

# THERMOCOUPLE WIRE GENERAL

## WIRE SIZE VS. RESISTANCE FOR THERMOCOUPLE WIRE

Resistance in ohms per single foot at 20°C (68°F)

AWG.	DIAMETER Inches	IRON (JP)	CONSTAN- TAN (EN, JN, TN)	CHROMEL (EP, KP)	ALUMEL (KN)	COPPER (TP)	PLATINUM (RN, SN)	PLATINUM 10% RHODIUM (SP)	PLATINUM 13% RHODIUM (RP)
20	.032	.0732	.2871	.4155	.1729	.100	.063	.113	.115
24	.0201	.1856	.7277	1.052	.4381	.2541	.160	.289	.293
26	.015	.2967	1.162	1.681	.700	.4006	.284	.513	.521
30	.010	.7500	2.940	4.25	1.77	1.026	.640	1.154	1.173
32	.008	1.171	4.594	6.641	2.766	1.0604	1.0	1.803	1.832
36	.005	3.0	11.76	17.0	7.08	4.106	2.56	4.616	4.692
40	.00315	7.56	29.63	42.832	17.838	10.34	6.45	11.633	11.824
44	.002	18.75	73.5	106.25	44.25	25.66	16.0	28.85	29.325
50	.001	75.0	294.0	425.0	177.0	102.67	64.0	115.4	117.3
56	.00049	312.37	1224.5	1770.1	737.193	428.51	266.56	480.63	488.54

## TEMPERATURE LIMITS FOR STANDARD GAUGE, BARE WIRE THERMOCOUPLES

Thermocouple Type	24 Gauge 0.020 in.	20 Gauge 0.032 in.	14 Gauge 0.064 in.	8 Gauge 0.1285 in.
J	700°F (371°C)	900°F (480°C)	1100°F (590°C)	1400°F (760°C)
K or N	1600°F (871°C)	1800°F (980°C)	2000°F (1090°C)	2300°F (1260°C)
T	400°F (204°C)	500°F (260°C)	700°F (370°C)	—
E	800°F (427°C)	1000°F (540°C)	1200°F (650°C)	1600°F (870°C)
R	2700°F (1480°C)	—	—	—
S	2700°F (1480°C)	—	—	—
B	3100°F (1700°C)	—	—	—
W, 5% Re-W, 26% Re	4200°F (2310°C)	—	—	—
W, 3% Re-W, 25% Re	4200°F (2310°C)	—	—	—
W-W, 26% Re	4200°F (2310°C)	—	—	—
Platinel II	2300°F (1260°C)	—	—	—

NOTE: The above recommendations should be used as a reference guide only since the environment in which they are used is unknown. Selection of material is at the sole risk of the user of this publication.

## MTI - INDUSTRIAL TEMPERATURE SENSORS