TEK-WAVE 4300B
FMCW Bluetooth Radar Level Transmitter

Quick Start Guide

1. Before you begin

This guide provides basic guidelines to assist you in quickly getting started.

⚠️ Installation of the device must be carried out by trained, qualified specialists authorized to perform such work by the facility's owner operator. The specialist must have read and understood these Operating Instructions and must follow the instructions they contain.

⚠️ When using the measuring device in hazardous areas, installation must comply with the corresponding national standards and regulations.

2. Unpack

Tek-Wave 4300B FMCW Bluetooth Radar Level Transmitter
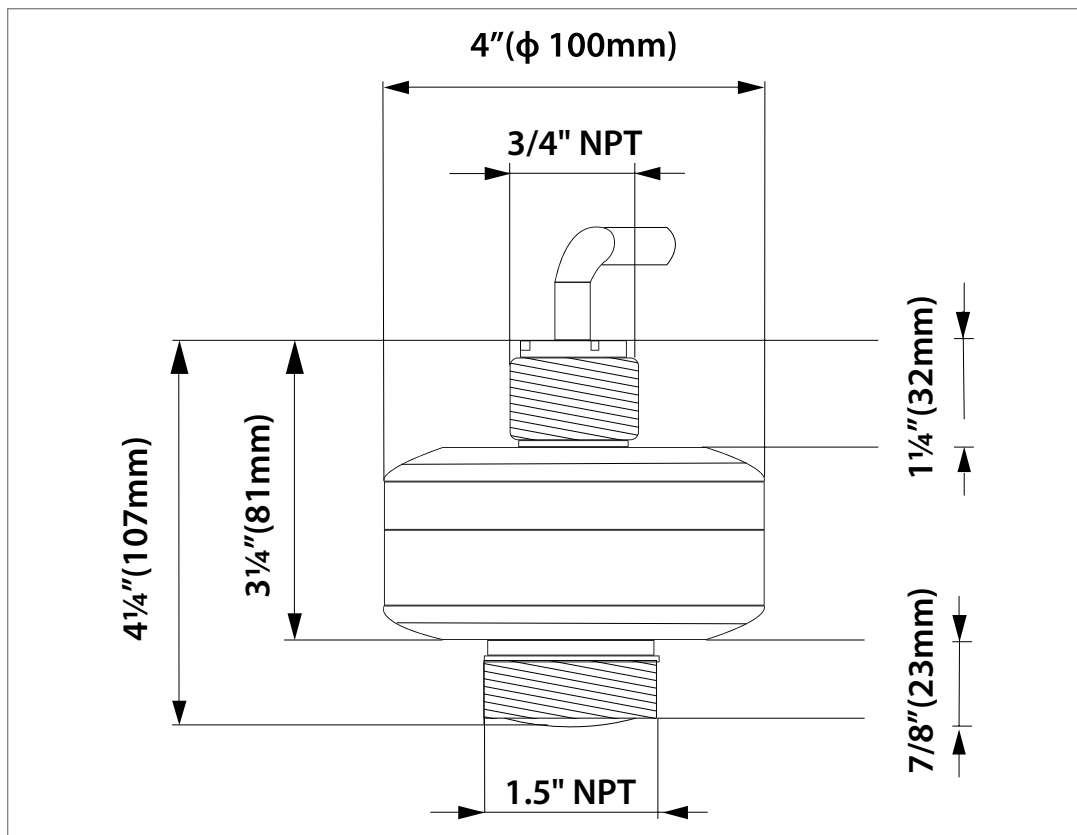
3. Dimensional Drawing
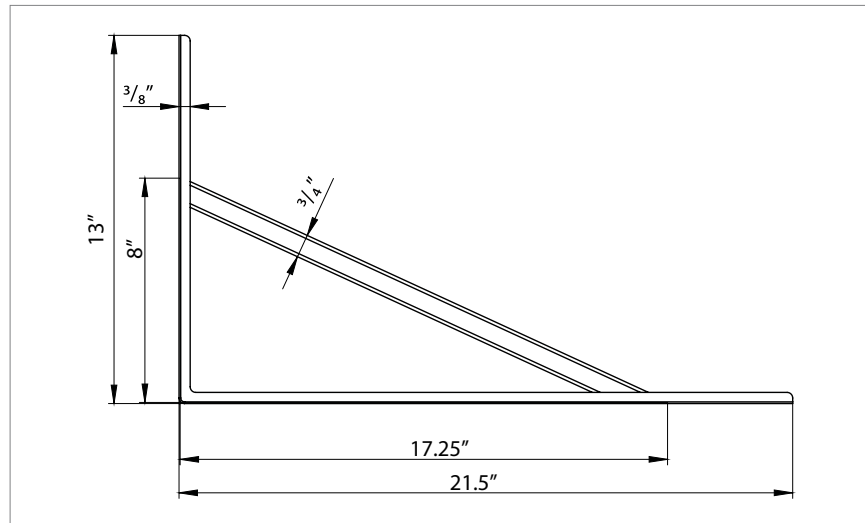

