

EcoWell Wireless Gateway (WZG6001) – 900MHz

FEATURES

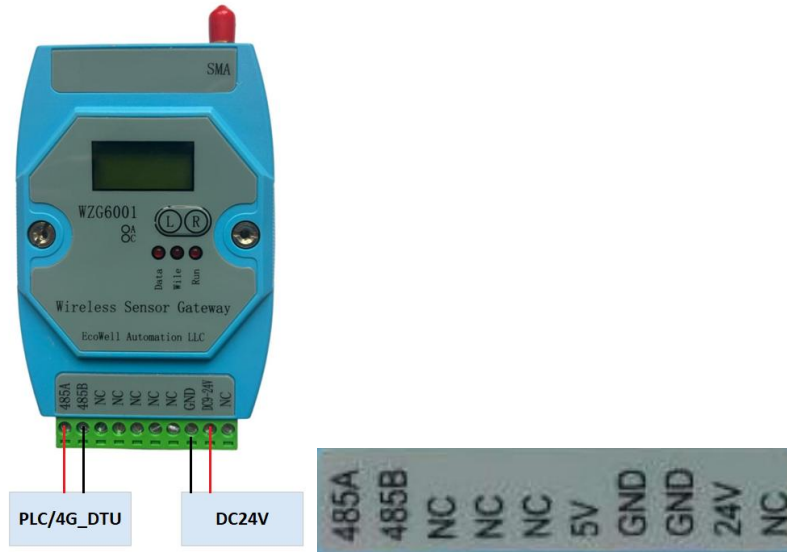
- **Communication Port:** one channel RS485, supporting MODBUS-RTU protocol
- **Instruments self-checking and fault diagnosis**
- **Convert the data of wireless pressure, wireless temperature and wireless liquid level into RS485 signals, which can be connected to other control terminals**
- **Varies configuration allowed at Gateway interface to optimize the applications**
- **Simple communication setup between transmitters and gateway**



TECHNICAL SPECIFICATIONS

Parameter		Specification
processor		32-bit industrial microprocessor, main frequency 72Mhz
power supply	Power supply	Standard voltage DC24V (±10%)
	Power consumption	≤3W
environment	Work Environment	-40~80°C
	Storage temperature	-40~80°C
	Relative humidity	Relative humidity ≤ 95% without frost
Wireless Communication Parameters	Communication Protocol	Private Lora protocol (API communication protocol)
	Transmit power	22dBm
	Sensitivity	125kHz Bandwidth, SF=7 -126dBm
		125kHz Bandwidth, SF=10 -135dBm
		125kHz Bandwidth, SF=12 -140dBm
	Communication distance	500m
	Communication standards and frequency bands	902~928MHz ISM frequency band
Serial Port	Communication Protocol	Transparent transmission
	2 RS485 ports, built-in 15KV ESD protection, serial port parameters are as follows: Data bits: 8 bits Stop bit: 1 bit Verification: No verification Baud rate: 4800, 9600, 19200, 38400 bps	
Indicator Lights	With power, communication and wireless communication indicator lights	
Antenna interface	Standard SMA female antenna interface, characteristic impedance 50 ohms	
LCD Display	OLED low temperature display	

ELECTRICAL WIRING



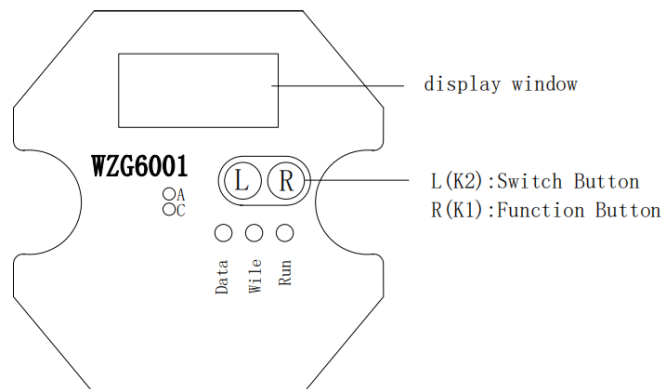
The wiring is as shown in the above picture. The conversion module 24+ is connected to the positive pole of the 24VDC power supply, and 24- is connected to the negative pole of the power supply. The ports on the left is the 485 ports of the gateway, which is wired to POC, PLC or 4GDTU to upload data.

