

## ECLA EUROPEAN CLASSIFICATION

### G01P

**MEASURING LINEAR OR ANGULAR SPEED, ACCELERATION, DECELERATION, OR SHOCK; INDICATING PRESENCE, ABSENCE, OR DIRECTION, OF MOVEMENT** (measuring or recording blood flow [A61B5/02](#), [A61B8/06](#); monitoring speed or deceleration of electrically-propelled vehicles [B60L3/00](#); vehicle lighting systems adapted to indicate speed [B60Q1/54](#); determining position or course in navigation, measuring ground distance in geodesy or surveying [G01C](#); combined measuring devices for measuring two or more variables of movement [G01C23/00](#); measuring velocity of sound [G01H](#); measuring velocity of light [G01J7/00](#); measuring direction or velocity of solid objects by reception or emission of radiowaves or other waves and based on propagation effects, e.g. Doppler effect, propagation time, direction of propagation, [G01S](#); measuring speed of nuclear radiation [G01T](#); measuring acceleration of gravity [G01V](#); [N: measuring or recording the speed of trains [B61L23/00](#); speed indicators incorporated in motor vehicles [B60K35/00](#); measuring frequency or phase [G01R](#); traffic control [G08G](#)])

#### Notes

1. This subclass covers measuring direction or velocity of flowing fluids using propagation effects of radiowaves or other waves caused in the fluid itself, e.g. by laser anemometer, by ultrasonic flowmeter with "sing-around-system".
2. Attention is drawn to the Notes following the title of class G01.

### G01P1/00

#### Details of instruments

#### G01P1/00B

- . [N: used for damping]

#### G01P1/00C

- . [N: used for thermal compensation]

#### G01P1/02

- . Housings

#### G01P1/02B

- . . [N: for acceleration measuring devices] [N9902]

#### G01P1/02C

- . . [N: for speed measuring devices, e.g. pulse generator] [N9902]

#### G01P1/04

- . Special adaptations of driving means

#### G01P1/06

- . [N: IPC 2] Indicating or recording devices, e.g. for remote indication [N: (indicating or recording in general [G01D](#); registering or indicating working conditions of vehicles [G07C5/00](#))]

#### [N: **WARNING**

[N0504]

This group is no longer used for the classification of new documents from April 1, 2005. The backlog of this group is being continuously reclassified to [G01P1/07](#), and [G01P1/12](#) and s.gr.

]

#### G01P1/07

- . indicating devices, e.g. for remote indication (indicating working conditions of vehicles [G07C5/00](#)) [N0504]

- G01P1/08 . . Arrangements of scales, pointers, lamps or acoustic indicators, e.g. in automobile speedometers
- G01P1/10 . . . for indicating predetermined speeds
- G01P1/10C . . . . [N: by comparing the value of the measured signal with one or several reference values (in general [G01R17/00](#))]
- G01P1/10D . . . . [N: by comparing the time duration between two impulses with a reference time]
- G01P1/11 . . . . by the detection of the position of the indicator needle
- G01P1/12 . Recording devices (indicating working conditions of vehicles [G07C5/00](#)) [N0504]
- G01P1/12B . . [N: Speed recorders] [N0504]
- G01P1/12B2 . . . [N: with recording discs] [N0504]
- G01P1/12C . . [N: for acceleration values] [N0504]
- G01P1/14 . . for permanent recording [N: ([G01P1/12B2](#) takes precedence)] [N0504]
- G01P1/16 . . for erasable recording, e.g. magnetic recording [N0504]

**G01P3/00** **Measuring linear or angular speed; Measuring differences of linear or angular speeds** ([G01P5/00](#) to [G01P11/00](#) take precedence; [N: direction and speed indication [G01P13/04B](#)]; counting mechanisms [G06M](#))

**Note**

The sub-groups of this group are distinguished by the method of measurement which is of major importance. Thus the mere application of other methods for giving a final indication does not affect the classification.