Fig 1: Front view

- *Mounting brackets*
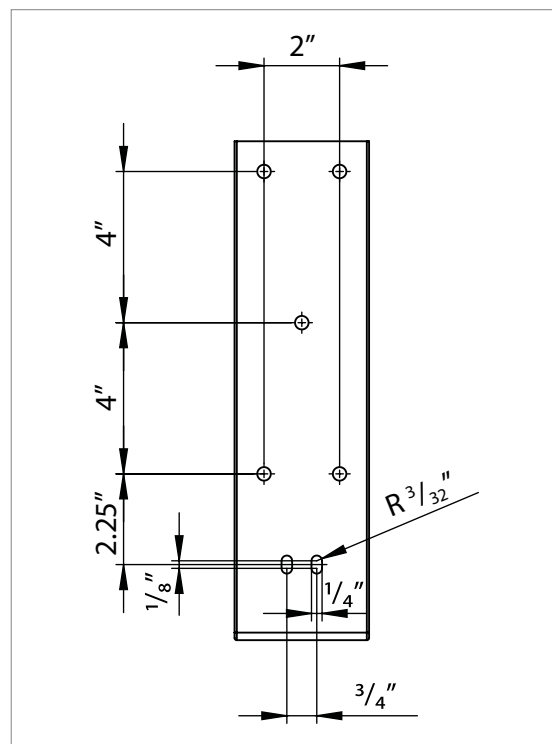

Fig 2: Mounting Bracket Side Angle
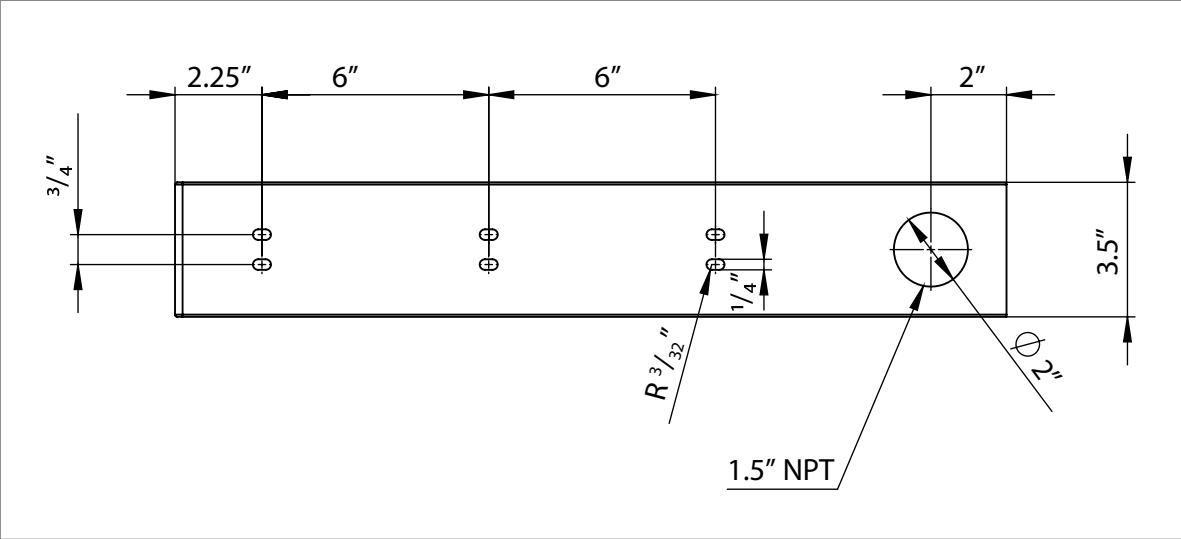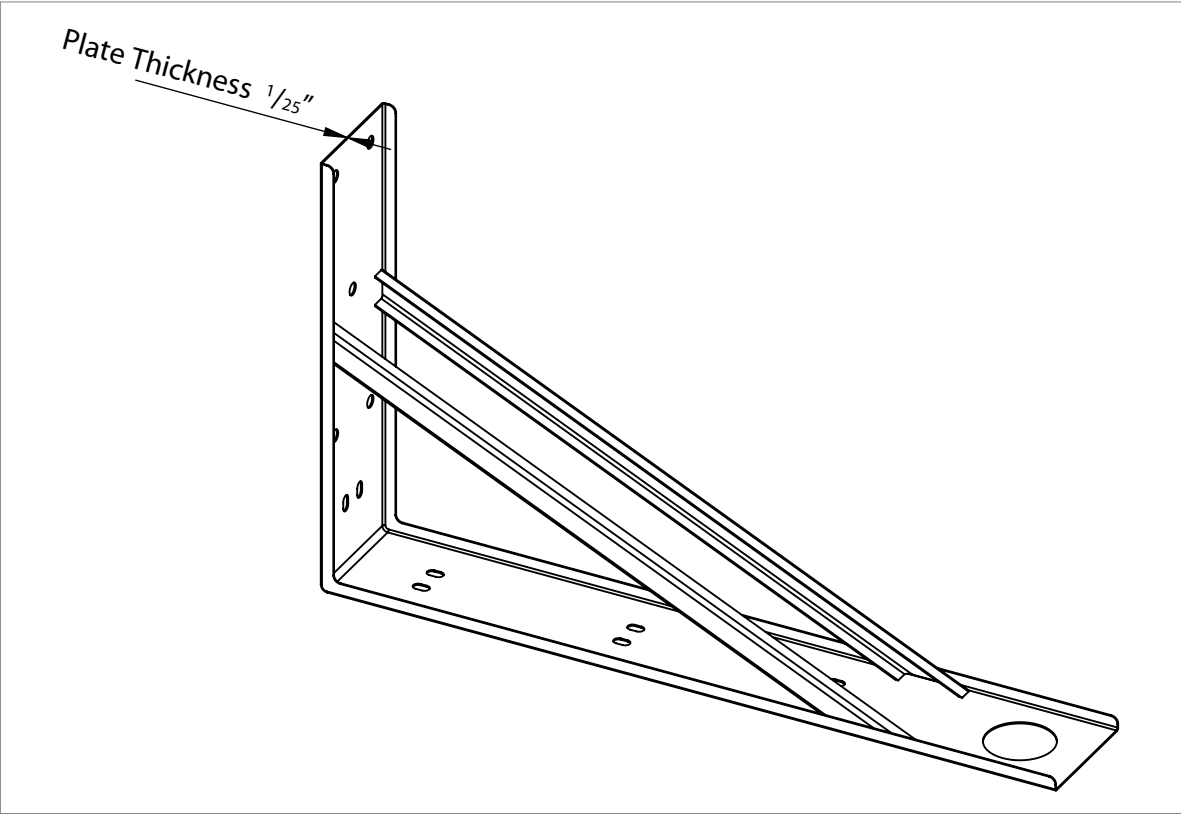

