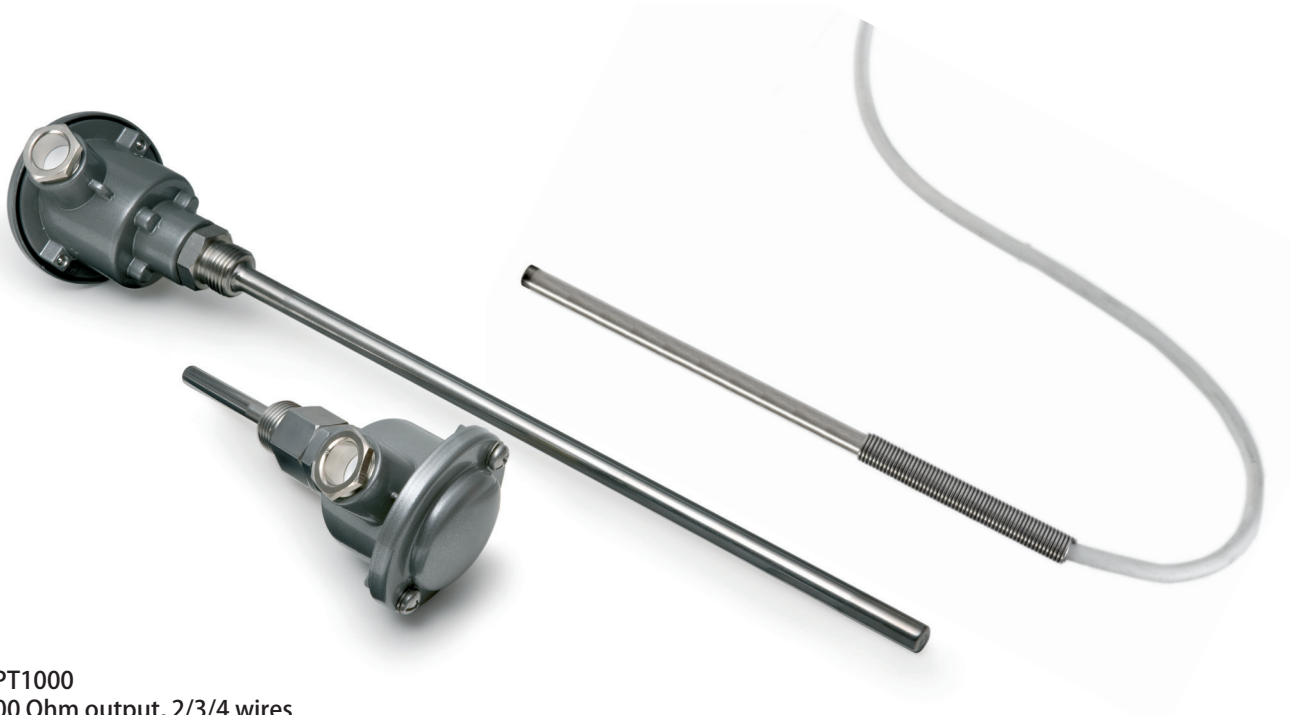




# PT100 - PT1000

## Temperature probes



PT100-PT1000  
100/1000 Ohm output, 2/3/4 wires  
Analog output 4-20 mA  
Cable outlet

### FEATURES

|                               |  |
|-------------------------------|--|
| <b>Sensor:</b>                | PT100-PT1000 platinum resistance thermometer   |
| <b>Accuracy:</b>              | Class A $\pm 0,15^{\circ}\text{C}$ @ $0^{\circ}\text{C}$ - DIN EN 60751  |
| <b>Probe:</b>                 | stainless steel  |
| <b>Head:</b>                  | DIN B in aluminum with blue painted cast   |
| <b>Execution:</b>             | IP 65 / NEMA 4X  |
| <b>Operating temperature:</b> | With traditional insulation from $-50$ to $300^{\circ}\text{C}$ (standard version)<br>With mineral insulation MgO from $-50$ to $500^{\circ}\text{C}$<br>Optional with minimum range from $-200^{\circ}\text{C}$ to $200^{\circ}\text{C}$ (PT100 only) |
| <b>Probe diameter:</b>        | standard $\varnothing 6\text{ mm}$ (other a available)   |

### TECHNICAL SPECIFICATIONS WITH CABLE VERSION

|                          |  |
|--------------------------|--|
| <b>Sensor:</b>           | PT100-PT1000 platinum resistance thermometer   |
| <b>Accuracy:</b>         | Class A $\pm 0,15^{\circ}\text{C}$ @ $0^{\circ}\text{C}$ , DIN EN 60751  |
| <b>Probe:</b>            | stainless steel  |
| <b>Anti-bend spring:</b> | IP 65 / NEMA 4X version<br>Silicone rubber cable, max $180^{\circ}\text{C}$ in TTS, max $300^{\circ}\text{C}$<br>Operating temperature: with traditional insulation from $-50$ to $300^{\circ}\text{C}$ , with MgO mineral insulation from $-50$ to $500^{\circ}\text{C}$ and optional with minimum range from $-200^{\circ}\text{C}$ to $200^{\circ}\text{C}$ . |
| <b>Probe diameter:</b>   | standard $\varnothing 6\text{ mm}$ (other than available)  |



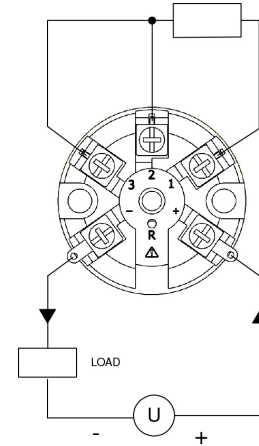
## TRANSMITTERS

### SEM 206 P: (RTD 100 2-3 wires)

PC configurable transmitter.

