Glossary of Terms

In every job specialty there are certain words and phrases used by "insiders" which after a time become almost a language unique to that specialty. Interconnect technology is a typical example of that condition.

This page provides some explanations, in an attempt to clarify some of the terms that are commonly used by engineers and sales staff at ITT Industries, Cannon.

The list is not comprehensive, but highlights many of the expressions commonly used. Should you have any comments or additions please contact us. Feedback will be appreciated.

A

ACCELERATED AGING – A connector test in which temperature, voltage, current, or other parameters are increased beyond the normal operating values to observe deterioration in a relatively short period of time.

ACCESSORIES – Auxiliary devices such as cable clamps, endbells, gaskets, or any number of mechanical hardware devices that can be added to a connector.

ADAPTER – A device which enables the interconnection of two dissimilar connectors and/or mechanically allows the connection of unique accessories. Some adapters are actually connectors in themselves and allow the user to mate the adapter with one half of a connector and then mate a different type of connector to the adapter effecting a transition. These types of adapters are common in RF and audio connectors. Other adapters are purely mechanical and allow the use of unique accessories or allow for special mounting configurations.

AEM – A connector insulating material which will not emit halogen (toxic) gases when exposed to flame. Referred to as a ZERO HALOGEN insulator. See HALOGEN.

ALLOY – A composition of two or more elements, of which at least one is a metal. In connector applications it is usually a combination of metals which is used to create an alloy superior in performance to any of its individual components.

ALTERNATE INSERT POSITION – See INSULATOR ROTATION.

AMBIENT TEMPERATURE – The temperature of the environment surrounding the connector, usually the air. Normally used as the reference when specifying the OPERATING TEMPERATURE range of the connector.

ANALOGUE – A signal which changes state continuously.

ANODIZE – A protective, insulating oxide layer formed on a metal by electrolytic action. Occasionally used as the outer most layer in connector plating, anodize is a very tough, non-conductive plating.

ARC – A luminous discharge of electricity through a gas. In connector usage, this is an extremely undesirable discharge through the air across two or more contacts or the contacts and the shell. This is usually the result of operating the connector beyond its capabilities. Arc discharge is characterized by a relatively low voltage drop, a high current density, and the high probability that the connector and related circuitry will be damaged as a result.

ATTENUATION – Power loss in an electrical system, expressed in decibels (dB).

B

BACK MOUNTING – See REAR MOUNTING.

BACK END TERMINATION – See ENDBELL.

BACKSHELL – See ENDBELL.

BACK SHELL MOLD – See POTTING CUP.

BANDWIDTH – The range of frequencies within which performance falls within specific limits. Usually the bandwidth is given as an operating range and the operating specifications apply only to that bandwidth, unless otherwise stated.

BASE METAL – The metal which the connector or connector component is made and over which various platings will be deposited.

BAYONET COUPLING – A quick coupling mechanism for mechanically mating and unmating connector halves. The plug half has a coupling nut with internal ramps and the receptacle has three "bayonet" pins. The two halves are mated and unmated by rotating the coupling nut. A REVERSE BAYONET COUPLING reverses this arrangement; with the ramps on the receptacle and the bayonet pins or roller bolts under the coupling nut.

BERYLLIUM COPPER – An alloy of copper used to make contacts. It is relatively expensive, but has superior spring quantities, is resistant to fatigue, and can operate at higher temperatures than other materials such as phosphor bronze. It is used when numerous insertion and extraction cycles are required.

BEZEL – A holder or flange designed to receive and position a lens or window in an electronic component such as an indicator assembly.

BIFURCATED CONTACT – A contact design in which the metal of the mating tube is slotted lengthwise to create two independent spring elements.

BODY – The main portion of the connector made of the shell, insulator, and contacts.

BOOT – A rear accessory, usually made of a resilient material, which is used around a multiconductor cable to add additional insulation, strength, abrasion resistance, or sealing. Also see SHRINK BOOT.

BOX MOUNT – See FLANGED RECEPTACLE.

BRAID – A woven metal tube used as shielding around a wire or a group of wires. In a flattened form, it is used as a grounding strap.

BRASS – Metal alloy of copper and zinc used for contacts. It is low cost, an excellent conductor, and resists fatigue.

BREAKDOWN – An electrical discharge through a connector insulator or insulation on a wire. A catastrophic failure mode.

BREAKDOWN VOLTAGE – The voltage at which an insulator ruptures.

BREAKOUT – The point at which wires are separated from a multi-conductor cable or wire bundle for routing to other points.

BUNDLE – See WIRE BUNDLE.

C

CABLE ASSEMBLY – A cable (or bundle of cables) with plugs and/or receptacles on each end.

CABLE CLAMP – A rear connector-clamping accessory, which tightens over a cable or wire bundle to provide strain relief to the cable. The cable clamp may be part of a more elaborate endbell or it may be used alone. Some cable clamps also provide cable jacket sealing using a resilient gland; for example the MS3057-C, others provide only strain relief.

CABLE CONNECTING RECEPTACLE – Unlike most receptacles which are designed for panel mounting, a cable connecting receptacle is for in-line use. It does not have a flange or jam nut for panel mounting, but does have rear threads to accept an endbell.

CABLE RECEPTACLE – See CABLE CONNECTING RECEPTACLE.

CABLE SEAL – An endbell or cable clamp that is used to seal a round-jacketed cable as it enters the rear of the connector. Examples would be a gland seal endbell or an MS3057-C cable clamp.

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CABLE SEALING RANGE – See SEALING RANGE.

CADMIUM – A metallic element chemically related to zinc and mercury, widely used for plating. It has an extraordinary ability to resist outdoor corrosion. It is especially resistant to alkali. Cadmium is electrically conductive and it is easy to solder. Its symbol is Cd.

CANADIAN STANDARDS ASSOCIATION – In Canada, a body that issues standards and specifications prepared by various voluntary committees of government and industry. Abbreviated CSA.

CARD INFORMATION STRUCTURE (CIS) – A data structure containing information about the format and organization of the data on the card.

CARDBUS – 32-bit busmater in the PC CARD form factor. CardBus operates at 3 or 5 volts and is designed for applications that require very high performance.

CARD SERVICES – The software layer above Socket Services that coordinates the allocation of system resources among cards in the socket.

CELSIUS – A temperature scale in which the freezing point of water is 0 degrees and the boiling point is 100 degrees at normal atmospheric pressure. Formerly known as Centigrade, but officially changed to Celsius by international agreement in 1948.

