

Level transmitter

WE-T101 instruction manual



Preface

- This manual is an instruction manual for various functions, wiring methods, operation methods, etc. of the product.

- Please read this manual carefully before operation, use this product correctly, and avoid unnecessary losses caused by incorrect operation.

- After you finish reading, please keep it in a place where it is easy to access it at any time for easy reference.

Note

- If there are any changes to the contents of this manual due to function upgrades, please refer to the newly released document.

- We strive to be correct in the content of this manual, so if you find an error, please contact us.

- The content of this manual is strictly prohibited from reprinting or copying.

- Please use this product in accordance with the characteristics of this product and comply with national and regional laws and regulations.

● The final interpretation of this manual is the property of the Company.

version

U-WE-T101-CN1 First Edition August 2025

Confirm the package contents

After opening the box, check the contents of the package before you begin. If you find that the model and quantity are wrong, or if there is physical damage to the appearance, please contact us.

The product packaging content is shown in the standard configuration list.

Product standard configuration list

Serial number	Name	quantity	Note:
1	Level transmitter	1	
2	Instructions	1	
3	Antenna	1	

4	Certificate of conformity	1	
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Note: Customized products may be slightly different from standard products, please refer to the order.

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第1章 Product Overview:

1.1 Product Introduction

WE-T101 is a series of level monitoring transmitters, including LoRa, RS485, 4G, NB, etc., and the power supply mode is battery power supply and 24V power supply. The level transmitter adopts high-stability digital sensors to realize real-time monitoring and calculation of on-site liquid level, and uses LoRa, RS485, 4G, NB and other communications to achieve long-distance communication.

The transmitter body and probe are split design, and according to different needs such as the medium to be measured on site, the liquid level range, and the installation method, it provides a variety of liquid level ranges, installation specifications of liquid level probes, and optimally matches the needs of application scenarios, which can be widely used in building buildings, industrial sites, municipal and other application scenarios.

1.2 Measurement principle

The measurement principle of liquid level transmitter is based on the principle of static pressure of liquid, that is, the liquid level of the liquid is directly proportional to the liquid level height. The level transmitter generally consists of a sensor and a transmitter. The sensor is in contact with the medium under test through a sealed measuring chamber, which is connected to the transmitter by a cable. When the sensor is in the liquid being measured, the measuring chamber inside the sensor feels the level of the liquid. This level is transmitted to the transmitter via cable. The transmitter converts the perceived liquid level into an electrical signal and outputs the level height.

1.3 Product features:

- The mobile app can monitor the meter anytime and anywhere.
- 4 communication methods to choose from.

- Battery and external power supply mode selection.
- Operating temperature range (-20~70)° C.
- Fully sealed waterproof design with IP67 protection.
- High-gain antenna and multiple verification

mechanisms ensure always-on.

● Support high-definition LCD display, with LED indicators and buttons, you can check the liquid level value, alarm information, battery prompt, etc. in real time on the spot;

第2章 Technical parameters

表1 Technical parameters

Input	
Level type	Gauge pressure
Measure variables	level
Measurement range	0m~1m... 10m
Performance parameters	

Accuracy	0.5%F.S
resolution	0.01m
Sampling period	1S-65535S can be set, default 30s
Reporting cycle	10s~65535s can be set, default 1 hour
Signal transmission	
LoRa	Antenna Interface Type: SMA Female It supports the 410.125~490.125MHz frequency band Maximum transmit power of 22dBm, Maximum -147dbm reception sensitivity, 5KM signal coverage capability with open viewing distance
4G	Antenna Interface Type: SMA Female Three-year flow rate (100M/month) It supports MQTT, HTTP, and WES cloud service protocols LTE FDD B1/3/5/8 LTE TDD B34/38/39/40/41 (Full Band) Rate(Mbps) LTE FDD:10.3(DL)/5.1(UL) LTE TDD: 9.1(DL)/3.1(UL)

