ECLA EUROPEAN CLASSIFICATION

G05D SYSTEMS FOR CONTROLLING OR REGULATING NON-ELECTRIC VARIABLES (for continuous casting of metals B22D11/16; valves per se F16K; sensing non-electric variables, see the relevant subclasses of G01; for regulating electric or magnetic variables G05F)

Notes

1. This subclass does not cover features of general applicability to regulating systems, e.g. anti-hunting arrangements, which are covered by subclass G05B.

2. In this subclass, the following term is used with the meaning indicated:

   - "systems" includes self-contained devices such as speed governors, pressure regulators.

3. Control systems specially adapted for particular apparatus, machines or processes are classified in the subclasses for the apparatus, machines or processes, provided that there is specific provision for control or regulation relevant to the special adaptation, either at a detailed level, (e.g. A21B1/40: "for regulating temperature in bakers` ovens") or at a general level, (e.g. B23K9/095: "for automatically control of welding parameters in arc welding"). Otherwise, classification is madein the most appropriate place in this subclass. The following are lists of places where there is specific provision of the kind referred to above. Where such provision is at a detailed level, the places have been grouped according to the main groups of this subclass. Where the provision is at a general level (e.g. of a kind appropriate to more than one of the main groups specified in the lists, or to main groups G05D27/00 or G05D29/00), the places are listed under the title "General References". Places related to G05D1/00

A01B69/00 Agricultural machines or implements
A63H17/36 Toy vehicles
B60V1/11 Air-cushion vehicles
B62D1/00 Steering controls of motor vehicles or trailers, i.e. means for initiating a change of direction
B62D6/00 Arrangements for automatically controlling the steering depending on driving conditions
B62D55/116 Chassis of endless-tracked vehicles
B63H25/00 Marine steering; control of waterborne vessels
B64C13/00 to B64C15/00 Controlling aircraft
B64D25/11 Controlling attitude or direction of aircraft ejector seats
B64G1/24 Cosmonautic vehicles
F41G7/00 Self-propelled missiles
F42B15/01 Guided missiles
F42B19/01 Marine torpedoesPlaces related to G05D3/00
A43D119/00 Footwear manufacture
B21K31/00 Tool carriers in forging or pressing
B23B39/26 Pattern-controlled boring or drilling tools
B23D1/30, B23D3/06, B23D5/04 Planing or slotting machines controlled by copying device
B23H7/18 Electrode to workpiece spacing in electric dischargte and electrochemical machining
B23K26/02 Workpiece in laser welding or cutting
B23K37/04 Workpiece in welding
B23K37/06 Molten metal in welding
B23Q5/20 Spindles in machine tools
B23Q15/00, B23Q16/00 Tool or work position in machine tools

B23Q35/00 Tools controlled by pattern or master model
B24B17/00 Grinding controlled by patterns, drawings, magnetic tape or the like
B24B47/22 Starting position in grinding
B30B15/24 Actuating members in presses
B62D55/116 Chassis of tracked vehicles
B65H23/18 Web-advancing mechanisms
E02F3/43 Dippers or buckets in dredgers
F15B9/00 Fluid-pressure servomotors with follow-up action
F24J2/38 Tracking of solar haet collectors
G03F9/00 Photomechanical production of patterned or textured surfaces
G11B5/588 Rotating heads in information storage systems
G21C7/12 Movement of control elements in nuclear reactors

Places related to G05D5/00

A24B7/14 Tobacco cutting
B05C11/02 Thickness of coating of fluent material on surface
B21B37/16 Thickness, width, diameter or other transverse dimensions of the products of metal-rolling mills
C03B18/04 Dimension of glass ribbon
D21F7/06 Thickness of layer in paper making

Places related to G05D7/00

A45D20/26 Air in hair drying helmets
A61M5/168 Flow of media to the human body
B03C3/36 Gases or vapour in electrostatic separators
B05C11/10 Fluent material in coating devices
B67D1/12 Dispensing beverages on draught
B67D5/28 Transferring liquids
C10K1/28 Gas purifiers
E21B21/08 Flushing boreholes
E21B43/12 Obtaining liquids from wells
F01D17/00 Flow in non-positive-displacement machines or systems
F01M1/16 Lubrication arrangements
F01P7/00 Coolant flow in cooling devices
F02C9/16, F02C9/50 Gas-turbine working fluid
F16L55/027 Throttle passages in pipes
F24F11/00 Air-flow or supply of heating or cooling fluids in air treatment arrangements
F26B21/12 Air or gas flow in dryers
G01G11/08 Continuous flow weighing apparatus
G21D3/14 Coolant in nuclear power plant

Places related to G05D9/00

B01D21/34 Liquid level in sedimentation arrangements
B41L27/04 Ink level in printing, manifolding or duplicating arrangements
F22D5/00 Feed water for boilers
H01J1/10, H01J13/14 Liquid pool electrodes in electric discharge tubes or lamps

Places related to G05D11/00

B01D21/32 Density in sedimentation arrangements
B01F15/04 Mixers
B24C7/00 Abrasive blasts
B28C7/00 Mixtures of clays or cements
B65G53/66 Bulk material conveyers
F02K3/075 Flow ratio in jet-propulsion plants

Places related to G05D13/00

B21C1/12 Drum speed in metal drawing

B23Q15/00 Cutting velocity of tool or work
B30B15/20 Ram speed in presses
B60K31/00 Setting or limiting speed of vehicles
B60L15/00 Electrically-propelled vehicles
B64D31/08 Cruising speed of aircraft
D01D1/09 Feed rate in manufacture of artificial filaments, threads, fibres, bristles or ribbons
D01G15/36 Carding machines
D02H13/14 Warping, beaming or leasing machines
D03D51/16 Cyclically varying speed of looms
G01N30/32 Speed of fluid carrier in chemical analysis
G11B15/46 Filamentary or web record carriers or heads for such carriers in information storage systems
G11B19/28 Non-filamentary, non-web record carriers, or heads for such carriers in information storage systemsPlaces related to G05D15/00
B25D9/26 Portable percussive tools
B30B15/22 Ram pressure in presses
B65H59/00 Tension in filamentary material
[N: B65H23/00, B65H59/00] Tension in webs, tapes, filamentary material
B66D1/50 Rope, cable or chain tension
D03D49/04 Tension in looms
D05B47/04 Tension in sewing machines
D21F3/06 Pressure in paper-making machines
F26B13/12 Drying fabrics
F26B21/10 Pressure in dryers
G11B15/43 Record carrier tension in information storage arrangementsPlaces related to G05D16/00
B60C23/00 Tyre pressure
B63C11/08 Air within diving suit
B64D13/00 Aircraft air-pressure
B65G53/66 Bulk material conveyers
D01D1/09 Manufacture of artificial filaments, threads, fibres, bristles or ribbons
E21B21/08 Flushing boreholes
F01M1/16 Lubrication arrangements
G01N30/32 Pressure of fluid carrier in chemical analysis
H01J7/14 Pressure in electric discharge tubes or lamps
H01K1/52 Pressure in electric incandescent lampsPlaces related to G05D19/00
B25D9/26 Portable percussion tools
B65G27/32 Jigging conveyersPlaces related to G05D21/00
B01D21/32 Density in sedimentation arrangements
B01D53/30 Treating gases or vapours
G01N30/34 Composition of fluid carrier in chemical analysis
Places related to G05D22/00
A01G25/16 Watering gardens, fields, sports grounds or the like
A01K41/04 Poultry incubators
A24B9/00 Tobacco products
F24F11/00 Air conditioning
F26B21/08 DryersPlaces related to G05D23/00
A21B1/40 Bakers` ovens
A45D6/20 Hair curlers
B21C31/00 Metal extruding
B60C23/00 Tyre temperature
B64G1/50 Cosmonautic vehicles
C03B18/18,
C03B18/22 Float baths in glass making

