Grooved Turbine Flowmeters

Product Bulletin HO-GF-105E

TECHNICAL DATA SHEET

Grooved Turbine Flowmeters for

- Water
- Water/Sand
- Liquid Carbon Dioxide
- Cement Slurry.

Flow Range and Model Information

<table>
<thead>
<tr>
<th>Flowmeter Size (Inches)</th>
<th>Victaulic® Size (Inches)</th>
<th>Linear Flow Range (US GPM)</th>
<th>(Refer to Note 1 below)</th>
<th>Technical Data</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Nominal</td>
<td>Nominal Max.</td>
<td>Frequency (Hz)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>'K' Factor</td>
<td>Frequency</td>
<td></td>
</tr>
<tr>
<td>Model HO</td>
<td>1 X 1</td>
<td>-4 -60</td>
<td>670</td>
<td>670</td>
</tr>
<tr>
<td>Model HO</td>
<td>1½ X 1½</td>
<td>-8 -130</td>
<td>220</td>
<td>500</td>
</tr>
<tr>
<td>Model HO</td>
<td>2 X 2</td>
<td>-15 -225</td>
<td>126</td>
<td>500</td>
</tr>
<tr>
<td>Model HO</td>
<td>2½ X 2½</td>
<td>-25 -400</td>
<td>75</td>
<td>500</td>
</tr>
<tr>
<td>Model HO</td>
<td>3 X 3</td>
<td>-40 -650</td>
<td>45</td>
<td>500</td>
</tr>
<tr>
<td>Model HO</td>
<td>4 X 4</td>
<td>-75 -1250</td>
<td>20</td>
<td>400</td>
</tr>
<tr>
<td>Model HO</td>
<td>6 X 6</td>
<td>-200 -2900</td>
<td>8</td>
<td>400</td>
</tr>
<tr>
<td>Model HO</td>
<td>8 X 8</td>
<td>-330 -5200</td>
<td>3</td>
<td>250</td>
</tr>
<tr>
<td>Model HO</td>
<td>10 X 10CB*</td>
<td>-650 -8000</td>
<td>1.11</td>
<td>150</td>
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<tr>
<td>Model HO</td>
<td>12 X 12CB*</td>
<td>-1400 -12000</td>
<td>.69</td>
<td>140</td>
</tr>
</tbody>
</table>

*Add -CB for CB Bearing Only.

FOR COMPLETE MODEL NUMBER INFORMATION, PLEASE SEE REVERSE SIDE.

Flow Range (Note 1)

Ranges shown are standard ranges — other ranges are available. Contact Hoffer Flow Controls Applications Group.

Bearing Selection:

Hybrid Ceramic, Self-lubricating shielded ball bearings must be used on CO2, may be used on H2O and never on H2O/Sand or CS. Hard Carbon Composite Sleeve bearings. For use on H2O only.

Tungsten Carbide Sleeve bearings must be used on H2O/Sand and CS, may be used on H2O and never used on CO2.

Please Note: Flowmeter service life is reduced when flows contain particulate.

GENERAL SPECIFICATIONS

Linearity: ±0.5% of reading (±0.25% typical) over tabulated linear flow range.

Repeatability: ±0.1% over tabulated useable range.

Temperature Range: -450°F to +450°F (Standard).

Pressure Drop Characteristics: Request graphical data.

Overrange: 150% of maximum flow (intermittently).

Construction: All stainless steel.

Flowmeters are calibrated and supplied with "K" Factor Tag.

*Victaulic is a registered trademark of Victaulic Company of America.
The quality system covering the design, manufacture and testing of our products is certified to International Standard ISO 9001.

