RIL440

Water Level Transmitter
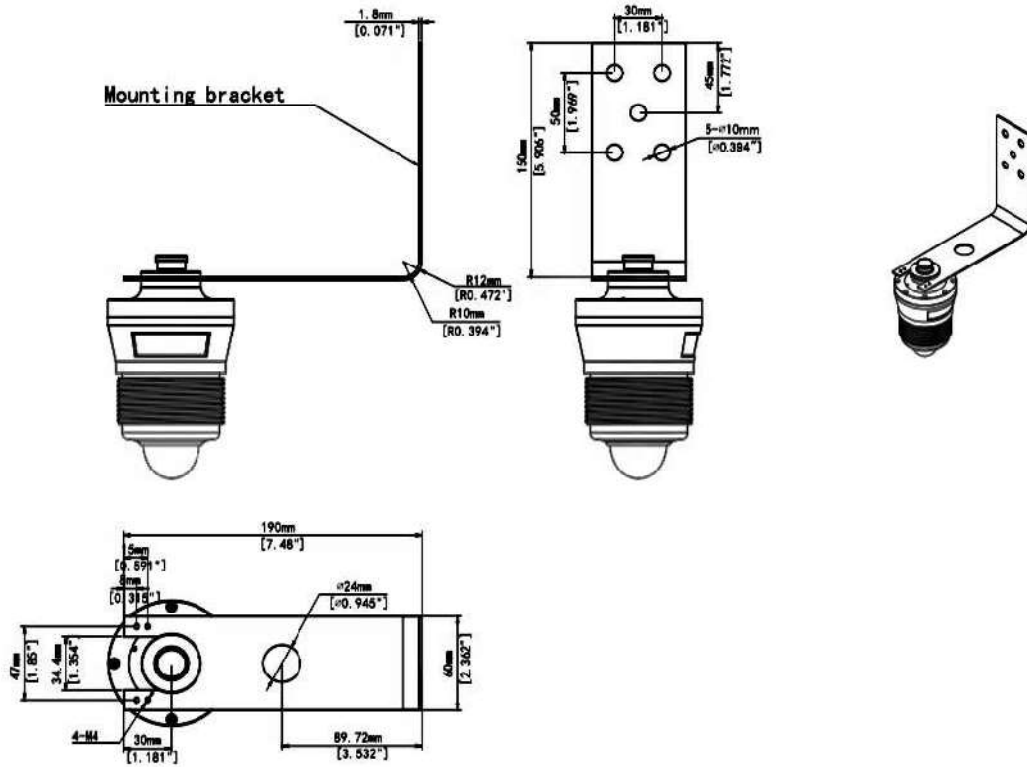
User Manual

INTRODUCTION

- RIL440-X as a lightweight radar water level transmitter, it adopts FMCW technology and is specially applied to non-contact liquid level measurement equipment such as water level.
- Using 120GHZ FMCW radar measurement technology, high measurement accuracy, good penetration, not affected by complex factors such as liquid measurement environment, reliable and stable measurement.
- IP68 waterproof protection, especially adapted to a variety of wilderness environments, or simple process control liquid tank measurements.
- Without display, the whole series support Bluetooth wireless communication, easy to connect with your mobile phone debugging software, complete a variety of configuration, operation on the mobile phone.
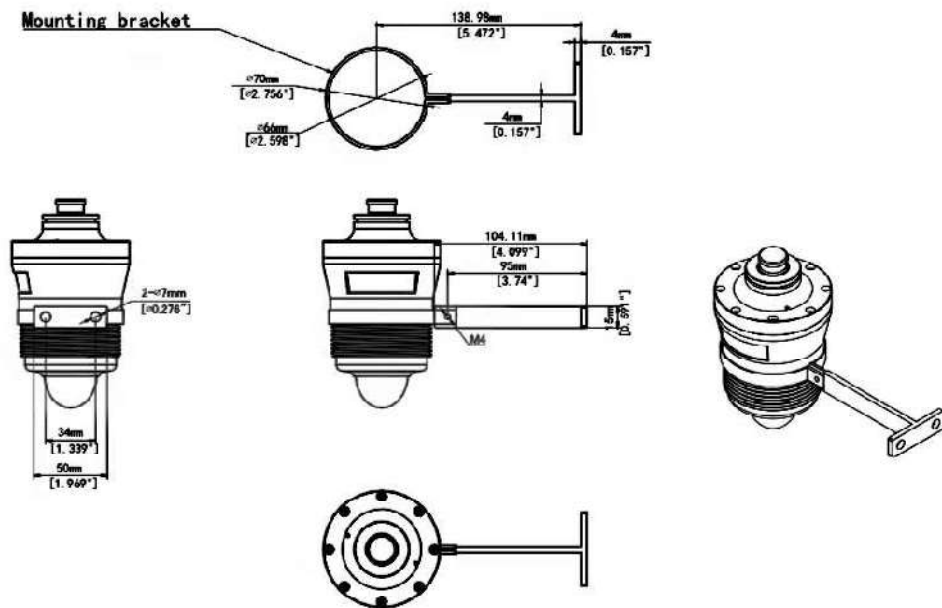- Light, handy and easy to install.