D01D1/09	Manufacture of artificial filaments, threads, fibres, bristles or ribbons
D04B35/30	Knitting machines
D06F75/26	Hand irons
D21F5/06	Paper-making machines
F01M5/00	Lubricant in lubrication arrangements
F16N7/08	Arrangements for supplying oil or unspecified lubricant from a reservoir
F22G5/00	Steam superheat
F26B21/10	Dryers
G01N30/30	Temperature of fluid carrier in chemical analysis
H01M10/50	Electric storage cells
H05B6/06, H05B6/50, H05B6/68	Dielectric, induction or microwave heating
H05G1/36	Anode of X-ray tubePlaces related to G05D25/00
B41B21/08	Photographic composing machines
H01S3/10, H05B33/08, H05B35/00 to H05B43/00	Lasers and other light sourcesGeneral references
A01J5/007	Milking machines
B23K9/095	Welding parameters
B23Q35/00	Copying
B24B17/00, B24B49/00	Grinding or polishing
B24C7/00	Abrasive blasts
B67D1/12	Dispensing beverages on draught
G03G21/20	Electrographic, electrophotographic or magnetographic processes
H02P5/00 to H02P9/00	Dynamo-electric motors or generators

G05D1/00 **Control of position, course or altitude of land, water, air, or space vehicles, e.g. automatic pilot** (steering applicable only to other than landborne vehicles, e.g. three-dimensional steering applicable to both aircraft and submarines B60K; construction or disposition of steering means on land vehicles B62, on waterborne vessels B63; manual or automatic control of aircraft, e.g. using automatic pilot or radiated signal B64C; radio navigation systems or analogous systems using other waves G01S)

G05D1/00B . [N: with arrangements to save energy]

G05D1/00C . [N: associated with a remote control arrangement]

G05D1/00C1 . . [N: characterised by the operator's input device (input arrangements for computing systems in general G06F3/00)] [N1202]

G05D1/00C2 . . [N: characterised by the communication link (data switching networks in general H04L12/00)] [N1202]

G05D1/00C3 . . [N: involving a plurality of vehicles, e.g. fleet or convoy travelling (traffic control systems for road vehicles G08G1/00; for marine craft G08G3/00; for aircraft G08G5/00; fleet control of land vehicles from a control room G05D1/02E20F6)] [N1202]

G05D1/00C4 . . [N: by having the operator tracking the vehicle either by direct line of sight or via one or more cameras located remotely from the vehicle] [N1202]

G05D1/00C5 . . [N: by providing the operator with simple or augmented images from one or more cameras located onboard the vehicle, e.g. tele-operation (images analyzed by a computer and used for automatic navigation G05D1/02E6V)] [N1202]

G05D1/00C6 . . [N: by providing the operator with a computer generated representation of the environment of the vehicle, e.g. virtual reality, maps (maps used for automatic navigation G05D1/02E14M; flight directors G01C23/00A)] [N1202]

G05D1/00C7 . . [N: by providing the operator with signals other than visual, e.g. acoustic, haptic] [N1202]

G05D1/00D . [N: with safety arrangements]

G05D1/00D2 . . [N: for transition from automatic pilot to manual pilot and vice versa]

G05D1/00D4 . . [N: for limitation of acceleration or stress]

G05D1/00D6 . . [N: to counteract a motor failure]

G05D1/00D8 . . [N: using redundant signals or controls]

G05D1/00E . [N: to help an aircraft pilot in the rolling phase]

G05D1/00F . [N: characterized by the autonomous decision making process, e.g. artificial intelligence, predefined behaviours (using knowledge based models G06N5/00)] [N1202]

G05D1/00G . [N: involving pointing a payload, e.g. camera, weapon, sensor, towards a fixed or moving target] [N1202]

G05D1/02 . Control of position or course in two dimensions

G05D1/02B . . [N: specially adapted to aircraft]

G05D1/02B2 . . . [N: to counteract a sudden perturbation, e.g. cross-wind, gust]

G05D1/02C . . [N: specially adapted to water vehicles]

G05D1/02C4 . . . [N: dynamic anchoring]

G05D1/02E . . [N: specially adapted to land vehicles] [C0306]

[N: **Informative note:**
This group covers control of position or course in two dimensions specially adapted for land vehicles, i.e. control systems to define a trajectory for a land vehicle, and to take suitable actions to make the vehicle follow said trajectory.
Relationships with other classification places.
Subclass G01C covers navigation in general, i.e. determining the position and course of land vehicles, ships, aircraft, and space vehicles.
Subclass G01S covers radio, sonar or lidar navigation systems, i.e. navigation by use of radio, acoustic or optical waves, or analogue arrangements using other electromagnetic waves.
Subclass G08G covers navigation systems for traffic control purposes, i.e. systems in which the navigation is not performed autonomously by or in the vehicle, but where the vehicles are guided by instructions transmitted to them.
Aspects of navigation systems that are important per se should also be classified in the relevant groups of G01C (see for example list under "Informative References" below).
Aspects of radio, sonar or lidar navigation systems that are important per se should also be classified in the relevant groups of G01S (see for example list under "Informative References" below).
Aspects of navigation systems for traffic purposes that are important per se should also be classified in the relevant groups of G08G (see for example list under "Informative References" below).

Informative References.
Attention is drawn to the following places, which could be of interest for search:
- navigation, i.e. determining the position and course of land vehicles, ships, aircraft, and space vehicles G01C21/00
- measuring distance traversed on the ground by vehicles, e.g. using odometers G01C22/00
- position-fixing by co-ordinating a plurality of determinations of direction or position lines G01S5/00
- determining distance or velocity using waves and not using reflection or reradiation of waves G01S11/00
- radar systems specially designed for traffic control G01S13/91
- radar systems specially designed for for anti-collision purposes G01S13/93
- sonar systems specially designed for for anti-collision purposes G01S15/93
- lidar systems specially designed for for anti-collision purposes G01S17/93
- traffic control systems for road vehicles G08G1/00
- monitoring the location of fleet of vehicles in traffic control systems G08G1/123M
- anti-collision traffic control systems G08G1/16
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G05D1/02E3 . . . [N: with means for defining a desired trajectory (involving a plurality of land vehicles G05D1/02E20)][N0306]