Fig 3: Mounting Bracket Back Angle

Fig 4: Mounting Bracket Top Angle
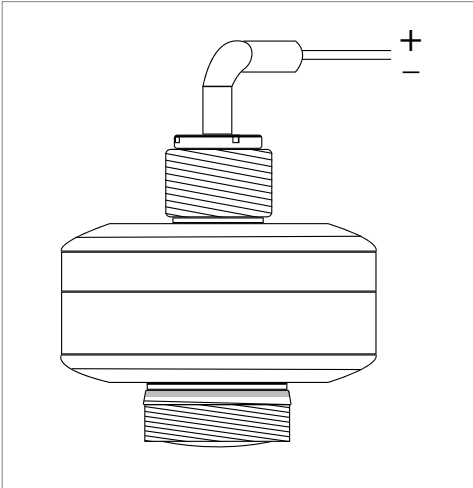
Fig 5: Mounting Bracket

4. Power Supply

Fig 6: Wiring Connections

Table 1: Wire Description

Wire Color	Function
Brown	Voltage +
White	Voltage − (4-20mA)
Green	Modbus RS485 A
Yellow	Modbus RS485 B
Gray	Ground

5. Installation

- **General mounting conditions**
  - The Tek-Wave 4300B should not be mounted closer than 8" (200mm) to the vessel wall.
  - The Tek-Wave 4300B is not mounted in the center because interference can cause signal loss.
  - The Tek-Wave 4300B is not mounted above the fill stream.
  - A weather protection cover is recommended to protect the instrument from sun or rain.
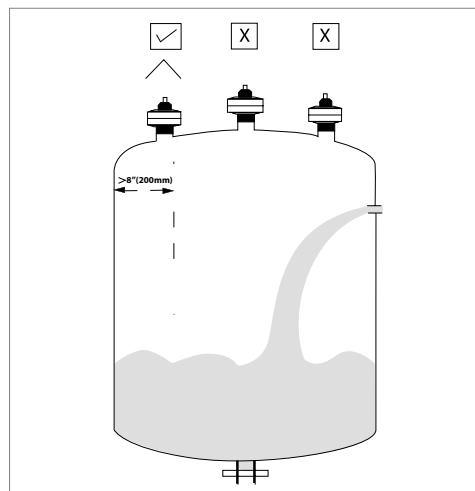 - The radar antenna should be vertical to measure the media surface.

Fig 7: General Mounting Position

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- **Stirring Fan in Vessel**

    If there is a stirring fan in the vessel:

    - The instrument should be mounted at 1/2 of the distance from the inner wall to the stirring fan.
    - Carry out false echo storage to reduce the interference from the stirring fan.

Fig 8: Mounting Position for Stirring Fan in Vessel

- **Reduction of Interference Echoes**

    Radar signals can spread by mounting metallic at a slope, which reduces the interference echoes.

Fig 9: Mounting Position for Interference Echoes Reduction

- **Mounting with Bracket**
  - The instrument should be mounted at 1/2 of the distance from the inner wall to the stirring fan.
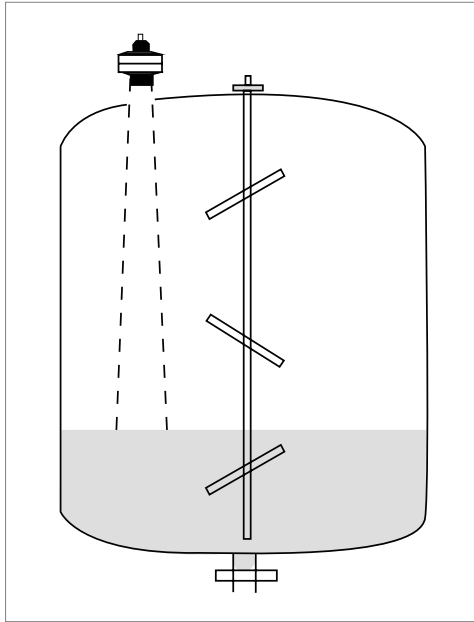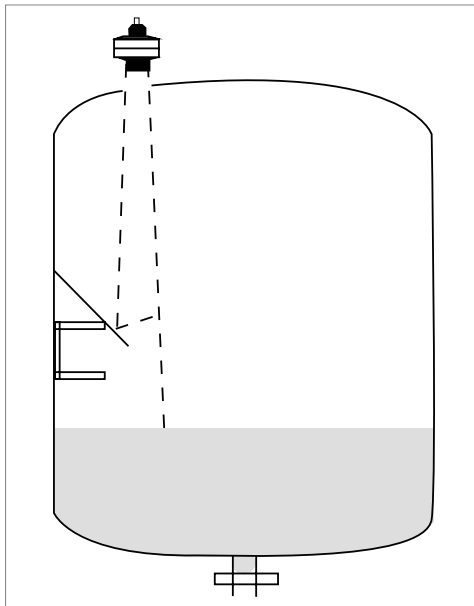 - Carry out false echo storage to reduce the interference from the stirring fan.
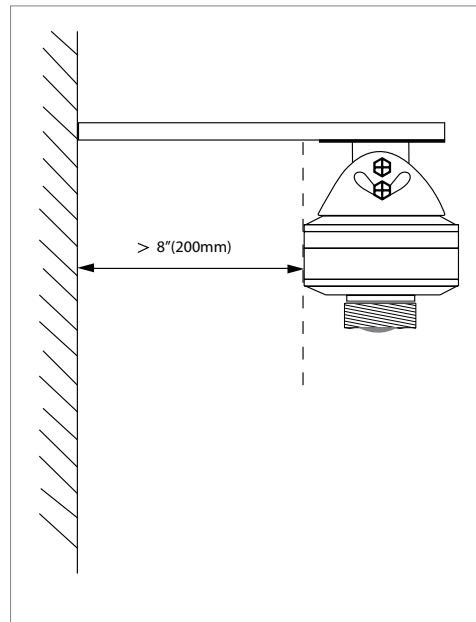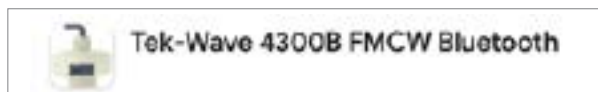

Fig 10: Mounting with Bracket

6. Operations (Setup with Smartphone/Tablet (Bluetooth) or Modbus Software)

- **Bluetooth Setup (Android Only)**

  - Please install "Blueset" in your smart phone.
  - Deny the APP to utilise the location and storage functions & Close the app.
  - Go to settings>"Tek-Wave 4300B">Hold Down the app till it indicates "APP info"
    - "APP info"> "Permissions">"Location">"Allow"
    - "APP info" >"Permissions">"Storage">"Allow"
  - Start APP.
  - Select Device "SENSOR 01".