SPECIFICATION

Frequency	120GHz
Range	10m / 18m
Accuracy	±1mm
Beam angle	5°(with lens antenna cover)
Power supply	12-38VDC
Communication	HART/MODBUS/PROFIBUS FF
Signal output	4~20mA or RS-485
Adjustment	Bluetooth or Wechat mini program
Ambient Temp/Humidity	-40~85℃/≤95%RH
Housing	POM
Antenna	Lens, POM
Pressure	-100..300KPa
Dimensions	139.8mm x 80mm x 80mm(No mounting parts)
Ratings	IP68
Mounting	G2 1/4 or Bracket Mounting

INSTALLATION

L-Bracket Installation

T-Bracket Installation

DIMENSIONS

Φ80mm
[3.15"]

Φ38mm
[1.496"]

Φ34mm
[1.339"]

2mm
[0.079"]

139.8mm
[5.504"]

66.9mm
[2.634"]

34.9mm
[1.374"]

Φ36mm
[1.418"]

G2-1/4

SA1212/S
Φ13.8[0.543"]

Product Nameplate

Silicone Sealing ring
Φ50mm× Φ2.65mm

2-1/4 NPT

Radar lens antenna

Product Electrical I/O interface

LED indicator
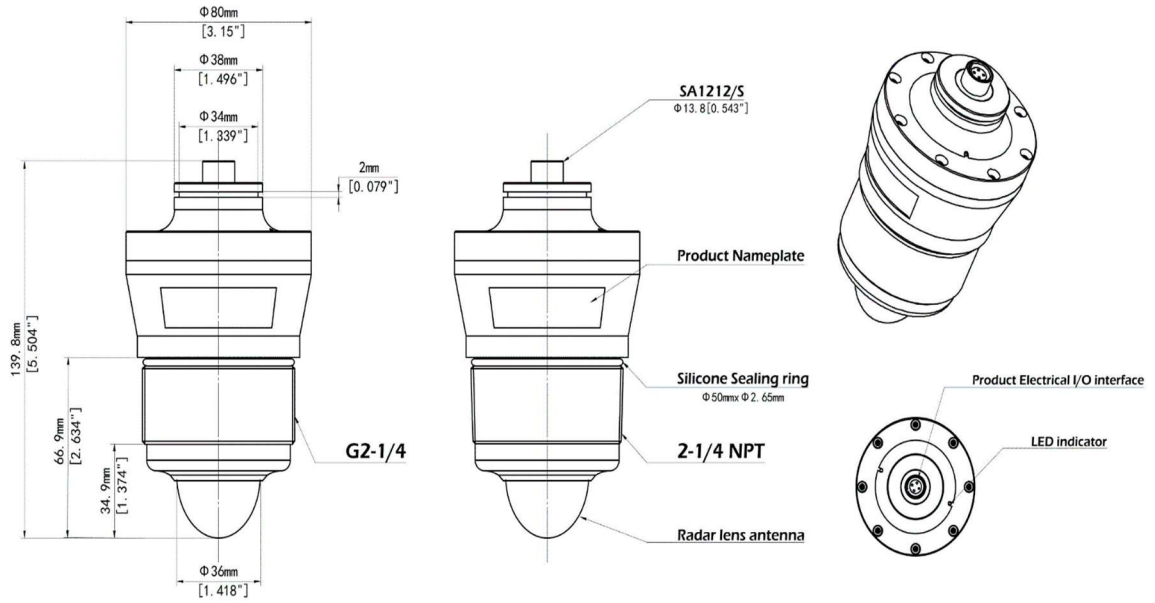
ELECTRICAL WIRING
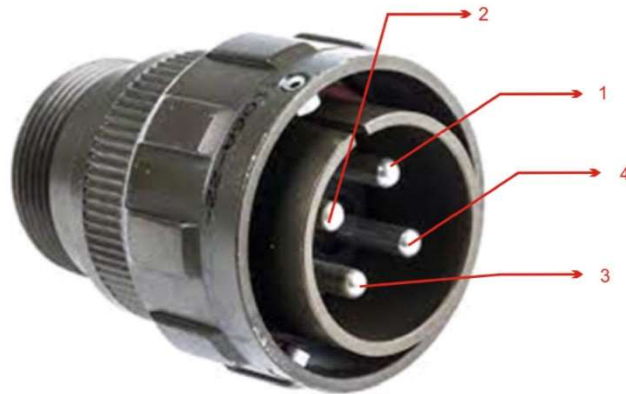
TRANSMITTER PINS	CONNECTOR PINS	DESCRIPTION（RS485 VERSION）	DESCRIPTION（4-20mA VERSION）
1	1	24VDC(+)	24VDC(+)
2	2	RS485 A	N/A
3	3	24VDC(-)	24VDC(-)
4	4	RS485 B	N/A

