

Symbol	Typ	Titel
G	Sektion	SECTION G — PHYSICS
G01	Untersektion	INSTRUMENTS
G01	Klasse	MEASURING (counting G06M); TESTING
G01R	Unterklasse	MEASURING ELECTRIC VARIABLES; MEASURING MAGNETIC VARIABLES (measuring physical variables of any kind by conversion into electric variables, <u>see</u> Note (4) following the title of class G01; measuring diffusion of ions in an electric field, e.g. electrophoresis, electro-osmosis, G01N; investigating non-electric or non-magnetic properties of materials by using electric or magnetic methods G01N; indicating correct tuning of resonant circuits H03J 3/12; monitoring electronic pulse counters H03K 21/40 ; monitoring operation of communication systems H04)
G01R 1/00	Hauptgruppe	<i>Details of instruments or arrangements of the types included in groups G01R 5/00-G01R 13/00 and G01R 31/00 (constructional details particular to arrangements for measuring the electric consumption G01R 11/02) [3, 2006.01]</i>
G01R 1/02	1-Punkt Untergruppe	. General constructional details (details of a kind applicable to measuring arrangements not specially adapted for a specific variable G01D 7/00)
G01R 1/04	2-Punkt Untergruppe	. . Housings; Supporting members; Arrangements of terminals
G01R 1/06	2-Punkt Untergruppe	. . Measuring leads; Measuring probes (G01R 19/145, G01R 19/165 take precedence; end pieces for leads H01R 11/00) [3]
G01R 1/067	3-Punkt Untergruppe	. . . Measuring probes [3]
G01R 1/07	4-Punkt Untergruppe	 Non contact-making probes [6]
G01R 1/073	4-Punkt Untergruppe	 Multiple probes [3]
G01R 1/08	2-Punkt Untergruppe	. . Pointers; Scales, Scale illumination
G01R 1/10	2-Punkt Untergruppe	. . Arrangements of bearings
G01R 1/12	3-Punkt Untergruppe	. . . of strip or wire bearings
G01R 1/14	2-Punkt Untergruppe	. . Braking arrangements; Damping arrangements
G01R 1/16	2-Punkt Untergruppe	. . Magnets
G01R 1/18	2-Punkt Untergruppe	. . Screening arrangements against electric or magnetic fields, e.g. against earth's field
G01R 1/20	1-Punkt Untergruppe	. Modifications of basic electric elements for use in electric measuring instruments; Structural combinations of such elements with such instruments
G01R 1/22	2-Punkt Untergruppe	. . Tong testers acting as secondary windings of current transformers (voltage or current isolation using transformers G01R 15/18)
G01R 1/24	2-Punkt Untergruppe	. . Transmission-line, e.g. waveguide, measuring sections, e.g. slotted section
G01R 1/26	3-Punkt Untergruppe	. . . with linear movement of probe
G01R 1/28	1-Punkt Untergruppe	. Provision in measuring instruments for reference values, e.g. standard voltage, standard waveform
G01R 1/30	1-Punkt Untergruppe	. Structural combination of electric measuring instruments with basic electronic circuits, e.g. with amplifier
G01R 1/36	1-Punkt Untergruppe	. Overload-protection arrangements or circuits for electric measuring instruments
G01R 1/38	1-Punkt Untergruppe	. Arrangements for altering the indicating characteristic, e.g. by modifying the air gap (circuits G01D 3/02)

Symbol	Typ	Titel
G01R 1/40	1-Punkt Untergruppe	. Modifications of instruments to indicate the maximum or the minimum value reached in a time interval, e.g. by maximum indicator pointer [3]
G01R 1/42	2-Punkt Untergruppe	. . thermally operated
G01R 1/44	1-Punkt Untergruppe	. Modifications of instruments for temperature compensation [2]
G01R 3/00	Hauptgruppe	Apparatus or processes specially adapted for the manufacture of measuring instruments
G01R 5/00	Hauptgruppe	Instruments for converting a single current or a single voltage into a mechanical displacement (vibration galvanometers G01R 9/02)
G01R 5/02	1-Punkt Untergruppe	. Moving-coil instruments
G01R 5/04	2-Punkt Untergruppe	. . with magnet external to the coil
G01R 5/06	2-Punkt Untergruppe	. . with core magnet
G01R 5/08	2-Punkt Untergruppe	. . specially adapted for wide angle deflection; with eccentrically-pivoted moving coil
G01R 5/10	1-Punkt Untergruppe	. String galvanometers
G01R 5/12	1-Punkt Untergruppe	. Loop galvanometers
G01R 5/14	1-Punkt Untergruppe	. Moving-iron instruments
G01R 5/16	2-Punkt Untergruppe	. . with pivoting magnet
G01R 5/18	2-Punkt Untergruppe	. . with pivoting soft iron, e.g. needle galvanometer
G01R 5/20	1-Punkt Untergruppe	. Induction instruments e.g. Ferraris instruments
G01R 5/22	1-Punkt Untergruppe	. Thermoelectric instruments (measuring effective values of currents or voltages using thermoconverters G01R 19/03)
G01R 5/24	2-Punkt Untergruppe	. . operated by elongation of a strip or wire or by expansion of a gas or fluid
G01R 5/26	2-Punkt Untergruppe	. . operated by deformation of a bimetallic element
G01R 5/28	1-Punkt Untergruppe	. Electrostatic instruments (combined with radiation detector G01T)
G01R 5/30	2-Punkt Untergruppe	. . Leaf electrometers
G01R 5/32	2-Punkt Untergruppe	. . Wire electrometers; Needle electrometers
G01R 5/34	2-Punkt Untergruppe	. . Quadrant electrometers
G01R 7/00	Hauptgruppe	Instruments capable of converting two or more currents or voltages into a single mechanical displacement (G01R 9/00 takes precedence)
