Selection Guide - Level Instrumentation

		Differential Pressure (d/p) / Hydrostatic	Gauge Pressure / Hydrostatic	Multivariable	Buoyancy/ Displacer	Purged Bubble Tube	Guided Wave Radar	Free Space Radar
	Why choose this technology	• Low priced/economical • Most popular/well understood • Wide measurement range • Independent of obstacles • Same transmitter can be used for numerous applications (flow, filter monitoring)	• Similar technology to d/p Cell • Most popular/well understood • Wide measurement range • Independent of obstacles • Same transmitter can also be used for pressure measurement	• Based on well-known d/p cell technology • One transmitter with three measurement outputs (6)	• Ability to measure density • Very robust and rugged • High Temp. (932°F / 500°C) / High Pressure (7251 psig / 500 barg) • Not affected by vapor levels during interface measurement	• Economical • Versatile connection to tank - doesn't require flanged connection • Keeps transmitter away from hot processes • Uses well understood d/p cell technology • No worry about process liquid crystallizing in instrument tubing	• Easy mounting position • Independent of media • Wide measurement range • Quick and easy setup	• Easy mounting position • Independent of media • Wide measurement range • Quick and easy setup
	Contact/Non-Contact Measurement	contact	contact	contact	contact	contact	contact	noncontact
Application Type	Liquid level measurement with changing density	Limited	Limited (1)	Good	Limited	No	Good	Good
	Interface (liquid/liquid)	Limited (3)	Limited (3)	Limited (3)	Good	Good (1)	Limited (7)	Limited (7)
	Density measurement	Limited (2) (3)	Limited (2) (3)	Limited (2) (3)	Good	Good (1)	No	No
Media Conditions	Measuring volume	Limited	Limited	Limited	Good	Limited	Good	Good
	Applications with foam	Good	Good	Good	Limited	Good	Good	Limited
	Solids	n/a	n/a	n/a	n/a	n/a	Good	Good
	High viscosity or waxy fluids	Limited (1)	Limited (1)	Limited (1)	Limited	Limited	Limited	Good
	Slurries	Limited (1)	Limited (1)	Limited (1)	Limited	Limited	Limited	Good
	Wavy/turbulence	Good	Good	Good	Limited	Limited	Good	Good
	Corrosive media (15)	Limited (1)	Limited (1)	Limited (1)	Good	Good	Limited	Good
	Low dielectric <2.0	Good	Good	Good	Good	Good	Good	Good
	Temperature up to 572°F (300°C)	Good (4)	Good (4)	Good (4)	Good	Good	Good	No
	Vacuum pressure	Good	No	Good	Good	No	Good	Good
	Pressure up to 1450 psig (100 barg)	Good	Good	Limited	Good	No	No	Good
Installation	Agitator/obstacles in way of measurement	Good	Good	Good	Limited	Good	No	Good
	Enclosed (not vented to atmosphere) vessel	Good	Limited (5)	Good	Good	No	Good	Good
Process Connection Conditions	Compatible with threaded connection	Good	Good	Good	n/a	Good	Good	Good
	Uses process flanged connection	Good	Good	Good	Good	No	Good	Good
	Connects to diaphragm seal/pressure seal	Good	Good	Good	n/a	No	n/a	n/a
	Installed with instrument/hydraulic tubing	Good	Good	Good	n/a	Good	n/a	n/a
	Manifold connection available	Good	Good	Good	n/a	Good	n/a	n/a
	Offers sanitary connection and fill fluids (Tri Clamp, Tank Spud)	Good	Good	Good	n/a	No	No	No
	Top of tank connection/entry	n/a	n/a	n/a	Good	Good	Good	Good
	Side/top of tank connection/entry	n/a	n/a	n/a	Limited	Good	Good	Good
	Side/bottom of tank connection/entry	Good	Good	Good	No	Good	n/a	n/a
	Bottom of tank connection/entry	Good	Good	Good	No	Good	n/a	n/a

(1) refer to MI 020-328

(2) requires use of two transmitters at known distance or dp or multivariable with diaphragm seals at known distance

(3) refer to MI 020-369

(4) do not direct mount transmitter next to high temperature process; remote mounting may be necessary to keep transmitter electronics below 185 F

(5) requires use of two gauge or absolute transmitters - level calculation is completed in DCS or PLC

(6) recommend accessory: HIM Smart HART Loop Interface and Monitor available from Schneider Electric PN# HIM-HART

(7) must be used as a system with differential pressure or mulitvariable transmitter and PID controller such as SCADAPack™ 4102

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