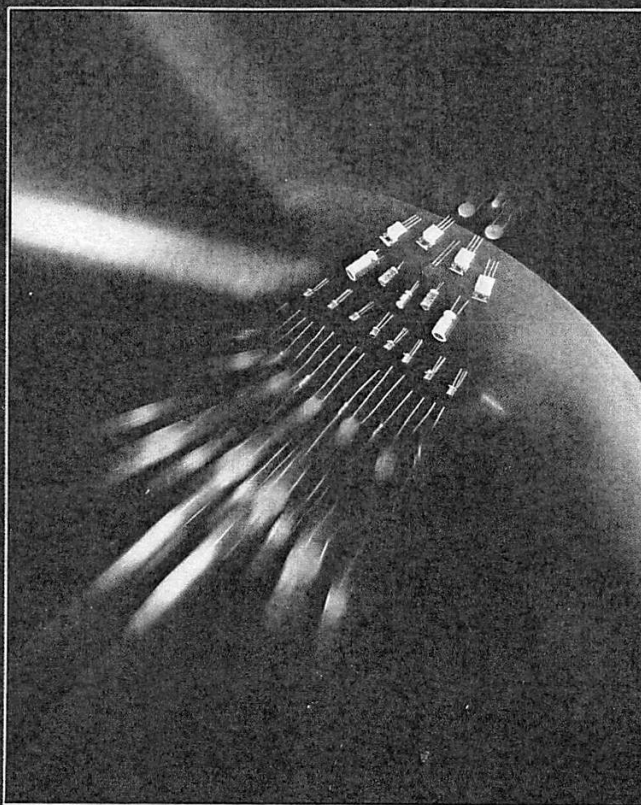


THE
ILLUSTRATED
DICTIONARY
OF ELECTRONICS

FIFTH EDITION



RUFUS P. TURNER & STAN GIBILISCO

The Illustrated Dictionary of Electronics

Fifth Edition

Rufus P. Turner
Stan Gibilisco

McGraw-Hill, Inc.

New York St. Louis San Francisco Auckland Bogotá Caracas
Lisbon London Madrid Mexico City Milan Montreal New Delhi
Paris San Juan São Paulo Singapore Sydney Tokyo Toronto

FIFTH EDITION
THIRD PRINTING

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Library of Congress Cataloging-in-Publication Data

Turner, Rufus P.

The illustrated dictionary of electronics / by Rufus P. Turner and Stan Gibilisco.

p. cm.

ISBN 0-8306-7345-8 ISBN 0-8306-3345-6 (pbk.)

1. Electronics—Dictionaries. I. Gibilisco, Stan. II. Title.

TK7804.T87 1990

621.381'03—dc20

90-22674

CIP

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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.

creeeping 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.