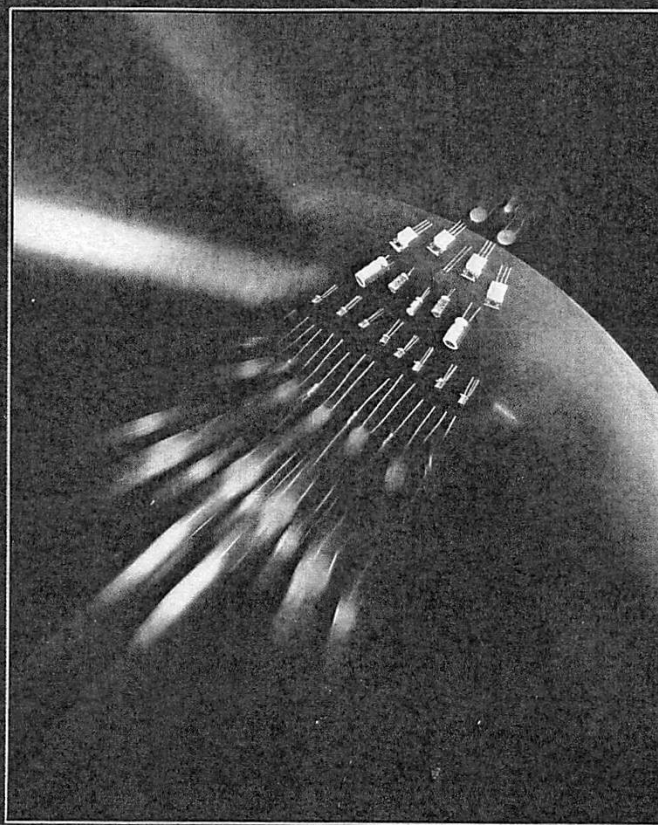


THE  
ILLUSTRATED  
DICTIONARY  
OF ELECTRONICS

FIFTH EDITION



RUFUS P. TURNER & STAN GIBILISCO

# The Illustrated Dictionary of Electronics

Fifth Edition

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Celsius scale • ceramet seal

**ABSOLUTE SCALE, FAHRENHEIT SCALE** (see conversion table in appendix B).

**cent** An audio-frequency interval of  $\frac{1}{100}$  of a half step. A half step is the frequency difference between two immediately adjacent keys on a piano.

**center-fed antenna** An antenna in which the feeders are connected to the center of the radiator.

**center feed** 1. Attaching a feeder or transmission line to the center of the radiator of an antenna. 2. Connection of signal-input terminals to the center of a coil. 3. Descriptive of paper tape whose feed holes are aligned with character hole centers. *Compare* ADVANCE FEED TAPE.

**center frequency** 1. The frequency, in a communications receiver, that is midway between the lower and upper 3 dB attenuation points. 2. The average frequency of a modulated carrier. 3. The carrier frequency of a modulated signal.

**centering control** In an oscilloscope circuit, a potentiometer used to position the image on the screen (particularly in the center). Separate controls are provided for horizontal and vertical centering.

**center loading** In a coil-loaded antenna, placement of the loading coil at the center of the radiator rather than at the (more common position) base of the radiator.

**center of beam** 1. In a directional antenna system, the direction, denoted by a straight ray, where the signal strength or response is the greatest. 2. In a beam of visible light, the geometric center of the spot produced when the beam strikes a surface perpendicular to the beam. 3. In a beam of visible light, the axis within the beam where the intensity is greatest.

**center of channel** The frequency that is midway between the lowest and highest frequency components of a communications channel.

**center of gravity** The point on, or in, an object about which the object balances in a gravitational field.

**center of mass** 1. The center of gravity. 2. The center of rotation in an orbiting system of objects.

**center of radiation** The point from which the energy radiated by an object appears to arrive.

**center tap** A connection made to the centermost turn of a coil or to the center-value point of a resistor, filament, or capacitor pair.

**center-tap keying** In a radiotelegraph transmitter, operation of a key (or keying relay) between ground and the center tap of the secondary of the transformer supplying filament power to the keyed stage.

