

GLOSSARY OF TERMS

ANODE - The positive power terminal of an SCR or Diode.

AVE - The average value of a particular parameter such as voltage or current.

CATHODE - The negative power terminal of a SCR or Diode.

CURRENT LIMITING - A means to limit the maximum amount of current applied to the load.

COMMAND SIGNAL - An input variable applied to an SCR power controller to adjust it's output.

CONDUCTANCE - The ability of a material to conduct electricity. Conductance is the inverse of resistance.

CURRENT FEEDBACK - A means to maintain the applied current to the load. The applied current is maintained as a linear function of the command signal regardless of line voltage and load changes.

CT - Current Transformer; a device used for sensing current. It's output is an electrically isolated signal proportional to the measured current.

di/dt - The rate of rise of applied current to an SCR as the unit turns on.

DIODE - A semiconductor which allows current to pass in one direction only.

DISTRIBUTIVE CONTROL - A means of controlling the on/off time of the SCR's to obtain a desired power output to the load.

dv/dt - Refers to the maximum rate of rise of applied voltage across an "off" SCR that will NOT cause a false turn-on. Usually stated as volts/second.

FORWARD DROP - The voltage drop across a semiconductor when that device is conducting current in it's normal forward direction.

GATE - The signal terminal of an SCR. The terminal used to turn on an SCR.

HEATSINK - Device used to transfer heat away from either an SCR or Diode.

HYBRID - Refers to a particular arrangement of SCR's and Diodes in an SCR power controller. Three SCR's and three Diodes.

I²T - Amperes squared times seconds. Refers to the subcycle current characteristics of either an SCR or a fast clearing fuse.

INLINE - Refers to the manner in which the SCR's are connected in three-phase applications.

INSIDE-DELTA - Refers to the manner in which the SCR's are connected in three-phase applications.

INRUSH CURRENT - That current which surges into a low impedance load or that which is drawn by a transformer during saturation.

LED - Light Emitting Diode. Often used as status indicators.

MOV - Metal Oxide Varistor. A device used to protect SCR's and Diodes from voltage transients.

OVER CURRENT TRIP - A detection and shutdown circuit which interrupts the operation of the SCR's if the SCR current has exceed a preset value.

GLOSSARY OF TERMS P2

PEAK - Refers to maximum instantaneous value of a voltage or current.

PHASE-ANGLE - An SCR firing mode in which the SCR's are turned ON for a portion of each half of an AC cycle.

PHASE LOCK LOOP - An electronic circuit which automatically adjusts itself to maintain synchronization with the line frequency for precise SCR timing.

PIV - Peak Inverse Voltage; refers to the voltage rating of an SCR or Diode.

PT - Potential Transformer; used to isolate and/or change a voltage from one level to another.

RC - Resistance/Capacitance network. Connected across the SCR's the RC is used to slow down the rate of applied voltage (dv/dt) to the SCR's to prevent the SCR's from being falsely turned ON by a voltage transient. This is often referred to as a dv/dt circuit.

RESISTANCE - The characteristics of a material which inhibit the flow of current, measured in ohms. Resistance is the inverse of conductance.

RESPONSE - The ability to respond to a command change measured in time or cycles.

RFI - Radio Frequency Interference; High frequency interference generated by phase-angle fired SCR's and other sources.

RMS - Root Mean Squared; refers to the heating value of voltage and current parameters.

SCR - Silicon Controlled Rectifier; The device used to switch the power to the load in SCR power controllers. A three terminal member of the thyristor semiconductor family.

SEMICONDUCTOR - Solid-state device for controlling electrical signals or electrical power.

SOFT START - A gradual application of voltage or power to the load to prevent current inrush.

SPAN ADJUSTMENT - Typically, a potentiometer adjustment to match the controllers output to the command signal. Also sometimes referred to as gain. Adjusted with the command signal at 100% so the power controllers output is full ON.

SUPPRESSOR - A device for clamping excessive voltage transients. See MOV.

THYRISTOR - The name of a semiconductor family, including SCR's, Triacs, and others.

TIME PROPORTIONING - A control mode in which the ON and the OFF time of an SCR are adjusted to provide the desired load power.

VOLTAGE CONTROL - A circuit which provides a linear voltage to the load proportional to the command signal and compensates for line voltage changes.

ZERO ADJUSTMENT - Typically, a potentiometer adjustment to match the command signal to the controllers output. Adjusted with the command signal at 0% so the power controllers output is OFF.

ZERO-CROSS FIRING - A method of controlling load power in which SCR's are turned ON only at the beginning of an AC cycle. Therefore, switching always occurs when the applied voltage is zero.