

Explanation of heading and its relationship with other headings

This heading is concerned with the sensing and measurement in respect of gases, liquids and fluent solids of velocity, volume and mass flow rates, total volume and mass flows, peak flow rate, flow duration, flow direction and other flow parameters. It is also concerned with the signalling of a predetermined flow parameter *eg* the attainment of a given flow velocity, and with the sensing and measurement of the movement of a body, *eg* a ship or aircraft, in a fluid which may or may not itself be moving

This is the main place for the organisation of flow measuring systems

Excluded are:

- . liquid meters of piston-and-cylinder and diaphragm-and-cylinder types of similar construction to liquid-pressure engines—F1W, Fluid-pressure reciprocating machines
- . reciprocating pumps adapted for metering—F1W, Fluid-pressure reciprocating machines
- . rotary positive-displacement meters in which the dynamic effect of the fluid is of minor importance—F1F, Rotary positive-displacement devices
- . apparatus for repetitively separating from bulk and delivering measured, discrete, quantities by volume of liquids and fluent solids—B8N, Metering fluent material &c
- . systems for measuring and transmitting measures of fluid flow by means of an electric signal having a quantitative relationship to the measured variable, or by means of non-contact-making radiation detectors producing an electric signal, or by means of sound or like waves—G1A, Radiation and radiation-utilising measurement &c; G1N, Electrophysical and electrochemical measurement &c; G1G, Acoustic measuring
- . measuring flow by weighing—G1W, Weighing; dynamometers
- . measuring flow by generating and detecting vortices—G1G, Acoustic measuring
- . measuring leakage inferentially from flow measurement, measuring flow resistance, measuring porosity—G1S, Measuring and testing physical properties

This is a main place for flow sensors, *ie* devices which convert flow parameters into corresponding other parameters

Excluded are:

- . transducers which convert flow parameters into corresponding electric, acoustic or radiation signals—G1A, Radiation and radiation-utilising measurement &c; G1N, Electrophysical and electrochemical measurement &c; G1G, Acoustic measuring
- . constructions of devices for sensing and measuring pressures derived from flow parameters—G1L, Pressure gauges; engine indicators
- . constructions of devices for generating vortices in flowing fluid, the frequency of vortex generation then being detected—G1G, Acoustic measuring

This is a residual place for details and unit functions of flow measuring systems and flow sensors

Excluded in particular are:

- . pipe couplings to meters—F2G, Pipe and rod couplings &c
- . dials, scale graduations and other indicating, recording and registering details of interest *other than* in flow measurement—G1J, Expressing measurement &c
- . counting apparatus—G4D, Counting apparatus
- . prepayment mechanism—G4V, Coin and token freed apparatus

This is also a residual place for associations of flow measuring systems with other apparatus (*including* other measuring systems)

Subject-matter is classified here only if no other appropriate place exists

Excluded in particular is:

- . measuring the consumption of petrol and other fluids in relation to vehicle or engine performance—G1K, Speedometers, movement indicators

Operative dates for Key entries

The operative dates of terms in this heading are:

1. for all terms annotated by a marginal code, that of the Edition corresponding to that code
2. for other Classifying terms, that of Edition C
3. for all Indexing terms, earlier than that of Edition A

Classifying Schedule

		associations of flow measuring systems with—
	RAA	. other measuring systems ( <i>including</i> other flow measuring systems)
	RAB	. other apparatus, <i>eg</i> de-aerators, valves (flow conditioning <i>per se</i> —See RWF)
		organisation of flow measuring systems (N.B. terms RF, RG and RH take precedence over terms RBA-RBE)—
		. of flow rate measuring systems—
		. . deriving flow rate from measurements of total flow and time—
	RBB	. . . using tracers or free bodies ( <i>including</i> bubbles and heated zones) moving with the flow (using ions as tracers—See G1N, Electrophysical and electrochemical measurement &c)
g	RBF	. . . using piston(s) to define a volume
	RBA	. . . other
	RBC	. . measuring flow rate by transducing flow rate into a (differential) pressure
		. . measuring flow rate by transducing flow rate into continuous rotation of a body—
g	RBDA	. . . body rotating about a path or track
g	RBDB	. . . other
	RBE	. . measuring flow rate by transducing flow rate into force on or displacement of a body ( <i>other than</i> continuous rotary displacement)
j	RBG	. . measuring proportion of flow
	RBK	. . other
		. of total flow measuring systems—
		. . division of flow into discrete volume units which are counted—
		. . . dry gas meters—
	RCA	. . . . with diaphragm(s)
	RCC	. . . . other
		. . . wet gas meters—
	RCD	. . . . with partitioned drum revolving in liquid
	RCE	. . . . with reciprocating bell
	RCF	. . . . other
	RCG	. . . division of flow into liquid drops which are counted
	RCH	. . other, <i>eg</i> repeated discharge through syphon
	RCJ	. . division of flow into discrete mass units which are counted
	RCK	. . separation of known proportion of flow
	RCT	. . other
		. of flow direction indicating systems
g	RDA	. . using material in the fluid to produce a visible effect <i>eg</i> smoke, chemicals; photographic recording methods
g	RDB	. . using a pivoted member
g	RDD	. . other
	RE	. of systems for measuring other flow parameters, <i>eg</i> peak flow rate, flow duration
	RF	. of systems specially designed to measure pulsed or fluctuating flow
	RG	. of systems specially designed to measure the flow of mixed phase materials, <i>eg</i> suspensions, slurries, liquid/gas mixtures, without separation
	RH	. of systems specially designed to measure velocity or flow rate in two or more directions
	RJ	devices producing a signal, <i>eg</i> an alarm signal, only when a predetermined flow value is reached
	RK	devices for observing merely the presence or absence of flow

Classifying Schedule—cont

- flow sensors (*ie* devices which convert flow parameters into corresponding other parameters, *eg* differential pressure, displacement)—
- RPA . associations of a plurality of sensors
  - RPB . positioning of sensors in relation to flow
  - . construction of sensors—
    - . . sensors transducing flow into displacement of a body—
      - . . . body urged by flow either linearly or angularly through less than 360°
      - . . . body continuously rotated by flow—
        - RQA . . . axis of rotation of body parallel to flow
        - RQC . . . axis of rotation of body transverse to flow
        - RQD . . . other
        - RQH . . sensors transducing flow into fluid pressure—
          - RSA . . . orifice plate or other fixed aperture
          - RSB . . . venturi
          - RSC . . . total and/or static pressure sensors, *eg* pitot tubes
          - RSD . . . weir
          - RSG . . . other
          - RT . . other sensors
          - RV calibration and testing of flow measuring systems
            - . calibration arrangements which are of interest as flow measuring systems are classified only as such. *See eg* classifying terms RBA-RBK *above*
            - . details and unit functions of flow measuring systems and flow sensors—
              - RWA . compensating for effects of auxiliary variables, *eg* temperature, pressure
              - RWB . bearings
              - RWC . casings and linings
              - RWD . lubrication
              - RWE . protection (*eg* protection of personnel should flow meter fail, and protection of meter against deleterious effects)
              - RWF . flow conditioning (*eg* flow straighteners and devices for reducing turbulence in flow)
              - RWK . other details and unit functions