CHAMFER – A bevel cut on the inside edge of an insulator contact cavity or a mounting hole. In a contact cavity the chamfer is intended to guide the mating pin into the cavity. In a mounting hole it is a countersink to accept a cone shaped bolt.

CHARACTERISTIC IMPEDANCE – The characteristic impedance of a transmission line is the impedance of the line when it is terminated in a perfect load (a load that absorbs all the energy and reflects none, such that VSWR = 1.00).

CIRCUIT – An electronic path between two or more points capable of carrying an electrical current.

CIRCULAR MIL – The international term used to define the cross-sectional area of a wire, equal to the area of a circle one mil (.001 inch) in diameter.

CIRCULAR MIL AREA – The square of the diameter of a round conductor measured in thousandths of an inch (.001).

CLEARANCE HOLE – See THRU HOLE.

CLOCKING – See INSULATOR ROTATION.

CLOSED ENTRY – An insulator design which limits the diameter of the mating contacts.

CLOSED SOCKET CONTACT – A socket contact in which the mating cavity limits the entry of a contact or probe having a diameter larger than the mating pin.

COAXIAL CABLE – A cable that comprises a single copper wire surrounded by insulating material, wire shielding or mesh, and a plastic protective sheath.

COEFFICIENT OF EXPANSION – The average expansion per degree of temperature over a specified range expressed as a fraction of the original dimension. The coefficient may be linear or volumetric.

COMPONENT – An essential functional part of the connector.

CONTACT – The conductive element in a connector which makes the actual connection between the wire and the mating connector for the purpose of transferring electrical energy. Ideally the contact should add nothing to the circuit. In the real world, however, contacts typically have a small CONTACT RESISTANCE and associated POTENTIAL DROP. Contacts come in many styles such as solder, crimp, printed circuit (PC), wire-wrap, first-make last-break, and thermocouple, to name just those found in this catalog. Also see SOLDER CONTACT, CRIMP CONTACT, PC CONTACT, THERMO-COUPLE CONTACT, FIRST-MAKE LAST-BREAK CONTACT, WIRE WRAP CONTACT, STAMPED AND FORMED CONTACT, SCREW MACHINE CONTACT, PIN CONTACT, and SOCKET CONTACT.

CONTACT ALIGNMENT – The overall play that a contact has in the insulator cavity to allow the mating contacts to self align. Also called contact float.

CONTACT ARRANGEMENT – See LAYOUT.

CONTACT CAVITY – A defined hole in the connector insulator into which the contacts fit. The cavities are generally marked with a unique designation or number for ease of identification.

CONTACT INSPECTION HOLE – See INSPECTION HOLE.

CONTACT RESISTANCE – The maximum amount of resistance which a contact introduces into the connection when carrying a specified current (usually stated in milliohms). When not stated, values are typically given for "Initial" or new contacts. Most specifications also limit the maximum resistance during or after each of a series of extreme tests, such as "Contact Resistance After Corrosion Test". These figures are typically slightly higher than "Initial". See POTENTIAL DROP.

CONTACT RETENTION – The maximum allowable axial load which can be applied to a contact from either direction without it being dislodged from the insulator. Usually stated in Newtons or pounds of force.

CONTACT SEPARATION FORCE – The force required to separate a pair of mated contacts. Usually stated in Newtons or pounds of force.

CONTACT SIZE – This usually relates to the maximum size wire this contact can nominally accommodate. It is based on that AWG size most closely corresponds to the circular mil area of the engaging end of a pin contact for that size. For example, a size 16 contact can accommodate a size 16 AWG wire maximum and the pin corresponds to the CMA of a size 16 AWG. Note, however, that oversized crimp pots are available for some crimp contacts which will allow, for example, a size 16 contact to accommodate a size 14 AWG wire.

CONTACT SPACING – The distance between to centers of adjacent contacts.

CONTINUITY – An unbroken conductive path for electrical energy.

COUPLING – There are three common methods of mechanically coupling circular connectors; all three are represented in this catalog. Coupling can be made with threads (as in the KFS series), three pin bayonet (as in TRIDENT and KPT/ KPSE series) or ramps (as in the CA-B series).

COUPLING LOSS (Fiber Optic) (also know as Splicing Loss and Transfer Loss) – Signal losses due to small differences in numerical aperture, core diameter, core concentricity, and tolerances in splicing connectors when two fibers are aligned.

COUPLING NUT (also know as Coupling Ring) – The rotating ring on plug style connectors which mechanically locks the two connector halves together. Coupling nuts may function by means of internal threads, roller wheels, pins, or internal bayonet ramps.

COUPLING RING – See COUPLING NUT.

COUPLING TORQUE – Torque is rotational force, usually stated in Newton-meters or Foot-pounds. In the coupling of connectors it is normally used to give the maximum force which should be applied to the coupling nut when mating the two-connector halves or the minimum amount of rotational force required to separate the connector halves.

CREEPAGE – The conduction of electricity across the surface of an insulator.

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CREEPAGE DISTANCE – The shortest distance between contacts of opposite polarities, or between a live contact and ground, measured over the surface of the insulator.

CREEPAGE PATH – A path across the surface of the insulator between two conductors, lengthening the path reduces the possibility of arc damage.

CRIMP – A method of attaching a contact to a wire through the application of pressure.

CRIMP CONTACT – A contact which is terminated to a wire by means of crimping with an appropriate die and tool. After termination, an insertion tool is normally used to insert the crimped contact into the connector. Removable crimp contacts can be FRONT RELEASE or REAR RELEASE. A removal tool is usually required to remove the contact.

CROSSTALK – Undesired electrical currents in conductors caused by electromagnetic or electrostatic coupling from other conductors or from external sources. Also, leakage of optical power from one optical conductor to another.

CURRENT – The movement of electrons through a conductor. Current is measured in amperes. Its symbol is I.

CURRENT RATING – The maximum current that a particular wire, contact, or connector can accommodate. NOTE: When several wires are used in a single connector or elevated temperature or altitude is involved, derating curves must be applied to these ratings. A typical derating system is MIL-W-5088 which allows the user to calculate the derating effects of current, ambient temperature, number of wires in the bundle, and altitude.

D

DEAD FACE – See DEAD FRONT.

DEAD FRONT – The mating surface of a connector which is designed so that the conductive elements, such as the contacts, are physically recessed in the insulator to avoid shorting or shock hazard.

DELAY LINE – A cable made to provide very low velocity of propagation with long electrical delay for transmitted signals.

