Handy Dandy Little Circuits

Handy Dandy Little Circuits #27

Motor Speed Controls

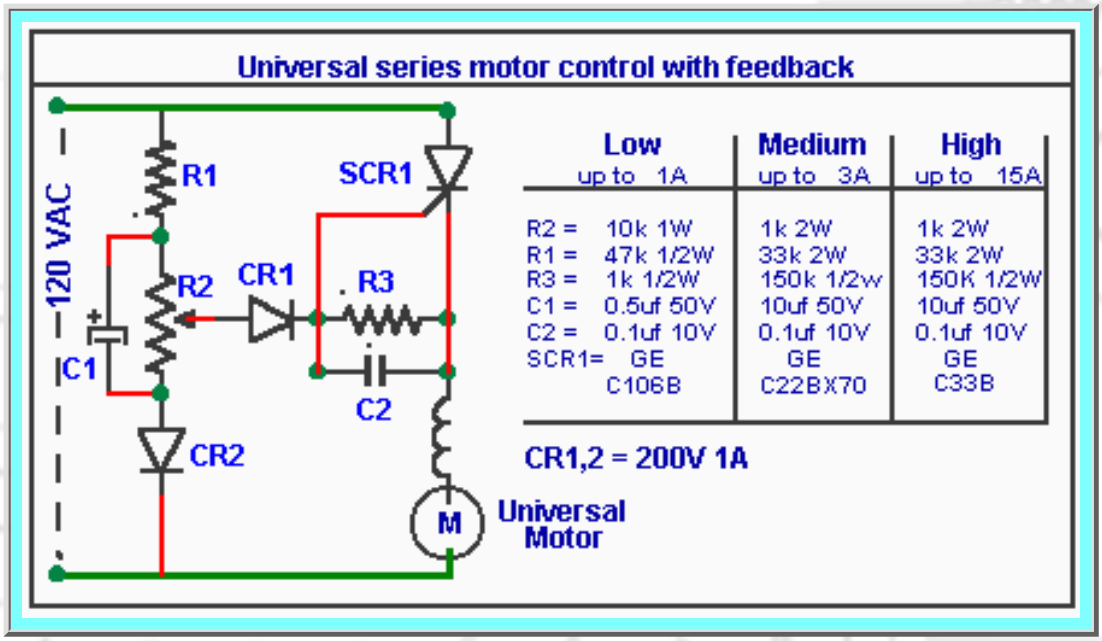
- **A few words of caution :**

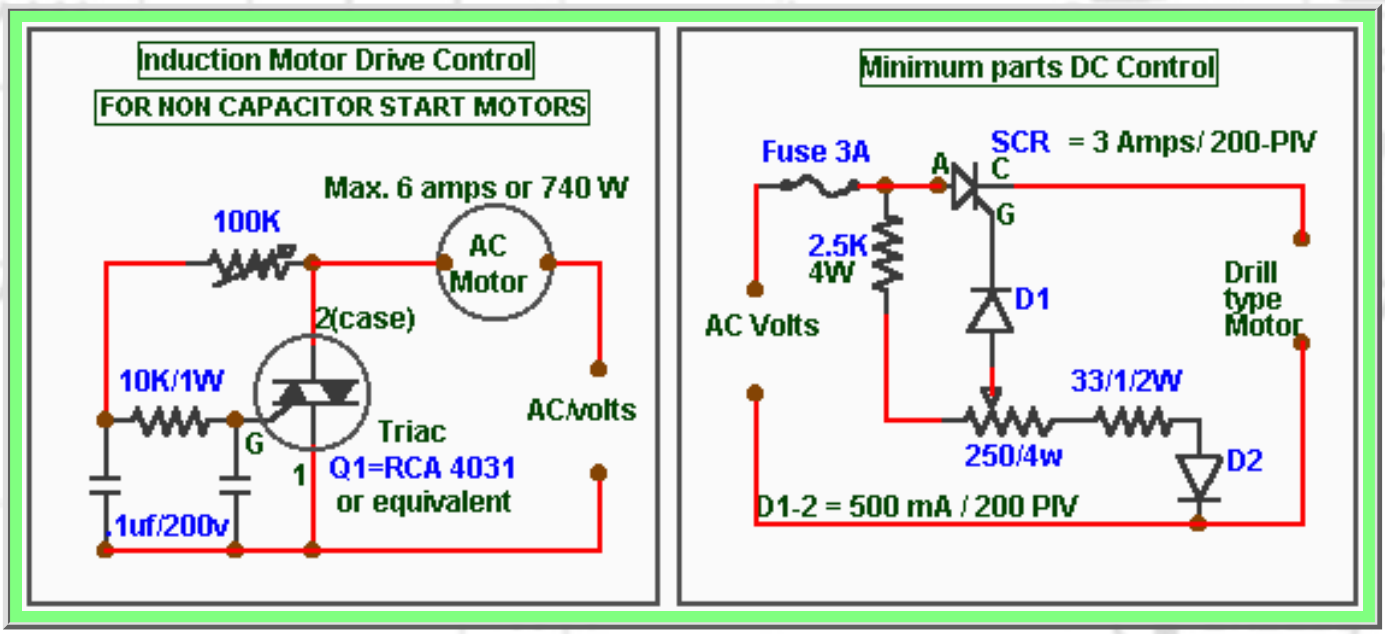
The circuits shown below are a few of many suggested circuits as published by SCR and TRIAC manufacturers and cannot be construed as beeing the exact application for your requirements and I cannot be held responsible for their use and end results .