Note: - If the 4300B is having any Alarm like HH or LL. the output current will be either 20.5 mA or 3.8 mA.at this point the Bluetooth app will starts connect/disconnect or get hang to previous screen until the unit reaches to normal operation.
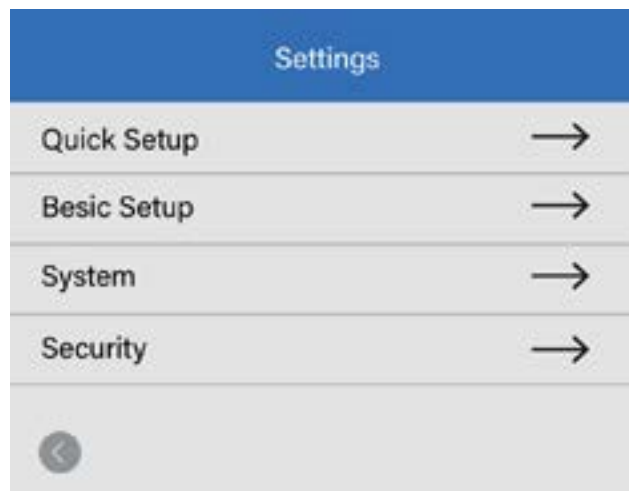Trouble shooting: Close the app and relaunch keep search for the 4300B unit repeatedly.

- **Setup**
  - Main Menu
    - You can find measuring distance, level and ratio on the main menu.
    - Using Setting Menu, you can set the parameters.
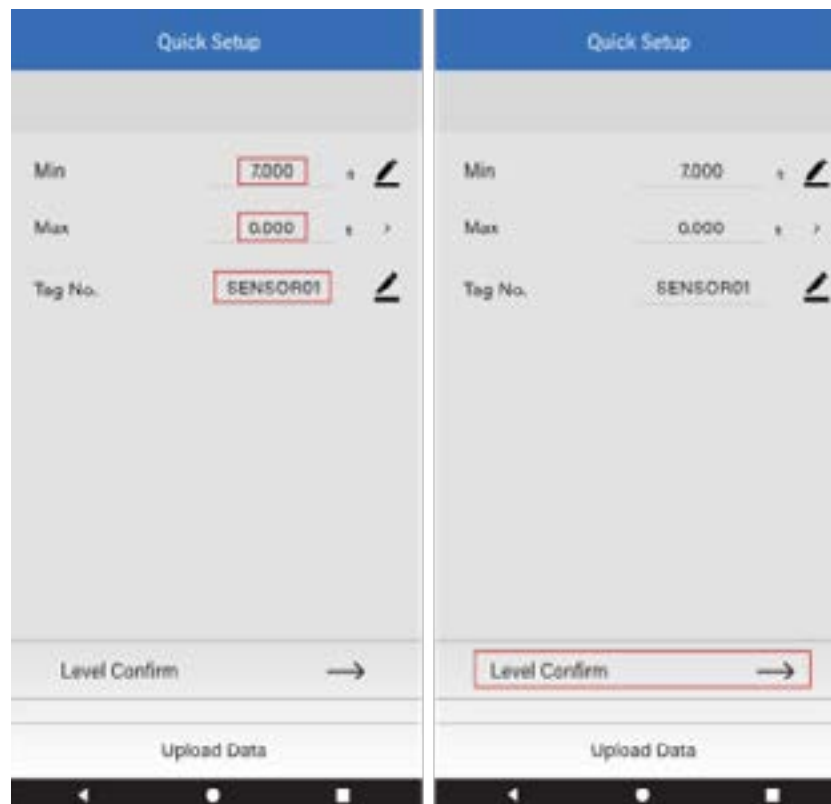

  - Setting Parameters
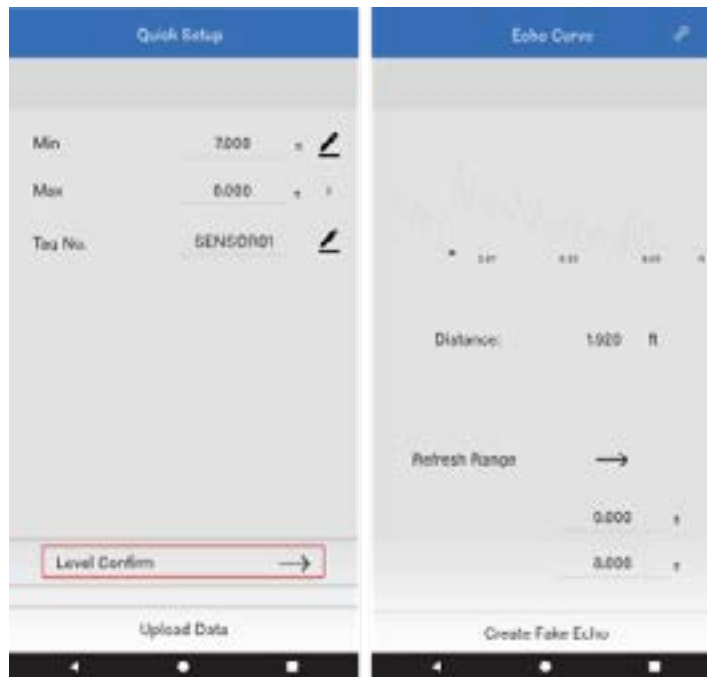   - Setting Parameters consist for sub menus

