

MODERN
DICTIONARY
of
ELECTRONICS

SEVENTH EDITION

REVISED AND UPDATED


Rudolf F. Graf



Boston Oxford Auckland Johannesburg Melbourne New Delhi


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For information, please contact:

Manager of Special Sales
Butterworth-Heinemann
225 Wildwood Avenue
Woburn, MA 01801-2041
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sending-end impedance — Also called the driving-point impedance. The ratio of an applied potential difference of a transmission line to the resultant current at the point where the potential difference is applied.

sending filter — A filter used at the transmitting terminal to restrict the transmitted frequency band.

sensation level — *See* level above threshold.

sense — 1. In navigation, the relationship between the change in indication of a radionavigational facility and the change in the navigational parameter being indicated. 2. In some navigational equipment, the property of permitting the resolution of 180° ambiguities. 3. To examine or determine the status of some system components. 4. To read holes in punched tape or cards.

sense amplifier — 1. A circuit used to sense low-level voltages such as those produced by magnetic or plated-wire memories and to amplify these signals to the logic voltage levels of the system. 2. A circuit used in communications-electronics equipment to determine a change of phase or voltage and to provide an automatic control function.

sense finder — In a direction finder, that portion which permits determination of direction without 180° ambiguity.

sense-reversing reflectivity — The characteristic of a reflector that reverses the sense of an incident ray. (For example, a perfect corner reflector is invisible to a circularly polarized radar because it reverses the sense.)

sense step — *See* secondary calibration.

sense switch — One of a series of switches on the console of the digital computer that permits the operator to control some parts of a program externally.

sense wire — A wire threaded through the core of a magnetic memory to detect whether a logical 1 or 0 is stored in the core when the core is interrogated by a read pulse. This technology is no longer in use.

sensing — 1. The process of determining the sense of an indication. 2. A technique used in a power supply regulator for monitoring the output voltage or current. In local sensing, the monitor points are the output terminals. In remote sensing, the monitor points are located at appropriate locations in the circuit being powered, connected by wire to sensing input terminals on the supply.

sensing element — *See* primary detector.

sensing field — The zone in which an object can be sensed by a proximity switch.

sensistor — A silicon resistor whose resistance varies with temperature, power, and time.

sensitive relay — 1. A relay requiring only a small current. It is used extensively in photoelectric circuits. 2. Any of a number of different types of relays requiring very low pickup power. Generally considered to be one requiring less than 100 milliwatts of pickup power.

sensitive volume — In a radiation-counter tube, the portion responding to a specific radiation.

sensitivity — 1. The minimum input signal required in a radio receiver or similar device to produce a specified output signal having a specified signal-to-noise ratio. This signal input may be expressed as power or voltage at a stipulated input network impedance. 2. Ratio of the response of a measuring device to the magnitude of the measured quantity. It may be expressed directly in divisions per volt, milliradians per microampere, etc., or indirectly by stating a property from which sensitivity can be computed (e.g., ohms per volt for a stated deflection). 3. The signal current developed in a camera tube per unit incident radiation density (i.e., per watt per unit area). Unless otherwise specified, the radiation is understood to be that of unfiltered incandescent source of 2854 K, and its density, which is generally measured in watts per unit

area, may then be expressed in lumens per foot. 4. The degree of response of an instrument or control unit to a change in the incoming signal. 5. In tape recording, the relative intensity of the magnetic signal recorded by a magnetizing field of a given intensity. 6. A measurement of the electrical output of a microphone for a given sound pressure level at its diaphragm. 7. The smallest input change that a DMM is able to display. It is equal to the least significant digit on the lowest measurement range. For example, a three-digit DMM with a 100-mV range has 100 μ V sensitivity. 8. Generally expressed in dBm at a specified impedance (usually 600 ohms), sensitivity is a measure of the lowest DTMF signal level that a receiver can detect. It represents an absolute threshold below which detection of a single frequency is not generated. 9. Measure of the ability of a device or circuit to react to a change in some input. 10. In television, a factor expressing the incident illumination on a specified scene required to produce a specified picture signal at the output terminals of a television camera. 11. A measure of relative output for a given input of a tape, microphone, etc. 12. Characteristic of a receiver that determines the minimum input signal strength required for a given signal output. Sensitivity is usually measured in microvolts (μ V).

sensitivity adjustment — Also called span adjustment. The control of the ratio of output signal to excitation voltage per unit measurand. Generally accomplished in a system by changing the gain of one or more amplifiers. The practice of placing excitation control components (such as potentiometers or rheostats) in series with the excitation to a transducer is a sensitivity adjustment for the system. However, in the latter case no significant change is introduced in the output-to-input ratio of the transducer.

sensitivity control — The control that adjusts the amplification of the radio-frequency amplifier stages and thereby makes the receiver more sensitive.

sensitivity-time control — Also called gain-time control or time gain. The portion of a system that varies the amplification of a radio receiver in a predetermined manner.

sensitizing (electrostatography) — The establishing of an electrostatic surface charge of uniform density on an insulating medium.

sensitometer — An instrument used to measure the sensitivity of light-sensitive materials.

sensitometry — Measurement of the light-response characteristics of photographic film.

