



Technical Information Data Bulletin

Copper 100 Ohms (Cu100)

α 0.00427

Temperature vs Resistance Table

Resistance @ 32°F

Temperature Range:

-140 to 500°F

-100 to 260°C

TEMPERATURE & PROCESS INSTRUMENTS - CON-

| Temp | 0 | -1 | -2 | -3 | -4 | -5 | -6 | -7 | -8 | -9 |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| -140 | 58.719 | 58.474 | 58.229 | 57.984 | 57.738 | 57.493 | 57.248 | 57.003 | 56.757 | |
| -130 | 61.166 | 60.922 | 60.677 | 60.433 | 60.188 | 59.943 | 59.698 | 59.454 | 59.209 | 58.964 |
| -120 | 63.608 | 63.364 | 63.120 | 62.876 | 62.632 | 62.388 | 62.144 | 61.899 | 61.655 | 61.411 |
| -110 | 66.045 | 65.802 | 65.558 | 65.314 | 65.071 | 64.827 | 64.584 | 64.340 | 64.096 | 63.852 |
| -100 | 68.476 | 68.233 | 67.990 | 67.747 | 67.504 | 67.261 | 67.018 | 66.775 | 66.532 | 66.288 |
| -90 | 70.902 | 70.660 | 70.417 | 70.175 | 69.932 | 69.690 | 69.447 | 69.204 | 68.962 | 68.719 |
| -80 | 73.323 | 73.081 | 72.839 | 72.597 | 72.355 | 72.113 | 71.871 | 71.629 | 71.387 | 71.144 |
| -70 | 75.738 | 75.496 | 75.255 | 75.014 | 74.772 | 74.531 | 74.289 | 74.048 | 73.806 | 73.564 |
| -60 | 78.147 | 77.907 | 77.666 | 77.425 | 77.184 | 76.943 | 76.702 | 76.461 | 76.220 | 75.979 |
| -50 | 80.528 | 80.291 | 80.053 | 79.816 | 79.578 | 79.341 | 79.103 | 78.866 | 78.629 | 78.388 |
| -40 | 82.903 | 82.665 | 82.428 | 82.190 | 81.953 | 81.716 | 81.478 | 81.241 | 81.003 | 80.766 |
| -30 | 85.277 | 85.040 | 84.803 | 84.565 | 84.328 | 84.090 | 83.853 | 83.615 | 83.378 | 83.140 |
| -20 | 87.652 | 87.415 | 87.177 | 86.940 | 86.702 | 86.465 | 86.227 | 85.990 | 85.752 | 85.515 |
| -10 | 90.027 | 89.789 | 89.552 | 89.314 | 89.077 | 88.839 | 88.602 | 88.364 | 88.127 | 87.890 |
| 0 | 92.401 | 92.164 | 91.926 | 91.689 | 91.451 | 91.214 | 90.977 | 90.739 | 90.502 | 90.264 |
| Temp | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 0 | 92.401 | 92.639 | 92.876 | 93.114 | 93.351 | 93.589 | 93.826 | 94.064 | 94.301 | 94.538 |
| 10 | 94.776 | 95.013 | 95.251 | 95.488 | 95.726 | 95.963 | 96.201 | 96.438 | 96.676 | 96.913 |
| 20 | 97.151 | 97.388 | 97.625 | 97.863 | 98.100 | 98.338 | 98.575 | 98.813 | 99.050 | 99.288 |
| 30 | 99.525 | 99.763 | 100.000 | 100.237 | 100.475 | 100.712 | 100.950 | 101.187 | 101.425 | 101.662 |
| 40 | 101.900 | 102.137 | 102.375 | 102.612 | 102.850 | 103.087 | 103.324 | 103.562 | 103.799 | 104.037 |
| 50 | 104.274 | 104.512 | 104.749 | 104.987 | 105.224 | 105.462 | 105.699 | 105.937 | 106.174 | 106.411 |
| 60 | 106.649 | 106.886 | 107.124 | 107.361 | 107.599 | 107.836 | 108.074 | 108.311 | 108.549 | 108.786 |
| 70 | 109.024 | 109.261 | 109.498 | 109.736 | 109.973 | 110.211 | 110.448 | 110.686 | 110.923 | 111.161 |
| 80 | 111.398 | 111.636 | 111.873 | 112.111 | 112.348 | 112.585 | 112.823 | 113.060 | 113.298 | 113.535 |
| 90 | 113.773 | 114.010 | 114.248 | 114.485 | 114.723 | 114.960 | 115.198 | 115.435 | 115.672 | 115.910 |
| 100 | 116.147 | 116.385 | 116.622 | 116.860 | 117.097 | 117.335 | 117.572 | 117.810 | 118.047 | 118.285 |