Transmitter specifications at 20°C and in nominal conditions.

|   |                   |
|---|-------------------|
| Power supply:                             | 10-30 Vcc         |
| Analog output:                            | 4-20 mA (2 wires) |
| Minimum span that can be set:             | 25°C              |
| Calibration error:                        | 0,2°C ±0,05% r.v. |
| Operating ambient temperature:            | from -40 to 85°C  |
| Relative humidity (without condensation): | 0-90%             |



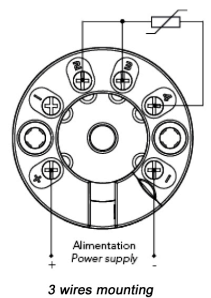
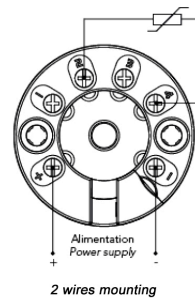
### TIXO 1 B: (RTD 100 2-3 wires)

ATEX Transmitters configurable by PC.

Transmitter at 25°C and in nominal conditions.



|   |                     |
|---|---------------------|
| Power supply                              | 8-28 Vdc            |
| Analog output:                            | 4-20 mA (2 wires)   |
| Minimum span can be set:                  | 0°C PT-100 - 10°C   |
| Transmission error:                       | ≤ ±0,1% of the f.s. |
| Operating ambient temperature:            | from -40 to 85°C    |
| Relative humidity (without condensation): | 5-95%               |



### TIXO 2 B: (RTD 100 - RTD 1000 - Ni 100 - Ni 1000 - Thermocouples)

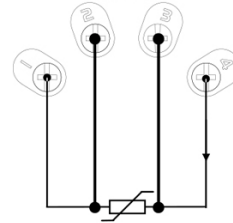
ATEX galvanically isolated transmitters configurable by PC.

Transmitter at 25°C and in nominal conditions.

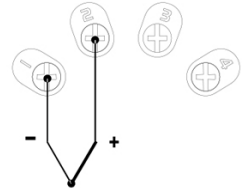


|   |                      |
|---|----------------------|
| Power supply:                             | 10-28 Vcc            |
| Analog output:                            | 4-20 mA (2 wires)    |
| Minimum span that can be set:             | 10°C (RTD) 50°C (TC) |
| Transmission error:                       | ≤ ±0,1% of the f.s.  |
| Operating ambient temperature:            | from -40 to 85°C     |
| Relative humidity (without condensation): | 5-95%                |

Mounting 2-3-4 wires  
RTD 100



Mounting TC



### TIXO 3 B: (RTD 100 - RTD 1000 - Ni 100 - Ni 1000 - Thermocouples)

ATEX galvanically isolated transmitters configurable by PC.

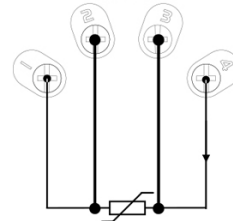
Transmitter at 25°C and in nominal conditions.



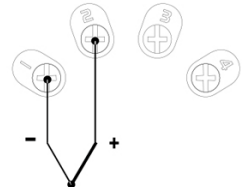
**HART**  
COMMUNICATION PROTOCOL

|   |                          |
|---|--------------------------|
| Power supply:                             | 10-28 Vcc                |
| Analog output:                            | 4-20 mA (2 wires) + HART |
| Minimum span that can be set:             | 10°C (RTD) 50°C (TC)     |
| Transmission error:                       | ≤ ±0,1% of the f.s.      |
| Operating ambient temperature:            | from -40 to 85°C         |
| Relative humidity (without condensation): | 5-95%                    |

Mounting 2-3-4 wires  
RTD 100

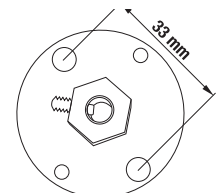
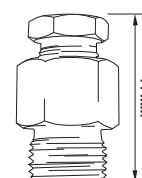


