

INTRODUCTION TO RC NETWORKS

Recent developments in electronic equipment have shown the following trends:

- Increasing demands for numerical control machines, robotics and technically advanced appliances are requiring progressive electronic technologies.
- When employing integrated circuit and microcomputer technology, today's equipment is required to perform multifunctions in limited size.
- The denser the installation of components, the more the components must be miniaturized and of lighter weight.

As a result, the following problems arise:

- Functional limits of magnetic relays and switches have narrowed due to increasing contact amperage.
- Miniaturization of electronic components has reduced their dielectric strength.
- Circuit noise has increased as a result of the coexistence of signal and power lines.
- Safety standards for electronic equipment and components have become increasingly restrictive.

Some key factors affecting circuit performance are:

- Arcing between relay and switch contacts cause pitting and whiskers resulting in premature contact failure.
- Contact arcing results in high frequency noise and abnormal high voltages.
- The generation of back electromotive force (EMF) is due to the inductance of loads present.
- The occurrence of high frequency noise is the result of contact chatter in magnetic relays and switches.

Back EMF, due to inductance, affects Silicon Control Rectifiers (SCRs) and Solid-State Relays (SSRs) and can result in the breakdown of other semiconductor devices. Power line surges must also be carefully considered. Either may be a contributing factor in equipment malfunctions, failures and in extreme cases of fire and/or electrical shock.

To illustrate these factors, consider that relay contact chatter is capable of inducing oscillations of several KHz, contact arcing frequencies of several MHz and amplitudes 10 to 20 times normal circuit voltages. Voltage surges from external sources may approach thousands of volts.

To protect electronic equipment against costly failures or malfunctions, Electrocube has developed advanced components to suppress contact arcing and filter unwanted electrical noise.

GENERAL CONSTRUCTION

RC Networks are easily selectable electronic components designed to prevent or substantially minimize the occurrence of arcing and noise generation in relay and switch contacts.

RC Networks consist of specially designed capacitors and resistors connected in series. Spark discharges and induced noise are absorbed over a wide range by the accumulation characteristic and impedance of the capacitor, while the RC time constant delays and averages surge voltage and oscillations.

RC Networks must have the capacity to store surge voltages and current energy and afford protection against inductively induced potentials. The dielectric material of Electrocube's capacitors, used in RC Networks, affords a very high degree of voltage withstand strength. All resistors are non-inductive types to insure a high degree of protection against pulse potentials. To provide additional protection for equipment and users, especially when these components are used in their applications, all Electrocube RC Networks are packaged in cases which meet or exceed the flammability requirements of UL94VO.

SAFETY STANDARDS

Electrocube's RC Networks are UL and UL_C approved. Self-declaration of CE mark is available upon request.

APPLICATIONS

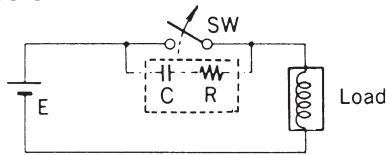
- Protection for contacts and from noise during switching operations of equipment such as radio, TV, copiers, mixers, coffee grinders, washing machines, dryers, tool machine equipment, packaging machinery, etc.
- Protection of electronic instruments during operation of relays, solenoids, motors, etc.
- Electrical noise protection of semiconductor devices during control of triacs, thyristors, motors, welders, illumination equipment, etc.

CUSTOM DESIGNS

Electrocube offers many years of experience in the design and manufacture of standard RC Networks, as well as special units to meet customer requirements. For custom applications, consult the factory direct to assist in the design, production and delivery of your special needs.

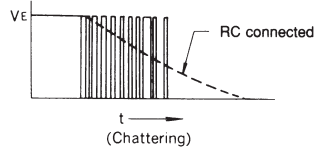
EFFECT OF RC NETWORKS

ARC SUPPRESSION



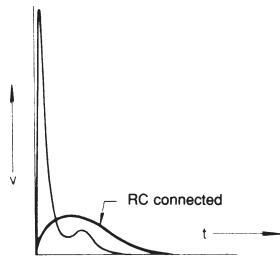
At the moment of switch opening, the RC combination absorbs and suppresses the energy of the arc by letting it bypass the switch.

DAMPING OSCILLATION



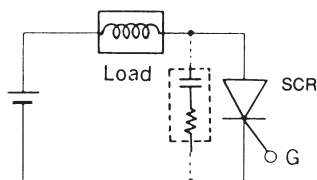
The RC combination absorbs the high frequency oscillations caused by mechanical vibrations such as relay contact chattering. Similarly, the oscillations created by arcing are also averaged and suppressed by the RC combination regardless of their origin.

