



Honeywell Part Number

ES120-0030

Resistance at 20°C

=

2500 Ohms

Tolerance (in %) @ 20°C

=

5.0%

Temperature	Resistance			Tolerance	Resistance
IN ° C	RO-MIN	RO-NOM	RO-MAX	+/- °C	Deviation in +/- %
-40	39306.5	45866.8	52427.2	2.5	14.30
-39	37146.5	43255.4	49364.4	2.5	14.12
-38	35120.0	40809.4	46498.8	2.4	13.94
-37	33216.7	38517.3	43817.8	2.4	13.76
-36	31429.6	36368.4	41307.3	2.4	13.58
-35	29749.8	34353.1	38956.4	2.4	13.40
-34	28172.7	32462.2	36751.8	2.4	13.21
-33	26689.0	30687.4	34685.8	2.4	13.03
-32	25292.6	29020.7	32748.9	2.3	12.85
-31	23977.9	27455.1	30932.3	2.3	12.67
-30	22740.0	25983.7	29227.4	2.3	12.48
-29	21573.7	24600.4	27627.1	2.3	12.30
-28	20474.0	23299.4	26124.8	2.3	12.13
-27	19437.4	22075.3	24713.2	2.3	11.95
-26	18459.7	20923.2	23386.6	2.2	11.77
-25	17537.0	19838.3	22139.5	2.2	11.60
-24	16665.6	18816.4	20967.2	2.2	11.43
-23	15842.9	17853.4	19863.9	2.2	11.26
-22	15065.9	16945.7	18825.4	2.1	11.09
-21	14331.9	16089.7	17847.5	2.1	10.93
-20	13637.8	15282.2	16926.5	2.1	10.76
-19	12981.7	14520.1	16058.5	2.1	10.60
-18	12361.1	13800.8	15240.4	2.1	10.43
-17	11773.9	13121.4	14468.9	2.0	10.27
-16	11218.1	12479.7	13741.2	2.0	10.11
-15	10691.8	11873.2	13054.6	2.0	9.95
-14	10191.3	11299.8	12408.4	2.0	9.81
-13	9717.6	10757.7	11797.7	2.0	9.67
-12	9269.2	10244.8	11220.3	2.0	9.52
-11	8844.4	9759.4	10674.4	1.9	9.38
-10	8463.0	9300.0	10137.0	1.9	9.00
-9	8120.6	8864.9	9609.3	1.8	8.40
-8	7753.9	8452.9	9151.8	1.7	8.27
-7	7406.2	8062.4	8718.5	1.7	8.14
-6	7076.3	7692.3	8308.2	1.7	8.01
-5	6763.2	7341.3	7919.5	1.7	7.88
-4	6466.2	7008.5	7550.8	1.7	7.74
-3	6184.2	6692.7	7201.3	1.7	7.60
-2	5916.1	6393.1	6870.0	1.6	7.46
-1	5661.3	6108.6	6555.8	1.6	7.32
0	5419.1	5838.4	6257.7	1.6	7.18
1	5188.6	5581.8	5974.9	1.6	7.04
2	4969.3	5337.9	5706.6	1.6	6.91
3	4760.5	5106.2	5451.9	1.5	6.77
4	4561.7	4885.8	5209.9	1.5	6.63
5	4372.3	4676.3	4980.2	1.5	6.50
6	4190.2	4476.9	4763.7	1.5	6.41
7	4016.9	4287.2	4557.5	1.5	6.31
8	3852.0	4106.7	4361.3	1.5	6.20
9	3695.1	3934.7	4174.4	1.4	6.09
10	3545.6	3771.0	3996.4	1.4	5.98
11	3403.2	3615.0	3826.9	1.4	5.86
12	3267.4	3466.4	3665.4	1.4	5.74
13	3138.0	3324.7	3511.5	1.4	5.62
14	3014.4	3189.7	3365.0	1.3	5.50
15	2896.3	3060.9	3225.4	1.3	5.38
16	2780.8	2938.0	3095.1	1.3	5.35
17	2670.9	2820.7	2970.6	1.3	5.31
18	2566.6	2708.8	2851.1	1.3	5.25
19	2468.0	2602.0	2736.0	1.3	5.15
20	2375.0	2500.0	2625.0	1.3	5.00
21	2282.1	2402.6	2523.0	1.3	5.02
22	2188.2	2309.5	2430.7	1.3	5.25
23	2102.6	2220.5	2338.4	1.3	5.31
24	2021.3	2135.5	2249.6	1.4	5.35
25	1943.8	2054.1	2164.5	1.4	5.37
26	1869.8	1976.4	2083.0	1.4	5.40
27	1799.1	1902.0	2004.9	1.4	5.41
28	1731.0	1830.8	1930.6	1.4	5.45