DERATING – To reduce the voltage, current, or power rating of a connector to improve its reliability or to permit operation at high ambient temperatures or altitudes.

DERATING CURVE – A graph of the change in power handling capability of a connector as a function of ambient temperature or altitude. Typically the graphed function is curved, hence the name.

DIGITAL – A signal comprising discreet elements.

DIALLYL PHTHALATE – A thermosetting plastic used for insulators and some types of connector housings. It has outstanding resistance to chemicals, excellent dimensional stability, and superior electrical insulating properties.

DIELECTRIC – An insulator used to isolate two conductors having a low loss factor (RF cables). The perfect insulator is a vacuum.

DIELECTRIC CONSTANT – That property (K) of an insulating material which is the ratio of the parallel capacitance (C) of a given configuration of electrodes with the material as the dielectric, to the capacitance of the same electrode configuration with a vacuum as the dielectric.

DIELECTRIC WITHSTANDING VOLTAGE – The maximum potential gradient that a dielectric material can withstand without failure.

DRAIN WIRE – In a foil shielded cable, the drain wire is an uninsulated wire which runs the length of the cable making intimate electrical contact with the inside of the foil. Since it would be difficult to directly terminate the fragile foil shield, the drain wire is used to terminate the shield by either soldering or crimping the drain wire to a ground termination.

DUMMY RECEPTACLE – A receptacle shell which takes the place of a working receptacle and is used to fill an empty connector-mounting hole or to provide a location to mate an unused connector. A dummy receptacle has no contacts and no insulator and thus provides no electrical function.

DUST CAP – A cover used in place of a mating connector to seal it against dirt and moisture. Usually secured to the connector by a captive chain, wire, or rope.

E

ELECTROPLATNG – To deposit a metal on the surface of a conductor using electrolysis.

EMI/RFI – Electro-Magnetic Interference and Radio Frequency Interference. This is unwanted stray electronic radiation which may enter, and/or be emitted by a electronic system. The most common method of shielding interconnections against this radiation is to use wires with a metallic braided shield and a connector system which will extend the shield through the interconnection. This type of design will keep radiation from entering, or being emitted by the system. Endbells for shielded cable and connectors with threads or grounding fingers are typically used for this purpose. Call for the specific EMI/RFI accommodations of the connectors in this catalog.

ENDBELL (also know as Backshell) – The outer rear end of the connector which is attached by means of internal threads or screws. It adapts the connector to its wire connections in a variety of ways. Typical endbells might have cable clamps to secure a wire bundle, ridges for heat shrink tubing, pipe threads, or shield termination mechanisms. Endbells may be straight, 90°, or 45°.

ENVIRONMENTALLY SEALED – A connector which uses seals, gaskets, O-rings, potting, or other devices to prevent moisture, dirt, air, or other contaminants from entering and degrading its performance.

EXTRACTION TOOL – A device used to remove a (removable) contact from a connector insulator. The extraction tool may be inserted into the mating face of the insulator (FRONT RELEASE) or the wire side (REAR RELEASE). In either case, the contact comes out the rear, or wire side, of the connector.

F

FAHRENHEIT – A temperature scale in which the freezing point of water is defined as 32 degrees and the boiling point is 212 degrees at normal atmospheric pressure. Abbreviated f.

FAILURE MODE – The manner in which a failure occurs, including the operating conditions of the connector at the time of failure.

FEMALE CONTACT – See SOCKET CONTACT.

FERRULE –

1. A bell shaped ring which is placed over a WIRE SEALING GROMMET to provide uniform axial compression of the grommet and to minimize the transmission of torque to the grommet when the endbell is screwed onto the rear of the connector. Ferrules are a part of the sealing mechanism at the rear of a connector. Ferrules are normally a separate component part of the connector although some endbells have integrated ferrules. Ferrules are usually made from a thermoplastic material, but occasionally ferrules are made of metal.

2. A tubular metal component that is placed over the outer braid of a coaxial cable to enable it to be crimped to the rear body of a coaxial connector.

FINISH – See PLATING.

FIRST-MAKE LAST-BREAK CONTACT – A contact which is longer than a standard contact or which sits in the insulator in such a way that it

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mates with the opposing connector half before any of the other contacts. Used to insure that a ground connection between the connector halves mates before any of the other contacts.

FLANGE – A square-mounting flange with four mounting holes for bolting the connector to a panel. The mounting holes may be clearance holes or threaded.

FLANGED RECEPTACLE (also known as a Box Mount or Wall Mount) – The shell of this connector has a square flange with mounting holes at each corner. Mounting holes are usually clearance holes, but may be threaded. Flanged receptacles can usually be front or rear panel mounted depending upon panel thickness. Some connectors have two different versions, one for front mounting, and one for rear panel mounting.

FLASH –

1. As commonly used in connector terminology, flash refers to extremely thin platings of metal, for example: gold flash is a very thin plating of gold. So thin, that the thickness is generally not specified.

2. A defect in the molding process or omission of a secondary operation such that undesirable rough edges remain on the connector from the mold gate or seam.

FLASH PLATING – See FLASH (1).

FOLLOWER – See FERRULE.

FOOT-POUND – A unit of measurement equivalent to the work of raising one pound vertically a distance of one foot.

FRONT MOUNTING – A receptacle that can only be mounted to the front of a panel with it's mounting FLANGE outside the equipment.

FRONT RELEASE – For crimp type removable contacts, front release means that the appropriate extraction tool is *inserted from the front,* or mating face, of the connector. The contact is then pushed out the rear (wire side) of the connector.

G

GAS TIGHT – The mating of two contact surfaces which are so tight that corrosive gasses cannot enter the joint.

GLAND SEAL – Usually part of an endbell, a gland seal is a resilient element which is compressed around a cable jacket by means of a compression ring. When the proper diameter wire is used and the compression ring is tightened to specifications, the gland creates an air and moisture tight seal around the cable jacket.

GOLD – A precious metal which is more conductive than silver or copper. Because it does not corrode and is highly conductive, it is used as a plating for contacts. Its symbol is Au.

GROMMET – See WIRE SEALING GROMMET.

GROMMET CAVITY – A defined hole in the WIRE SEALING GROMMET through which the wires are passed. The cavities are generally marked with a unique designation or number for ease of use.

GROMMET SEAL – See WIRE SEALING GROMMET.