G01R 7/02	1-Punkt Untergruppe	. for forming a sum or a difference
G01R 7/04	1-Punkt Untergruppe	. for forming a quotient (for measuring resistance G01R 27/08)
G01R 7/06	2-Punkt Untergruppe	. . moving-iron type
G01R 7/08	2-Punkt Untergruppe	. . moving-coil type, e.g. crossed-coil type
G01R 7/10	3-Punkt Untergruppe	. . . having more than two moving coils
G01R 7/12	1-Punkt Untergruppe	. for forming product
G01R 7/14	2-Punkt Untergruppe	. . moving-iron type
G01R 7/16	2-Punkt Untergruppe	. . having both fixed and moving coils, i.e. dynamometers

Symbol	Typ	Titel
G01R 7/18	3-Punkt Untergruppe	. . . with iron core magnetically coupling fixed and moving coils
G01R 9/00	Hauptgruppe	Instruments employing mechanical resonance
G01R 9/02	1-Punkt Untergruppe	. Vibration galvanometers, e.g. for measuring current
G01R 9/04	1-Punkt Untergruppe	. using vibrating reeds, e.g. for measuring frequency
G01R 9/06	2-Punkt Untergruppe	. . magnetically driven
G01R 9/08	2-Punkt Untergruppe	. . piezo-electrically driven
G01R 11/00	Hauptgruppe	Electromechanical arrangements for measuring time integral of electric power or current, e.g. of consumption (monitoring electric consumption of electrically-propelled vehicles B60L 3/00)
G01R 11/02	1-Punkt Untergruppe	. Constructional details (applicable to electric measuring instruments in general G01R 1/00)
G01R 11/04	2-Punkt Untergruppe	. . Housings; Supporting racks; Arrangements of terminals
G01R 11/06	2-Punkt Untergruppe	. . Magnetic circuits of induction meters [2]
G01R 11/067	3-Punkt Untergruppe	. . . Coils therefor [2]
G01R 11/073	3-Punkt Untergruppe	. . . Armatures therefor [2]
G01R 11/09	4-Punkt Untergruppe	 Disc armatures [2]
G01R 11/10	2-Punkt Untergruppe	. . Braking magnets; Damping arrangements
G01R 11/12	2-Punkt Untergruppe	. . Arrangements of bearings
G01R 11/14	3-Punkt Untergruppe	. . . with magnetic relief
G01R 11/16	2-Punkt Untergruppe	. . Adaptations of counters to electricity meters
G01R 11/17	2-Punkt Untergruppe	. . Compensating for errors; Adjusting or regulating means therefor [2]
G01R 11/18	3-Punkt Untergruppe	. . . Compensating for variations in ambient conditions [2]
G01R 11/185	4-Punkt Untergruppe	 Temperature compensation [2]
G01R 11/19	3-Punkt Untergruppe	. . . Compensating for errors caused by disturbing torque, e.g. rotating-field errors of polyphase meters [2]
G01R 11/20	3-Punkt Untergruppe	. . . Compensating for phase errors in induction meters [2]
G01R 11/21	3-Punkt Untergruppe	. . . Compensating for errors caused by damping effects of the current, e.g. adjustment in the overload range [2]
G01R 11/22	3-Punkt Untergruppe	. . . Adjusting torque, e.g. adjusting starting torque, adjusting of polyphase meters for obtaining equal torques [2]
G01R 11/23	3-Punkt Untergruppe	. . . Compensating for errors caused by friction, e.g. adjustment in the light-load range [2]
G01R 11/24	2-Punkt Untergruppe	. . Arrangements for avoiding or indicating fraudulent use [4]
G01R 11/25	2-Punkt Untergruppe	. . Arrangements for indicating or signalling faults [2, 4]
G01R 11/30	1-Punkt Untergruppe	. Dynamo-electric motor meters
G01R 11/32	2-Punkt Untergruppe	. . Watt-hour meters
G01R 11/34	2-Punkt Untergruppe	. . Ampère-hour meters
G01R 11/36	1-Punkt Untergruppe	. Induction meters, e.g. Ferraris meters (Ferraris instruments G01R 5/20)

Symbol	Typ	Titel
G01R 11/38	2-Punkt Untergruppe	. . for single-phase operation
G01R 11/40	2-Punkt Untergruppe	. . for polyphase operation
G01R 11/42	3-Punkt Untergruppe	. . . Circuitry therefor
G01R 11/46	1-Punkt Untergruppe	. Electrically-operated clockwork meters; Oscillatory meters; Pendulum meters
G01R 11/48	1-Punkt Untergruppe	. Meters specially adapted for measuring real or reactive components; Meters specially adapted for measuring apparent energy
G01R 11/50	2-Punkt Untergruppe	. . for measuring real component
G01R 11/52	2-Punkt Untergruppe	. . for measuring reactive component
G01R 11/54	2-Punkt Untergruppe	. . for measuring simultaneously at least two of the following three variables: real component, reactive component, apparent energy
G01R 11/56	1-Punkt Untergruppe	. Special tariff meters
G01R 11/57	2-Punkt Untergruppe	. . Multi-rate meters (G01R 11/63 takes precedence) [2]
G01R 11/58	3-Punkt Untergruppe	. . . Tariff-switching devices therefor [2]
G01R 11/60	2-Punkt Untergruppe	. . Subtraction meters; Meters measuring maximum or minimum-load hours
G01R 11/63	2-Punkt Untergruppe	. . Over-consumption meters, e.g. measuring consumption while a predetermined level of power is exceeded [2]
G01R 11/64	2-Punkt Untergruppe	. . Maximum meters, e.g. tariff for a period is based on maximum demand within that period
G01R 11/66	3-Punkt Untergruppe	. . . Circuitry
G01R 13/00	Hauptgruppe	Arrangements for displaying electric variables or waveforms (display by mechanical displacement only G01R 5/00, G01R 7/00, G01R 9/00; recording frequency spectrum G01R 23/18) [4]
