

## SECTION G — PHYSICS

## G08 SIGNALLING

**G08B** **SIGNALLING OR CALLING SYSTEMS; ORDER TELEGRAPHS; ALARM SYSTEMS** (signalling arrangements on vehicles B60Q, B62D 41/00; railway signalling systems or devices B61L; on cycles B62J 3/00, B62J 6/00; safes or strong-rooms with alarm devices E05G; signalling or alarm devices in mines E21F 17/18; sensitive measuring elements, see the appropriate subclasses of G01; traffic control systems G08G; visual indicating means G09; sound-producing devices G10; radio or near-field calling systems H04B 5/00, H04B 7/00; loudspeakers, microphones, gramophone pick-ups or like acoustic electromechanical transducers H04R)

**Note(s)**

1. This subclass covers also means for identifying or incapacitating burglars or the like.
2. This subclass does not cover:
  - the mere provision of an audible or visible signalling device on measuring or switching apparatus;
  - alarm systems for indicating that a specific variable has exceeded, or fallen below, a predetermined value, which are covered by the relevant subclasses of class G01 for the measurement of that variable.
  - alarms for specific processes or types of machines or apparatus, which are covered by the relevant subclasses for the processes, machines, or apparatus.
3. In this subclass, the following term is used with the meaning indicated:
  - "systems" may cover also devices peculiar thereto.

**Subclass index**

## SIGNALLING OR CALLING SYSTEMS

Characterised by the transmission of the signal.....1/00

Characterised by the nature of the indication: audible; visible; tactile; combined.....3/00, 5/00, 6/00, 7/00

ORDER TELEGRAPHS.....9/00

## ALARM SYSTEMS

Responsive to an unspecified condition.....23/00

Responsive to two or more different conditions.....19/00

Responsive to one specified condition: intrusion; fire; other.....13/00, 15/00, 17/00, 21/00

With transmission from or to a central station.....25/00, 26/00, 27/00

Predictive alarm systems.....31/00

CHECKING, MONITORING.....29/00

**1/00 Systems for signalling characterised solely by the form of transmission of the signal**

- 1/02 • using only mechanical transmission
- 1/04 • using hydraulic transmission; using pneumatic transmission
- 1/06 • • hydraulic only
- 1/08 • using electric transmission

**3/00 Audible signalling systems; Audible personal calling systems** (audible indication of time signals G04B 21/00, G04C 21/00)

- 3/02 • using only mechanical transmission
- 3/06 • using hydraulic transmission; using pneumatic transmission
- 3/10 • using electric transmission; using electromagnetic transmission
- 3/14 • using explosives

**5/00 Visible signalling systems, e.g. personal calling systems, remote indication of seats occupied** (display of time signals G04B 19/00, G04C 17/00, G04C 19/00, G04G 9/00; for display of alphanumeric information G09F; flags, banners G09F)

- 5/02 • using only mechanical transmission
- 5/06 • using hydraulic transmission; using pneumatic transmission
- 5/14 • • with indicator element moving about a pivot, e.g. hinged flap, rotating vane
- 5/16 • • • with reset means necessitating a separate operation to return the indicator element
- 5/18 • • with indicator element moving rectilinearly
- 5/20 • • • with reset means necessitating a separate operation to return the indicator element
- 5/22 • using electric transmission; using electromagnetic transmission
- 5/24 • • with indicator element moving about a pivot, e.g. hinged flap, rotating vane
- 5/26 • • • with reset means necessitating a separate operation to return the indicator element
- 5/28 • • • with hinged flap or arm