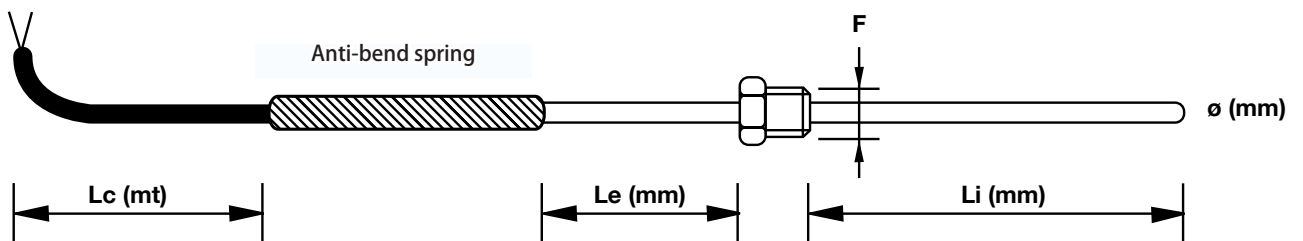
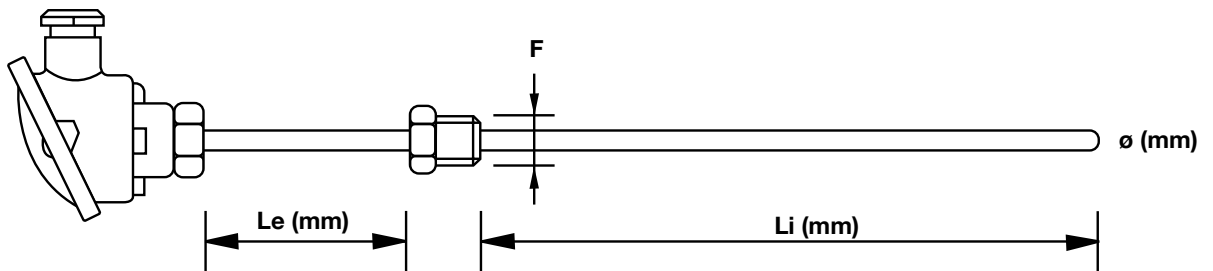
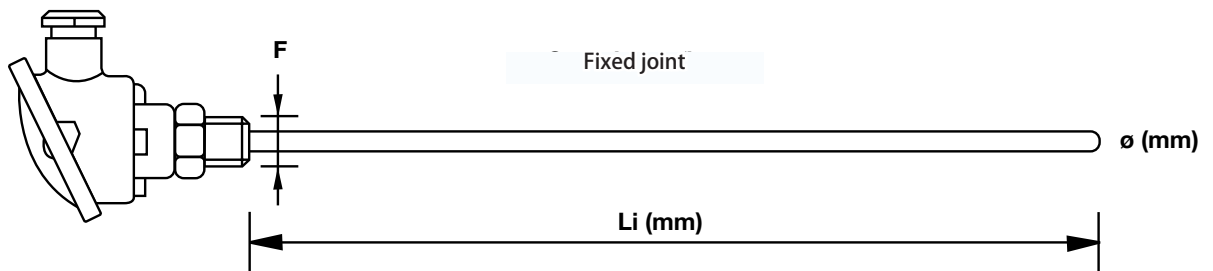
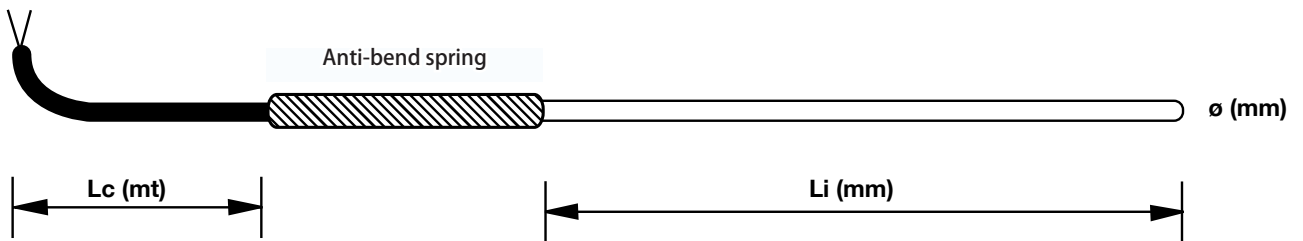
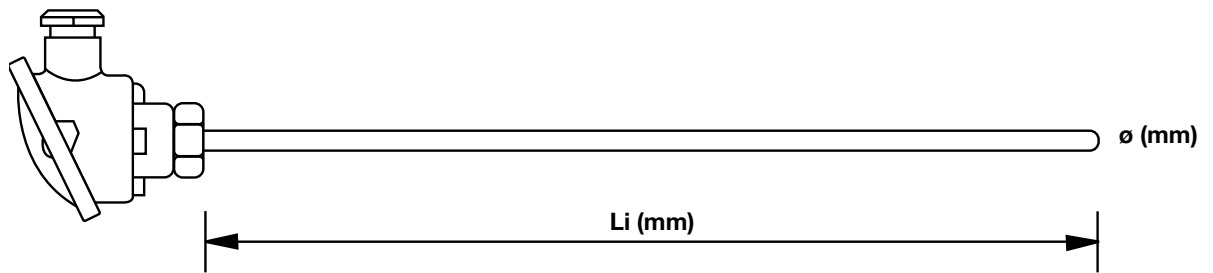
Mounting TC