G01R 13/02	1-Punkt Untergruppe	. for displaying measured electric variables in digital form (counters G06M; analogue/digital conversion in general H03M 1/00) [4]
G01R 13/04	1-Punkt Untergruppe	. for producing permanent records [4]
G01R 13/06	2-Punkt Untergruppe	. . Modifications for recording transient disturbances, e.g. by starting or accelerating a recording medium
G01R 13/08	2-Punkt Untergruppe	. . Electromechanical recording system using a mechanical direct-writing method
G01R 13/10	3-Punkt Untergruppe	. . . with intermittent recording by representing the variable by the length of a stroke or by the position of a dot
G01R 13/12	2-Punkt Untergruppe	. . Chemical recording, e.g. clydonographs (G01R 13/14 takes precedence)
G01R 13/14	2-Punkt Untergruppe	. . Recording on a light-sensitive material
G01R 13/16	2-Punkt Untergruppe	. . Recording on a magnetic medium
G01R 13/18	3-Punkt Untergruppe	. . . using boundary displacement
G01R 13/20	1-Punkt Untergruppe	. Cathode-ray oscilloscopes (cathode-ray tubes H01J 31/00)
G01R 13/22	2-Punkt Untergruppe	. . Circuits therefor (circuits for generating pulses, e.g. sawtooth waveforms H03K 3/00)
G01R 13/24	3-Punkt Untergruppe	. . . Time-base deflection circuits
G01R 13/26	3-Punkt Untergruppe	. . . Circuits for controlling the intensity of the electron beam (brilliance control H01J 29/98)

Symbol	Typ	Titel
G01R 13/28	3-Punkt Untergruppe	. . . Circuits for simultaneous or sequential presentation of more than one variable (electronic switches H03K 17/00)
G01R 13/30	3-Punkt Untergruppe	. . . Circuits for inserting reference markers, e.g. for timing, for calibrating, for frequency marking
G01R 13/32	3-Punkt Untergruppe	. . . Circuits for displaying non-recurrent functions such as transients; Circuits for triggering; Circuits for synchronisation; Circuits for time-base expansion
G01R 13/34	3-Punkt Untergruppe	. . . Circuits for representing a single waveform by sampling, e.g. for very high frequencies (sample-and-hold arrangements G11C 27/02) [2]
G01R 13/36	1-Punkt Untergruppe	. using length of glow discharge, e.g. glowlight oscilloscopes (discharge tubes H01J) [4]
G01R 13/38	1-Punkt Untergruppe	. using the steady or oscillatory displacement of a light beam by an electromechanical measuring system (such measuring systems <u>per se</u> G01R 5/00, G01R 7/00, G01R 9/00) [4]
G01R 13/40	1-Punkt Untergruppe	. using modulation of a light beam otherwise than by mechanical displacement, e.g. by Kerr effect [4]
G01R 13/42	1-Punkt Untergruppe	. Instruments using length of spark discharge, e.g. by measuring maximum separation of electrodes to produce spark
G01R 15/00	Hauptgruppe	<i>Details of measuring arrangements of the types provided for in groups G01R 17/00-G01R 29/00, G01R 33/00-G01R 33/26 and G01R 35/00 (details of instruments G01R 1/00; measuring leads, measuring probes G01R 1/06; overload protection arrangements G01R 1/36; circuits for correcting the transfer function G01D 3/02) [1, 2006.01]</i>
G01R 15/04	1-Punkt Untergruppe	. Voltage dividers [6]
G01R 15/06	2-Punkt Untergruppe	. . having reactive components, e.g. capacitive transformer [6]
G01R 15/08	1-Punkt Untergruppe	. Circuits for altering the measuring range
G01R 15/09	2-Punkt Untergruppe	. . Autoranging circuits [6]
G01R 15/12	1-Punkt Untergruppe	. Circuits for multi-testers, e.g. for measuring voltage, current, or impedance at will
G01R 15/14	1-Punkt Untergruppe	. Adaptations providing voltage or current isolation, e.g. for high-voltage or high-current networks (voltage dividers G01R 15/04) [6]
G01R 15/16	2-Punkt Untergruppe	. . using capacitive devices [6]
G01R 15/18	2-Punkt Untergruppe	. . using inductive devices, e.g. transformers [6]
G01R 15/20	2-Punkt Untergruppe	. . using galvano-magnetic devices, e.g. Hall-effect devices [6]
G01R 15/22	2-Punkt Untergruppe	. . using light-emitting devices, e.g. LED, optocouplers [6]
G01R 15/24	2-Punkt Untergruppe	. . using light-modulating devices [6]
G01R 15/26	2-Punkt Untergruppe	. . using modulation of waves other than light, e.g. radio or acoustic waves [6]
G01R 17/00	Hauptgruppe	Measuring arrangements involving comparison with a reference value, e.g. bridge
G01R 17/02	1-Punkt Untergruppe	. Arrangements in which the value to be measured is automatically compared with a reference value
G01R 17/04	2-Punkt Untergruppe	. . in which the reference value is continuously or periodically swept over the range of values to be measured
G01R 17/06	2-Punkt Untergruppe	. . Automatic balancing arrangements
G01R 17/08	3-Punkt Untergruppe	. . . in which a force or torque representing the measured value is balanced by a force or torque representing the reference value
G01R 17/10	1-Punkt Untergruppe	. ac or dc measuring bridges (automatic comparison or re-balancing arrangements G01R 17/02)

Symbol	Typ	Titel
G01R 17/12	2-Punkt Untergruppe	. . using comparison of currents, e.g. bridges with differential current output
G01R 17/14	2-Punkt Untergruppe	. . with indication of measured value by calibrated null indicator, e.g. percent bridge, tolerance bridge (G01R 17/12, G01R 17/16 take precedence)
