

SCR Mode of Operation

SCR power supplies have two distinctive modes of operation. They allow you to maintain either the output Voltage or Amperage constant.

Definition:

Constant Current (CC) mode of operation maintains the DC current output of the power supply constant with respect to the reference set by the CC control pot. DC voltage of the power supply will float with respect to the load applied.

Constant Voltage (CV) mode of operation maintains the DC voltage output of the power supply constant with respect to the reference set by the CV control pot. DC current of the power supply will float with respect to the load applied.

Operating CV - CC is made very easy and almost fool proof if the following procedure is followed.

Maintain Constant Current: Turn CV pot clockwise to 100%. This allows the power supply to float output voltage between 0 and full rated DC voltage. Turn CC pot clockwise to desired output current. As load is increased or decreased, DC amperage will remain at the set point while DC voltage will vary.

If CV pot is set at less than 100%, output voltage will be limited to this set point. If set voltage is less than the required voltage to maintain set current level, automatic crossover to Constant Voltage will occur.

Maintain Constant Voltage: Turn CC pot clockwise to 100%. This allows the power supply to float output current between 0 and full rated DC amperage. Turn CV pot clockwise to desired output voltage. As load is increased or decreased, DC voltage will remain at set point while DC amperage will vary.

If CC pot is set at less than 100%, output current will be limited to this set point. If set current is less than the required current to maintain set voltage level, automatic crossover to Constant Current will occur.

Automatic current trip

Current trip is supplied for protection against exceeding the maximum DC amperage rating of the power supply. If the DC amperage is exceeded, the power supply will continue to run but there will not be any output.

To reset, simply turn control pots down to zero, turn power supply OFF and back ON, turn pots back to desired output. This protects against a short across the bus bar or any unnatural rise in output current.

Operating Instructions.

Figure 5 depicts a typical operating flow diagram for an SCR controlled power supply. Output voltage or amperage is adjusted by the two knobs on the control panel.

Amperage is determined by the area of the load and output voltage.

Operation:

Select either CV or CC mode of operation.

For CV mode; turn CC control knob clockwise to 100%. Turn CV control knob counter clockwise to 0%.

Insert load in the tank.

Press the START button.

Power supply will start, and output voltage and amperage will indicate 0 on the meters.

To increase the output voltage, turn the CV knob clockwise to desired output voltage.

Amperage will increase proportionately.

For CC mode: turn CV control knob clockwise to 100%.

Turn the CC control knob counter clockwise to 0%.

Insert load in the tank.

Press the START button.

Power supply will start, and output voltage and amperage will indicate 0 the meters.

To increase the output amperage, turn the CC knob clockwise to desired output voltage.

Voltage will increase proportionately.

Never operate the power supply with any of the panels removed. This will create lack of cooling and cause overheating, thus activating thermal protection. Thermal overloads need a few minutes to cool off before they can reset

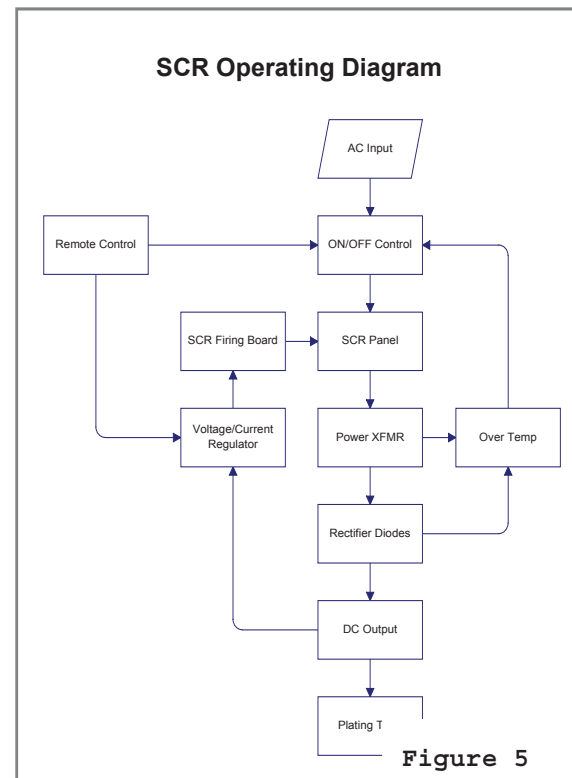


Figure 5