## G08B

- 5/30 • • • with rotating or oscillating members, e.g. vanes
- 5/32 • • with indicator element moving rectilinearly
- 5/34 • • • with reset means necessitating a separate operation to return the indicator element
- 5/36 • • using visible light sources
- 5/38 • • • using flashing light
- 5/40 • using smoke, fire, or coloured gases (sky-writing G09F 21/16)
- 6/00 Tactile signalling systems, e.g. personal calling systems** (indication of time by feeling G04B 25/02; deaf-aid sets H04R 25/00) [6]
- 7/00 Signalling systems according to more than one of groups G08B 3/00-G08B 6/00** (combinations of display arrangements with audible advertising G09F 27/00); **Personal calling systems according to more than one of groups G08B 3/00-G08B 6/00**
- 7/02 • using mechanical transmission
- 7/04 • using hydraulic transmission; using pneumatic transmission
- 7/06 • using electric transmission
- 7/08 • using explosives
- 9/00 Order telegraph apparatus, i.e. means for transmitting one of a finite number of different orders at the discretion of the user, e.g. bridge to engine room orders in ships** (signalling devices in mines E21F 17/18)
- 9/02 • Details
- 9/04 • • Means for recording operation of the apparatus
- 9/06 • • Means for indicating disagreement between orders given and those carried out
- 9/08 • mechanical
- 9/10 • • using ratchet
- 9/12 • • using rotary shaft
- 9/14 • hydraulic; pneumatic
- 9/16 • • using ratchet
- 9/18 • • by varying displacement of the fluid
- 9/20 • • by varying pressure of the fluid
- 13/00 Burglar, theft, or intruder alarms** (vehicle theft alarms B60R 25/10; cycle theft alarms B62H 5/00)
- 13/02 • Mechanical actuation
- 13/04 • • by breaking of glass
- 13/06 • • by tampering with fastening (alarm locks E05B 45/00; alarm devices on safes E05G 1/10)
- 13/08 • • by opening, e.g. of door, of window, of drawer, of shutter, of curtain, of blind
- 13/10 • • by pressure on floors, floor coverings, stair treads, counters, or tills
- 13/12 • • by the breaking or disturbance of stretched cords or wires
- 13/14 • • by lifting or attempted removal of hand-portable articles
- 13/16 • Actuation by interference with mechanical vibrations in air or other fluid
- 13/18 • Actuation by interference with heat, light, or radiation of shorter wavelength; Actuation by intruding sources of heat, light, or radiation of shorter wavelength
- 13/181 • • using active radiation detection systems [5]
- 13/183 • • • by interruption of a radiation beam or barrier (light barriers G01V 8/10) [5]
- 13/184 • • • • using radiation reflectors [5]
- 13/186 • • • • using light guides, e.g. optical fibres [5]
- 13/187 • • • by interference of a radiation field [5]
- 13/189 • • using passive radiation detection systems [5]
- 13/19 • • • using infra-red-radiation detection systems [5]
- 13/191 • • • • using pyroelectric sensor means [5]
- 13/193 • • • • using focusing means [5]
- 13/194 • • • using image scanning and comparing systems [5]
- 13/196 • • • • using television cameras [5]
- 13/20 • Actuation by change of fluid pressure
- 13/22 • Electrical actuation
- 13/24 • • by interference with electromagnetic field distribution
- 13/26 • • by proximity of an intruder causing variation in capacitance or inductance of a circuit
- 15/00 Identifying, scaring, or incapacitating burglars, thieves, or intruders, e.g. by explosives** (burglar traps, or the like, on safes E05G 5/02)
- 15/02 • with smoke, gas, or coloured or odorous powder or liquid
- 17/00 Fire alarms; Alarms responsive to explosion** (temperature-responsive elements G01K)
- 17/02 • Mechanical actuation of the alarm, e.g. by the breaking of a wire
- 17/04 • Hydraulic or pneumatic actuation of the alarm, e.g. by change of fluid pressure
- 17/06 • Electric actuation of the alarm, e.g. using a thermally-operated switch (thermally-operated electric switches *per se* H01H 37/00)
- 17/08 • Actuation involving the use of explosive means
- 17/10 • Actuation by presence of smoke or gases
- 17/103 • • using a light emitting and receiving device [5]
- 17/107 • • • for detecting light-scattering due to smoke [5]
- 17/11 • • using an ionisation chamber for detecting smoke or gas (vacuum gauges making use of ionisation effects G01L 21/30; gas analysis by investigating the ionisation G01N 27/62) [5]
- 17/113 • • • Constructional details (discharge tubes for measuring pressure of introduced gas, or for detecting presence of gas, in general H01J 41/02) [5]
- 17/117 • • by using a detection device for specific gases, e.g. combustion products, produced by the fire (G08B 17/103, G08B 17/11 take precedence; investigating or analysing gases in general G01N, e.g. by using electric means G01N 27/00) [5]
- 17/12 • Actuation by presence of radiation or particles, e.g. of infra-red radiation, of ions
- 19/00 Alarms responsive to two or more different undesired or abnormal conditions, e.g. burglary and fire, abnormal temperature and abnormal rate of flow**
- 19/02 • Alarm responsive to formation or anticipated formation of ice (indicating weather conditions G01W 1/00)
- 21/00 Alarms responsive to a single specified undesired or abnormal condition and not otherwise provided for**
- 21/02 • Alarms for ensuring the safety of persons [7]
- 21/04 • • responsive to non-activity, e.g. of elderly persons (G08B 21/06 takes precedence) [7]
- 21/06 • • indicating a condition of sleep, e.g. anti-dozing alarms (safety devices for propulsion-unit control of vehicles responsive to incapacity of driver B60K 28/06) [7]