G01R 17/16	2-Punkt Untergruppe	. . with discharge tubes or semiconductor devices in one or more arms of the bridge, e.g. voltmeter using a difference amplifier
G01R 17/18	2-Punkt Untergruppe	. . with more than four branches
G01R 17/20	1-Punkt Untergruppe	. ac or dc potentiometric measuring arrangements (automatic comparison or re-balancing arrangements G01R 17/02)
G01R 17/22	2-Punkt Untergruppe	. . with indication of measured value by calibrated null indicator
G01R 19/00	Hauptgruppe	Arrangements for measuring currents or voltages or for indicating presence or sign thereof (G01R 5/00 takes precedence; for measuring bioelectric currents or voltages A61B 5/04) [4]
G01R 19/02	1-Punkt Untergruppe	. Measuring effective values, i.e. root-mean-square values
G01R 19/03	2-Punkt Untergruppe	. . using thermoconverters [4]
G01R 19/04	1-Punkt Untergruppe	. Measuring peak values of ac or of pulses [2]
G01R 19/06	1-Punkt Untergruppe	. Measuring real component; Measuring reactive component
G01R 19/08	1-Punkt Untergruppe	. Measuring current density
G01R 19/10	1-Punkt Untergruppe	. Measuring sum, difference, or ratio
G01R 19/12	1-Punkt Untergruppe	. Measuring rate of change
G01R 19/14	1-Punkt Untergruppe	. Indicating direction of current; Indicating polarity of voltage
G01R 19/145	1-Punkt Untergruppe	. Indicating the presence of current or voltage [3]
G01R 19/15	2-Punkt Untergruppe	. . Indicating the presence of current [3]
G01R 19/155	2-Punkt Untergruppe	. . Indicating the presence of voltage [3]
G01R 19/165	1-Punkt Untergruppe	. Indicating that current or voltage is either above or below a predetermined value or within or outside a predetermined range of values (circuits with regenerative action, e.g. Schmitt trigger H03K 3/00; threshold switches H03K 17/00) [3]
G01R 19/17	2-Punkt Untergruppe	. . giving an indication of the number of times this occurs [3]
G01R 19/175	1-Punkt Untergruppe	. Indicating the instants of passage of current or voltage through a given value, e.g. passage through zero [3]
G01R 19/18	1-Punkt Untergruppe	. using conversion of dc into ac, e.g. with choppers
G01R 19/20	2-Punkt Untergruppe	. . using transducers
G01R 19/22	1-Punkt Untergruppe	. using conversion of ac into dc
G01R 19/25	1-Punkt Untergruppe	. using digital measurement techniques (arrangements for displaying measured electric variables in digital form G01R 13/02) [3]
G01R 19/252	2-Punkt Untergruppe	. . using analogue/digital converters of the type with conversion of voltage or current into frequency and measuring of this frequency [4]
G01R 19/255	2-Punkt Untergruppe	. . using analogue/digital converters of the type with counting of pulses during a period of time proportional to voltage or current, delivered by a pulse generator with fixed frequency [4]

Symbol	Typ	Titel
G01R 19/257	2-Punkt Untergruppe	. . using analogue/digital converters of the type with comparison of different reference values with the value of voltage or current, e.g. using step-by-step method [4]
G01R 19/28	1-Punkt Untergruppe	. adapted for measuring in circuits having distributed constants
G01R 19/30	1-Punkt Untergruppe	. Measuring the maximum or the minimum value of current or voltage reached in a time interval (G01R 19/04 takes precedence; modifications of instruments to indicate the maximum or the minimum value reached in a time interval G01R 1/40) [2, 3]
G01R 19/32	1-Punkt Untergruppe	. Compensating for temperature change (modifications of instruments for temperature compensation G01R 1/44) [2]
G01R 21/00	Hauptgruppe	Arrangements for measuring electric power or power factor (G01R 7/12 takes precedence) [4]
G01R 21/01	1-Punkt Untergruppe	. in circuits having distributed constants (G01R 21/04, G01R 21/07, G01R 21/09, G01R 21/12 take precedence) [2]
G01R 21/02	1-Punkt Untergruppe	. by thermal methods [2]
G01R 21/04	2-Punkt Untergruppe	. . in circuits having distributed constants
G01R 21/06	1-Punkt Untergruppe	. by measuring current and voltage (G01R 21/08-G01R 21/133 take precedence) [4]
G01R 21/07	2-Punkt Untergruppe	. . in circuits having distributed constants (G01R 21/09 takes precedence) [2]
G01R 21/08	1-Punkt Untergruppe	. by using galvanomagnetic-effect devices, e.g. Hall-effect devices (such devices <u>per se</u> H01L) [2]
G01R 21/09	2-Punkt Untergruppe	. . in circuits having distributed constants [2]
G01R 21/10	1-Punkt Untergruppe	. by using square-law characteristics of circuit elements, e.g. diodes, to measure power absorbed by loads of known impedance (G01R 21/02 takes precedence) [2]
G01R 21/12	2-Punkt Untergruppe	. . in circuits having distributed constants
G01R 21/127	1-Punkt Untergruppe	. by using pulse modulation (G01R 21/133 takes precedence) [4]
G01R 21/133	1-Punkt Untergruppe	. by using digital technique [4]
G01R 21/14	1-Punkt Untergruppe	. Compensating for temperature change [2]
