

THERMOCOUPLE WIRE SIZE AND RESISTANCE TABLE

AWG No.	Diameter Inches	ISA Type K Chromel-P/ Alumel	ISA Type J Iron/ Constantan	ISA Type T Copper/ Constantan	ISA Type E Chromel/ Constantan	ISA Type N Nicrosil/ Nisil	ISA Type S PT-PT 10% RH	ISA Type R PT-PT 13% RH
8	.1285	.0365	.2185	.0186	.0437	.0485	.011	.011
12	.0808	.0916	.0533	.0455	.1099	.1225	.028	.029
14	.0641	.1466	.085	.0735	.1752	.1947	.045	.047
16	.0508	.2331	.136	.117	.2775	.3100	.071	.073
18	.0403	.3706	.218	.1874	.4454	.4926	.116	.119
20	.0320	.5894	.349	.2991	.7030	.7812	.185	.190
22	.0253	.9368	.544	.4751	1.1206	1.2498		
24	.0201	1.4901	.878	.7526	1.78	1.980	.464	.478
26	.0159	2.3811	1.405	1.204	2.836	3.164	.740	.760
28	.0126	3.768	2.235	1.9159	4.512	5.039		
30	.0100	5.984	3.551	3.0431	7.169	8.000	1.85	1.91

Resistance in Ohms per Double Foot at 68°F. For explanation of how to use this table, see Example:

Example: What is external resistance to my instrument if I use a 20 gauge Chromel/Alumel thermocouple 3 feet long and 14 gauge Chromel/Alumel lead wire 20 feet in length?

Answer: 3 x .5894 = 1.7682 ohms
 20 x .1466 = 2.932 ohms
 Total 4.7002 ohms

Note: Type S and R utilize extension lead wire type Copper/Copper 11. Type B utilizes extension lead wire type Copper/Copper.



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