

Selection guide

Level instrumentation

↑ Recommended
↔ Limited
↓ Not recommended

		Differential pressure (d/p)/hydrostatic	Gauge pressure/hydrostatic	Multivariable	Buoyancy/displacer	Purged bubble tube	Guided wave radar	Free space radar
Why choose this technology		<ul style="list-style-type: none">Low priced/economicalMost popular/well understoodWide measurement rangeIndependent of obstaclesSame transmitter can be used for numerous applications (flow, filter monitoring)	<ul style="list-style-type: none">Similar technology to d/p cellMost popular/well understoodWide measurement rangeIndependent of obstaclesSame transmitter can also be used for pressure measurement	<ul style="list-style-type: none">Based on well-known d/p cell technologyOne transmitter with three measurement outputs¹¹	<ul style="list-style-type: none">Ability to measure densityVery robust and ruggedHigh Temp. (932 F) / High Pressure (7251 PSIG)Not affected by vapor levels during interface measurement	<ul style="list-style-type: none">EconomicalVersatile — doesn't require flanged tank connectionKeeps transmitter away from hot processesUses well understood d/p cell technologyNo worry about process liquid crystallizing in tubing	<ul style="list-style-type: none">Easy mounting positionIndependent of mediaWide measurement rangeQuick and easy setup	<ul style="list-style-type: none">Easy mounting positionIndependent of mediaWide measurement rangeQuick and easy setup
Contact/non-contact measurement		contact	contact	contact	contact	contact	contact	noncontact
Application	Liquid level measurement with changing density	↔ ¹	↔ ¹	↑	↔ ³	↓	↑	↔ ¹²
	Density measurement	↔ ^{6 7}	↔ ^{6 7}	↔ ^{6 7}	↑	↑ ⁴	↓	↓
Media conditions	Measuring volume	↔ ²	↔ ²	↔ ²	↑	↔	↑	↑
	Applications with foam	↑	↑	↑	↔	↑	↑	↔
	Solids	n/a	n/a	n/a	n/a	n/a	↑	↑
	High viscosity or waxy fluids	↔ ¹	↔ ¹	↔ ¹	↔ ³	↔	↔	↑
	Slurries	↔ ¹	↔ ¹	↔ ¹	↔	↔	↔	↑
	Wavy/turbulence	↑	↑	↑	↔	↔	↑	↑
	Corrosive media ¹⁵	↔ ¹	↔ ¹	↔ ¹	↑	↑	↔	↑
	Low dielectric <2.0	↑	↑	↑	↑	↑	↑	↑
	Temperature up to 572 °F (300 °C)	↑ ⁸	↑ ⁸	↑ ⁸	↑	↑	↑	↓
	Vacuum pressure	↑	↓	↑	↑	↓	↑	↑
Install	Pressure up to 1450 psig (100 barg)	↑	↑	↔	↑	↓	↓	↑
	Agitator/obstacles in way of measurement	↑	↑	↑	↔ ⁵	↑ ⁹	↓	↑
Process Connection Conditions	Enclosed (not vented to atmosphere) vessel	↑	↔ ¹⁰	↑	↑	↓	↑	↑
	Compatible with threaded connection	↑	↑	↑	n/a	↑	↑	↑
	Uses process flanged connection	↑	↑	↑	↑	↓	↑	↑
	Connects to diaphragm seal/pressure seal	↑	↑	↑	n/a	↓	n/a	n/a
	Installed with instrument/hydraulic tubing	↑	↑	↑	n/a	↑	n/a	n/a
	Manifold connection available	↑	↑	↑	n/a	↑	n/a	n/a
	Offers sanitary connection and fill fluids (tri clamp, tank spud)	↑	↑	↑	n/a	↓	↓	↓
	Top of tank connection/entry	n/a	n/a	n/a	↑ ⁵	↑	↑	↑
	Side/top of tank connection/entry	n/a	n/a	n/a	↔	↑	↑	↑
	Side/bottom of tank connection/entry	↑	↑	↑	↓	↑	n/a	n/a
Bottom of tank connection/entry		↑	↑	↑	↓	↑	n/a	n/a

1. With diaphragm seal/pressure seal, use of capillaries may require heat trace
2. With symmetrical cylindrical vertical tank — use of 3rd party display device facilitates volume output
3. May require tank/chamber heating to avoid solidification
4. Refer to MI 020-328
5. Must use side chamber for installation; not recommended to use from top of tank install with agitator, obstacles
6. Requires use of two transmitters at known distance or dp or multivariable with diaphragm seals at known distance

7. Refer to mi 020-369
8. Do not direct mount transmitter next to high temperature process; remote mounting may be necessary to keep transmitter electronics below 185 °F
9. If it is impractical to immerse bubble tubes in the tank (because the tank has a mixer and/or baffles, or because the liquid is corrosive, etc.), The bubbles can be introduced through connections at the side of the tank. Bubble tube assembly should be located in area of representative liquid, and where liquid agitation is at a minimum

10. Requires use of two gauge or absolute transmitters - level calculation is completed in DCS or PLC
11. Recommend accessory: HIM smart HART loop interface and monitor available from Schneider Electric PN# HIM-HART
12. Must be coupled with differential pressure or multivariable transmitter and PID controller such as SCADAPack™ 4102