thank you

Thanks for purchasing a ACCUPULSE®. We appreciate your business and your trust. Please take a moment to familiarize yourself with the product and this manual before installation.

WARNINGS
Failure to read and understand the information provided in this manual may result in personal injury or death, damage to the product or product failure. This product must be installed in accordance with National Electrical Code, ANSI/NFPA 70.

- Do not connect power to this equipment if it has been damaged or has any missing parts.
- Do not install in areas with regular impact shocks or excessive vibration.
- Do not install in areas where ambient temperature exceeds 50ºC (122ºF).

	ELECTRICAL SHOCK HAZARD A qualified service person must install and service this product according to applicable codes and electrical schematics.
	EXPLOSION OR FIRE HAZARD Do not use this product in areas with flammable liquids, gas of dust. Do not install in hazardous locations as defined by National Electrical Code, ANSI/NFPA 70 unless as part of a circuit extension from a non-hazardous location using approved intrinsically safe rated sensor models with approved IS barrier according to UL698A.
	FALL HAZARD Use proper protective measures as defined by National and Local Codes to prevent falls during installation and service. Use adequate PPE and ensure that fall protective systems are in place prior to working at a height of 4+ feet above lower levels.

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ACCUPULSE® RADAR LEVEL SENSOR

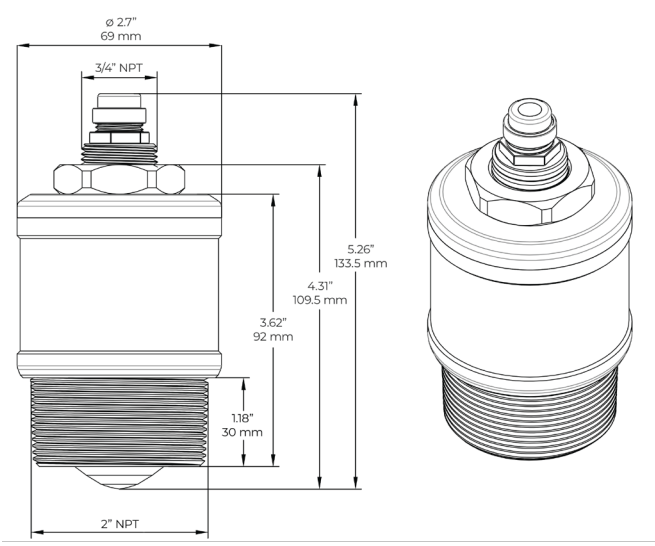
Radar Liquid Level Sensor

Installation Guide

PRIMEX Powered by SJE

www.primexcontrols.com | phone: 844-477-4639

dimensions:



1 description

The ACCUPULSE radar level transmitter is an accurate, and cost-effective solution for applications requiring a non-contact level measurement. There are multiple mounting options that simplify the installation of the sensor even in challenging applications. The narrow radar beam requires a minimal target area on the surface of the liquid thus improving the reliability of the measurement. A general-purpose PE (Polyethylene) body sensor is available for non-corrosive applications and a PVDF (Polyvinylidene Fluoride - Kynar) body can be used in harsher environments. A hazardous location model is also available for intrinsically safe applications. The ACCUPULSE sensors are set up wirelessly using the ACCUPULSE mobile Application.

PART NUMBERS:

ACCUPULSE Radar Level Transmitters
PE (Polyethylene) Body

Part #	Model	Description
1123058	ACPLS-GEN-20	XDCR,RADAR,ACCUPULSE, GENERAL PURPOSE, 49FT RANGE, 20FT CBL
1123059	ACPLS-GEN-40	XDCR,RADAR,ACCUPULSE, GENERAL PURPOSE, 49FT RANGE, 40FT CBL
1123539	ACPLS-GEN-KS6	XDCR,RADAR,ACCUPULSE, GENERAL PURPOSE, 49FT RANGE, 6FT KWIKSWTICH
1124228	ACPLS-GEN-KS20	XDCR,RADAR,ACCUPULSE, GENERAL PURPOSE, 49FT RANGE, 20FT KWIKSWTICH

