Positive displacement meters series
BM 200 - BM 400 - BM 600

Accessories

- Pulse emitter
- Encoder 6422 Exx-d. Pulses emitter EM 345 Exx-i incorporated in Veeder Root 7887 register
- Mechanical temperature compensation
- With VEGA II compensation
- Instant flow rate
- Mechanical needle indicator
- Ticket printer
- Vector flow. Zero start on command
- Preset
- Extension for electronic or mechanical counter
- VEBA II
- Automatic valve
- Pressure

<table>
<thead>
<tr>
<th>Type</th>
<th>Dimension A</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>BM 200</td>
<td>356 mm</td>
<td>54 Kg</td>
</tr>
<tr>
<td>BM 400</td>
<td>430 mm</td>
<td>102 Kg</td>
</tr>
<tr>
<td>BM 600</td>
<td>733 mm</td>
<td>155 Kg</td>
</tr>
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<table>
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<tbody>
<tr>
<td>VR Counter</td>
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<tr>
<td>Printer</td>
<td>5 Kg</td>
</tr>
<tr>
<td>VEGA II Counter</td>
<td>20 Kg</td>
</tr>
</tbody>
</table>
Positive displacement meters series 
BM 200 - BM 400 - BM 600

PD meter series BM sizes 2", 3", 4" and 6" offers high accuracy: +/- 0.1% with a repeatability of +/- 0.01%, over a large range of flow rate. This accuracy remains constant during long periods of use. Visual indication of the flow rate measured can be obtained when associated with mechanical register or electronic flow computer directly mounted on the meter or remotely by means of a pulses emitter (see VEGA II or VEGA II Turbine).

Applications
- Loading and unloading of tank trucks, tank wagons and barges
- Aircraft refuelling
- Transfer of petrochemical products from refineries to depots in pipelines
- Calibration of other meters and tanks

Operation
While rotating, the vanes are driven by the internal surface of the single body. This means that the self-lubricating vanes are always in contact with the internal surface of measuring chamber, therefore product leakage is avoided and though high accuracy is granted.

The calibration mechanism allows micrometric adjustment. It is not necessary to change gears.
When an electronic counter is used, the calibration mechanism is substituted with a 90° driving gear, if the electronic counter is mounted directly on the meter. If the electronic counter is remote, the meter mounts a pulses emitter or encoder (see Encoder 6422 data sheet).

Filtering and air elimination
To assure a measuring accuracy and preserve the meter from damage, the fluid under measurement must be properly filtered and air or gas must be eliminated. H. H. Ehlers produces a wide range of strainers and strainer-air separators (see FA - FDA leaflet).

Technical specifications

### EU Directives compliance
- PED (dir. 97/23/CE) Compliant directive 97/23/CE, with risk category depending on the measured liquid
- ATEX (dir. 94/9/CE) Non electrical equipment, compliant directive 94/9/CE, suitable for installation in hazardous area II 2G, marking Ex II 2 G c T1 ... T6

### Working conditions
- Flow rate: [100 ; 1,300] l/min @ 10 cSt [200 ; 2,400] l/min @ 10 cSt [300 ; 3,400] l/min @ 10 cSt 1,400 l/min with jet fuel (*) 2,600 l/min with jet fuel (*) 4,000 l/min with jet fuel (*)
- Working pressure: 1,000 KPa max 1,000 KPa max 1,000 KPa max Higher available upon request
- Test pressure: 1,700 KPa 1,700 KPa 1,700 KPa Higher available upon request
- Working temperature: [-30; +100] °C [-30; +100] °C [-30; +100] °C Higher and lower available upon request

### Construction
- Manifold and flanges: Carbon Steel with corrosion prevention treatment
- Body: Carbon Steel with corrosion prevention treatment
- Covers: Carbon Steel with corrosion prevention treatment
- Rotor: Aluminium
- Vanes: Graphite
- Gaskets: Nitrile
- Ball bearings: Stainless Steel
- Coupling: Viton lip seal
- Flanged: 3'' ANSI150 RF 4'' ANSI150 RF 6'' ANSI150 RF Other sizes and standards

### Readout
- Standard: litres litres or m³ m³ Others upon request
- Volume per revolution: 2.275 litres 4.55 litres 6.825 litres
- Flow direction: Left (IN) to right (OUT) Left (IN) to right (OUT) Left (IN) to right (OUT) Right (IN) to left (OUT)