GUIDE PIN – A special pin which is inserted into a socket contact before the contact can be inserted into the connector insulator. Guide pins provide a rounded surface at the front of the socket and greatly aid in pushing the contact into the insulator thus avoiding damage to both the insulator and the contact. Typically, small size socket contacts require the use of guide pins while larger sizes can be inserted without them.

H

HALOGEN – A general name applied to four chemical elements, fluorine, chlorine, bromine, and iodine, that have similar chemical properties. As it applies to connector insulating materials, these elements are all high toxic to humans when burned.

HARNESS – A group of wires or cables bundled together with attached connectors and/or components in a pre-shaped assembly.

HEAT SHRINK ENDBELL – An endbell specifically designed to allow heat shrink boots or heat shrink tubing to be applied over it and insure a good bond.

HERTZ – International unit of frequency equal to one cycle per second. That is, 20,000 Hz is 20,000 cycles per second.

I

I/O CARD – A PC Card which provides Input/Output capabilities. Common applications include LAN adapters, data/fax modems, and ATA drives.

I/O INTERFACE – Supports memory and Input/Output cycles. PC Cards which support I/O must indicate this support in the CIS. See CARD INFORMATION STRUCTURE (CIS).

IMPEDANCE MATCH – When a transmission line is terminated so that VSWR = 1.00. Another definition is when a source is terminated in an impedance that allows optimum energy transfer.

INITIAL – A test result taken prior to any other environmental testing. For example, contact resistance is frequently specified "Initial", that is, with "new" contacts. Most specifications also limit the maximum resistance during or after each of a series of extreme tests, such as "Contact Resistance After Corrosion Test". These figures are typically slightly higher than "Initial".

IN-LINE RECEPTACLE – See CABLE CONNECTING RECEPTACLE.

INDENTOR – The part of a crimping die which indents the contact barrel to form the actual crimp. Indentors normally make six or eight multiple indentations for each crimp.

INDIVIDUAL WIRE SEALING GROMMET – See WIRE SEALING GROMMET.

INSERT – See INSULATOR.

INSERT ARRANGEMENT – See LAYOUT.

INSERT RETENTION FORCE – The maximum allowable force which should be applied to the face of the insulator without dislodging it from the shell or causing any change in connector performance specifications. Usually stated in Newtons or pounds of force.

INSERTION FORCE – The effort, usually stated ounces or Newtons, required to engage two contacts or connector halves.

INSERTION LOSS – The attenuation that results when a transducer is inserted in a transmission line. It is the ratio of the power input to the transducer to the power out of the transducer expressed in decibels (dB).

INSERTION TOOL – A small, hand-held tool used to insert contacts into a connector.

INSPECTION HOLE – A small hole in a crimp contact barrel. A properly crimped contact will allow the user to see the bare wire through the inspection hole. This is verification that the wire is fully seated in the crimp barrel.

INSULATION – A material which has high electrical resistance and is suitable for covering or encasing electrical components to prevent a short circuit.

INSULATION GRIP – See INSULATION SUPPORT.

INSULATION RESISTANCE – The minimum resistance (usually stated in Megaohms) between adjacent contacts and between the contacts and the shell at a specific voltage. When not stated, values are typically given for new insulators. Most specifications also specify minimum resistance figures during or

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after each of a series of extreme tests, such as "Insulation Resistance During Dry Heat".

INSULATION SUPPORT – An extended portion at the rear of a crimp contact that is crimped around the wire insulation to provide extra strain relief. This crimp is in addition to the crimp over the conductor which provides the actual electrical termination.

INSULATOR – The insulating element into which the contacts are mounted in a connector. This can be a resilient material, thermoplastic, or a thermoset compound, among other materials.

INSULATOR POLARIZATION – See INSULATOR ROTATION.

INSULATOR ROTATION – A method of differentiating a circular connector if more than one connector with the same sex and layout is to be used in a system. The insulator is permanently positioned in the shell so that only a connector with the same degree of rotation can be mated with it. Possible rotations are specific to each layout with some layouts having many possible rotations and others having none. A chart of valid rotations is listed by layout for connectors capable of being rotated. Most connector series use the military convention of assigning letter designations for specific degrees of rotation (for example: W, X, Y, Z). See KEYING.

INTER-MODULATION – In microwave mixers and up-converters, frequency conversion is achieved by combining two input frequencies together in a non-linear element(s) such as a diode, thereby generating a third mathematically related intermediate frequency (IF).

INTERCHANGEABLE – The characteristic of connectors in which a connector half of one manufacturer or series will directly replace that of another manufacturer and provide the same electrical and mechanical function.

INTERFACIAL SEAL – The sealing of mated connectors over the entire face of the mating insulators when the two-connector halves are mated. Usually done by employing resilient insulators.

INTERMATEABLE – The characteristic of connectors in which a connector half of one manufacturer or series will mate directly with the connector half of another manufacturer.

INTERMITTENT – Occurring at intervals. A connection which passes electrical current only in random or undesirable intervals.

INTERMOUNTABLE – The characteristic of connectors in which one manufacturer's connector or series will mount in exactly the same panel space and mounting holes as another manufacturer's.

IP65 – One classification from a rating system used in Europe covering the environmental sealing capability of a connector or enclosure. The system uses two digits, the first digit relates to the degrees of protection the connector has from dirt and dust under the conditions defined in the specification. The second digit relates to the degrees of protection it has against moisture. The degree of protection against dirt ranges from 1 (no protection), to 6 (dust tight). Moisture sealing in the specification ranges from 1 (no protection), to 8 (protected against continuous submersion). The classification IP65 states that the connector is "dust-tight" (6), allowing no ingress of dust what so ever, and "protected against water jets" (5), water projected by a nozzle against the connector from any direction shall have no harmful effect.

IP67 – One classification from a rating system used in Europe covering the environmental sealing capability of a connector or enclosure. The system uses two digits, the first digit relates to the degrees of protection the connector has from dirt and dust under the conditions defined in the specification. The second digit relates to the degrees of protection it has against moisture. The degree of protection against dirt ranges from 1 (no protection), to 6 (dust tight). Moisture sealing in the specification ranges from 1 (no protection), to 8 (protected against continuous submersion). The classification IP67 states that the connector is "dust-tight" (6), allowing no ingress of dust what-so-ever, and "protected against the effects of immersion" (7), the ingress of water in harmful quantity shall not be possible when the connector is immersed in water under defined conditions of pressure and time.

J

JACKET – The outermost layer of insulation in a cable composed of several wires.