BACK ELECTROMOTIVE FORCE SUPPRESSION



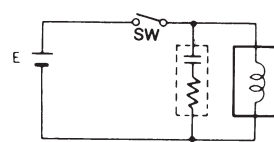
With back electromotive force due to inductance, the surge voltage peak is suppressed by conducting it through the RC circuit on the low impedance side. The peak is absorbed by the capacitance of RC. The waveform is averaged and smoothed by the time constant of the RC; thus generated noise is eliminated or substantially minimized.

DV/DT SUPPRESSION

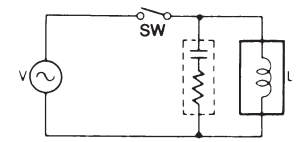


The RC combination allows the dv/dt of the "on" and "off" operation of thyristors or similar devices to decrease; thus surge voltages are suppressed and semiconductor elements are protected. Even in the case of zero crossing circuits, such as AC circuits, protection is necessary since harmonic noise occurs when there is a gap between phases of current and voltage of the load circuit.

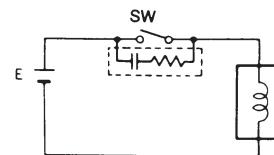
APPLICATION EXAMPLES



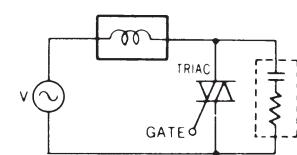
Standard example in DC circuits



Standard example in AC circuits



Standard example in DC circuits



For phase control circuits employing SCR or TRIAC, etc.

DETERMINING RC VALUE

In general, the calculated RC value is difficult to determine using the following formula. This is due to contributing factors such as equipment wiring and component locations which can vary from machine to machine.

$$C = \frac{I^2}{10} \text{ Mfd.}$$

$$R = \frac{E}{10 [3.16 \sqrt{C}] (1 + 50/E)}$$

C = Capacitance in MFD
I = Load Current in Amps
R = Resistance in Ohms
E = Source Voltage

The best way to determine the values needed is to obtain a storage oscilloscope and match combinations of resistors and capacitors while viewing the amount of spike reduction on the oscilloscope. The user should change the combination of R & C until the optimum spike reduction is achieved.

Electrocube has determined that the best overall combination is 0.47-50 Mfd @ 220 . This combination seems to work for 90% of the applications. The voltage should be selected for the normal DC or AC voltages, however, the designer must take into consideration the peak voltages involved.

The resistor wattage depends upon the number of times per minute the circuit is activated. As a general rule of thumb, the following chart should be considered.

CIRCUIT ACTIVATION TIMES/MINUTE	RESISTOR WATTAGE
1-3	1/2
4-5	1
6-9	2
10-15	5
>15	10

The chart and formula are guidelines to give the user a starting point from which to work. The final selection must be evaluated in the application to determine its acceptability.

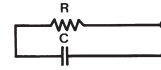
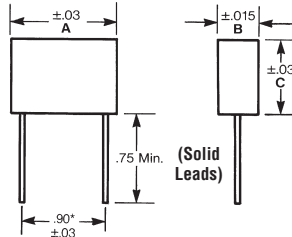
All resistors are rated $\frac{1}{2}$ watt.

Maximum peak surge voltage is $1\frac{1}{2}$ times the rated DC voltage.

For other lead lengths and resistor values, consult factory.

*Networks with MTW leads have nominal lead spacing.

Temperature range: -40° to $+80^{\circ}$ C.

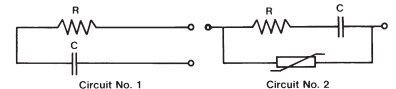
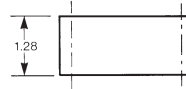
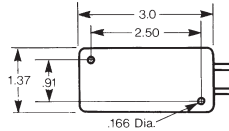


Available in solid wire and stranded wire leads. See part numbers below.

