

CPC COOPERATIVE PATENT CLASSIFICATION

G PHYSICS (NOTES omitted)

INSTRUMENTS

G01 MEASURING; TESTING (NOTES omitted)

G01D MEASURING NOT SPECIALLY ADAPTED FOR A SPECIFIC VARIABLE; ARRANGEMENTS FOR MEASURING TWO OR MORE VARIABLES NOT COVERED IN A SINGLE OTHER SUBCLASS; TARIFF METERING APPARATUS; MEASURING OR TESTING NOT OTHERWISE PROVIDED FOR

NOTES

1. This subclass covers :
 - devices for indicating or recording the results of measurements, not peculiar to variables covered by a single other subclass;
 - analogous apparatus but in which the input is not a variable to be measured, e.g. a hand operation;
 - details of measuring instruments, which are of general interest;
 - measurement transducers not adapted solely for the measurement of a single specified variable and not provided for elsewhere, i.e. means for converting the output of a sensing member to another variable where the form or nature of the sensing member does not constrain the means for converting;
 - measuring or testing not otherwise provided for.
2. Attention is drawn to the Notes following the title of class [G01](#).

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

1/00	Measuring arrangements giving results other than momentary value of variable, of general application (G01D 3/00 takes precedence; in tariff metering apparatus G01D 4/00; transducers not specially adapted for a specific variable G01D 5/00)	3/022	• • {having an ideal characteristic, map or correction data stored in a digital memory}
1/02	• giving mean values, e.g. root means square values (measuring root mean square values of currents or voltages G01R 19/02)	3/024	• • for range change; Arrangements for substituting one sensing member by another
1/04	• giving integrated values (giving mean values G01D 1/02)	3/028	• mitigating undesired influences, e.g. temperature, pressure
1/06	• • by intermittent summation	3/032	• • affecting incoming signal, e.g. by averaging; gating undesired signals
1/08	• • • over fixed periods of time	3/036	• • on measuring arrangements themselves
1/10	• giving differentiated values	3/0365	• • • {the undesired influence being measured using a separate sensor, which produces an influence related signal}
1/12	• giving a maximum or minimum of a value	3/06	• with provision for operation by a null method
1/14	• giving a distribution function of a value, i.e. number of times the value comes within specified ranges of amplitude	3/063	• • {Comparing the measuring value with a reference value which periodically or incidentally scans the measuring range}
1/16	• giving a value which is a function of two or more values, e.g. product or ratio	3/066	• • {Balancing a force which represents the measuring value, by means of a reference force}
1/18	• with arrangements for signalling that a predetermined value of an unspecified parameter has been exceeded (G01D 1/14 takes precedence)	3/08	• with provision for safeguarding the apparatus, e.g. against abnormal operation, against breakdown
3/00	Indicating or recording apparatus with provision for the special purposes referred to in the subgroups	3/10	• with provision for switching-in of additional or auxiliary indicators or recorders
3/02	• with provision for altering or correcting the law of variation	4/00	Tariff metering apparatus (in taximeters G07B 13/00; apparatus actuated by coins, cards or the like with meter-controlled dispensing of liquid, gas, or electricity G07F 15/00)
3/021	• • {using purely analogue techniques}	4/002	• {Remote reading of utility meters}

- 4/004 . . {Remote reading of utility meters to a fixed location}
- 4/006 . . {Remote reading of utility meters to a non-fixed location, i.e. mobile location}
- 4/008 . {Modifications to installed utility meters to enable remote reading}
- 4/02 . Details
- 4/04 . . Resetting-mechanisms, e.g. for indicating members
- 4/06 . . Arrangement of clutches between driving and indicating member, e.g. of hysteresis clutch ([G01D 4/04 takes precedence](#))
- 4/08 . . Transfer of indication from a counter into a summing counter
- 4/10 . Maximum indicating or recording apparatus, i.e. where the tariff for a period is based on a maximum demand within that period
- 4/12 . . Apparatus for indicating or recording progressive maximum
- 4/14 . . Fixed-demand indicating or recording apparatus, i.e. where indication is made when a predetermined quantity has been consumed during a time interval greater or less than a predetermined time interval
- 4/16 . Apparatus for indicating or recording maximum or minimum load hours
- 4/18 . Apparatus for indicating or recording overconsumption with opposing torque which comes into effect when a predetermined level is exceeded, e.g. subtraction meters

5/00 Mechanical means for transferring the output of a sensing member; Means for converting the output of a sensing member to another variable where the form or nature of the sensing member does not constrain the means for converting; Transducers not specially adapted for a specific variable
[\(G01D 3/00 takes precedence; specially adapted for apparatus giving results other than momentary value of variable G01D 1/00\)](#)

NOTE

The subgroups of this main group are distinguished by the means which is of major importance. Thus the mere application of other means for giving a final indication does not affect the classification.