sensor — 1. In a navigational system, the portion that perceives deviations from a reference and converts them into signals. 2. A component that converts mechanical energy into an electrical signal, either by generating the signal or by controlling an external electrical source. 3. *See* primary detector. 4. An information-pickup device. 5. A transducer designed to produce an electrical output proportional to some time-varying quantity, as temperature, illumination, pressure, etc. 6. The component of an instrument that converts an input signal into a quantity that is measured by another part of the instrument. 7. Any device that can detect the presence of, or a change in the level of, light, sound, capacitance, magnetic field, etc. 8. A device or component that reacts to a change; the reaction is then used to cause a control or instrument to function. For example, a thermistor changes resistance as temperature changes, and the resistance changes can be used in an electric circuit to vary current. 9. A transducer that converts a parameter at a test point to a form suitable for measurement by the test equipment. 10. A sensing element. The basic element of a transducer that usually changes some physical parameter to an electrical

emitting narrow beams placed one above the other to cover a vertical segment, azimuth information is obtained by horizontal scanning of the beam, and range information is obtained from the echo-return time.

stacked-diode laser—A type of laser used when a great amount of power is required. Avoiding the bulk of large numbers of optical lenses, this instrument offers high output intensity and a small emitting region at reasonable drive currents.

stacked dipole antenna—Antenna in which the antenna directivity is increased by providing a number of identical dipole elements, excited either directly or parasitically. The resultant radiation pattern will depend on the number of dipole elements used, the spacing and phase difference between the elements, and the relative magnitudes of the currents.

stacked heads—Also called inline heads. An arrangement of magnetic recording heads used for stereophonic sound. The two heads are directly in line, one above the other.

stack frame—A contiguous data area allocated for every activation of a routine; holds parameter values, local variables, temporary variables, and return-linkage information.

stack pointer—1. A register that comes into use when the microprocessor must service an interrupt—a high-priority call from an external device for the central processing unit to suspend temporarily its current operations and divert its attention to the interrupting task. A CPU must store the contents of its registers before it can move on to the interrupt operation. It does this in a stack, so named because information is added to its top, with the information already there being pushed further down. The stack thus is a last-in, first-out type of memory. The stack-pointer register contains the address of the next unused location in the stack. 2. The counter or register used to address a stack in the memory.

stage—1. A term usually applied to an amplifier to mean one step, especially if part of a multistep process; or the apparatus employed in such a step. 2. A hydraulic amplifier used in a servovalve. Servovalves may be single-stage, two-stage, three-stage, etc. 3. A single section of a multisection circuit or device.

stage-by-stage elimination—A method of locating trouble in electronic equipment by using a signal generator to introduce a test signal into each stage, one at a time, until the defective stage is found.

stage efficiency—Ratio of useful power (alternating current) delivered to the load to the power at the input (direct current).

stagger—Periodic positional error of the recorded spot along a recorded facsimile line.

staggered heads—An infrequently used arrangement of magnetic recording heads for stereophonic sound. The heads are $1\frac{1}{32}$ inch (30.95 mm) apart. Stereo tapes

recorded with staggered heads cannot be played on recorders using stacked heads, and vice versa.

staggered tuning—A means of producing a wide bandwidth in a multistage IF amplifier by tuning to different frequencies by a specified amount.

staggering—The offsetting of two channels of different carrier systems from exact sideband-frequency coincidence in order to avoid mutual interference.

staggering advantage—A reduction in intelligible crosstalk between identical channels of adjacent carrier systems as a result of using slightly different frequency allocations for the different systems.

stagger time—The interval between the times of actuation of any two contact sets.

stagger-tuned amplifier—An amplifier consisting of two or more stages, each tuned to a different frequency.

stagnation thermocouple—A type of thermocouple in which a high recovery factor is achieved by stagnating the flow in a space surrounding the junction. This results in a high response time as compared with an exposed junction.

staircase—A video test signal containing several steps at increasing luminance levels. The staircase signal is usually amplitude modulated by the subcarrier frequency and is useful for checking amplitude and phase linearities in video systems.

staircase generator—A special-purpose signal generator that produces an output that increases in steps; thus, its output waveform has the appearance of a staircase.

staircase signal—A waveform consisting of a series of discrete steps resembling a staircase.

stall torque—1. The torque that the rotor of an energized motor produces when restrained from motion. 2. The torque developed by a servomotor at speed in excess of 1 rpm but less than 0.5 percent of the synchronous speed with a rated voltage and frequency of the proper phase relationship applied to both windings. 3. See holding torque.

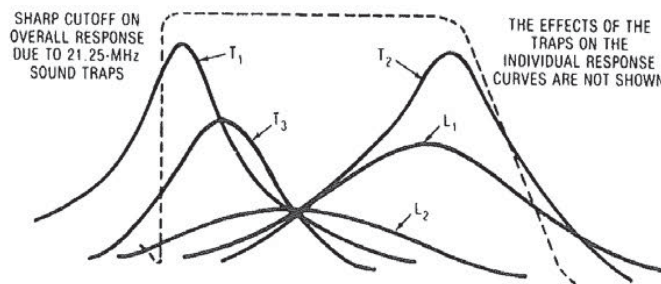
stalled-torque control—A control function used to control the drive torque at zero speed.

stalo—Acronym for stabilized local oscillator. A highly stable oscillator, usually stabilized by feedback from a very high- Q LC circuit such as a high- Q cavity. Used as part of a moving-target indication device in conjunction with a radar.

stamped printed wiring—Wiring that is produced by die stamping and that is bonded to an insulating base.

stamper—A negative (generally made of metal by electroforming) from which finished records are molded.

stand-alone—1. Pertaining to a device that requires no other piece of equipment along with it to complete its own operation or function. 2. A system or piece of equipment that is capable of doing its job without being



Staggered tuning.