

**A**

**Access Control** - The means of influencing and regulating the flow of persons through a door (entry and/or exit).

**Active Leaf** - The leaf that opens first, in a pair of doors, and the one to which the lock is applied.

**Actuator** - The mechanism of the switch or switch enclosure that operates the contacts.

**American National Standards Institute (ANSI)** - A federation of trade, technical, and professional organizations, government agencies.

**Ampere/Hour (AH)** - A measurement of a battery's capacity. One ampere of current flowing for one hour equals one ampere/hour.

**Automatic Closing Door** - Doors that normally are open but that close when the automatic-closing device is activated.

**Architectural Hardware (Builders' Hardware)** - Term applied to all hardware used in building construction, particularly that used on or in connection with doors, frames, windows, and other movable members.

**Astragal** - A molding or strip whose purpose is to cover or close the gap between the meeting edges on a pair of doors. Some types overlap, others meet at the center line of the gap (split).

**B**

**Battery Standby** - A means of automatically switching over to stored battery power during local primary power failure.

**Builder's Hardware Manufacturers Association (BHMA)** - The trade association for North American manufacturers of commercial builders hardware.

**Block Diagram** - A drawing that shows the relationship of equipment in a system. Blocks used to represent each piece of equipment are arranged into a system diagram that shows their physical or operational relation to each other.

**Bolt** - The projectable member of a lock or latch mechanism that engages the door frame and the strike. (See *deadbolt and latchbolt*.)

**Bolt Position Switch** - A miniature switch used on or in a locking device to monitor whether the locking bolt is in the locked (projected) or unlocked (retracted) position.

**Bridge Rectifier** - a circuit using four diodes to provide full wave rectification converting AC voltage to a pulsating DC voltage

**Buzzer** – an electric signaling device that makes a buzzing sound



**Code** - A standard that is an extensive compilation of provisions covering broad subject matter or that is suitable for adoption into law independently of other codes and standards.

**Coordinator** - A device used on pairs of swinging doors that prevents the active leaf from closing before the inactive leaf closes. Necessary when an overlapping astragal is present and automatic or self-latching flushbolts are used with door closers on both leaves.

**Cam** - A rotating eccentric piece attached to the end of a cylinder plug to actuate a lock or latch mechanism.

**Case** - A housing for a lock mechanism.

**Circuit** - The path through which electrical energy flows.

**Coded Card** - A plastic card that has a combination (three to six digits, encrypted in its design either in a series of small magnets or on magnetic tape).

**Coil, electric** - Successive turns of insulated wire that create a magnetic field when an electric current is passed through them.

**Conductor** - Material with the ability to carry electric current. The term is also used for an electric wire.

**Connector** - Generally, any device used to provide rapid connect/disconnect service for electrical cable and wire terminations.

**Continuity** - The state of belief, complete and uninterrupted, like a normally closed circuit.

**Continuity Check** - A test performed on a length of wire or cable to determine whether the electrical current flows continuously throughout the length.

**Continuous Duty** - Refers to a device or a control that can operate continuously with no off or rest periods.

**Control Box** - A sheet metal enclosure that contains electronic and electromechanical controls and circuitry.

**Current** - The flow of electrons through an electrical conductor. Current is measured in amperes.

**Cylindrical Lock (Bored Lock)** - Term used to describe locks or latches which have a cylindrical case into which a separate latch bolt case fits. Lock or latch

**Cylinder** - A housing that contains a tumbler mechanism and a key-way plug that can be turned only by the correct key. It includes a cam or spindle to transmit rotary action to a lock or latch mechanism. For security and keying versatility, authorities generally specify a pin-tumbler cylinder of no fewer than five pins. The two types of cylinders, the mortise cylinder (round, threaded housing) and the bored lock cylinder (sometimes called a cylinder insert), which both provide the same functional value of security and convenience and are often included in the same keying system. (See *keying*.) parts are intended for installation into a hole bored into the face of the door.

## D

**Deadbolt** - A bolt operated manually and not actuated by springs. When locked, the bolt cannot be forced back. A deadbolt is operated (projected and retracted) by a key cylinder or lever handle.

**Deadlatch** - A latch in which the latchbolt is positively held in the projected position by an auxiliary mechanism.

**De-energize** - To remove power.

**Delay** - A period of time before or during an event.

**Dogging Device** - As used on exit devices, a mechanism that fastens the cross bar in the fully depressed position, and also retains the latch bolt or bolts in a retraction position thus permitting free operation of the door from either side. Not allowed on fire exit hardware.