G01R 22/00	Hauptgruppe	Arrangements for measuring time integral of electric power or current, e.g. electricity meters (electromechanical arrangements therefor G01R 11/00 ; monitoring electric consumption of electrically-propelled vehicles B60L 3/00) [4, 2006.01]
G01R 22/02	1-Punkt Untergruppe	. by electrolytic methods [4]
G01R 22/04	1-Punkt Untergruppe	. by calorimetric methods [4]
G01R 22/06	1-Punkt Untergruppe	. by electronic methods [2006.01]
G01R 22/08	2-Punkt Untergruppe	. . using analogue techniques [2006.01]
G01R 22/10	2-Punkt Untergruppe	. . using digital techniques [2006.01]
G01R 23/00	Hauptgruppe	Arrangements for measuring frequencies; Arrangements for analysing frequency spectra (frequency discriminators H03D)
G01R 23/02	1-Punkt Untergruppe	. Arrangements for measuring frequency, e.g. pulse repetition rate; Arrangements for measuring period of current or voltage (measuring short time intervals G04F)
G01R 23/04	2-Punkt Untergruppe	. . adapted for measuring in circuits having distributed constants
G01R 23/06	2-Punkt Untergruppe	. . by converting frequency into an amplitude of current or voltage
G01R 23/07	3-Punkt Untergruppe	. . . using response of circuits tuned on resonance, e.g. grid-drip meter [2]

Symbol	Typ	Titel
G01R 23/08	3-Punkt Untergruppe	. . . using response of circuits tuned off resonance
G01R 23/09	3-Punkt Untergruppe	. . . using analogue integrators, e.g. capacitors establishing a mean value by balance of input signals and defined discharge signals or leakage (radiation-measuring instruments in which pulses generated by a radiation detector are integrated G01T 1/15) [2]
G01R 23/10	2-Punkt Untergruppe	. . by converting frequency into a train of pulses, which are then counted
G01R 23/12	2-Punkt Untergruppe	. . by converting frequency into phase shift
G01R 23/14	2-Punkt Untergruppe	. . by heterodyning; by beat-frequency comparison (generation of oscillations by beating unmodulated signals of different frequencies H03B 21/00) [2]
G01R 23/15	2-Punkt Untergruppe	. . Indicating that frequency of pulses is either above or below a predetermined value or within or outside a predetermined range of values, by making use of non-linear or digital elements [3]
G01R 23/16	1-Punkt Untergruppe	. Spectrum analysis; Fourier analysis
G01R 23/163	2-Punkt Untergruppe	. . adapted for measuring in circuits having distributed constants [3]
G01R 23/165	2-Punkt Untergruppe	. . using filters [3]
G01R 23/167	3-Punkt Untergruppe	. . . with digital filters [3]
G01R 23/17	2-Punkt Untergruppe	. . with optical auxiliary devices [3]
G01R 23/173	2-Punkt Untergruppe	. . Wobulating devices similar to swept panoramic receivers (panoramic receivers <u>per se</u> H03J 7/32) [3]
G01R 23/175	2-Punkt Untergruppe	. . by delay means, e.g. tapped delay lines [3]
G01R 23/177	2-Punkt Untergruppe	. . Analysis of very low frequencies [3]
G01R 23/18	2-Punkt Untergruppe	. . with provision for recording frequency spectrum
G01R 23/20	2-Punkt Untergruppe	. . Measurement of non-linear distortion
G01R 25/00	Hauptgruppe	Arrangements for measuring phase angle between a voltage and a current or between voltages or currents (measuring power factor G01R 21/00; measuring position of individual pulses in a pulse train G01R 29/02; phase discriminators H03D) [2]
G01R 25/02	1-Punkt Untergruppe	. in circuits having distributed constants
G01R 25/04	1-Punkt Untergruppe	. involving adjustment of a phase shifter to produce a predetermined phase difference, e.g. zero difference
G01R 25/06	1-Punkt Untergruppe	. employing quotient instrument
G01R 25/08	1-Punkt Untergruppe	. by counting of standard pulses (measuring time intervals G04F) [2]
G01R 27/00	Hauptgruppe	Arrangements for measuring resistance, reactance, impedance, or electric characteristics derived therefrom
G01R 27/02	1-Punkt Untergruppe	. Measuring real or complex resistance, reactance, impedance, or other two-pole characteristics derived therefrom, e.g. time constant (by measuring phase angle only G01R 25/00)
G01R 27/04	2-Punkt Untergruppe	. . in circuits having distributed constants
G01R 27/06	3-Punkt Untergruppe	. . . Measuring reflection coefficients; Measuring standing-wave ratio
G01R 27/08	2-Punkt Untergruppe	. . Measuring resistance by measuring both voltage and current
G01R 27/10	3-Punkt Untergruppe	. . . using two-coil or crossed-coil instruments forming quotient
G01R 27/12	4-Punkt Untergruppe	 using hand generators, e.g. meggers

Symbol	Typ	Titel
G01R 27/14	2-Punkt Untergruppe	. . Measuring resistance by measuring current or voltage obtained from a reference source (G01R 27/16, G01R 27/20, G01R 27/22 take precedence)
G01R 27/16	2-Punkt Untergruppe	. . Measuring impedance of element or network through which a current is passing from another source, e.g. cable, power line
G01R 27/18	3-Punkt Untergruppe	. . . Measuring resistance to earth
G01R 27/20	2-Punkt Untergruppe	. . Measuring earth resistance; Measuring contact resistance of earth connections, e.g. plates
G01R 27/22	2-Punkt Untergruppe	. . Measuring resistance of fluids (measuring vessels, electrodes therefor G01N 27/07)
