Designed & priced for overall appeal
Design Excellence Leads To Better Performance

Among the many PD flowmeter design principals available today, the oval gear still holds a top place both in simplicity and field proven performance.

Flomec’s inside story reveals a robust positive displacement oval gear flowmeter range incorporating patented innovations & features that bring many benefits to market.

**OVERVIEW**

**FLOMEC** is a range of oval gear flowmeters which provide high levels of accuracy & repeatability for a wide range of most clean liquids irrespective of viscosity & conductivity including fuels, oils, additives, chemicals, food bases, paints, viscous emulsions, insecticides, alcohols & solvents either pumped or gravity fed.

**CHECKLIST**

- modular process connections
- no requirement for flow conditioning
- high accuracy, repeatability & reliability
- wide turndown (min.~max. flow)
- ultimate rotor stability (all metal rotors)
- dual outputs (reed & hall effect) standard
- hyperpulse high resolution pulse output
- hazardous area versions
- bi-directional flow capability
- quadrature pulse output option

All metal rotors provide ultimate rotor stability.

Hyperpulse high resolution & dual outputs (standard)

Modular Process Connections
Small capacity flowmeters

FloMec small capacity flowmeters provide precise volumetric measurement of small quantities of liquids or low flows found in a broad range of industrial & commercial industries including automotive, aviation, mining, power, chemical, pharmaceutical, food, paint, medical engineering, petroleum & environmental.

Applications include additives for fuel, consumer products, water treatment, flotation cells & de-foaming plants, corrosion inhibitors, perfumes, catalysts, emulsifiers, oils, grease, glues, ink & insecticides.

**GENERAL SPECIFICATIONS**

- **flow range**: 0.5~550 litres/hr (0.16~145 USGPH)
- **nominal sizes**: 4~8mm (1/8"~3/8")
- **linearity**: +/-1% of reading
- **repeatability**: +/-0.03% repeatability
- **temperature**: -20~+120ºC (-4~250ºF)
- **materials**: 316 stainless or aluminum
- **pulse outputs**: reed switch & NPN open collector (standard)

(* for full specifications see page 6)

**STANDARD OPTIONS**

- LCD totaliser
- LCD flow rate totaliser
- LCD two stage batch controller
- Intrinsically Safe (I.S.) instruments
- 4~20mA, scaled pulse & alarm outputs
- Quadrature pulse output

(see ancillaries for further details on integral & remote options)

High resolution for precise measurement
Simple to install & wire
Dual outputs to suit most applications
Stable stainless steel rotors
Precision ceramic bearings

Two oval shaped gears (rotors) are the only moving parts within the measuring chamber.

Pulse meter
Medium capacity flowmeters

**FLOMECT** medium capacity flowmeters find widespread application in industry to monitor & control liquid flow streams & allow for precise dispensing of small to medium batch runs. They also have extensive application in the distribution of fuels, fuel oils, lubricant, alcohols, solvents & the blending of bio & ethanol fuels.

**GENERAL SPECIFICATIONS**

- **flow range**: 1~450 litres/min (0.26~120 USGPM)
- **nominal sizes**: 15~50mm (1/2"~2")
- **linearity**: +/-0.5% of reading
- **repeatability**: +/-0.03% repeatability
- **temperature**: -20~+120ºC (-4~250ºF)
- **materials**: 316 stainless or aluminum
- **pulse outputs**: reed switch & NPN open collector (standard)

*For full specifications see page 6*

**STANDARD OPTIONS**

- modular process connections
- LCD totaliser
- LCD flow rate totaliser
- LCD two stage batch controller
- Intrinsically Safe (I.S.) instruments
- 4~20mA, scaled pulse & alarm outputs
- integral mechanical totaliser / batch register
- quadrature pulse output

(see ancillaries for further details on integral & remote options)
Large capacity flowmeters

**FLOMEC** 3” and 4” large capacity flowmeters are highly competitive meters suited for receipt verification, loading, un-loading & distribution management at petroleum depots, mine sites, marine & aviation facilities. Common transfer applications involve fuels, oils, solvents, alcohols along with the blending of bio & ethanol fuels.