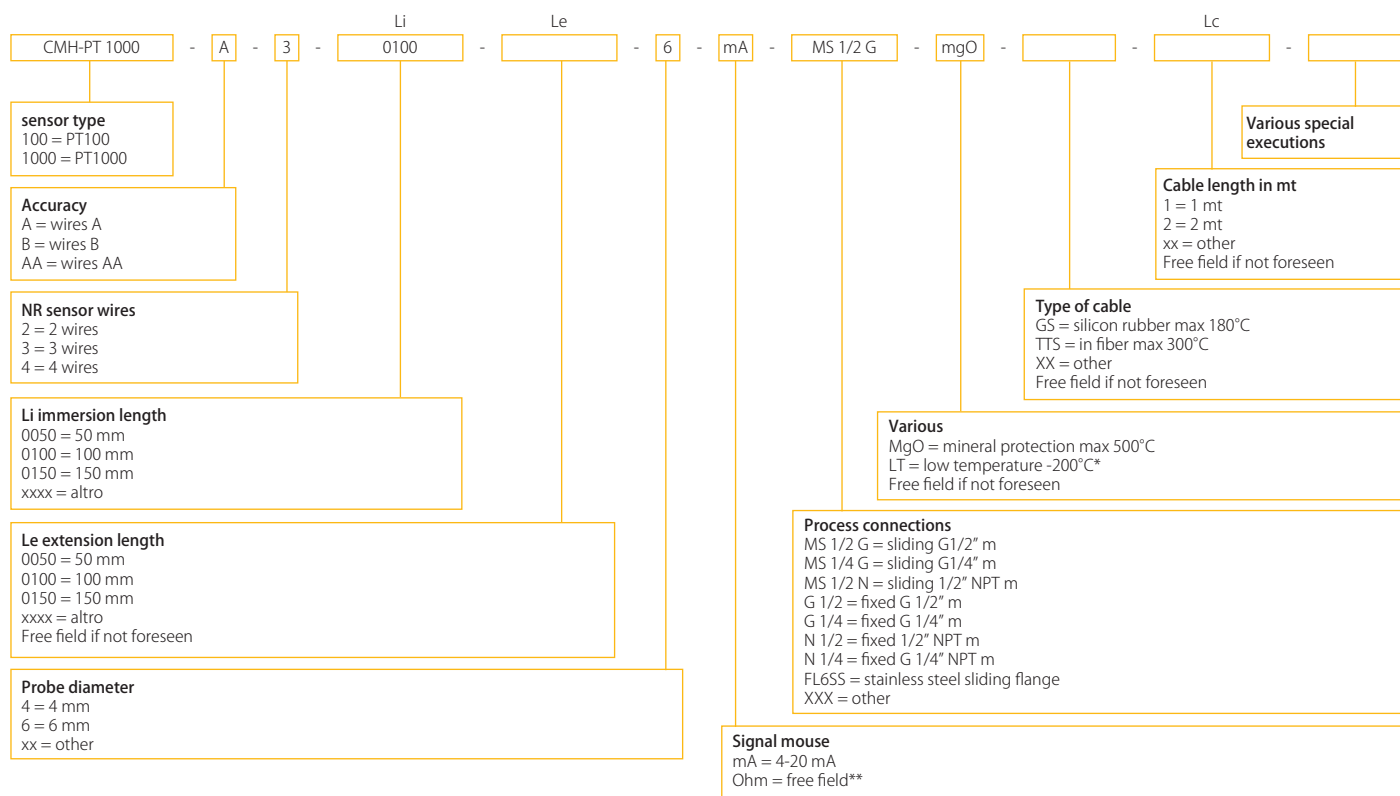


## OTHER ACCESSORIES

|                                |   |
|--------------------------------|---|
| MS1/2G:                        | sliding fitting compression                     |
| Materials:                     | 316 stainless steel                             |
| Process connection:            | 1/2" male gas<br>1/2" male NPT<br>1/4" male NPT |
| Length:                        | 44 mm   |
| FL-6-SS:                       | sliding flange for probes<br>diameter 6 mm      |
| Material:                      | stainless steel                                 |
| Distance between fixing holes: | 33 mm   |





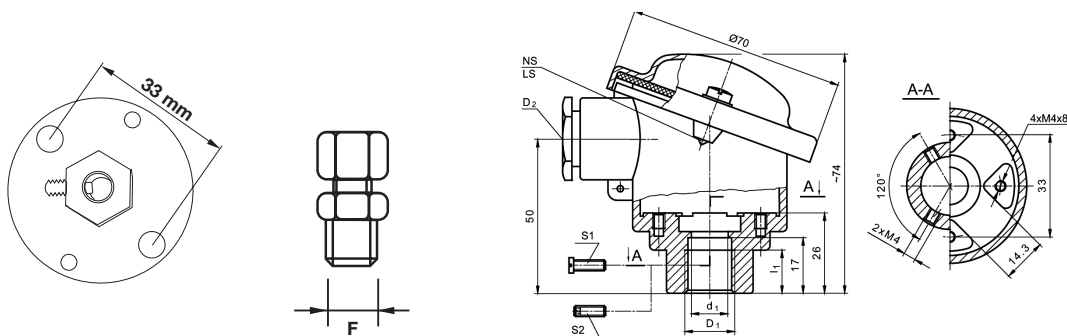


\* Only PT100

\*\* In case of Ohm output it will be supplied with internal terminal connection

## OTHER ACCESSORIES

|                              |   |
|------------------------------|---|
| <b>MS1/2G:</b>               | compression sliding joint.              |
| <b>Material:</b>             | 316 stainless steel                     |
| <b>Process connection:</b>   | 1/2 "male gas                           |
| <b>Length:</b>               | 44 mm                                   |
| <b>FL-6-SS</b>               | sliding flange for 6 mm diameter probes |
| <b>Material:</b>             | stainless steel                         |
| <b>Interax fixing holes:</b> | 33 mm                                   |