21/08	• • responsive to the presence of persons in a body of water, e.g. a swimming pool; responsive to an abnormal condition of a body of water [7]	26/00	<b>Alarm systems in which substations are interrogated in succession by a central station</b>
21/10	• • responsive to calamitous events, e.g. tornados, earthquakes (seismology G01V 1/00; indicating weather conditions G01W 1/00) [7]	27/00	<b>Alarm systems in which the alarm condition is signalled from a central station to a plurality of substations</b>
21/12	• • responsive to undesired emission of substances, e.g. pollution alarms (alarms on pipe-lines F17D 3/01) [7]	29/00	<b>Checking or monitoring of signalling or alarm systems; Prevention or correction of operating errors, e.g. preventing unauthorised operation</b>
21/14	• • • Toxic gas alarms (G08B 21/16 takes precedence) [7]	29/02	• Monitoring continuously signalling or alarm systems [5]
21/16	• • • Combustible gas alarms [7]	29/04	• • Monitoring of the detection circuits [5]
21/18	• Status alarms (G08B 21/02 takes precedence) [7]	29/06	• • Monitoring of the line circuits, e.g. signalling of line faults (testing or locating faults in cables or lines in general G01R 31/02, G01R 31/08) [5]
21/20	• • responsive to moisture [7]	29/08	• • • Signalling of tampering with the line circuit [5]
21/22	• • responsive to presence or absence of persons [7]	29/10	• • Monitoring of the annunciator circuits [5]
21/24	• • Reminder alarms, e.g. anti-loss alarms (devices to prevent loss of bags or the like A45C 13/24) [7]	29/12	• Checking intermittently signalling or alarm systems [5]
23/00	<b>Alarms responsive to unspecified undesired or abnormal conditions</b>	29/14	• • checking the detection circuits [5]
25/00	<b>Alarm systems in which the location of the alarm condition is signalled to a central station, e.g. fire or police telegraphic systems</b>	29/16	• Security signalling or alarm systems, e.g. redundant systems [5]
25/01	• characterised by the transmission medium [5]	29/18	• Prevention or correction of operating errors (G08B 29/02, G08B 29/12 take precedence) [5]
25/04	• • using a single signalling line, e.g. in a closed loop [5]	29/20	• • Calibration, including self-calibrating arrangements [5]
25/06	• • using power transmission lines (systems in general for transmission of information <i>via</i> power distribution lines H04B 3/54) [5]	29/22	• • • Provisions facilitating manual calibration, e.g. input or output provisions for testing; Holding of intermittent values to permit measurement [5]
25/08	• • using communication transmission lines (telephonic communication systems combined with alarm systems H04M 11/04) [5]	29/24	• • • Self-calibration, e.g. compensating for environmental drift or ageing of components [5]
25/10	• • using wireless transmission systems [5]	29/26	• • • • by updating and storing reference thresholds [5]
25/12	• Manually actuated calamity alarm transmitting arrangements [5]	29/28	• • • • by changing the gain of an amplifier [5]
25/14	• Central alarm receiver or annunciator arrangements [5]	31/00	<b>Predictive alarm systems characterised by extrapolation or other computation using updated historic data [5]</b>

**G08C TRANSMISSION SYSTEMS FOR MEASURED VALUES, CONTROL OR SIMILAR SIGNALS** (fluid pressure transmission systems F15B; mechanical means for transferring the output of a sensing member into a different variable G01D 5/00; mechanical control systems G05G) [4]

