

PQWT PQWT-TC300

PQWT TC300 Auto Mapping Underground Water Detector Instruction Manual

Brand: PQWT | Model: PQWT-TC300

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1. INTRODUCTION

The PQWT TC300 Auto Mapping Underground Water Detector is a geophysical prospecting instrument designed for locating underground water veins, aquifers, and geological anomalies. It utilizes the natural electric field method to collect and process data, automatically generating curve graphs and profile maps. This manual provides detailed instructions for the proper setup, operation, and maintenance of the device to ensure accurate and reliable results for well drilling and geological survey projects.

2. PRODUCT COMPONENTS

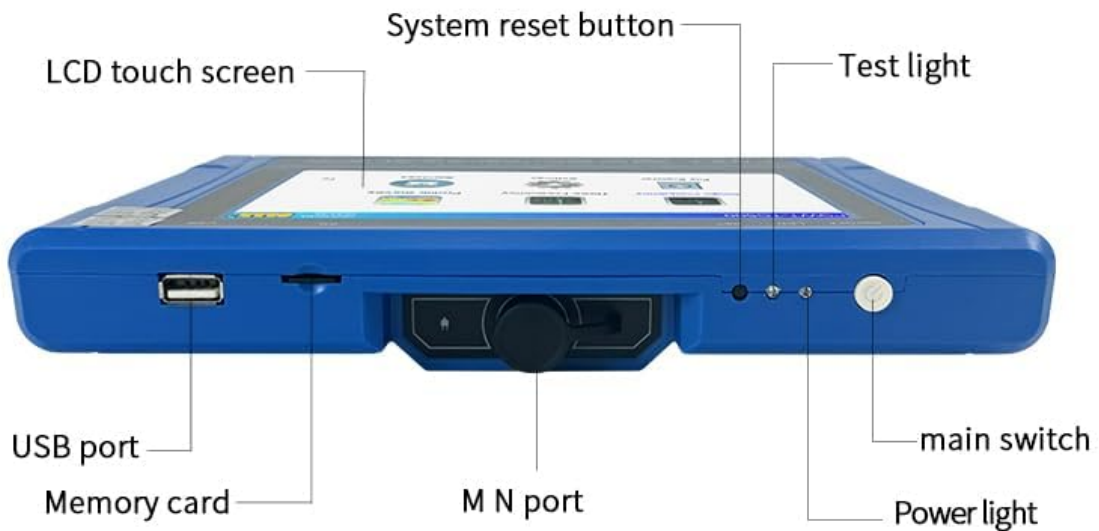
The PQWT TC300 system includes the following main components:

- **Host Machine:** The main control unit with a 7-inch LCD touch screen for data display and interaction.
- **Connection Cable:** Used to connect the electrodes to the host machine.
- **Alloy Electrodes:** Two robust electrodes for ground contact and signal acquisition.
- **Charger and USB Cable:** For charging the internal lithium-ion batteries and data transfer.
- **USB Flash Drive:** Contains tutorial videos and documents for comprehensive guidance.
- **Carrying Case:** For safe transport and storage of the instrument and accessories.



Figure 2.1: PQWT TC300 main unit and electrodes.