CAPACITY MFD	RESISTANCE OHMS 10%	RATED VOLTAGE	PEAK PULSE VOLTAGE	A IN.	B IN.	C IN.	#20 AWG TINNED SOLID WIRE	#18 AWG MTW 3" LEADS
0.5 $\pm$ 10%	22	200 VDC OR 125 VAC	300V	1.00	.38	.63	RG1780-1	RG1983-1
0.5 $\pm$ 10%	33		300V	1.00	.38	.63	RG1780-2	RG1983-2
0.5 $\pm$ 10%	47		300V	1.00	.38	.63	RG1780-3	RG1983-3
0.5 $\pm$ 10%	68		300V	1.00	.38	.63	RG1780-4	RG1983-4
0.5 $\pm$ 10%	82		300V	1.00	.38	.63	RG1780-5	RG1983-5
0.5 $\pm$ 10%	100		300V	1.00	.38	.63	RG1780-6	RG1983-6
0.5 $\pm$ 10%	150		300V	1.00	.38	.63	RG1780-7	RG1983-7
0.5 $\pm$ 10%	220		300V	1.00	.38	.63	RG1780-8	RG1983-8
0.5 $\pm$ 10%	330		300V	1.00	.38	.63	RG1780-9	RG1983-9
0.5 $\pm$ 10%	470		300V	1.00	.38	.63	RG1780-10	RG1983-10
0.5 $\pm$ 10%	680		300V	1.00	.38	.63	RG1780-11	RG1983-11
1.0 $\pm$ 10%	22	300 VDC OR 150 VAC	300V	1.00	.50	.75	RG1781-1	RG2030-1
1.0 $\pm$ 10%	33		300V	1.00	.50	.75	RG1781-2	RG2030-2
1.0 $\pm$ 10%	47		300V	1.00	.50	.75	RG1781-3	RG2030-3
1.0 $\pm$ 10%	68		300V	1.00	.50	.75	RG1781-4	RG2030-4
1.0 $\pm$ 10%	82		300V	1.00	.50	.75	RG1781-5	RG2030-5
1.0 $\pm$ 10%	100		300V	1.00	.50	.75	RG1781-6	RG2030-6
1.0 $\pm$ 10%	150		300V	1.00	.50	.75	RG1781-7	RG2030-7
1.0 $\pm$ 10%	220		300V	1.00	.50	.75	RG1781-8	RG2030-8
1.0 $\pm$ 10%	330		300V	1.00	.50	.75	RG1781-9	RG2030-9
1.0 $\pm$ 10%	470		300V	1.00	.50	.75	RG1781-10	RG2030-10
1.0 $\pm$ 10%	680		300V	1.00	.50	.75	RG1781-11	RG2030-11
0.1 $\pm$ 20%	22	600 VDC OR 250 VAC	900V	1.00	.38	.63	RG1782-1	RG2031-1
0.1 $\pm$ 20%	33		900V	1.00	.38	.63	RG1782-2	RG2031-2
0.1 $\pm$ 20%	47		900V	1.00	.38	.63	RG1782-3	RG2031-3
0.1 $\pm$ 20%	68		900V	1.00	.38	.63	RG1782-4	RG2031-4
0.1 $\pm$ 20%	82		900V	1.00	.38	.63	RG1782-5	RG2031-5
0.1 $\pm$ 20%	100		900V	1.00	.38	.63	RG1782-6	RG2031-6
0.1 $\pm$ 20%	150		900V	1.00	.38	.63	RG1782-7	RG2031-7
0.1 $\pm$ 20%	220		900V	1.00	.38	.63	RG1782-8	RG2031-8
0.1 $\pm$ 20%	330		900V	1.00	.38	.63	RG1782-9	RG2031-9
0.1 $\pm$ 20%	470		900V	1.00	.38	.63	RG1782-10	RG2031-10
0.1 $\pm$ 20%	680		900V	1.00	.38	.63	RG1782-11	RG2031-11
0.25 $\pm$ 20%	22	900 VDC OR 350 VAC	900V	1.00	.50	.75	RG1783-1	RG1988-1
0.25 $\pm$ 20%	33		900V	1.00	.50	.75	RG1783-2	RG1988-2
0.25 $\pm$ 20%	47		900V	1.00	.50	.75	RG1783-3	RG1988-3
0.25 $\pm$ 20%	68		900V	1.00	.50	.75	RG1783-4	RG1988-4
0.25 $\pm$ 20%	82		900V	1.00	.50	.75	RG1783-5	RG1988-5
0.25 $\pm$ 20%	100		900V	1.00	.50	.75	RG1783-6	RG1988-6
0.25 $\pm$ 20%	150		900V	1.00	.50	.75	RG1783-7	RG1988-7
0.25 $\pm$ 20%	220		900V	1.00	.50	.75	RG1783-8	RG1988-8
0.25 $\pm$ 20%	330		900V	1.00	.50	.75	RG1783-9	RG1988-9
0.25 $\pm$ 20%	470		900V	1.00	.50	.75	RG1783-10	RG1988-10
0.25 $\pm$ 20%	680		900V	1.00	.50	.75	RG1783-11	RG1988-11
0.5 $\pm$ 10%	22	1200 VDC OR 450 VAC	900V	1.25	.58	.84	RG1784-1	RG1986-1
0.5 $\pm$ 10%	33		900V	1.25	.58	.84	RG1784-2	RG1986-2
0.5 $\pm$ 10%	47		900V	1.25	.58	.84	RG1784-3	RG1986-3
0.5 $\pm$ 10%	68		900V	1.25	.58	.84	RG1784-4	RG1986-4
0.5 $\pm$ 10%	82		900V	1.25	.58	.84	RG1784-5	RG1986-5
0.5 $\pm$ 10%	100		900V	1.25	.58	.84	RG1784-6	RG1986-6
0.5 $\pm$ 10%	150		900V	1.25	.58	.84	RG1784-7	RG1986-7
0.5 $\pm$ 10%	220		900V	1.25	.58	.84	RG1784-8	RG1986-8
0.5 $\pm$ 10%	330		900V	1.25	.58	.84	RG1784-9	RG1986-9
0.5 $\pm$ 10%	470		900V	1.25	.58	.84	RG1784-10	RG1986-10
0.5 $\pm$ 10%	680		900V	1.25	.58	.84	RG1784-11	RG1986-11