| 110 | 118.522 | 118.759 | 118.997 | 119.234 | 119.472 | 119.709 | 119.947 | 120.184 | 120.422 | 120.659 |
| 120 | 120.897 | 121.134 | 121.372 | 121.609 | 121.846 | 122.084 | 122.321 | 122.559 | 122.796 | 123.034 |
| 130 | 123.271 | 123.509 | 123.746 | 123.984 | 124.221 | 124.458 | 124.696 | 124.933 | 125.171 | 125.408 |
| 140 | 125.646 | 125.883 | 126.121 | 126.358 | 126.596 | 126.833 | 127.071 | 127.308 | 127.545 | 127.783 |
| 150 | 128.020 | 128.258 | 128.495 | 128.733 | 128.970 | 129.208 | 129.445 | 129.683 | 129.920 | 130.158 |
| 160 | 130.395 | 130.632 | 130.870 | 131.107 | 131.345 | 131.582 | 131.820 | 132.057 | 132.295 | 132.532 |
| 170 | 132.770 | 133.007 | 133.245 | 133.482 | 133.719 | 133.957 | 134.194 | 134.432 | 134.669 | 134.907 |
| 180 | 135.144 | 135.382 | 135.619 | 135.857 | 136.094 | 136.332 | 136.569 | 136.806 | 137.044 | 137.281 |
| 190 | 137.519 | 137.756 | 137.994 | 138.231 | 138.469 | 138.706 | 138.944 | 139.181 | 139.419 | 139.656 |
| 200 | 139.893 | 140.131 | 140.368 | 140.606 | 140.843 | 141.081 | 141.318 | 141.556 | 141.793 | 142.031 |
| 210 | 142.268 | 142.506 | 142.743 | 142.980 | 143.218 | 143.455 | 143.693 | 143.930 | 144.168 | 144.405 |
| 220 | 144.643 | 144.880 | 145.118 | 145.355 | 145.593 | 145.830 | 146.067 | 146.305 | 146.542 | 146.780 |
| 230 | 147.017 | 147.255 | 147.492 | 147.730 | 147.967 | 148.205 | 148.442 | 148.680 | 148.917 | 149.154 |
| 240 | 149.392 | 149.629 | 149.867 | 150.104 | 150.342 | 150.579 | 150.817 | 151.054 | 151.292 | 151.529 |
| 250 | 151.767 | 152.004 | 152.241 | 152.479 | 152.716 | 152.954 | 153.191 | 153.429 | 153.666 | 153.904 |
| 260 | 154.141 | 154.379 | 154.616 | 154.854 | 155.091 | 155.328 | 155.566 | 155.803 | 156.041 | 156.278 |
| 270 | 156.516 | 156.753 | 156.991 | 157.228 | 157.466 | 157.703 | 157.941 | 158.178 | 158.415 | 158.653 |
| 280 | 158.890 | 159.128 | 159.365 | 159.603 | 159.840 | 160.078 | 160.315 | 160.553 | 160.790 | 161.028 |
| 290 | 161.265 | 161.502 | 161.740 | 161.977 | 162.215 | 162.452 | 162.690 | 162.927 | 163.165 | 163.402 |
| 300 | 163.640 | 163.877 | 164.114 | 164.354 | 164.593 | 164.833 | 165.072 | 165.312 | 165.551 | 165.791 |
| 310 | 166.030 | 166.270 | 166.509 | 166.749 | 166.988 | 167.228 | 167.467 | 167.707 | 167.946 | 168.186 |
| 320 | 168.425 | 168.665 | 168.904 | 169.144 | 169.383 | 169.623 | 169.862 | 170.102 | 170.341 | 170.581 |
| 330 | 170.820 | 171.060 | 171.299 | 171.539 | 171.778 | 172.018 | 172.257 | 172.497 | 172.736 | 172.976 |
| 340 | 173.215 | 173.455 | 173.694 | 173.934 | 174.174 | 174.413 | 174.653 | 174.892 | 175.132 | 175.371 |
| 350 | 175.611 | 175.851 | 176.090 | 176.330 | 176.569 | 176.809 | 177.048 | 177.288 | 177.528 | 177.767 |
| 360 | 178.007 | 178.246 | 178.486 | 178.726 | 178.965 | 179.205 | 179.444 | 179.684 | 179.924 | 180.163 |
| 370 | 180.403 | 180.642 | 180.882 | 181.122 | 181.361 | 181.601 | 181.841 | 182.080 | 182.320 | 182.559 |
| 380 | 182.799 | 183.039 | 183.278 | 183.518 | 183.758 | 183.997 | 184.237 | 184.477 | 184.716 | 184.956 |