## PT100 / PT1000 RESISTANCE THERMORESISTANCE TOLERANCES ACCORDING TO IEC 60751: 2008

| Range | Classe A |      | Classe B |      |
|-------|----------|------|----------|------|
|       | °C       | Ohm  | °C       | Ohm  |
| -200  | 0,55     | 0,24 | 1,30     | 0,56 |
| -100  | 0,35     | 0,14 | 0,80     | 0,32 |
| 0     | 0,15     | 0,06 | 0,30     | 0,12 |
| 100   | 0,35     | 0,13 | 0,80     | 0,30 |
| 200   | 0,55     | 0,20 | 1,30     | 0,48 |
| 300   | 0,75     | 0,27 | 1,80     | 0,64 |
| 400   | 0,95     | 0,33 | 2,30     | 0,79 |
| 500   | 1,15     | 0,38 | 2,80     | 0,93 |
| 600   | 1,35     | 0,43 | 3,30     | 1,06 |
| 650   | 1,45     | 0,46 | 3,55     | 1,13 |
| 700   |          |      | 3,80     | 1,17 |
| 800   |          |      | 4,30     | 1,28 |
| 850   |          |      | 4,55     | 1,34 |



## CONVERSION TABLE FOR PT100 RESISTANCE THERMOMETERS ACCORDING TO IEC 75

### Relationship between resistance and temperature

|      | 0       | -1     | -2     | -3     | -4     | -5     | -6     | -7     | -8     | -9     |
|------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| -200 | 18,493  |        |        |        |        |        |        |        |        |        |
| -190 | 22,803  | 22,374 | 21,944 | 21,514 | 21,083 | 20,653 | 20,221 | 19,790 | 19,358 | 18,926 |
| -180 | 27,078  | 26,652 | 26,226 | 25,799 | 25,372 | 24,945 | 24,517 | 24,089 | 23,661 | 23,232 |
| -170 | 31,320  | 30,897 | 30,474 | 30,051 | 29,627 | 29,203 | 28,779 | 28,354 | 27,929 | 27,504 |
| -160 | 35,531  | 35,111 | 34,691 | 34,271 | 33,850 | 33,429 | 33,008 | 32,587 | 32,165 | 31,742 |
| -150 | 39,714  | 39,297 | 38,879 | 38,462 | 38,044 | 37,626 | 37,208 | 36,789 | 36,370 | 35,951 |
| -140 | 43,869  | 43,455 | 43,040 | 42,625 | 42,210 | 41,795 | 41,379 | 40,963 | 40,547 | 40,130 |
| -130 | 47,999  | 47,587 | 47,175 | 46,763 | 46,350 | 45,937 | 45,524 | 45,111 | 44,697 | 44,283 |
| -120 | 52,106  | 51,696 | 51,286 | 50,876 | 50,466 | 50,055 | 49,645 | 49,234 | 48,822 | 48,411 |
| -110 | 56,190  | 55,783 | 55,375 | 54,967 | 54,559 | 54,151 | 53,742 | 53,333 | 52,924 | 52,515 |
| -100 | 60,254  | 59,849 | 59,443 | 59,037 | 58,631 | 58,225 | 57,818 | 57,412 | 57,005 | 56,598 |
| -90  | 64,299  | 63,895 | 63,491 | 63,087 | 62,683 | 62,279 | 61,874 | 61,469 | 61,065 | 60,659 |
| -80  | 68,325  | 67,923 | 67,521 | 67,119 | 66,717 | 66,314 | 65,911 | 65,508 | 65,105 | 64,702 |
| -70  | 72,335  | 71,934 | 71,534 | 71,134 | 70,733 | 70,332 | 69,931 | 69,530 | 69,128 | 68,727 |
| -60  | 76,328  | 75,930 | 75,531 | 75,132 | 74,733 | 74,333 | 73,934 | 73,534 | 73,135 | 72,735 |
| -50  | 80,307  | 79,910 | 79,512 | 79,115 | 78,717 | 78,319 | 77,921 | 77,523 | 77,125 | 76,727 |
| -40  | 84,271  | 83,875 | 83,479 | 83,083 | 82,687 | 82,291 | 81,894 | 81,498 | 81,101 | 80,704 |
| -30  | 88,222  | 87,828 | 87,433 | 87,038 | 86,643 | 86,248 | 85,853 | 85,458 | 85,063 | 84,667 |
| -20  | 92,160  | 91,767 | 91,374 | 90,980 | 90,587 | 90,193 | 89,799 | 89,405 | 89,011 | 88,617 |
| -10  | 96,086  | 95,694 | 95,302 | 94,910 | 94,517 | 94,125 | 93,732 | 93,339 | 92,946 | 92,553 |
| 0    | 100,000 | 99,609 | 99,218 | 98,827 | 98,436 | 98,045 | 97,653 | 97,262 | 96,870 | 96,478 |