Note: The parameter settings for one channel 485 port connected to PLC or POC are as follows:

Parameter	Parameter Description	Device Bus
Communication Parameter	9600/N/8/1	RS485
PLC/POC communication address	1	

INSTALLATION GUIDE

I. LCD Display and Key Menu



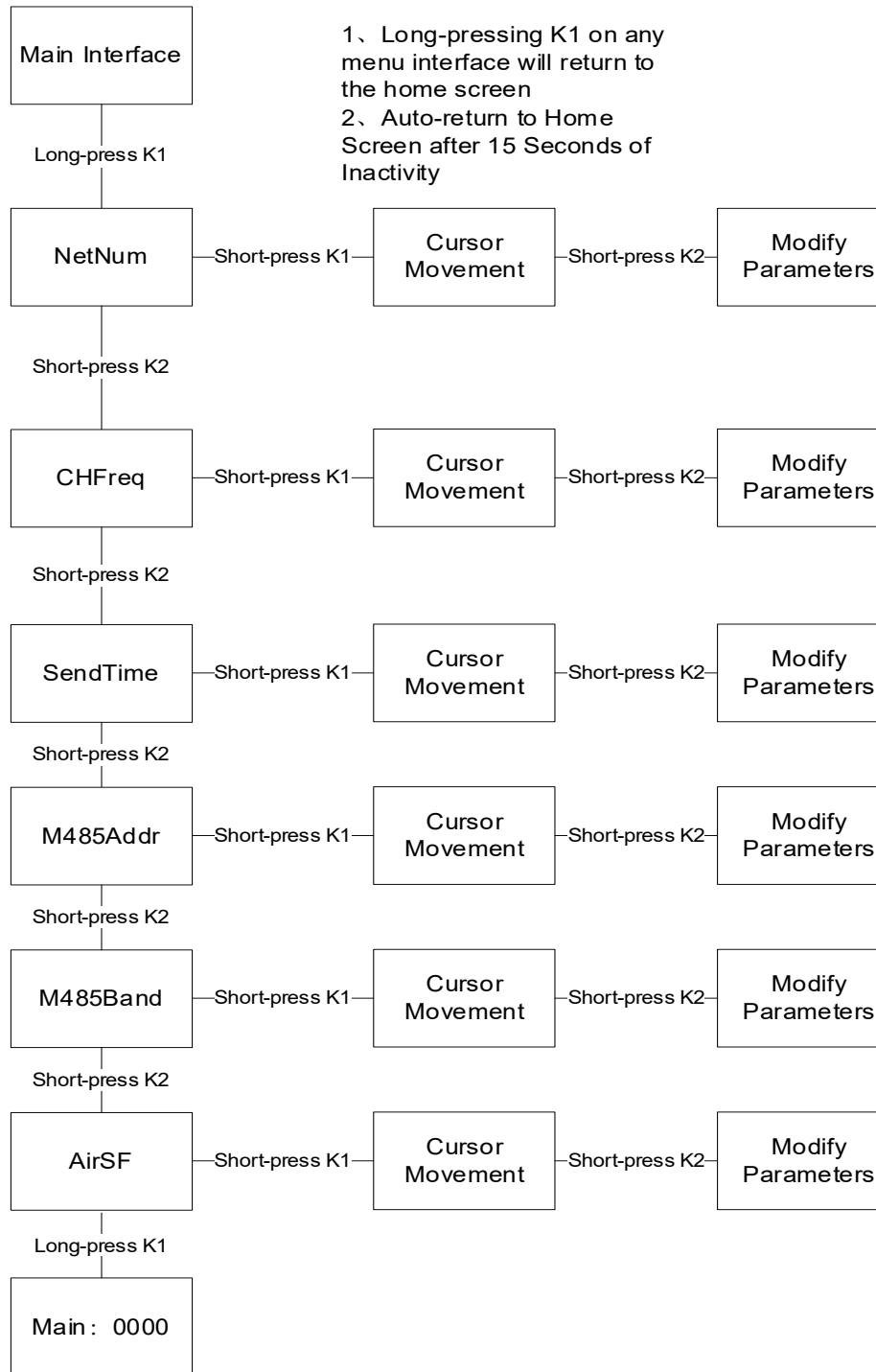
Press K1 for 5 seconds to enter the setting mode. There are 6 setting states in total. Press the left button to scroll through the menu items. The following table is displayed in sequence:

Screen Display	Menu Contents	Adjustment function	Description
Addr	Wireless communication address	Shift, increase	This value should be the same as the communication address setting of the wireless transmitter.
Freq	Wireless communication frequency	Shift, increase	902-928; This value should be the same as the communication address setting of the wireless transmitter.
AirSF	Lora wireless air transmission rate	Add, return	1~6; this value should be the same as the communication address setting of the wireless transmitter.
M485 Baud	PLC docking 485 baud rate	Shift, return	4800~38400; default value is 9600
M485 Addr	PLC docking 485 slave address	Shift, increase	1~20, default value is 1
Send Time	Wireless instrument collection interval	Shift, increase	1~9999 seconds, default is 120 seconds

Key Function Description	
K1 short press	Enter settings, confirm and return
K1 long press	Enter the menu, return to the main interface
K2 short press	Decrease, Page Up, Shift
K2 long press	none

Interface Function Description	
Functional Description	Fault diagnosis
Equipment running count	The working condition of the device can be judged based on the cumulative count. If the running count is always small, it means that the device is often restarted and there is a fault.
Device Number	Wireless device number: by turning the page, check the wireless instrument communication status according to the device number
Wireless device collection value	If "No Data" is displayed, it means there is no data. If there is data, it means the instrument is online. You can use this value to verify with the instrument whether the collected data is consistent.

II. Parameter Configuration Setup



III. REGISTER ADDRESSES

Modbus RTU settings: address 01, baud rate 9600, 8bit, no parity check. If 6001 is connected to pressure and temperature transmitters, it supports up to 30 devices. If there is an integrated temperature and pressure transmitter, it can support up to 15 devices. The snr of the integrated temperature and pressure transmitter is set as 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28;

Serial number	Address DEC	type	Regulatory marking	Parameter Description	Remark	Parameter Description
1	40001	W	Read-only	Instrument 1 collection value	Corresponding instrument: Group number: 1, Serial number: 0	For instruments with a range less than 300KPa, two decimal places are used and the unit is KPa. For example, 10012 represents the actual pressure of 100.12KPa; For instruments with a range greater than 300KPa and less than 1MPa, one decimal place is used and the unit is KPa. For example, 5002 represents the actual pressure of 500.2 kPa. For instruments with a range greater than 1MPa, 2 decimal places are used and the unit is MPa. For example, 10012 means the actual pressure is 100.12MPa.
2	40002	W	Read-only	Instrument 2 collection value	Corresponding instrument: Group number: 1, Serial number: 1	
3	40003	W	Read-only	Instrument 3 collection value	Corresponding instrument: Group number: 1, Serial number: 2	
4	40004	W	Read-only	Instrument 4 collection value	Corresponding instrument: Group number: 1, Serial number: 3	
5	40005	W	Read-only	Instrument 5 collection value	Corresponding instrument: Group number: 1, Serial number: 4	
6	40006	W	Read-only	Instrument 6 collection value	Corresponding instrument: Group number:	