**Door Closer** - A labeled device that, when applied to a door and frame, causes an open door to close by mechanical force. The closing speed can be regulated by this device.

**Door Holder/Release Device** - A labeled, fail safe device, controlled by a detection device, used on an automatic-closing door to release the door at the time of fire.

**Door Status Switch** - A DSS is a switch used to monitor whether a door is in an opened or closed position.

**Double Pole, Double Throw (DPDT)** - A term used to describe a switch or relay output contact form (2 form C) in which two separate switches are operating simultaneously, each with a normally open and normally closed contact and a common connection. This form is used to make and break two separate circuits.

**dry contact** - Metallic points making (shorting) or breaking (opening) a circuit. The switched circuit must have its own source of power and is merely routed through the dry contacts.

**Duty Cycle** - The percentage of on time or operating time of a device. For example, a device that is on for one minute and off for nine minutes is operating at a 10 Percent duty cycle.

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## Ⓔ

**Egress Side** - The side of an opening from which traffic exits.

**Electric Strike** - An electro-mechanical door locking device (usually solenoid-operated) that will unlock the door when electrical power is applied to it. A fail-safe configuration will operate in the reverse condition (i.e., normally locked when power is applied and unlocked when power is interrupted).

**Electromagnet** - A coil of wire, usually wound on an iron core, that produces a strong magnetic field when current is sent through the coil.

**Electromotive force (EMF)** - Pressure or voltage; the force that causes current to flow in a circuit.

**Emergency Release** - An optional feature of a lock that provides a means of overriding the lock and retracting the bolt in an emergency. It can be operated either mechanically or electrically.

**Energize** - To apply power.

**Exit** - That portion of a means of egress that is separated from all other spaces of a building or structure by construction or equipment as required to provide a protected way of travel to the exit discharge.

**Exit Access** - That portion of a means of egress that leads to an exit.

**Exit Discharge** - That portion of a means of egress between termination of an exit and the public way.

## Ⓕ

**Fail Safe** - Lock or locking device that remains unlocked on loss of power.

**Fail Secure** - Lock or locking device that remains locked on loss of power. Also known as Non-Fail Safe (NFS).

**Finish Hardware** - Architectural or Builders Hardware that has a finished appearance as well as a functional purpose and that may be considered a part of the decorative treatment of a room or building.

**Fire Door Assembly** - Any combination of a fire door, a frame, hardware, and other accessories that together provide a specific degree of fire protection to the opening.

**Fire Exit Hardware** - Labeled devices for swinging fire doors installed to facilitate safe egress of persons and generally consisting of a cross bar and various types of latch release mechanisms that cannot be held in a retracted locked position and providing fire protection where used as part of a fire door assembly.

**Fire Rating** - The time, in minutes or hours, that materials or assemblies have withstood a fire exposure as established in accordance with the test procedures of NFPA 251.

**Flush Bolts, Automatic** - A mortised bolt installed near the top or bottom of the inactive leaf of a pair of doors that holds the inactive leaf in a closed position until the active leaf is opened.

**Flush Bolts, Manual** - A mortised bolt installed near the top or bottom of the inactive leaf of a pair of doors in which the bolts are manually extended or retracted into or out of the header or sill by a means of a lever.

## ⓐ

**Ground** - A conducting connection between an electrical circuit and the earth or other large conducting body to serve as an electrical ground, thus making a complete electrical circuit.

**Ground, Earth** - The portion (if a circuit that is connected to a buried metallic object such as a grounding rod or water pipe).

## ⓑ

**Handing of Door** - The description of swinging door operation, always viewed from outside the room, building, and so forth. *Left hand* means that the door hinges on the left and *right hand* means that the door hinges on the right.

**Hard-Wired** - Refers to groups of connections that require the use of wire conductors.

**Heat Sink** - A method used to transfer a rise in temperature by means of a metal plate or fin-shaped object with good heat transfer efficiency that helps dissipate heat into the surrounding air, into a liquid, or into a larger mass.

**Hertz (Hz)** - The international unit of frequency equal to one cycle per second.

**HES** - manufacturer of the best electro-mechanical access control devices in the world!

**Hot** - Connected, alive, energized.

**Humidity** - The amount of moisture in the air, measured in percent of relative humidity.

## I

**Impedance** - The opposition in an electrical circuit to the flow of an alternating current (AC). Symbol Z

**Inactive Leaf** - One door of a pair of doors that ordinarily is latched closed; the second operating door of a pair.

**Induction** - An influence exerted by a charged body or by a magnetic field on neighboring bodies without apparent communication; electrifying, magnetizing, or inducing voltage by exposure to a field.

