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Glossary of Electrical Connection Terms

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ADAPTER:

An intermediate device to provide for connector attachments such as special accessories, special mounting means or special inter-connection means to an electrical termination.

AMBIENT TEMPERATURE:

The temperature of the surrounding environment, usually air.

ANTI-ROTATION, CONNECTOR:

Connector design which provides keying or locking provisions to maintain positive orientation for accessory hardware.

AXIAL DISPLACEMENT:

The incremental difference between an initial position and a final position resulting from a force applied along the axis of a component.

BACK MOUNTED:

A connector installed with its mounting flange positioned behind the mounting surface when looking at the mating face or front side of the connector.

BACKSHELL:

A connector accessory or component, which may or may not be supplied with the connector, to provide for strain relief, tighter harness routing in restricted space, shielding from electrical interferences or positive moisture.

BARREL CHAMFER:

The flared entrance or internal bevel at the wire entry end of the termination device intended to facilitate entry of the conductor.

BARREL, CONDUCTOR:

The section of the contact, splice or terminal that accommodates the stripped cable conductor. In the case of insulation displacing barrels the cable need not be stripped.

BARREL, INSULATION:

The portion of a contact, terminal or splice which accommodates the wire insulation.

BARREL, WIRE:

(See BARREL CONDUCTOR)

BARRIER:

Dielectric material used to insulate electrical circuits from each other or from ground.

BARRIER STRIP:

A continuous section of dielectric material which insulates electrical circuits from each other or from ground.

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BASIS METAL:

The metal from which a connector, contact, terminal or splice is made.

BAYONET COUPLING, CYLINDRICAL:

(See COUPLING, BAYONET)

BELLED MOUTH (BELLMOUTH):

(See BARREL CHAMFER)

BIFURCATED CONTACT:

A spring-type contact with a lengthwise slot to provide two segments which apply contact force in the same direction.

BINDING POST:

A fixed support, generally screw-type, to which conductors are connected.

BODY, CONNECTOR:

The main portion of a connector consisting of the housing and insert assembly to which contacts and accessories are attached.

BONDING CONDUCTOR:

A device used to connect exposed metal to ground. It normally carries no current but is used as a current path to eliminate shock or spark hazards and insures the operation of circuit protective devices in cases of insulation breakdown.

BOOT:

A connector accessory, usually made from a flexible or semi-rigid insulating material, designed to house wire/cable terminations as a protective device, provide harness direction, moisture seal when bonded or used as a potting form.

BRAID:

A woven or braided sheath made from conductive or nonconductive material.

BUNDLE:

A group of wires fastened or held together by auxiliary means such as straps, ties, clamps, lacing tape/twine or flexible wrappings (jackets) or sheaths. Also called "cable".

BUSING:

The joining of two or more circuits to provide a common electrical connection.

BUTT SPLICE:

A device for joining conductors end-to-end with their axis in line and not overlapping. (See SPLICE).

BUTTING DIES:

Crimping dies so designed that the opposing die faces touch at the closed condition of the crimping cycle. Also called "bottoming dies".

CABLE CLAMP:

A connector accessory or portion of a component which is designed to grip the wire or cable to provide strain relief and absorb mechanical stress which would otherwise be transmitted to the termination.

CABLE SHIELDING CLAMP:

A connector accessory device consisting of a sealing member and cable support designed to terminate the shield of the electrical cable at the connector.

CAPTIVE DEVICE:

A multi-part fastener, usually screw-type, whose components are retained without separation when loosened from its base assembly.

CAPTIVE DEVICE - FASTENER:

A fastener, usually screw-type, whose components are retained without separation when loosened from its base assembly.

CIRCUMFERENTIAL CRIMP:

A type of crimp where the crimping dies completely surround a barrel resulting in a symmetrical reshaping of the barrel. Some circumferential crimps are oval, hexonical, circular, etc.

CLOCKING:

(See POLARIZATION)

CLOSED END SPLICE:

A splice, open at one end only, designed to terminate two or more conductors. (See SPLICE)

CLOSED ENTRY:

A socket contact or insert cavity design feature which prevents the entry of over-size pin contacts, test probes or other insertable components.