The RG1676 is designed for arc and noise suppression in heavy duty applications requiring greater magnitudes of power dissipation. Due to its mass and weight, mounting holes are provided at either end of the case to permit secure mounting to a chassis.

Its configuration lends itself to stacking for maximum utilization of available space. Special lead lengths are available. Other values of wattage and resistance or capacitance and voltage are also available.

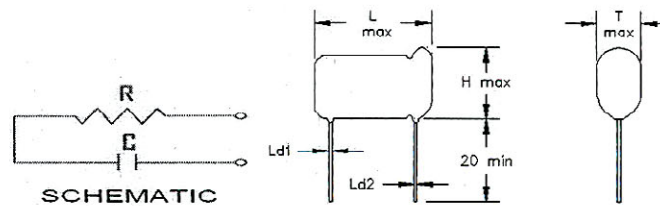


Maximum peak surge voltage is 1½ time the rated DC voltage.

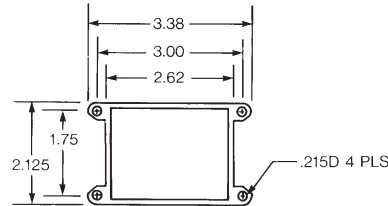
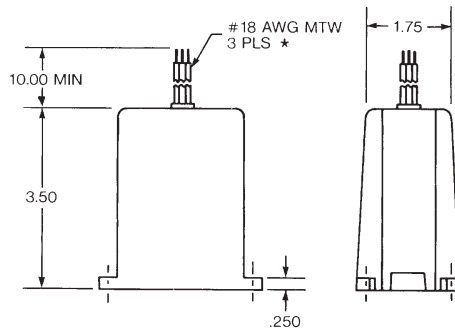
All leads #18 AWG MTW except -24 through -33 and -61 which are 16# AWG MTW.

