

SEVENTH EDITION

MODERN DICTIONARY of ELECTRONICS

RUDOLF F. GRAF

MODERN
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of
ELECTRONICS

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REVISED AND UPDATED

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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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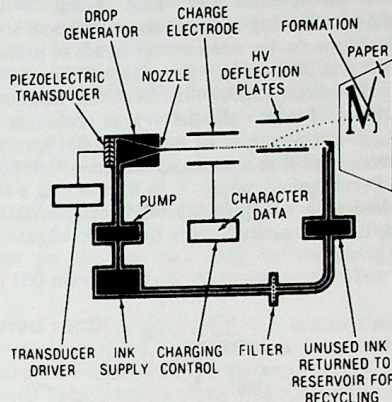
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ink-jet printer — input impedance

ink-jet printer—A nonimpact printer that forms letters and numbers by electrostatically aiming a jet of ink onto the paper.



Ink-jet printer.

ink-jet printing—A nonimpact printing technique that utilizes droplets of ink to form copy images. As the print head moves across the surface of the copy paper, it shoots a stream of tiny, electrostatically charged ink drops at the page, placing them precisely to form individual print characters.

ink-mist recording—Also called ink-vapor recording. In facsimile, electromechanical recording in which particles of an ink mist are deposited directly onto the record sheet.

ink recorder—The ink-filled pen or capillary tube that produces a graphic record.

ink recording—A type of mechanical facsimile recording in which an inked helix marks the record sheet.

ink-vapor recording—See ink-mist recording.

inleads—Those portions of the electrodes of a device that pass through an envelope or housing.

in-line heads—See stacked heads.

in-line procedures—1. In COBOL, the procedural instructions that are part of the main sequential and controlling flow of the program. 2. Short functions whose code is inserted by the compiler at the point of call, thereby avoiding the overhead of a normal function call.

in-line processing—The processing of data in random sequence not subject to preliminary sorting or editing.

in-line subroutine—A subroutine that is inserted directly into the linear operational sequence. Such a subroutine must be recopied at each point in a routine where it is needed.

in-line tuning—The method of tuning the intermediate-frequency strip of a superheterodyne receiver in which all the intermediate-frequency amplifier stages are made resonant to the same frequency.

inorganic electrolyte—A solution that conducts electricity due to the presence of ions of substances not of organic origin.

in phase—Two waves of the same frequency that pass through their maximum and minimum values of like polarity at the same instant are said to be in phase.

in-phase portion of the chrominance signal—That portion of the chrominance signal having the same phase as, or exactly the opposite phase from, that of the

subcarrier modulated by the I signal. This portion of the chrominance signal may lead or lag the quadrature portion by 90 electrical degrees.

input—1. The current, voltage, power or other driving force applied to a circuit or device. 2. The terminals or other places where current, voltage, power, or driving force may be applied to a circuit or device. 3. Data to be processed. 4. The process of transferring data from external computer storage to an internal storage. 5. The terminals, jack, or receptacle provided for the introduction of an electrical signal or electric power into a device or system.

input admittance—1. The reciprocal of the input impedance. 2. The admittance between the input terminals with the outputs shorted together.

input area—In a computer, the area of internal storage into which data from external storage is transferred.

input bias current—1. The current that must be supplied to each input of an IC operational amplifier to assure proper biasing of the differential-input-stage transistors. In specification sheets, this term refers to the average of the two input bias currents. 2. One-half the sum of the separate currents entering the two input terminals of a balanced amplifier. 3. The average of the two input currents of an operational amplifier.

input block—In a computer, a section of the internal storage reserved for receiving and processing input data.

input capacitance—1. The capacitance at the input terminals of a device. 2. The capacitance between gate and source terminals of a field-effect transistor at specified bias and frequency conditions, with the drain ac short-circuited to the source.

input channel—A channel through which a state is impressed on a device or logic element.

input common-mode range—The maximum input that can be applied to either input of an operational amplifier without causing damage or abnormal operation.

input common-mode rejection ratio—1. The ratio of the change in input voltage to the corresponding change in output voltage, divided by the open-loop voltage gain. 2. The ratio of the full differential voltage gain to the common-mode voltage gain.

input common-mode voltage range—The range of voltages on the input terminals of an operational amplifier for which the amplifier is operational. Note that the specifications are not guaranteed over the full common-mode voltage range unless specifically stated.

input device—1. The device or set of devices through which data is brought into another device. 2. A device such as a card reader or terminal keyboard that converts data from the form in which it has been received into electronic signals that can be interpreted by the computer.

input equipment—The equipment that introduces information into a computer.

input error voltage—The error voltage appearing across the input terminals of an operational amplifier when a feedback loop is applied around the amplifier.

input extender—A high-speed diode array used in a logic circuit when increased fan-in capability is required.

input formatting—The technique a system uses to put all entered data into a standard (or intelligible) format.

input gap—Also called buncher gap. In a microwave tube, the gap where the initial velocity modulation of the electron stream occurs.

input impedance—1. The impedance a transducer presents to a source. 2. The effective impedance seen looking into the input terminals of an amplifier; circuit details, signal level, and frequency must be specified. 3. The impedance that exists between the input terminals

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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 well known to electronics professionals and hobbyists. Mr. Graf graduated from Brooklyn College of Technology as an electronics engineer and completed his graduate work at New York University. He has been active in the electronics industry for over fifty years in capacities ranging from design and consulting engineer to chief engineer and 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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