

SEVENTH EDITION

M O D E R N
DICTIONARY
of
ELECTRONICS

RUDOLF F. GRAF



Xu Peicheng Ex. 1009, p. 1

**MODERN
DICTIONARY
of
ELECTRONICS**

SEVENTH EDITION

REVISED AND UPDATED



Rudolf F. Graf is an author whose name is well-known to engineers, technicians, and hobbyists around the world. He graduated as an electronics engineer from Brooklyn Polytechnic Institute and did his graduate work New York University. Mr. Graf has been active in the electronics industry for more than fifty years in capacities ranging from design and consulting engineer, chief engineer, chief instructor at electronics and television schools, and consulting editor. He also held various sales and marketing positions. Mr. Graf is the author or co-author of more than 150 technical articles published by major magazines. He has written about 50 books on electricity and electronics, with more than 2 million copies in print, including the best-selling *Video Scrambling & Descrambling for Satellite & Cable TV, Second Edition* and the *Circuits* series of books, both published by Newnes. A number of his books have been translated into several European languages as well as Chinese, Japanese, and Russian.

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Newnes

Boston Oxford Auckland Johannesburg Melbourne New Delhi

Xu Peicheng Ex. 1009, p. 4

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Library of Congress Cataloging-in-Publication Data

Graf, Rudolf F.
Modern dictionary of electronics / Rudolf F. Graf. — 7th ed.,
revised and updated.
p. cm.
ISBN 0-7506-9866-7 (alk. paper)
1. Electronics — Dictionaries. I. Title
TK7804.G67 1999
621.381'03 — dc21 99-17889
CIP

British Library Cataloguing-in-Publication Data

A catalogue record for this book is available from the British Library.

The publisher offers special discounts on bulk orders of this book.

For information, please contact:

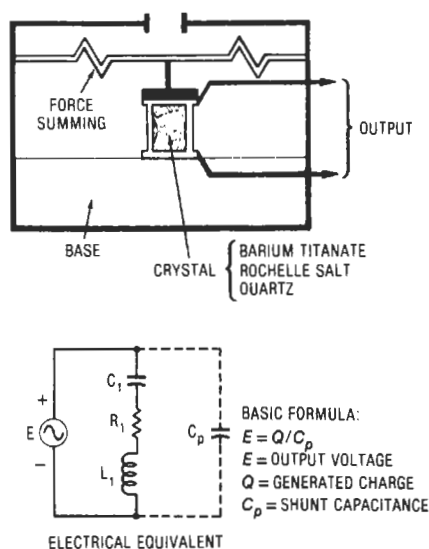
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10 9 8 7 6 5 4 3 2 1

Typeset by Laser Words, Madras, India
Printed in the United States of America

Xu Peicheng Ex. 1009, p. 5



Piezoelectric transducer.

piezoresistive transduction—A change in the resistance of a conductor or semiconductor caused by a change in the mechanical stress applied to it.

piggyback—See voltage corrector.

piggyback control—See cascade control.

piggyback twister—An electrically alterable, non-destructive-readout information-storage device that consists of a thin, narrow tape of magnetic material wound spirally around a fine copper conductor. A second similar tape is wrapped on top of the first to sense the stored information. A binary digit is stored at the intersection of a copper strap and a pair of these twister wires.

pigtail—1. Either a wire attached for terminating purposes to a shield, or a conductor extending from a small component. 2. The termination of a capacitor winding to its lead. 3. The disc-shaped head, at the end of a lead, that is attached to a capacitor winding. 4. A short wire extending from an electric or electronic device to serve as a jumper or ground connection.

pigtail splice—A splice made by tightly twisting the bared ends of parallel conductors together.

pigtail wire—1. Fine-stranded, extra-flexible, rope-lay lead wire. 2. A short piece of wire attached to a shield for terminating purposes, or the conductor extending from a small component.

pile—1. A nuclear reactor. So called because early reactors were piles of graphite blocks and uranium slugs. 2. (Voltaic) Invented by Volta in 1800, it was the first primary battery known to the modern world. The pile consisted of an arrangement of pairs of discs of copper and zinc, each pair separated by a disc of moistened pasteboard. Later Volta arranged a series of cups filled with brine, each containing a zinc and copper plate, and by connecting these together obtained an electric current.

pileup—Also called stack. 1. On a relay, a set of contact arms, assemblies, or springs fastened one on top of the other with layers of insulation separating them. 2. A departure from the base line because of a rapid accumulation of pulses.