The meters are relatively compact & light weight in construction, important benefits when used in mobile installations or within confined spaces.

**GENERAL SPECIFICATIONS** :

- **flow range**: 50~1500 litres/min (13~400 USGPM)
- **nominal sizes**: 80 & 100mm (3” & 4”)
- **linearity**: +/-0.2% 15:1 turndown
- **repeatability**: +/-0.03% repeatability
- **temperature**: - 20~+120ºC (-4~250ºF)
- **materials**: aluminum or ductile iron
- **pulse outputs**: reed switch & NPN open collector

(* for full specifications see page 6)

**STANDARD OPTIONS** :

- modular process connections
- LCD totaliser
- LCD flow rate totaliser
- LCD two stage batch controller
- Intrinsically Safe (I.S.) instruments
- 4~20mA, scaled pulse & alarm outputs
- integral mechanical totaliser / batch register
- quadrature pulse output

(see ancillaries for further details on integral & remote options)

[Images of Flowmeters]

[www.flomec.com.au]
Flomec ancillaries

BATTERY POWERED TOTALISER

Simultaneously displays resettable (batch) total & cumulative total in engineering units as programmed by the user. When externally dc powered the instrument will produce an un-scaled or scaleable solid state output pulse which is NPN/PNP selectable. Available with intrinsically safe (I.S.) certification.

Data sheet FSBLT000

BATTERY POWERED FLOW RATE TOTALISER

Displays instantaneous flow rate, resettable (batch) total or a cumulative total in engineering units as programmed by the user. When externally powered this instrument will produce an un-scaled or scaleable solid state pulse, 4~20mA & flow alarm outputs & has non-linearity correction & dual flow input functions. Available with intrinsically safe (I.S.) certification.

Data sheet FSBLRT000

BATCH CONTROLLER

Provides automatic batch control with one or two stage outputs. The display provides batch quantity as well as status at each stage of the batch process. Batch limiting & no-flow detection are safety features & automatic overrun compensation & dual stage outputs provide for precise batch control. Other features include remote stop/start, system interlocks, totalised display & multiple batch controller networking.

Data sheet FSLEB000

MECHANICAL Registers

As an alternative to electronic totalisers, robust mechanical registers with metal housings offer 3 or 4 large resettable digits & 6 or 8 digit cumulative total clearly visible for loading & un-loading sites at petroleum depots, mining, construction & marine facilities.

• Field programmable electronics
• Scrolling English prompts
• Remote or integral meter mounting
• Easy to read displays
Performance specifications

Flowrate de-rating guide

<table>
<thead>
<tr>
<th>Viscosities (cp)</th>
<th>Max. flow multiplier</th>
</tr>
</thead>
<tbody>
<tr>
<td>up to 1200</td>
<td>1.0</td>
</tr>
<tr>
<td>1200–4000</td>
<td>0.6</td>
</tr>
<tr>
<td>up to 6000</td>
<td>0.5</td>
</tr>
<tr>
<td>up to 10000</td>
<td>0.4</td>
</tr>
<tr>
<td>up to 20000</td>
<td>0.3</td>
</tr>
<tr>
<td>40000 max.</td>
<td>0.16</td>
</tr>
<tr>
<td>60000 max.</td>
<td>0.12</td>
</tr>
<tr>
<td>100000 max.</td>
<td>0.08</td>
</tr>
<tr>
<td>200000 max.</td>
<td>0.06</td>
</tr>
<tr>
<td>400000 max.</td>
<td>0.05</td>
</tr>
<tr>
<td>600000 max.</td>
<td>0.04</td>
</tr>
<tr>
<td>up to 1000000</td>
<td>0.03</td>
</tr>
</tbody>
</table>