GROOVED TURBINE FLOWMETER MODEL NUMBERING SYSTEM

<table>
<thead>
<tr>
<th>MODEL HO</th>
<th>(A)</th>
<th>(B)</th>
<th>(C)</th>
<th>(D)</th>
<th>(E)</th>
<th>(F/G/H)</th>
<th>(I)</th>
<th>(J)</th>
<th>(K)</th>
</tr>
</thead>
</table>

A. End Fitting Size
B. Flowmeter Size
C. Minimum Operating Flow
D. Maximum Operating Flow
E. Bearing Type

- **(BP)** Self-Lubricating, Ceramic Hybrid Ball Bearing for 1".
- **(CB)** Self-Lubricating, Ceramic Hybrid Ball Bearing for 1½" thru 4".
- **(C)** Hard Carbon Composite Sleeve Bearing
- **(T)** Tungsten Carbide Sleeve Bearing

F. Pickup Coils

- **(1M)** One Magnetic Coil
- **(2M)** Two Magnetic Coils
- **(1MC3PA)** One RF Coil
- **(2MC3PA)** Two RF Coils
- **(1MC2PAHT)** One High Temp 6" Pigtail RF coil
- **(2MC2PAHT)** Two High Temp 6" Pigtail RF coils
- **(1HTM)** High Temperature Magnetic Coil (+450 to +850°F)
- **(2HTM)** Two High Temperature Magnetic Coils
- **(1ISM)** Intrinsically Safe Mag Coil
- **(1ISM-ATEX)** One ISM ATEX Coil
- **(2ISM)** Two Intrinsically Safe Mag Coils
- **(2ISM-ATEX)** Two ISM ATEX Coils
- **(RP___)** Redi-Pulse Coil (See Redi-Pulse Technical Data Sheet RP-XXX)
- **(_____)** Intrinsically Safe Redi-Pulse Coil (See I.S. Redi-Pulse Technical Data Sheet IRP-XXX)
- **(P)** Pigtail or Flying Leads, Add-P and the length of leads after any coil except the high temperature coils.

G. Coil Spacing, Mechanical Degrees Apart

- Factory Assigned. Spacing required when meter has two pickup coils.

H. Riser and Explosion-Proof Coil Enclosures

- **(X)** 1" MNPT riser, welded to body. Required for all types of enclosures.
- **(X-ATEX)** 3/4" MNPT riser, welded to the body.
- **(XE2)** 1" MNPT riser with E2 enclosure. (See Chart)*
- **(X-ATEX)E2** 3/4" MNPT riser with E2 enclosure. (See Chart)*
- **(X8S)** 8" Long S/S 1" MNPT riser. (For fluid temperatures below -40°F (-40°C) or above +140°F (+60°C)
- **(X8S-ATEX)** 8" Long S/S 3/4" MNPT riser. (For fluid temperatures below -40°F (-40°C) or above +140°F (+60°C)

I. End Fitting Types

- **(VIC)** Grooved End Fittings

J. Service Type

- **(L)** Clean Liquid
- **(S)** Slurry
- **(SP)** Special

K. Special Features

- **(CE)** CE Mark - Required for Europe
- **(PED-CE)** PED Mark - Required for Europe
- **(SEP-CE)** Sound Engineering Practice
- **(SP)** Any special features that are not covered in the model number, use –SP and a written description
- **(EXP)** CSA Explosion-Proof Certification (See Chart)**
- **(X)** No Special Features

**E2 EXPLOSION-PROOF/FLAME-PROOF ENCLOSURE WITH 3/4" FNPT MOUNT AND 3/4" CABLE ENTRY RATINGS:**

- **FM:** CLASS I, DIV. 1, GR. ABCD; CLASS I, DIV. 2, GR. ABCD; CLASS II, DIV. 1, GROUPS EFG
- **CSA:** CLASS I, DIV. 1, GR. ABCD; CLASS II, DIV. 1, GR. EFG; CLASS III, TYPE 4X
- **ATEX:** EX II 2GD Ex d IIC, CLASS I, ZONE 1, IP 66
- **IEC:** EX d IIC IP68

**CLASS I, DIV. 1, GR. ABCD; CLASS I, DIV. 2, GR. ABCD; CLASS II, DIV. 1, GROUPS EFG
CANADA: CLASS I, ZONE 1 & 2, Ex d II C
USA: CLASS I, ZONE 1 & 2, AEx d II C

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