JACKSCREW – A screw attached to one half of a connector pair used to mechanically align, draw them together, and lock them in place.

JAM NUT – See JAM NUT RECEPTACLE.

JAM NUT RECEPTACLE – A top hat shaped connector (the top of the hat being the mating surface). It is mounted into a round panel hole from the rear. The "brim of the hat" prevents the connector from falling through the hole. A large hex nut (jam nut) is screwed on to the front of the connector to secure it to the panel. Typically, the upper "brim" of the hat contains an O-RING which seals the connector to the panel.

K

KEY – A mechanism used to polarize connectors by the user. See KEYING.

KEYING – A method of differentiating a connector if more than one connector with the same gender and layout is to be used in a system. The key is usually a pin or other projection which can be located in a contact cavity or slot. The key will prevent a connector without a matching orifice from mating. Keying and POLARIZATION serve the same function, but keying can be done by the user, while polarization is manufactured into the connector and normally cannot be altered by the user.

L

LACING CORD – Several types of cord or ribbon which can be used to tie a group of wires into a bundle or harness.

LANYARD RELEASE – A plug connector with a wire or cable handle (lanyard). The plug can be separated from the receptacle by an axial pull on the lanyard.

LAYOUT – The number, size, and geometric arrangement of the contacts in a connector. When a connector is said to have a certain "layout" it refers to a specific contact configuration. For example, the KPT/KPSE series has a page of drawings showing the arrangement of the contacts in the insulator. Each of these arrangements can be referred to as a layout.

LEVELS OF INTERCONNECTION – A system of classifying interconnection devices into one of six categories.

Level 1 is Chip-to-Lead. It covers interconnections used inside of integrated circuits and passive devices to connect the internal elements to the leads on the device package.

Level 2 is Device-to-Board. It covers the interconnection of PC mounted parts to the printed circuit board.

Level 3 is Board-to-Backplane. It covers the direct interconnection of PC boards.

Level 4 is Board-to-Board. It covers interconnections between circuit boards within the same enclosure.

Level 5 is Board-to-Box. It covers interconnection of circuit board to the I/O of the equipment. It forms the system interconnection to the outside world.

Level 6 is System-to-System. It covers external connections of one system to another, for example an interconnection of a computer to it's CRT terminal would be a Level 6 interconnect.

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LOCATOR – A part of a crimping tool TURRET. Rotation of the locator sets the tool for a particular contact size or gender.

LOCK WIRE – A mechanical means of securing a mated pair of threaded connectors. A wire is passed through a hole in the coupling nut and then secured to the shell, endbell, or other surface. Using this technique, the coupling nut cannot be removed without cutting the lock wire. Lock wires are used to provide additional vibration resistance or to minimize the possibility of tampering with the connector. Lock wires are unnecessary with bayonet style connectors.

M

MALE CONTACT – See PIN CONTACT.

MATERIAL SCATTERING LOSS (Fiber Optic) – Loss due to fluctuations in the refractive index and to in homogeneities in material composition and temperature.

MATING LIFE – The minimum number of times a connector can be mated and unmated and still meet all of its design specifications. The maximum life may be much higher than this figure.

MEAN TIME BETWEEN FAILURES – The limit of the ratio of operating time of a connector to the number of observed failures as the failures approach infinity. Abbreviated MTBF.

MEMORY INTERFACE – The default interface for PCMCIA, it supports memory operations and is used by both memory and I/O cards.

METAFORMAT – Used to encompass the contents, layout, and interpretation of the card information structure. See CARD INFORMATION STRUCTURE (CIS).

MICRON – A unit of length equal to 10^{-6} meters (.001 millimeters).

MICROBENDING LOSS (Fiber Optic) – Loss due to small geometrical irregularities along the coreclad interface of the fiber.

MILITARY SPECIFICATION – Abbreviated MIL-SPEC or MS.

MIS-MATCH – A termination having a different impedance than that for which a circuit or cable is designed.

MODE – One of the components of a general configuration of a propagating wave front.

MOUNTING CLIP – Any of a variety of mounting accessories used to secure a connector or connector pair to a rigid surface.

MOUNTING FLANGE – See FLANGE and FLANGED RECEPTACLE.

MULTIFUNCTION CARD – PC Card that supports more than one function such as LAN with modem, sound with memory, etc. Ideal for systems with only on PC Card slot.

MULTI-CONDUCTOR CABLE – Two or more individual wires surrounded by a jacketing material.

MULTI-MODE FIBER (Fiber Optic) – A fiber which transmits many modes.

N

NAPKIN RING – One of several designs used for screw machine socket contacts. A band of plated conductive metal is formed around a circumferential cut or opening in the mating portion of contact. This creates a zone of mechanical and electrical continuity between the mated contacts.

NEST – The portion of a crimping die that supports the contact barrel during crimping.

NEWTON – A unit of force.

NEWTON-METERS – A unit of measure for rotational acceleration. 1 Nm = .7376 Foot Pounds.

O

O-RING – A donut shaped ring of rubber used as a seal around the periphery of connectors and connector accessories to form an air, dirt, and moisture tight seal.

OPERATING TEMPERATURE – The range of AMBIENT TEMPERATUREs over which the connector can operate and still meet all of its design specifications.

OPERATING VOLTAGE – The range of voltages over which the connector can be operated. Safety precautions must be taken anytime a voltage in excess of 50 V is to be used in a circuit. Check your local and national codes for guidelines.

OUTGASSING – The circumstance in which an insulator releases gasses trapped within it under a vacuum or conditions of decreased pressure, high heat, or both.

P

PC CARD – A memory or I/O card compatible with the PC Card Standard.

Type I – The 3.3 mm thick card is commonly used for memory cards such as RAM, Flash, OTP, SRAM, and EEPOM, but can be used for I/O devices as well.

Type II – The 5.0 mm thick form factor is typically used for I/O devices such as data/fax modems, LAN adapters, and other communications devices.

Type III – The thickest PC Card at 10.5 mm, used for devices that require more space such as rotating media.

PC CARD LOGO – The PC Card logo is copyrighted by PCMCIA and its use indicates that the manufacturer is a PCMCIA member.

PANEL – The outside surface of a piece of equipment on to which connectors are mounted. The panel is usually made of metal.

PANEL MOUNT – A connector designed to be mounted on a panel by means of screws or jam nut.

PAIRED CABLE – A cable in which all of the conductors are arranged in the form of twisted pairs.

PATCH CABLE – A cable with plugs or terminals on each end of the conductors to temporarily connect circuits of equipment together.