OPERATION

Through the Bluetooth wireless function of the device itself, the radar device is remotely connected with the Android / iOS APP preinstalled on the mobile phone to complete the configuration, debugging, waveform monitoring, historical information reading and other basic parameters of the device.

1. Splash screens

1.1 APP interface
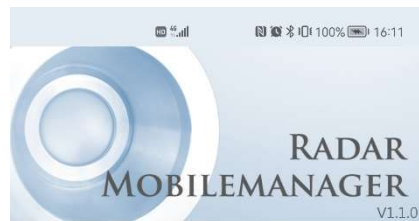
Checking wireless connection...

1.2 Device Bluetooth Detection

Normal

Bluetooth connected.

Failure

Bluetooth connection failed.

SCAN

DEMO

Scan: Click to retest the Bluetooth device.
Simulate: Click to enter the simulation mode to provide intuitive functional experience.
Stop: Click to stop the current scanning operation, and enter the stop scanning interface (if no accessory device is scanned for 30 seconds, it jumps to the weight scanning interface).

2. Connect and set interface

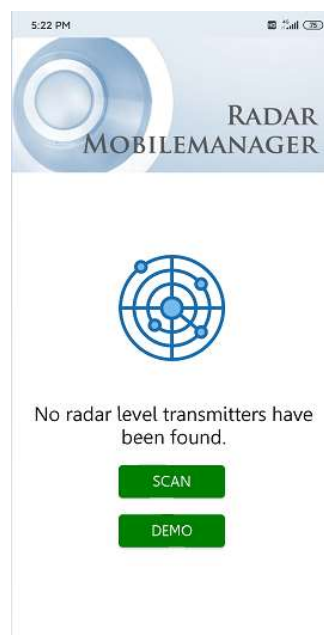### 2.1Scan Bluetooth device

STOP: Click to stop the current scanning operation, and enter the stop scanning interface (if no accessory device is scanned for 30 seconds, it jumps to the weight scanning interface).
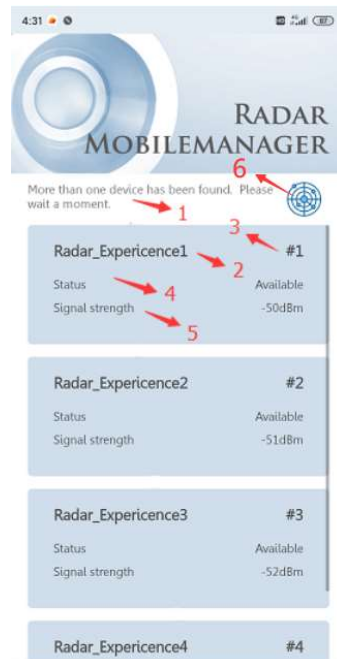
2.2 Stop scanning interface

Scan: Click to rescan nearby devices.

Simulate: Click to enter the simulation mode to provide intuitive functional experience.

2.3 Scanning Device List

After finding nearby radar devices, the device information parameters will be added in turn.

1) Current prompt

2) Radar serial number

3) The scanned radar number

4) Current status of radar equipment

5) The current radar signal intensity, the smaller the numerical signal, the better

Distinguish different radar devices by their ID numbers. Click the corresponding radar device to connect to the radar to jump to the main interface.

