

## Time Delay Relay

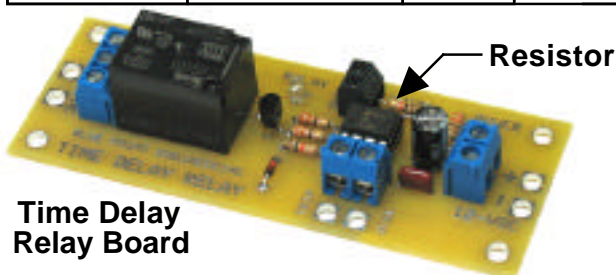
Resistor Values / Time Delay Chart

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Resistor Value (K)	Seconds	+5%	-5%
10 K	2.2	2.1	2.3
11 K	2.5	2.4	2.6
12 K	2.8	2.6	2.9
13 K	3.1	2.9	3.2
15 K	3.6	3.4	3.8
16 K	3.9	3.7	4.1
18 K	4.5	4.2	4.7
20 K	5.0	4.8	5.3
22 K	5.6	5.3	5.9
24 K	6.2	5.8	6.5
27 K	7.0	6.6	7.3
30 K	7.8	7.5	8.2
33 K	8.7	8.3	9.1
36 K	9.5	9.1	10.0
39 K	10.4	9.9	10.9
43 K	11.5	10.9	12.1
47 K	12.6	12.0	13.3
51 K	13.7	13.1	14.4
56 K	15.2	14.4	15.9
62 K	16.8	16.0	17.7
68 K	18.5	17.6	19.5
75 K	20.5	19.5	21.5
82 K	22.5	21.3	23.6
91 K	25.0	23.7	26.2
100 K	27.5	26.2	28.9
110 K	30.3	28.8	31.9
120 K	33.2	31.5	34.8
130 K	36.0	34.2	37.8
150 K	41.6	39.5	43.7
160 K	44.4	42.2	46.6
180 K	50.0	47.5	52.5
200 K	55.6	52.9	58.4

Resistor Value (K-M)	Minutes	+5%	-5%
220 K	1.02	0.97	1.07
240 K	1.11	1.06	1.17
270 K	1.26	1.19	1.32
300 K	1.40	1.33	1.47
330 K	1.54	1.46	1.61
360 K	1.68	1.59	1.76
390 K	1.82	1.73	1.91
430 K	2.01	1.91	2.11
470 K	2.19	2.08	2.30
510 K	2.38	2.26	2.50
560 K	2.61	2.48	2.75
620 K	2.90	2.75	3.04
680 K	3.18	3.02	3.34
750 K	3.51	3.33	3.68
820 K	3.83	3.64	4.02
910 K	4.25	4.04	4.47
1.0 M	4.68	4.44	4.91
1.1 M	5.15	4.89	5.40
1.2 M	5.61	5.33	5.89
1.3 M	6.08	5.78	6.39
1.5 M	7.02	6.67	7.37
1.6 M	7.49	7.11	7.86
1.8 M	8.43	8.00	8.85
2.0 M	9.36	8.90	9.83
2.2 M	10.30	9.79	10.82
2.4 M	11.24	10.68	11.80
2.7 M	12.64	12.01	13.28
3.0 M	14.05	13.35	14.75
3.3 M	15.46	14.68	16.23
3.6 M	16.86	16.02	17.71
3.9 M	18.27	17.35	19.18
4.7 M	22.02	20.92	23.12
5.1 M	23.89	22.70	25.09
5.6 M	26.24	24.92	27.55
6.2 M	29.05	27.60	30.50
6.8 M	31.86	30.27	33.45
7.5 M	35.14	33.38	36.90
8.2 M	38.42	36.50	40.34
9.1 M	42.64	40.51	44.77
10.0 M	46.86	44.51	49.20



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Time values are calculated and are approximate. You may have to experiment to get the exact time. Use 1/4 watt resistors – available at any electronics supply store (i.e., Radio Shack). The +/- 5% Values above show approximate range expected when using 5% resistors.