RS485	Communication protocol Compatible with WES-IO (fixed 9600bps) and Modbus protocol Baud rate 4800, 9600, 19200, 34800, 57600, 115200 Data bits 7 bits, 8 bits Stop positions 1 bit, 1.5 bit, 2 bit Check bits None, Odd, Even
NB	Antenna Interface Type: SMA Female Five-year flow rate (300M/year) LTE Cat NB2: B3/B5/B8 Rate(kbps):Single- Tone:25.5(DL)/16.7(UL) Multi-Tpne: 127(DL)/158.5(UL)
Electrical specifications	
Power supply	19000mAh, lithium battery
	DC 9-30V
Battery life	Subject to specific usage conditions and reporting cycles The collection period is 60s, and it is reported once an hour. LoRa: 4.5 years

	NB: 3.5 years 4G: 1.8 years
environmental conditions	
Work environment	Temperature: (-20~70)° C Relative humidity: 5%~95%
Storage environment	Temperature: (-40~85)° C Relative humidity: 5%~95%
Protection level	Water and dust resistance: IP67 ESD: 4KV contact, 8KV non-contact

第3章 Product structure and size

3.1 Dimensions

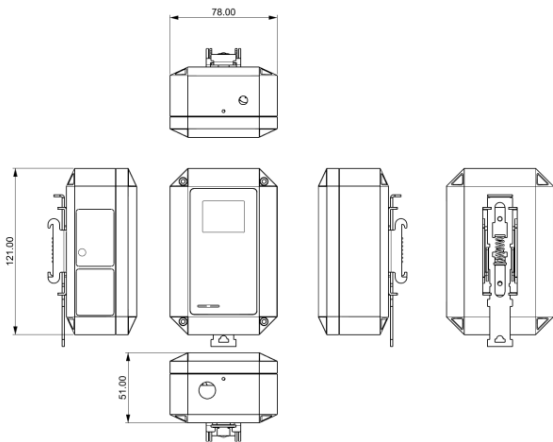


图1 Product dimensions

3.2 Process connection

表2 Process connection

Thread type	M20×1.5	M30×1.5
D (mm)	20mm	30mm

3.3 Connect the cables

Cable length: 5m, 10m, 20m, 50m, or 100m can be selected, and other lengths need to be customized.

3.4 Material:

Housing material: ABS/PC

Cable sheath material: PVC or polyurethane PU

Process connection material: 304SS or 316LSS

第4章 Installation and wiring

4.1 Arrival inspection

After the product arrives, the user should first check the packaging quality of the product, the packaging box should be intact and the logo should be clear. If the packaging has been obviously damaged, contact the storage and transportation department in time to find out the problem and responsibility and notify our company. If the packaging is not damaged and other problems, the product can be taken out of the box and the integrity of the product can be counted.

4.2 Installation conditions:

- (1) When the submersible level transmitter is installed, the metal probe should sink into the bottom of the container.
- (2) A place that is easy to operate and maintain should be chosen for installation.
- (3) It should be installed as far away from the vibration source as possible.
- (4) It should be installed as far away from heat sources as possible.

4.3 Installation notes

(1) Determine the measurement range required by the process to be consistent with the range of the transmitter to be installed.

(2) The thread specification of the fitting for process installation must be matched with the product.

(3) Installation and fixation must avoid collision or friction with the container wall, and the impact of working conditions such as medium flow on product fixation and measurement should be considered.

(4) During installation and maintenance, the product should be slowly submerged into the medium to avoid the diaphragm

and the impact of the medium surface.

(5) The wire is a special waterproof wire, and wear, puncture, and scratch should be eliminated during installation and use. If there are the above problems on site, protective measures should be taken for the conductor.

4.4 Installation diagram

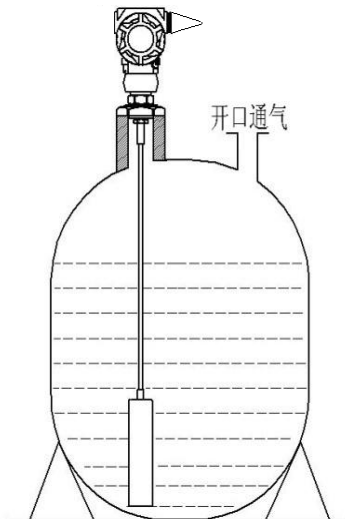


图2 Schematic diagram of the installation of the level transmitter

第5章 operation

5.1 Display and operating unit



图3 Panel schematic

5.1.1 Interface Description

表3 Interface description

Serial number	Description
1	System time
2	Bluetooth: After the Bluetooth connection between the phone and the device is successful, the Bluetooth logo will be displayed
3	Upside signal
4	Battery level
5	Units of measurement
6	Measurements
7	Recognition Countdown, after the device is recognized, start a 600-second countdown
8	Alarm information

5.1.2 Key Instructions

1 operation button on the left side of the main unit.