G05D1/02E3B . . . . [N: in accordance with safety or protection criteria, e.g. avoiding hazardous areas (monitoring the location of vehicles within a certain area, e.g. forbidden or allowed areas, in traffic control systems for road vehicles G08G1/123M3)] [N0306]

G05D1/02E3D . . . . [N: in accordance with energy consumption, time reduction or distance reduction criteria] [N0306]

G05D1/02E3F . . . . [N: ensuring the processing of the whole working surface] [N0306]

G05D1/02E3L . . . . [N: involving a learning process] [N0306]

G05D1/02E3S . . . . [N: involving speed control of the vehicle (vehicle fittings for automatically controlling, i.e. preventing speed from exceeding an arbitrarily established velocity or maintaining speed at a particular velocity, as selected by the vehicle operator B60K31/00)] [N0306]

G05D1/02E3V . . . . [N: involving docking at a fixed facility, e.g. base station or loading bay (parking aids B62D15/02H)] [N1202]

G05D1/02E5 . . . [N: using mechanical sensing means, e.g. for sensing treated area] [N0306]

G05D1/02E5B . . . . [N: in combination with fixed guiding means] [N0306]

G05D1/02E6 . . . [N: using optical position detecting means (position-fixing by using electromagnetic waves other than radio waves, e.g. optical position detecting means G01S5/16)] [N0306]

G05D1/02E6B . . . . [N: using optical markers or beacons (optical beacons per se G01S1/70)] [N0306]

G05D1/02E6B2 . . . . . [N: in combination with a laser (lasers per se H01S)] [N0306]

G05D1/02E6D . . . . [N: using obstacle or wall sensors (G05D1/02E6V and G05D1/02E20B take precedence; lidar systems designed for anti-collision purposes G01S17/93)] [N0306]

G05D1/02E6D2 . . . . . [N: in combination with a laser (lasers per se H01S)] [N0306]

G05D1/02E6N . . . . [N: using non-visible light signals, e.g. IR or UV signals] [N0306]

G05D1/02E6S . . . . [N: using reflecting strips] [N0306]

G05D1/02E6V . . . . [N: unsing a video camera in combination with image processing means (image data processing in general G06T ; video signal coding and transmission H04N)] [N0306]

G05D1/02E6V2 . . . . . [N: in combination with a laser (lasers per se H01S)] [N0306]

G05D1/02E6V4 . . . . . [N: extracting 3D information from a plurality of images taken from different locations, e.g. stereo vision (stereoscopic image analysis H04N13/00X; depth recovery from images G06T7/00R7S)] [N1202]

G05D1/02E6V6 . . . . . [N: extracting relative motion information from a plurality of images taken successively, e.g. visual odometry, optical flow (determining position or orientation from images G06T7/00P)] [N1202]

G05D1/02E8 . . . [N: using acoustic signals, e.g. ultra-sonic singals (sonar systems designed for anti-collision purposes G01S15/93)] [N0306]

G05D1/02E10 . . . [N: using a radar (radar systems designed for anti-collision purposes between land vehicles or between land vehicle and fixed obstacles G01S13/93C)] [N0306]

G05D1/02E12 . . . [N: using magnetic or electromagnetic means] [N0306]

G05D1/02E12P . . . . [N: using magnetic plots] [N0306]

G05D1/02E12S . . . . [N: using magnetic strips] [N0306]

G05D1/02E12W . . . . [N: using buried wires] [N0306]

G05D1/02E14 . . . [N: using internal positioning means] [N0306]

G05D1/02E14B . . . . [N: comprising intertial navigation means, e.g. azimuth detector (inertial navigation G01C21/16; inertial navigation combined with non-inertial navigation instruments G01C21/16A)] [N0306]

G05D1/02E14D . . . . [N: comprising means for registering the travel distance, e.g. revolutions of wheels (measuring distance traversed on the ground by vehicles, e.g. using odometers G01C22/00)] [N0306]

G05D1/02E14M . . . . [N: using mapping information stored in a memory device (navigation using map-matching G01C21/30)] [N0306]

G05D1/02E16 . . . [N: using signals provided by a source external to the vehicle (involving a plurality of vehicles G05D1/02E20; automatically controlling vehicle speed responsive to exernally generated signals B60K31/00F)] [N0306]

G05D1/02E16B . . . . [N: using satellite positioning signals, e.g. GPS] [N0306]

G05D1/02E16D . . . . [N: using a RF signal] [N0306]

G05D1/02E16D2 . . . . . [N: generated in a local control room] [N0306]

G05D1/02E16F . . . . [N: using signals transmitted via a public communication network, e.g. GSM network] [N0306]

G05D1/02E20 . . . [N: involving a plurality of land vehicles, e.g. fleet or convoy travelling (traffic control systems for road vehicles G08G1/00, particularly anticollision systems G08G1/16)] [N0306]

[N: **Informative note:**
In this group, the following terms or expressions are used with the meaning indicated:
- fleet means a plurality of vehicles controlled in a coordinated manner or under unified control;
- convoy (or platooning) means a plurality of vehicles following an identical trajectory, said vehicles being separated by a predetermined distance maintained by a control system
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G05D1/02E20B . . . . [N: with means for avoiding collisions between vehicles (vehicle fittings for automatically controlling speed inclusing means for detecting potential obstacles B60K31/00D; avoiding obstacles by action on the steering system B62D; radar, sonar, lidar systems designed for anti-collision purposes G01S13/93, G01S15/93, G01S17/93)] [N0306]

G05D1/02E20F . . . . [N: Fleet control (monitoring fleets in traffic control systems for road vehicles G08G1/123M, G08G1/127)] [N0306]
G05D1/02E20F2 . . . . . [N: Convoy travelling] [N030 6]
G05D1/02E20F4 . . . . . [N: by at least one leading vehicle of the fleet] [N0306]
G05D1/02E20F6 . . . . . [N: by controlling means in a control room] [N0306]
G05D1/03 . . using near-field transmission systems, e.g. inductive-loop type [N: (G05D1/02E and subgroups take precedence)] [C0306]

G05D1/04 . Control of altitude or depth
G05D1/04B . . [N: specially adapted for aircraft]
G05D1/04B2 . . . [N: during banks]
G05D1/04B4 . . . [N: to counteract a perturbation, e.g. gust of wind]
G05D1/04C . . [N: specially adapted for water vehicles]
G05D1/06 . . Rate of change of altitude or depth
G05D1/06B . . . [N: specially adapted for aircraft]
G05D1/06B2 . . . . [N: to counteract a perturbation, e.g. gust of wind]
G05D1/06B2B . . . . . [N: by acting on the pitch]
G05D1/06B2C . . . . . [N: by acting on the motors]
G05D1/06B2D . . . . . [N: by combined action on the pitch and on the motors]
G05D1/06B4 . . . . [N: to follow the profile of undulating ground]
G05D1/06B6 . . . . [N: during a phase of take-off or landing]
G05D1/06B6B . . . . . [N: specially adapted for take-off]
G05D1/06B6B2 . . . . . [N: specially adapted for vertical take-off]
G05D1/06B6C . . . . . [N: specially adapted for landing]
G05D1/06B6C2 . . . . . [N: on a moving platform, e.g. aircraft carrier] [N1202]
G05D1/06C . . . [N: specially adapted for under-water vehicles]