- G01P3/02 . Devices characterised by the use of mechanical means
- G01P3/04 . . by comparing two speeds
- G01P3/06 . . . using a friction gear
- G01P3/08 . . . using differential gearing
- G01P3/10 . . by actuating an indicating element, e.g. pointer, for a fixed time
- G01P3/12 . . by making use of a system excited by impact
- G01P3/14 . . by exciting one or more mechanical resonance systems
- G01P3/16 . . by using centrifugal forces of solid masses [N: (governors [G05D13/10](#))]
- G01P3/18 . . . transferred to the indicator by mechanical means
- G01P3/20 . . . transferred to the indicator by fluid means
- G01P3/22 . . . transferred to the indicator by electric or magnetic means
- G01P3/24 . . by using friction effects ([G01P3/06](#) takes precedence)
- G01P3/26 . Devices characterised by the use of fluids
- G01P3/26B . . [N: by using fluidic impulse generators]
- G01P3/26C . . [N: by using a vortex chamber]
- G01P3/28 . . by using pumps
- G01P3/30 . . by using centrifugal forces of fluids
- G01P3/32 . . . in a rotary container communicating with a fixed container
- G01P3/34 . . by using friction effects
- G01P3/36 . Devices characterised by the use of optical means, e.g. using infra-red, visible, or

ultra-violet light ([G01P3/68](#) takes precedence; gyrometers using the Sagnac effect, i.e. rotation-induced shifts between counter-rotating electromagnetic beams [G01C19/64](#)) [[C0504](#)]

- G01P3/36B . . [N: by using a ring laser (ring lasers in general [H01S3/083](#))
- [N: **WARNING**  
[[N0504](#)]  
This group is no longer used for the classification of new documents from April 1, 2005. The backlog of this group is being continuously reclassified to [G01C19/64](#) and s.gr.  
]
- G01P3/36C . . [N: by using diffraction of light (for measuring speed of fluids [G01P5/26](#))] [[C0504](#)]
- G01P3/38 . . using photographic means
- G01P3/40 . . using stroboscopic means
- G01P3/42 . Devices characterised by the use of electric or magnetic means ([G01P3/66](#) takes precedence; measuring electric or magnetic values in general [G01R](#))
- G01P3/44 . . for measuring angular speed ([G01P3/56](#) takes precedence)
- G01P3/44B . . . [N: mounted in bearings (bearings [F16C](#))]
- G01P3/44B2 . . . . [N: mounted between two axially spaced rows of rolling elements] [[N9602](#)]
- G01P3/46 . . . by measuring amplitude of generated current or voltage [N: (in general [G01R19/00](#))]
- G01P3/46B . . . . [N: by using dynamo-electro tachometers or electric generator]
- G01P3/48 . . . by measuring frequency of generated current of voltage [N: (in general [G01R23/00](#))]
- G01P3/48C . . . . [N: by using electronic circuits in general]
- G01P3/48C2 . . . . . [N: by using circuits for the electrical integration of the generated pulses (measuring impulse frequency by integration [G01R23/09](#))]
- G01P3/48C3 . . . . . [N: by using circuits for the detection of the pulses delivered by the ignition system of an internal combustion engine]
- G01P3/481 . . . . of pulse signals
- G01P3/481W . . . . . [N: using a pulse wire sensor, e.g. Wiegand wire] [[N9809](#)]
- G01P3/482 . . . . . delivered by nuclear radiation detectors [[N9602](#)]
- G01P3/483 . . . . . delivered by variable capacitance detectors [[N9602](#)]
- G01P3/484 . . . . . delivered by contact-making switches
- G01P3/486 . . . . . delivered by photo-electric detectors
- G01P3/487 . . . . . delivered by rotating magnets
- G01P3/488 . . . . . delivered by variable reluctance detectors
- G01P3/489 . . . . . Digital circuits therefor
- G01P3/49 . . . using eddy currents
- G01P3/495 . . . . where the indicating means responds to forces produced by the eddy currents and the generating magnetic field
- G01P3/495B . . . . . [N: with a counter for the covered distance incorporated (measuring the covered distance [G01C22/00](#))] [[N9507](#)]
- G01P3/495C . . . . . [N: with thermal compensation] [[N9507](#)]
- G01P3/50 . . for measuring linear speed ([G01P3/56](#) takes precedence)
- G01P3/50B . . . [N: by using eddy currents]