G01R 27/26	2-Punkt Untergruppe	. . Measuring inductance or capacitance; Measuring quality factor, e.g. by using the resonance method; Measuring loss factor; Measuring dielectric constants
G01R 27/28	1-Punkt Untergruppe	. Measuring attenuation, gain, phase shift, or derived characteristics of electric four-pole networks, i.e. two-port networks; Measuring transient response (in line transmission systems H04B 3/46)
G01R 27/30	2-Punkt Untergruppe	. . with provision for recording characteristics, e.g. by plotting Nyquist diagram
G01R 27/32	2-Punkt Untergruppe	. . in circuits having distributed constants [2]
G01R 29/00	Hauptgruppe	Arrangements for measuring or indicating electric quantities not covered by groups G01R 19/00-G01R 27/00
G01R 29/02	1-Punkt Untergruppe	. Measuring characteristics of individual pulses, e.g. deviation from pulse flatness, rise time, duration (of amplitude G01R 19/00; of repetition rate G01R 23/00; of phase difference of two cyclic pulse trains G01R 25/00; monitoring pattern of pulse trains H03K 5/19) [3]
G01R 29/027	2-Punkt Untergruppe	. . Indicating that a pulse characteristic is either above or below a predetermined value or within or beyond a predetermined range of values [3]
G01R 29/033	3-Punkt Untergruppe	. . . giving an indication of the number of times this occurs [3]
G01R 29/04	1-Punkt Untergruppe	. Measuring form factor, i.e. quotient of root-mean-square value and arithmetic mean of instantaneous value; Measuring peak factor, i.e. quotient of maximum value and root-mean-square value
G01R 29/06	1-Punkt Untergruppe	. Measuring depth of modulation
G01R 29/08	1-Punkt Untergruppe	. Measuring electromagnetic field characteristics
G01R 29/10	2-Punkt Untergruppe	. . Radiation diagrams of aeriels
G01R 29/12	1-Punkt Untergruppe	. Measuring electrostatic fields
G01R 29/14	2-Punkt Untergruppe	. . Measuring field distribution
G01R 29/16	1-Punkt Untergruppe	. Measuring asymmetry of polyphase networks
G01R 29/18	1-Punkt Untergruppe	. Indicating phase sequence; Indicating synchronism
G01R 29/20	1-Punkt Untergruppe	. Measuring number of turns; Measuring transformation ratio or coupling factor of windings (calibrating instrument transformers G01R 35/02)
G01R 29/22	1-Punkt Untergruppe	. Measuring piezo-electric properties
G01R 29/24	1-Punkt Untergruppe	. Arrangements for measuring quantities of charge (electrostatic instruments G01R 5/28; indicating presence of current G01R 19/15; arrangements for measuring time integral of electric power or current G01R 22/00) [2]
G01R 29/26	1-Punkt Untergruppe	. Measuring noise figure; Measuring signal-to-noise ratio [2]
G01R 31/00	Hauptgruppe	Arrangements for testing electric properties; Arrangements for locating electric faults; Arrangements for electrical testing characterised by what is being tested not provided for elsewhere (measuring leads, measuring probes G01R 1/06; indicating electrical condition of

Symbol	Typ	Titel
switchgear or protective devices H01H 71/04, H01H 73/12, H02B 11/10, H02H 3/04; testing or measuring semiconductors or solid state devices during manufacture H01L 21/66; testing line transmission systems H04B 3/46)		
G01R 31/01	1-Punkt Untergruppe	. Subjecting similar articles in turn to test, e.g. "go/no-go" tests in mass production; Testing objects at points as they pass through a testing station (G01R 31/18 takes precedence) [6]
G01R 31/02	1-Punkt Untergruppe	. Testing of electric apparatus, lines, or components for short-circuits, discontinuities, leakage, or incorrect line connection
G01R 31/04	2-Punkt Untergruppe	. . Testing connections, e.g. of plugs, of non-disconnectable joints
G01R 31/06	2-Punkt Untergruppe	. . Testing of electric windings, e.g. for polarity (measuring number of turns, transformation ratio, or coupling factor G01R 29/20)
G01R 31/07	2-Punkt Untergruppe	. . Testing of fuses (means for indicating condition of fuse structurally associated with the fuse H01H 85/30) [6]
G01R 31/08	1-Punkt Untergruppe	. Locating faults in cables, transmission lines, or networks (emergency protective circuit arrangements H02H)
G01R 31/10	2-Punkt Untergruppe	. . by increasing destruction at fault, e.g. burning-in by using a pulse generator operating a special programme
G01R 31/11	2-Punkt Untergruppe	. . using pulse-reflection methods
G01R 31/12	1-Punkt Untergruppe	. Testing dielectric strength or breakdown voltage
G01R 31/14	2-Punkt Untergruppe	. . Circuits therefor
G01R 31/16	2-Punkt Untergruppe	. . Construction of testing vessels; Electrodes therefor
G01R 31/18	2-Punkt Untergruppe	. . Subjecting similar articles in turn to test, e.g. "go/no-go" tests in mass production
G01R 31/20	2-Punkt Untergruppe	. . Preparation of articles or specimens to facilitate testing
G01R 31/24	1-Punkt Untergruppe	. Testing of discharge tubes (during manufacture H01J 9/42) [2]
G01R 31/25	2-Punkt Untergruppe	. . Testing of vacuum tubes [2]
G01R 31/26	1-Punkt Untergruppe	. Testing of individual semiconductor devices (measurement of impurity content of materials G01N) [2]