### Performances
- Accuracy: ± 0.1% ± 0.1% ± 0.1%
- Repeatability: ± 0.01% ± 0.01% ± 0.01%
- Pressure drop: Refer to the diagram attached

### Pressure drop curves
- Density= 795 Kg/m³
- Viscosity at 15°C = 2 cSt

### Accuracy curves

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BM 200
BM 400
BM 600
Positive displacement meters series
BM 200 - BM 400 - BM 600

ISO 4119 PD meter series BM sizes 2", 3", 4" and 6" offers high accuracy: +/- 0,1% with a repeatability of +/- 0,01%, over a large range of flow rate. This accuracy remains constant during long periods of use. Visual indication of the flow rate measured can be obtained when associated with mechanical register or electronic flow computer directly mounted on the meter or remotely by means of a pulses emitter (see VEGA II or VEGA II triflute).

### Applications
- Reading and recording of tank trucks, tank wagons and barges
- Aircraft refuelling
- Transfer of petrochemical products from refineries to depots in large quantities.
- Loading and unloading of tank trucks, tank wagons and barges
- Non electrical equipment, compliant directive 94/9/CE, suitable for installation in hazardous area
- Strainer / air separators (see FA - FDA leaflet).

### Filtering and air elimination
To assure a measuring accuracy and preserve the meter from damage, the flow under measurement must be properly filtered and air or gas must be eliminated. Belt positions is wide range of velocities and atmospheres – air separaters (see PA - FSA bullet).

### Operation
While rotating, the vanes are driven by the internal surface of the single body. This means that the self – lubricating vanes are always in contact with the internal surface of measuring chamber, guaranteeing that the mechanical backlash is avoided and that high accuracy is granted.

The calibration mechanism allows micrometric adjustment. It is not necessary to change gears. When an electronic counter is used, the calibration mechanism is substituted with a 90° driving gear, if the electronic counter is not necessary to change gears.

The master meter is a pulses emitter (see Encoder Isoil 6422 data sheet)

### Technical specifications

#### EU Directives compliance
- ATEX (dir. 94/9/CE)
- PED (dir. 97/23/CE)

#### Working conditions
- Flow rate:
  - BM 200: 1,100 - 1,900 l/min @ 10 cSt
  - BM 400: 2,000 - 3,800 l/min @ 10 cSt
- Working pressure:
  - BM 200: 1,000 KPa max
  - BM 400: 1,700 KPa
- Working temperature:
  - [30, +100] °C
- Viscosity: +0,15
- Density: 795 Kg/m

#### Performance
- Accuracy: ± 0,1 %
- Repeatability: ± 0,05 %

#### Other sizes
- Higher available upon request
- Left (IN) to right (OUT)

#### Materials
- Manifold: Stainless Steel
- Body: Stainless Steel SS316
- Cover: Graphite bushes
- Rotor: Graphite
- Vanes: Graphite
- Ball bearings: Graphite
- Gaskets: Graphite
- Manifold and flanges: Graphite
- Flanged: Graphite
- Coupling:
  - BM 200: Graphite
  - BM 400: Graphite
  - BM 600: Graphite
- Test pressure:
  - BM 200: 6.825 litres
  - BM 400: 2,600 l/min with jet fuel (*)
  - BM 600: 4,000 l/min with jet fuel (*)

### Pressure drop curves
- Master Meter with trolley

### Accuracy curves

#### Flow rate
- [100 ; 1,300] l/min @ 10 cSt
- [200 ; 2,400] l/min @ 10 cSt
- [300 ; 3,400] l/min @ 10 cSt

#### Flow rate 
- Graphite
- Carbon Steel with corrosion prevention treatment
- PTFE
- Viton lip seal
- ± 0.1 %
- ± 0.05 %
- ± 0.01 %

#### Flow rate
- ± 0.1 %
- ± 0.05 %
- ± 0.01 %
- upon request
- Others upon request
- Stainless Steel
- § 36-423
Positive displacement meters series
BM 200 - BM 400 - BM 600

Technical specifications

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<tr>
<th>EU Directives compliance</th>
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<td>BM 600</td>
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</table>

Flow direction:
- BM 200: to the right (OUT) (Left (IN) to right (OUT)
- BM 400: to the left (OUT) (Right (IN) to left (OUT)
- BM 600: to the right (OUT) (Left (IN) to right (OUT)

Accurate and reliable, the vanes are driven by the internal surface of the single body. This means that the self-lubricating vanes are always in contact with the internal surface of measuring chamber, so product leakage is avoided and high accuracy is granted.