表4 Key definitions

operation	Description
Click	Light up the screen and backlight Switch pages List wraps, option switching Modify the parameter value by 1
Double click	Enter the parameter modification sub-interface Determine the options
Three strikes	Identify the device Enter the parameter setting interface
Long press	Long press for 5~6 seconds, the system light will flash white, and the device will restart after releasing the button. Long press for 10-11 seconds, the system light flashes white, and after releasing the button, the

operation	Description
	device parameters return to the default value and enter the inactive state.
Activation	Press and hold for 5~6 seconds, the system light flashes white, release the button, and then click the button to activate the device.

5.1.3 Indicator Light Description

Communication indicator: flashing green, indicating normal communication

System light: Flashing green, indicating that the device is normal

Flashing orange indicates that the device is alarmed

Flashing red indicates a faulty device

5.1.4 Alarm and fault information

表5 Alarm code

Status code	Problem location
1	Plate temperature
2	battery
3	Bluetooth

Status code	Problem location
4	Uplink network
5	shown
6	sensors
7	Other

For example, the status code in the figure shows 6, which indicates the sensor alarm, indicating that the current collected liquid level value triggers the alarm threshold.

5.2 On-site operation

The device button operation is as follows:

Operation instructions: Click the button to light up the screen and display the monitoring value and other information; Click the button again to light up the background light, and click the button again to display the QR code. Under the QR code interface, click the button three times to enter the parameter setting interface.

Parameter settings: In the LoRa example, after entering the parameter setting interface, you can set parameters such as device address and LoRa network (Net, Channel).

In the Setting interface, click the button to wrap the list, as shown in the figure below, double-click the button to enter the parameter setting interface.



图4 Parameter interface

After entering a parameter modification interface, as shown in the figure below, the first row is the parameter value,  which means to save, and  to return to the previous level; With a single click, the action flag cycles through the four options, and the background of the action flag changes to a dark color when the action flag is on one option.



图5 Schematic diagram of the parameter subinterface

Parameter modification example: The operation flag moves to the first row, double-click the key, as shown in the figure below, after the triangle appears, click the key, click once, add 1 to the value, and repeat the cycle of 0-9. Once the value is determined, double-click the key and the triangle disappears. The action flag moves to , double-click the button to save the settings. The operation flag moves to the  Setting interface.



图6 Operation diagram

Example of zero point zeroing: For example, when the

sensor detects inaccurate values in a 0m environment, it can be zeroed at zero. Keep the sensor in the air, enter the Setting interface, click the button to wrap the list to Calibration, double-click the button to calibrate, and wait for the prompt to correct the calibration successfully, and the calibration is completed.



图7 Operation diagram

The page parameters table is as follows:

表6 Parameter list

page	Parameter Name	Value range	Note:
Setting	Address	LoRa: 1-99 RS485: 1-64	Device address
	Net	1-99	LoRa Network ID (LoRa version only)
	Channel	0-83	LoRa Network Channel

page	Parameter Name	Value range	Note:
			(LoRa version only)
	Baudrate	1-64	Baud rate (RS485 version only)
	Calibration	/	Zero point calibration zero
	Exit	/	Exit
Address	/	LoRa: 1-99 RS485: 1-64	You can modify the device address
Net	/	1-99	You can modify the LoRa network ID of the device
Channel	/	0-83	You can modify the LoRa network channel of the device
Baudrate	/	4800 9600 19200 38400 57600	The baud rate of RS485 communication can be modified

page	Parameter Name	Value range	Note:
		115200	

5.3 The device is on the cloud

This product can be bound to the device through the "World Power Device Assistant" applet or web terminal to realize remote monitoring, abnormal alarms, data reports and other functions.