G01R 31/265	2-Punkt Untergruppe	. . Contactless testing [6]
G01R 31/27	2-Punkt Untergruppe	. . Testing of devices without physical removal from the circuit of which they form part, e.g. compensating for effects due to surrounding elements [6]
G01R 31/28	1-Punkt Untergruppe	. Testing of electronic circuits, e.g. by signal tracer (testing for short-circuits, discontinuities, leakage or incorrect line connection G01R 31/02; checking computers G06F 11/00; checking static stores for correct operation or testing static stores during standby or offline operation G11C 29/00)
G01R 31/30	2-Punkt Untergruppe	. . Marginal testing, e.g. by varying supply voltage (marginal testing of computers G06) [2]
G01R 31/302	2-Punkt Untergruppe	. . Contactless testing (non contact-making probes G01R 1/07) [5]
G01R 31/303	3-Punkt Untergruppe	. . . of integrated circuits (G01R 31/305-G01R 31/315 take precedence) [6]
G01R 31/304	3-Punkt Untergruppe	. . . of printed or hybrid circuits (G01R 31/305-G01R 31/315 take precedence) [6]
G01R 31/305	3-Punkt Untergruppe	. . . using electron beams [5]
G01R 31/306	4-Punkt Untergruppe	 of printed or hybrid circuits [6]
G01R 31/307	4-Punkt Untergruppe	 of integrated circuits [6]

Symbol	Typ	Titel
G01R 31/308	3-Punkt Untergruppe	. . . using non-ionising electromagnetic radiation, e.g. optical radiation [5]
G01R 31/309	4-Punkt Untergruppe	 of printed or hybrid circuits [6]
G01R 31/311	4-Punkt Untergruppe	 of integrated circuits [6]
G01R 31/312	3-Punkt Untergruppe	. . . by capacitive methods [5]
G01R 31/315	3-Punkt Untergruppe	. . . by inductive methods [5]
G01R 31/316	2-Punkt Untergruppe	. . Testing of analog circuits [6]
G01R 31/3161	3-Punkt Untergruppe	. . . Marginal testing [6]
G01R 31/3163	3-Punkt Untergruppe	. . . Functional testing [6]
G01R 31/3167	2-Punkt Untergruppe	. . Testing of combined analog and digital circuits [6]
G01R 31/317	2-Punkt Untergruppe	. . Testing of digital circuits [6]
G01R 31/3173	3-Punkt Untergruppe	. . . Marginal testing [6]
G01R 31/3177	3-Punkt Untergruppe	. . . Testing of logic operation, e.g. by logic analysers [6]
G01R 31/3181	3-Punkt Untergruppe	. . . Functional testing (G01R 31/3177 takes precedence) [6]
G01R 31/3183	4-Punkt Untergruppe	 Generation of test inputs, e.g. test vectors, patterns or sequences [6]
G01R 31/3185	4-Punkt Untergruppe	 Reconfiguring for testing, e.g. LSSD, partitioning [6]
G01R 31/3187	4-Punkt Untergruppe	 Built-in tests [6]
G01R 31/319	4-Punkt Untergruppe	 Tester hardware, i.e. output processing circuits [6]
G01R 31/3193	5-Punkt Untergruppe	 with comparison between actual response and known fault-free response [6]
G01R 31/327	1-Punkt Untergruppe	. Testing of circuit interrupters, switches or circuit-breakers (structural association with switches H01H) [6]
G01R 31/333	2-Punkt Untergruppe	. . Testing of the switching capacity of high-voltage circuit-breakers (means for detecting the presence of an arc or discharge in switching devices H01H 9/50, H01H 33/26) [6]
G01R 31/34	1-Punkt Untergruppe	. Testing dynamo-electric machines (testing electric windings G01R 31/06; methods or apparatus specially adapted for manufacturing, assembling, maintaining or repairing dynamo-electric machines H02K 15/00) [3]
G01R 31/36	1-Punkt Untergruppe	. Apparatus for testing electrical condition of accumulators or electric batteries, e.g. capacity or charge condition (accumulators combined with arrangements for measuring, testing or indicating condition H01M 10/48; circuit arrangements for charging, or depolarising batteries or for supplying loads from batteries H02J 7/00) [3]
G01R 31/38	1-Punkt Untergruppe	. Testing of sparking-plugs (testing non-electrical properties G01M 19/02) [6]
G01R 31/40	1-Punkt Untergruppe	. Testing power supplies [6]
G01R 31/42	2-Punkt Untergruppe	. . AC power supplies [6]
G01R 31/44	1-Punkt Untergruppe	. Testing lamps (discharge lamps G01R 31/24; structurally associated with light source circuit arrangements for detecting lamp failure H05B 37/03) [6]
G01R 33/00	Hauptgruppe	Arrangements or instruments for measuring magnetic variables
G01R 33/02	1-Punkt Untergruppe	. Measuring direction or magnitude of magnetic fields or magnetic flux (G01R 33/20 takes precedence; measuring direction or magnitude of the earth's field for navigation or surveying G01C; for prospecting, for measuring the magnetic field of the earth G01V 3/00) [4]

Symbol	Typ	Titel
G01R 33/022	2-Punkt Untergruppe	. . Measuring gradient [3]
G01R 33/025	2-Punkt Untergruppe	. . Compensating stray fields [3]
G01R 33/028	2-Punkt Untergruppe	. . Electrodynamic magnetometers [3]
G01R 33/032	2-Punkt Untergruppe	. . using magneto-optic devices, e.g. Faraday [3]
G01R 33/035	2-Punkt Untergruppe	. . using superconductive devices [3]
G01R 33/038	2-Punkt Untergruppe	. . using permanent magnets, e.g. balances, torsion devices [3]
G01R 33/04	2-Punkt Untergruppe	. . using the flux-gate principle
G01R 33/05	3-Punkt Untergruppe	. . . in thin-film element [3]