- G01P3/52 . . . by measuring amplitude of generated current or voltage
- G01P3/54 . . . by measuring frequency of generated current or voltage
- G01P3/56 . . for comparing two speeds
- G01P3/56B . . . [N: by measuring or by comparing the phase of generated current or voltage (phase comparators per se [H03D 13/00](#); phase measurement [G01R25/00](#))]
- G01P3/58 . . . by measuring or comparing amplitudes of generated currents or voltage [N: (amplitude comparators [H03K5/24](#))]
- G01P3/60 . . . by measuring or comparing frequency of generated currents or voltages [N: (frequency comparators [H03K5/26](#))]
  
- G01P3/62 . Devices characterised by the determination or the variation of atmospheric pressure with height to measure the vertical components of speed ([measuring pressure in general G01L](#))
  
- G01P3/64 . Devices characterised by the determination of the time taken to traverse a fixed distance
  
- G01P3/66 . . using electric or magnetic means ([G01P3/80](#) takes precedence; measuring short time intervals [G04F8/00](#), [G04F10/00](#)) [[C9602](#)]
- G01P3/66B . . . [N: for projectile velocity measurements]
- G01P3/68 . . using optical means, i.e. using infra-red, visible, or ultra-violet light ([G01P3/80](#) takes precedence; [N: by reflection of waves [G01S17/58](#)]) [[C9602](#)]
- G01P3/68B . . . [N: for projectile velocity measurements]
- G01P3/80 . . using auto-correlation or cross-correlation detection means [[N9602](#)]
- G01P3/80B . . . [N: in devices of the type to be classified in [G01P3/66](#)] [[N9602](#)]
- G01P3/80C . . . [N: in devices of the type to be classified in [G01P3/68](#)] [[N9602](#)]
  
- G01P5/00** **Measuring speed of fluids, e.g. of air stream; Measuring speed of bodies relative to fluids, e.g. of ship, of aircraft** ([application of speed-measuring devices for measuring volume of fluid G01F](#))
  
- G01P5/00A . [N: Full-field flow measurement, e.g. determining flow velocity and direction in a whole region at the same time, flow visualisation]
  
- G01P5/00C . [N: by measuring fluid level in front of an obstacle]
  
- G01P5/00E . [N: by using a jet directed into the fluid]
- G01P5/00E1 . . [N: the jet used is composed of ionised or radioactive particles]
  
- G01P5/00H . [N: by using an electrolyte added to the fluid]
  
- G01P5/01 . by using swirlflowmeter
  
- G01P5/02 . by measuring forces exerted by the fluid on solid bodies, e.g. anemometer
- G01P5/04 . . using deflection of baffle-plates
- G01P5/06 . . using rotation of vanes ([measuring speed of rotating shafts G01P3/00](#))
- G01P5/06B . . . [N: with mechanical coupling to the indicating device]
- G01P5/07 . . . with electrical coupling to the indicating device
  
- G01P5/08 . by measuring variation of an electric variable directly affected by the flow, e.g. by using dynamo-electric effect

- G01P5/08B . . [N: by using electronic circuits for measuring the dynamoelectric effect]
- G01P5/08C . . [N: by using special arrangements and constructions for measuring the dynamo-electric effect]
  
- G01P5/10 . by measuring thermal variables
- G01P5/12 . . using variation of resistance of a heated conductor
  
- G01P5/14 . by measuring differences of pressure in the fluid
- G01P5/16 . . using Pitot tubes, [N: e.g. Machmeter]
- G01P5/165 . . . Arrangements or constructions of Pitot tubes
- G01P5/17 . . . Coupling arrangements to the indicating device
- G01P5/175 . . . . with the determination of Mach number ([analogue computers therefor G06G7/57](#))
  
- G01P5/18 . by measuring the time taken to traverse a fixed distance
- G01P5/20 . . using particles entrained by a fluid stream ([G01P5/22 takes precedence](#))
- G01P5/22 . . using auto-correlation or cross-correlation detection means [N9602]
  