- Quick Setup
  - Set Measuring Range
    - Please enter "Quick Setup" to set the measuring range.
    - Write minimum and maximum range and press [edit icon] to save data.
    - Write Tag number as per your application and press [edit icon] to save data.
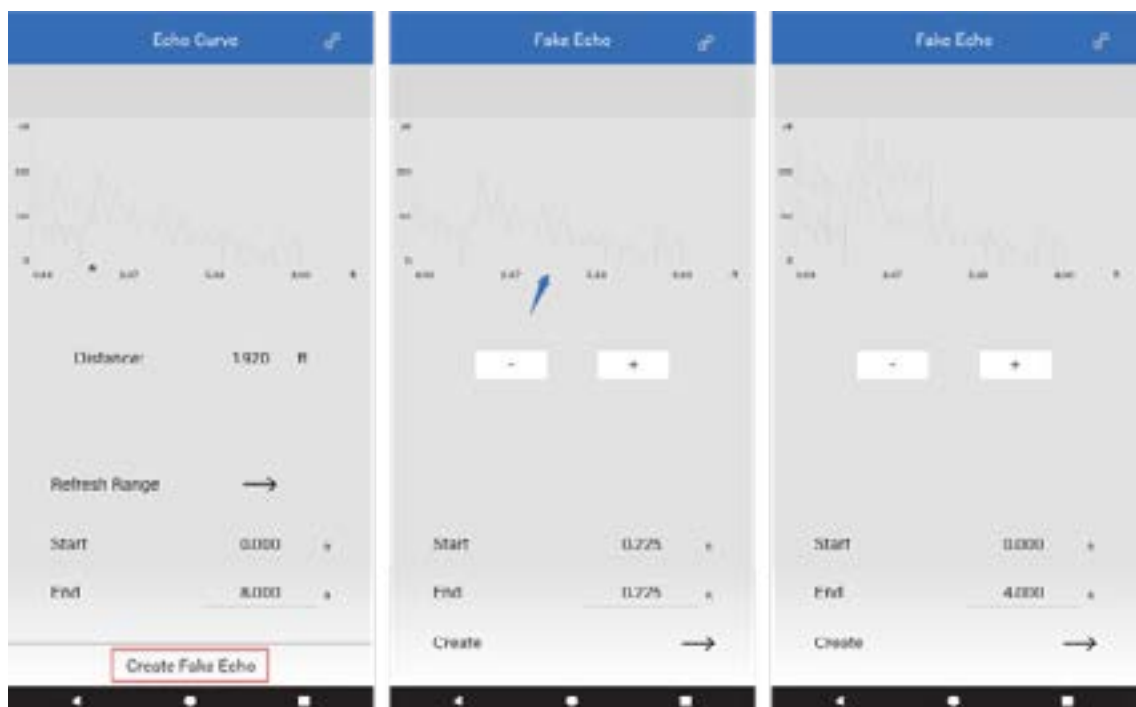   - You can upload data from the device by pressing "Upload Data".

- Check Echo Curve
  - Enter menu with echo curve by entering "Level Confirm".
  - If you set a new measuring range and want to change the X range, please re-write the data on the End and save it by Refresh Range ➡

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- Check Fake Echo
    - If there is an obstacle inside the tank that generates a fake echo, you will need to create a fake echo.
    - Please use "+" or "-" to move the line indicated by the arrow to set the fake echo position of false echo and press ⟶ behind Create and you will get new double echo curve.
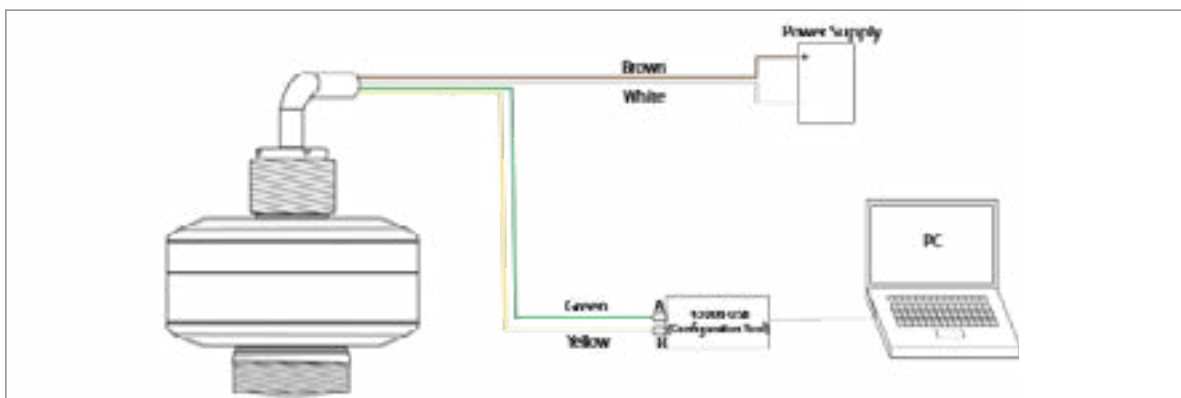
- Basic Setup
  - You can set the following parameters according to field conditions.
  - You can also upload data from the device by "Upload Data".
  - For most applications, the device can work properly after the setup of the above two menus.
  - For more menu information, please contact us, and you can also refer to the menu overview.

*Note: The distance between device and smartphone should be not more than 25' to get better signal communication.

- **Modbus Software Setup**
  - Connect the 4300B to the 4300B-USB tool and power the 4300B.