RG1676 PN.	RESISTANCE OHMS	TOLERANCE %	POWER WATTS	CAPACITY MFD	TOLERANCE %	VDC VOLTS	VAC VOLTS	METAL OXIDE VARISTOR PN.	RG1676 LEAD LENGTH (IN.)	CIRCUIT NO.
RG1676-1	100	10	10	1.00	10	1000	480	N/A	24	1
RG1676-2	100	10	10	.50	10	1000	480	N/A	24	1
RG1676-3	10	10	2	1.00	10	600	250	N/A	25	1
RG1676-4	220	10	10	.47	10	600	250	N/A	25	1
RG1676-5	220	10	1	.50	10	600	250	N/A	25	1
RG1676-6	100	10	1	.10	10	2000	480	N/A	24	1
RG1676-7	100	10	3	2.00	10	600	250	N/A	25	1
RG1676-8	100	10	2	.47	10	600	250	N/A	25	1
RG1676-9	220	10	1	.47	10	600	250	N/A	25	1
RG1676-10	220	10	5	2.00	10	600	250	N/A	25	1
RG1676-11	220	10	1	.50	10	600	120	V130LA1	24	2
RG1676-12	220	10	2	.50	10	1000	480	N/A	24	1
RG1676-13	220	10	1	.47	10	1000	480	N/A	24	1
RG1676-14	220	10	1	.47	10	600	120	V130LA1	24	2
RG1676-15	220	10	1	1.00	10	600	250	N/A	25	1
RG1676-16	220	10	10	.50	10	1000	480	N/A	24	1
RG1676-17	100	10	2	1.00	10	600	250	N/A	25	1
RG1676-18	220	10	5	.47	10	1000	480	N/A	48	1
RG1676-19	220	10	2	1.00	10	400	120	N/A	24	1
RG1676-20	100	10	2	2.00	20	600	250	N/A	18	1
RG1676-21	10	10	5	1.00	10	1000	480	N/A	24	1
RG1676-22	220	10	2	.50	10	400	120	N/A	24	1
RG1676-23	220	10	.5	.50	10	400	120	N/A	24	1
RG1676-24	220	10	10	.50	10	1000	480	N/A	36	1
RG1676-25	220	10	.5	.50	10	400	120	N/A	36	1
RG1676-26	47	10	2	.10	10	1000	480	N/A	12	1
RG1676-27	47	10	2	.10	10	2000	480	N/A	12	1
RG1676-28	47	10	2	.10	10	1000	250	V250LA2	24	2
RG1676-29	200	10	10	.50	10	1000	480	N/A	24	1
RG1676-30	100	10	2	.47	10	600	250	V300LA2	12	2
RG1676-31	22	10	1	.10	10	1000	480	N/A	24	1
RG1676-32	100	10	10	.25	10	1000	480	N/A	24	1
RG1676-33	50	10	10	.25	10	1000	480	N/A	24	1
RG1676-34	220	10	5	.47	10	1000	480	N/A	48	1
RG1676-35	220	10	.5	.50	10	600	250	N/A	36	1
RG1676-36	220	10	1	.47	10	600	120	V130LA1	120	2
RG1676-37	100	10	10	.18	10	1000	480	N/A	24	1
RG1676-38	50	10	10	.50	10	600	250	V250LA2	24	2
RG1676-39	50	10	10	.50	10	1000	480	V480LA40A	24	2
RG1676-40	15	10	10	.25	10	1000	480	N/A	24	1
RG1676-41	33	10	1	.10	10	2000	480	N/A	24	1
RG1676-42	15	10	5	.50	10	1000	480	N/A	24	1
RG1676-43	47	10	2	.47	20	600	250	N/A	12	1
RG1676-44	100	10	10	.30	10	1000	480	N/A	24	1
RG1676-45	220	10	5	.50	10	1500	480	N/A	24	1
RG1676-46	10	10	5	.22	20	1000	480	N/A	24	1
RG1676-47	220	10	1	.25	10	1000	480	V480LA40A	24	2
RG1676-48	100	10	2	.10	10	2000	480	N/A	24	1
RG1676-49	100	10	3	.10	10	1000	480	N/A	24	1
RG1676-50	470	10	10	.25	10	1000	480	V480LA40A	24	2
RG1676-51	220	10	10	.50	10	1000	480	V480LA40A	24	2
RG1676-52	22	10	10	.10	10	600	250	N/A	24	1
RG1676-53	75	10	10	.50	10	1000	480	N/A	24	1
RG1676-54	47	10	2	2.00	10	600	250	N/A	24	1
RG1676-55	10	10	2	.47	10	600	250	N/A	25	1
RG1676-56	50	10	10	.50	10	600	250	V250LA40A	24	2
RG1676-57	100	10	1	.50	10	600	120	V130LA1	24	2
RG1676-58	220	10	2	.10	10	2000	275	V275LA40A	24	2
RG1676-59	220	10	2	.47	10	600	250	V250LA40A	24	2
RG1676-60	220	10	5	1.00	10	1000	480	N/A	24	1
RG1676-61	68	10	10	.25	10	1000	480	N/A	24	1
RG1676-62	220	10	5	.25	10	1000	480	N/A	24	1
RG1676-63	50	10	10	1.00	10	600	250	N/A	24	1
RG1676-64	220	10	10	2.00	10	600	250	N/A	24	1
RG1676-65	10	10	10	.50	10	1000	480	N/A	24	1
RG1676-66	820	10	10	.47	10	1000	480	N/A	10	1