PVDF (Polyvinylidene Fluoride - Kynar) Body

Part #	Model	Description
1123061	ACPLS-CHEM-20	XDCR,RADAR,ACCUPULSE, CHEMICAL RESISTANT, 49FT RANGE, 20FT CBL
1123062	ACPLS-CHEM-40	XDCR,RADAR,ACCUPULSE, CHEMICAL RESISTANT, 49FT RANGE, 40FT CBL
1123540	ACPLS-CHEM-KS6	XDCR,RADAR,ACCUPULSE, CHEMICAL RESISTANT, 49FT RANGE, 6FT KWIKSWITCH
1124229	ACPLS-CHEM-KS20	XDCR,RADAR,ACCUPULSE, CHEMICAL RESISTANT, 49FT RANGE, 20FT KWIKSWITCH

HAZARDOUS LOCATIONS - PVDF (Polyvinylidene Fluoride - Kynar) Body

Part #	Model	Description
1126984	ACPLS-ISCHEM-20	XDCR,RADAR,ACCUPULSE, IS RATED, CHEMICAL RESISTANT, 49FT RANGE, 20FT CBL
1126985	ACPLS-ISCHEM-40	XDCR,RADAR,ACCUPULSE, IS RATED, CHEMICAL RESISTANT, 49FT RANGE, 40FT CBL
1127022	ACPLS-ISCHEM-KS6	XDCR,RADAR,ACCUPULSE, IS RATED, CHEMICAL RESISTANT, 49FT RANGE, 6FT KWIKSWITCH
1127021	ACPLS-ISCHEM-KS20	XDCR,RADAR,ACCUPULSE, IS RATED, CHEMICAL RESISTANT, 49FT RANGE, 20FT KWIKSWITCH
1047680	ACPLS-ISBAR	INTRINSICALLY SAFE BARRIER - TURK MZB87P

Mounting

Part #	Model	Description
1126951	ACPLS-BKT-FIX-3.0	MOUNTING BRACKET FOR ACCUPULSE RADAR,316L SS, 3”
1126952	ACPLS-BKT-FIX-8.5	MOUNTING BRACKET FOR ACCUPULSE RADAR,316L SS, 8.5”
1126953	ACPLS-WGT-SS	FREE HANGING S.S. THREADED WEIGHT
1123068	ACPLS-BKT-ADJ-NO	Bracket Adjustable Pivot Arm for radar transmitter, SS, Wall Mount, No unistrut (User supplied)
1123069	ACPLS-BKT-ADJ-24	Bracket Adjustable Pivot Arm for radar transmitter, SS, Wall Mount, 24”, adjustable
1123070	ACPLS-BKT-ADJ-36	Bracket Adjustable Pivot Arm for radar transmitter, SS, Wall Mount, 36”, adjustable

KwikSwitch Kits

Part #	Model	Description
1123071	KWIKS-25-KIT	KWIKSWITCH 4-Port KIT, 25FT Manifold Cable, (2)-25FT Floats N.O., (1) Sealing Plug, SS Mt Brck, & 6-Pos Hook Brck
1123072	KWIKS-50-KIT	KWIKSWITCH 4-Port KIT, 50FT Manifold Cable, (2) 25FT Floats N.O., (1) Sealing Plug, Mt Brck, & 6-Pos Hook Brck
1123073	KWIKS-100-KIT	KWIKSWITCH 4-Port KIT, 100FT Manifold Cable (2) 25FT Float N.O., (1) Sealing Plug, SS Mt Brck & 6-Pos Hook Brck

PERFORMANCE
- Range: 7.87 inches to 49.21 feet (0.2 to 15 m)
- Measuring Frequency: W Band, 76 to 81 GHz, 5 GHz FMCW Bandwidth
- Update Rate: Automatic adjustment 1 to 3 Hz
- Power on to 1st reading: 6 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:12-28 VDC
- Output Signal: 4-20 mA
- Reverse Voltage Protection: ≤ 30V
- Spike Protection: < 3kW
- Cable: Polyurethane jacket with shield

22 AWG conductors

WARRANTY: 2 years

2 FCC information

FCC regulations require 75-85 GHz radars to be installed to ensure a vertically downward orientation at fixed locations only. They must not operate while being moved or while inside a moving container. Hand-held applications are prohibited as well as marketing to residential consumers.