|     | 0       | 1       | 2       | 3       | 4       | 5       | 6       | 7       | 8       | 9       |
|-----|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0   | 100,000 | 100,391 | 100,781 | 101,172 | 101,562 | 101,953 | 102,343 | 102,733 | 103,123 | 103,513 |
| 10  | 103,902 | 104,292 | 104,681 | 105,071 | 105,460 | 105,849 | 106,238 | 106,627 | 107,016 | 107,404 |
| 20  | 107,793 | 108,181 | 108,570 | 108,958 | 109,346 | 109,734 | 110,122 | 110,509 | 110,897 | 111,284 |
| 30  | 111,672 | 112,059 | 112,446 | 112,833 | 113,220 | 113,607 | 113,994 | 114,380 | 114,767 | 115,153 |
| 40  | 115,539 | 115,925 | 116,311 | 116,697 | 117,083 | 117,469 | 117,854 | 118,240 | 118,625 | 119,010 |
| 50  | 119,395 | 119,780 | 120,165 | 120,550 | 120,934 | 121,319 | 121,703 | 122,087 | 122,471 | 122,855 |
| 60  | 123,239 | 123,623 | 124,007 | 124,390 | 124,774 | 125,157 | 125,540 | 125,923 | 126,306 | 126,689 |
| 70  | 127,072 | 127,454 | 127,837 | 128,219 | 128,602 | 128,984 | 129,366 | 129,748 | 130,130 | 130,511 |
| 80  | 130,893 | 131,274 | 131,656 | 132,037 | 132,418 | 132,799 | 133,180 | 133,561 | 133,941 | 134,322 |
| 90  | 134,702 | 135,083 | 135,463 | 135,843 | 136,223 | 136,603 | 136,982 | 137,362 | 137,741 | 138,121 |
| 100 | 138,500 | 138,879 | 139,258 | 139,637 | 140,016 | 140,395 | 140,773 | 141,152 | 141,530 | 141,908 |
| 110 | 142,286 | 142,664 | 143,042 | 143,420 | 143,797 | 144,175 | 144,552 | 144,930 | 145,307 | 145,684 |
| 120 | 146,061 | 146,438 | 146,814 | 147,191 | 147,567 | 147,944 | 148,320 | 148,696 | 149,072 | 149,448 |
| 130 | 149,824 | 150,199 | 150,575 | 150,950 | 151,326 | 151,701 | 152,076 | 152,451 | 152,826 | 153,200 |
| 140 | 153,575 | 153,950 | 154,324 | 154,698 | 155,072 | 155,446 | 155,820 | 156,194 | 156,568 | 156,941 |
| 150 | 157,315 | 157,688 | 158,061 | 158,435 | 158,808 | 159,180 | 159,553 | 159,926 | 160,298 | 160,671 |
| 160 | 161,043 | 161,415 | 161,787 | 162,159 | 162,531 | 162,903 | 163,274 | 163,646 | 164,017 | 164,388 |
| 170 | 164,760 | 165,131 | 165,501 | 165,872 | 166,243 | 166,613 | 166,984 | 167,354 | 167,724 | 168,095 |
| 180 | 168,465 | 168,834 | 169,204 | 169,574 | 169,943 | 170,313 | 170,682 | 171,051 | 171,420 | 171,789 |
| 190 | 172,158 | 172,527 | 172,895 | 173,264 | 173,632 | 174,000 | 174,368 | 174,736 | 175,104 | 175,472 |
| 200 | 175,840 | 176,207 | 176,575 | 176,942 | 177,309 | 177,676 | 178,043 | 178,410 | 178,777 | 179,143 |
| 210 | 179,510 | 179,876 | 180,242 | 180,609 | 180,975 | 181,340 | 181,706 | 182,072 | 182,437 | 182,803 |
| 220 | 183,168 | 183,533 | 183,899 | 184,264 | 184,628 | 184,993 | 185,358 | 185,722 | 186,087 | 186,451 |
| 230 | 186,815 | 187,179 | 187,543 | 187,907 | 188,271 | 188,634 | 188,998 | 189,361 | 189,724 | 190,088 |
| 240 | 190,451 | 190,813 | 191,176 | 191,539 | 191,901 | 192,264 | 192,626 | 192,988 | 193,350 | 193,712 |
| 250 | 194,074 | 194,436 | 194,798 | 195,159 | 195,520 | 195,882 | 196,243 | 196,604 | 196,965 | 197,326 |
| 260 | 197,686 | 198,047 | 198,407 | 198,768 | 199,128 | 199,488 | 199,848 | 200,208 | 200,568 | 200,927 |
| 270 | 201,287 | 201,646 | 202,006 | 202,365 | 202,724 | 203,083 | 203,442 | 203,800 | 204,159 | 204,517 |
| 280 | 204,876 | 205,234 | 205,592 | 205,950 | 206,308 | 206,666 | 207,024 | 207,381 | 207,739 | 208,096 |
| 290 | 208,453 | 208,810 | 209,167 | 209,524 | 209,881 | 210,237 | 210,594 | 210,950 | 211,307 | 211,663 |
| 300 | 212,019 | 212,375 | 212,731 | 213,086 | 213,442 | 213,797 | 214,153 | 214,508 | 214,863 | 215,218 |
| 310 | 215,573 | 215,928 | 216,282 | 216,637 | 216,991 | 217,346 | 217,700 | 218,054 | 218,408 | 218,762 |
| 320 | 219,115 | 219,469 | 219,822 | 220,176 | 220,529 | 220,882 | 221,235 | 221,588 | 221,941 | 222,294 |
| 330 | 222,646 | 222,999 | 223,351 | 223,703 | 224,055 | 224,407 | 224,759 | 225,111 | 225,463 | 225,814 |
| 340 | 226,166 | 226,517 | 226,868 | 227,219 | 227,570 | 227,921 | 228,272 | 228,622 | 228,973 | 229,323 |
| 350 | 229,673 | 230,023 | 230,373 | 230,723 | 231,073 | 231,423 | 231,772 | 232,122 | 232,471 | 232,820 |
| 360 | 233,169 | 233,518 | 233,867 | 234,216 | 234,565 | 234,913 | 235,261 | 235,610 | 235,958 | 236,306 |
| 370 | 236,654 | 237,002 | 237,349 | 237,697 | 238,044 | 238,392 | 238,739 | 239,086 | 239,433 | 239,780 |
| 380 | 240,127 | 240,473 | 240,820 | 241,166 | 241,513 | 241,859 | 242,205 | 242,551 | 242,897 | 243,242 |
| 390 | 243,588 | 243,933 | 244,279 | 244,624 | 244,969 | 245,314 | 245,659 | 246,004 | 246,349 | 246,693 |
| 400 | 247,038 | 247,382 | 247,726 | 248,070 | 248,414 | 248,758 | 249,102 | 249,445 | 249,789 | 250,132 |
| 410 | 250,476 | 250,819 | 251,162 | 251,505 | 251,848 | 252,190 | 252,533 | 252,875 | 253,218 | 253,560 |
| 420 | 253,902 | 254,244 | 254,586 | 254,928 | 255,269 | 255,611 | 255,952 | 256,294 | 256,635 | 256,976 |