COLOR CODING:

A system for the identification of components, materials, tools and related devices by means of color.

COMPRESSION RING:

A separate ring, within the backshell assembly, that is chamfered to provide an environmental seal by compressing the rear grommet.

CONDUCTOR:

An electric current-carrying material; the conductive element in an electrical wire.

CONDUCTOR STOP:

A device or design feature on a terminal, splice, contact or tool which correctly positions the conductor in the conductor barrel.

CONNECTOR, CARD EDGE:

A rectangular connector into which the edge of a printed wiring board is inserted so as to make electrical contact with conductive traces located on the circuit board.

CONNECTOR, ELECTRICAL:

A conductor terminating device which allows for the separation of one or more electrical circuits to facilitate servicing.

CONNECTOR, HERMAPHRODITIC:

A connector which has features enabling it to be mated with an identical connector.

CONNECTOR, PLUG:

An electrical connector, intended to be attached to the free end of a conductor, wire, cable or bundle, which couples or mates to a receptacle connector.

CONNECTOR, RECEPTACLE:

An electrical connector, intended to be mounted or installed onto a fixed structure such as a panel, electrical case or chassis, which couples or mates to a plug connector.

CONNECTOR, RIGHT ANGLE:

A rectangular connector which is generally mounted onto a printed wiring board whose contacts are inserted into a matching pattern or plated through holes in the circuit board and soldered in place.

CONNECTOR SET, ELECTRICAL:

Two or more separate plug and receptacle connectors designed to be mated together. The set may include mixed connectors mated together, such as one plug connector and one dummy receptacle connector or one receptacle connector and one dummy plug connector.

CONNECTOR, UNBILICAL:

An electrical connector, used to connect a cable to a vehicle such as an aircraft or rocket, which is unmated prior to or during initial movement or launching of the vehicle.

CONTACT AREA:

The area in contact between two conductive elements through which current flow can take place.

CONTACT ARRANGEMENT:

The position and layout pattern of contacts in a connector.

CONTACT BACK WIPE:

Usually refers to an actuated contact surface where a contact travels on the surface of its mating contact during the actuation cycle then moves back to a clean wiped surface at the completion of the actuation or engagement cycle.

CONTACT, ELECTRICAL:

The conductive element in a connector or other device which mates with a corresponding element to provide an electrical path or circuit.

CONTACT, FEMALE:

(See CONTACT, SOCKET)

CONTACT FLOAT:

The allowable, free axial, lateral or angular movement of a contact in a connector.

CONTACT, HERMAPHRODITIC:

An electrical contact which has features that enable it to be mated with an identical contact.

CONTACT, MALE:

(See CONTACT, PIN)

CONTACT, PIN:

A contact intended to make electrical contact on its outer surface upon engagement with a socket contact.

CONTACT RESISTANCE:

The electrical resistance through a pair of engaged contacts or terminals. Resistance may be measured in ohms or millivolt drop at a specified test current. This resistance measurement does not include the resistance of the terminating conductor joint or the conductor.

CONTACT RETAINER:

A device either on the contact or in the connector insert whose purpose is to retain the contact in the insert.

CONTACT RETENTION:

The provision or means in an electrical connector by which the contacts are retained; the ability of a connector to retain contacts. (See FORCE, CONTACT RETENTION)

CONTACT SIZE:

Either a single number designator based on the AWG size number most closely corresponding in circular mil area (CMA) to the CMA of the pin contact of a given contact set, or a double number designator, similarly based, whereby the first number corresponds to the CMA of the pin contact, and the second number corresponds to the max wire size accommodated by the contacts conductor barrel.

CONTACT, SOCKET:

A contact having an engagement end that will accept entry of a pin contact with the point of electrical contact on the inside diameter of contacting surface.

CONTACT WIPE:

The distance a contact travels on the surface of its mating contact during engagement or separation.

COUPLING, BAYONET, CYLINDRICAL:

A coupling mechanism utilizing spiral ramps in one cylindrical connector half to engage projections in the mating half so as to provide jacking and locking together of the mating halves through limited rotation of the coupling ring.

COUPLING, BREECH:

A coupling mechanism which distributes the coupling load over large solid metal engaging and locking lands for positive coupling alignment and complete connector mating with a limited rotation of the coupling ring.

