

Temperature sensing element NTC 12k; $B_{25/85} = 3740$

Basic technical parameters

Sensing element	Bead NTC thermistor
Working temperature range	-40 to 125 °C *
Resistance at 25 °C	12 k Ω
Coefficient $\beta_{25/85}$	3740 \pm 1%
Coefficient $\beta_{25/100}$	3760 \pm 1%
Long-term resistance stability	\leq 3 % after 1000 h at 85 °C **
Recommended / maximum DC input	0.5 mW / 5mW
Sensor tolerance	\pm 5 % ***

* The real range of working temperature of the sensor is given by the design of the sensing element and the production technology.

** These parameters depend on the specific type and design of the thermistor.

*** The thermistor electrical resistance tolerance at a temperature of 25 °C is rated by the manufacturer into groups \pm 1%, \pm 3 % or \pm 5%.

Dependence of resistance in Ω on temperature

°C	0	-1	-2	-3	-4	-5	-6	-7	-8	-9
-40	309400									
-30	171800	183340	194880	206420	217960	229500	245480	261460	277440	293420
-20	98980	105144	111308	117472	123636	129800	245480	261460	277440	293420
-10	58880	62308	65736	69164	72592	76020	138200	146600	155000	163400
0	36130	38094	40058	42022	43986	45950	80612	85204	89796	94388

°C	0	1	2	3	4	5	6	7	8	9
0	36130	34624	33118	31612	30106	28600	27440	26280	25120	23960
10	22800	21900	21000	20100	19200	18300	17594	16888	16182	15476
20	14770	14216	13662	13108	12554	12000	11560.8	11121.6	10682.4	10243.2
30	9804	9454	9104	8754	8404	8054	7773.6	7493.2	7212.8	6932.4
40	6652	6426	6200	5974	5748	5522	5339	5156	4973	4790
50	4607	4458	4309	4160	4011	3862	3740	3618	3496	3374
60	3252	3152	3052	2951	2851	2751	2668	2585	2503	2420
70	2337	2268	2199	2131	2062	1993	1936	1879	1821	1764
80	1707	1659	1611	1563	1515	1467	1427	1387	1346	1306
90	1266	1232	1198	1164	1130	1096	1067	1038	1010	980.8
100	952.0	927.6	903.2	878.8	854.4	830.0	809.2	788.4	767.6	746.8
110	726.0	708.2	690.4	672.6	654.8	637.0	621.6	606.2	590.8	575.4
120	560.0	547.0	534.0	521.0	508.0	495.0				

Note: The resistance values **in bold** are taken from the table of the manufacturer of the bead thermistor, the other values are calculated by linear interpolation, with the error caused by calculation being one order of magnitude lower than the tolerance specified by the manufacturer.