TROUBLESHOOTING RADAR AND ULTRASONIC LEVEL DEVICES

For more information on Ultrasonic/Radar Level Devices visit:

WWW.ABMSSENSOR.COM
RADAR PROBLEMS AND SOLUTIONS

METAL STAND PIPE MOUNTING

- Creates a false echo
- Fixed distance doesn’t change with level

ANTENNA EXTENSION (6” or 8”)
The Antenna has to be exposed on its own within the Tank
Read Non-Contact Tutorial
MULTIPLE REFLECTIONS

Reads distance longer than tank. In some cases, double the distance than the actual level of material.

Move Level Device off from the center of tank

TURN ON "LOW DIELECTRIC MATERIALS" (Found in "TOOLS")
Green light should be flashing
RADAR PROBLEMS AND SOLUTIONS

FALSE LEVEL OF LOW DIELECTRIC MATERIALS

It shows longer distance to low dielectric Materials (oil, solvents)

TURN ON “LOW DIELECTRIC MATERIALS”
Found in “TOOLS”. Green Light should be flashing.
EMPTY TANK WITH CONED BOTTOM

- Goes to loss of echo
- May give false readings that are longer than empty tank

Go to “TOOLS” and choose “Select 22 or 2mA for Loss Of Echo”
Check “ShowCalibData” to determine if 20mA is for the longer distance or 4mA.
(“4mA Distance, 20mA Distance”)
No communication with PC and low output current

Yellow Light Continuously ON

Press the push button and hold it until the light changes color then the light goes OFF. Now the communication is ON. Correct the 4 mA and 20 mA calibration value; check in “ShowCalibData” to verify that the distances are correct.
Tank level stays the same

- Use Aimer with thick rubber gasket

In “ECHO PROFILE” the signal looks cluttered at a close distance

- Rubber Boot with SS Hose Clamps
- Use plastic (NYLON, PVC) to decouple the sensor from tank mounting
ULTRASONIC PROBLEMS AND SOLUTIONS

STANDPIPE INFLUENCE

Receive fixed echo

45 deg. cut

Look in “ECHO PROFILE” for ripples. Stand pipe might be very rough inside.

Install PVC insert pipe with 45 deg. cut (Read Tutorial: Non-Contact Level Devices)
ULTRASONIC PROBLEMS AND SOLUTIONS

DUSTY APPLICATIONS

Looses echo in filling conditions

Turn on “Solid/Liquid Materials”.

Change Burst Power to 90 or higher, by going to “Select Burst Power” in the “TOOLS” menu.
ULTRASONIC PROBLEMS AND SOLUTIONS

CONDENSATION ON TRANSDUCER FACE

- Loss of echo at longer distances
  - Turn on “Solid/Liquid Materials”
- Ringing on “ECHO PROFILE”
  - Turn on “Vaporized Liquid High Power”
ULTRASONIC PROBLEMS AND SOLUTIONS

TALL NARROW TANK WITH WELDING JOINTS

Multiple echoes in “ECHO PROFILE”

Turn on “Solid/Liquid Materials”

Fixed echo

Set Burst Power to 3
By going to “TOOLS” and “SELECT BURST POWER”
Check to see if the shield cable is attached to the 4th terminal. If not then attach it.
Problems with Software Installing

“Missing or Needs Updating MFC42.dll”
MESSAGE

Software will not fully install

Go to Start, Search, All Files and Folders, Look in: C, then in “All or Part of The File Name”, Type: MFC42.dll and change the “.dll” to .cem
Communication Problems

Level Devices with RS485 Communication (Network)

Use a RS485 to RS232 converter (B&B Electronics Manufacturing Company, Model 485SD9TB).

OR

Use a RS485 to USB (B&B Electronics Manufacturing Company, Model 485USBTB-2W)

Note: When you load their software driver you will go to the windows warning; click continue anyway and do the loading twice using Wizard. Using this converter you save on using a USB to RS232 converter.
Communication Problems

No Male DB9 connector for Serial port on your PC

Use a USB to RS232 converter (Keyspan, Model USA-19HS)
Problems with Software Running on VISTA

Deadlock appears on computer

The whole screen is frozen and none of the functions work

Unplug and plug again the communication converter (USB to RS232 or USB to RS485) from your PC port.
2 or more Ultrasonic Sensors close to each other

Picking up readings from Sensors near by

In echo profile there will be multiple echoes

The Ultrasonic Sensors of the same frequency must be at least 10 ft apart

False distance readings

Ultrasonic Sensors can be installed closer if their frequencies are different i.e. 45KHz and 70KHz
Communication Problem (RS-232)

The communication hasn’t started

States at bottom of screen: “Data Link Error”

With link to PC disconnected; Check voltage at pin 4 & 2 to be around -10 volts and between pins 4 & 1 to be 0 volts
Communication Problem (RS-485)

The communication hasn’t started

States at bottom of screen: “Data Link Error”

LED blinks yellow on sensor

Reverse the communication cables
The Probe_GatewayPC or MiniProbe software window would not open but was listed in the running processes.

Turn off Hardware Acceleration for the graphics card.
Loss of Calibration

Entered calibration distances no longer work due to noise problems

No longer reading correct distance

In ShowCalibData the 4 and 20mA distances are reading near 0.

In tools: correct the 4 and 20mA distances and disable the Push button.
2 Radar Units Close to Each Other

Cross talk between radar units installed on plastic tank

Unstable results when more than one unit is ON. Stable results when One unit is ON

- Metal stilling well from top to bottom of tank
- Use horn antennas
Communication doesn’t work with computer that has Windows 7 Operating System

When selecting ports; all Don’t work

Use USB-RS232 Converter Cable
Made by USBexpert company
(model: USB232)