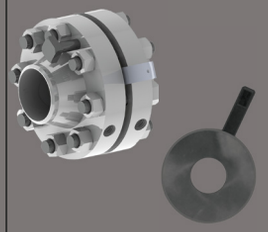
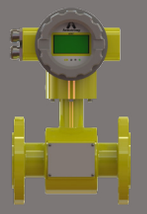
Flow Measurement Matrix - Institutional

Meter Type	 Accelabar®	 Verabar®	 Vortex Meter	 Insertion Vortex	 Orifice	 Mag Meter	 Ultrasonic Meter
Line Size Range (Inches)	1" to 12"	≥ 1.5"	0.5" to 12"	≥ 0.5"	≥ 0.5"	≥ 0.5"	≥ 0.75"
Required Straight Run of Piping - Single elbow additional straight run required for other upstream disturbances	No straight run required	7D up and 3D down	10D up and 5D down	10D up and 5D down	3D to 75D Upstream Depending upon Beta Ratio and Disturbance, 2D to 9D Downstream	5D up and 2D down	10D up and 5D down
Permanent Pressure Loss	33 - 35% of Generated Differential	3 - 4% of Generated Differential	Inline Vortex (AVF) = Negligible	Insertion Vortex (AVI) = Negligible	50 to 70% of Generated Differential	Zero	Zero
Accuracy of Flow Coefficient (% of Measured Rate)	± 0.5%	± 1.0%	± 0.7 to 1.5%	± 1.2 to 2.0%	± 1.0 to 2.0%	± 0.3 to 1%	± 1%
Turndown in Flow (Dependent on application and flowing conditions)	65 : 1	10 : 1	20 : 1	20 : 1	3 : 1	1000:1	1000:1
Communication Protocol	4-20 mA, Relays, MODBUS, BACnet MSTP/ IP	4-20 mA, Relays, MODBUS, BACnet MSTP/IP	4-20 mA, MODBUS, BACnet MSTP	4-20 mA, MODBUS, BACnet MSTP	4-20 mA, Relays, MODBUS, BACnet MSTP/ IP	4-20 mA, Relays, MODBUS, BACnet MSTP/IP	4-20 mA, Relays, MODBUS, BACnet MSTP/IP
Gas							
Liquid						>5µ Siemens/cm	
Steam							

Ideal **Acceptable** **Not Recommended or Least Favorable**