- G01P5/24 . by measuring the direct influence of the streaming fluid on the properties of a detecting acoustical wave [N0504]
- G01P5/24R . . [N: by using reflection of acoustical waves, i.e. Doppler-effect] [N0504]
- G01P5/24R2 . . . [N: involving continuous, e.g. modulated or unmodulated, waves ([G01P5/24R4 takes precedence](#))] [N0504]
- G01P5/24R4 . . . [N: involving pulsed waves] [N0504]
- G01P5/24T . . [N: by measuring transit time of acoustical waves ([measuring propagation velocity of acoustical waves per se G01H5/00](#))] [N0504]
- G01P5/24T2 . . . [N: Sing-around-systems] [N0504]
- G01P5/24T4 . . . [N: by measuring phase differences] [N0504]
  
- G01P5/26 . by measuring the direct influence of the streaming fluid on the properties of a detecting optical wave [N0504]
  
- G01P7/00** **Measuring speed by integrating acceleration** ([measuring travelled distance by double integration of acceleration G01C21/16](#))
  
- G01P9/00** **Measuring speed by using gyroscopic effect, e.g. using gas, using electron beam** ([gyroscopes or turn-sensitive devices per se G01C19/00](#))
  
- [N: **Note**  
[N0504]  
Absolute angular speed sensors are classified under [G01C9/00](#) and s.gr.  
]
  
- G01P9/02 . using rotary gyroscopes
- G01P9/04 . using turn-sensitive devices with vibrating masses, e.g. tuning-fork [N0504]
  
- [N: **WARNING**  
[N0504]

This group is not used in ECLA; its scope is covered by [G01C19/56](#) and s.gr. ]

- G01P11/00**      **Measuring average value of speed (by determining time taken to traverse a fixed distance [G01P3/64](#), [G01P5/18](#))**
- G01P11/02      .    Measuring average speed of number of bodies, e.g. of vehicles for traffic control
- G01P13/00**      **Indicating or recording presence, absence, or direction, of movement (electric switches [H01H](#); counting moving objects [G06M7/00](#))**
- G01P13/00B      .    [N: of fluids or of granulous or powder-like substances]
- G01P13/00B2      .    .    [N: by using a solid body which is shifted by the action of the fluid]
- G01P13/00B2A    .    .    .    [N: with electrical coupling to the indicating devices]
- G01P13/00B4      .    .    [N: by using deflection of baffle-plates]
- G01P13/00B4A    .    .    .    [N: with electrical coupling to the indicating device]
- G01P13/00B6      .    .    [N: by using the rotation of vanes]
- G01P13/00B6A    .    .    .    [N: with electrical coupling to the indicating device]
- G01P13/00B8      .    .    [N: by using dynamo-electric effect]
- G01P13/00B10    .    .    [N: by using thermal variables]
- G01P13/00B14    .    .    [N: by using differences of pressure in the fluid]
- G01P13/00B22    .    .    [N: by using vibrations generated by the fluid]
- G01P13/00C      .    [N: by using a window mounted in the fluid carrying tube [G01P13/00B2](#), [G01P13/00B4](#), [G01P13/00B6](#) take precedence]
- G01P13/00C2     .    .    [N: with photo-electric detection]
- G01P13/00D      .    [N: by making use of products, e.g. chemical products added to the fluid in order to make the fluid flow visible]
- G01P13/02      .    Indicating direction only, e.g. by weather vane
- G01P13/02A      .    .    [N: indicating air data, i.e. flight variables of an aircraft, e.g. angle of attack, side slip, shear, yaw] [N9806]
- G01P13/04      .    .    Indicating positive or negative direction of a linear movement or clockwise or anti-clockwise direction of a rotational movement
- G01P13/04B      .    .    .    [N: with speed indication] [N9507]
- G01P15/00**      **Measuring acceleration; Measuring deceleration; Measuring shock, i.e. sudden change of acceleration**
- G01P15/00C      .    [N: by measuring acceleration changes by making use of a triple differentiation of a displacement signal]
- G01P15/00N      .    [N: Kinematic accelerometers, i.e. measuring acceleration in relation to an external reference frame, e.g. Ferratis accelerometers ([G01P15/00C](#), [G01P15/16](#), [G01P15/16B](#) take precedence)] [N0504]