COUPLING, QUICK DISCONNECT:

A design feature which permits relatively rapid joining and separation of mating parts.

COUPLING RING:

That portion of a cylindrical plug connector housing which, by rotation, aids in the mating, captivation or unmating of the plug to the receptacle connector. (See COUPLING, BAYONET; COUPLING, QUICK DISCONNECT; COUPLING, THREADED)

COUPLING, THREADED:

A coupling mechanism utilizing matching screw threads for mating and unmating of cylindrical connectors or other devices.

COUPLING, THREADED SELF LOCKING:

A coupling mechanism utilizing matching screw threads for mating and unmating of cylindrical connectors or devices incorporating automatically actuated locking mechanism to prevent the coupling ring from disengaging under vibration conditions.

COUPLING TORQUE:

The force required to rotate a coupling ring or jackscrew when engaging a mating pair of connectors.

COUPLING TRIPLE START, SELF LOCKING:

A coupling mechanism using a triple start thread for quick connector mating with one full turn of the coupling ring which is also designed with an anti-coupling device.

COVER, DUST:

A covering device or material used during stowage and transit to protect connectors, harnesses or electronic assemblies against dust and other foreign matter. It may be of a design which attaches to a connector (See COVER, PROTECTIVE) or may completely envelop a connector, harness or electronic assembly.

COVER, PROTECTIVE:

An accessory used to cover the mating portion of a connector for mechanical, environmental and/or electrical protection.

CREEP (LEAKAGE) DISTANCE:

The shortest distance on the surface of an insulator separating two electrically conductive surfaces.

CRIMP:

The physical compression or reshaping of a conductor barrel or ferrule around a conductor in order to obtain a mechanical and an electrical connection.

CRIMP ANVIL (NEST):

That portion of a crimping die which supports a barrel or ferrule during crimping.

CRIMP INDENTOR:

That portion of the crimping die which indents or reshapes the barrel or ferrule.

CRIMP POT ADAPTER:

A sleeve that fits around the stripped conductor and allows for a small wire to fit into a large gage crimp pot.

CRIMP TENSILE STRENGTH:

The axial force required to separate the wire from the crimped conductor barrel. The wire may pull out of or break in the crimped area of the conductor barrel.

CRIMPING DIES:

That portion of a crimping tool that compresses and reshapes the conductor barrel or ferrule to form the crimp.

CRIMPING TOOL:

The device used to perform a crimp.

CURRENT RATING:

The maximum current which a device is designed to conduct for a specified time at a specified operating temperature.

CUTOUT, CONNECTOR:

A hole or group of holes cut in a panel, case or chassis for the purpose of mounting a connector.

DEPTH OF CRIMP:

The distance the crimp die indenter indents the conductor barrel or ferrule.

DIELECTRIC:

A material having electrical insulating properties.

DISCONNECT:

A conductive device designed to be separated from its mated part.

DUMMY CONNECTOR, PLUG:

A connector device designed to mate with a receptacle connector so as to perform protective, environmental and/or electrical shorting functions.

DUMMY CONNECTOR, RECEPTACLE:

A connector device designed to mate with a plug connector so as to perform protective, environmental, and cable and harness routing/fitting and stowage functions.

ENVIRONMENTALLY SEALED:

The provision or characteristic of a device which enables it to be protected against the entry of moisture, fluids and foreign, particulate contaminants which could otherwise affect the performance of the device.

EXTRACTION TOOL:

A device used for removing removable contacts from their retaining cavity or mechanism.

EYELET:

A reinforced conductive device or hole into which conductors are passed/routed or terminated.

FEED-THRU:

A connector, terminal block or terminal device having conductive elements accessible from opposite sides of an insulator or a partition for termination or connection with mating devices.

FERRULE:

A short tube or sheath of conductive material used to make connections to shielded or coaxial cable; a specially formed metal ring used in connector accessories to reduce the transmission of torque to the connector grommet.

FLAG TERMINAL:

A terminal having a tongue protruding from the side of its barrel.

FLANGE, CONNECTOR:

A projection extending from or around the periphery of a connector for the purpose of attaching the connector to a rigid surface.