pill—A microwave stripline termination.

pillbox antenna—A cylindrical parabolic reflector enclosed by two plates perpendicular to the cylinder and spaced to permit propagation of only one mode in the

desired direction of polarization. It is fed on the focal line.

pilot—1. In a transmission system, a signal wave, usually a single frequency, transmitted over the system to indicate or control its characteristics. 2. In a tape relay, instructions appearing in a routing line, relative to the transmission or handling of that message.

pilot cell—The storage-battery cell selected because its temperature, voltage, and specific gravity are assumed to be those of the entire battery.

pilot channel—A very narrow-band channel over which a single frequency, the pilot frequency, is transmitted to operate trouble alarms or automatic level regulators, or both.

pilot contacts—Contacts whose opening, closing, or transfer govern an operation of relays or similarly controlled devices.

pilot holes—Also called manufacturing holes or fabrication holes. Holes on a printed circuit board used as guides during manufacturing operations. Mounting holes in a part are sometimes used as pilot holes.

pilot lamp—A light that indicates whether a circuit is energized.

pilot light—Also known as a monitor light. 1. A light that, by means of position or color, indicates whether a control is functioning. 2. A light that indicates which of a number of normal conditions of a system or device exists. It is unlike an alarm light, which indicates an abnormal condition.

pilot regulator—A device for maintaining the receiving level of a carrier-derived circuit constant under varying attenuation conditions of the transmission line.

pilot spark—A low-power preliminary spark used in a gas-discharge tube to produce an ionized path for the large main spark discharge.

pilot subcarrier—A subcarrier used as a control signal in the reception of compatible FM stereophonic broadcasts.

pilot tone—1. A single frequency sent over a narrow channel to cause an alarm or automatic control to operate. 2. The signal included with the stereo information and applied in a subchannel on the FM signal, which is used to reform the suppressed subcarrier and synchronize the switching of the detectors in the stereo decoder. Pilot-tone frequency is 19 kHz (broadcast at the equivalent of 10 percent FM modulation), and doubling this (38 kHz) gives the subcarrier frequency. The pilot tone also activates the stereo indicator light.

pilot-type device—A device used in a circuit for control apparatus that carries electrical signals for directing the performance but does not carry the main power current.

pilot wire—An auxiliary conductor used with remote measuring devices or for operating apparatus at a distance.

pilot-wire regulator—An automatic device for controlling adjustable gains or losses associated with transmission circuits to compensate for transmission changes caused by temperature variations, the control usually depending on the resistance of a conductor or pilot wire having substantially the same temperature conditions as the conductors of the circuit being regulated.

pi mode—A mode of magnetron operation in which the fields of successive anode openings facing the interaction space differ in phase by π radians.

pin—Also called a prong or base pin. A terminal on a connector, plug, or tube base.

pinboard—A perforated board into which pins may be inserted to hold a diagram or a set of equipment.

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"How do you improve on a classic? Rudy Graf has done just that in the fully updated seventh edition of his **Modern Dictionary of Electronics**. In his elegantly practical style he defines over 28,000 terms drawn from a broad range of fields. In a world where electronics technology is growing so rapidly, this authoritative book belongs on everyone's reference shelf!"

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For easy reference, the author has provided definitions for standard abbreviations and equations as well as tables of SI (International System of Units) units, measurements, and schematic symbols.

Rudolf F. Graf is an author whose name is familiar to electronics professionals and hobbyists alike. Mr. Graf graduated from Brooklyn Polytechnic Institute as an electronics engineer, and did his graduate work at New York University. He has been active in the electronics industry for more than fifty years in capacities ranging from design and consulting engineer to chief instructor at electronics and television schools, as well as in sales and marketing. He currently lives in New York. His many books offer a practical and enjoyable approach to often complex material. Other Newnes titles by Mr. Graf include **Video Scrambling and Descrambling, Second Edition**, and his full five-book series on electronics circuits.

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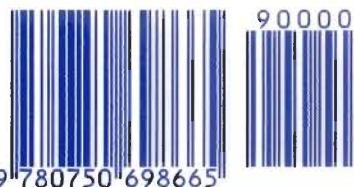


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An imprint of Butterworth-Heinemann

<http://www.newnespress.com>

ISBN 0-7506-9866-7



9 780750 698665

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