G05D1/08 . Control of attitude, i.e. control of roll, pitch, or yaw
G05D1/08B . . [N: specially adapted for aircraft]
G05D1/08B2 . . . [N: to ensure stability]
G05D1/08B2B . . . . [N: using mathematical models]
G05D1/08B2C . . . . [N: using limited authority control]
G05D1/08B2D . . . . [N: to prevent a coupling between different modes]
G05D1/08B2E . . . . [N: to ensure coordination between different movements]
G05D1/08B4 . . . [N: specially adapted for vertical take-off of aircraft]
G05D1/08B6 . . . [N: specially adapted to captive aircraft]
G05D1/08C . . [N: specially adapted to water vehicles]
G05D1/08D . . [N: specially adapted for space vehicles]
G05D1/08E . . [N: specially adapted for land vehicles]

G05D1/10 . Simultaneous control of position or course in three dimensions (G05D1/12 takes precedence)
G05D1/10B . . [N: specially adapted for aircraft]
G05D1/10B2 . . . [N: specially adapted for vertical take-off of aircraft]

G05D1/10B4 . . . [N: involving a plurality of aircrafts, e.g. formation flying (traffic control systems for aircraft G08G5/00)] [N1202]

G05D1/10B6 . . . [N: specially adapted for unpowered flight, e.g. glider, parachuting, forced landing (parachutes per se B64D17/00)] [N1202]

G05D1/10C . . [N: specially adapted for missiles]

G05D1/10C2 . . . [N: animated with a rolling movement]

G05D1/12 . Target-seeking control

[N: **Note**
Within groups G05D3/00 to G05D3/20, in the absence of an indication of the contrary, an invention is classified in the last appropriate place
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G05D3/00 **Control of position or direction** (G05D1/00 takes precedence)

G05D3/10 . without using feedback

G05D3/10B . . [N: Solar tracker]

G05D3/12 . using feedback

G05D3/12B . . [N: using synchromachines (selsyns)]

G05D3/12B2 . . . [N: without modulation]

G05D3/12B4 . . . [N: with modulation]

G05D3/12K . . [N: using discrete position sensor]

G05D3/12K2 . . . [N: with electrical contact]

G05D3/12V . . [N: using clutch or brake]

G05D3/14 . . using an analogue comparing device

G05D3/14C . . . [N: with dc amplifier chain]

G05D3/14D . . . [N: with ac amplifier chain]

G05D3/14E . . . [N: with non-linear amplifier chain]

G05D3/14F . . . [N: with fine or coarse devices]

G05D3/14G . . . [N: with a plurality of loops]

G05D3/14G2 . . . . [N: using models or predicting devices]

G05D3/14G4 . . . . [N: using PID devices]

G05D3/14H . . . [N: with potentiometer]

G05D3/14K . . . [N: with discrete position sensor]

G05D3/14V . . . [N: with clutch or brake]

G05D3/16 . . . whose output amplitude can only take a number of discrete values (G05D3/18 takes precedence)

G05D3/16V . . . . [N: using clutch or brake]

G05D3/18 . . . delivering a series of pulses

G05D3/18S . . . . [N: using stepping motor]

G05D3/18V . . . . [N: using clutch or brake]

G05D3/20 . . using a digital comparing device

G05D3/20F . . . [N: using fine or coarse devices]

G05D3/20V . . . [N: using clutch or brakes]

G05D5/00 **Control of dimensions of material**

G05D5/02 . of thickness, e.g. of rolled material (of specific materials B21B, B29C, B32B, C03B, D21F)

G05D5/03 . . characterised by the use of electric means

G05D5/04 . of the size of items, e.g. of particles

G05D5/06 . . characterised by the use of electric means

G05D7/00 **Control of flow** (level control G05D9/00; ratio control G05D11/00; of media to the human body A61M5/168; weighing apparatus G01G)

G05D7/00B . [N: characterised by the use of auxiliary non-electric power combined with the use of electric means]

G05D7/01 . without auxiliary power

G05D7/01B . . [N: the sensing element being a flexible member, e.g. bellows, diaphragm, capsule]

G05D7/01B2 . . . [N: the sensing element acting as a valve]

G05D7/01B4 . . . [N: the sensing element being deformable and acting as a valve]

G05D7/01C . . [N: the sensing element being a piston or plunger associated with one or more springs]

G05D7/01C2 . . . [N: within the flow-path]

G05D7/01C2A . . . . [N: using sliding elements]

G05D7/01D . . [N: the in-line sensing element being a piston or float without flexible member or spring]

G05D7/01D2 . . . [N: using slidable elements]

G05D7/01D4 . . . [N: the sensing element being a ball]

G05D7/01E . . [N: the sensing element being a float or a ball placed outside the flow path to be controlled]

G05D7/01G . . [N: using pivoting sensing element acting as a valve mounted within the flow-path]

G05D7/01M . . [N: using rotary sensing element]

G05D7/01P . . [N: without moving parts]

G05D7/01S . . [N: using hydraulic or pneumatic amplifiers, relays or transmitters]

G05D7/03 . with auxiliary non-electric power [N: (G05D7/00B takes precedence)]

G05D7/06 . characterised by the use of electric means [N: (G05D7/00B takes precedence)]

G05D7/06C . . [N: specially adapted for solid materials]

G05D7/06C2 . . . [N: characterised by the set value given to the control element]

G05D7/06F . . [N: specially adapted for fluid materials]

G05D7/06F2 . . . [N: characterised by the set value given to the control element]

G05D7/06F4 . . . [N: characterised by the type of regulator means]

G05D7/06F4B . . . . [N: by action on throttling means (G05D7/06F4F, G05D7/06F4G take precedence)] [C1202]

G05D7/06F4B2 . . . . . [N: using a plurality of throttling means (G05D7/06F4B4 takes precedence)] [C1202]

G05D7/06F4B2A . . . . . [N: the plurality of throttling means being arranged in series] [N1202]

G05D7/06F4B2B . . . . . [N: the plurality of throttling means being arranged in parallel] [N1202]

G05D7/06F4B2C . . . . . [N: the plurality of throttling means being arranged for the control of a single flow from a plurality of converging flows (G05D7/06F4B2B takes precedence; ratio control G05D11/13)] [N1202]

G05D7/06F4B2D . . . . . [N: the plurality of throttling means being arranged for the control of a plurality of diverging flows from a single flow (G05D7/06F4B2B takes precedence; ratio control G05D11/13)] [N1202]

G05D7/06F4B4 . . . . . [N: characterised by free surface flow (open channel water distribution systems E02B13/00)] [N1202]

G05D7/06F4D . . . . [N: by action on flow sources (G05D7/06F4F, G05D7/06F4G take precedence)] [C1202]

G05D7/06F4D2 . . . . . [N: using a plurality of flow sources] [N1202]

G05D7/06F4F . . . . [N: by combined action on throttling means and flow sources (G05D7/06F4G takes precedence)] [C1202]