- 5/02 . using mechanical means
- 5/04 . . using levers; using cams; using gearing
- 5/06 . . acting through a wall or enclosure, e.g. by bellows, by magnetic coupling
- 5/08 . . Reducing the effects of friction, e.g. by applying vibrations
- 5/10 . . Applying external forces to increase force available for operation of indicating or recording part
- 5/12 . using electric or magnetic means ([G01D 5/06 takes precedence](#))
- 5/125 . . {characterised by a first part whose movement represents the measuring value, and by a second part which is moved by an external force in order to follow the movement of the first part}
- 5/14 . . influencing the magnitude of a current or voltage

- 5/142 . . . {using Hall-effect devices (measuring magnetic variables using Hall-effect or other galvanomagnetic devices [G01R 33/06](#))}
- 5/145 {influenced by the relative movement between the Hall device and magnetic fields ([see G01R 33/06](#))}
- 5/147 {influenced by the movement of a third element, the position of Hall device and the source of magnetic field being fixed in respect to each other}
- 5/16 . . . by varying resistance
- 5/165 by relative movement of a point of contact {or actuation} and a resistive track
- 5/1655 {more than one point of contact or actuation on one or more tracks}
- 5/18 . . . by varying effective impedance of discharge tubes or semiconductor devices

WARNING

Group [G01D 5/18](#) is impacted by reclassification into groups [G01D 5/183](#) and [G01D 5/185](#).

Groups [G01D 5/18](#), [G01D 5/183](#) and [G01D 5/185](#) should be considered in order to perform a complete search.

- 5/183 {Sensing rotation or linear movement using strain, force or pressure sensors}

WARNING

Groups [G01D 5/183](#) and [G01D 5/185](#) are incomplete pending reclassification of documents from group [G01D 5/18](#).

Groups [G01D 5/18](#), [G01D 5/183](#) and [G01D 5/185](#) should be considered in order to perform a complete search.

- 5/185 {using piezoelectric sensors}
- 5/20 . . . by varying inductance, e.g. by a movable armature
- 5/2006 {by influencing the self-induction of one or more coils ([G01D 5/22 takes precedence](#))}
- 5/2013 {by a movable ferromagnetic element, e.g. a core ([G01D 5/2033 takes precedence](#))}
- 5/202 {by movable a non-ferromagnetic conductive element ([G01D 5/2033 takes precedence](#))}
- 5/2026 {constituting a short-circuiting element}
- 5/2033 {controlling the saturation of a magnetic circuit by means of a movable element, e.g. a magnet}
- 5/204 {by influencing the mutual induction between two or more coils ([G01D 5/22 takes precedence](#))}
- 5/2046 {by a movable ferromagnetic element, e.g. a core}
- 5/2053 {by a movable non-ferromagnetic conductive element}
- 5/206 {constituting a short-circuiting element}
- 5/2066 {by movement of a single coil with respect to a single other coil}
- 5/2073 {by movement of a single coil with respect to two or more coils}
- 5/208 {using polyphase currents}

