PRESSURE DROP LIMITATIONS ON PD FLOWMETERS

Positive displacement flowmeters are an inexpensive means to accurately meter high viscosity clean liquids as high as 1 million centipoise however, the appropriate meter must be sized so that the pressure drop across the primary measuring elements (oscillating piston or oval rotor), does not exceed the maximum capability of either.

The oscillating piston meter can withstand 4 bar differential making it more suitable to high viscosity liquids, the oval meter is limited to 1 bar differential due to the pressure imposed on the rotor shafts.

FLOW RATE DE-RATING GUIDE FOR PD METERS

Viscosities	**Maximum flow multiplier for PD meters**		
Less than	Standard oval gear	Special cut oval gear	Oscillating piston
1,000 cp	1	1.00	1.00
2,000 cp	0.50	1.00	1.00
4,000 cp	0.42	0.84	0.90
6,000 cp	0.33	0.66	0.80
8,000 cp	0.25	0.50	0.70
30,000 cp	0.15	0.30	0.60
60,000 cp	0.12	0.25	0.50
150,000 cp	0.10	0.20	0.40
250,000 cp	0.05	0.10	0.15
1,000,000 cp	0.025	0.05	0.08