G05D7/06F4G . . . . [N: by action on throttling means or flow sources of very small size, e.g. microfluidics (microvalves F16K99/00M; micro-structural devices per se B81B)] [N1202]

G05D9/00 **Level control, e.g. controlling quantity of material stored in vessel** (controlling level of liquid-pool electrode in electric discharge tubes and lamps H01J1/10, H01J13/14)

G05D9/02 . without auxiliary power

G05D9/04 . with auxiliary non-electric power

G05D9/12 . characterised by the use of electric means

G05D11/00 **Ratio control** (control of chemical or physico-chemical variables, e.g. pH-value G05D21/00; humidity control G05D22/00; control of viscosity G05D24/00; proportioning the ingredients for mixing clay or cement with other substances B28C7/00)

G05D11/00B . [N: with discontinuous action]

G05D11/00C . [N: using interconnected flow control elements]

G05D11/00D . [N: using synchronised pumps]

G05D11/00E . [N: involving a first fluid acting on the feeding of a second fluid]

G05D11/00G . [N: involving a fluid operating a pump motor]

G05D11/02 . Controlling ratio of two or more flows of fluid or fluent material

G05D11/03 . . without auxiliary power

G05D11/035 . . with auxiliary non-electric power

G05D11/04 . . . by sensing weight of individual components, e.g. gravimetric procedure

G05D11/06 . . . by sensing density of mixture, e.g. using aerometer

G05D11/08 . . . by sensing concentration of mixture, e.g. measuring pH value

G05D11/10 . . . . by sensing moisture of non-aqueous liquids

G05D11/12 . . . by sensing viscosity of mixture

G05D11/13 . . characterised by the use of electric means

G05D11/13B . . . [N: by measuring the values related to the quantity of the individual components (G05D11/13F takes precedence)]

G05D11/13B2 . . . . [N: by controlling the flow of the individual components (G05D11/13B4 takes precedence)]

G05D11/13B4 . . . . [N: with discontinuous action]

G05D11/13B4B . . . . . [N: by sensing the weight of the individual components]

G05D11/13D . . . [N: by sensing at least one property of the mixture (G05D11/13F takes precedence)]

G05D11/13D2 . . . . [N: by sensing the viscosity]

G05D11/13D4 . . . . [N: by sensing the density of the mixture]

G05D11/13D6 . . . . [N: by sensing the concentration of the mixture, e.g. measuring pH value]

G05D11/13F . . . [N: by measuring a value related to the quantity of the individual components and sensing at least one property of the mixture]

G05D11/16 . Controlling mixing ratio of fluids having different temperatures, e.g. by sensing the temperature of a mixture of fluids having different viscosities

G05D13/00 **Control of linear speed; Control of angular speed; Control of acceleration or deceleration, e.g. of a prime mover** (synchronising telegraph receiver and transmitter H04L7/00) [C9511]

G05D13/02 . Details

G05D13/04 . . providing for emergency tripping of an engine in case of exceeding maximum speed

G05D13/06 . . providing for damping of erratic vibrations in governors

G05D13/08 . without auxiliary power

G05D13/10 . . Centrifugal governors with fly-weights

G05D13/12 . . . Details

G05D13/14 . . . . Fly weights; Mountings thereof; Adjusting equipment for limits, e.g. temporarily

G05D13/16 . . . . Risers; Transmission gear therefor; Restoring mechanisms therefor

G05D13/18 . . . Counterbalanced by spider springs acting immediately upon the fly-weights

G05D13/20 . . . counterbalanced by spider springs acting upon the articulated riser

G05D13/22 . . . counterbalanced by fluid pressure acting upon the articulated riser

G05D13/24 . . . counterbalanced by two or more different appliances acting simultaneously upon the riser, e.g. with both spring force and fluid pressure, with both spring force and electromagnetic force

G05D13/26 . . . with provision for modulating the degree of non-uniformity of speed

G05D13/28 . . . with provision for performing braking effects in case of increased speed

G05D13/30 . . Governors characterised by fluid features in which the speed of a shaft is converted into fluid pressure (transducers converting variations of physical quantities into fluid pressure variations F15B5/00)

G05D13/32 . . . using a pump

G05D13/34 . with auxiliary non-electric power (fluid-pressure converters F15B3/00)

G05D13/36 . . using regulating devices with proportional band, i.e. P regulating devices

G05D13/38 . . . involving centrifugal governors of fly-weight type

G05D13/40 . . . involving fluid governors of pump type

G05D13/42 . . . involving fluid governors of flow-controller type, i.e. the width of liquid flow being controlled by fly-weights

G05D13/44 . . . involving fluid governors of jet type

G05D13/46 . . using regulating devices with proportional band and integral action, i.e. PI regulating devices

G05D13/48 . . . involving resilient restoring mechanisms

G05D13/50 . . . involving connecting means or superimposing a proportional regulating device and an integral regulating device

G05D13/52 . . using regulating devices with proportional band and derivative action, i.e. PD regulating devices

G05D13/54 . . . involving centrifugal governors of fly-weight type exerting an acceleratory effect

G05D13/56 . . . involving restoring mechanisms exerting a delay effect

G05D13/58 . . . involving means for connecting a speed regulating device and an acceleration regulating device

G05D13/60 . . using regulating devices with proportional band, derivative and integral action, i.e. PID regulating devices

G05D13/62 . characterised by the use of electric means, e.g. use of a tachometric dynamo, use of a transducer converting an electric value into a displacement [N: electric motor control H02P]

G05D13/64 . Compensating the speed difference between engines meshing by a differential gearing or the speed difference between a controlling shaft and a controlled shaft [N: G05D13/62 takes precedence]

G05D13/66 . Governor units providing for co-operation with control dependent upon a variable other than speed

G05D15/00 **Control of mechanical force or stress; Control of mechanical pressure**

G05D15/01 . characterised by the use of electric means

G05D16/00 **Control of fluid pressure** (control of pressure in electric discharge tubes or lamps H01J e.g. H01J7/14; control of pressure in electric incandescent lamps H01K1/52)

G05D16/02 . Modifications to reduce the effects of instability, e.g. due to vibrations, friction, abnormal temperature, overloading, unbalance (vibration dampers F16F7/00)

G05D16/04 . without auxiliary power

G05D16/06 . . the sensing element being a flexible membrane, yielding to pressure, e.g. diaphragm, bellows, capsule

G05D16/06B . . . [N: two controllers being mounted in series]

G05D16/06C . . . [N: two controllers being mounted in parallel]