5/2086	. . . . .	{by movement of two or more coils with respect to two or more other coils}	5/242	. . .	by carrying output of an electrodynamic device, e.g. a tachodynamo
5/2093	. . . . .	{using polyphase currents}	5/243	. .	influencing the phase or frequency of ac
5/22	. . . .	differentially influencing two coils	5/244	. .	influencing characteristics of pulses or pulse trains; generating pulses or pulse trains
5/2208	. . . . .	{by influencing the self-induction of the coils}	5/24404	. . .	{Interpolation using high frequency signals}
5/2216	. . . . .	{by a movable ferromagnetic element, e.g. a core}	5/24409	. . .	{Interpolation using memories}
5/2225	. . . . .	{by a movable non-ferromagnetic conductive element}	5/24414	. . .	{Encoders having selectable interpolation factors}
5/2233	. . . . .	{constituting a short-circuiting element}	5/24419	. . .	{Interpolation not covered by groups G01D 5/24404 , G01D 5/24409 or G01D 5/24414 }
5/2241	. . . . .	{by controlling the saturation of a magnetic circuit by means of a movable element, e.g. a magnet}	5/24423	. . .	{Mounting means or means for restraining during shipping (G01D 5/24442 takes precedence)}
5/225	. . . . .	{by influencing the mutual induction between the two coils}	5/24428	. . .	{Error prevention}
5/2258	. . . . .	{by a movable ferromagnetic element, e.g. core}	5/24433	. . . .	{by mechanical means}
5/2266	. . . . .	{specially adapted circuits therefor}	5/24438	. . . . .	{Special design of the sensing element or scale}
5/2275	. . . . .	{by a movable non-ferromagnetic conductive element}	5/24442	. . . . .	{by mounting means}
5/2283	. . . . .	{constituting a short-circuiting element}	5/24447	. . . .	{by energy backup}
5/2291	. . . . .	{Linear or rotary variable differential transformers (LVDTs/RVDTs) having a single primary coil and two secondary coils}	5/24457	. . .	{Failure detection}
5/24	. . .	by varying capacitance	5/24461	. . . .	{by redundancy or plausibility}
<u>WARNING</u>			5/24466	. . . .	{Comparison of the error value to a threshold}
Group G01D 5/24 is impacted by reclassification into group G01D 5/2403 .			5/24471	. . .	{Error correction}
Groups G01D 5/24 and G01D 5/2403 should be considered in order to perform a complete search.			5/24476	. . . .	{Signal processing (G01D 5/2448 - G01D 5/24495 take precedence)}
5/2403	. . . .	{by moving plates, not forming part of the capacitor itself, e.g. shields}	5/2448	. . . .	{Correction of gain, threshold, offset or phase control}
<u>WARNING</u>			5/24485	. . . .	{using other sensors}
Group G01D 5/2403 is incomplete pending reclassification of documents from groups G01D 5/24 , G01D 5/241 , G01D 5/2412 and G01D 5/2415 .			5/2449	. . . .	{using hard-stored calibration data}
Groups G01D 5/24 , G01D 5/241 , G01D 5/2412 , G01D 5/2415 and G01D 5/2403 should be considered in order to perform a complete search.			5/24495	. . . .	{using previous values}
5/2405	. . . .	{by varying dielectric}	5/245	. . .	using a variable number of pulses in a train
5/241	. . . .	by relative movement of capacitor electrodes	5/2451	. . . .	{Incremental encoders (G01D 5/2454 takes precedence)}
<u>WARNING</u>			5/2452	. . . . .	{incorporating two or more tracks having an (n, n+1, ...) relationship}
Groups G01D 5/241 , G01D 5/2412 and G01D 5/2415 are impacted by reclassification into group G01D 5/2403 .			5/2454	. . . .	{Encoders incorporating incremental and absolute signals}
Groups G01D 5/241 , G01D 5/2412 , G01D 5/2415 and G01D 5/2403 should be considered in order to perform a complete search.			5/2455	. . . . .	{with incremental and absolute tracks on the same encoder}
5/2412	. . . . .	{by varying overlap}	5/2457	. . . . .	{Incremental encoders having reference marks}
5/2415	. . . . .	{adapted for encoders}	5/2458	. . . . .	{with incremental and absolute tracks on separate encoders}
5/2417	. . . . .	{by varying separation}	5/246	. . .	by varying the duration of individual pulses
			5/247	. . .	using time shifts of pulses
			5/248	. . .	by varying pulse repetition frequency
			5/249	. . .	using pulse code
			5/2492	. . . .	{Pulse stream}
			5/2495	. . . . .	{Pseudo-random code}
			5/2497	. . . .	{Absolute encoders (G01D 5/2454 takes precedence)}
			5/25	. .	Selecting one or more conductors or channels from a plurality of conductors or channels, e.g. by closing contacts
			5/251	. . .	one conductor or channel
			5/2515	. . . .	{with magnetically controlled switches, e.g. by movement of a magnet}
			5/252	. . .	a combination of conductors or channels

