



CIRCUIT BREAKER TERMINOLOGY

AMBIENT TEMPERATURE

Refers to the temperature of the air immediately surrounding the circuit breaker/protector.

AUTOMATIC RESET

Device, which will automatically open an overloaded circuit. It will also automatically close or complete the circuit after a period of time. If the overload is still present, the device will continue to cycle until either the power or the overload is removed.

CIRCUIT BREAKER/PROTECTOR

An automatic switching device that opens the circuit and interrupts the flow of current when an overload condition occurs.

CSA

Canadian Standards Association (similar to UL).

CURRENT RATING

Designation of rating given in amperes at which the device will not trip. A specific temperature is usually assigned.

DIELECTRIC STRENGTH

The ability of an insulating material to withstand an impressed voltage without exceeding minimal leakage current or breakdown. Specified in voltage (VAC), usually between a live metal part and ground or between open contacts of a device.

FUSE

A protective device using a special metal-alloyed conductor which is notched to control the cross sectional area. A fault current will melt the narrow cross section, interrupting the flow of current.

IEC 934

IEC 934 is an international standard for circuit breakers for equipment.

INTERRUPT CAPACITY

The highest level of fault current that a circuit protective system is intended to interrupt. Devices qualified to UL489 must alone clear the fault, be operable afterwards, and be still capable of tripping on 200% overloads. A UL1077 qualified device may have a backup device wherein the combination must successfully clear the fault while leaving the protector in a fail-safe condition (no loss of case integrity, external materials remaining unignited by gaseous emissions, and no dielectric path to grounded parts).

MANUAL RESET

Refers to those breakers in which the electrical contacts remain open after a trip until someone physically closes or completes the circuit either by pushing a reset button or throwing a switch.

MAXIMUM ULTIMATE TRIP

Current rating at which a circuit protection device will trip within a certain period of time at a specified temperature.

MINIMUM ULTIMATE TRIP

Current rating for which a circuit protection device will not trip for an extended period of time at a specified temperature

NUISANCE TRIPS

Those trips caused by a response to non-damaging inrush or start-up current surges, as opposed to an actual overcurrent trip.

OVERCURRENT

That current which may cause dangerous overheating.

OVERCURRENT PROTECTION

Protection achieved by limiting the duration and magnitude of exposure to an overcurrent.

OVERLOAD

An electrical load or current flow greater than that which a circuit is designed to handle.

OVERLOAD CAPACITY

The highest level of overload current that devices will interrupt and remain in operable condition, capable of clearing additional overloads.

SAFETY FACTOR

The allowance added to the steady-state application current to ensure that the protective device selected will be more than sufficient to handle the application without nuisance trips. MP recommends that 15% be the minimum safety factor used.

SLOW-BLOW FUSE

A dual element fuse that allows for slow response to overloads (less than 10x rating) and fast response to fault currents.

TRIP-FREE

A characteristic of certain breakers that provides for independence between the protection mechanism and the operating button or handle, such that a fault cannot be maintained manually.

UL

Underwriter's Laboratories, a not-for-profit corporation that tests and certifies equipment on the basis of established safety standards.

UL489/CSA 22.2-5

Standard (requirements/specifications) for "Circuit Breakers and Circuit Breaker Enclosures."

UL1077/CSA 22.2-235

Standard (requirements/specifications) for "Supplementary Protectors for Use in Electrical Equipment."

VDE

Verband Deutscher Elektrotechniker—German regulatory agency similar to UL/CSA.

VOLTAGE DROP

The voltage decrease across the protector/breaker due to the internal resistance of the device.

For additional information please contact:

Mechanical Products Company

1824 River Street • Jackson, MI 49202 • USA

Phone: (517)782-0391 • Fax: (517)788-6773

mechanicalproducts@mechprod.com

www.mechprod.com