

## Glossary

**INSULATION** — A material having good dielectric properties which is used to separate close electrical components, such as cable conductors and circuit components.

**INSULATION LEVEL** — A thickness rating for power cable insulation. Circuits having fault detectors which interrupt fault currents within 1 minute are rated 100% level, within 1 hour are rated 133% level, and over 1 hour are rated 173% level.

**INSULATION TEMPERATURE RATING** — A maximum temperature assigned to insulations based on laboratory tests.

**INSULATION RESISTANCE** — The electrical resistance of an insulating material at a specific time and condition as measured between two conductors.

**INSULATION STRESS** — The potential difference across an insulator. The stress on insulation is expressed in volts per mil (V/m) or kilovolts per meter (kV/m).

**INSULATION THICKNESS** — The wall thickness of the applied insulation.

**INSULATION VOLTAGE RATING** — The nominal phase-to-phase operating voltage of a three-phase cable system.

**INTERAXIAL SPACING** — Center-to-center conductor spacing in paired wire or center-to-center spacing between conductors in a flat cable.

**INTERCALATED TAPES** — Two or more tapes helically wound and overlapping on a cable.

**INTERCONNECTING CABLE** — The wiring between modules, between units, or the larger portions of a system.

**INTERCONNECTION** — Mechanically joining devices together to complete an electrical circuit.

**INTERFACE** — The two surfaces on the contact side of both halves of a multiple-contact connector which face each other when the connector is assembled.

**INTERFERENCE** — Disturbances of an electrical or electromagnetic nature that introduce undesirable responses into other electronic equipment.

**INTERMEDIATE FREQUENCY** — A frequency to which a signal is converted for ease of handling. Receives its name from the fact that it is an intermediate step between the initial and final conversion or detection stages.

**INTERMEDIATE TEMPER** — As applied to aluminum, any temper between soft and hard drawn.

**INTERNAL WIRING** — Electronic wiring which interconnects components, usually within a sealed subsystem.

**INTERSTICE** — The space or void between assembled conductors and within the overall circumference of the assembly.

**INTRINSICALLY SAFE** — Incapable of releasing sufficient electrical or thermal energy under normal or abnormal conditions to cause ignition of a specific hazardous atmospheric mixture in its most ignitable concentration. See Article 504 of the NEC.

**I/O** — Input/Output. The process of transmitting data to and from the processor and its peripherals.

**IONIZATION** — (1) The creation of ions when polar compounds are dissolved in a solvent, (2) when a liquid, gas or solid is caused to lose or gain electrons due to the passage of an electric current.

**IONIZATION FACTOR** — This is the difference between percent dissipation factors at two specified values of electrical stress; the lower of the two stresses is usually so selected that the effect of the ionization on dissipation factor at this stress is negligible.

**IONIZATION VOLTAGE** — The potential at which a material ionizes. The potential at which an atom gives up an electron.

**IR DROP** — A method of designating a voltage drop in terms of both current and resistance.

**IRRADIATION** — In insulations, the exposure of the material to high-energy emissions for the purpose of favorably altering the molecular structure.

**ISDN** — Integrated Services Digital Network. A standard which covers a wide range of data communication issues but primarily the total integration of voice and data.

**ISO** — International Standards Organization.

**ISO 9000** — A set of quality standards widely used around the world.

**ISOLATION** — The ability of a circuit or component to reject interference, usually expressed in dB.

**I<sup>2</sup>R** — Formula for power in watts, where I = current in amperes, R = resistance in ohms. See Watt.

## J

**JACK** — A plug-in type terminal widely used in electronic apparatus for temporary connections.

**JACKET** — Pertaining to wire and cable, the outer sheath which protects against the environment and may also provide additional insulation.

**JAN SPECIFICATION** — Joint Army-Navy specification (replaced by current Military Specifications).

**JET STARTER CABLE** — Single conductor 600 V cable used for external aircraft power.

**JITTER** — The slight movement of a transmission signal in time or phase that can introduce errors and loss of synchronization in high-speed synchronous communications.

**JOINT** — That portion of the conductor where the ends of two wires, rods, or groups of wires are joined by brazing, soldering, welding or by mechanical means.

**JOULE'S LAW** — When electricity flows through a material the rate of heating in watts will equal the resistance of the material in ohms times the square of the current in amperes.  $W = I^2R$ .

**JUMPER CABLE** — Extra flexible cables with high-voltage insulation for use as temporary connections. Usually has red jacket.

## K

**KAPTON** — DuPont's trademark for polyimide.

**kB** — K-byte. 1,024 bytes. Usually describes bits or bytes, as in transmission speeds measured in kB/sec or kilobits per second.

**kbps** — Thousands of bits per second (bps).

**kcmil** — One thousand circular mils, replaced "MCM" in the 1990 NEC.

**KEVLAR** — A high strength DuPont polymer used as a cable messenger or strength member.