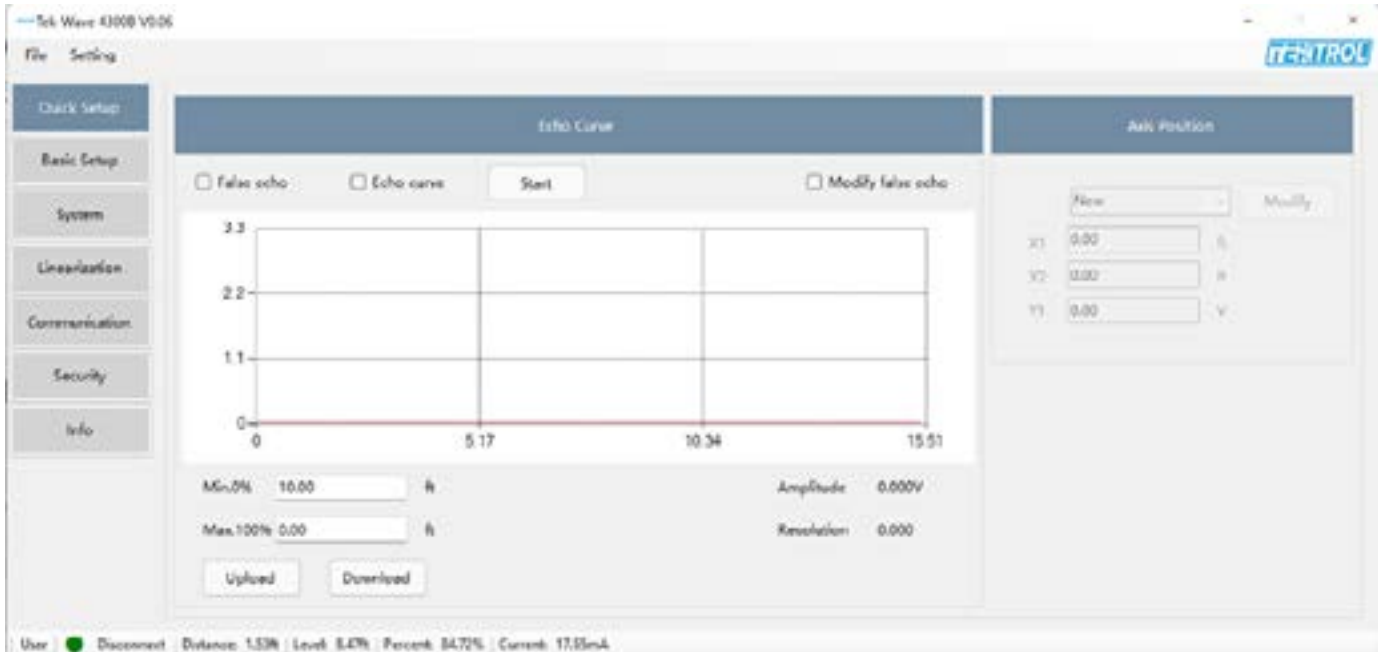- Launch the 4300B Modbus Program.

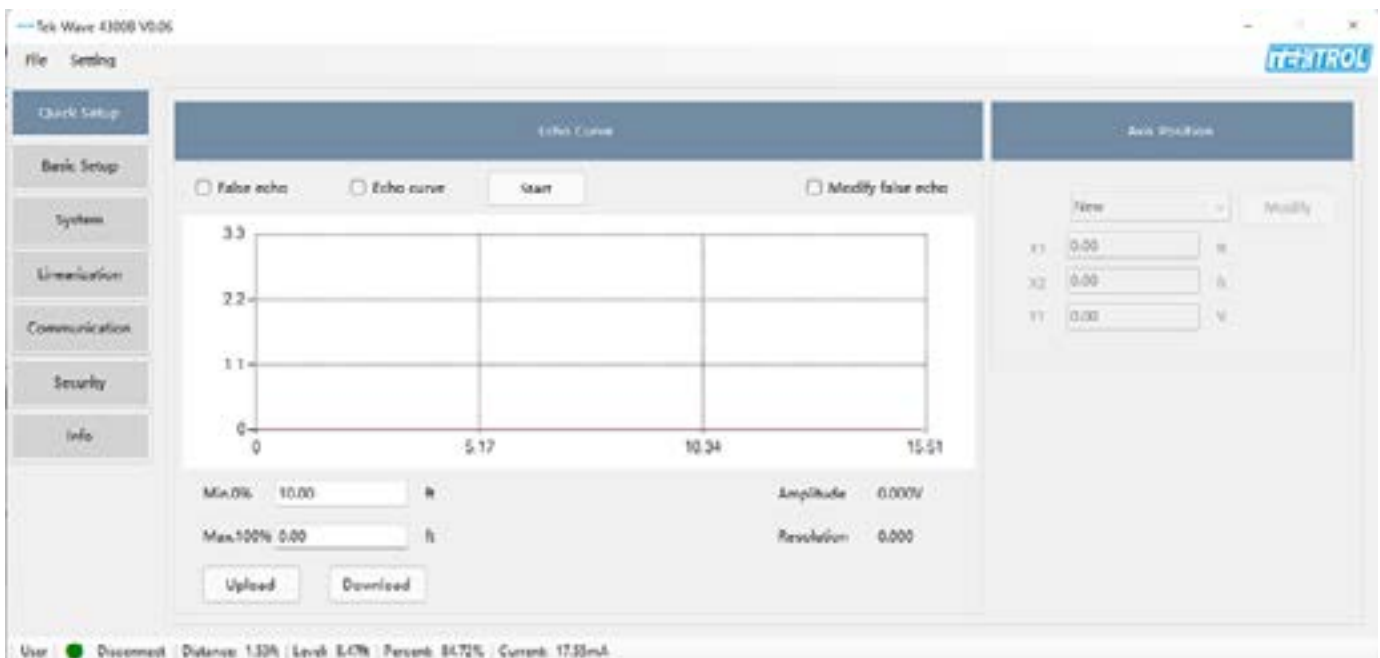- When the program opens. Click Connect to Poll the 4300B.

- It will take the software a few moments to find the 4300B.

- When the Modbus program connects to the 4300B, there will be two red flashing lights on the 4300B-USB tool and a green Dot in the lower left side of the screen. The 4300B process data will appear on the bottom of the screen.

- From the Quick Setup screen the Max and Min range can be set up the Max range is your 4mA and the min range is you 20mA. You can also look at the Echo Curve on this screen.

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- In the Basic Setup screen the following parameter can be adjusted.

- In the System screen you can simulate a mA signal to make use you output is setup correctly at your PLC or Scada.