PRODUCT PARTS



Product Accessories

Back of product

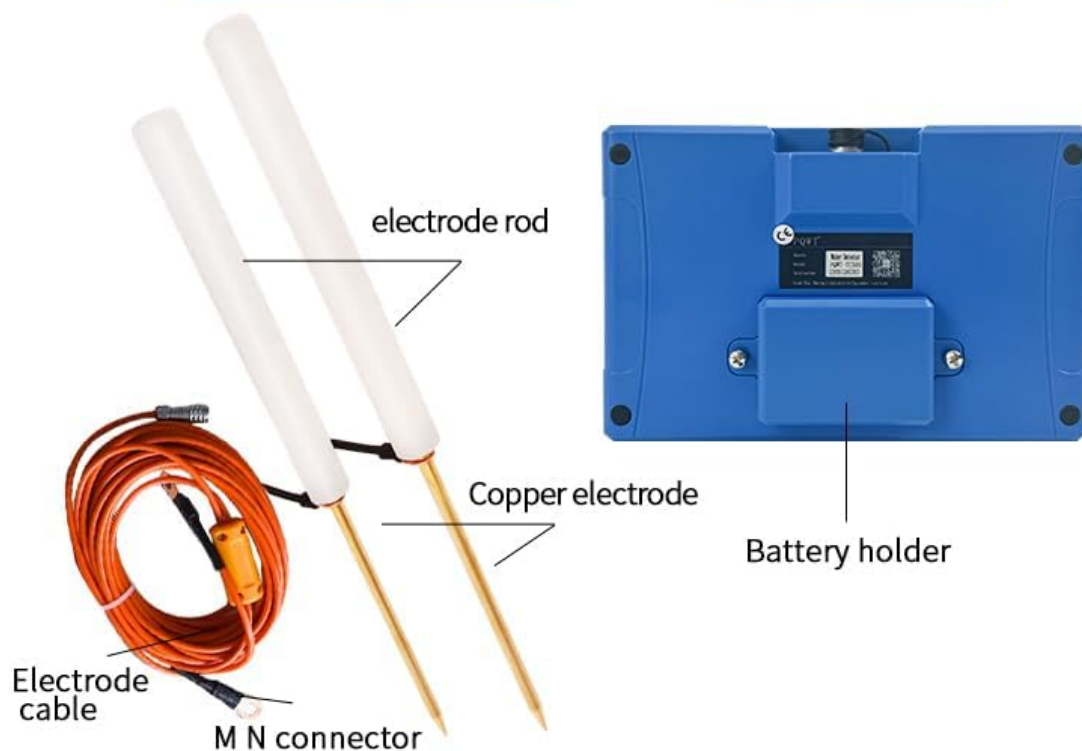


Figure 2.2: Detailed diagram illustrating the various parts and accessories of the PQWT TC300 system, including the LCD touch screen, system reset button, test light, USB port, memory card slot, M N port, main switch, power light, electrode cable, electrode rods, copper electrodes, and battery holder.

3. SETUP

3.1 Initial Device Setup

1. **Charge Batteries:** Ensure the two Lithium Ion batteries are fully charged before use.
2. **Connect Electrodes:** Connect the electrode cable to the main unit and the alloy electrodes.
3. **Power On:** Long press the power button on the host machine to turn it on. The system will start and display the main interface with various options.
4. **Language Selection:** The device supports 12 interface languages. Navigate to 'Settings' to select your preferred language if needed.

3.2 Field Preparation and Wiring

Before commencing measurements, proper field preparation and wiring are crucial for accurate data collection.

1. **Lay Out Measuring Tape:** Select a straight line for measurement. Lay out a measuring tape (50-100m recommended) along this line.
2. **Mark Start Point:** Mark the start point (0m) on the ground. Geophysical prospecting lines are typically made perpendicular to tectonic lines.
3. **Place First Electrode:** Plug one alloy electrode into the ground at the 0m mark, near the host machine.
4. **Place Second Electrode:** Plug the second alloy electrode into the ground at the 10m mark on the measuring tape.
5. **Connect Cables:** Ensure both electrodes are securely connected to the host machine via the connection cable.



Figure 3.1: The PQWT TC300 device with its electrodes and connecting cables prepared for a field measurement, illustrating the setup process.

Your browser does not support the video tag.

Video 3.1: This video demonstrates the complete setup and initial operation of the PQWT TC300 water detector, including wiring the electrodes, powering on the device, and navigating the main interface. It provides a visual guide for users to follow the setup steps effectively.

4. OPERATION

4.1 Starting a Profile Survey

1. **Access Profile Survey:** From the main interface, select "Profile Survey" to enter the measurement interface.

2. **Line Test:** Before recording, put the two connected electrodes together in a crossing way. Then, click "Line Test" on the instrument. A green light indicates the line is normal.
3. **Select Measuring Line:** Plug in an electrode rod to select the measuring line.
4. **Start Recording:** Click "Record" to begin data collection. The instrument will display the collected data on the screen.

4.2 Data Collection and Mapping

1. **Move Electrodes:** After the first data point is recorded, move both electrodes forward by one meter along the measuring tape.
2. **Record Next Point:** Click "Record" again to collect data at the new position. Repeat this process for the entire measuring line.
3. **Complete Line:** It is suggested to test over 15 points for one measuring line to ensure sufficient data.
4. **View Profile Map:** Once a measuring line is finished, the curve graph will be displayed automatically. Click "Profile" to view the automatically drawn profile map. You can zoom in or out using the "+" or "-" buttons.



Figure 4.1: The PQWT TC300's screen showing a detailed geophysical profile map, indicating potential underground water sources through color variations and contour lines.

4.3 Important Considerations

- **Electrode Stability:** The electrode rods should not shake during sampling.
- **Avoid Metal Contact:** Ensure electrodes do not contact metal objects on the ground during sampling.
- **Weather Conditions:** Do not use the instrument in thunderstorm weather.
- **Environmental Factors:** Avoid regions with high-pressure lines or significant ground drops, as these can interfere with measurements.