# CONVERSION TABLE FOR PT1000 RESISTANCE THERMOMETERS ACCORDING TO IEC 751 STANDARDS

|     | 0      | 1      | 2      | 3      | 4      | 5      | 6      | 7      | 8      | 9      | 0      |
|-----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| -80 | 683,25 | 687,27 | 691,29 | 695,3  | 699,31 | 703,32 | 707,33 | 711,34 | 715,34 | 719,34 | 723,35 |
| -70 | 723,35 | 727,35 | 731,34 | 735,34 | 739,34 | 743,33 | 747,32 | 751,32 | 755,3  | 759,29 | 763,28 |
| -60 | 763,28 | 767,26 | 771,25 | 775,23 | 779,21 | 783,19 | 787,17 | 791,14 | 795,12 | 799,09 | 803,06 |
| -50 | 803,06 | 807,03 | 811    | 814,97 | 818,94 | 822,9  | 826,87 | 830,83 | 834,79 | 838,75 | 842,71 |
| -40 | 842,71 | 846,66 | 850,62 | 854,57 | 858,53 | 862,48 | 866,43 | 870,38 | 874,33 | 878,27 | 882,22 |
| -30 | 882,22 | 886,16 | 890,1  | 894,04 | 897,99 | 901,92 | 905,86 | 909,8  | 913,73 | 917,67 | 921,6  |
| -20 | 921,6  | 925,53 | 929,46 | 933,39 | 937,32 | 941,24 | 945,17 | 949,09 | 953,02 | 956,94 | 960,86 |
| -10 | 960,86 | 964,78 | 968,7  | 972,61 | 976,53 | 980,44 | 984,36 | 988,27 | 992,18 | 996,09 | 1000   |
| 0   | 1000   | 1003,9 | 1007,8 | 1011,7 | 1015,6 | 1019,5 | 1023,4 | 1027,3 | 1031,2 | 1035,1 | 1039   |
| 10  | 1039   | 1042,9 | 1046,8 | 1050,7 | 1054,6 | 1058,5 | 1062,4 | 1066,3 | 1070,2 | 1074   | 1077,9 |
| 20  | 1077,9 | 1081,8 | 1085,7 | 1089,6 | 1093,5 | 1097,3 | 1101,2 | 1105,1 | 1109   | 1112,9 | 1116,7 |
| 30  | 1116,7 | 1120,6 | 1124,5 | 1128,3 | 1132,2 | 1136,1 | 1140   | 1143,8 | 1147,7 | 1151,5 | 1155,4 |
| 40  | 1155,4 | 1159,3 | 1163,1 | 1167   | 1170,8 | 1174,7 | 1178,6 | 1182,4 | 1186,3 | 1190,1 | 1194   |
| 50  | 1194   | 1197,8 | 1201,7 | 1205,5 | 1209,4 | 1213,2 | 1217,1 | 1220,9 | 1224,7 | 1228,6 | 1232,4 |
| 60  | 1232,4 | 1236,3 | 1240,1 | 1243,9 | 1247,8 | 1251,6 | 1255,4 | 1259,3 | 1263,1 | 1266,9 | 1270,8 |
| 70  | 1270,8 | 1274,6 | 1278,4 | 1282,2 | 1286,1 | 1289,9 | 1293,7 | 1297,5 | 1301,3 | 1305,2 | 1309   |
| 80  | 1309   | 1312,8 | 1316,6 | 1320,4 | 1324,2 | 1328   | 1331,8 | 1335,7 | 1339,5 | 1343,3 | 1347,1 |
| 90  | 1347,1 | 1350,9 | 1354,7 | 1358,5 | 1362,3 | 1366,1 | 1369,9 | 1373,7 | 1377,5 | 1381,3 | 1385,1 |
