Backpressure Drop Graphs: Flow Sensors

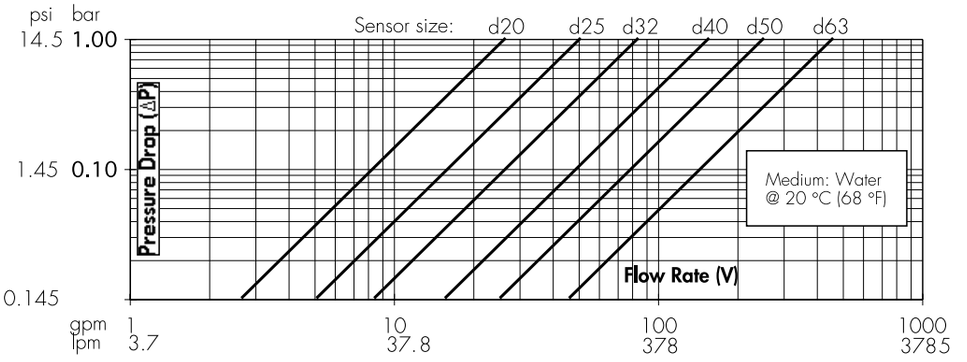
Backpressure Calculation:
Minimum downstream pipe backpressure levels (full pipes) are required to prevent cavitation within the sensor. The minimum back pressure is calculated by the following formula:

$$2.7 \times \Delta P + 1.3 \times Pv$$

ΔP = Pressure drop across sensor
Pv = Liquid vapor pressure at operating temperature

1) *Using Pressure Drop Graph, find ΔP by locating your maximum flow rate on specific sensor size line.*
2) *Using the Liquid Vapor Pressures Chart, find Pv at operating temperature.*
3) *Calculate minimum back pressure needed using formula.*

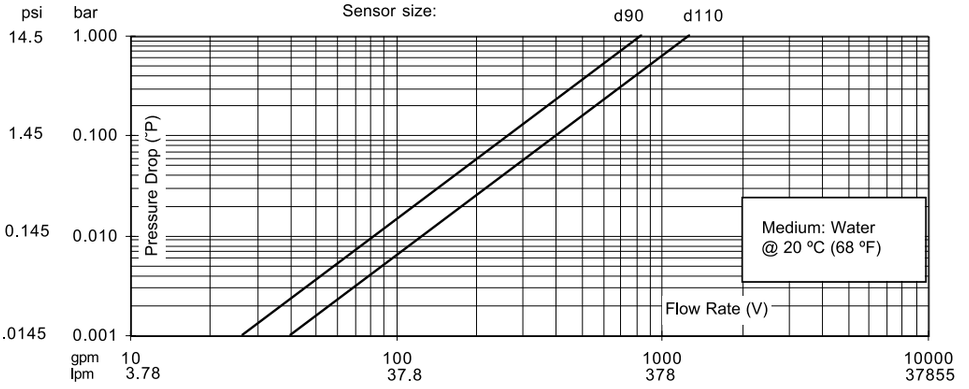
Model 7000-7001



Liquid Vapor Pressures at Operation Temperatures

°C	-20	-10	0	10	20	25	30	40	50	65
°F	-4	14	32	50	68	77	86	104	122	149
Pv (bar)	0.001	0.003	0.006	0.012	0.023	0.32	0.042	0.074	0.123	0.25
Pv (psi)	0.014	0.038	0.088	0.178	0.338	0.458	0.614	1.067	1.784	3.626

Model 7002



Water Saturation Vapor Pressures at Operating Temperatures

°C	-20	-10	0	10	20	25	30	40	50	65
°F	-4	14	32	50	68	77	86	104	122	149
Pv (bar)	0.001	0.003	0.006	0.012	0.023	0.32	0.042	0.074	0.123	0.25
Pv (psig)	0.014	0.038	0.088	0.178	0.338	0.458	0.614	1.067	1.784	3.626