5. MAINTENANCE

To ensure the longevity and optimal performance of your PQWT TC300, follow these maintenance guidelines:

- **Cleaning:** Regularly clean the host machine and electrodes with a soft, dry cloth. Avoid using abrasive cleaners or solvents.
- **Storage:** Store the instrument and its accessories in the provided carrying case in a dry, cool place, away from direct sunlight and extreme temperatures.
- **Battery Care:** Fully charge the batteries before long-term storage and recharge them every few months to maintain battery health.

- **Cable Inspection:** Periodically inspect all cables for any signs of wear, cuts, or damage. Replace damaged cables immediately.
- **Software Updates:** Check the manufacturer's website or contact support for any available software updates to ensure the device operates with the latest features and improvements.

6. TROUBLESHOOTING

If you encounter issues with your PQWT TC300, consider the following common troubleshooting steps:

- **Device Not Powering On:**
 - Ensure batteries are fully charged.
 - Check battery connections.
 - Verify the power button is pressed and held sufficiently.
- **Inaccurate Readings/No Data:**
 - Perform a "Line Test" to ensure proper electrode connection and ground contact.
 - Check for any metal objects near the electrodes that might interfere with readings.
 - Ensure the electrodes are firmly planted in the ground.
 - Avoid areas with high-pressure lines or significant ground drops.
- **Screen Issues:**
 - If the screen is unresponsive, try restarting the device.
 - Ensure the screen is clean and free from moisture or debris.
- **Software/Interface Problems:**
 - Refer to the instructional USB flash drive for detailed operational guides.
 - Contact customer support for advanced software issues or guidance.

7. SPECIFICATIONS

PARAMETERS

Model	PQWT-TC300
Measuring depth	0-300m
Measuring frequency	Single frequency, three frequency, 40frequency
Power supply	Battery Model 26650*2pcs #4000mAh Rechargeable lithium battery
A/D convesion	16-bit 1MspS
Measuring range	0mV-1500mV The instrument automatically switches the range
Measuring accuracy	0.001 mV
Measurement channel	6 channels
Unit of measurement data	The electric field components of different frequencies ofthe earth electromagnetic field $\Delta V_s(mv)$
Channel gain	0-500.000 times
Languages	English; Spanish; French, Arabic, Russian
Power consumption	About 4W
Display	Industrial-grade 7-inch high-definition digital touch LCD screen
Working hours	6-8 hours
G.W/Shipping	G.W:8KG,DHL/UPS/ Fedex to door service

Figure 7.1: Technical parameters of the PQWT TC300, including model, measuring depth, frequency, power supply, and display type.

PQWT TC300 Technical Specifications

Feature	Specification
Model	PQWT-TC300
Measuring Depth	0-300 Meters
Measuring Frequency	Single frequency, three frequency, 40 frequency
Power Supply	Battery Model 26650*2pcs 4000mAh Rechargeable lithium battery
A/D Conversion	16-bit 1Msps
Measuring Range	0mV-1500mV (instrument automatically switches range)
Measurement Accuracy	0.001mV
Measurement Channel	6 channels
Unit of Measurement Data	The electric field components of different frequencies of the earth electromagnetic field $\Delta V_s(mV)$

Feature	Specification
Channel Gain	0-500.000 times
Languages	English, Spanish, Arabic, Russian, Polish, Thai, Indonesian, Portuguese, French, German, Turkish, Italian
Power Consumption	Approximately 4W
Display Style	Industrial-grade 7-inch high-definition digital touch LCD screen
Working Hours	6-8 hours
Item Weight	13.72 pounds
Product Dimensions	7.87 x 15.75 x 18.11 inches
Temperature Range	-10~+50 Degrees Celsius
Usage	Outdoor

8. WARRANTY & SUPPORT

8.1 Warranty Information

The PQWT TC300 host machine is covered by a **2-year warranty**. Additionally, lifelong maintenance service is provided to safeguard your investment.

8.2 Technical Support

For comprehensive guidance and professional analysis support, the instrument package includes a detailed operation manual and an instructional USB flash drive with tutorial videos and documents. Users can also send collected data (pictures of profile maps) to the PQWT geophysical prospecting water communication platform for expert analysis and consultation with hydrogeology experts. This ensures that even beginners can learn to operate the device and confirm well drilling or mineral prospecting points effectively.



Figure 8.1: Illustration of data sharing and expert support, showing a profile map on the device, a mobile phone displaying the map, and a team of experts analyzing data on computers.

ASK A QUESTION ABOUT THIS MANUAL

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question