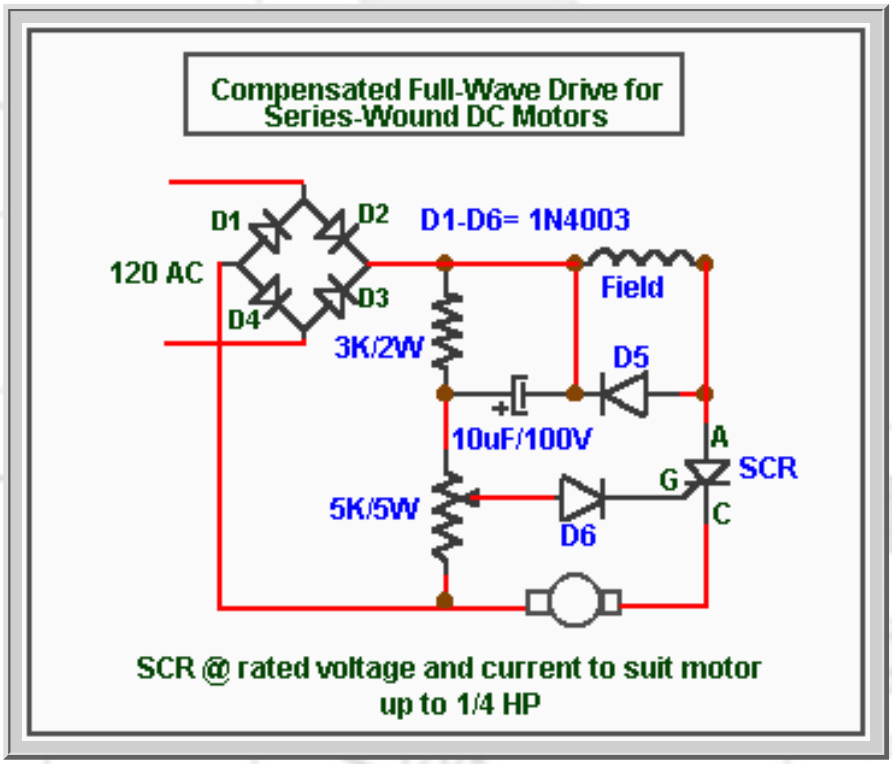
It is suggested that the subject of TRIAC and SCR as well as motor drive control systems be researched before making a final decision as to the application of these control circuits .
For satisfactory and safe results, knowing the exact type of motor you wish to control is of prime importance and all data available should be obtained before you contemplate to add any drive control circuits . Mount all SCR's and Triac on heatsink . Use current rated stranded wiring as required .

If you cannot find the SCR's and TRIAC's suggested in the circuits you may be able to find a substitute following this link **Cross References**

Some links to SCR's,TRiac's and motor control application notes:
Silicon Controlled Rectifiers (SCR)
Motor Controls
Thyristors
Application Notes
Triac Data