G01R 33/06	2-Punkt Untergruppe	. . using galvano-magnetic devices
G01R 33/07	3-Punkt Untergruppe	. . . Hall-effect devices [6]
G01R 33/09	3-Punkt Untergruppe	. . . Magneto-resistive devices [6]
G01R 33/10	2-Punkt Untergruppe	. . Plotting field distribution
G01R 33/12	1-Punkt Untergruppe	. Measuring magnetic properties of articles or specimens of solids or fluids (involving magnetic resonance G01R 33/20) [4]
G01R 33/14	2-Punkt Untergruppe	. . Measuring or plotting hysteresis curves
G01R 33/16	2-Punkt Untergruppe	. . Measuring susceptibility
G01R 33/18	2-Punkt Untergruppe	. . Measuring magnetostrictive properties
G01R 33/20	1-Punkt Untergruppe	. involving magnetic resonance (medical aspects A61B 5/055; magnetic resonance gyrometers G01C 19/60) [4, 5]
G01R 33/24	2-Punkt Untergruppe	. . for measuring direction or magnitude of magnetic fields or magnetic flux [4]
G01R 33/26	3-Punkt Untergruppe	. . . using optical pumping [4]
G01R 33/28	2-Punkt Untergruppe	. . Details of apparatus provided for in groups G01R 33/44-G01R 33/64 [5]
G01R 33/30	3-Punkt Untergruppe	. . . Sample handling arrangements, e.g. sample cells, spinning mechanisms [5]
G01R 33/31	4-Punkt Untergruppe	 Temperature control thereof [6]
G01R 33/32	3-Punkt Untergruppe	. . . Excitation or detection systems, e.g. using radiofrequency signals [5]
G01R 33/34	4-Punkt Untergruppe	 Constructional details, e.g. resonators [5]
G01R 33/341	5-Punkt Untergruppe	 comprising surface coils [6]
G01R 33/3415	6-Punkt Untergruppe	 comprising arrays of sub-coils [6]
G01R 33/343	5-Punkt Untergruppe	 of slotted-tube or loop-gap type [6]
G01R 33/345	5-Punkt Untergruppe	 of waveguide type (G01R 33/343 takes precedence) [6]
G01R 33/36	4-Punkt Untergruppe	 Electrical details, e.g. matching or coupling of the coil to the receiver [5]
G01R 33/38	3-Punkt Untergruppe	. . . Systems for generation, homogenisation or stabilisation of the main or gradient magnetic field [5]
G01R 33/381	4-Punkt Untergruppe	 using electromagnets (electromagnets <u>per se</u> H01F 7/06) [6]

Symbol	Typ	Titel
G01R 33/3815	5-Punkt Untergruppe	 with superconducting coils, e.g. power supply therefor (superconductive magnets H01F 6/00) [6]
G01R 33/383	4-Punkt Untergruppe	 using permanent magnets (permanent magnets <u>per se</u> H01F 7/02) [6]
G01R 33/385	4-Punkt Untergruppe	 using gradient magnetic field coils [6]
G01R 33/387	4-Punkt Untergruppe	 Compensation of inhomogeneities (screening G01R 33/42) [6]
G01R 33/3873	5-Punkt Untergruppe	 using ferromagnetic bodies [6]
G01R 33/3875	5-Punkt Untergruppe	 using correction coil assemblies, e.g. active shimming [6]
G01R 33/389	4-Punkt Untergruppe	 Field stabilisation [6]
G01R 33/42	3-Punkt Untergruppe	. . . Screening (screening in general H05K 9/00) [5, 6]
G01R 33/421	4-Punkt Untergruppe	 of main or gradient magnetic field [6]
G01R 33/422	4-Punkt Untergruppe	 of the radiofrequency field [6]
G01R 33/44	2-Punkt Untergruppe	. . using nuclear magnetic resonance (NMR) (G01R 33/24, G01R 33/62 take precedence) [5]
G01R 33/46	3-Punkt Untergruppe	. . . NMR spectroscopy [5]
G01R 33/465	4-Punkt Untergruppe	 applied to biological material, e.g. <u>in vitro</u> testing [6]
G01R 33/48	3-Punkt Untergruppe	. . . NMR imaging systems [5]
G01R 33/483	4-Punkt Untergruppe	 with selection of signal or spectra from particular regions of the volume, e.g. <u>in vivo</u> spectroscopy [6]
G01R 33/485	5-Punkt Untergruppe	 based on chemical shift information [6]
G01R 33/50	4-Punkt Untergruppe	 based on the determination of relaxation times [5]
G01R 33/54	4-Punkt Untergruppe	 Signal processing systems, e.g. using pulse sequences [5]
G01R 33/56	5-Punkt Untergruppe	 Image enhancement or correction, e.g. subtraction or averaging techniques [5]
G01R 33/561	6-Punkt Untergruppe	 by reduction of the scanning time, i.e. fast acquiring systems, e.g. using echo-planar pulse sequences [6]
G01R 33/563	6-Punkt Untergruppe	 of moving material, e.g. flow-contrast angiography [6]
G01R 33/565	6-Punkt Untergruppe	 Correction of image distortions, e.g. due to magnetic field inhomogeneities [6]
G01R 33/567	6-Punkt Untergruppe	 gated by physiological signals [6]
G01R 33/58	4-Punkt Untergruppe	 Calibration of imaging systems, e.g. using test probes [5]
G01R 33/60	2-Punkt Untergruppe	. . using electron paramagnetic resonance (G01R 33/24, G01R 33/62 take precedence) [5]
G01R 33/62	2-Punkt Untergruppe	. . using double resonance (G01R 33/24 takes precedence) [5]
G01R 33/64	2-Punkt Untergruppe	. . using cyclotron resonance (G01R 33/24 takes precedence) [5]
G01R 35/00	Hauptgruppe	Testing or calibrating of apparatus covered by the other groups of this subclass [2]
G01R 35/02	1-Punkt Untergruppe	. of auxiliary devices, e.g. of instrument transformers according to prescribed transformation ratio, phase angle, or wattage rating
G01R 35/04	1-Punkt Untergruppe	. of instruments for measuring time integral of power or current

Symbol	Typ	Titel
G01R 35/06	2-Punkt Untergruppe	. . by stroboscopic methods