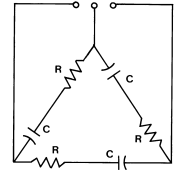
All resistors are rated ½ watt
Maximum peak surge voltage is 1 ½ times the rated DC voltage.
For other lead lengths and resistor values, consult factory.
Temperature range: -40° C to +85° C



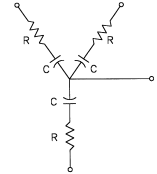
CAPACITY MFD.	RESISTANCE OHMS 10%	RATED VOLTAGE	PEAK PULSE VOLTAGE	L mm	H mm	T mm	LS mm	Ld 1 / Ld 2 mm	PART NUMBER
1.0 ± 20%	22	200 VDC 125 VAC	300V	36.8	17.0	10.0	30 ± 2	0.8 / 0.7	RG2675-1
1.0 ± 20%	33		300V	36.8	17.0	10.0	30 ± 2	0.8 / 0.7	RG2675-2
1.0 ± 20%	47		300V	36.8	17.0	10.0	30 ± 2	0.8 / 0.7	RG2675-3
1.0 ± 20%	68		300V	36.8	17.0	10.0	30 ± 2	0.8 / 0.7	RG2675-4
1.0 ± 20%	82		300V	36.8	17.0	10.0	30 ± 2	0.8 / 0.7	RG2675-5
1.0 ± 20%	100		300V	36.8	17.0	10.0	30 ± 2	0.8 / 0.7	RG2675-6
1.0 ± 20%	150		300V	36.8	17.0	10.0	30 ± 2	0.8 / 0.7	RG2675-7
1.0 ± 20%	220		300V	36.8	17.0	10.0	30 ± 2	0.8 / 0.7	RG2675-8
1.0 ± 20%	330		300V	36.8	17.0	10.0	30 ± 2	0.8 / 0.7	RG2675-9
1.0 ± 20%	470		300V	36.8	17.0	10.0	30 ± 2	0.8 / 0.7	RG2675-10
1.0 ± 20%	680		300V	36.8	17.0	10.0	30 ± 2	0.8 / 0.7	RG2675-11
.15 ± 20%	22	600 VDC 250 VAC	900V	27.5	17.5	10.5	20 ± 2	0.8 / 0.7	RG2676-1
.15 ± 20%	33		900V	27.5	17.5	10.5	20 ± 2	0.8 / 0.7	RG2676-2
.15 ± 20%	47		900V	27.5	17.5	10.5	20 ± 2	0.8 / 0.7	RG2676-3
.15 ± 20%	68		900V	27.5	17.5	10.5	20 ± 2	0.8 / 0.7	RG2676-4
.15 ± 20%	82		900V	27.5	17.5	10.5	20 ± 2	0.8 / 0.7	RG2676-5
.15 ± 20%	100		900V	27.5	17.5	10.5	20 ± 2	0.8 / 0.7	RG2676-6
.15 ± 20%	150		900V	27.5	17.5	10.5	20 ± 2	0.8 / 0.7	RG2676-7
.15 ± 20%	220		900V	27.5	17.5	10.5	20 ± 2	0.8 / 0.7	RG2676-8
.15 ± 20%	330		900V	27.5	17.5	10.5	20 ± 2	0.8 / 0.7	RG2676-9
.15 ± 20%	470		900V	27.5	17.5	10.5	20 ± 2	0.8 / 0.7	RG2676-10
.15 ± 20%	680		900V	27.5	17.5	10.5	20 ± 2	0.8 / 0.7	RG2676-11
.25 ± 10%	22	600 VDC 250 VAC	900V	36.8	19.0	10.5	30 ± 2	0.8 / 0.7	RG2677-1
.25 ± 10%	33		900V	36.8	19.0	10.5	30 ± 2	0.8 / 0.7	RG2677-2
.25 ± 10%	47		900V	36.8	19.0	10.5	30 ± 2	0.8 / 0.7	RG2677-3
.25 ± 10%	68		900V	36.8	19.0	10.5	30 ± 2	0.8 / 0.7	RG2677-4
.25 ± 10%	82		900V	36.8	19.0	10.5	30 ± 2	0.8 / 0.7	RG2677-5
.25 ± 10%	100		900V	36.8	19.0	10.5	30 ± 2	0.8 / 0.7	RG2677-6
.25 ± 10%	150		900V	36.8	19.0	10.5	30 ± 2	0.8 / 0.7	RG2677-7
.25 ± 10%	220		900V	36.8	19.0	10.5	30 ± 2	0.8 / 0.7	RG2677-8
.25 ± 10%	330		900V	36.8	19.0	10.5	30 ± 2	0.8 / 0.7	RG2677-9
.25 ± 10%	470		900V	36.8	19.0	10.5	30 ± 2	0.8 / 0.7	RG2677-10
.25 ± 10%	680		900V	36.8	19.0	10.5	30 ± 2	0.8 / 0.7	RG2677-11
.50 ± 20%	22	600 VDC 250 VAC	900V	36.8	23.3	15.0	30 ± 2	0.8 / 0.7	RG2678-1
.50 ± 20%	33		900V	36.8	23.3	15.0	30 ± 2	0.8 / 0.7	RG2678-2
.50 ± 20%	47		900V	36.8	23.3	15.0	30 ± 2	0.8 / 0.7	RG2678-3
.50 ± 20%	68		900V	36.8	23.3	15.0	30 ± 2	0.8 / 0.7	RG2678-4
.50 ± 20%	82		900V	36.8	23.3	15.0	30 ± 2	0.8 / 0.7	RG2678-5
.50 ± 20%	100		900V	36.8	23.3	15.0	30 ± 2	0.8 / 0.7	RG2678-6
.50 ± 20%	150		900V	36.8	23.3	15.0	30 ± 2	0.8 / 0.7	RG2678-7
.50 ± 20%	220		900V	36.8	23.3	15.0	30 ± 2	0.8 / 0.7	RG2678-8
.50 ± 20%	330		900V	36.8	23.3	15.0	30 ± 2	0.8 / 0.7	RG2678-9
.50 ± 20%	470		900V	36.8	23.3	15.0	30 ± 2	0.8 / 0.7	RG2678-10
.50 ± 20%	680		900V	36.8	23.3	15.0	30 ± 2	0.8 / 0.7	RG2678-11