PATCH CORD – Braid covered with plugs or terminals on each end to connect jacks or blocks in switchboards or programming systems.

PATCH PANEL – A piece of hardware, usually found in the wiring closet, on which the building cable is terminated, and connection between different circuits in made.

PC CONNECTOR – A connector with PC CONTACTs.

PC CONTACT – A pin or socket contact that has a post opposite the mating end which is intended to be soldered directly to a printed circuit (PC) board instead of being terminated to a wire. The solder post may come in a variety of diameters and lengths.

PC PIN – See PC CONTACT.

PERIPHERAL SEAL – A resilient seal used to keep moisture from entering the connector at the point where the plug and receptacle shells meet. A common method is to use flat gaskets on receptacles and O-rings on plugs.

PHOSPHOR BRONZE – An alloy of copper, tin, and phosphorus used to make spring contacts. It typically used in lower cost contacts where frequent insertions and withdrawals and high temperatures are not a factor.

Glossary of Terms

PIN – A male contact. See PIN CONTACT.

PIN CONTACT – The contact which has a long shaft at the engagement end which enters the socket contact.

PLATING (also known as Finish) – The metallic coatings used on contacts and metal connectors. These are thin layers of metal designed to improve conductivity, solderability, or to resist corrosion. Typical contact finishes are gold or silver. Typical shell finishes are olive drab over cadmium, electroless nickel, or black anodize.

PLUG – The male portion of the connector pair usually employing a coupling nut to secure it to the receptacle half. A plug may have either pin or socket contacts.

POLARIZATION – A mechanical mechanism that allows connector halves to intermate in only one specific orientation. This can be accomplished by asymmetrical shapes of the two halves as in a D-Subminiature connector, insulator rotation, keys, keyways, ramps, or other means. Polarization prevents connectors of the same size and/or same layout from intermating when this is undesirable, such as when two otherwise identical connectors are used on the same panel. Polarization is typically done by the assembler and cannot be changed by the user, while keying is typically done by the user with an auxiliary keying device.

POLARIZING PIN – See KEY.

POLARIZED BACKSHELL – An ENDBELL with "TEETH" for positioning the endbell.

POSITION – See INSULATOR ROTATION.

POTENTIAL – The difference in voltage between two points in a circuit. Frequently one point is assumed to be ground, which has zero potential.

POTENTIAL DROP – The difference in potential between two ends of a resistance with a current flowing through it. In connector specifications it is the maximum amount of voltage drop in millivolts (or resistance in milliohms) which a contact introduces into the connection. When not stated, values are typically given for "Initial" or new contacts. Most specifications also limit maximum voltage drop (or resistance) during or after each of a series of extreme tests. These figures are typically slightly higher than "Initial".

POT LIFE – The period after the addition of a catalyst during which the compound can be used.

POTTING – The permanent sealing of a cable to a connector using an insulating material such as potting compound to exclude moisture or provide stain relief. See POTTING CUP.

POTTING COMPOUND – A sealing material used in potting to fill a potting cup.

POTTING CUP – A bell-shaped (plastic) endbell with an enlarged opening for the wires. After the connector is loaded with wired contacts, the potting cup is attached to the rear of the connector. The inside of the cup is then filled with a potting compound. When the compound hardens, it forms a solid, permanent, watertight mass around the wires.

POTTING RING – A portion of the POTTING CUP which secures the bell shaped cup to the rear of the connector, usually by means of internal threads.

PRE-TIN – To apply tin-lead solder to the contact solder cup and/or conductor prior to soldering the two together.

R

R.F. LEAKAGE – The ratio of the total power escaping from a confined microwave structure to the input power to the structure in DECIBELs.

RACK AND PANEL CONNECTOR – A connector made to mount inside a cabinet (rack) which contains electronic modules. These modules have a mating connector half mounted on their rear panels. The modules slide into and out of the rack like a drawer. When fully pushed into the rack, the connector halves self align and mate, connecting the module to rack system. This arrangement of rack- mounted modules makes it easy to quickly interchange modules.

RAMP – A sloped channel that accepts the bayonet pins or roller wheels in a bayonet or reverse bayonet connector. The ramp is part of the mechanism which mechanically locks the two-connector halves together.

RANGE – See SEALING RANGE and WIRE RANGE.

RATCHET CRIMP TOOL – A crimping tool with a ratchet mechanism in the handle which will not allow the jaws to open until the crimp dies have closed completely insuring a complete crimp.

RATED CURRENT – The continuous, not interrupted current a connector can take when simultaneous power on all contacts is given, without exceeding the maximum temperature.

REAR MOUNTING – A receptacle that mounts through the panel from the rear, with its mounting flange inside the equipment. Typically, rear mount receptacles are slightly longer than front mount types to allow for the thickness of the panel. Flange mount receptacles usually come in front and rear mount versions. All jam nut receptacles are rear mount.

REAR RELEASE – For crimp type removable contacts, rear release means that the appropriate extraction tool is *inserted from the rear*, or wire side, of the connector. The contact is then pulled out the rear of the connector.

RECEPTACLE – The connector half that mates with the plug. The receptacle has threads, pins or ramps which engage the coupling nut on the plug, locking the two halves together. A receptacle may have either pin or socket contacts.

REDUCTION SLEEVE – A method of crimping a wire on to a crimp contact when the wire diameter is smaller than that accommodated by contact. The sleeve is inserted into the contact crimp barrel and then the wire is inserted into the sleeve. The contact is then crimped. The sleeve increases the diameter of the wire such that standard crimping tools and contacts can be used.

REFLECTION LOSS (Fiber Optic) – Energy reflected back toward a cable source.

REMOVABLE CONTACT – A contact which can be inserted and removed from the insulator by the user. Insertion tool and extraction tool are normally required to insert and remove the contact.

REMOVAL TOOL – See EXTRACTION TOOL.

RESISTANCE – That property of a substance which impedes current and results in the dissipation of power in the form of heat. The unit of resistance is the ohm.

RETURN LOSS – The ratio of the power reflected from a discontinuity in a transmission line to the power incident.

REVERSE BAYONET COUPLING – A quick coupling mechanism for mechanically mating and unmating connector halves. The plug half has internal roller bolts or pins and the receptacle has ramps. The two halves are mated and unmated by rotating the coupling nut.

RIGID COAXIAL CABLE – Nonflexible coaxial cable, usually a metal tube armored coaxial cable.

RING – See COUPLING NUT.

