

TEMPERATURE SENSOR

Thermoelectrically cooled detectors are equipped with a built-in thermistor to provide precise control and measurements of detector active element temperature. The bias applied to the thermistor should be < 1 mW, the bias > 100 mW may damage the thermistor.

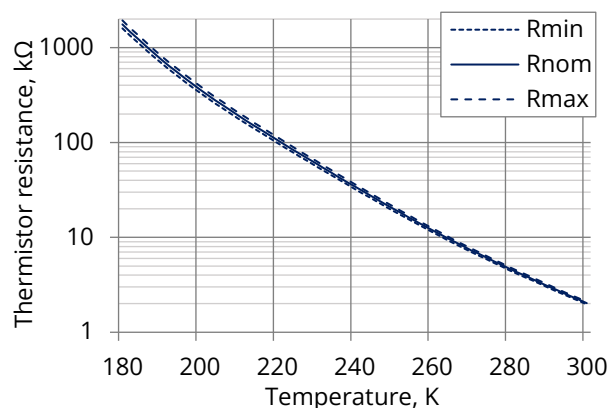


FIGURE 1. Thermistor characteristics

TABLE 1. Resistance vs. temperature of the thermistor

| T, K | T, °C | R _{min} , kΩ | R _{nom} , kΩ | R _{max} , kΩ | T, K | T, °C | R _{min} , kΩ | R _{nom} , kΩ | R _{max} , kΩ | T, K | T, °C | R _{min} , kΩ | R _{nom} , kΩ | R _{max} , kΩ |
|------|-------|-----------------------|-----------------------|-----------------------|------|-------|-----------------------|-----------------------|-----------------------|------|-------|-----------------------|-----------------------|-----------------------|
| 180 | -93 | 1594.97 | 1757.95 | 1935.84 | 220 | -53 | 99.10 | 106.21 | 113.72 | 260 | -13 | 11.41 | 11.96 | 12.53 |
| 182 | -91 | 1336.02 | 1469.90 | 1615.75 | 222 | -51 | 88.44 | 94.67 | 101.25 | 262 | -11 | 10.34 | 10.83 | 11.33 |
| 184 | -89 | 1124.16 | 1234.66 | 1354.81 | 224 | -49 | 78.98 | 84.44 | 90.21 | 264 | -9 | 9.38 | 9.82 | 10.26 |
| 186 | -87 | 950.46 | 1042.11 | 1141.58 | 226 | -47 | 70.57 | 75.37 | 80.42 | 266 | -7 | 8.52 | 8.91 | 9.31 |
| 188 | -85 | 807.57 | 883.99 | 966.78 | 228 | -45 | 63.09 | 67.30 | 71.73 | 268 | -5 | 7.75 | 8.10 | 8.45 |
| 190 | -83 | 689.57 | 753.62 | 822.88 | 230 | -43 | 56.42 | 60.12 | 64.01 | 270 | -3 | 7.07 | 7.37 | 7.69 |
| 192 | -81 | 591.68 | 645.64 | 703.89 | 232 | -41 | 50.49 | 53.74 | 57.15 | 272 | -1 | 6.45 | 6.72 | 7.00 |
| 194 | -79 | 510.07 | 555.75 | 604.98 | 234 | -39 | 45.19 | 48.05 | 51.04 | 274 | 1 | 5.89 | 6.13 | 6.38 |
| 196 | -77 | 441.68 | 480.54 | 522.34 | 236 | -37 | 40.47 | 42.98 | 45.61 | 276 | 3 | 5.38 | 5.60 | 5.83 |
| 198 | -75 | 384.05 | 417.25 | 452.91 | 238 | -35 | 36.26 | 38.47 | 40.77 | 278 | 5 | 4.93 | 5.13 | 5.32 |
| 200 | -73 | 335.23 | 363.71 | 394.26 | 240 | -33 | 32.51 | 34.45 | 36.47 | 280 | 7 | 4.52 | 4.69 | 4.87 |
| 202 | -71 | 293.65 | 318.17 | 344.43 | 242 | -31 | 29.16 | 30.87 | 32.64 | 282 | 9 | 4.15 | 4.30 | 4.46 |
| 204 | -69 | 258.05 | 279.23 | 301.88 | 244 | -29 | 26.18 | 27.68 | 29.24 | 284 | 11 | 3.81 | 3.95 | 4.09 |
| 206 | -67 | 227.41 | 245.76 | 265.36 | 246 | -27 | 23.51 | 24.84 | 26.21 | 286 | 13 | 3.50 | 3.63 | 3.75 |
| 208 | -65 | 200.91 | 216.85 | 233.85 | 248 | -25 | 21.14 | 22.30 | 23.51 | 288 | 15 | 3.22 | 3.33 | 3.45 |
| 210 | -63 | 177.89 | 191.77 | 206.55 | 250 | -23 | 19.02 | 20.05 | 21.11 | 290 | 17 | 2.96 | 3.06 | 3.17 |
| 212 | -61 | 157.81 | 169.92 | 182.79 | 252 | -21 | 17.13 | 18.04 | 18.98 | 292 | 19 | 2.73 | 2.82 | 2.91 |
| 214 | -59 | 140.22 | 150.80 | 162.03 | 254 | -19 | 15.45 | 16.25 | 17.07 | 294 | 21 | 2.51 | 2.59 | 2.68 |
| 216 | -57 | 124.76 | 134.02 | 143.83 | 256 | -17 | 13.95 | 14.65 | 15.38 | 296 | 23 | 2.32 | 2.39 | 2.46 |
| 218 | -55 | 111.14 | 119.25 | 127.83 | 258 | -15 | 12.61 | 13.23 | 13.87 | 298 | 25 | 2.13 | 2.20 | 2.27 |