FLANGED SPADE TONGUE TERMINAL:

A slotted tongue terminal having the ends of the tongue formed up or down to the tongue plane, so as to form a degree of protection against the terminal slipping out from under its captive hardware.

FORCE, CONTACT ENGAGING:

The force required to fully engage a pair of mating contacts.

FORCE, CONTACT RETENTION:

The maximum allowable force which, if applied axially in either direction on a contact, does not displace the contact permanently from its normal position in the connector or jeopardize or damage the contact or retention provision.

FORCE, CONTACT SEPARATION:

The force required to separate a pair of fully mated contacts.

FORCE, INSERT RETENTION:

The maximum allowable force which, if applied to the mating face of a connector insert, does not displace the insert permanently from its normal position in the connector housing or jeopardize or damage the insert or connector housing retention provision.

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FRONT MOUNTED:

A connector mounted with its mounting flange positioned in front of the mounting surface when looking at the mating face or front side of the connector.

FULL CYCLING CONTROL:

Controls placed on the crimping cycle of crimping tools forcing the tool to be closed to its fullest extent requiring completion of the crimping cycle before the tool can be opened. (See RATCHET CONTROL)

GANG DISCONNECT:

A connector that permits the simultaneous connection or disconnection of two or more electrical circuits.

GRID SPACED CONTACTS:

Contacts in a multiple contact connector spaced in a geometric pattern.

GROMMET:

An elastomeric or plastic sealing device which supports and protects terminations and wires/cables from adverse mechanical and environmental conditions.

GROUNDING CONDUCTOR:

A conductor which provides a current return path from an electrical device to ground.

GUIDE PIN:

A pin or rod, extending beyond the mating face or body of a connector, designed to position and guide connectors during mating so as to ensure proper engagement of the contacts.

GUIDE SOCKET:

A socket or hole in a connector designed to accept a guide pin of a mating connector and thereby position and guide the connectors during mating so as to ensure proper engagement of the contacts.

GUSSET:

The transition between the terminal tongue and conductor barrel.

HARNESS:

A group of wires or cables routed together with or without attached components and secured in a manner to provide a preshaped electrical wire or cable assembly.

HOOK TONGUE TERMINAL:

A terminal with a hook-shaped tongue.

HOUSING, ELECTRICAL CONNECTOR:

The portion of a connector into which the insert is assembled. Also called "shell".

INDENTOR:

(See CRIMP INDENTOR)

INSERT, ELECTRICAL CONNECTOR:

The insulating element of a connector which supports and positions the contacts.

INSERTION TOOL:

A tool used to insert contacts into their retaining device.

INSPECTION HOLE:

A hole located in the conductor barrel that permits inspection to determine that the conductor is properly located before crimping and that the conductor is properly located after crimping thus ensuring a proper termination.

INSULATED TERMINAL:

A terminal having its conductor barrel and insulation support, if any, covered with a dielectric material.

INSULATION CRIMP:

The physical reshaping of an insulation sleeve to close or compress around the wire insulation.

INSULATION GRIP:

That portion of an insulation barrel which when closed or compressed around the conductor insulation makes contact with the insulation on the cable. (See BARREL, INSULATION)

INSULATION PIERCING TERMINAL:

A terminal having a barrel with a design that displays the wire insulation and makes contact with the conductor.

INSULATION SUPPORT:

The portion of an insulation barrel which extends around but is not necessarily compressed or closed to the point of making contact with the cable insulation.

INTERFACE:

The two surfaces of mating connectors which face each other when mated.

INTERFACIAL SEAL:

(See SEAL)

JACKET:

The outermost layer of insulating material on a wire or cable.

JACKSCREW:

A captive screw and nut assembly, attached to connectors, for use in mating and unmating connectors; may also facilitate connector mounting and polarization.

KEY:

A projection on a connector which engages a keyway in a mating connector so as to guide the connectors halves during mating; may be positioned and/or used in multiples to provide a polarization feature.

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KEYWAY:

A slot or groove into which a key engages.

LAP JOINT:

Two conductors joined by placing them side-by-side so that they overlap. (See PARALLEL SPLICE and SPLICE)

LOCATOR:

A device for positioning a contact, terminal or splice in the crimping dies.