- In the Communication screen the HART and Mobus communication paraments can be changed.
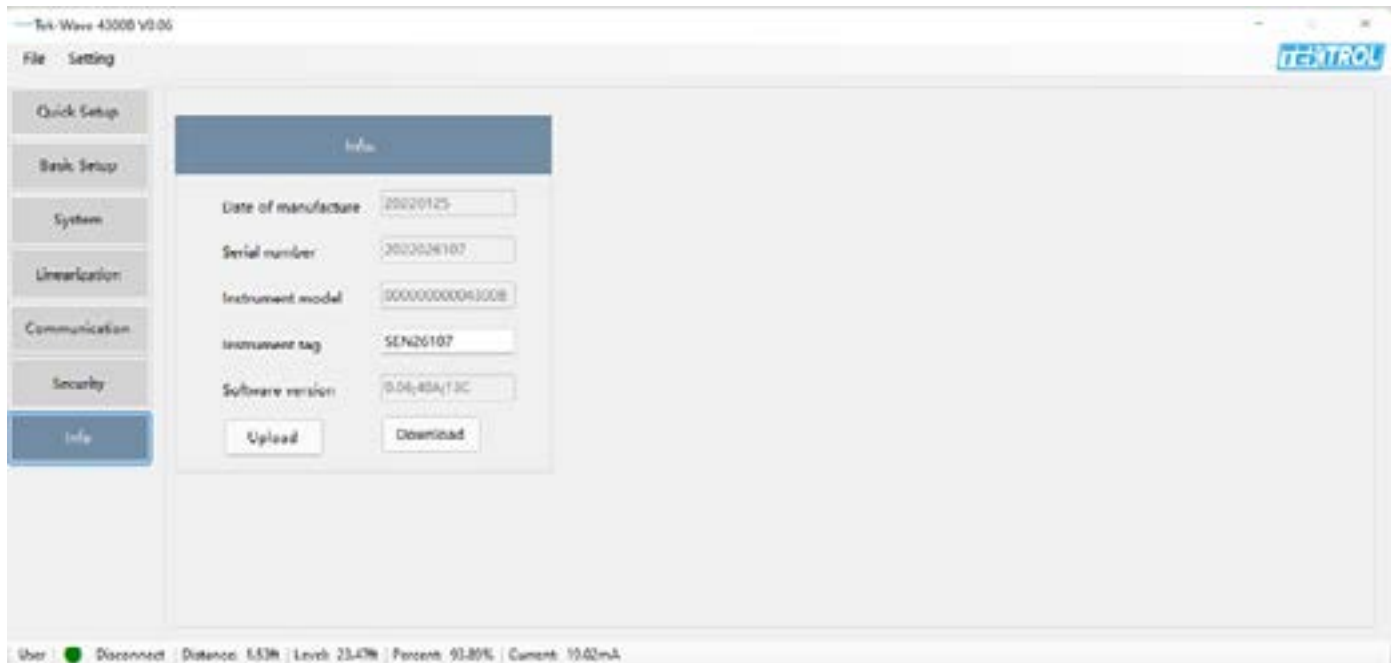

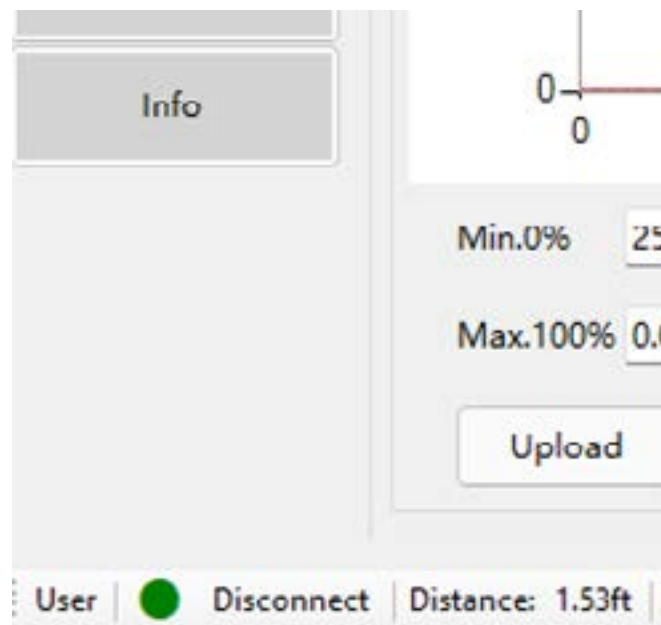- The Security screen will allow the following parameters to be changed.

- The Info screen will give you all the manufacturing information about the 4300B.

