

Small Volume Provers



Flow Management Devices raises the bar in Small Volume Prover design and performance with its comprehensive line of Unidirectional Captive Displacement Small Volume Provers.

Our provers are designed per API MPMS Chapter 4 standards to verify the accuracy of almost any liquid flow meter type, including Coriolis, Turbine, Helical Turbine, Positive Displacement, and Ultrasonic. Flow rate capabilities range from 142 BPH to 35,000 BPH.

FMD provers ensure accurate and repeatable proving performance and are compatible with most hydrocarbon products, such as crude, refined products, NGLs, cryogenic liquids, and hot bitumen.

Flow MD's patented prover design provides an accurate, repeatable, and fast measurement with minimal product displacement. Additionally, our provers are easy to operate, with self-diagnostics and long-wearing seals made of proprietary PTFE blends.

The piston-poppet assembly design minimizes flow disturbances, and the all-stainless-steel drive end holds up to harsh field proving conditions. Our chrome-lined flow tubes provide enhanced durability and better resistance to particulate and chemical damage.

Our unique and compact design utilizes pulse interpolation electronics, a patented drive end, a motor-driven piston with durable carbon fiber belts, a smooth-bore cylinder, a poppet valve, and optical position sensors.

Why Choose FMD Small Volume Provers?

- Uncertainty $\leq 0.005\%$
- Repeatability $\leq 0.02\%$ (ISO Cal Lab)
- Conforms to API MPMS Chapter 4 Standards
- Certifications:
 - Quality: ISO:9001, ISO:17025
 - Hazardous Area: CSA, ATEX, IECEx
 - Equipment: CE, PED, CRN, ABS
 - Customer Approvals: 9COM
- Easily handles heavy crude and other hydrocarbon liquids
- Chrome lined flow tubes
- All wetted parts stainless / PTFE
- Galvanized frame
- Smooth belt drive with clutch
- Metric switch bar option available
- 2" connections allow for rapid draining (FMD-025 to FMD-200)
- 2" vents for pressure and temperature verification (FMD-025 to FMD-200)
- Prover validation / self-test function

fmd-sales@idexcorp.com
www.flowmd.com

Contact us today to discuss your proving application.

SERVICE, EXPERIENCE,
INNOVATION & EXCELLENCE

FMD Prover Model Number Configuration

To build your FMD Prover Model Number please follow the steps on the left and choose one of each options on the right by using the blue letter(s) or number(s) next to the corresponding description and identifier. **Example FMD Model # : H 6 6 06E TT 1 A B S G BD W C**