FCC ID: VPKAPGTRUEEC80
Contains Transmitter Module FCC ID: 2ABN2-BG22A3

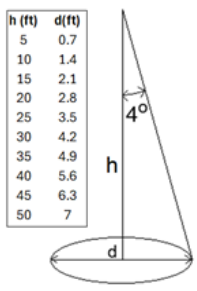
Mounting

MODEL SELECTION

PE Body

PVDF Body

RADAR BEAM SIZE / BRACKET MOUNTING



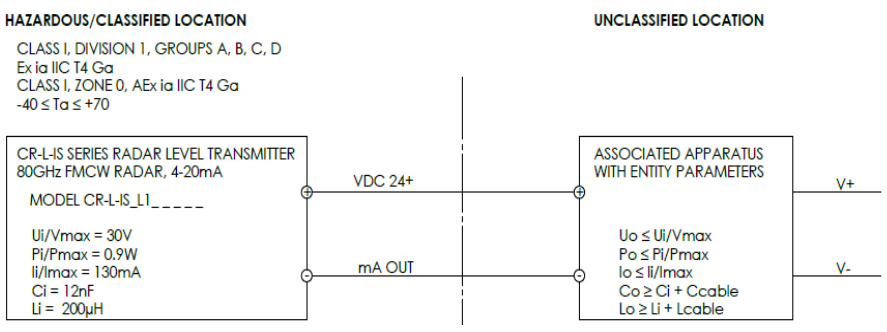
The size of the target beam area reflecting off the surface of the measured media is proportional to the distance h. Keeping h as short as possible will minimize the target area and reduce possible interference with static objects and create a false echo. Keep the beam away from walls, pipes, pumps, floats, etc. Multiple mounting options are available.
Select the mounting bracket that best positions the sensor in a vertical position and clear of obstructions.

Hazardous Location wiring

IMPORTANT: CR-L-IS level sensor MUST be installed according to drawing 9007010 (Intrinsically Safe Installation Drawing for Hazardous Locations) in Appendix A to meet listed approvals. Faulty installation will invalidate all safety approvals and ratings.

DANGER: POTENTIAL ELECTROSTATIC CHARGE HAZARD.

AVERTISSEMENT – DANGER POTENTIEL DE CHARGES ELECTROSTATIQUES.

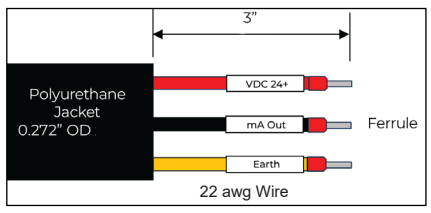


C SA US
610507

4 wiring information

pin out tables

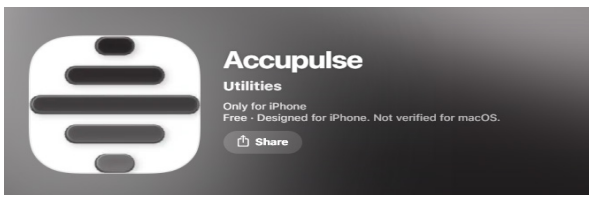
Red	Power Supply + 12 to 28 VDC
Black	4-20mA Out
Yellow	Shield, Earth Ground



4-20 mA Wires

5 App setup

The ACCUPULSE radar transmitters are configured with the ACCUPULSE mobile App. The App can be downloaded from the Apple Store or Google Play.