					1, Serial number: 5
7	40007	W	Read-only	Instrument 7 collection value	Corresponding instrument: Group number: 1, Serial number: 6
8	40008	W	Read-only	Instrument 8 collection value	Corresponding instrument: Group number: 1, Serial number: 7
9	40009	W	Read-only	Instrument 9 collects values	Corresponding instrument: Group number: 1, Serial number: 8
10	40010	W	Read-only	Instrument 10 collection value	Corresponding instrument: Group number: 1, Serial number: 9
11	40011	W	Read-only	Instrument 11 collection value	Corresponding instrument: Group number: 1, Serial number: 10
12	40012	W	Read-only	Instrument 12 collection value	Corresponding instrument: Group number: 1, Serial number: 11
13	40013	W	Read-only	Instrument 13 collects values	Corresponding instrument: Group number: 1, Serial number: 12
14	40014	W	Read-only	Instrument 14 collects values	Corresponding instrument: Group number: 1, Serial number: 13
15	40015	W	Read-only	Instrument 15 collection value	Corresponding instrument: Group number:

					1, Serial number: 14
16	40016	W	Read-only	Instrument 16 collection value	Corresponding instrument: Group number: 1, Serial number: 15
17	40017	W	Read-only	Instrument 17 collection value	Corresponding instrument: Group number: 1, Serial number: 16
18	40018	W	Read-only	Instrument 18 collection value	Corresponding instrument: Group number: 1, Serial number: 17
19	40019	W	Read-only	Instrument 19 collection value	Corresponding instrument: Group number: 1, Serial number: 18
20	40020	W	Read-only	Instrument 20 collection value	Corresponding instrument: Group number: 1, Serial number: 19
twenty one	40021	W	Read-only	Instrument 21 collection value	Corresponding instrument: Group number: 1, Serial number: 20
twenty two	40022	W	Read-only	Instrument 22 collection value	Corresponding instrument: Group number: 1, Serial number: 21
twenty three	40023	W	Read-only	Instrument 23 collection value	Corresponding instrument: Group number: 1, Serial number: 22
twenty four	40024	W	Read-only	Instrument 24 collection value	Corresponding instrument: Group number:

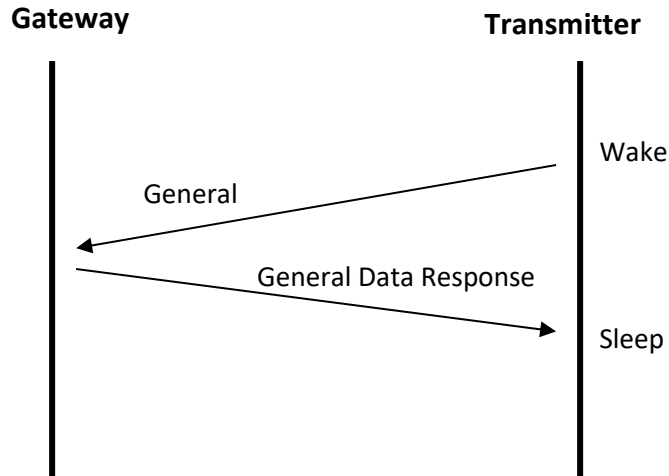
					1, Serial number: 23	
25	40025	W	Read-only	Instrument 25 collection value	Corresponding instrument: Group number: 1, Serial number: 24	
26	40026	W	Read-only	Instrument 26 collection value	Corresponding instrument: Group number: 1, Serial number: 25	
27	40027	W	Read-only	Instrument 27 collection value	Corresponding instrument: Group number: 1, Serial number: 26	
28	40028	W	Read-only	Instrument 28 collection value	Corresponding instrument: Group number: 1, Serial number: 27	
29	40029	W	Read-only	Instrument 29 collection value	Corresponding instrument: Group number: 1, Serial number: 28	
30	40030	W	Read-only	Instrument 30 collection value	Corresponding instrument: Group number: 1, Serial number: 29	
31	40031	W	Read-only	Meter 1 battery level	Corresponding instrument: Group number: 1, Serial number: 00	
32	40032	W	Read-only	Meter 2 battery level	Corresponding instrument: Group number: 1, Serial number: 01	
33	40033	W	Read-only	Meter 3 battery level	Corresponding instrument: Group number:	