| 100 | 1385,1 | 1388,8 | 1392,6 | 1396,4 | 1400,2 | 1404   | 1407,8 | 1411,6 | 1415,4 | 1419,1 | 1422,9 |
| 110 | 1422,9 | 1426,7 | 1430,5 | 1434,3 | 1438   | 1441,8 | 1445,6 | 1449,4 | 1453,1 | 1456,9 | 1460,7 |
| 120 | 1460,7 | 1464,4 | 1468,2 | 1472   | 1475,8 | 1479,5 | 1483,3 | 1487   | 1490,8 | 1494,6 | 1498,3 |
| 130 | 1498,3 | 1502,1 | 1505,8 | 1509,6 | 1513,3 | 1517,1 | 1520,8 | 1524,6 | 1528,3 | 1532,1 | 1535,8 |
| 140 | 1535,8 | 1539,6 | 1543,3 | 1547,1 | 1550,8 | 1554,6 | 1558,3 | 1562   | 1565,8 | 1569,5 | 1573,3 |
| 150 | 1573,3 | 1577   | 1580,7 | 1584,5 | 1588,2 | 1591,9 | 1595,6 | 1599,4 | 1603,1 | 1606,8 | 1610,5 |
| 160 | 1610,5 | 1614,3 | 1618   | 1621,7 | 1625,4 | 1629,1 | 1632,9 | 1636,6 | 1640,3 | 1644   | 1647,7 |
| 170 | 1647,7 | 1651,4 | 1655,1 | 1658,9 | 1662,6 | 1666,3 | 1670   | 1673,7 | 1677,4 | 1681,1 | 1684,8 |
| 180 | 1684,8 | 1688,5 | 1692,2 | 1695,9 | 1699,6 | 1703,3 | 1707   | 1710,7 | 1714,3 | 1718   | 1721,7 |
| 190 | 1721,7 | 1725,4 | 1729,1 | 1732,8 | 1736,5 | 1740,2 | 1743,8 | 1747,5 | 1751,2 | 1754,9 | 1758,6 |
| 200 | 1758,6 | 1762,2 | 1765,9 | 1769,6 | 1773,3 | 1776,9 | 1780,6 | 1784,3 | 1787,9 | 1791,6 | 1795,3 |
| 210 | 1795,3 | 1798,9 | 1802,6 | 1806,3 | 1809,9 | 1813,6 | 1817,2 | 1820,9 | 1824,6 | 1828,2 | 1831,9 |
| 220 | 1831,9 | 1835,5 | 1839,2 | 1842,8 | 1846,5 | 1850,1 | 1853,8 | 1857,4 | 1861,1 | 1864,7 | 1868,4 |
| 230 | 1868,4 | 1872   | 1875,6 | 1879,3 | 1882,9 | 1886,6 | 1890,2 | 1893,8 | 1897,5 | 1901,1 | 1904,7 |
| 240 | 1904,7 | 1908,4 | 1912   | 1915,6 | 1919,2 | 1922,9 | 1926,5 | 1930,1 | 1933,7 | 1937,4 | 1941   |
| 250 | 1941   | 1944,6 | 1948,2 | 1951,8 | 1955,5 | 1959,1 | 1962,7 | 1966,3 | 1969,9 | 1973,5 | 1977,1 |
| 260 | 1977,1 | 1980,7 | 1984,3 | 1987,9 | 1991,5 | 1995,1 | 1998,7 | 2002,3 | 2005,9 | 2009,5 | 2013,1 |
| 270 | 2013,1 | 2016,7 | 2020,3 | 2023,9 | 2027,5 | 2031,1 | 2034,7 | 2038,3 | 2041,9 | 2045,5 | 2049   |
| 280 | 2049   | 2052,6 | 2056,2 | 2059,8 | 2063,4 | 2067   | 2070,5 | 2074,1 | 2077,7 | 2081,3 | 2084,8 |
| 290 | 2084,8 | 2088,4 | 2092   | 2095,6 | 2099,1 | 2102,7 | 2106,3 | 2109,8 | 2113,4 | 2117   | 2120,5 |
| 300 | 2120,5 | 2124,1 | 2127,6 | 2131,2 | 2134,8 | 2138,3 | 2141,9 | 2145,4 | 2149   | 2152,5 | 2156,1 |