

American Wire Gauge (AWG)

System of numerical designations for wire sizes, based on specified ranges of cross-sectional areas. Starts with 4/0 (000) at the largest size, going to 3/0, 2/0, 1/0, 1, 2, and up to 40 and beyond for the smallest size. A step of one AWG number corresponds to a reduction of cross-sectional area of appr. 20 %.

Attenuation

A reduction of power. Occurs naturally when waves travel through lines, wave guides, or media such as air or water. Is produced additionally by imperfections in electrical or optical connections (attenuation in fibre optics), e. g. contact resistance, mismatch, etc.

Bulkhead connector

Connector designed to be inserted into a panel cutout from the rear of the panel, thus forming part of the barrier between two spaces. Back-mounted.

Clearance

The shortest distance in air between two conductive parts, see IEC 60664.

Climatic stability

General term describing the behavior of components under various climatic conditions, e. g. high and low temperatures, tropical climate, high humidity, moist heat, fungus, atmospheric conditions (industrial atmosphere), reduced air pressure, etc. Climatic conditions for test purposes are explained in IEC 60068, DIN 46 040.

Connector

A component which terminates conductors for the purpose of providing connection and disconnection to a suitable mating component which shall not be engaged or disengaged when live. Depending on the fastening to a cabinet, panel, rack etc. or a cable, they are classified as fixed or free connectors. A connector comprises one or more contacts and a housing which may have a separate connector insert and a separate outer housing or shell.

Connector housing

The part of a connector into which the insert and the contacts are assembled. It may function as part of the locking mechanism.

Connector insert

An insulating element designed to support and position contacts in a connector housing.

Connector life

The number of mating cycles prior to abrasion of the conductive contact surface and which does not result in a significant rise of the contact resistance. Tests according to test 9a of IEC 60512-5 / DIN EN 60512 Part 5.

Contact

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

Contact resistance

The electrical resistance of a mated set of contacts under specified conditions. Tested according to tests 2a, 2b, 2c, of IEC 60 512 -2/ DIN EN 60 512-2.

Contact size

The designation used to differentiate one contact from another. It may be denoted by one of the following numbering systems:

- numbering system: assigned numbers used to denote the size of the contact and its related conductor accommodation (e. g. in AWG units),
- current rating system: the related current-carrying capacity is used to denote the size of the contact,
- cross-sectional area system: reference is made to the cross-sectional area of the maximum conductor accommodation to denote the size of the contact, e. g. in mm².

Creepage distance

The shortest distance along the surface of the insulating material between two conductive parts. The longer the distance, the less the risk of arc damage or tracking. Minimum creepage distances are specified according to the rated voltage and the applicable pollution degree and Comparative Tracking Index.

Crimped connection

A solderless connection made by crimping. IEC 60352-2 / DIN IEC 60352 Part 2.

Crimping die

That part of a crimping tool which forms the crimp(s) and usually incorporates the crimp anvil(s) and the crimp indenter(s).

Derating curve

The method for determining derating is specified in IEC 60 512-3. Here the combination of ambient temperature (T_u) and the current (I) leading to the same maximum allowable temperature (T_b) at the hottest point of the connector are plotted.

DIN

Deutsches Institut für Normung. A German standards organization.

Electromagnetic interference (EMI)

General term describing the undesirable effects of the immission or emission of radio frequency fields. In connectors electromagnetic interference is prevented by shielding. Shielded connectors normally provide means to connect the screens of attached cables.

Funnel entry (restricted entry C146 D series)

Flared or widened entrance to a conductor barrel permitting easier insertion of the conductor.

Insertion or withdrawal force

The force required to fully insert or withdraw a set of mated connectors without the effect of coupling, locking or similar devices. The insertion force is usually greater than the withdrawal force.

Insulation grip

The area of a crimp contact that has been reshaped around the insulation of the conductor by compression during the crimping operation.

Insulation resistance

The resistance of the insulation between two conductive elements, in particular, the resistance between two contacts or between a contact and a metallic housing or shield. Tested according to test 3a of IEC 60512-2 / DIN IEC 60512 Part 2.

Intermateable

Two connectors are intermateable when they are capable of being connected electrically and mechanically but without regard to their performance and intermountability.

Locator

In a crimping tool the device used for positioning a crimp contact or terminal end.

Locking lever

A mechanical locking device operated by actuating a lever, designed to hold two mated connectors together. Typically the lever can only be fully locked if the two connectors are correctly mated.

Mating cycle

One mating cycle comprises one insertion and one withdrawal operation. Term used in the definition of connector life.

Material group

Classification of insulation materials according to their CTI values (CTI = Comparative Tracking Index)

Overvoltage category

A numeral defining a transient overvoltage condition. Overvoltage categories I, II, III and IV are used.

Connector with braking capacity (CBC)

A component which may be engaged or disengaged in normal use, when live or under load. Note: In the sense of this document the term - live- is used if contacts are under voltage not necessarily with a current flowing across the contacts. The term - load - is used if a current is flowing across the contacts.

Rated current

A current value assigned by the manufacturer which the connector or PSD can carry continuously (without interruption) and simultaneously through all its contacts wired with the largest conductor preferably at an ambient temperature of 40 °C without the upper temperature being exceeded.

Shield, shielding

Shielding of internal or external electric fields by means of a plane with a uniform electric potential, formed by metal shells or metallic layers on the inside or outside of plastic shells. The shield is normally connected to the shielding braid of the cable and/or chassis ground.

Terminal block

An assembly of terminals in a housing or body of insulating material to facilitate interconnection between multiple conductors. Also called terminal strip or barrier blocks if the terminals are separated by an insulation barrier.

Wire range

The range of wire cross sections which is compatible with the dimensions the terminals of the contact (wire barrel). The wire range is expressed in mm² or in AWG numbers.