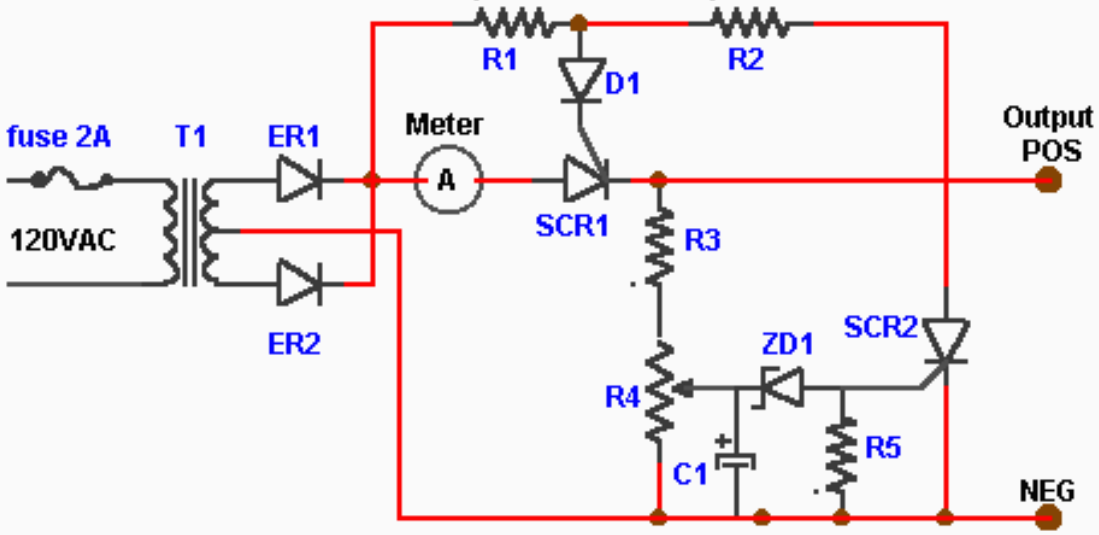


Heavy Duty 12 Volts Battery Chargers

- You can use a transformer with up to 12 amps output current with corresponding fuse value . Use No.12-14 stranded wiring to battery connection with heavy duty clips . Mount Rectifiers and SCR's on heatsink . You can use a mA meter with a shunt resistor . See Metering a power supply .

Note The rectifiers and SCR's value as quoted can be changed to lesser values as required for lower current output as required .

High Current 12V Battery Charger

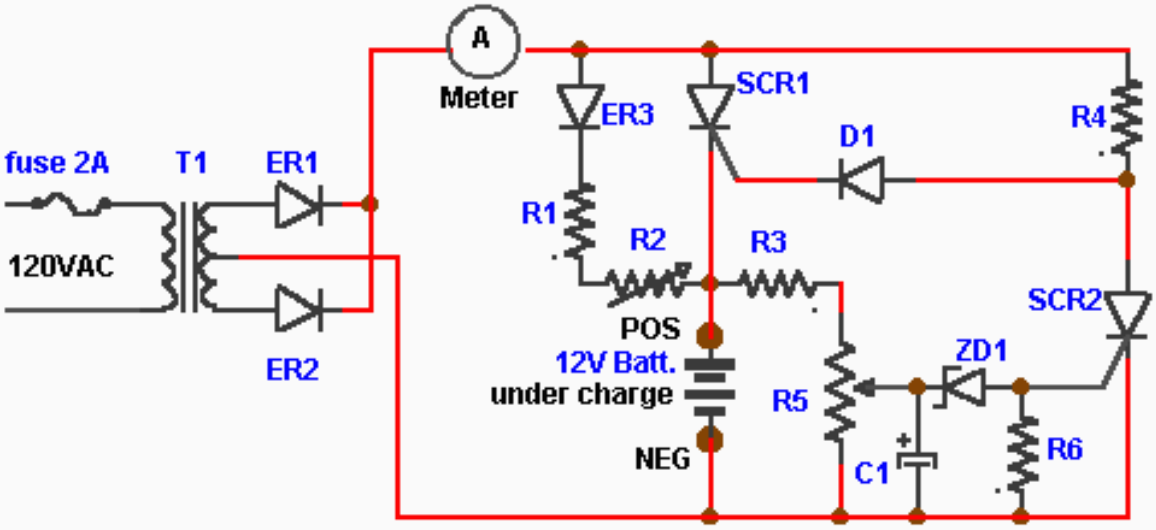


M = Current meter 1-10ADC (optional)
D1 = Diode .750mA/200V
ZD1 = Zener Diode 8.2V/1W
C1 = Capacitor 100 mfd @ 25V
T1 = Center tap 12V/10A(min)
ER1,2 = Rectifier Diodes 15A,200V

R1,R2 = 27 ohms / 5W
R3 = 47 ohms 1W
R4 = 500 ohms / 2W
R5 = 100 ohms @ 1/2 W
SCR1 = 20 A @ 50 V
SCR2 = 2 A @ 50 V

Adjust R4 using a fully charged battery so that the charging just ceases. Automatically start charging when battery voltage drops below R4 setting and stops when battery is fully charged.

High Current 12V Battery Charger with Trickle Charge



ER1, ER2, ER3 = Rectifer 20A/200V
R1= 470 ohms 5W
R2 = 250 5W
R3= 47 ohms 1/2 W
R4 = 47 ohms 2 W

R5 = 750 ohms 1 W
R6 = 1K 1/2 W
ZD1 = Zener 11 V, 1W, 50V
C1 = 50mfd, 25V
D1 = 1 A /100V

SCR1 = 20 A 50V
SCR2 = 2 A 50V

R5 = Adjust charging start on fully charge battery.
ER3 , R1 , R2 = form the trickle charge circuit which starts when Full charging stops
R2 adjust the amount of trickle charge current

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Questions? Email me at roma60@home.com