LOCKING SPRING:

(See CONTACT RETAINER)

LUG:

(See TERMINAL)

MATE:

The joining, engaging, connecting or coupling of two connectors or devices designed to be utilized together.

MOLD, POTTING:

An accessory used as a form for containing the potting compound around the terminations of a connector. (See BOOT)

NEST:

(See CRIMP ANVIL)

OFFSET TONGUE TERMINAL:

A terminal whose tongue is forward of its conductor barrel and whose stud hole is offset from the centerline of the conductor barrel.

OPEN BARREL TERMINAL:

A terminal with an open conductor and/or insulation barrel which is designed to be crimped around a conductor or wire.

OPERATING TEMPERATURE:

The temperature at which a device may function on a continuous basis.

PANEL:

The structure or surface to which a device is mounted.

PARALLEL SPLICE:

A device for joining two or more conductors in which the conductors lie parallel and adjacent. (See LAP JOINT and SPLICE)

PIGTAIL:

A conductor or wire extending from an electric or electronic device to serve as a connection.

PLATING:

The overlaying of metal over the basis material.

PLUG, SEALING:

An accessory used to fill open, nonwired cavities in a connector grommet so as to prevent the entry of moisture, fluids or foreign particulate contaminants.

POLARIZATION:

The arrangement or orientation of connector inserts, jackscrews, polarizing pins/sockets, keys/keyways or housing configurations to prevent the mismatching or cross mating of connectors.

POLARIZING PIN, SOCKET, KEY OR KEYWAY:

Devices incorporated in a connector to accomplish polarization.

POSITIONER:

A device attached to the crimping tool to position the conductor barrel between the indentors.

POST INSULATE:

To insulate an electrical connection after assembly.

POTTING:

The sealing of the cable-end of a connector with a material compound to exclude entry of fluids or contaminants and to provide strain relief to terminated wires or cable.

POTTING FORM:

(Not preferred; see MOLD, POTTING)

PRE-INSULATE:

To insulate an electrical connection before assembly.

PRE-TINNED:

The application of solder to a contact, conductor or other connecting device prior to soldering; the application of tin plating to the basis metal of connecting devices prior to fabrication.

PULL-OUT FORCE:

The axial force required to remove a terminated conductor from its attached contact or terminal; the axial force required to remove a contact from its retention number. (See FORCE, CONTACT RETENTION)

QUICK DISCONNECT:

(See COUPLING)

RACK:

A housing for electronic equipment which permits convenient removal of portions of the equipment.

RAM:

The moving portion in the head of a crimping tool.

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RANGE, WIRE:

The designation of wire/conductor sizes that a given conductor barrel, ferrule, grommet or accessory will accommodate.

REAR INSERTION-FRONT RELEASE:

The type of connector whose contacts are inserted from the rear, with the proper insertion tool, and released from the rear with the removal tool inserted from the face of the connector. This requires demating the plug and receptacle.

REAR INSERTION-REAR RELEASE:

The type of connector whose contacts are both inserted and removed from the rear of the connector with the proper tools. This does not require demating of an electrical installation.

RECTANGULAR TERMINAL:

A terminal with a rectangular shaped tongue.

REMOVAL TOOL:

(See EXTRACTION TOOL)

RING-TONGUE TERMINAL:

A terminal having a round-end tongue with a hole to accommodate a screw or stud.

SCOOP PROOF:

A design feature whereby exposed contacts of a connector cannot be touched or damaged by any portion of the mating connector.

SCREW LOCK:

(See JACKSCREW)

SEAL, INTERFACIAL:

A seal provided at the interface of connectors to prevent the entry of fluids or contaminants across the interface of mated connectors.

SEAL, PERIPHERAL:

A seal provided around the periphery of connector inserts to prevent the entry of fluids or contaminants at the perimeter of mated connectors.

SERRATIONS:

Alteration of the inside surface of a conductor barrel to provide better gripping of the conductor or on the outside of a connector housing to provide better gripping of the connector; protusions on the rear of a connector housing for positive orientation of accessories.

SERVICE RATING:

The maximum voltage or current which a connector or electrical device is designed to function continuously at a specified temperature.