**center-tapped coil** See CENTER-TAPPED WINDING.

**center-tapped filament** A tube or lamp filament having a tap at its center.

**center-tapped inductor** An inductor having a tap at half the total inductance.

**center-tapped potentiometer** A potentiometer having a tap at half the total resistance of the resistance element.

**center-tapped resistor** A fixed resistor having a tap at half the total resistance.

**center-tapped transformer** A transformer having one or more center-tapped windings.

**center-tapped winding** A winding having a tap at half the total number of turns.



CENTER-TAPPED WINDING

**center tracking frequency** In three-frequency alignment (tracking) of a circuit, the frequency between the upper and lower frequency limits (alignment or tracking points of the circuit).

**center wire** The straight wire cathode in a gaseous voltage-regulator tube or Geiger-Mueller tube.

**center-zero meter** A meter having its zero point at the center of the scale, e.g., a dc galvanometer.

**centi** Prefix meaning HUNDREDTH(S) ( $10^{-2}$ ). Abbreviation, c.

**centigrade scale** CELSIUS SCALE.

**centimeter** Abbreviation, cm. A unit of length equal to  $10^{-2}$  meter, or 0.3937 inch.

**centimeter-gram-second system** Abbreviation, cgs. The now-little-used system of units in which the centimeter is the unit of length; the gram, mass; and the mean solar second, time. Electrical units in the cgs system fall into two categories: ELECTROSTATIC and ELECTROMAGNETIC. The names of cgs electrostatic units have the prefix STAT (e.g., STATAMPERE, STATVOLT, etc.). Cgs electromagnetic units have the prefix AB (e.g., ABAMPERE, ABVOLT, etc.).

**centimeter waves** See MICROWAVES.

**centipoise** A cgs measure of the dynamic viscosity of liquids equal to  $10^{-2}$  poise.

**central processing unit** In a digital computer, the section containing the arithmetic and logic, control, and internal memory units. Also called central processor.

**Central Radio Propagation Laboratory** A government laboratory that studies radio propagation and collects, correlates, and analyzes data for predicting propagation conditions. The organization also studies methods of measuring propagation.

**centrifugal force** The force that urges the mass of a rotating body away from the axis of rotation. *Compare* CENTRIFUGAL FORCE.

**centrifugation potential** An electric potential that occurs in a colloidal solution when the solution is centrifuged.

**centrifugal switch** A switch actuated by centrifugal force, e.g., the automatic disconnection switch in a capacitor motor.

**centripetal force** The force which draws the mass of a rotating body toward the axis of rotation. *Compare* CENTRIFUGAL FORCE.

**Ceracircuit** A form of hybrid integrated circuit perfected by the Sprague Company.

**ceramal** See CERMET.

**ceramet seal** See CERAMIC-TO-METAL SEAL.

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**counterpoise ground system** A counterpoise with a radius such that resonance is obtained with a  $\frac{1}{4}$ -wavelength antenna operated at a height of more than  $\frac{1}{4}$  wavelength above actual ground. Usually such a system consists of three or four radials measuring  $\frac{1}{4}$  wavelength each and extending outward from the base of the antenna nearly parallel to the average terrain.

**counter tube** 1. A tube, such as the Geiger-Mueller tube, in which a penetrating radioactive particle ionizes a gas and produces an output pulse. 2. A flip-flop tube. 3. A tube operated so that it delivers one or more output pulses after receiving a certain number of input pulses.

**counter voltage** *See* BACK VOLTAGE and KICKBACK.

**counting-type frequency meter** A direct-reading analog or digital frequency meter which indicates the number of pulses (or cycles) per second applied to it.

**count-remaining technique** *See* COMPLEMENT-SETTING TECHNIQUE.

**couple** Two dissimilar metals in contact with each other or immersed in an electrolyte.

**coupled circuits** Circuits between which energy is transferred electrostatically, electromagnetically, by some combination of the two, or by direct connection.

**coupled impedance** The impedance which a circuit "sees", when it is coupled to another circuit. Thus, when the secondary of a transformer is terminated with an impedance, the primary sees a combination of that impedance and its own.