G05D16/06D . . . [N: the controller being mounted within the flow path and having slidable elements]
G05D16/06E . . . [N: the sensing element being deformable, e.g. Bourdon tube]
G05D16/06E2 . . . . [N: the deformable sensing element acting as a throttling member]
G05D16/06G . . . [N: the sensing element being a bellow]
G05D16/06G2 . . . . [N: acting directly on the obturator]
G05D16/06G2B . . . . . [N: characterised by the form of the obturator]
G05D16/06G4 . . . . [N: acting indirectly on the obturator, e.g. by a lever]
G05D16/06G4B . . . . . [N: characterised by the form of the obturator]
G05D16/06H . . . [N: the sensing element being a membrane]
G05D16/06H2 . . . . [N: characterised by the properties of the membrane]
G05D16/06H4 . . . . [N: characterised by the loading device of the membrane e.g. spring]
G05D16/06H6 . . . . [N: characterised by the form of the obturator]
G05D16/06H6B . . . . . [N: the obturator is a membrane]
G05D16/06H8 . . . . [N: the membrane acting directly on the obturator]
G05D16/06H8B . . . . . [N: using one membrane without spring]
G05D16/06H8B2 . . . . . [N: characterised by the form of the obturator]
G05D16/06H8C . . . . . [N: using several membranes without spring]
G05D16/06H8D . . . . . [N: using one spring-loaded membrane]
G05D16/06H8D2 . . . . . [N: characterised by the form of the obturator]
G05D16/06H8D4 . . . . . [N: characterised by the loading mechanisms of the membrane]
G05D16/06H8E . . . . . [N: using a spring-loaded membrane with a spring-loaded slideable obturator]
G05D16/06H8E2 . . . . . [N: characterised by the form of the obturator]
G05D16/06H8E4 . . . . . [N: characterised by the loading mechanisms of the membrane]
G05D16/06H8G . . . . . [N: using several spring-loaded membranes]
G05D16/06H10 . . . . [N: the membrane acting on the obturator through a lever]
G05D16/06H10B . . . . . [N: using one membrane without spring]
G05D16/06H10B2 . . . . . [N: characterised by the form of the obturator]
G05D16/06H10C . . . . . [N: using a spring-loaded membrane]
G05D16/06H10C2 . . . . . [N: characterised by the form of the lever]
G05D16/06H10C4 . . . . . [N: characterised by the form of the obturator]
G05D16/06H10C6 . . . . . [N: characterised by the loading mechanisms of the membrane]
G05D16/06H10D . . . . . [N: using a spring-loaded membrane with a spring-loaded slideable obturator]
G05D16/06H10E . . . . . [N: using several membranes]
G05D16/08 . . . Control of liquid pressure
G05D16/10 . . the sensing element being a piston or plunger
G05D16/10B . . . [N: with sensing element placed within the flow-path]
G05D16/10B2 . . . . [N: using sliding elements]
G05D16/12 . . the sensing element being a float

G05D16/14 . with auxiliary non-electric power

G05D16/16 . . derived from the controlled fluid
G05D16/16B . . . [N: using one or several membranes]
G05D16/16D . . . [N: using one or several pistons]
G05D16/18 . . derived from an external source
G05D16/18B . . . [N: using one or several membranes]

G05D16/20 . characterised by the use of electric means
G05D16/20D . . [N: with direct action of electric energy on controlling means (G05D16/20H takes precedence)]
G05D16/20D2 . . . [N: using throttling means]
G05D16/20D2B . . . . [N: actuated by an electric motor]
G05D16/20D2D . . . . [N: with a plurality of throttling means]
G05D16/20D2D1 . . . . . [N: the plurality of throttling means being arranged in series] [N1202]
G05D16/20D2D2 . . . . . [N: the plurality of throttling means being arranged in parallel] [N1202]
G05D16/20D2D3 . . . . . [N: the plurality of throttling means being arranged for the control of a single pressure from a plurality of converging pressures (G05D16/20D2D2 takes precedence)] [N1202]
G05D16/20D2D3B . . . . . [N: the plurality of throttling means comprising only a first throttling means acting on a higher pressure and a second throttling means acting on a lower pressure, e.g. the atmosphere] [N1202]
G05D16/20D2D4 . . . . . [N: the plurality of throttling means being arranged for the control of a plurality of diverging pressures from a single pressure (G05D16/20D2D2 takes precedence)] [N1202]
G05D16/20D4 . . . [N: using control means acting on the pressure source]
G05D16/20D4B . . . . [N: with a plurality of pressure sources]
G05D16/20D6 . . . [N: using a combination of controlling means as defined in G05D16/20D2 and G05D16/20D4 (G05D16/20D4B takes precedence)]
G05D16/20F . . [N: without direct action of electric energy on the controlling means (G05D16/20H takes precedence)]
G05D16/20H . . [N: with combination of electric and non-electric auxiliary power]

G05D17/00 **Control of torque; Control of mechanical power**

G05D17/02 . characterised by the use of electric means

G05D19/00 **Control of mechanical oscillations, e.g. of amplitude, of frequency, of phase** (generating or transmitting mechanical vibrations B06B; control of electric motors H02P)

G05D19/02 . characterised by the use of electric means

G05D21/00 **Control of chemical or physico-chemical variables, e.g. pH value**

G05D21/02 . characterised by the use of electric means

G05D22/00 **Control of humidity** (of tobacco products A24B9/00; air conditioning F24F)

G05D22/02 . characterised by the use of electric means

G05D23/00 **Control of temperature** (automatic switching arrangements for electric heating apparatus H05B1/02; controlling induction heating H05B6/06; regulating temperature of anode of X-ray tube H05G1/36)

[N: **Notes**

1. In the groups G05D23/01 to G05D23/32 symbols relating to subordinate and complementary information are added after the double oblique stroke.

2. Within groups G05D23/01 to G05D23/32, an invention is classified in the last appropriate place in the absence of an indication of the contrary

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G05D23/01 . without auxiliary power
G05D23/01B . . [N: with mechanical sensing element not covered by groups G05D23/02 and G05D23/12]
G05D23/02 . . with sensing element expanding and contracting in response to changes of temperature (G05D23/13 takes precedence)
G05D23/02B . . . [N: the sensing element being a non-metallic solid, e.g. elastomer, paste]
G05D23/02B2 . . . . [N: the sensing element being placed within a regulating fluid flow]
G05D23/02B4 . . . . [N: the sensing element being placed outside a regulating fluid flow]
G05D23/02C . . . [N: the sensing element being of the rod type, tube type, or of a similar type]
G05D23/02C2 . . . . [N: the sensing element being placed within a regulating fluid flow]
G05D23/02C4 . . . . [N: the sensing element being placed outside a regulating fluid flow]
G05D23/02C4B . . . . . [N: for combustible fluid]
G05D23/02D . . . [N: with fusing sensing element]
G05D23/08 . . . with bimetallic element (valve arrangements adapted for mixing F16K11/00)
G05D23/10 . . . . with snap-action elements (for valves F16K31/56)
G05D23/12 . . with sensing element responsive to pressure or volume changes in a confined fluid
G05D23/12B . . . [N: characterised by the sensing element]
G05D23/12B2 . . . . [N: using a plurality of sensing elements]
G05D23/12C . . . [N: the sensing element being placed within a regulating fluid flow]
G05D23/12D . . . [N: the sensing element being placed outside a regulating fluid flow]
G05D23/12D4 . . . . [N: using a capillary tube]
G05D23/12D4B . . . . . [N: to control a gaseous fluid circulation]
G05D23/12D4B2 . . . . . [N: the fluid being combustible]
G05D23/13 . . by varying the mixing ratio of two fluids having different temperatures
G05D23/13B . . . [N: for liquids (G05D23/13E takes precedence)] [C1202]
G05D23/13B2 . . . . [N: without temperature sensing element]
G05D23/13B4 . . . . [N: with temperature sensing element]
G05D23/13B4B . . . . . [N: details of the sensor]
G05D23/13B4C . . . . . [N: measuring the temperature of incoming fluid]
G05D23/13B4D . . . . . [N: measuring the temperature of mixed fluid]
G05D23/13B4D2 . . . . . [N: with manual temperature setting means]
G05D23/13B4D2B . . . . . {7 dots} [N: combined with flow controlling means]