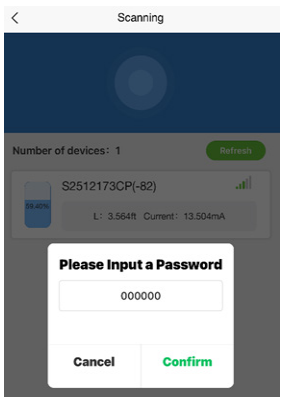


Install and launch the App from your mobile device.
Note: You will need to agree to the terms before use.

scanning for your device

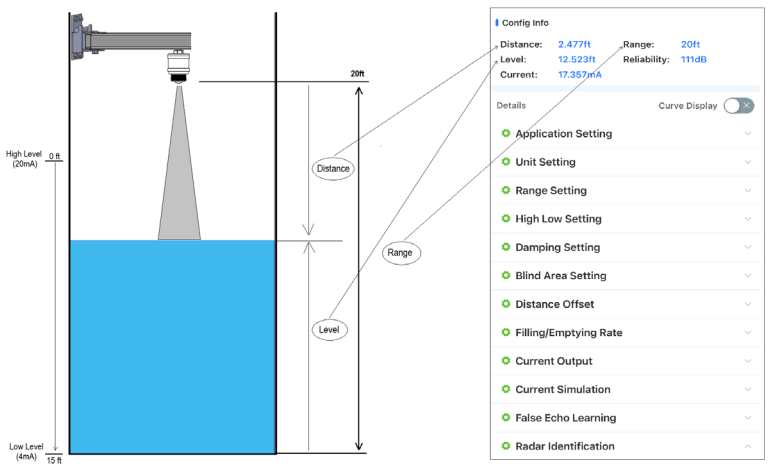
Your radar transmitter must be powered up and within 20ft of your mobile device.

Select and connect to the device you wish to configure.
Enter the password to connect (Default is 000000)



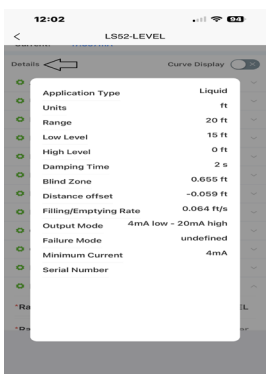
Application example:

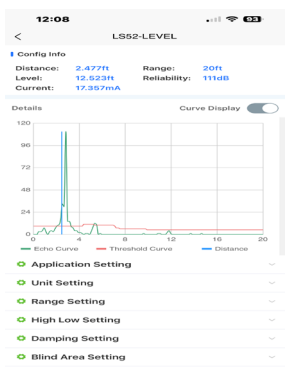
20 ft Wasterwater Tank Level measurement



Application Setting: Liquid
Units: ft
Range: 20ft
High Low Setting: High = 0.0ft, Low = 15.0ft. (Level + Distance = Low Level)
Current Output = 4mA low - 20mA high. **Failure mode** = 4mA (Backup sensors Required)
Radar Identification = LS52-LEVEL (Instrumentation tag name. Enter the password to set)

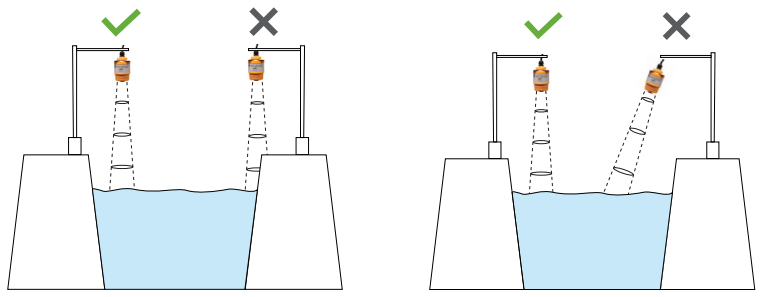
Select “Details” to view the full list of parameter settings
Turn on “Curve Display” to view the echo signal





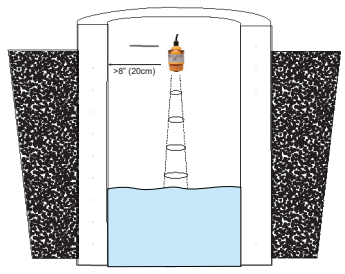
5 Mounting instructions

- Mount your ACCUPULSE series radar so it has a clear, perpendicular path to the surface being monitored.
- Your sensor should be mounted away from inlets and outlets.
- The radar path should be free from obstructions and as open as possible for the 4° off axis beam pattern.
- Install the radar at least 8” (20 cm) away from side walls.
- Wrap PTFE tape around threads before installing the radar. **Do NOT over tighten.**
- For proper performance and accuracy, do not suspend by cable without the use of optional weight.