RG2377
SCHEMATIC

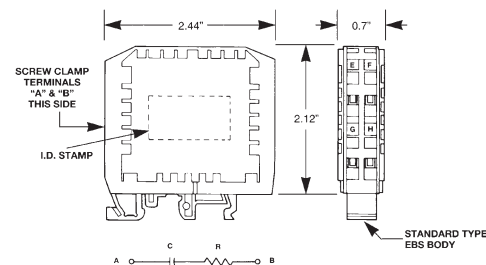


RG2406
SCHEMATIC



DELTA PART NO.	WYE PART NO.	RESISTOR (OHM $\pm 10\%$)	WATTS	CAPACITOR MFD	VOLTS (VAC)
RG2377-1	RG2406-1	22	10	0.5	480
RG2377-2	RG2406-2	33	10	0.5	480
RG2377-3	RG2406-3	47	10	0.5	480
RG2377-4	RG2406-4	68	10	0.5	480
RG2377-5	RG2406-5	82	10	0.5	480
RG2377-6	RG2406-6	100	10	0.5	480
RG2377-7	RG2406-7	150	10	0.5	480
RG2377-8	RG2406-8	220	10	0.5	480
RG2377-9	RG2406-9	330	10	0.5	480
RG2377-10	RG2406-10	470	10	0.5	480
RG2377-11	RG2406-11	680	10	0.5	480

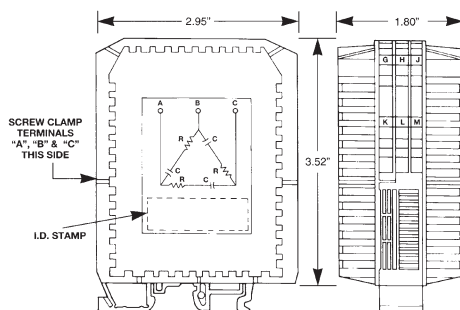
- Single-phase and three-phase Delta and WYE configurations
- Compatible with DIN Rails 46277-1 and 46277-3
- Enclosures meet UL-94VO flammability requirements
- Screw terminations for convenience
- Ideal for control applications, large scale instrumentation and automation
- Space-saving
- Reduced installation time
- Custom configurations available



DASH NO.	RESISTANCE (OHMS)
-1	22
-2	33
-3	47
-4	68
-5	82
-6	100
-7	150
-8	220
-9	330
-10	470
-11	680

R = (SEE CHART) $\pm 10\%$ 1/2 WATT
C = 0.5 μ F $\pm 10\%$ 125 VAC/200 VDC

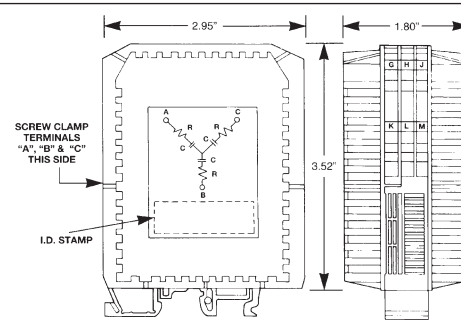
RG2408 - XX
DASH NO.