G05D23/13B4D4 . . . . . [N: with pressure equalizing means]
G05D23/13B4G . . . . . [N: using a plurality of sensing elements]
G05D23/13B4G2 . . . . . [N: measuring the temperature of mixed fluid]
G05D23/13C . . . [N: for gases (G05D23/13E takes precedence)] [C1202]
G05D23/13D . . . [N: for steam and liquid (G05D23/13E takes precedence)] [C1202]
G05D23/13E . . . [N: characterised by the use of electric means]

G05D23/185 . with auxiliary non-electric power
G05D23/185B . . [N: with sensing element expanding and contracting in response to change of temperature]
G05D23/185C . . [N: with bimetallic element]
G05D23/185D . . [N: with sensing element responsive to pressure or volume change in a confined fluid]
G05D23/185M . . [N: by varying the mixing ratio of fluids having different temperatures]

G05D23/19 . characterised by the use of electric means [N: G05D23/13E takes precedence]
G05D23/19B . . [N: characterised by the use of a variable reference value]
G05D23/19B2 . . . [N: variable in time]
G05D23/19B4 . . . [N: associated with tele control]
G05D23/19C . . [N: using an analogue comparing device]
G05D23/19C2 . . . [N: whose output amplitude can only take two discrete values]
G05D23/19C4 . . . [N: whose output amplitude can take more than two discrete values]
G05D23/19C6 . . . [N: delivering a series of pulses]
G05D23/19D . . [N: using digital means]
G05D23/19E . . [N: characterised by the type of controller]
G05D23/19E2 . . . [N: using a modification of the thermal impedance between a source and the load]
G05D23/19E4 . . . [N: using a thermal motor]
G05D23/19E6 . . . [N: using thermal energy, the cost of which varies in function of time]
G05D23/19E8 . . . [N: using thermal energy, the availability of which is aleatory]
G05D23/19F . . [N: using a combination of auxiliary electric and non-electric power]
G05D23/19G . . [N: using a plurality of sensors (G05D23/19B, G05D23/19D, and G05D23/19E take precedence)]
G05D23/19G2 . . . [N: sensing the temperature of one space]
G05D23/19G4 . . . [N: sensing the temperaure in different places in thermal relationship with one or more spaces]
G05D23/19G4B . . . . [N: to control the temperature of one space]
G05D23/19G4C . . . . [N: to control the temperature of a plurality of spaces]
G05D23/19G4C2 . . . . . [N: each space being provided with one sensor acting on one or more control means]
G05D23/19G4D . . . . [N: using sequential control]
G05D23/19T . . [N: with control of the working time of a temperature controlling device]
G05D23/20 . . with sensing elements having variation of electric or magnetic properties with change of temperature (G05D23/13 takes precedence)
G05D23/20B . . . [N: characterised by the use of a variable reference value]

G05D23/20B2 . . . . [N: variable in time]
G05D23/20B4 . . . . [N: associated with tele control]
G05D23/20C . . . [N: using an analogue comparing device]
G05D23/20C2 . . . . [N: whose output amplitude can only take two discrete values]
G05D23/20C4 . . . . [N: whose output amplitude can take more than two discrete values]
G05D23/20C6 . . . . [N: delivering a series of pulses]
G05D23/20D . . . [N: using digital means]
G05D23/20E . . . [N: characterised by the type of controller]
G05D23/20E2 . . . . [N: using a modification of the thermal impedance between a source and the load]
G05D23/20E4 . . . . [N: using a thermal motor]
G05D23/20E6 . . . . [N: using thermal energy the cost of which varies in function of time]
G05D23/20E8 . . . . [N: using thermal energy, the availability of which is aleatory]
G05D23/20F . . . [N: using a combination of auxiliary electric and non-electric power]
G05D23/20G . . . [N: using a plurality of sensors (G05D23/20B, G05D23/20D, G05D23/20E take precedence)]
G05D23/20G2 . . . . [N: sensing the temperature of one space]
G05D23/20G4 . . . . [N: sensing the temperature in different places in thermal relationship with one or more spaces]
G05D23/20G4B . . . . . [N: to control the temperature of one space]
G05D23/20G4C . . . . . [N: to control the temperature of a plurality of spaces]
G05D23/20G4C2 . . . . . [N: each space being provided with one sensor acting on one or more control means]
G05D23/20G4D . . . . . [N: using sequential control]
G05D23/20K . . . [N: details of the sensing element]
G05D23/20K2 . . . . [N: the sensing element being a semiconductor]
G05D23/20K4 . . . . [N: the sensing element being a ionized gas]
G05D23/20K6 . . . . [N: the sensing element being a dielectric of a capacitor]
G05D23/20L . . . [N: details of the regulator]
G05D23/20L1 . . . . [N: using mechanical means]
G05D23/22 . . . the sensing element being a thermocouple
G05D23/22B . . . . [N: characterised by the use of a variable reference value]
G05D23/22B2 . . . . . [N: variable in time]
G05D23/22B4 . . . . . [N: associated with tele control]
G05D23/22C . . . . [N: using an analog comparing device]
G05D23/22C2 . . . . . [N: whose output amplitude can only take two discrete values]
G05D23/22C4 . . . . . [N: whose output amplitude can take more than two discrete values]
G05D23/22C6 . . . . . [N: delivering a series of pulses]
G05D23/22D . . . . [N: using digital means]
G05D23/22E . . . . [N: characterised by the type of controller]
G05D23/22E2 . . . . . [N: using a modification of the thermal impedance between a source and the load]
G05D23/22E4 . . . . . [N: using a thermal motor]
G05D23/22E6 . . . . . [N: using thermal energy the cost of which varies in function of time]