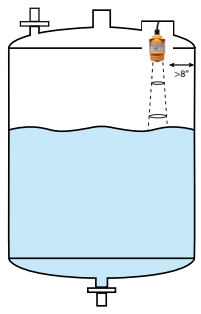


Ensure the radar is installed **perpendicular** to the measured surface. Ensure there are no interferences within the beam angle, such as walls, steps, ladders, river banks, etc.

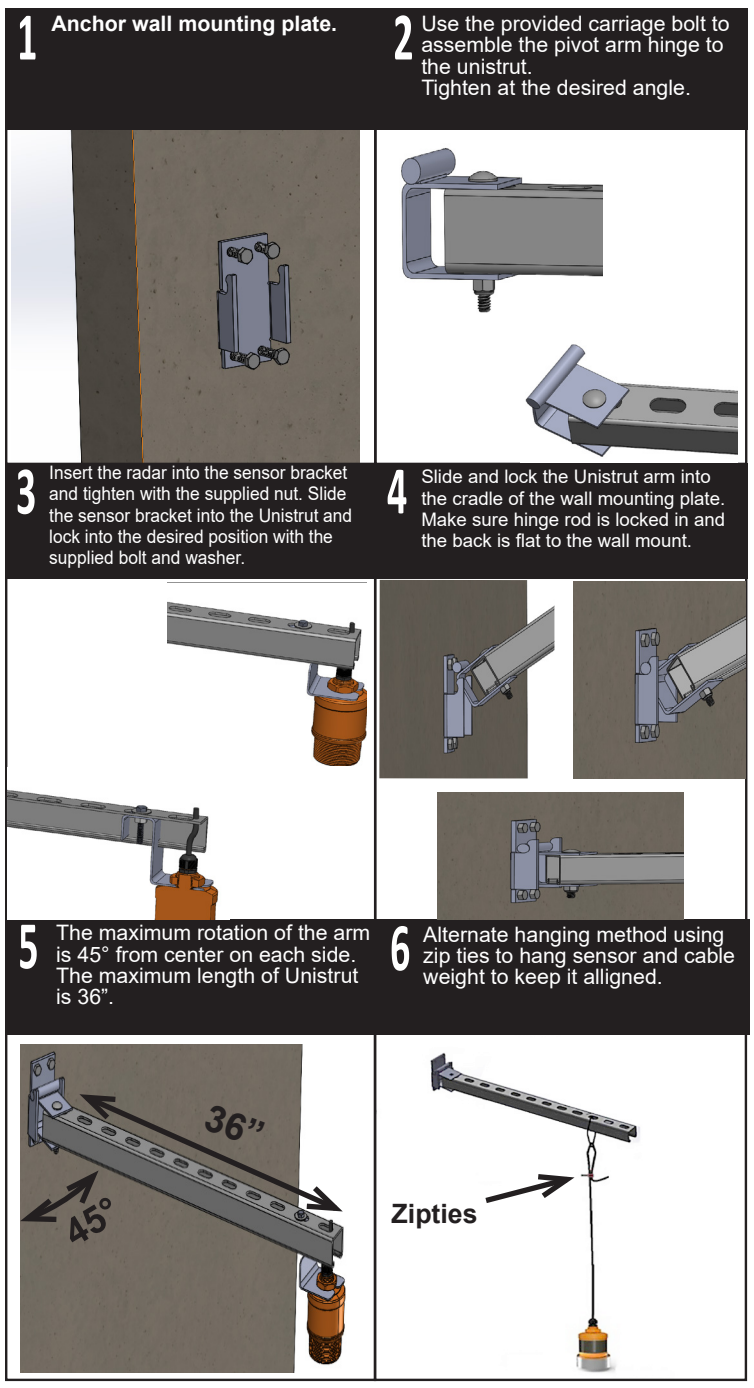
Install the radar at least 8” (20 cm) away from side walls. When installing in wells or pipes, place the radar as close to the center as possible to avoid interference from side walls.



When installing in tanks with domed lids, install **off center** to avoid additional false echoes.



pivot Arm installation instructions



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