FMC Technologies

Smith Meter® PD Meter

PD Rotary Vane Meter

Application Bulletin

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The process of selecting correct PD meter options for any given application is often complicated by product variables such as viscosity and temperature. The chart below has been organized to simplify the process. Please note that final selection may vary due to product compatibility.

Meter Feature Selection Guide Based Upon Fluid Viscosity and Temperature for Smith Meter® Positive Displacement Rotary Vane Meters

Temperature Range	Viscosity		
	Up to 2,000 SSU (Up to 400 mPa•s)[1]	**2,000 to 10,000 SSU (400 mPa•s to 2 Pa•s)[1]**	**Over 10,000 SSU (Over 2 Pa•s)[1]**
-20° F (-29° C) to Standard Max. Design Temperature[2]	• Standard Seals[3] • Standard Trim • Standard Clearances[5] • Standard Flow Range • Standard Accessory Stack-Up	• Standard Seals[3] • Standard Trim • Special Clearances • Standard Flow Range • Standard Accessory Stack-Up	• Standard Seals[3] • Standard Trim • Special Clearances • Reduce Max. Flow per Formula[4] • Standard Accessory Stack-Up
Standard Max. Design Temperature[2] to 200° F (93° C)	• Standard Seals[3] • Standard Trim • Special Clearances • Standard Flow Range • Standard Accessory Stack-Up	• Standard Seals[3] • Standard Trim • Special Clearances • Standard Flow Range • Standard Accessory Stack-Up	• Standard Seals[3] • Standard Trim • Special Clearances • Reduce Max. Flow per Formula[4] • Standard Accessory Stack-Up
201° F to 300° F (94° C to 149° C)	• Viton Seals[3] • All Iron Trim • Standard Clearances • Reduce Max. Flow by 25% • Ventilated Extension	• Viton Seals[3] • All Iron Trim • Special Clearances • Reduce Max. Flow by 25% • Ventilated Extension	• Viton Seals[3] • All Iron Trim • Special Clearances • Reduce Max. Flow per Formula[4] • Ventilated Extension
301° F to 400° F (150° C to 204° C)	• Viton Seals • All Iron Trim • Standard Clearances • Reduce Max. Flow by 25% • Ventilated Extension with Manual Calibrator Kit	• Viton Seals • All Iron Trim • Special Clearances • Reduce Max. Flow by 25% • Ventilated Extension with Manual Calibrator Kit	• Viton Seals • All Iron Trim • Special Clearances • Reduce Max. Flow per Formula[4] • Ventilated Extension with Manual Calibrator Kit

1 SSU to mPa·s relation based upon sp. gr. of 0.93.
2 Meters 2" through 6": 150 °F (65°C); 8" 137°F (58°C); 10": 125°F (52°C); 12": 115°F (46°C); 16": 105°F (41°C).
3 Standard seals may be used up to 225°F (107°C).
4 Maximum allowable flow at actual product viscosity, with High Viscosity Meter Clearances, if viscosity is over 10,000 SSU (or 2 Pa·s):

$$\frac{10{,}000\ \text{SSU}}{\text{Actual Product Viscosity (SSU)}} \times \text{Max. Flow Rating or} \qquad \frac{2\ \text{Pa·s}}{\text{Actual Product Viscosity (Pa·s)}} \times \text{Max. Flow Rating}$$

5 Special clearances required on 10", 12", and 16" meters for applications in excess of 1,000 SSU (200 mPa·s).
Note: *When ordering, specify: a. Highest temperature and viscosity at that temperature.*
b. Lowest temperature and viscosity at that temperature.

Revisions included in AB01003 Issue/Rev. 0.2 (9/07):
Page 1: Omitted last row on chart

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