- 5/2525 {with magnetically controlled switches, e.g. by movement of a magnet}
- 5/26 . . characterised by optical transfer means, i.e. using infra-red, visible, or ultra-violet light
- 5/262 . . {with optical projection of a pointer or a scale}
- 5/264 . . {Mechanical constructional elements therefor (G01D 5/28, G01D 5/32, G01D 5/39 and G01D 5/40 take precedence); Mechanical adjustment thereof}
- 5/266 . . {by interferometric means (G01D 5/353 takes precedence)}
- 5/268 . . {using optical fibres (G01D 5/28 - G01D 5/38 take precedence)}
- 5/28 . . with deflection of beams of light, e.g. for direct optical indication (G01D 5/40 takes precedence; {mechanical adjustment G01D 5/264})
- 5/285 . . . {using a movable mirror}
- 5/30 . . . the beams of light being detected by photocells
- 5/305 {controlling the movement of a following part}
- 5/32 . . with attenuation or whole or partial obturation of beams of light (G01D 5/40 takes precedence ; mechanical adjustment G01D 5/264))
- 5/34 . . . the beams of light being detected by photocells
- 5/341 {controlling the movement of a following part}
- 5/342 {the sensed object being the obturating part}
- 5/344 {using polarisation (G01D 5/35303 takes precedence)}
- 5/345 {Polarising encoders}
- 5/347 using displacement encoding scales
- 5/34707 {Scales; Discs, e.g. fixation, fabrication, compensation}
- 5/34715 {Scale reading or illumination devices}
- 5/34723 {involving light-guides}
- 5/3473 {Circular or rotary encoders}
- 5/34738 {Axles; Driving or coupling means}
- 5/34746 {Linear encoders}
- 5/34753 {Carriages; Driving or coupling means}
- 5/34761 {Protection devices, e.g. caps; Blowing devices}
- 5/34769 {Sealing means}
- 5/34776 {Absolute encoders with analogue or digital scales}
- 5/34784 {with only analogue scales or both analogue and incremental scales}
- 5/34792 {with only digital scales or both digital and incremental scales}

WARNING

Group [G01D 5/34792](#) is impacted by reclassification into group [G01D 5/34794](#).

Groups [G01D 5/34792](#) and [G01D 5/34794](#) should be considered in order to perform a complete search.

- 5/34794 {Optical encoders using the Vernier principle, i.e. incorporating two or more tracks having a (n, n+1, ...) relationship}

WARNING

Group [G01D 5/34794](#) is incomplete pending reclassification of documents from group [G01D 5/34792](#).

Groups [G01D 5/34792](#) and [G01D 5/34794](#) should be considered in order to perform a complete search.

- 5/353 influencing the transmission properties of an optical fibre
- 5/35303 {using a reference fibre, e.g. interferometric devices}
- 5/35306 {using an interferometer arrangement}
- 5/35309 {using multiple waves interferometer}
- 5/35312 {using a Fabry Perot}
- 5/35316 {using a Bragg gratings}
- 5/35319 {using other multiple wave interferometer}
- 5/35322 {using interferometer with one loop with several directions of circulation of the light, e.g. Sagnac interferometer}
- 5/35325 {using interferometer with two arms in reflection, e.g. Mickelson interferometer}
- 5/35329 {using interferometer with two arms in transmission, e.g. Mach-Zender interferometer}
- 5/35332 {using other interferometers}
- 5/35335 {Aspects of emitters or receivers used by an interferometer in an optical fibre sensor arrangement (using multiple sensor devices using multiplexing techniques G01D 5/35383)}
- 5/35338 {using other arrangements than interferometer arrangements}
- 5/35341 {Sensor working in transmission}
- 5/35345 {using Amplitude variations to detect the measured quantity}
- 5/35348 {using stimulated emission to detect the measured quantity}
- 5/35351 {using other means to detect the measured quantity}
- 5/35354 {Sensor working in reflection}
- 5/35358 {using backscattering to detect the measured quantity}
- 5/35361 {using elastic backscattering to detect the measured quantity, e.g. using Rayleigh backscattering}
- 5/35364 {using inelastic backscattering to detect the measured quantity, e.g. using Brillouin or Raman backscattering}
- 5/35367 {using reflected light other than backscattered to detect the measured quantity}
- 5/3537 {Optical fibre sensor using a particular arrangement of the optical fibre itself}
- 5/35374 {Particular layout of the fiber}