**coupler** A device for transferring energy between two circuits and employing capacitive coupling, direct coupling, inductive coupling, or some combination of these.

**coupling** The linking of two circuits or devices by electrostatic lines of force (*electrostatic*, or *capacitive*, coupling) or electromagnetic lines of force (*electromagnetic*, or *inductive*, coupling), or by direct connection (*direct* coupling) for the purpose of transferring energy from one to the other. *Also see* CAPACITIVE COUPLING, COEFFICIENT OF COUPLING, DIRECT COUPLING, INDUCTIVE COUPLING, MUTUAL INDUCTANCE.

**coupling aperture** A hole in a waveguide that is employed for the purpose of transmitting energy to the waveguide, or receiving energy from outside the waveguide.

**coupling capacitor** A capacitor employed to conduct ac energy from one circuit to another. *Also see* CAPACITIVE COUPLING.

**coupling coefficient** *See* COEFFICIENT OF COUPLING.

**coupling diode** A semiconductor diode connected between the stages of a direct-coupled amplifier. Correctly poled it acts as a high resistance between the stages when there is no signal and, hence does not pass the high dc operating voltage from one stage to the next. When a signal is present, however, the diode resistance decreases and the signal gets through.

**coupling efficiency** A measure of the effectiveness of a coupling system, i.e., the degree to which it delivers an undistorted signal of correct amplitude and phase.

**coupling loop** 1. A usually one-turn coil constituting one wind of a coupling transformer. 2. A small loop inserted into a waveguide to induce a microwave energy into it.

**coupling probe** A usually short, straight wire or pin protruding into a waveguide to couple microwave energy electrostatically into the latter, somewhat in the manner of an antenna.

**coupling transformer** A transformer employed primarily to transfer ac energy electromagnetically into or out of a circuit.

**covalent binding forces** In a crystal, the binding forces resulting from the sharing of valence electrons by neighboring atoms.

**covalent bonding** The binding together of the atoms of a material as a result of shared electrons or holes.

**coverage** 1. The area within which a broadcast or communication station can be reliably heard. 2. The shielding effectiveness of a coaxial cable.

**covered sine** Abbreviation, covers. The trigonometric functional equivalent of the versed sine of the complement of an angle, i.e., the difference between the sine of an angle and unity (1): covers  $a = 1 \sin a$ . *Also see* VERSED SINE.

**CP** Abbreviation of *chemically pure*.

**cp** 1. Abbreviation of CANDLE POWER. 2. Abbreviation of *central processor*.

**$C_{pk}$**  Symbol for PLATE-CATHODE CAPACITANCE of a tube.

**C power supply** *See* C BIAS SUPPLY.

**cps** 1. Abbreviation of CYCLES PER SECOND. (Cycles per second, to denote ac frequency, has been supplanted by HERTZ). 2. Abbreviation of *characters per second*.

**CPU** Abbreviation of CENTRAL PROCESSING UNIT.

**CQ** A general call signal used in radio communication, especially by amateur stations, to invite a response from any station that hears it.

**Cr** Symbol for CHROMIUM.

**cracked-carbon resistor** A high-stability resistor in which the resistance material is particulate carbon.

**cradle guard** *See* GUARD WIRE.

**cradlephone** A telephone in which the microphone and earphone are mounted on opposite ends of a handle which rests on the crossmember of a stand connected to a base containing the bells and dial. Also called *French phone*, *French telephone*, and *handset*.

**crate** A foundation unit into which modules are plugged to establish a circuit.

**crater lamp** A glow-discharge tube whose light-emitting element is a crater instead of the usual plate.

**crawl** 1. *See* CREEPING COMPONENT. 2. The credits (names of staff and their contribution to content) superimposed and moving usually vertically on a TV picture at the end of a program.

**crazing** The formation of tiny cracks in materials, particularly in such dielectrics as plastic and ceramic.

**creep** *See* COLD FLOW.

**creepage** Current leakage across the surface of a dielectric.

**creeping component** A quantity, such as current, voltage, or frequency, which slowly changes in value with time.

**crest factor** *See* AMPLITUDE FACTOR.

**crest value** The maximum amplitude of a composite current or voltage.