

	Hydrostatic d/p cell (IDP10S)	Hydrostatic Gauge (IGP10S)	Multivariable (IMV31)	Buoyancy/ Displacer (244LD)	Purged Bubble Tube (IDP10S)	Guided-Wave Radar (LG01)	Free-Space Radar (LR01)
Why choose this technology	<ul style="list-style-type: none"> <li>Low priced/economical</li> <li>Most popular/well understood</li> <li>Wide measurement range</li> <li>Independent of obstacles</li> <li>Same transmitter can be used for numerous applications (flow, filter monitoring)</li> </ul>	<ul style="list-style-type: none"> <li>Similar technology to d/p Cell</li> <li>Most popular/well understood</li> <li>Wide measurement range</li> <li>Independent of obstacles</li> <li>Same transmitter can also be used for pressure measurement</li> </ul>	<ul style="list-style-type: none"> <li>Compensates for changing density</li> <li>Boiler drum/steam drum level</li> <li>Based on well-known d/p cell technology</li> <li>One transmitter with three measurement outputs (16)</li> </ul>	<ul style="list-style-type: none"> <li>Ability to measure density</li> <li>Very robust and rugged</li> <li>High Temp. (932 F) / High Pressure (7251 PSIG)</li> <li>Not affected by vapor levels during interface measurement</li> </ul>	<ul style="list-style-type: none"> <li>Economical</li> <li>Versatile connection to tank - doesn't require flanged connection</li> <li>Keeps transmitter away from hot processes</li> <li>Uses well understood d/p cell technology</li> <li>No worry about process liquid crystallizing in instrument tubing</li> </ul>	<ul style="list-style-type: none"> <li>Easy mounting position</li> <li>Independent of media</li> <li>Wide measurement range</li> <li>Quick and easy setup</li> </ul>	<ul style="list-style-type: none"> <li>Easy mounting position</li> <li>Independent of media</li> <li>Wide measurement range</li> <li>Quick and easy setup</li> </ul>
Contact/Non-Contact	contact measurement	contact measurement	contact measurement	contact measurement	contact measurement	contact measurement	noncontact
Application Type	Liquid (clean) level	↑	↑	↑	↑	↑	↑
	Liquid level measurement with changing density	↔ (1)	↔ (1)	↑	↔ (6)	↓	↑
	Interface (liquid/liquid)	↔ (5) (11)	↔ (4) (11)	↔ (5) (11)	↑	↑ (7)	↓
	Density measurement	↔ (10) (11)	↔ (10) (11)	↑	↑	↑ (7)	↓
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)	↔ (6)	↔	↔
	Slurries	↔ (1)	↔ (1)	↔ (1)	↔	↔	↔
	Wavy/turbulence	↑	↑	↑	↔	↔	↔
	Corrosive media (15)	↔ (1)	↔ (1)	↔ (1)	↑	↑	↔
	Low dielectric <2.0	↑	↑	↑	↑	↑	↔ (7)
	High temperature above 570 F	↑ (12)	↑ (12)	↑ (12)	↑	↑	↓
	Vacuum pressure	↑	↓	↑	↑	↓	↑
	High pressure > 1500 PSIG	↑	↑	↔	↑	↓	↔ (3)
Installation	Agitator/obstacles in way of measurement	↑	↑	↑	↔ (8)	↑ (13)	↓
	Open (vented to atmosphere) vessel	↑	↑	↑	↑	↑	↑ (9)
	Enclosed (not vented to atmosphere) vessel	↑	↔ (14)	↑	↑	↓	↑
Process Connection Conditions	Compatible with threaded connection	↑	↑	↑	n/a	↑	↑
	Uses process flanged connection	↑	↑	↑	↑	↓	↑
	Connects to diaphragm seal/pressure seal	↑	↑	↑	n/a	↓	n/a
	Installed with instrument/hydraulic tubing	↑	↑	↑	n/a	↑	n/a
	Manifold connection available	↑	↑	↑	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	↑ (8)	↑	↑
	Side/top of tank connection/entry	n/a	n/a	n/a	↔	↑	↑
	Side/bottom of tank connection/entry	↑	↑	↑	↓	↑	n/a
Bottom of tank connection/entry	↑	↑	↑	↓	↑	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) available 2019
- (4) requires constant overflow application in open tank
- (5) requires constant overflow application in open tank or two pressure taps with minimum level covering low pressure tap
- (6) may require tank/chamber heating to avoid solidification
- (7) refer to MI 020-328
- (8) must use side chamber for installation; not recommended to use from top of tank install with agitator, obstacles
- (9) when using any type of radar in an open vessel, check local regulations for rules/laws regarding potential stray radar emissions
- (10) requires use of two transmitters at known distance or dp or multivariable with diaphragm seals at known distance
- (11) refer to MI 020-369
- (12) do not direct mount transmitter next to high temperature process; remote mounting may be necessary to keep transmitter electronics below 185 F
- (13) 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
- (14) requires use of two gauge or absolute transmitters - level calculation is completed in DCS or PLC
- (15) reference TI 37-75b for selecting material appropriate with corrosive media
- (16) recommend accessory: HIM Smart HART Loop Interface and Monitor available from Schneider Electric PN# HIM-HART

↑ recommended  
 ↔ limited  
 ↓ not recommended

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