EchoPro® LR16

Pulse Radar Liquid Level Transmitter

FLOWLINE™ LEVEL BEST

Application

The intrinsically safe 26 GHz. pulse radar transmitter provides continuous level measurement up to 98.4' (30m) with a 4-20 mA analog and HART digital signal output, and is configured via its integral push button display module or HART communicator. The non-contact liquid level sensor is intended for petroleum, water, wastewater and diluted chemical storage or process conditions in above or below grade tanks of any material. Select this sensor for challenging process conditions with low or non-corrosive media, light surface foam or agitation, higher temperature or pressure, condensation or vapor, and installation in a tank adapter, flange fitting or metal stand-pipe. Typical applications include bulk storage, tanker truck, RO storage, process tank, waste sump and neutralization tanks.



LR16-5021-20-00
Shown

Features

- Rugged 316L stainless steel antenna and process mount
- Configuration via push button display or HART communicator
- 26 GHz. pulse radar is unaffected by vapor or condensation
- 12" (30cm) dead band enables utilization of the entire tank
- LCD displays level in feet or meters with percent of span bar
- Optional display mode indicates the echo signal return curve
- Fail-safe diagnostics with selectable signal fail-safe outputs
- Recognition, storage and rejection of false echo signal returns
- IP67 stainless enclosure with polycarbonate display window

Antenna Selection

The sensor is offered in three antenna sizes including 2" (48mm), 3" (78mm) and 4" (98mm). The larger the antenna, the narrower the beam and the stronger the RF signal return. To select the appropriate antenna size, consider four variables; The height of the tank, the amount of unobstructed measurement space under the sensor, the thickness of any surface foam and the dielectric of the liquid. In general, the taller the tank, the lesser the free measurement space, the thicker the surface foam or with dielectric values less than 10, consider an increasingly larger antenna.



LR16-5021-30-00
Shown



Push Button
Display Module

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Specifications

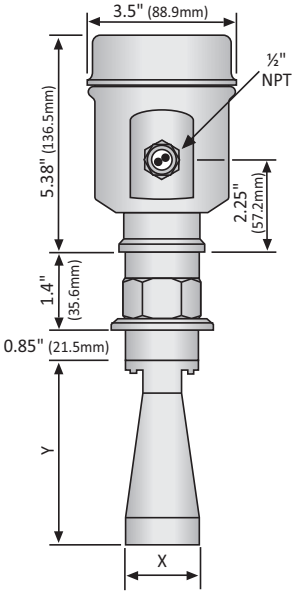
Range:	12” to 98.4’ (30cm to 30m)
Frequency:	26 GHz.
Accuracy:	± 3mm
Dead band:	12” (30cm)
Beam angle:	-20: 18º -30: 12º -40: 8º
Configuration:	Push button, HART 7
Memory:	Non-volatile
Display type:	LCD, dot matrix
Display units:	Feet and meters
Display bar:	Percent of span
Display graph:	Echo signal curve
Supply voltage:	21.6 to 26.4 VDC
Max. consumption:	22.5 mA
Signal output:	4-20 mA, two-wire, HART 7
Signal invert:	4-20 mA, 20-4 mA
Signal fail-safe:	3.9 mA, 20.5 mA, 22 mA
Process temp.:	F: -76º to 302º C: -60º to 150º
Temp. comp.:	Automatic
Storage temp.:	F: -40º to 176º C: -40º to 80º
Pressure:	-14.5 to 150 psi (-1 to 10 bar)
Enclosure rating:	IP67
Encl. material:	316L stainless steel w/silicone gasket
Encl. window mat.:	Polycarbonate
Conduit entrance:	(1) 1/2” NPT connector
Antenna material:	316L
Process mount:	1-1/2” NPT
Classification:	Intrinsically safe
Approvals:	ATEX Ex IIG Ex ia II C T6...T3 Ga IEC Ex ia IIC T6...T3 Ga CSA Class I, Div 1, Groups A, B, C & D; Class II, Div 1, Groups E, F & G; (T6... T3); Class I Zone 0 AEx ia IIC (T6... T3) Ga & Zone 20 AEx ia IIIC (T76ºC to T146ºC) Da; Ex ia IIC (T6...T3) Ga & Ex ia IIIC (T76ºC to T146ºC) Ga
Certification:	FCC
Compliance:	CE, CRN, RoHS

Dimensions

ANTENNA

P/N	X	Y
- 20	2” (48mm)	5.51” (140mm)
- 30	3” (78mm)	8.94” (227mm)
- 40	4” (98mm)	11.34” (288mm)





Fittings

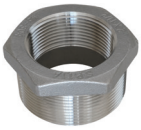
REDUCER BUSHINGS

LM53-2400
2” x 1.5” NPT, PVC, schedule 40

LM53-2800
2” x 1.5” NPT, PVC, schedule 80

LM53-3800
3” x 1.5” NPT, PVC, schedule 80

LM53-2S10
2” x 1.5” NPT, 316 stainless


LM53-2S10


LM53-2800

ANSI FLANGES | SS

LM53-3S50
3” x 1.5” NPT, 316 stainless

LM53-4S50
4” x 1.5” NPT, 316 stainless

LM53-6S50
6” x 1.5” NPT, 316 stainless


LM53-4S50

ANSI FLANGES | CPVC

LM53-3850
3” x 1.5” NPT, CPVC, schedule 80

LM53-4850
4” x 1.5” NPT, CPVC, schedule 80

LM53-6850
6” x 1.5” NPT, CPVC, schedule 80


LM53-3850

Ordering

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ANTENNA SIZE (1) (2)

- **2** 2” (48mm) horn
- **3** 3” (78mm) horn
- **4** 4” (98mm) horn

NOTES

1) If you want help in selecting a sensor for your application, please go to our website and submit a Level Questionnaire. An engineer will review your requirements and suggest a product solution via email.
2) To install the sensor with a flange or reducer bushing, order the fitting separately, and follow the antenna preparation instructions in the manual.