G05D23/22E8 . . . . . [N: using thermal energy the availability of which is aleatory]
G05D23/22F . . . . [N: using a combination of auxiliary electric and non-electric power]
G05D23/22G . . . . [N: using a plurality of sensors (G05D23/22B, G05D23/22D, G05D23/22E take precedence)]
G05D23/22G2 . . . . . [N: sensing the temperature of one space]
G05D23/22G4 . . . . . [N: sensing the temperature in different places in thermal relationship with one or more spaces]
G05D23/22G4B . . . . . [N: to control the temperature of one space]
G05D23/22G4C . . . . . [N: to control the temperature of a plurality of spaces]
G05D23/22G4C2 . . . . . {7 dots} [N: each space being provided with one sensor acting on one or more control means]
G05D23/22G4D . . . . . [N: using sequential control]
G05D23/22L . . . . [N: details of the regulator]
G05D23/22L2 . . . . . [N: using discharge tubes]
G05D23/22L4 . . . . . [N: using photoelectric elements]
G05D23/22L6 . . . . . [N: using selfs or transformers]
G05D23/24 . . . the sensing element having a resistance varying with temperature, e.g. a thermistor
G05D23/24A . . . . [N: using a heating element as a sensing element]
G05D23/24B . . . . [N: characterised by the use of a variable reference value]
G05D23/24B2 . . . . . [N: variable in time]
G05D23/24B4 . . . . . [N: associated with telecontrol]
G05D23/24C . . . . [N: using an analog comparing device]
G05D23/24C1 . . . . . [N: using circuits with semiconductor devices]
G05D23/24C2 . . . . . [N: whose output amplitude can only take two discrete values]
G05D23/24C2C . . . . . [N: using circuit with semiconductor devices]
G05D23/24C4 . . . . . [N: whose output amplitude can take more than two discrete values]
G05D23/24C6 . . . . . [N: delivering a series of pulses]
G05D23/24C6C . . . . . [N: using circuits with semiconductor devices]
G05D23/24C6D . . . . . [N: using bimetallic elements]
G05D23/24D . . . . [N: using digital means]
G05D23/24E . . . . [N: characterised by the type of controller]
G05D23/24E2 . . . . . [N: using a modification of the thermal impedance between a source and the load]
G05D23/24E4 . . . . . [N: using a thermal motor]
G05D23/24E6 . . . . . [N: using thermal energy, the cost of which varies in function of time]
G05D23/24E8 . . . . . [N: using thermal energy the availability of which is aleatory]
G05D23/24F . . . . [N: using a combination of auxiliary electric and non-electric power]
G05D23/24G . . . . [N: using a plurality of sensors (G05D23/24B, G05D23/24D and G05D23/24E take precedence)]
G05D23/24G2 . . . . . [N: sensing the temperature of one space]
G05D23/24G4 . . . . . [N: sensing the temperature in different places in thermal relationship with one or more space]
G05D23/24G4B . . . . . [N: to control the temperature of one space]

G05D23/24G4C . . . . . [N: to control the temperature of a plurality of spaces]
G05D23/24G4C2 . . . . . {7 dots} [N: each space being provided with one sensor acting on one or more control means]
G05D23/24G4D . . . . . [N: using sequential control]
G05D23/24L . . . . [N: Details of the regulator]
G05D23/24L2 . . . . . [N: using discharge tubes]
G05D23/24L4 . . . . . [N: using photoelectric elements]
G05D23/24L6 . . . . . [N: using selfs or transformers]
G05D23/26 . . . the sensing element having a permeability varying with temperature
G05D23/26B . . . . [N: characterised by the use of a variable reference value]
G05D23/26C . . . . [N: using an analogue comparing device]
G05D23/26D . . . . [N: using digital means]
G05D23/26E . . . . [N: characterised by the type of controller]
G05D23/26F . . . . [N: using a combination of auxiliary electric and non-electric power]
G05D23/26G . . . . [N: using a pluarility of sensors (G05D23/26B, G05D23/26D, G05D23/26E take precedence)]
G05D23/27 . . with sensing element responsive to radiation
G05D23/27B . . . [N: characterised by the use of a variable reference value]
G05D23/27C . . . [N: using an analog comparing device]
G05D23/27D . . . [N: using digital means]
G05D23/27E . . . [N: characterised by the type of controller]
G05D23/27F . . . [N: using a combination of auxiliary electric and non-electric power]
G05D23/27G . . . [N: using a plurality of sensors]
G05D23/275 . . with sensing element expanding, contracting, or fusing in response to changes of temperature
G05D23/275B . . . [N: using a variable reference value]
G05D23/275B2 . . . . [N: variable in time]
G05D23/275B4 . . . . [N: associated with tele control]
G05D23/275C . . . [N: using an analogic regulator]
G05D23/275C2 . . . . [N: whose output amplitude can only take two discrete values]
G05D23/275C4 . . . . [N: whose output amplitude can take more than two discrete values]
G05D23/275C6 . . . . [N: delivering a series of pulses]
G05D23/275D . . . [N: using digital means]
G05D23/275E . . . [N: characterised by the type of controller]
G05D23/275E2 . . . . [N: using a modification of the thermal impedance between a source and the load]
G05D23/275E4 . . . . [N: using a thermal motor]
G05D23/275E6 . . . . [N: using thermal energy the cost of which varies in function of time]
G05D23/275E8 . . . . [N: using thermal energy the availability of which is aleatory]
G05D23/275F . . . [N: using a combination of auxiliary electric and non-electric power]
G05D23/275G . . . [N: using a plurality of sensors (G05D23/275B, G05D23/275D, G05D23/275E take precedence)]
G05D23/275G2 . . . . [N: sensing the temperature of one space]
G05D23/275G4 . . . . [N: sensing the temperature in different places in thermal relationship with

one or more spaces]

G05D23/275G4B . . . . . [N: to control the temperature of one space]

G05D23/275G4C . . . . . [N: to control the temperature of a plurality of spaces]

G05D23/275G4C2 . . . . . [N: each space being provided with one sensor acting on one or more control means]

G05D23/275G4D . . . . . [N: using sequential control]

G05D23/275K . . . [N: Details of the sensing element]

G05D23/275K1 . . . . [N: using fusible material]

G05D23/275K2 . . . . [N: using expansible fluid]

G05D23/275K4 . . . . [N: using conductible expansible fluid]

G05D23/275K6 . . . . [N: using bimetallic element]

G05D23/275K8 . . . . [N: using expansible solid]

G05D23/275K9 . . . . [N: using the controlled element as sensing element]

G05D23/30 . . Automatic controllers with an auxiliary heating device affecting the sensing element, e.g. for anticipating change of temperature (automatic controllers in general and not restricted to control of temperature G05B)

G05D23/30C . . . [N: using a sensing element having a resistance varying with temperature, e.g. thermistor]

G05D23/30C2 . . . . [N: using semiconductor devices]

G05D23/32 . . . with provision for adjustment of the effect of the auxiliary heating device, e.g. a function of time

G05D24/00 **Control of viscosity**

G05D24/02 . characterised by the use of electric means

G05D25/00 **Control of light, e.g. intensity, colour, phase** (mechanically operable parts of lighting devices for the control of light F21V; optical devices or arrangements using movable or deformable elements for controlling light independent of the light source G02B26/00; devices or arrangements, the optical operation of which is modified by changing the optical properties of the medium of the devices or arrangements for the control of light, circuit arrangements specially adapted therefor, control of light by electro-magnetic waves, electrons or other elementary particles G02F1/00; circuit arrangements for controlling light sources H01S3/10, H05B33/08, H05B35/00 to H05B43/00)

G05D25/02 . characterised by the use of electric means

G05D27/00 **Simultaneous control of variables covered by two or more of the preceding main groups**

G05D27/02 . characterised by the use of electric means

G05D29/00 **Simultaneous control of electric and non-electric variables**

G05D99/00 **Subject matter not provided for in other groups of this subclass** [N0704]