- 5/35377 {Means for amplifying or modifying the measured quantity}
- 5/3538 {using a particular type of fiber, e.g. fibre with several cores, PANDA fiber, fiber with an elliptic core or the like}
- 5/35383 {using multiple sensor devices using multiplexing techniques}
- 5/35387 {using wavelength division multiplexing}
- 5/3539 {using time division multiplexing}
- 5/35393 {using frequency division multiplexing}
- 5/35396 {using other forms of multiplexing}
- 5/36 Forming the light into pulses
- 5/363 {Direction discrimination}
- 5/366 {Particular pulse shapes}
- 5/38 by diffraction gratings
- 5/39 Scanning a visible indication of the measured value and reproducing this indication at the remote place, e.g. on the screen of a cathode ray tube {(mechanical adjustment G01D 5/264)}
- 5/40 specially adapted for use with infra-red light {(mechanical adjustment G01D 5/264)}
- 5/42 using fluid means
- 5/425 {characterised by a first part whose movement represents the measuring value, and by a second part which is moved by an external force in order to follow the movement of the first part}
- 5/44 using jets of fluid
- 5/46 by deflecting or throttling the flow
- 5/48 using wave or particle radiation means (G01D 5/26 takes precedence)
- 5/485 {using magnetostrictive devices}
- 5/50 derived from a radioactive source
- 5/52 detected by a counter tube
- 5/54 using means specified in two or more of groups G01D 5/02, G01D 5/12, G01D 5/26, G01D 5/42, and G01D 5/48

NOTES

1. For a combination of two or more of the means specified, the first applicable one of the subgroups below takes precedence over any others of these groups.
2. Classification is made in this group only if no other group can be selected as being predominantly applicable.

- 5/56 using electric or magnetic means
- 5/58 using optical means, i.e. using infra-red, visible or ultra-violet light
- 5/60 using fluid means
- 5/62 using wave or particle radiation means not covered by group G01D 5/58

7/00 Indicating measured values

- 7/002 {giving both analog and numerical indication}
- 7/005 {Indication of measured value by colour change}
- 7/007 {Indication of measured value by tactile means}
- 7/02 Indicating value of two or more variables simultaneously
- 7/04 using a separate indicating element for each variable
- 7/06 Luminous indications projected on a common screen

- 7/08 using a common indicating element for two or more variables
- 7/10 giving indication in co-ordinate form
- 7/12 Audible indication of meter readings, e.g. for the blind

9/00 Recording measured values

- 9/005 {Solid-state data loggers}

WARNING

Group [G01D 9/005](#) is impacted by reclassification into group [G01D 9/007](#).

Groups [G01D 9/005](#) and [G01D 9/007](#) should be considered in order to perform a complete search.

- 9/007 {Data loggers attached to transport containers for perishable products, e.g. food or medicines}

WARNING

Group [G01D 9/007](#) is incomplete pending reclassification of documents from group [G01D 9/005](#).

Groups [G01D 9/005](#) and [G01D 9/007](#) should be considered in order to perform a complete search.

- 9/02 Producing one or more recordings of the values of a single variable
- 9/04 with provision for multiple or alternative recording
- 9/06 Multiple recording, e.g. duplicating
- 9/08 giving both graphical and numerical recording
- 9/10 the recording element, e.g. stylus, being controlled in accordance with the variable, and the recording medium, e.g. paper roll, being controlled in accordance with time
- 9/12 recording occurring continuously
- 9/14 with provision for altering speed of recording medium in accordance with the magnitude of the variable to be recorded
- 9/16 recording occurring at separated intervals, e.g. by chopper bar
- 9/18 recording element actuated only upon change in value of variable
- 9/20 the recording element, e.g. stylus, being controlled in accordance with time and the recording medium, e.g. paper roll, being controlled in accordance with the variable
- 9/22 recording occurring continuously
- 9/24 recording occurring at separated intervals, e.g. by chopper bar
- 9/26 either the recording element, e.g. stylus, or the recording medium, e.g. paper roll, being controlled in accordance with both time and the variable
- 9/28 Producing one or more recordings, each recording being of the values of two or more different variables (G01D 9/38, G01D 9/40 take precedence)
- 9/285 {producing additional marks (e.g. reference lines time marks)}
- 9/30 there being a separate recording element for each variable, e.g. multiple-pen recorder
- 9/32 there being a common recording element for two or more variables