ROTATION – See INSULATOR ROTATION.

S

SAFETY WIRE – See LOCK WIRE.

SALT SPRAY TEST – A test, or series of tests, in which mated and/or unmated connectors are subjected to salt water under specified conditions. to test the connector's resistance to corrosion and any associated degradation in electrical function.

Glossary of Terms

SASH CHAIN – A style of metal chain used to secure a DUST CAP to a connector or panel.

SCOOP PROOF – A connector design which includes an elongated shell to prevent the pin contacts from contacting the mating connector face before they are properly aligned for mating. This eliminates the possibility of damaged pins during mating.

SCREW MACHINE CONTACT – A contact made from a solid bar or rod using screw machine operations. Some screw machine contacts include secondary elements which are welded, crimped, or formed around the basic screw machined part to complete the contact.

SEAL – There are generally four types of seals associated with connectors. See PERIPHERAL SEAL, INTERFACIAL SEAL, WIRE SEALING GROMMET, and CABLE SEAL.

SEAL PLUG – See WIRE HOLE FILLER.

SEALING RANGE – The sizes of wire insulation diameter accommodated by a connector's individual wire sealing grommet. Also the diameter of a cable jacket accommodated by a gland seal endbell.

SELECTIVE PLATING – The application of metal PLATING to selective areas of the contact, particularly those areas subject to wear. Precious metal platings may be applied selectively to those contact surfaces responsible for the electrical connection, reducing the contact cost without sacrificing electrical performance.

SEMI-RIGID – A cable containing a flexible inner core and a relatively inflexible sheathing.

SERRATIONS – See TEETH.

SERVICE RATING – The service rating is determined by the amount of insulation or creepage distance between contacts. Each layout has a service rating associated with it based upon the operating voltages which can be safely handled by that specific arrangement of contacts.

SHELL – The outside case of a connector into which the insulator and contacts are situated.

SHELL SIZE – A standard system developed for military circular connectors for indicating the diameter of the shell. The system is based upon 1/16" increments, that is, a size 16 shell is one inch in diameter.

SHIELD EFFECTIVENESS – The ability of a shield to screen out undesirable signals.

SHIELDED CABLE ENDBELL – Endbell with a threaded rear ring designed to captivate the braid of a shielded cable and continue the shielding through the connector.

SHIELDED CABLE – A cable or group of wires enclosed within a conductive shield. The shield is normally terminated to ground and minimizes the effects of unwanted electrical energy entering or leaving the cable. Shields are made of braided copper, copper foil, or other conductive overlays. The shield is usually enclosed in an insulating jacket. Also See EMI/RFI. Some connector and connector endbells allow the termination and continuation of the shielding effect through the connector. See SHIELDED CABLE ENDBELL.

SHOCK – An abrupt impact applied to a stationary object. It is usually expressed in gravities (*g*).

SHRINK BOOT – A rear accessory made from various types of insulating materials which shrink when specific temperatures are applied to them. Shrink boots are used to add additional insulation, strength, abrasion resistance, or sealing properties to the connector. Boots are supplied to the user in an expanded form, but return to a predefined shape and size when the appropriate amount of heat is applied to them. Various materials and options are available to meet specific user requirements, such as boots with meltable inner adhesive liners which form a moisture tight mass inside the boot after it has been shrunk.

SILICONE – A group of polymers which are rubbery and extremely stable in high temperatures. Silicone is an insulator and is water repellent by nature.

SILVER – A precious metal which is more conductive than copper. Because it does not readily corrode, it is used for contact plating. Its symbol is Ag.

SLICING LOSS – See COUPLING LOSS (Fiber Optic).

SOCKET – A female contact. See SOCKET CONTACT.

SOCKET – PC CARD APPLICATION – The 68-pin physical connection into which the PC CARD is inserted.

SOCKET CONTACT – The contact which has a opening at the engagement end to accept the pin contact.

SOLDER CONTACT – A contact which is terminated to the wire with solder. Solder contacts are normally bonded into the insulator and cannot be removed by the user. The alternative is crimp contacts to which a wire is attached by crimping. Crimp contacts can usually be inserted and removed by the user.

SOCKET SERVICES – Software that talks directly to the hardware and provides a standardized interface for PC Cards, socket and adapters to hide hardware specifics from drivers.

SOLDER CUP – The end of a SOLDER CONTACT designed to accept a wire which will be then soldered to the contact.

STAMPED AND FORMED CONTACT – Contacts made by stamping and forming a sheet of metal rather than by machining metal stock. See SCREW MACHINE CONTACTs.

STAR CLIP – One of several designs used for screw machine socket contacts. A tiny plated star shaped clip is captivated inside a solid barrel into which the pin contact fits. The clip creates a multi-point area of mechanical and electrical continuity between the mated contacts.

STEP INDEX FIBER (Fiber Optic) – A multimode fiber consisting of a core of uniform refractive index, surrounded by cladding of slightly lower refractive index.

STEPPED PLANE – A polarization technique where one half of the insulator face is set back below the level of the other half. This creates a stair step front face which fits into the mating connector only when the two steeped planes match. Typically a pin contact is used in the recessed plane while a socket contact is used is the forward plane.

STORAGE TEMPERATURE – The range of AMBIENT TEMPERATUREs over which the connector can be stored safely.

STRANDED CONDUCTOR – A conductor composed of several smaller independent strands.

STRIP – To remove insulation from a conductor.

STRIP FORM CONTACTS – Stamped and formed crimp contacts supplied on a continuous metal strip for use in automated or semi-automated crimping machines.

STRIP LENGTH – The length of conductor which should be exposed from the insulation at the end of the wire prior to terminating to a contact. Using the appropriate strip length guarantees a connection with maximum mechanical strength and a minimum of exposed conductor. NOTE: Correct strip lengths are typically quite short. Care should be taken to use the strip length data in this catalog to prepare wires for termination.

STRIPPER – A tool to remove insulation from a wire.

Glossary of Terms

T

TEETH – A serrated edge on the rear of a connector shell and/or front of an endbell which allows the endbell to be positioned at a specific angle before tightening on to the connector. Used particularly with right angle endbells to position them at a specific angle.

TEST PROD – A sharp metal point with an insulated handle used with various types of test equipment for making an electrical connection between the circuit and the test gear.

TEST VOLTAGE – The range of voltages over which the connector has been tested per the perimeters in the applicable specification.

THERMO-COUPLE CONTACT – A contact made of a special material for use with thermocouple probes. Typical contact materials are Alumel, chromel, constantan, or iron.

