltasensor.pt |  | commercial@deltasensor.pt |

Subject to modification. All rights reserved to Delta Sensor, Lda

 Antes de imprimir este documento pense bem se é mesmo necessário fazê-lo: O meio ambiente é de todos.
 Please consider the environment before printing this document.