Temperature vs Resistance Table Resistance @ 32°F

Temperature Range:
-140 to 500°F
-100 to 260°C

| Temp | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 390 | 185.196 | 185.435 | 185.675 | 185.915 | 186.154 | 186.394 | 186.634 | 186.873 | 187.113 | 187.353 |
| 400 | 187.592 | 187.832 | 188.072 | 188.312 | 188.551 | 188.791 | 189.031 | 189.270 | 189.510 | 189.750 |
| 410 | 189.990 | 190.229 | 190.469 | 190.709 | 190.948 | 191.188 | 191.428 | 191.668 | 191.907 | 192.147 |
| 420 | 192.387 | 192.627 | 192.866 | 193.106 | 193.346 | 193.586 | 193.825 | 194.065 | 194.305 | 194.545 |
| 430 | 194.784 | 195.024 | 195.264 | 195.504 | 195.743 | 195.983 | 196.223 | 196.463 | 196.703 | 196.942 |
| 440 | 197.182 | 197.422 | 197.662 | 197.902 | 198.141 | 198.381 | 198.621 | 198.861 | 199.101 | 199.340 |
| 450 | 199.580 | 199.820 | 200.060 | 200.300 | 200.539 | 200.779 | 201.019 | 201.259 | 201.499 | 201.739 |
| 460 | 201.978 | 202.218 | 202.458 | 202.698 | 202.938 | 203.178 | 203.418 | 203.657 | 203.897 | 204.137 |
| 470 | 204.377 | 204.617 | 204.857 | 205.097 | 205.336 | 205.576 | 205.816 | 206.056 | 206.296 | 206.536 |
| 480 | 206.776 | 207.016 | 207.256 | 207.495 | 207.735 | 207.975 | 208.215 | 208.455 | 208.695 | 208.935 |
| 490 | 209.175 | 209.415 | 209.655 | 209.895 | 210.134 | 210.374 | 210.614 | 210.854 | 211.094 | 211.334 |
| 500 | 211.574 | | | | | | | | | |



Unical RTD Highly Accurate, Handheld RTD Calibrator

Features

- Measure and simulate multiple RTD types with a programmable scale factor and averaging
- Calibrate and Read Pt100, Pt200, Pt1000, Cu10, Cu100, Ni100, Ni120
- 14 RTD Types + Ohm (to 4000 Ohm)
- High accuracy ($\pm 0.04\%$ of reading)
- Single-line LCD display (green, 7mm)
- Single value, multi-step or continuous ramp/soak simulation
- Selectable temperature scales (IPTS68 and ITS90)



MicroCal 200/200+ Two Channel High Accuracy Portable or Benchtop Laboratory Multifunction Calibrator

Features

- Resistance thermometers 2, 3, and 4 wire connections (Pt100/200/500/1000, Cu 10/100, and Ni100/120)
- High accuracy ($\pm 0.02\%/\pm 0.01\%$ of reading)
- Two insulated and independent channels
- Menu-driven procedures
- Compatible with 14 thermocouple types
- Ideal tool for measuring and simulating: Thermocouple, mV, V, mA, and Ohms



MC1200 High Accuracy Multifunction Process Calibrator

Features

- Read and source modes
- Eight (13) RTD types (Pt100/200/500/1000, Cu10/50/100, and Ni120)
- Thermocouple, mV, V, mA, and Ohms plus YSI 400 Thermistors
- Direct keyboard entry enables quick output changes
- Store up to nine (9) setpoints for each output function
- RTD function compatible with all pulsed transmitters
- RS-232 interface