THERMOPLASTIC – A plastic material that can be softened by heat and rehardened into a solid state by cooling. This process can be accomplished using a variety of techniques.

THERMOSET – A plastic material which hardens when heat and pressure are applied. Unlike thermoplastic, it cannot be remelted or remolded.

THERMOSETTING – A classification of resin which cures by chemical reaction when heated and, when cured, cannot be resoftened by heating.

THREADED COUPLING – A method of mechanically coupling connector halves which makes use of a threaded coupling nut on the plug which threads into a mating thread on the receptacle.

THROUGH-BULKHEAD RECEPTACLE – Flange mounted on a panel, the TBR connector has a mating end on each side of the panel, one with pin contacts, and the other with socket contacts. This provides a transition through a panel (or bulkhead). Standard plug style connectors can be mated with the TBR from each side of the panel. TBR's are used when a disconnect is needed from each side of the panel. They are particularly useful when air leakage through the panel must be eliminated.

THROUGH HOLE – See THRU HOLE.

THRU HOLE (also know as Clearance Hole or Through Hole) – A mounting hole without threads.

TORQUE – A force which produces rotation.

TORQUE WRENCH – A device which makes use of an integrated gauge which allows you to tighten coupling nuts, endbells, and bolts to a specific force.

TRANSFER LOSS – See COUPLING LOSS (Fiber Optic).

TRANSMISSION LINE – The conductive connection between system elements which can carry signal power. At low frequencies, (60 cycles) a two-wire line-cord is a transmission line.

TRANSMISSION LOSS – The power lost in transmission between one point and another.

TRANSMISSION MEDIA – The copper cabling or fiber optics used to carry information around a data network.

TUPLE – A block of data in the CARD INFORMATION STRUCTURE (CIS) used to record specifics about the card layout.

TURRET – An interchangeable device which is attached to a crimp tool that allows the tool to crimp a range of contacts. Each turret is made to crimp a specific style contact or a range of contacts and/or wire gauges. Also see LOCATOR.

TWIN CABLE – A pair of insulated conductors twisted, sheathed, or held together mechanically and not identifiable from each other in a common covering.

TWIN COAXIAL – A configuration containing two separate, complete coaxial cables laid parallel or twisted around each other in one complex.

TWIN LINE – A transmission line which has a solid insulating material, in which the two conductors are placed in parallel to each other.

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 that the combination is a special case of a cord.

U

UL 94V-0 – A flammability performance rating set by Underwriter's Laboratories for plastics.

V

VELOCITY OF PROPAGATION – In cable measurements, a function of dielectric constant. The transmission speed of an electrical signal down a length of cable compared to speed in free space — expressed as a percentage of speed in free space.

VIBRATION – A continuously reversing change in the magnitude of a given force.

VG95234 – A military specification used by the German government and NATO covering reverse bayonet connectors. VG is the equivalent of an MS specification in the United States, in translation from the German, literally meaning Defense (V), Equipment (G).

VOLTAGE DROP – The difference in voltage between two points in a circuit due to the loss of electrical pressure as a current flows through an impedance.

VOLTAGE RATING – See OPERATING VOLTAGE.

VOLTAGE REFLECTION COEFFICIENT – The ratio of the reflected voltage from a discontinuity in a transmission line to the incident voltage.

W

W –

1. In circular connectors, a degree of INSULATOR ROTATION.

2. Symbol for watt, work, or energy.

WALL MOUNT – See FLANGED RECEPTACLE.

WASH OUT – A defect in the mold used to make molded connector components that manifests itself as a blurred or deformed surface around the area on the component where the mold is gated. It is the result of mold age and wear. It is typically a cosmetic issue that rarely results in any decreased connector performance.

WAVE SPRING – A wavy metal washer mounted inside a coupling nut. When the connector halves are mated, the wavespring applies a reverse pressure on the two-mated halves. This is intended to improve vibration performance or peripheral sealing.

WAVE WASHER – See WAVE SPRING.

WIRE BUNDLE – A group of individual wires held together by a wire accessory such as cable ties, lacing cord, tubing, or clamps.

WIRE HOLE FILLER (also know as a Seal Plug) – A plug which is inserted into an unused GROMMET CAVITY in a connector to retain the sealing capability of the connector. They can be inserted into unused cavities in the grommet, insulator, or both; however, contacts are always recommended for filling unused insulator cavities. Fillers are usually made of plastic and are commonly found in two shapes, one which resembles a blunt nail and the other shaped like a barbell.

WIRE INSULATION DIAMETER – The outside diameter of the insulation on an insulated wire.

WIRE RANGE – The sizes of wire conductors accommodated by a particular contact.

Glossary of Terms

WIRE SEALING GROMMET – A resilient disc with holes in it to accommodate the individual wires entering the rear of the connector. Each cavity forms a tight seal against the wire insulation (as long as wires within the specified diameter are used). The grommet seals the back of the connector against moisture, dirt, and air. The grommet is normally held in place and compressed by an endbell and/or ferrule. It is usually a separate component, but may be part of the insulator itself. See GROMMET CAVITY.

WIRE SIZE – A numerical designation for conductor diameter. This catalog uses American Wire Gauge (AWG) which is based on the approximate circular mil area of the wire.

WIRE STRIP LENGTH – See STRIP LENGTH.

WIRE WRAP CONTACT – A type of contact which is terminated by wrapping wire around a post in a manner that deforms the wire and creates a gas tight connection between the wire and the post. This method is slow and labor intensive. If used at all, it is employed in prototype work.

WORK – The magnitude of a force times the distance through which that force is applied.

WORKING VOLTAGE – See OPERATING VOLTAGE.

X

X –

1. In circular connectors, a degree of INSULATOR ROTATION.

2. Symbol for reactance.

Y

Y –

1. In circular connectors, a degree of INSULATOR ROTATION

2. Symbol for admittance.

Z

Z –

1. In circular connectors, a degree of INSULATOR ROTATION.

2. Symbol for impedance.

ZERO HALOGEN –In connector terminology, an insulating material that will not emit halogen gasses when burned. See HALOGEN.

ZERO INSERTION FORCE CONNECTOR (ZIF) – A connector designed in such a way that the contacts do not mechanically touch until the two-connector halves have been jointed and a compression mechanism has forced the contacts together. A ZIF connector has extremely low insertion and removal forces making it possible to easily mate very large numbers of contacts with virtually no wear.