DASH NO.	RESISTANCE (OHMS)
-1	22
-2	33
-3	47
-4	68
-5	82
-6	100
-7	150
-8	220
-9	330
-10	470
-11	680
-12	270
-13	620
-14	10

R = (SEE CHART) $\pm 10\%$ 10 WATTS
C = 0.5 μ F $\pm 10\%$ 480 VAC

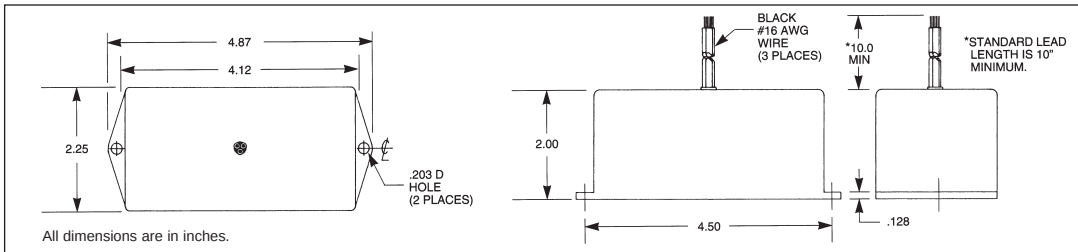
RG2409 - XX
DASH NO.



DASH NO.	RESISTANCE (OHMS)
-1	22
-2	33
-3	47
-4	68
-5	82
-6	100
-7	150
-8	220
-9	330
-10	470
-11	680
-12	270
-13	620
-14	10

R = (SEE CHART) $\pm 10\%$ 10 WATTS
C = 0.5 μ F $\pm 10\%$ 480 VAC

RG2411 - XX
DASH NO.



Electrocube, the largest U.S. manufacturer of arc suppressing resistor-capacitor (RC) networks has expanded its capabilities into the industrial motor and controls market with the introduction of its new series of three-phase high voltage RC networks.

Designated as the RG2561 through RG2564 (660 VAC) and RG2571 through RG2574 (480 VAC) Series, these new product lines are designed to meet the exacting electrical and physical requirements of heavy duty industrial applications.

The creation of this new product line complements Electrocube's extensive lines of single-phase and three-phase RC networks for electronic instrumentation and control. These RC networks allow Electrocube to continue its role as a leader in the design, development and manufacture of the highest quality RC networks in the United States.

Consult Electrocube for all of your RC networks and precision film capacitor requirements.

FEATURES:

- **480 and 600 VAC ratings**
- **Three-phase Delta and WYE configurations**
- **Varistor options available**
- **Capacitance: 0.47 μ F, $\pm$ 10% tolerance**
- **Resistance: 22 to 680 ohms, $\pm$ 5%, 10 watt**
- **Enclosure meets UL-94VO flammability requirements**
- **Standard lead length is 10"**
- **Custom configurations**

SERIES SELECTION

SERIES	VAC	Y		VARISTOR
RG2561	660	no	yes	no
RG2562	660	yes	no	no
RG2563	660	no	yes	yes
RG2564	660	yes	no	yes
RG2571	480	no	yes	no
RG2572	480	yes	no	no
RG2573	480	no	yes	yes
RG2574	480	yes	no	yes

RESISTOR SELECTION

DASH NO.	OHMS
-1	22
-2	33
-3	47
-4	68
-5	82
-6	100
-7	150
-8	220
-9	330
-10	470
-11	680

HOW TO ORDER

RG2564 - 8 - 12

SERIES _____
(See Series Selection Chart)

CAPACITOR: 0.47 μ F, $\pm$ 10%

RESISTOR: Ohms $\pm$ 5%, 10 Watt

CASE: ABS Plastic/Epoxy Fill

RESISTOR
(See Resistor Selection Chart)

LEAD LENGTH (INCHES)
(Note: standard lead length is 10" $\pm$ 0.010"; specify lead lengths in 1" increments)