The calibration mechanism allows micrometric adjustment. It is not necessary to change gears. When an electronic counter is used, the calibration mechanism is substituted with a 90° driving gear, if the electronic counter in not necessary to change gears.

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The calibration mechanism allows micrometric adjustment. It is not necessary to change gears. When an electronic counter is used, the calibration mechanism is substituted with a 90° driving gear, if the electronic counter in not necessary to change gears.

Applications:
- Measuring and weighing of tank trucks, tank wagons and barges
- Aircraft refueling
- Loading and unloading of tank trucks, tank wagons and barges
- Measuring system
- Pressurized gas, fuel, air and carbon dioxide
- Gas concern industry
- Cryogenic fluid

Filtering and air elimination:
- Before the measuring accuracy and pressure the fluid must be filtered.
- Air must be eliminated.
- The fluid must be properly filtered and air or gas must be eliminated.
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- The fluid must be properly filtered and air or gas must be eliminated.

Performance:
- Accuracy: +0.15 % ± 0.1 % ± 0.05 %
- Repeatability: +0.15 % ± 0.1 % ± 0.05 %
- Range of application: Refer to the diagrams attached

Accuracy curves

Pressure drop curves

Features:
- Higher available upon request
- Non electrical equipment, compliant directive 94/9/CE, suitable for installation in hazardous area
- 2.272 litres
- 2.55 litres
- 4.805 litres
- 500
- 200
- 400
- 600
- 500
- 200
- 400
- 600

Master Meter with trolley
Positive displacement meters series
BM 200 - BM 400 - BM 600

**Accessories**

**Pulses emitter**

**Encoder 6422 Eex-d. Pulses emitter EM 345 Eex-i incorporated in Veeder Root 7887 register**

**Mechanical temperature compensation**

- with "alfa" coefficient
- with VEGA II compensation

**Instant flow rate**

- Mechanical needle indicator
- Ticket printer
- Veeder Root, Zero start or cumulative

**Preset**

- Veeder Root 7887, with one or two pneumatic micro switches or electric micro switches Type A489X

**Extension for electronic or mechanical counter**

- 250 mm, 500 mm, 1000 mm and 3000 mm

**IS automatic valve**

- 3" or 4", 2 stages or Multiplex closure. Flow limiting, 16 valves

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**Type** | **Dimension A** | **Weight**
--- | --- | ---
BM 200 | 356 mm | 54 Kg
BM 400 | 430 mm | 102 Kg
BM 600 | 733 mm | 155 Kg

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**Accessories** | **Weight**
--- | ---
VR Counter | 6 Kg
Preset | 5 Kg
Printer | 5 Kg
VEGA II Counter | 20 Kg

---

Positive displacement meters series
BM 200 - BM 400 - BM 600
Positive displacement meters series

**BM 200 - BM 400 - BM 600**

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**Accessories**

- Pulses emitter
- Encoder 6422 Eex-d
- Pulses emitter EM 345 Eex-i incorporated in Veeder Root 7887 register
- Mechanical temperature compensation
- Setting "alfa" coefficient (only with Veeder Root 7887 register)
- With VEGA II compensation
- Is achieved by an algorithm based on "alfa" coefficient or density
- Unit drum (for Master Meter)
- Allows the reading of the tens of litre
- Instant flow rate
- Mechanical needle indicator
- Ticket printer

**Veeder Root**

- Zero start or cumulative
- Preset

**Veeder Root 7889**

- With one or two pneumatic micro switches or electric micro switches Eex-d ATEX
- Extension for electronic or mechanical counter

**ISOLI**

- Automatic valve
- 3" or 4"
- 2 stages or Multistep closure
- Flow limiting
- No return

**Positive displacement meters series**

**BM 200 - BM 400 - BM 600**

- Type
- Dimension A
- Weight

**Veeder Root 7889**

- With one or two pneumatic micro switches or electric micro switches Eex-d ATEX
- Extension for electronic or mechanical counter

**Accessories**

- Weight

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