

Selection Questionnaire



Fluid: _____ (Notes 1, 2)

Concentration: _____ % (Note 2)

Temperature: _____ °C (Notes 2, 3)

Pressure: _____ psi (Note 3)

Viscosity: _____ cSt (Note 4)

Maximum Solids: _____ % (Note 5)

Particle Size: _____ mm dia. (Note 5)

Ferrous Particles in Fluid?: Yes No (Note 6)

Electromagnetic flow meters only: (Note 7)
conductivity of fluid greater than 20 microSiemens?: Yes No

Maximum/minimum measured flow rate:
_____ / _____ Units: _____

Pipe Size: _____ **Pipe Material:** _____

Sensor Body: CPVC 316L SS
 PVDF Brass

Sensor O-Rings: EPDM Viton®
 Other _____

Installation Fittings: Tee Saddle
 Weld-On Adaptor

Power Supply Available: _____

Distance of straight pipe upstream/downstream of flow sensor: _____ / _____ (Note 8)

Type of piping element upstream/downstream of flow sensor (i.e. valve, elbow, reducer, etc.):
_____ / _____ (Note 8)

Maximum distance from flow sensor to remote instrument: _____ (Note 9)

Reference Notes

1. Digiflow® FlowX3 flow meters measure liquids only. No air bubbles should be present and the pipe must always be full.
2. Check chemical resistance of the fluid to verify if wetted parts are acceptable.
3. Check that the service is within the pressure/temperature rating of installation fitting.
4. Viscosity range is 0.5 to 20 cSt (centistokes). Factor calibration is required if outside this range, up to 40 cSt maximum. Maximum viscosity for Oval Gear flow sensor is 1,000 cP. Insertion electromagnetic flow transmitters have no viscosity limitations. See **Units of Viscosity** below.
5. Maximum percentage solids content for paddle wheel sensors is 10%, with particles not to exceed 0.5 mm in length or diameter (0% solids for ULF flow sensors). The insertion type electromagnetic flow transmitters can handle homogeneous solids easily. Particle size is not an issue.
6. Paddle wheel flow meters cannot be used on services containing ferrous particles i.e., those which will be attracted to the magnetic rotor blades. The insertion type electromagnetic flow transmitters is only sensitive to metallic particles if they are magnetic.
7. Electromagnetic flow transmitters require liquid to have minimum conductivity at 20 microSiemens.
8. For accurate flow measurement there must be a developed turbulent velocity profile at the sensor location. This requires a straight run pipe with a minimum number of pipe diameters distance upstream and downstream of the flow sensor. These distances depend on the type of piping element (i.e. valves, elbows, reducers etc.) causing the disturbance. See page 36.
9. Hall Effect signals may be transmitted up to 300 meters (984 ft.) without the need for conditioning whereas Coil or Reed Effect signals may be transmitted up to 16 m (52.5 ft.) without conditioning. Coil Effect sensors are normally used with the battery powered flow monitor.

Units of Viscosity

$$\text{Absolute Viscosity } (\mu): 1 \text{ poise (P)} = 1 \frac{\text{dyne}}{\text{cm}^2} = 1 \frac{\text{gm}}{\text{cm} \cdot \text{sec.}}$$

$$1 \text{ centipoise (cP)} = 0.01 \text{ poise}$$

$$\text{Viscosity of water at } 20^\circ\text{C is } 1.002 \text{ cP}$$

$$\text{Kinematic Viscosity } (\nu) = \frac{\text{Absolute Viscosity}}{\text{Density of Fluid}}$$

$$1 \text{ stoke (St)} = 1 \frac{\text{m}^2}{\text{sec.}}$$

$$1 \text{ centistoke (cSt)} = 0.01 \text{ stoke}$$

Viscosity is temperature dependent. Liquid viscosities drop with increased temperature.