6) Status indication

2.4 Main interface of radar equipment
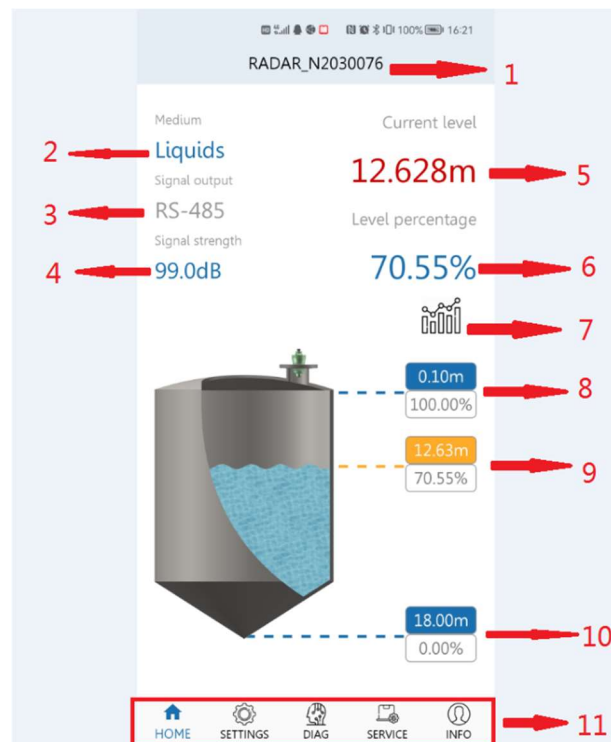
1) Device serial number
2) Current equipment material attributes can be divided into hydrology and liquid according to Settings
3) Current initial current
4) Current radar echo intensity
5) Update the measured distance according to the current set parameters
6) Correlation with 5 indicates that the current measured distance accounts for 100% of the total range
7) Data curve button, click to jump to curve interface
8) Measure the lowest value
9) The measured value is associated with 5 and 6 and varies according to the height of the measured value
10) Measure the maximum value
11) Interface jump navigation bar
Settings: The Settings screen is displayed
Diagnosis: The diagnosis page is displayed
Services: The service page is displayed
Info: The Info page is displayed

2.5 SETTINGS

Connect the radar to set parameters, click the corresponding parameter option to modify and confirm, then send to the device. Modifying Parameters.

2.6 DIAGNOSITICS

Connect radar diagnostic parameters, click corresponding parameter options to modify and confirm, then send to the device. Modify the corresponding parameters.

2.7 Service

Connect the radar service parameters, click the corresponding parameter options to modify and confirm, then send to the device. Modify the corresponding parameters.

2.8 Curve
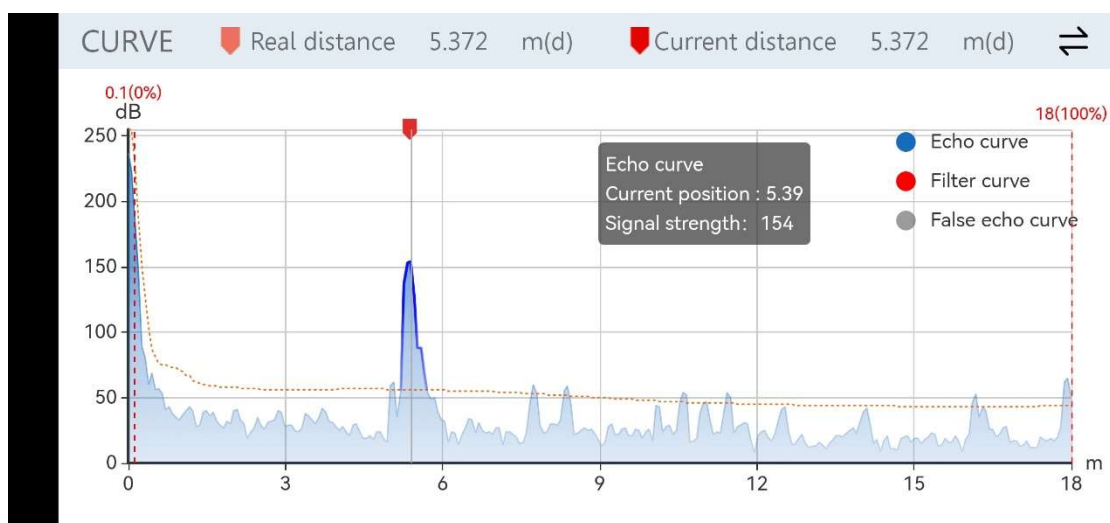
Display the current callback curve, filter curve and false echo curve information of the connected radar.

Click the corresponding dot in the upper right corner to display the

hidden curve.
Stretch the screen horizontally to zoom in and out of the curve.