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	RO-MIN	RO-NOM	RO-MAX		
29	1666.1	1762.7	1859.3	1.4	5.48
30	1604.1	1697.5	1790.9	1.4	5.50
31	1544.6	1635.1	1725.5	1.5	5.53
32	1487.4	1575.3	1663.2	1.5	5.58
33	1433.0	1518.0	1603.0	1.5	5.60
34	1380.1	1463.1	1546.1	1.5	5.67
35	1329.4	1410.5	1491.6	1.6	5.75
36	1280.8	1360.1	1439.4	1.6	5.83
37	1234.3	1311.7	1389.2	1.6	5.91
38	1189.6	1265.4	1341.2	1.6	5.99
39	1146.8	1220.9	1295.0	1.7	6.07
40	1105.8	1178.2	1250.7	1.7	6.15
41	1066.4	1137.3	1208.2	1.7	6.24
42	1028.6	1098.0	1167.4	1.8	6.32
43	992.4	1060.3	1128.1	1.8	6.40
44	957.7	1024.0	1090.4	1.8	6.48
45	924.4	989.2	1054.1	1.9	6.56
46	892.4	955.8	1019.2	1.9	6.64
47	861.6	923.7	985.7	1.9	6.72
48	832.1	892.8	953.5	2.0	6.80
49	803.8	863.1	922.5	2.0	6.88
50	776.5	834.6	892.6	2.0	6.96
51	750.3	807.1	863.9	2.1	7.04
52	725.2	780.7	836.3	2.1	7.12
53	701.0	755.3	809.7	2.2	7.20
54	677.6	730.9	784.2	2.2	7.29
55	655.2	707.4	759.6	2.2	7.38
56	633.6	684.8	735.9	2.3	7.47
57	612.9	663.0	713.0	2.3	7.55
58	593.0	642.0	691.0	2.4	7.63
59	573.9	621.8	669.7	2.4	7.71
60	555.4	602.3	649.2	2.4	7.78
61	537.7	583.5	629.4	2.5	7.86
62	520.6	565.5	610.3	2.5	7.93
63	504.2	548.0	591.9	2.5	8.00
64	488.5	531.2	574.0	2.6	8.06
65	473.3	515.1	556.8	2.6	8.11
66	458.6	499.4	540.2	2.7	8.17
67	444.5	484.4	524.2	2.7	8.23
68	430.9	469.8	508.8	2.7	8.29
69	417.7	455.8	493.9	2.8	8.35
70	405.1	442.3	479.5	2.8	8.41
71	392.8	429.2	465.6	2.9	8.47
72	381.0	416.6	452.2	2.9	8.54
73	369.6	404.4	439.2	2.9	8.60
74	358.6	392.7	426.7	3.0	8.68
75	347.9	381.3	414.7	3.0	8.75
76	337.7	370.3	403.0	3.1	8.82
77	327.7	359.7	391.7	3.1	8.89
78	318.2	349.5	380.8	3.2	8.96
79	308.9	339.6	370.2	3.2	9.03
80	300.0	330.0	360.0	3.3	9.10
81	291.3	320.7	350.2	3.3	9.17
82	283.0	311.8	340.6	3.3	9.24
83	274.9	303.1	331.3	3.4	9.30
84	267.2	294.8	322.4	3.4	9.36
85	259.7	286.7	313.7	3.4	9.42
86	252.4	278.8	305.3	3.5	9.48
87	245.4	271.2	297.1	3.5	9.54
88	238.6	263.9	289.2	3.5	9.60
89	232.0	256.8	281.6	3.6	9.66
90	225.6	249.9	274.2	3.6	9.72
91	219.5	243.3	267.0	3.7	9.78
92	213.5	236.8	260.1	3.7	9.84
93	207.7	230.6	253.4	3.8	9.90
94	202.1	224.5	246.9	3.8	9.96
95	196.7	218.6	240.5	3.9	10.02
96	191.5	212.9	234.4	3.9	10.08
97	186.4	207.4	228.5	4.0	10.14
98	181.5	202.1	222.7	4.0	10.20
99	176.7	196.9	217.1	4.1	10.26