5.3.1 Device cloud platform

(1) Mini program

Search for the mini program "World Electric Device Assistant" in WeChat and add the mini program.

(2) Web

Web address: <https://hnsd.weixinzjit.com/wessass/#/login>

5.3.2 Adding Devices

Step 1: Enter the mini program project device management interface

Click Projects - Select Projects - Click  - Click - Device Management.



图8 Enter the project equipment management interface

Step 2: Add the device

Click the + sign in the upper right corner of the device management page, select the product, select the addition method, you can add it manually, scan the code to add or scan the QR code to add.

Select Add Manually: After clicking Next, select the Device Serial Number (SN), tap Next, and click Confirm Device.

Select Bluetooth: Click Search, select a device you searched, click Save, and click Confirm Device.

Select Scan QR code: Click Search, scan the device QR code, and click Confirm device.

Add manually:



图9 Add manually

Scan the code to add:



图10 Scan the device QR code to add

Bluetooth adds:



图11 Bluetooth added

5.3.3 Guidelines for using the device cloud platform and mini program

Once the device is successfully added, you can view the device in the project. The detailed operation guide of the cloud platform and mini program can be viewed in the Mini Program Documentation Center.

5.4 Device local Bluetooth configuration

Step 1: Enter the mini program and search for the device via Bluetooth

Tap - Tap Search Device. When you search for the device you want to connect to, you can click Stop search.

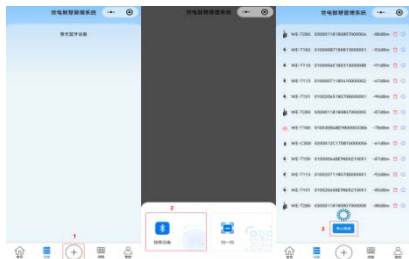


图12 Bluetooth search device

Step 2: Bluetooth connection device

Click the device name to connect the device.

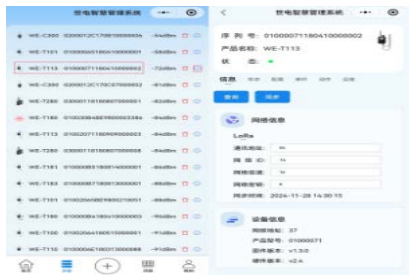


图13 Bluetooth connected devices

5.5 Precautions for use

This product has the function of instant threshold reporting: in the reporting week interval, if there is an abnormality in the collection data (exceeding the set threshold, it needs to be set in

advance), the set of data will be reported immediately (the device collection cycle is 1 minute by default, and the reporting period is 1 hour by default, both can be adjusted).

第6章 Fault analysis and troubleshooting

The following table lists possible problems with level transmitters and solutions, if your problem is not listed or the solution does not address your problem, please contact us.

表7 Common fault analysis and troubleshooting

Fault phenomenon	Cause analysis	Elimination methods
The meter is not displayed	The battery is low	Replace the battery with a new one
Abnormal liquid level value	Abnormal probe connection	Check for broken level probe cables
Unable to receive data	The 4G/NB network can judge the meter status through the indicator light, and if the network is not successfully injected, it will check:	(1) Install the SIM card correctly, (2) Contact the network operator to set up the network, or check the signal strength of the local 4G network.

	Whether the SIM card is installed correctly and whether it is in the Wi-Fi service area.	
	The LoRa network is not connected	Check whether the supporting gateway is connected Whether the parameters of LoRa and the gateway are consistent
The card is unreadable	The card is not inserted/the card is not charged/the card is bound	Reinsert Check card fee renewal The card is unbound
There is no data on the platform	There are bugs in general procedures	Check the procedure

第7章 Warranty and after-sales service

The company promises to customers that if there is a product quality problem during the warranty period, the company will implement an unconditional three-guarantee service for products with quality problems, that is, free repair, replacement or return. All non-customized products are guaranteed to be returned or exchanged within 7 days (excluding damaged products), and customized products are subject to the warranty agreed in the contract.

Disclaimer

During the warranty period, product failures caused by the following reasons are not covered by the three guarantees:

- (1) Product failure caused by improper use by the customer.
- (2) The customer disassembles, repairs and modifies the product by himself, causing product failure.

