

# Surge Protection Glossary of Terms

Presented by Jasco Products

**Alternating Current (AC)** - A continuous cycle of electricity that flows through a peak in one direction, decreases to zero, then reverses and reaches a peak in the opposite direction. The frequency is the number of peak-to-peak cycles per second. AC flow is typically expressed as a sine wave at 60 cycles per second (Hz).

**Ampere (Amp)** - A measure of the amount of electrical current flow. A 15 ampere re-settable circuit breaker provides total system protection against overloads and external shorts. Any ampere rating less than a 15 ampere rating will not provide full utilization of available power.

**Capacitor** - A noise reduction devise for storing an electrical charge. The amount of noise filtration is determined by the size of the capacitor (the larger the better noise filter).

**Circuit** - The path of electric current, leading from a source through components, and back to the source.

**Circuit Breaker** - An electromagnetic or thermal device that opens the circuit when the current in the circuit exceeds a predetermined amount, such as ours at 1875 watts; re-settable.

**Clamping Voltage** - The maximum level of voltage allowed to pass through a transient-voltage surge protection device. Lower clamping voltages indicate a greater level of surge protection.

**Coaxial Line Gold Connectors** - Provide superior connectivity to reduce noise and data loss.

**Conductor** - A substance capable of being a medium for the transmission of heat or electricity.

**Current** - The flow of electrons; the time rate of electron flow, measured in amperes.

**Direct Current (DC)** - An electric current that only flows in one direction.

**Dummy MOV** - A high energy and high clamping voltage MOV used to artificially boost the joule rating of a surge protector. Although they are used in conjunction with low energy, low clamping MOVs, dummy MOVs are never utilized due to high clamping voltage characteristics.

**Electrical Current** - The flow of electrons through a conductor.

**EMI** - (Electro Magnetic Interference). EMI is defined as electrical or magnetic noise and are a primary source of electrical interference.

**Frequency** - Measured in hertz, a unit of frequency equal to one cycle per second. U.S. and Canada standard is 60 hertz. European standard is 50 hertz.

**Ground** - A connection between an electrical circuit and the earth or body serving as the earth.

**Hertz (Hz)** - Unit of frequency. One Hertz is defined as one cycle per second. Frequency is also measured in KHz (1,000 cycles per second) and MHz (1,000,000 cycles per second).

**Insulator** - A substance with negligible electrical or thermal conductivity.

**Joules** - Unit of energy. Larger surges contain more energy, therefore, a larger level of energy (joules) dissipated implies a greater level of surge protection. The higher the joule rating, the better protection.

**Jumper Wire** - A wire used to connect 2 points in a circuit.

**Let-through Voltage** - Another term for clamping voltage.

**Live Wire** - A wire that carries electrical current.

**Maximum Surge** - 6000 volts due to air arcing at 30,000 volts/inch.

**Maximum Transient(Peak) Current** - Amount of transient (spike) current that a MOV can absorb without rupturing.

**Metal Oxide Varistor (MOV)** - A high energy surge suppression component that activates at a predetermined voltage clamping level to divert excess current and absorb energy, protecting sensitive electronic equipment from damaging surges, spikes or transients. A surge suppressor's level of protection is determined by the quantity and size which is the (energy level measured in Joules) of the MOV's used.

**Neutral Wire** - The wire in a cable that is kept at zero voltage. All current that flows through the hot wire also must flow through the neutral wire.

**Noise interference** - A series of low-level surges, above or below the line voltage. They are typically 10 volts or less, sometimes just a fraction of a volt, and interfere with the transmission or reception of data signals. See EMI and RFI.

**Ohm** - Unit measure of electrical resistance. The amount of electrical resistance in a circuit or electrical device.

**Open Circuit** - An electrical circuit with a physical break in the path (caused by opening a switch, disconnecting a wire, burning out a fuse, etc.) through which no current can flow.

**Over-Voltage Surge** - A long duration voltage surge that could cause catastrophic damage to sensitive equipment.

**Peak Transient Power** - Specification of greatest level of instantaneous power that a surge protection device can dissipate. A higher number indicates a greater level of power dissipation.

**Printed Circuit Board** - A component used to safely house all surge suppression and noise filtration components from damaging shorts.

**Polarized Plug** - A plug whose blades are designed to enter a receptacle in only one orientation.

**Power** - The rate at which work is being done. The unit of electrical power measurement is the watt.

**RFI (Radio Frequency Interference)** - RFI is a specific type of EMI within the frequencies of 60 KHz to 200 MHz. RFI noise can scramble computer data.

**Receptacle Outlet** - An outlet where one or more receptacles are installed.

**Relay Switch** - Proprietary, patented technology used in Power Blocker 2 product to detect over-voltage surges.

**Resistance** - The quality of an electric circuit, measured in ohms, that resists the flow of current because of the conductor's atomic nature. Good conductors (such as copper, silver, aluminum or gold) offer little resistance; poor conductors (such as glass, wood, and paper) offer much resistance.

**Response Time** - Time it takes for a MOV to start to react. Less than 1 nanosecond (1 second = 1,000 milliseconds = 1,000,000 microseconds = 1,000,000,000 nanoseconds).

**Short Circuit** - An improper connection between hot wires, or between a hot wire and a neutral wire.

**Spike/Surge** - Random, high-speed, transient increases in electrical power. Surges are typically longer in duration than spikes, although, they are commonly used to describe the same phenomenon.

**Switch** - A device that is used to connect and disconnect the flow of current or to divert current from one circuit to another used only on hot wires, never in ground wires.

**Thermal Runaway** - The deterioration of MOV's by heat to such extent that they could cause a fire. (See UL 1449 Rev.II)

**Thermoplastic** - Flame retardant, and high impact durability. Has excellent electrical insulation.

**Transient Surge** A spike surge that typically has a very high voltage associated with it.

**Underwriters Laboratories, Inc. (UL)** - An independent organization which tests the performance and safety of consumer products.

**Volt** - A unit that is used to measure electrical pressure (comparable to pounds of pressure in a water system).

**Voltage** - The electromotive forces or potential difference between two points of a circuit, measured in volts, that causes electric current to flow. One volt creates a current of 1 ampere through a resistance of 1 ohm.

**Watt** - A unit of measurement of electrical power (volts times amperes equals watts of electrical energy used). One watt used for 1 hour is 1 watt hour; 1000 watt hours equals 1 kilowatt hour (the unit by which electricity is metered and sold by utility companies).