**Ingress Side** - The side of an opening from which traffic enters.

**Input Voltage** - The designed power source requirement needed by equipment in order to operate properly.

**Inrush** - The initial surge of current through a load when power is first applied. Lamp loads, inductive motors, solenoids, and capacitive load types all have inrush or surge currents higher than the normal running or steady state currents..

**Insulation** - A material that provides high electric resistance, making it suitable for covering components, terminals, and wires to prevent possible future contact of adjacent conductors, resulting in a short circuit.

**Interlock** - A system of multiple doors with controlled interaction. Interlocks are also known as lightraps, airtraps, mantraps, and sallyports. (See *safety interlock*, *security interlock*.)

**Intermittent Duty Solenoid** - A solenoid designed to be energized for short periods of time. Continuous operation may damage an intermittent duty solenoid.

**Isolation** - No electrical connection between two or more circuits.

## ⓐ

**Jumper** - A short length of conductor used to make a connection between terminals, around a break in a circuit, or around an instrument. It is usually a temporary connection.

**Junction** - A point in a circuit where two or more wires are connected.

**Junction Box** - A protective enclosure for connecting circuit wires.

## ⓑ

**Keying** - The various keying arrangements for pin-tumbler cylinders: *individual key*-the key for an individual cylinder; *keyed alike*-all cylinders may be operated by the same key (not to be confused with *master keyed*); *keyed different*-a different individual key operates each cylinder (or group of cylinders); *master key*-a key to operate a group of cylinders, each of which may be set to a different individual key; *master keyed*-all cylinders in a group can be operated by one master key, although all cylinders may be keyed differently (not to be confused with *keyed alike*).

## ⓒ

**Labeled** - Equipment or materials to which has been attached a label, symbol, or other identifying mark of an organization that is acceptable to the AHJ and concerned with product evaluation, that maintains periodic inspection of production of labeled equipment or materials, and whose labeling the manufacturer indicates compliance with appropriate standards or performance in a specified manner.

**Latch** - The locking in of a circuit by means of a holding contact; used in relay logic when a momentary initiation is required.

**Latchbolt** - A device for automatically retaining a door in the closed position upon its closing; a beveled spring-loaded bolt that automatically seats in the strike on contact. Retracted by key cylinder or lever handle.

**Light-Emitting Diode (LED)** - A diode, a solid-state device, that gives off virtually heatless colored light when electric current is passed through it. LEDs are very efficient and long-lasting.

**Listed** - Refers to equipment or materials included in a list published by an authorizing organization. The listing states that the equipment or material meets appropriate standards or has been tested for and is suited to a specific application.

**Load** - Any device that consumes electrical power; the amount of power required for operation of a circuit or device.

**Load Rating** - A control specification outlining the type of load, the minimum (min.) and the maximum (max.) currents, and the voltage. local alarm A visual or audible signaling device located at a monitored door, window, or other opening.

**Lock** - A device for securing a door in the closed position against unauthorized or forced entry. It requires actuation to project or to retract its bolt.

**Labeled Product** - Generally refers to products that may be used on a Fire Rated Opening.

**Leaf** - One of the two doors forming a pair of doors. Leaves are identified as being both active or as an inactive and an active leaf.



**Mantrap** - See *interlock*.

**Maximum Rating** - The absolute maximum condition in which a device is designed to operate. Voltage, frequency, current, temperature, humidity, shock, and other parameters can be specified as maximum.

**Means of Egress** - A continuous and unobstructed way of travel from any point in a building or structure to a public way consisting of three separate and distinct parts: the exit access, the exit and the exit discharge.

**Metal Oxide Varistor (MOV)** - A device designed to protect electric equipment from high-transient voltage by diverting a momentary overvoltage to the ground. An MOV allows the overvoltage to dissipate, and then to restore itself to its initial non-conducting state.

**Mode of Operation** - The specified operational condition of a switch, lock, door system, and so forth,

**Momentary Switch** - A spring-loaded contact that, when pressed, closes two contacts. When pressure is removed, the contacts open.

