

Dimensions and resistances for thermocouple wires

Dimensions			Wire resistance in ohms per metre of wire					
AWG	Diam. mm	Area mm ²	K	N	J	T	S	Cu/Cu
18	1,02	0,823	1,2	1,6	0,8	0,6	0,4	0,04
20	0,81	0,519	1,9	2,6	1,2	1,0	0,6	0,07
22	0,64	0,324	3,1	4,1	1,9	1,5	0,9	0,11
23	0,57	0,259	3,9	5,1	2,3	2,0	1,2	0,13
24	0,51	0,205	4,9	6,5	3,0	2,5	1,5	0,17
25	0,45	0,162	6,2	8,2	3,7	3,1	1,8	0,21
26	0,40	0,128	7,8	10,4	4,7	3,9	2,3	0,27
28	0,32	0,080	11,8	16,5	7,5	6,3	3,7	0,43
30	0,25	0,051	19,8	26,2	12,0	10,0	5,8	0,68
32	0,20	0,032	30,9	41,0	18,8	15,6	9,3	1,08
34	0,16	0,020	49,7	66,1	30,2	25,2	14,8	1,71
36	0,13	0,013	79,0	105,0	48,1	40,1	23,5	2,72
38	0,10	0,008	123,7	164,0	75,3	62,5	37,3	4,33
40	0,08	0,005	205,4	273,1	124,1	103,8	59,3	6,88

AWG = American wire gage, which is a number of the used draw plate. There is no mathematical formula connecting the plate number to wire diameter or wire area.

Wire resistance in ohms per metre of wire means the total resistance for 1 metre of both wires in a one-pair cable. For Pt100-wire the total resistance for 1 metre of two wires also corresponds to the resistance of 2 metres of one wire. The resistance of the different cables of the homepage are called "Total resistance" at the table tops.

The figures of the table is approximative and rounded. Deviations may occur.

Compensated materials – are recognized by the letter C, a e KC – have a resistance that normally differs from the one of the corresponding thermocouple material.

Cu/Cu means copper in both wires and has been included for comparison reasons. The values also are the base for the resistances of the Pt100 wires.