

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

Frank Jay
Editor in Chief

J. A. Goetz
Chairman
Standards Coordinating Committee
on Definitions (SCC 10)

Membership

Ashcroft, D. L.	Gelperin, D.	Radatz, J.
Azbill, D. C.	Guifrida, T. S.	Reymers, H. E.
Ball, R. D.	Goldberg, A. A.	Roberts, D. E.
Balaska, T. A.	Graube, M.	Rosenthal, S. W.
Bauer, J. T., Jr.	Griffin, C. H.	Rothenbukler, W. N.
Blasewitz, R. M.	Heirman, D. N.	Sabath, J.
Boberg, R. M.	Horch, J. W.	Shea, R. F.
Boulter, E. A.	James, R. E.	Showers, R. M.
Frewin, L. F.	Karady, G. G.	Skomal, E. N.
Bucholz, W.	Key, T. S.	Smith, T. R.
Buckley, F. J.	Kieburzt, R. B.	Smith, E. P.
Cannon, J. B.	Kincaid, M. R.	Smolin, M.
Cantrell, R. W.	Klein, R. J.	Snyder, J. H.
Chartier, V. L.	Klopfenstein, A.	Spurgin, A. J.
Cherney, E. A.	Koepfinger, J. L.	Stephenson, D.
Compton, O. R.	Lensner, W.	Stepniak, F.
Costrell, L.	Masiello, R. D.	Stewart, R. G.
Davis, A. M.	Meitzler, A. H.	Swinth, K. L.
Denbrock, F.	Michael, D. T.	Tice, G. D.
DiBlasio, R.	Michaels, E. J.	Turgel, R. S.
Donnan, R. A.	Migliaro, H. W.	Thomas, L. W., Sr.
Duvall, L. M.	Mikulecky, H. W.	Vance, E. E.
Elliott, C. J.	Moore, H. R.	Wagner, C. L.
Erickson, C. J.	Mukhedir, D.	Walter, F. J.
Flick, C.	Muller, C. R.	Weinschel, B. O.
Freeman, M.	O'Donnell, R. M.	Zitovsky, S. A.
	Petersons, O.	



Published by
The Institute of Electrical and Electronics Engineers, Inc
New York, NY

Library of Congress Catalog Number 88-082198

ISBN: 1-55937-000-9

© Copyright 1988

The Institute of Electrical and Electronics Engineers, Inc

*No part of this publication may be reproduced in any form,
in an electronic retrieval system or otherwise,
without the prior written permission of the publisher.*

November 3, 1988

SH12070

- to locate either a malfunction in the computer or a mistake in coding. *See: programmed check.* 210
- (2) (test, measurement and diagnostic equipment). A logical sequence of tests designed to locate a malfunction in the unit under test. 54
- diagnostic test (1) (ATLAS).** A test applied to a unit under test (UUT) with the purpose of isolating a fault to a lower level of assembly. 400
- (2) (test, measurement and diagnostic equipment). A test performed for the purpose of isolating a malfunction in the unit under test or confirming that there actually is a malfunction. 54
- dial (1) (industrial control).** A plate or disk, suitably marked, that served to indicate angular position, as for example the position of a handwheel. 206
- (2) (automatic control). A type of calling device used in automatic switching that, when wound up and released, generates pulses required for establishing connections. 192
- dialing (telephone switching systems).** The act of using a calling device. 55
- dialing pattern (telephone switching systems).** The implementation of a numbering plan with reference to an individual automatic exchange. 55
- dial-mobile telephone system (mobile communication).** A mobile communication system that can be interconnected with a telephone network by dialing, or a mobile communication system connected on a dial basis with a telephone network. *See: mobile communication system.* 181
- dial pulse (telephony)(dial-pulse address signaling systems).** A momentary interruption or change in the direct-current path of a signalling system to provide address information. 540
- dial pulsing (telephony)(dial-pulse address signaling systems).** A means of transmitting the address telephone number over a direct-current path. The current is interrupted, at the transmitting end, in a regular, momentary pattern. The number of interruptions corresponds to the digit being transmitted. 540
- dial pushing (telephone switching systems).** A means of pulsing consisting of regular, momentary interruptions of a direct or alternating current path at the sending end in which the number of interruptions corresponds to the value of the digit or character. 55
- dial tone (telephone switching systems).** The tone that indicates that the switching equipment is ready to receive signals from a calling device. 55
- dial train (register).** All the gear wheels and pinions used to interconnect the dial pointers. *See: watt-hour meter.* 328
- diametric rectifier circuit.** A circuit that employs two or more rectifying elements with a conducting period of 180 electrical degrees plus the commutating angle. *See: rectification.* 328
- diamond winding (rotating machinery).** A distributed winding in which the individual coils have the same shape and coil pitch. 63
- diaphragm (electrolytic cells).** A porous or permeable membrane separating anode and cathode compartments of an electrolytic cell from each other or from an intermediate compartments for the purpose of preventing admixture of anolyte and catholyte. *See: electrolytic cell.* 328
- diathermy (medical electronics).** The therapeutic use of alternating currents to generate heat within some part of the body, the frequency being greater than the maximum frequency for neuromuscular response. 192
- dibit (data transmission).** Two bits; two binary digits. 59
- dichotomizing search.** *See: binary search.*
- dichroic filter (fiber optics).** An optical filter designed to transmit light selectively according to wavelength (most often, a high-pass or low-pass filter). *See: optical filter.* 433
- dichroic mirror (fiber optics).** A mirror designed to reflect light selectively according to wavelength. *See: dichroic filter.* 433
- dichromate cell.** A cell having an electrolyte consisting of a solution of sulphuric acid and a dichromate. *See: electrochemistry.* 328
- die (semiconductor).** *See: chip; semiconductor.*
- dielectric (surge arresters).** A medium in which it is possible to maintain an electric field with little or no supply of energy from outside sources. 62
- dielectric constant (1) (dielectric).** That property which determines the electrostatic energy stored per unit volume for unit potential gradient. *Note:* This numerical value usually is given relative to a vacuum. *See: dielectric heating.* 14
- (2) (antennas). The real part of the complex dielectric constant. 111
- dielectric dissipation factor.** (1) The cotangent of the dielectric phase angle of a dielectric material or the tangent of the dielectric loss angle. *See: dielectric heating.* (2) The ratio of the loss index ϵ'' to the relative dielectric constant ϵ' . *See: relative complex dielectric constant.* 22
- dielectric filter.** *See: interference filter.*
- dielectric guide.** A waveguide in which the waves travel through solid dielectric material. *See: waveguide.* 328
- dielectric heater.** A device for heating normally insulating material by applying an alternating-current field to cause internal losses in the material. *Note:* The normal frequency range is above 10 megahertz. *See: interference.* 188
- dielectric lens.** A lens made of dielectric material and used for refraction of radio-frequency energy. *See: antenna; waveguide.* 244
- dielectric loss angle (rotating machinery).** δ The angle whose tangent is the dissipation factor. 22
- dielectric loss factor*.** *See: loss factor.*
- *Deprecated
- dielectric phase angle.** (1) The angular difference in phase between the sinusoidal alternating voltage applied to a dielectric and the component of the resulting alternating current having the same period as the voltage. *See: dielectric heating.* (2) The angle whose cotangent is the dissipation factor, or $\text{arc cot } \epsilon''/\epsilon'$. *See:*