**Monitoring Loop** - A continuous loop of wire starting at the control panel and running through switches in a system to indicate a breach of security through an open switch or a cut wire.

**Multi-conductor Cable** - A cable consisting of two or more conductors, either cabled or laid in a flat parallel construction, with or without a common overall covering.

**Multiplex** - Refers to a system of transmitting several messages simultaneously on the same circuit or channel. Multiplex equipment greatly reduces the number of wire cables needed in a system.

**Mortise Lock** - Term used to describe locks or latches designed to be installed into a mortise pocket in the edge of door rather than applied to or through a hole bored in the face of a door.

**Mullion** - A fixed or removable vertical post set in a double door opening that allows both leaves to be active or set between a door and a side light or a separate, framed, glazed area.

## N

**National Electrical Code (NEC)** - A standard for the safe installation of electrical wiring and equipment. It is part of the National Fire Codes series published by the NFPA.

**National Fire Protection Association (NFPA)** - The premier source worldwide for the development, publication and dissemination of knowledge about fire and life safety.

**National Electrical Manufacturers Association (NEMA)** - An organization known for its standardization of wire and cable specifications.

**Noise** - Unwanted and/or unintelligible signals picked up on a cable circuit.

**Normally Closed (NC)** - The condition or position of a contact prior to initiation or energization-in this case, a closed condition.

**Normally Open (NO)** - The condition or position of a contact prior to initiation or energization-in this case, an open condition.

## O

**Occupancy** - The purpose for which a building or portion thereof is used or intended to be used.

**Ohm** - A unit of measurement for resistance (R) and impedance (Z).

**Ohm's Law** - One of the most widely used principles of electricity. It expresses the relationship between voltage (E), current (I) and resistance (R) according to the following equations:  $E = IR$ ;  $I = E/R$ ;  $R = E/I$ .

**Operating Temperature** - A temperature range over which a device will perform within its specified design tolerances; may be stated in degrees Fahrenheit (°F) or degrees centigrade (C).

**Operating Voltage** - The voltage by which a system operates; a nominal voltage with a specified tolerance applied; the design voltage range necessary to remain within the operating tolerances. For example, for a system specified 12 volts +/- 10 percent of nominal, 12 volts is the nominal voltage and the design voltage range is 10.8 to 13.2 volts DC.

**Output Voltage** - The designed power source produced by a power supply to operate equipment.

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**Panic Exit Hardware** - Non-fire labeled devices for swinging doors installed to facilitate safe egress of persons and generally consisting of a cross bar and various types of latch release mechanisms that can be held in a retracted locked position (dogged).

**Parallel** - A method of connecting an electric circuit whereby each element is connected across the other. The addition of all currents through each element equals the total current of the circuit.

**Polarity** - The positive or negative orientation of a signal or power source.

**Potentiometer (POT)** - Variable resistor.

**Power Operated Fire Doors** - Doors that normally are opened and closed electrically, pneumatically, or mechanically.

**Primary** - The transformer winding that receives the energy from a supply circuit.

**Pullman Latch** – type of latch which pivots like a hinge and whose locking side is radiused

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**Rated Voltage** - The maximum voltage at which an electric component can operate for extended period, without undue degradation or safety hazard.

**Reactance** - Opposition offered to the flow of alternating current by inductance (xl) or capacitance (xc) of a component or circuit.

**Rectifier** - A solid state electrical device that will allow current to flow in one direction only. It is designed to convert alternating current to direct current.

**Regulated Power Supply** - A power supply that provides a constant output regardless of input voltage.

**Relay** - An electrically controlled device that opens and closes electrical contacts to effect the operation of other devices in the same or another electrical circuit.

**Reset Time** - The time required to return the output to its original condition.

**Resistance** - The opposition to the flow of an electric current (measured in ohms); the reciprocal of conductance.

**Resistor** - A circuit element whose chief purpose is to oppose the flow of current.

**Rim Exit Device** - a mechanical lock applied to the surface of the door that is operated from the inside of an outward swing door through the use of a crossbar or push rail extending at least halfway across the width of the door

**Riser Diagram** - A document which explains wire type, size, and the number of conductors to be run from a control panel to each control or monitor location.



**Secured Side** - Refers to the area or side of an opening that is locked, requires a key, card, code, etc. to enter.

**Secondary** - The transformer winding that receives energy by electromagnetic induction from the primary.

**Self-Closing Doors** - Doors that, when opened and released, return to the closed position.

**Series Circuit** - An electrical circuit in which all the receptive devices are arranged in succession, as distinguished from a parallel circuit. The same current flows through each part of the circuit in sequence.