### Subclass index

#### TRANSMISSION SYSTEMS IN GENERAL

Electric; non-electric.....19/00, 23/00

SYSTEMS FOR TRANSMITTING THE POSITION OF AN OBJECT.....21/00

#### ARRANGEMENTS CHARACTERISED BY THE METHOD OF TRANSMISSION

Multiplex; use of a wireless electrical link.....15/00, 17/00

#### PROCESSING SIGNALS

Differentiating, delaying.....13/00

MONITORING, PREVENTING OR CORRECTING ERRORS.....25/00

13/00	<b>Arrangements for influencing the relationship between signals at input and output, e.g. differentiating, delaying</b>	15/00	<b>Arrangements characterised by the use of multiplexing for the transmission of a plurality of signals over a common path</b>
13/02	• to yield a signal which is a function of two or more signals, e.g. sum, product	15/02	• simultaneously, i.e. using frequency division
		15/04	• • the signals being modulated on carrier frequencies
		15/06	• successively, i.e. using time division
		15/08	• • the signals being represented by amplitude of current or voltage in transmission link

## G08C

- 15/10 • • the signals being represented by frequencies or phase of current or voltage in transmission link
- 15/12 • • the signals being represented by pulse characteristics in transmission link
- 17/00 Arrangements for transmitting signals characterised by the use of a wireless electrical link [6]**
- 17/02 • using a radio link [6]
- 17/04 • using magnetically coupled devices [6]
- 17/06 • using capacity coupling [6]
- 19/00 Electric signal transmission systems (G08C 17/00 takes precedence)**
- 19/02 • in which the signal transmitted is magnitude of current or voltage (G08C 19/36, G08C 19/38 take precedence)
- 19/04 • • using variable resistance
- 19/06 • • using variable inductance
- 19/08 • • • differentially influencing two coils
- 19/10 • • using variable capacitance
- 19/12 • in which the signal transmitted is frequency or phase of ac
- 19/14 • • using combination of fixed frequencies
- 19/16 • in which transmission is by pulses
- 19/18 • • using a variable number of pulses in a train
- 19/20 • • • operating on dynamo-electric devices, e.g. step motor
- 19/22 • • by varying the duration of individual pulses
- 19/24 • • using time shift of pulses
- 19/26 • • by varying pulse repetition frequency
- 19/28 • • using pulse code
- 19/30 • in which transmission is by selection of one or more conductors or channels from a plurality of conductors or channels (G08C 19/38 takes precedence)
- 19/32 • • of one conductor or channel
- 19/34 • • of a combination of conductors or channels
- 19/36 • using optical means to convert the input signal
- 19/38 • using dynamo-electric devices (operated by pulses G08C 19/20)
- 19/40 • • of which only the rotor or the stator carries a winding to which a signal is applied, e.g. using step motor
- 19/42 • • • having three stator poles
- 19/44 • • • having more than three stator poles
- 19/46 • • of which both rotor and stator carry windings (having squirrel-cage rotor G08C 19/40)
- 19/48 • • • being of the type with a three-phase stator and a rotor fed by constant-frequency ac, e.g. selsyn, magflip
- 21/00 Systems for transmitting the position of an object with respect to a predetermined reference system, e.g. tele-autographic system [5]**
- 23/00 Non-electric signal transmission systems, e.g. optical systems**
- 23/02 • using acoustic waves [6]
- 23/04 • using light waves, e.g. infra-red [6]
- 23/06 • • through light guides, e.g. optical fibres [6]
- 25/00 Arrangements for preventing or correcting errors; Monitoring arrangements**
- 25/02 • by signalling back from receiving station to transmitting station
- 25/04 • by recording transmitted signals

**G08G TRAFFIC CONTROL SYSTEMS** (guiding railway traffic, ensuring the safety of railway traffic B61L; arrangement of road signs or traffic signals E01F 9/00; radar systems or analogous systems, designed for traffic control G01S 13/91; sonar or lidar systems specially designed for traffic control G01S 15/88, G01S 17/88) [2]

### Note(s)

This subclass covers:

- identification of traffic offenders;
- indicating the position of vehicles for traffic control purposes;
- navigation systems for traffic control purposes, i.e. systems in which the navigation is not performed autonomously by or in the vehicles, but where the vehicles are guided by instructions transmitted to them;
- indication of free spaces in parking areas.