9/34	. . . the variables being recorded in a predetermined sequence	15/02	. Styli or other recording elements acting to mechanically deform or perforate the recording surface (printing recording elements G01D 15/20)
9/36	. . . . in separate columns	15/04	. . acting to punch holes in the recording surface
9/38	. Producing one or more recordings, each recording being produced by controlling the recording element, e.g. stylus, in accordance with one variable and controlling the recording medium, e.g. paper roll, in accordance with another variable	15/06	. Electric recording elements, e.g. electrolytic
		15/08	. . for spark erosion
9/40	. Producing one or more recordings, each recording being produced by controlling either the recording element, e.g. stylus or the recording medium, e.g. paper roll, in accordance with two or more variables	15/10	. Heated recording elements acting on heatsensitive layers
9/42	. Recording indications of measuring instruments by photographic means, e.g. of counters	15/12	. Magnetic recording elements
		15/14	. Optical recording elements; Recording elements using X-or nuclear radiation
11/00	Component parts of measuring arrangements not specially adapted for a specific variable (G01D 13/00 , G01D 15/00 take precedence)	15/16	. Recording elements transferring recording material, e.g. ink, to the recording surface (printing recording elements G01D 15/20)
11/02	. Bearings or suspensions for moving parts	15/18	. . Nozzles emitting recording material
11/04	. . Knife-edge bearings	15/20	. Recording elements for printing with ink or for printing by deformation or perforation of the recording surface, e.g. embossing
11/06	. . Strip or thread suspensions, e.g. in tension	15/22	. Chopper bars for bringing recording element into contact with recording surface
11/08	. Elements for balancing moving parts	15/24	. Drives for recording elements and surfaces not covered by G01D 5/00
11/10	. Elements for damping the movement of parts	15/26	. . operating by clockwork
11/12	. . using fluid damping	15/28	. Holding means for recording surfaces; Guiding means for recording surfaces; Exchanging means for recording surfaces
11/14	. . using magnetic induction damping		. . for foldable strip charts
11/16	. Elements for restraining, or preventing the movement of, parts, e.g. for zeroising (caging of moving parts when not in use G01D 11/20)	15/30	. . for circular charts
11/18	. . Springs (G01D 11/06 takes precedence)	15/32	. Recording surfaces
11/20	. Caging devices for moving parts when not in use	15/34	. . {of circular shape}
11/22	. . automatically actuated	15/342	. . {of cylindrical shape}
11/24	. Housings {; Casings for instruments}	15/345	. . {Strip or Tape}
11/245	. . {Housings for sensors}	15/347	
11/26	. . Windows; Cover glasses; Sealings therefor	18/00	Testing or calibrating apparatus or arrangements provided for in groups G01D 1/00 - G01D 15/00
11/28	. Structurally-combined illuminating devices	18/001	. {Calibrating encoders}
11/30	. Supports specially adapted for an instrument; Supports specially adapted for a set of instruments	18/002	. {Automatic recalibration (G01D 18/008 takes precedence)}
11/305	. . {Panel mounting of instruments}	18/004	. . {Continuous recalibration}
13/00	Component parts of indicators for measuring arrangements not specially adapted for a specific variable	18/006	. . {Intermittent recalibration}
13/02	. Scales; Dials	18/008	. {with calibration coefficients stored in memory}
13/04	. . Construction	21/00	Measuring or testing not otherwise provided for
13/06	. . . Moving bands (G01D 13/10 takes precedence)	21/02	. Measuring two or more variables by means not covered by a single other subclass
13/08	. . . Rotating drums (G01D 13/10 takes precedence)	2204/00	Indexing scheme relating to details of tariff-metering apparatus
13/10	. . . with adjustable scales; with auxiliary scales, e.g. vernier	2204/10	. Analysing; Displaying
13/12	. . Graduation	2204/12	. . Determination or prediction of behaviour, e.g. likely power consumption or unusual usage patterns
13/14	. . . for rotations of more than 360 degrees	2204/125	. . . Utility meter reading systems specially adapted for determining the environmental impact of user behaviour
13/16	. . . with staggered markings	2204/14	. . Displaying of utility usage with respect to time, e.g. for monitoring evolution of usage or with respect to weather conditions
13/18	. . . with raised or recessed markings	2204/16	. . Displaying of utility pricing or cost
13/20	. . . with luminescent markings	2204/18	. . Remote displaying of utility meter readings
13/22	. Pointers, e.g. settable pointer	2204/20	. Monitoring; Controlling
13/24	. . for indicating a maximum or minimum	2204/22	. . Arrangements for detecting or reporting faults, outages or leaks
13/26	. . adapted to perform a further operation, e.g. making electrical contact	2204/24	. . Identification of individual loads, e.g. by analysing current/voltage waveforms
13/265	. . . {Pointers which conduct light}		
13/28	. . with luminescent markings		
15/00	Component parts of recorders for measuring arrangements not specially adapted for a specific variable		
15/005	. {Effaceable recording}		