**Shall** - Indicates a mandatory requirement.

**Short** - An improper connection between “hot” current-carrying wire and neutral or ground.

**Should** - Indicates a recommendation or that which is advised but not required.

**Single Pole, Double Throw (SPDT)** - A term used to describe a switch or relay contact form (1 form C) that has a normally open and a normally closed contact with a common connection.

**Single Pole, Single Throw (SPST)** - A switch with only one moving and one stationary contact, available either normally open (NO) or normally closed (NC).

**Solenoid** - An electromechanical device that operates the lock-bolt. When electricity is applied, a mechanical motion is obtained that moves the bolt.

**Spike** - A momentary increase in electrical current. Spikes can damage electronic equipment.

**Splice** - A connection of two or more conductors or cables to provide good mechanical strength as well as good conductivity.

**Springlatch** - A plain latch with a beveled latch-bolt that is activated by springs.

**Strike** – (aka. T-Strike) A plate mortised into or mounted on the door jamb to accept and restrain a bolt when the door is closed. In some metal installations of a deadlock, the strike may simply be an opening cut into the jamb.

**Switches** - Devices that make or break connections in an electrical or electronic circuit. In computing systems, they are also used to make selections (the toggle switch, for example, completes a conditional jump). Switches are usually manually operated but can also work by mechanical, thermal, electromechanical, barometric, hydraulic, or gravitational means.



**Terminal/Termination Block** - A device that provides a place for safe and convenient interconnection of current-carrying conductors.

**Terminals** - Metal wire termination devices designed to handle one or more conductors and to be attached to a board, bus, or block with mechanical fasteners or clipped on. Common types are ring tongue, spade, flag, hook, blade, quick-connect, offset, flanged. Special types include taper pin, taper tab, and others, insulated and not insulated.

**Throw** - Measurement of the maximum projection of a deadbolt or latch bolt when the bolt is fully projected.

**Time Delay** - An electronically controlled delay period designed into a component that will either send a prolonged signal or delay transmitting a signal.

**Time-Delay Relay** - A relay for automatically locking or unlocking a locking unit after a short, fixed time interval.

**Tolerance** - Normally stated as a percentage, the maximum allowable deviation of electrical, environmental, or dimensional parameters.

**Transformer** - An electric device that changes voltage in direct proportion to currents and in inverse proportion to the ratio of the number of turns of its primary and secondary windings. The input side of a transformer is called the primary side; the output or low-voltage side is called the transformer secondary.

**Transient** - Any increase or decrease in the excursion of voltage, current, power, heat, and so forth, above or below a nominal value that is not normal to the source. (See *transient voltage*.)

**Transient Voltage** - Refers to several parameters of a transient: (1) the peak or maximum voltage reached, (2) the rate of rise of the transient ( $dv/dt$ ), and (3) the duration of the transient. Transient voltages are generated when inductive load, such as solenoids, contactors, motors, relays, and so forth, are de-energized. Although some devices have excellent protection against these sometimes damaging excursions, when a transient is known to be present, it should be suppressed at the source. Diodes and metal oxide varistors (MOVS) are commonly used as suppressors.

**Trickle Charge** - A low-powered electrical energy source provided to keep standby batteries fully charged.

**Twisted Pair** - A cable composed of two small insulated conductors, twisted together without a common covering. The two conductors of a twisted pair are usually substantially insulated, so the combination is a special case of a cord.

U

**Underwriters Laboratories (U.L.)** - an independent product safety testing and certification organization.

V

**Volt (V)** - A unit of electromotive force. It is the difference of potential required to make a current of one ampere flow through a resistance of one ohm.

**Voltage** - The term most often used (in place of *electromotive force*, *potential*, *potential difference*, or *voltage drop*) to designate electrical pressure that exists between two points and is capable of producing a flow of current when a closed circuit is connected between the two points.

**Voltage Drop** - Voltage loss experienced by electrical circuits due to two principal factors: (1) wire size and (2) length of wire runs.

**Volt/Amp (VA) Rating** - The product of rated input voltage multiplied by the rated current. This establishes the "apparent energy" available to accomplish work.

W

**Watt** - The common unit of electrical power. One watt is dissipated by a resistance of one ohm through which one ampere flows.

Z

**Zone** - A specific area of protection; a portion of a large protected area.