- G01P15/00N4 . . [N: measuring translational acceleration] [N0504]
- G01P15/00R . [N: by making use of fluid seismic masses] [N0504]
- G01P15/00R4 . . [N: by using thermal pick-up] [N0504]
- G01P15/02 . by making use of inertia forces [N: using solid seismic masses] ([G01P15/14](#) takes precedence) [C0504] [C1208]
- G01P15/03 . . by using non-electrical means
- G01P15/03B . . . [N: by measuring the displacement of a movable inertial mass]
- G01P15/03B2 . . . . [N: for indicating angular accelerations ([G01P15/03B3](#) takes precedence)]
- G01P15/03B3 . . . . [N: for indicating predetermined acceleration values]
- G01P15/03C . . . [N: by using fluidic means]
- G01P15/04 . . for indicating maximum value
- G01P15/06 . . . using members subjected to a permanent deformation
- G01P15/08 . . with conversion into electric or magnetic values
- G01P15/08A . . . [N: Details]
- G01P15/08F . . . [N: by magnetostrictive pick-up]
- G01P15/08K . . . [N: for indicating angular acceleration]
- G01P15/08L . . . [N: with indication of predetermined acceleration values ([G01P15/135](#) takes precedence)]
- G01P15/08N . . . [N: by non-contact electron transfer, i.e. electron tunneling]
- G01P15/08T . . . [N: by thermal pick-up ([G01P15/00R4](#) takes precedence)] [N0504]
- G01P15/09 . . . [N: by piezo-electric pick-up]
- G01P15/09B . . . . [N: of the compression mode type]
- G01P15/09C . . . . [N: of the shear mode type]
- G01P15/09D . . . . [N: of the bending or flexing mode type]
- G01P15/093 . . . by photo-electric pick-up [N0504]
- G01P15/097 . . . by vibratory elements [N0504]
- G01P15/097C . . . . [N: by acoustic surface wave resonators or delay lines] [N0504]
- G01P15/10 . . . . by vibratory strings [C0504]
- G01P15/105 . . . by magnetically sensitive devices [N0504]
- G01P15/11 . . . by inductive pick-up
- G01P15/12 . . . by alteration of electrical resistance [N: ([G01P15/08T](#), [G01P15/105](#) take precedence)] [C0504]
- G01P15/12B . . . . [N: by potentiometers]
- G01P15/12C . . . . [N: by metal resistance strain gauges, e.g. wire resistance strain gauges]
- G01P15/12D . . . . [N: by piezo-resistive elements, e.g. semiconductor strain gauges]
- G01P15/12E . . . . [N: by semiconductor devices comprising at least one PN junction, e.g. transistors]
- G01P15/125 . . . by capacitive pick-up
- G01P15/13 . . . by measuring the force required to restore a proofmass subjected to inertial forces to a null position
- G01P15/13B . . . . [N: with electrostatic counterbalancing means]
- G01P15/13C . . . . [N: with electromagnetic counterbalancing means]

- G01P15/13D . . . . [N: with piezo-electric counterbalancing means]
- G01P15/135 . . . by making use of contacts which are actuated by a movable inertial mass
- G01P15/14 . by making use of gyroscopes ([gyroscopes per se G01C19/00](#)) [C0504] [C1208]
- G01P15/16 . by evaluating the time-derivative of a measured speed signal [C0504] [C1208]
- G01P15/16B . . [N: for measuring angular accelerations]
- G01P15/18 . in two or more dimensions [N0504]
- G01P21/00           Testing or calibrating of apparatus of devices covered by the preceding groups**
- G01P21/02 . of speedometers
- G01P21/02B . . [N: for measuring speed of fluids; for measuring speed of bodies relative to fluids  
(for measuring volume flow [G01F25/00A](#))] [N9806]