Appendix Data Communications

1. Data format

The default data format for Modbus communication is:
115200, n, 8, 1 (baud rate 115200bps, 1). starting bit, 8 data bits,
no check, 1 stop bit).

2. Information Frame Format (xx represents one byte)

a) Read data instruction frames

01 04 xx xx xx xx xx xx

Address Function Code Register Start Address Number of
Registers CRC Check Code (low byte first)

b) Read the data response frame

01 04 xx xx..... xx xx xx

Address Function Code Number of Bytes Answer Data CRC Check
Code (low byte first)

c) Write data instruction frames

01 06 xx xx xx xx xx xx

Address Function Code Register Address Write Data CRC
Checksum (Low Byte First)

d) Write data response frames

01 06 xx xx xx xx xx xx

Address Function Code Register Address Write Data CRC

Checksum (Low Byte First)

e) Write multi-data instruction frames

01 10 xx xx xx xx xx... xx xx xx

Address Function Code Start Register Address Number of

Registers Number of Bytes Write Data CRC Check Code (low bytes first)

f) Write a data response frame

01 10 xx xx xx xx

Address Function Code Start Register Address Number of

Registers CRC Check Code (low byte first)

3. Register address

表8 Enter the register

Input		
Address	Description	Note:
0x0000	PID is 16 places higher	
0x0001	PID is 16 bits lower	
0x0002	SN byte1 byte2	
0x0003	SN byte3 byte4	
0x0004	SN byte5 byte6	
0x0005	SN byte7 byte8	

0x0006	SN byte9 byte10	
0x0007	Software version byte3 byte2	
0x0008	Software version byte1 byte0	
0x0009	Hardware version	
Reserved		
0x0010	Device status	0 Normal 1 Call the police 2 Error
0x0011	The alarm code is 16 digits higher	
0x0012	The alarm code is 16 digits lower	
0x0013	The fault code is 16 digits high	
0x0014	The fault code is 16 digits lower	
0x0015	The level value is high	0.01m
0x0016	The level value is low	

0x0017	Plate temperature	0.1℃
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表9 Keep registers

Holding		
Address	Description	Note:
0x0000	Device ID	1-64 The initial default value is 1
0x0001	RS485 baud rate gear selection	0:4800bps 1:9600bps 2:19200bps 3:38400bps 4:57600bps 5:115200bps The default is 5:115200bps

0x00 02	System time is high	
0x00 03	The system time is low	
Reserved		
0x00 10	The liquid level is high and the threshold is high	0.01m, default 40
0x00 11	The liquid level is high and the threshold is low	
0x00 12	The liquid level is low and the threshold is high	0.01m, default 10
0x00 13	The liquid level is low and the threshold is low	
0x00 14	The liquid level is high, and the limit value is high	0.01m, default 50
0x00 15	The liquid level is high and the limit is low	
0x00 16	The liquid level is low and the limit is high	0.01m, default 0
0x00 17	The liquid level is low and the limit is low	

0x00 18	Liquid level display units	0: m The default is 0:m
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4. Command examples

a) Measurement Instructions:

Request frame: 01 04 00 15 00 02 60 0F

Answer frame: 01 04 04 00 00 00 0A 7B 83

Example reading: 00 00 00 0A, i.e. 0.1 m

b) Set threshold instructions:

For example, the high threshold for the liquid level is 0.4 m and the low threshold for the liquid level is 0.1 m:

Request frame: 01 10 00 10 00 04 0 800 00 00 28 00 00 00

0A 97 84

Answer frame: 01 10 00 10 000 4 C0 0F

Appendix Selection and Ordering

WE-T101 product selection parameter table	
Parameter	Selection code and specification
Communication mode	LR: LoRa
	4G: 4G/Cat1
	RS: RS485
	NB: NB2
R range range	R05: 0~5m
	R10: 0~10m
Power supply mode	P0: Battery powered
	P1: 9~30V DC power supply
Note: The range range and power supply method can be	

Example:

WE-T101-LR-R10-P0

LoRa wireless level transmitter, 0~10m detection range, battery powered



WES



For more inquiries, please scan
the QR code

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