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Temperature IN ° C	Resistance			Tolerance +/-°C	Resistance Deviation in +/- %
	RO-MIN	RO-NOM	RO-MAX		
100	172.1	191.9	211.7	4.1	10.32
101	167.6	187.0	206.4	4.2	10.38
102	163.3	182.3	201.3	4.2	10.44
103	159.1	177.7	196.4	4.3	10.50
104	155.0	173.3	191.6	4.3	10.56
105	151.0	169.0	186.9	4.3	10.62
106	147.2	164.8	182.4	4.4	10.68
107	143.5	160.7	178.0	4.4	10.74
108	139.9	156.8	173.7	4.5	10.80
109	136.4	153.0	169.6	4.5	10.86
110	133.0	149.3	165.6	4.6	10.92
111	129.7	145.6	161.6	4.6	10.98
112	126.5	142.1	157.8	4.6	11.04
113	123.3	138.7	154.1	4.7	11.10
114	120.3	135.4	150.6	4.7	11.18
115	117.4	132.2	147.1	4.8	11.25
116	114.5	129.1	143.7	4.8	11.32
117	111.7	126.1	140.4	4.9	11.38
118	109.0	123.1	137.2	4.9	11.44
119	106.4	120.3	134.1	5.0	11.50
120	103.9	117.5	131.1	5.0	11.55
121	101.5	114.8	128.1	5.1	11.61
122	99.1	112.1	125.2	5.2	11.65
123	96.8	109.6	122.4	5.2	11.70
124	94.5	107.1	119.7	5.3	11.74
125	92.3	104.7	117.0	5.4	11.78
126	90.2	102.3	114.4	5.4	11.82
127	88.2	100.0	111.9	5.5	11.86
128	86.2	97.8	109.4	5.6	11.90
129	84.2	95.6	107.0	5.6	11.94
130	82.3	93.5	104.7	5.7	11.98
131	80.5	91.5	102.4	5.7	12.02
132	78.7	89.5	100.2	5.8	12.06
133	76.9	87.5	98.1	5.8	12.10
134	75.2	85.6	96.0	5.9	12.16
135	73.5	83.8	94.0	6.0	12.21
136	71.9	82.0	92.0	6.0	12.26
137	70.3	80.2	90.1	6.1	12.31
138	68.8	78.5	88.2	6.1	12.37
139	67.3	76.8	86.4	6.2	12.41
140	65.8	75.2	84.6	6.2	12.46
141	64.4	73.6	82.8	6.3	12.51
142	63.0	72.1	81.1	6.3	12.56
143	61.7	70.6	79.5	6.4	12.60
144	60.4	69.1	77.9	6.4	12.64
145	59.1	67.7	76.3	6.5	12.67
146	57.9	66.3	74.7	6.6	12.71
147	56.7	65.0	73.2	6.6	12.75
148	55.5	63.6	71.8	6.7	12.79
149	54.3	62.3	70.3	6.7	12.83
150	53.2	61.1	69.0	6.8	12.87

FINDING RESISTANCE AND TEMPERATURE USING STEINHART & HART EQUATION

1/T = a + b(Ln R) + c(Ln R)^3, T in degrees Kelvin

Coefficients

a= 0.00125168910224  
b= 0.00026810948749  
c= 0.00000012909966