Definition of Terms Related to Protective Devices

Ambient Temperature - The temperature of the median in which the heat of the device is dissipated.

Ampacity - The current-carrying capacity of the conductor or device.

Branch Circuit - A portion of the wiring system extending beyond the final overcurrent protective device.

Bus Bars - Rigid conductors serving as a connection for two or more circuits.

Cascade Circuit - A series arrangement of more than one protector connected between the power source and the load.

Circuit Breaker - A device used to open/close a circuit non-automatically, as well as open a circuit automatically when subjected to a predetermined overload current without damaging itself.

Common Trip - A feature on a multi-pole protector in which an overload on any pole will cause all poles to open.

Coordination - The ability of the protector with the lowest rating in a cascade arrangement to trip before those with higher ratings (See Cascade Circuit).

Current Limitation - A protective device that reduces the available short circuit peak current to a lesser value.

Current Rating - The maximum current in amperes, at rated current and frequency, that a device will carry continuously under defined conditions without exceeding specified performance limits.

Dielectric Strength - The maximum voltage stress that a material can withstand without rupture.

Duty Continuous - The requirement that demands operation at a constant load for an indefinite period of time.

Duty Intermittent - The requirement that demands operation for alternate intervals of: (1) load/no load; (2) load/rest; or (3) load/no load/rest.

Effective or RMS Value - The value of alternating current that will produce the same amount of energy in a resistance as the corresponding value of direct current.

Fault - A defect in the normal circuit configuration commonly referred to as short circuit. Usually due to unintentional grounding.

Fault Current - The current that may flow in any part of a system under fault conditions.

Feeder - All circuit conductors between the service entrance equipment and the final branch circuit protector.

High Inrush (HI-INRUSH) - A load that exhibits, upon application of power, a steep wave front transient of very high current amplitude for a short duration.

Instantaneous Trip - Indicates that no intentional delay is purposely introduced in the opening time of a protector.

Interrupting Capacity - The maximum fault current that can be interrupted by a protective device without failure of the device. Often referred to as Rupture Capacity.

Let-through Current - The actual fault current passing through a protective device as compared to the current available to the device.

Overload Current - The current value in excess of the rated current of the protective device.

Time Delay - The introduction of an intentional delay to the opening function of a protective device.

Total Clearing Time - The time elapsing from initiation of overload current to final current interruption.

Ultimate Trip Current - The minimum value of current that will cause tripping of a protective device.

Voltage Drop - Conductor's voltage reduction due to resistance.

Voltage Rating - The maximum voltage at which a device is designed to operate.

Voltage Trip - A protective device that is factory calibrated to trip at a predetermined voltage value.

Watt - The unit of electrical power required to do work at the rate of one joule/second or the power consumed when one ampere flows with one volt applied to a circuit.