- 2204/26 . . Remote utility meter reading systems with control function, i.e. reading systems including mechanisms for turning on/off the supply
- 2204/28 . . Processes or tasks scheduled according to the power required, the power available or the power price
- 2204/30 . Remote utility meter reading systems specially adapted for metering the generated energy or power
- 2204/35 . . Monitoring the performance of renewable electricity generating systems, e.g. of solar panels
- 2204/40 . Networks; Topology
- 2204/43 . . Identification of a specific meter
- 2204/45 . . Utility meters networked together within a single building
- 2204/47 . . Methods for determining the topology or arrangement of meters in a network
- 2205/00 Indexing scheme relating to details of means for transferring or converting the output of a sensing member**
 - 2205/10 . Detecting linear movement
 - 2205/14 . . by converting the linear movement into a rotary movement
 - 2205/18 . . using magnetic means not otherwise provided for in this subclass
 - 2205/20 . Detecting rotary movement
 - 2205/22 . . by converting the rotary movement into a linear movement
 - 2205/24 . . using magnetic means not otherwise provided for in this subclass
 - 2205/26 . . Details of encoders or position sensors specially adapted to detect rotation beyond a full turn of 360°, e.g. multi-rotation
 - 2205/28 . . The target being driven in rotation by additional gears
 - 2205/40 . Position sensors comprising arrangements for concentrating or redirecting magnetic flux
 - 2205/50 . Grounding or electrostatically shielding a position sensor or encoder
 - 2205/60 . Means for precisely aligning or centering the disk of a rotary encoder, e.g. fitting jigs
 - 2205/70 . Position sensors comprising a moving target with particular shapes, e.g. of soft magnetic targets
 - 2205/73 . . Targets mounted eccentrically with respect to the axis of rotation
 - 2205/77 . . Specific profiles
 - 2205/771 . . . Toothed profiles
 - 2205/772 Sawtooth profiles
 - 2205/773 Spiral profiles
 - 2205/774 . . . Profiles with a discontinuity, e.g. edge or stepped profile
 - 2205/775 . . . Tapered profiles
 - 2205/776 . . . Cam-shaped profiles
 - 2205/777 . . . Whorl-shaped profiles
 - 2205/80 . Manufacturing details of magnetic targets for magnetic encoders
 - 2205/85 . Determining the direction of movement of an encoder, e.g. of an incremental encoder
 - 2205/90 . Two-dimensional encoders, i.e. having one or two codes extending in two directions
 - 2205/95 . Three-dimensional encoders, i.e. having codes extending in three directions
- 2207/00 Indexing scheme relating to details of indicating measuring values**
 - 2207/10 . Displays which are primarily used in aircraft or display aircraft-specific information
 - 2207/20 . Displays for vehicles in which information is superimposed on an external view, e.g. heads-up displays or enhanced reality displays
 - 2207/30 . Displays providing further information, in addition to measured values, e.g. status
 - 2213/00 Indexing scheme relating to constructional details of indicators**
 - 2213/10 . Drivers for gauges
 - 2213/20 . Gauges having a single pointer and two or more scales
 - 2218/00 Indexing scheme relating to details of testing or calibration**
 - 2218/10 . Testing of sensors or measuring arrangements