TRUE ECHO®

General Purpose
CR-L Radar Liquid Level Sensor

Datasheet

PVDF body

2.72"
69 mm

3/4" NPT
with Nut

5.26"
133.5 mm

4.31"
109.5 mm

3.62"
92 mm

1.18"
30 mm

2" NPT

PE body

The TRUE ECHO® CR-L brings the accurate level readings of radar sensors to industrial liquid measurements. It can accurately measure in many environments, including varying temperatures, steam, dust, smoke, and foam. The radar's narrow beam can detect small targets and achieve precise positioning with high resolution. It has a maximum measuring range of 49.2 feet (15 m) and a minimum blind zone of 7.87 inches (0.2 m). All TRUE ECHO CR-L sensors can be field calibrated and programmed via the TRUE ECHO Bluetooth app.

Features

• Simple to install
• 4-20mA and RS-485 Outputs
• Bluetooth compatible for on-site maintenance
• Chemical resistant
• Accurate level measurements in adverse environmental conditions

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GENERAL PURPOSE SPECIFICATIONS

Performance

Range	7.87" to 49.21 ft (0.2 to 15 m)	
Measuring Frequency	W Band, 76 to 81GHz, 5GHz FMCW bandwidth	
Update Rate	4-20mA:	Automatic adjustment 1 to 3Hz
	RS-485:	3Hz
Power on to 1st reading*	4-20mA:	≥22 seconds
	RS-485:	≥12 seconds
Accuracy	± 3mm	
Beam Angle	8° (4° half angle)	

Environmental

Process Temperature	-40° to 158°F (-40° to 70°C)
Process Pressure	-14.5 to 43.51 psi
Dielectric Constant of Measured Medium	≥ 2
Protection Rating	IP67

Electrical

Operating Voltage	4-20mA:	16-30 VDC
	RS-485:	12-30 VDC (<10mA @ 24 VDC)
Reverse Voltage Protection	≤30V	
Spike Protection	<3kW	
Cable	Polyurethane jacket with shielded 18awg wires	

Connectivity

Output signal	4-20mA:	2 wire + shield
	RS-485:	4 wire + shield
Bluetooth Version	5	
Fault Output (4-20 only)	3.6mA, 22mA, or Last Value	

Physical

Housing	PVDF or PE
Process fitting	2" NPT
Diameter	2.72" (69mm)
Height	5.39" (137 mm)
Weight	18.87 oz (535 g)

Certifications

- FCC
- ISED
- CE

*Time to first reading is determined by the Damping setting, as explained in the User Manual.

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MODEL NUMBER CONFIGURATOR

Part Number: CR – __L__ – __GP__ – __49__ – ____ – ____ – __E5__ – __16__ – __B0__
                        A   **B**   **C**   **D**   **E**   **F**   **G**   **H**

A. Product
□ **L**   Continuous Wave Radar for Liquid

B. Purpose
□ **GP**   General Purpose

C. Range
□ **49**   49 ft (15 m)

D. Output
□ **L1**   4-20 mA
□ **L31**   RS-485 Modbus RTU

E. Material
□ **P**   PE (Orange)
□ **K**   PVDF (Translucent)

F. Connector
□ **E5**   Pigtail with cable

G. Cable Length
□ **16**   16 feet (5m)

H. Customer Label
□ **B0**   APG

COMMON MODEL CONFIGURATIONS

Model Number	Model Description
CR-L-GP-49-L1-P-E5-16-B0	Liquid, general purpose, 49 ft range, **4-20 mA**, **PE**, pigtail, 16 ft cable
CR-L-GP-49-L1-K-E5-16-B0	Liquid, general purpose, 49 ft range, **4-20 mA** **PVDF**, pigtail, 16 ft cable
CR-L-GP-49-L31-P-E5-16-B0	Liquid, general purpose, 49 ft range, **RS-485**, **PE**, pigtail, 16 ft cable
CR-L-GP-49-L31-K-E5-16-B0	Liquid, general purpose, 49 ft range, **RS-485**, **PVDF**, pigtail, 16 ft cable

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