

IEEE Standard Dictionary of Electrical and Electronics Terms

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**IEEE
Standard Dictionary
of
Electrical and
Electronics
Terms**

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mercury relay

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metal-clad switchgear

mercury relay. A relay in which the movement of mercury opens and closes contacts. *See:* **mercury-contact relay.** 259

mercury vapor lamp transformers (multiple-supply type) (power and distribution transformer). Transformers, autotransformers, or reactors for operating mercury or metallic iodide vapor lamps for all types of lighting applications, including indoor, outdoor area, roadway, uviarc, and other process and specialized lighting. 53

mercury-vapor tube. A gas tube in which the active gas is mercury vapor. 125

merge (computing systems). To combine two or more sets of items into one, usually in a specified sequence. 255, 77

meridional ray (fiber optics). A ray that passes through the optical axis of an optical waveguide (in contrast with a skew ray, which does not). *See:* **axial ray; geometric optics; numerical aperture; optical axis; paraxial ray; skew ray.** 433

mesh. A set of branches forming a closed path in a network, provided that if any one branch is omitted from the set, the remaining branches of the set do not form a closed path. *Note:* The term **loop** is sometimes used in the sense of mesh. *See:* **network analysis.** 210

mesh-connected circuit. A polyphase circuit in which all the current paths of the circuit extend directly from the terminal of entry of one phase conductor to the terminal of entry of another phase conductor, without any intermediate interconnections among such paths and without any connection to the neutral conductor, if one exists. *Note:* In a three-phase system this is called the delta (or Δ) connection. *See:* **network analysis.** 210

mesh current. A current assumed to exist over all cross sections of a given closed path in a network. *Note:* A mesh current may be the total current in a branch included in the path, or it may be a partial current such that when combined with others the total current is obtained. *See:* **network analysis.** 210

mesh or loop equations. Any set of equations (of minimum number) such that the independent mesh or loop currents of a specified network may be determined from the impressed voltages. *Notes:* (1) For a given network, different sets of equations, equivalent to one another, may be obtained by different choices of mesh or loop currents. (2) The equations may be differential equations, or algebraic equations when impedances and phasor equivalents of steady-state single-frequency sine-wave quantities are used. *See:* **network analysis.** 210

mesial point (pulse terms). A magnitude referenced point at the intersection of a waveform and a mesial line. *See:* The single pulse diagram below the **waveform epoch** entry. 254

mesopic vision (illuminating engineering). Vision with fully adapted eyes at luminance conditions between those of photopic and scotopic vision, that is, between about 3.4 cd/m^2 , ($2.2 \times 10^{-3} \text{ cd/in}^2$) (1.0 fL) and 0.034 cd/m^2 , ($2.2 \times 10^{-5} \text{ cd/in}^2$) (0.01 fL). 167

message (telephone switching systems). An answered call or the information content thereof. 55

message source. That part of a communication system where messages are assumed to originate. *See:* **information theory.** 160

message switch (data transmission). A technique whereby messages are routed to the appropriate receiver by way of message address codes rather than by switching of the communication channel itself. 59

message switching (data communications). A method of handling messages over communications networks. The entire message is transmitted to an intermediate point (that is, a switching computer), stored for a period of time, perhaps very short, and then transmitted again towards its destination. The destination of each message is indicated by an address integral to the message. *See:* **circuit switching.** 12

message telecommunication network (telephone switching systems). An arrangement of switching and transmission facilities to provide telecommunication services to the public. 55

message-timed release (telephone switching systems). Release effected automatically after a measured interval of communication. 55

message unit (telephone switching systems). A basic chargeable unit based on the duration and destination of a call. 55

message-unit call (telephone switching systems). A call for which billing is in terms of accumulated message units. 55

metacompiler. *See:* **compiler generator.**

metalanguage (1)(ATLAS). A form of notation used to rigorously define the syntax and sometimes the semantics of another language. 400

(2)(software). A language used to specify a language or languages. 434

metal clad. The conducting parts are entirely enclosed in a metal casing. 328

metal-clad switchgear (1)(electric power distribution for industrial plants). Metal-enclosed power switchgear characterized by the following necessary features. (A) The main circuit switching and interrupting device is of the removable type arranged with a mechanism for moving it physically between connected and disconnected positions and equipped with self-aligning and self-coupling primary and secondary disconnecting devices. (B) Major parts of the primary circuit, such as the circuit switching or interrupting devices, buses, potential transformers, and control power transformers, are enclosed by grounded metal barriers. Specifically included is an inner barrier in front of or a part of the circuit interrupting device to ensure that no energized primary circuit components are exposed when the unit door is opened. (C) All live parts are enclosed within grounded metal compartments. Automatic shutters prevent exposure of primary circuit elements when the removable element is in the test, disconnected, or fully withdrawn position. (D) Primary bus conductors and connections are covered with insulating material throughout. For special con-

point

703

pointer shift due to tapping

ing to the following rules: The longitude equals twice the tilt angle and the latitude is twice the angle whose cotangent is the negative of the axial ratio of the polarization ellipse. *Notes:* (1) For this definition the axial ratio carries a sign. (2) The points of the northern hemisphere of a *Poincare* sphere represent polarizations with a right-hand sense. The north pole represents left-hand circular polarization and the south pole right-hand circular polarization. The points of the equator represent all possible linear polarizations.