#### **1/00 Traffic control systems for road vehicles**

- 1/005 • including pedestrian guidance indicator [5]
- 1/01 • Detecting movement of traffic to be counted or controlled (G08G 1/07-G08G 1/14 take precedence; road pricing or congestion charging of vehicles or vehicle users G07B 15/06)
- 1/015 • • with provision for distinguishing between motor cars and cycles
- 1/017 • • identifying vehicles (G08G 1/015, G08G 1/054 take precedence) [5]
- 1/02 • • using treadles built into the road (pads or other sensitive devices responsive to passage of vehicles E01F 11/00)
- 1/04 • • using optical or ultrasonic detectors
- 1/042 • • using inductive or magnetic detectors [5]
- 1/048 • • with provision for compensation of environmental or other condition, e.g. snow, vehicle stopped at detector [5]
- 1/052 • • with provision for determining speed or overspeed [5]
- 1/054 • • • photographing overspeeding vehicles [5]
- 1/056 • • with provision for distinguishing direction of travel [5]
- 1/065 • by counting the vehicles in a section of the road or in a parking area, i.e. comparing incoming count with outgoing count (road pricing or congestion charging of vehicles or vehicle users G07B 15/06)
- 1/07 • Controlling traffic signals
- 1/08 • • according to detected number or speed of vehicles
- 1/081 • • Plural intersections under common control [5]
- 1/082 • • • Controlling the time between beginning of the same phase of a cycle at adjacent intersections [5]
- 1/083 • • • Controlling the allocation of time between phases of a cycle [5]
- 1/085 • • using a free-running cyclic timer

- 1/087 • • Override of traffic control, e.g. by signal transmitted by an emergency vehicle [5]
- 1/09 • Arrangements for giving variable traffic instructions (indicating arrangements for variable information by selection or combination of individual elements G09F 9/00)
- 1/095 • • Traffic lights
- 1/0955 • • • transportable [5]
- 1/096 • • provided with indicators in which a mark progresses showing the time elapsed, e.g. of green phase
- 1/0962 • • having an indicator mounted inside the vehicle, e.g. giving voice messages [5]
- 1/0965 • • • responding to signals from another vehicle, e.g. emergency vehicle [5]
- 1/0967 • • • Systems involving transmission of highway information, e.g. weather, speed limits (transmission of navigation instructions to the vehicle G08G 1/0968) [5]
- 1/0968 • • • Systems involving transmission of navigation instructions to the vehicle [5]
- 1/0969 • • • • having a display in the form of a map [5]
- 1/097 • Supervising of traffic control systems, e.g. by giving an alarm if two crossing streets have green light simultaneously
- 1/123 • indicating the position of vehicles, e.g. scheduled vehicles (transmission of navigation instructions to vehicles G08G 1/0968) [5]
- 1/127 • • to a central station [5]
- 1/13 • • • the indicator being in the form of a map [5]
- 1/133 • • within the vehicle [5]
- 1/137 • • • the indicator being in the form of a map [5]
- 1/14 • indicating individual free spaces in parking areas
- 1/16 • Anti-collision systems (road vehicle drive control systems for predicting or avoiding probable or impending collision otherwise than by control of a particular sub-unit B60W 30/08) [2, 2006.01]
- 3/00 Traffic control systems for marine craft** (marking of navigational route B63B 22/16, B63B 51/00)
- 3/02 • Anti-collision systems
- 5/00 Traffic control systems for aircraft [2]**
- 5/02 • Automatic landing aids, i.e. systems in which flight data of incoming planes are processed to provide landing data (landing aids fitted in or to aircraft B64D 45/04; visual or acoustic landing aids B64F 1/18)
- 5/04 • Anti-collision systems
- 5/06 • for control when on the ground [2]
- 7/00 Traffic control systems for simultaneous control of two or more different kinds of craft [2]**
- 7/02 • Anti-collision systems [2]
- 9/00 Traffic control systems for craft where the kind of craft is irrelevant or unspecified [2]**
- 9/02 • Anti-collision systems [2]
- 99/00 Subject matter not provided for in other groups of this subclass [2006.01]**