Accuracy & pressure drop

<table>
<thead>
<tr>
<th>Flow Rate</th>
<th>Accuracy</th>
<th>Pressure Drop</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5 ~ 36</td>
<td>± 0.2%</td>
<td>0.13 ~ 9.5</td>
</tr>
<tr>
<td>2 ~ 100</td>
<td>± 0.5%</td>
<td>( -20ºC ~ +120ºC )</td>
</tr>
<tr>
<td>1 ~ 40</td>
<td>± 1%</td>
<td>15ºC ~ 250ºF</td>
</tr>
<tr>
<td>10 ~ 150</td>
<td>± 0.2%</td>
<td>35ºC ~ 440ºF</td>
</tr>
<tr>
<td>15 ~ 250</td>
<td>± 0.5%</td>
<td>50ºC ~ 68ºF</td>
</tr>
<tr>
<td>30 ~ 450</td>
<td>± 1%</td>
<td>75ºC ~ 150ºF</td>
</tr>
<tr>
<td>50 ~ 1000</td>
<td>± 0.2%</td>
<td>100ºC ~ 1500ºF</td>
</tr>
<tr>
<td>75 ~ 1500</td>
<td>± 1%</td>
<td>200ºC ~ 300ºF</td>
</tr>
</tbody>
</table>

Specifications

<table>
<thead>
<tr>
<th>Model prefix :</th>
<th>OM004</th>
<th>OM006</th>
<th>OM008</th>
<th>OM015</th>
<th>OM025</th>
<th>OM040</th>
<th>OM050</th>
<th>OM080</th>
<th>OM80H</th>
<th>OM100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal size (inches)</td>
<td>4mm (1/8&quot;)</td>
<td>6mm (1/4&quot;)</td>
<td>8mm (3/8&quot;)</td>
<td>15mm (1/2&quot;)</td>
<td>25mm (1&quot;)</td>
<td>40mm (1.5&quot;)</td>
<td>50mm (2&quot;)</td>
<td>80mm (3&quot;)</td>
<td>80mm (3&quot;)</td>
<td>100mm (4&quot;)</td>
</tr>
<tr>
<td>Flow range (litres/min)</td>
<td>0.26 ~ 10.6</td>
<td>0.26 ~ 40</td>
<td>2.6 ~ 66</td>
<td>8 ~ 120</td>
<td>10 ~ 200</td>
<td>13 ~ 260</td>
<td>20 ~ 400</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temperature range</td>
<td>-20ºC ~ +120ºC</td>
<td>-4ºF ~ +250ºF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum pressure (bar)</td>
<td>15 (220)</td>
<td>68 (1000)</td>
<td>68 (1000)</td>
<td>30 (440)</td>
<td>20 (300)</td>
<td>12 (180)</td>
<td>12 (180)</td>
<td>10 (150)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electrical</td>
<td>Reed switch pulses / litre (pulses / US gallon)</td>
<td>355 (3345)</td>
<td>83 (314)</td>
<td>27 (102)</td>
<td>13 (50)</td>
<td>6.5 (247)</td>
<td>2.32 (8.8)</td>
<td>1.55 (5.87)</td>
<td>1.1 (4.15)</td>
<td></td>
</tr>
<tr>
<td>Hall effect</td>
<td>290 (10440)</td>
<td>2100 (7950)</td>
<td>710 (2650)</td>
<td>166 (628)</td>
<td>107 (405)</td>
<td>52.6 (200)</td>
<td>26.1 (99)</td>
<td>9.3 (35.2)</td>
<td>6.2 (23.5)</td>
<td>4.4 (16.6)</td>
</tr>
<tr>
<td>Quadrature Hall option</td>
<td>290 (10440)</td>
<td>2100 (7950)</td>
<td>710 (2650)</td>
<td>166 (628)</td>
<td>54 (204)</td>
<td>26.3 (100)</td>
<td>13 (49)</td>
<td>4.65 (17.6)</td>
<td>3.1 (17.8)</td>
<td>2.2 (8.3)</td>
</tr>
<tr>
<td>Reed switch output</td>
<td>30Vdc x 200mA max.</td>
<td>(maximum thermal shock 10ºC (50ºF) / minute)</td>
<td>3 wire open collector, 5–24Vdc max., 20mA max.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hall effect output (NPN)</td>
<td>3 wire open collector, 5–24Vdc max., 20mA max.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Optional outputs</td>
<td>4–20mA, scaled pulse, quadrature pulse, flow alarms or two stage batch control</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Physical

| Protection class | IP66/67 (NEMA4X), optional Exd IIIB T6, integral ancillaries can be supplied I.S. (intrinsically safe) |
| Overall dimensions | refer data sheet |
| Recommended filtration | 75 microns (200 mesh) | 150 microns (100 mesh) | 350 microns (40 mesh) |