111

point (1) (for supervisory control or indication or telemeter selection) (power switchgear). All of the supervisory control or indication devices, in a system, exclusive of the common devices, in the master station and in the remote station that are necessary for: (A) Energizing the closing, opening, or other circuits of a unit, or set of units of switchgear or other equipment being controlled, or (B) Automatic indication of the closed or open or other positions of a unit, or set of units of switchgear or other equipment for which indications are being obtained, or (C) Connecting a telemeter transmitting equipment into the circuit to be measured and to transmit the telemeter reading over a channel to a telemeter receiving equipment. *Note:* A point may serve for any two or all three of the purposes described above; for example, when a supervisory system is used for the combined control and indication of remotely operated equipment, point (for supervisory control) and point (for supervisory indication) are combined into a single control and indication point.

103

(2) (positional notation). (A) The character, or the location of an implied symbol, that separates the integral part of a numerical expression from its fractional part. For example, it is called the binary point in binary notation and the decimal point in decimal notation. If the location of the point is assumed to remain fixed with respect to one end of the numerical expressions, a fixed-point system is being used. If the location of the point does not remain fixed with respect to one end of the numerical expression, but is regularly recalculated, then a floating-point system is being used. *Note:* A fixed-point system usually locates the point by some convention, while a floating-point system usually locates the point by expressing a power of the base. *See:* **branchpoint; breakpoint; checkpoint; entry point; fixed point; floating point; rerun point; variable point.**

210, 255, 77

(B) The character, or implied location of such a character, that separates the integral part of a numerical expression from the fractional part. Since the place to the left of the point has unit weight in the most commonly used systems, the point is sometimes called the units point, although it is frequently called the binary point in binary notation and the decimal point in decimal notation. *See:* **breakpoint; fixed point; floating point.**

235

(3) (lightning protection). The pointed piece of metal used at the upper end of the elevation rod to receive a lightning discharge.

328

point contact (semiconductors). A pressure contact between a semiconductor body and a metallic point. *See:* **semiconductor; semiconductor device.**

245

point detector. A device that is a part of a switch-operating mechanism and is operated by a rod connected to a switch, derail, or movable-point frog to indicate that the point is within a specified distance of the stock rail.

328

point equipment (point)(supervisory control, data acquisition, and automatic control). Elements of a supervisory system, exclusive of the basic common equipment, which are peculiar to and required for the performance of a discrete supervisory function. (1) Alarm point. Station (remote or master, or both) equipment(s) that inputs a signal to the alarm function. (2) Accumulator point. Station (remote or master, or both) equipment(s) that accepts a pulsing digital input signal to accumulate a total of pulse counts. (3) Analog point. Station, (remote or master, or both) equipment(s) that inputs an analog quantity to the analog function. (4) Control point. Station (remote or master, or both) equipment(s) that operates to perform the control function. (5) Indication (status) point. Station (remote or master, or both) equipment(s) that accepts a digital input signal for the function of indication. (6) Sequence of events point. Station (remote or master, or both) equipment(s) that accepts a digital input signal to perform the function of registering sequence of events. (7) Telemetering selection point. Station (remote or master, or both) equipment(s) for the selective operation of telemetering transmitting equipment to appropriate telemetering receiving equipment over an interconnecting communication channel. This type of point is more commonly used in electromechanical or stand-alone type of supervisory control. (8) Spare point. Point equipment that is not being utilized but is fully wired and equipped. (9) Wired point. Point for which all common equipment, wiring, and space are provided. To activate the point requires only the addition of plug-in hardware. (10) Space only point. Point for which cabinet space only is provided for future addition or wiring and other necessary plug-in equipment. *Note:* A point may serve for one or more of the purposes described above, for example, when a supervisory system is used for combined control and supervision of remotely operated equipment, a point for supervisory control and point for supervisory indication may be combined into a single control and indication point.

570

pointer (software). (1) An identifier that indicates the location of an item of data. (2) A data item whose value is the location of another data item. *See:* **data; identifier.**

434

pointer pusher (demand meter). The element that advances the maximum demand pointer in accordance with the demand and in integrated-demand meters is reset automatically at the end of each demand interval. *See:* **demand meter.**

328

pointer shift due to tapping. The displacement in the position of a moving element of an instrument that occurs when the instrument is tapped lightly. The