Prover Type Step 1	→ Prover Type H - Horizontal	Structural Components 4 - 304 6 - 316 <small>*Note: Can contain other materials</small>	Max Flow Rate <table border="1"> <tr><td>007 - BPH: 1,000</td><td>GPM: 700</td><td>M³HR: 150</td></tr> <tr><td>015 - BPH: 2,100</td><td>GPM: 1,500</td><td>M³HR: 330</td></tr> <tr><td>025 - BPH: 3,570</td><td>GPM: 2,500</td><td>M³HR: 560</td></tr> <tr><td>035 - BPH: 5,000</td><td>GPM: 3,500</td><td>M³HR: 790</td></tr> <tr><td>045 - BPH: 6,400</td><td>GPM: 4,500</td><td>M³HR: 1,022</td></tr> <tr><td>060 - BPH: 8,500</td><td>GPM: 6,000</td><td>M³HR: 1,350</td></tr> <tr><td>06E - BPH: 8,500</td><td>GPM: 6,000</td><td>M³HR: 1,350</td></tr> <tr><td>090 - BPH: 12,850</td><td>GPM: 9,000</td><td>M³HR: 2,000</td></tr> <tr><td>09E - BPH: 12,850</td><td>GPM: 9,000</td><td>M³HR: 2,000</td></tr> <tr><td>130 - BPH: 18,500</td><td>GPM: 13,000</td><td>M³HR: 2,900</td></tr> <tr><td>200 - BPH: 28,500</td><td>GPM: 20,000</td><td>M³HR: 4,500</td></tr> <tr><td>20E - BPH: 28,500</td><td>GPM: 20,000</td><td>M³HR: 4,500</td></tr> </table> <small>Denotes Extended Volume Provers</small>	007 - BPH: 1,000	GPM: 700	M³HR: 150	015 - BPH: 2,100	GPM: 1,500	M³HR: 330	025 - BPH: 3,570	GPM: 2,500	M³HR: 560	035 - BPH: 5,000	GPM: 3,500	M³HR: 790	045 - BPH: 6,400	GPM: 4,500	M³HR: 1,022	060 - BPH: 8,500	GPM: 6,000	M³HR: 1,350	06E - BPH: 8,500	GPM: 6,000	M³HR: 1,350	090 - BPH: 12,850	GPM: 9,000	M³HR: 2,000	09E - BPH: 12,850	GPM: 9,000	M³HR: 2,000	130 - BPH: 18,500	GPM: 13,000	M³HR: 2,900	200 - BPH: 28,500	GPM: 20,000	M³HR: 4,500	20E - BPH: 28,500	GPM: 20,000	M³HR: 4,500
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Structural Components Step 2	→																																						
Wetted Components Step 3	→	Wetted Components 4 - 304 6 - 316																																					
Max Flow Rate Step 4	→																																						
Flange Configuration Step 5	→	Flange Configuration RR - Right In - Right Out LL - Left In - Left Out TT - Top In - Top Out RL - Right In - Left Out LR - Left In - Right Out 4A - 4 Flanges RT - Right In - Top Out LT - Left In - Top Out TR - Top In - Right Out																																					
Pressure Class Step 6	→ Pressure Class 1 - ANSI 2 - PED																																						
Flange Type Step 7	→ Flange Type A - Raised Face 2 - Ring Joint																																						
Pressure Rating Step 8		Pressure Rating A - 150# - 285 psi - 19.6 Bar B - 300# - 740 psi - 51.1 Bar C - 600# - 1480 psi - 102.1 Bar D - 900# - 2220 psi - 153.2 Bar E - 1500# - 3705 psi - 255.5 Bar <small>All Pressure ratings available for FMD models 007 to 090. Per ASME (B16.5M) Table 2-1.1 -20 to 100°F (-29 to 37.8°C). Low Temp (LT) -50≤T AMB<-20°F option H code will be provided by factory.</small>																																					
Cover Type Step 9	→ Cover Type S - Standard (Quick Access) P - Purge (≤ -20°F Product)																																						
Area Classification Step 10	→	Area Classification E - US/CSA Class 1 Div 1 40°C G - US/CSA Class 1 Div 2 40°C J - ATEX Ex d mb [ia] IIB T3 G - -20°C to 54°C K - IECEx EX d mb [ia] IIB T3 G - -20°C to 54°C <small>Consult factory for other options.</small>																																					
Motor Voltage Step 11		Motor Voltage DC Voltages AA - 24 VDC (007-035) ^{1,2} 50 Hz Voltages BC - 220/230/240 VAC 1ph 50Hz ^{1,2,4} BD - 190/220 VAC 3ph 50Hz BF - 380/400/415 VAC 3ph 50Hz BN - 690 VAC 3ph 50Hz 60 Hz Voltages CB - 110-120 VAC 1ph 60Hz ^{1,2} CC - 220/230 VAC 1ph 60Hz ^{1,2} CD - 208-230/240 VAC 3ph 60Hz CF - 400 VAC 3ph 60Hz CI - 440/460/480 VAC 3ph 60Hz CN - 690 VAC 3ph 60Hz <small>1 = Not available with low ambient temperature. 2 = Only available US/CSA area classification. 3 = Only available on models FMD-007 through FMD-090. 4 = Only available on models FMD-007 through FMD-035. Note: Not all voltages are available for all Area Classifications. Consult factory for other voltage options and control power requirements.</small>																																					
Tube Finish Step 12	→ Tube Finish W - Wrap (Standard) N - Natural Finish																																						
Seal Material Step 13	→ Seal Material E - Ekonal C - Carbon N - NGL Service																																						

Contact Factory for any Special Requests. Please always verify prover sizing with FMD as meter type, process fluid and operating conditions must be considered to properly size a prover. Note: Not all configurations shown on this table are available. Consult factory for details.

FMD Prover Flow Rates & Displaced Volumes														
FMD Model Number		FMD-007	FMD-015	FMD-025	FMD-035	FMD-045	FMD-060	FMD-060EV	FMD-090	FMD-090EV	FMD-130	FMD-200	FMD-200EV	
* Max Flow	BPH	1,000	2,100	3,570	5,000	6,400	8,500	8,500	12,850	12,850	18,500	28,500	28,500	
	GPM	700	1,500	2,500	3,500	4,500	6,000	6,000	9,000	9,000	13,000	20,000	20,000	
	M³/HR	150	330	560	790	1,022	1,350	1,350	2,000	2,000	2,900	4,500	4,500	
*FMD Provers are compatible with most meter types, including Coriolis, Turbine, Helical Turbine, Positive Displacement, and Ultrasonic. Meter type, operating conditions, and fluid characteristics will affect prover sizing. Please reach out to us to discuss your specific application and the optimal FMD Prover for your application.														
* Displaced Volume	Gallons	Primary	5	10	20	25	35	50	75	80	120	90	140	210
		Secondary	4	8	15	20	25	40	60	60	90	60	100	170
	Liters	Primary	19	40	75	95	130	195	290	300	450	340	520	800
		Secondary	15	30	60	75	100	150	225	225	340	250	400	640
Inlet/Outlet Flange Size (ANSI B 16.5)		3"	4"	6"	6"	8"	10"	10"	12"	12"	16"	20"	20"	
*Please note: Standard prover volume is in gallons, liters are optional - Prover requires non-standard switchbar for liters. Alternate displaced volumes are available for liters, please contact factory for additional information. Liters are a direct conversion and not indicative of Seraphin can sizes.														