** Accuracy ±0.2% of reading with mechanical registers
| Temperature range | Typically ± 0.03% of reading (accuracy is ± 0.2% of reading with optional RT12 with non-linearity correction) |
| Pressure range | 25% | 75% | 100% |

*Maximum flow is to be reduced as viscosity increases, see flow de-rating guide. Max. allowable pressure drop is 100kpa (15 psi).

**Accuracy ± 0.1% of reading with mechanical registers.
<table>
<thead>
<tr>
<th>Model</th>
<th>Nominal Size</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>OM004</td>
<td>4mm (1/8&quot;)</td>
<td>aluminum or stainless steel</td>
</tr>
<tr>
<td>OM006</td>
<td>6mm (1/4&quot;)</td>
<td>aluminum or stainless steel</td>
</tr>
<tr>
<td>OM008</td>
<td>8mm (3/8&quot;)</td>
<td>aluminum or stainless steel</td>
</tr>
<tr>
<td>OM015</td>
<td>15mm (1&quot;)</td>
<td>aluminum or stainless steel</td>
</tr>
<tr>
<td>OM025</td>
<td>25mm (1 1/2&quot;)</td>
<td>aluminum or stainless steel</td>
</tr>
<tr>
<td>OM040</td>
<td>40mm (1 1/2&quot;)</td>
<td>aluminum or stainless steel</td>
</tr>
<tr>
<td>OM050</td>
<td>50mm (2&quot;)</td>
<td>aluminum or stainless steel</td>
</tr>
<tr>
<td>OM060</td>
<td>80mm (3&quot;)</td>
<td>aluminum or stainless steel</td>
</tr>
<tr>
<td>OM080H</td>
<td>80mm (3&quot; high flow)</td>
<td>aluminum or ductile iron</td>
</tr>
<tr>
<td>OM100</td>
<td>100mm (4&quot;)</td>
<td>aluminum or ductile iron</td>
</tr>
</tbody>
</table>

**Body material**
- A: Aluminum
- S: 316 stainless steel
- H: High pressure 316 stainless steel
- D: Ductile iron

**Rotor material**
- 4: Aluminum
- 5: 316 stainless steel
- 9: Application specific

**Bearing type**
- 1: Ceramic
- 4: Hardened steel roller bearings (aluminum rotors)

**O-ring material**
- 1: Viton (standard) -15 to +200°C (-5 to +400°F)
- 2: Ethylene Propylene Rubber (EPR)
- 3: Teflon encapsulated viton
- 4: Buna-N (Nitrile) -85 to +100°C (-53 to +212°F)

**Temperature limits**
- 1: 120°C (250°F) - see note 1
- 2: 120°C (250°F) - see note 2

**Process connections**
- 1: BSP female threaded
- 2: NPT female threaded
- 4: ANSI-150 RF flanges
- 5: ANSI-300 RF flanges
- 6: PN16 DIN flanges
- 9: Customer nominated

**Integral options**
- QP: Quadrature pulse output
- E: Explosion proof
- ATEX: ATEX approved
- IECEx: IECEx approved
- Q1: Exd with Quadrature pulse
- B11: BT11 dual totaliser
- B3: Intrinsic-safety BT11 (I.S.)
- R2: RT12 Flow Rate Totaliser
- B: E0: EB10 batch controller
- B3: R3: Intrinsically safe RT12 (I.S.)
- M: i: M* digit mechanical reset totaliser
- M: M* digit mechanical reset totaliser

**Cable entries**
- 0: 3-6mm cable gland
- 1: M20 x 1.5mm
- 2: 1/2" NPT

**Model designation**

Proudly the flomec facility is ISO9001 quality certified for design & manufacture.

Innovative engineering & features can be attributed to 150 combined years of flow metering experience coming from the Flomec design team.

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