

# EchoPro<sup>®</sup> LR31

Pulse Radar Liquid Level Transmitter



## 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 remote push button display module or HART communicator. The non-contact liquid level sensor is intended for industrial wastewater, municipal storm or sewer lift station, reservoir, river, canal or open channel applications located below or above grade. Select this sensor for **challenging process conditions** that may include light surface foam or agitation, small trash or plant material, wind, condensation or vapor. Each comes with a 32.8' (10m) cable, mounting bracket and display module. The sensor is designed for bracket mount installation suspended above the liquid



## Features

- Rugged IP68 sensor enclosure with 304 SS mounting bracket
- Configuration via push button display or HART communicator
- 26 GHz. pulse radar is unaffected by sump process conditions
- Wall mounted display with windowed enclosure rated IP67
- 12" (30cm) dead band enables utilization of the entire sump
- LCD displays level in feet or meters with percent of span bar
- Optional display mode indicates the echo signal return curve
- Self diagnostics with selectable fail-safe signal outputs
- Recognition, storage and rejection of false echo signal returns

## Lift Stations

Industrial and municipal pump lift stations collect and transfer wastewater or stormwater into treatment. These receptacles are dynamic environments that contain dirt, grease, oil, agitation, sludge, foam, condensation, chemicals or vapor. The LR31 pulse radar sensor is unaffected by such challenging process conditions, and is designed for bracket mount installation, either downhole or above grade based on your needs.



LR31-0021-10-00  
Shown



Push Button  
Display Module

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## Specifications

### SENSOR

<b>Range:</b>	12" to 98.4' (30cm to 30m)
<b>Frequency:</b>	26 GHz.
<b>Accuracy:</b>	± 3mm
<b>Dead band:</b>	12" (30cm)
<b>Beam angle:</b>	12°
<b>Supply voltage:</b>	21.6 to 26.4 VDC
<b>Max consumption:</b>	22.5 mA
<b>Signal output:</b>	4-20 mA, two-wire, HART 7
<b>Signal invert:</b>	4-20 mA, 20-4 mA
<b>Signal fail-safe:</b>	3.9 mA, 20.5 mA, 22 mA
<b>Process temp.:</b>	F: -40° to 212° C: -40° to 100°
<b>Temp. comp.:</b>	Automatic
<b>Pressure:</b>	Atmospheric
<b>Enclosure rating:</b>	IP68
<b>Encl. material:</b>	Nylon
<b>Cable type:</b>	6-conductor, shielded
<b>Cable length:</b>	32.8' (10m)
<b>Cable jacket mat.:</b>	PVC
<b>Process mount:</b>	304 SS bracket or 1" NPT

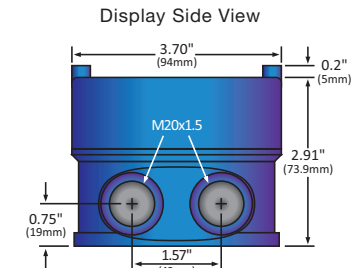
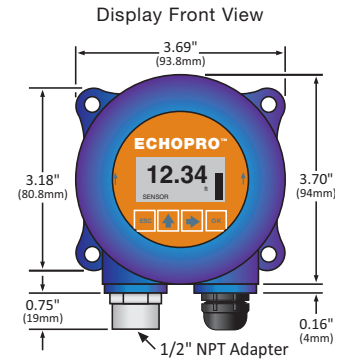
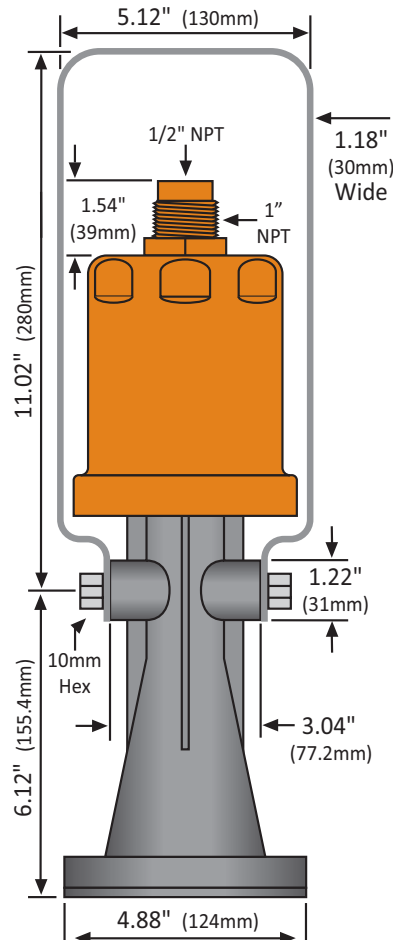
### DISPLAY

<b>Display type:</b>	LCD, dot matrix
<b>Display units:</b>	Feet and meters
<b>Display bar:</b>	Percent of span
<b>Display graph:</b>	Echo signal curve
<b>Configuration:</b>	Push button, HART 7
<b>Enclosure type:</b>	Wall mount
<b>Enclosure rating:</b>	IP67
<b>Encl. material:</b>	Polycarbonate
<b>Conduit entrance:</b>	(2) 1/2" NPT connectors

### COMMON

<b>Memory:</b>	Non-volatile
<b>Storage temp.:</b>	F: -40° to 176° C: -40° to 80°
<b>Classification:</b>	Intrinsically safe
<b>Approvals:</b>	ATEX  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 (T76°C to T146°C) Da; Ex ia IIC (T6...T3) Ga & Ex ia IIIC (T76°C to T146°C) Ga
<b>Certification:</b>	FCC
<b>Compliance:</b>	CE, RoHS

## Dimensions



## Ordering

LR31-0021-10-00  
(1) (2)

## NOTES

- 1) Includes the sensor, bracket, cable and display.
- 2) 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.