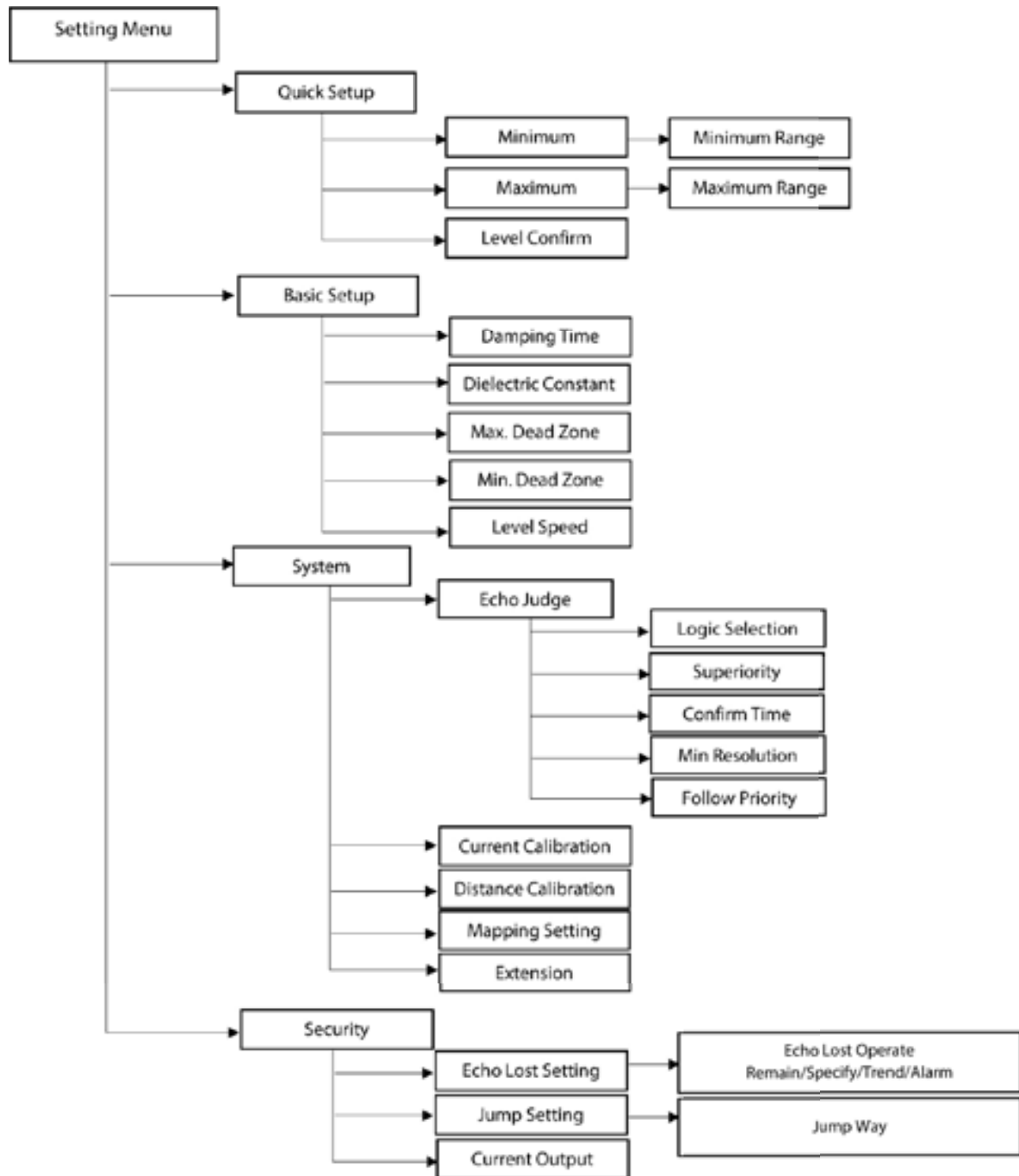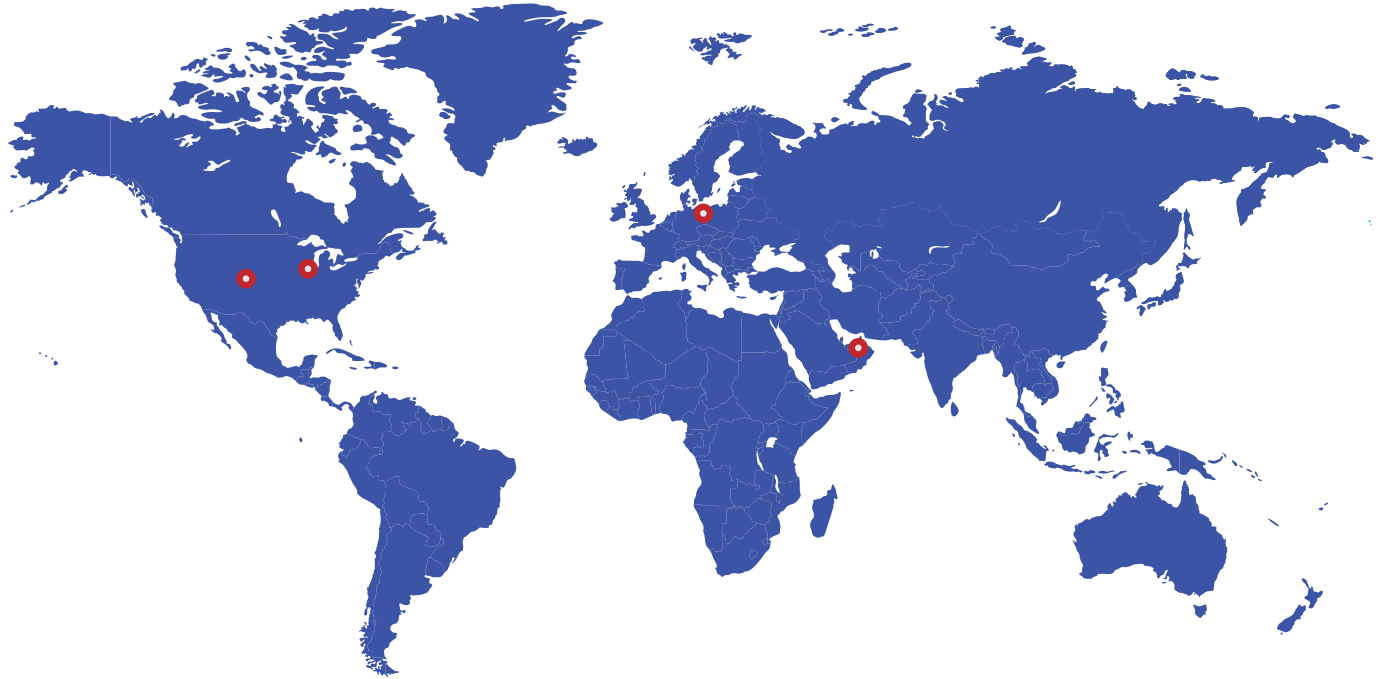- After you have uploaded all the modifications to the 4300B, click Disconnect and remove the 4300B from your PC.

Setting Menu
- Quick Setup
  - Minimum → Minimum Range
  - Maximum → Maximum Range
  - Level Confirm
- Basic Setup
  - Damping Time
  - Dielectric Constant
  - Max. Dead Zone
  - Min. Dead Zone
  - Level Speed
- System
  - Echo Judge
    - Logic Selection
    - Superiority
    - Confirm Time
    - Min Resolution
    - Follow Priority
  - Current Calibration
  - Distance Calibration
  - Mapping Setting
  - Extension
- Security
  - Echo Lost Setting → Echo Lost Operate Remain/Specify/Trend/Alarm
  - Jump Setting → Jump Way
  - Current Output

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