					1, Serial number: 02
34	40034	W	Read-only	Meter 4 battery level	Corresponding instrument: Group number: 1, Serial number: 03
35	40035	W	Read-only	Meter 5 Battery level	Corresponding instrument: Group number: 1, Serial number: 04
36	40036	W	Read-only	Meter 6 Battery level	Corresponding instrument: Group number: 1, Serial number: 05
37	40037	W	Read-only	Meter 7 Battery level	Corresponding instrument: Group number: 1, Serial number: 06
38	40038	W	Read-only	Meter 8 battery level	Corresponding instrument: Group number: 1, Serial number: 07
39	40039	W	Read-only	Meter 9 battery level	Corresponding instrument: Group number: 1, Serial number: 08
40	40040	W	Read-only	Meter 10 battery level	Corresponding instrument: Group number: 1, Serial number: 9
41	40041	W	Read-only	Meter 11 Battery level	Corresponding instrument: Group number: 1, Serial number: 10
42	40042	W	Read-only	Meter 12 Battery level	Corresponding instrument: Group number:

					1, Serial number: 11
43	40043	W	Read-only	Meter 13 Battery level	Corresponding instrument: Group number: 1, Serial number: 12
44	40044	W	Read-only	Meter 14 Battery level	Corresponding instrument: Group number: 1, Serial number: 13
45	40045	W	Read-only	Meter 15 battery level	Corresponding instrument: Group number: 1, Serial number: 14
46	40046	W	Read-only	Meter 16 battery level	Corresponding instrument: Group number: 1, Serial number: 15
47	40047	W	Read-only	Meter 17 Battery level	Corresponding instrument: Group number: 1, Serial number: 16
48	40048	W	Read-only	Meter 18 battery level	Corresponding instrument: Group number: 1, Serial number: 17
49	40049	W	Read-only	Meter 19 battery level	Corresponding instrument: Group number: 1, Serial number: 18
50	40050	W	Read-only	Meter 20 battery level	Corresponding instrument: Group number: 1, Serial number: 19
51	40051	W	Read-only	Meter 21 battery level	Corresponding instrument: Group number:

					1, Serial number: 20
52	40052	W	Read-only	Meter 22 Battery level	Corresponding instrument: Group number: 1, Serial number: 21
53	40053	W	Read-only	Meter 23 battery level	Corresponding instrument: Group number: 1, Serial number: 22
54	40054	W	Read-only	Meter 24 battery level	Corresponding instrument: Group number: 1, Serial number: 23
55	40055	W	Read-only	Meter 25 battery level	Corresponding instrument: Group number: 1, Serial number: 24
56	40056	W	Read-only	Meter 26 battery level	Corresponding instrument: Group number: 1, Serial number: 25
57	40057	W	Read-only	Meter 27 battery level	Corresponding instrument: Group number: 1, Serial number: 26
58	40058	W	Read-only	Meter 28 battery level	Corresponding instrument: Group number: 1, Serial number: 27
59	40059	W	Read-only	Meter 29 battery level	Corresponding instrument: Group number: 1, Serial number: 28
60	40060	W	Read-only	Meter 30 battery level	Corresponding instrument: Group number:

					1, Serial number: 29	
108	40108					



After receiving data, the gateway sends a regular response to end the communication and put the instrument into sleep mode. The regular response data includes the instrument sleep time, and the instrument will sleep at this time interval.

During normal data communication, if the gateway does not respond, the instrument will not resend and will directly enter the sleep state.

IV. Common troubleshooting

Fault	Causes	Trouble Shooting
The instrument does not communicate with the protocol conversion module	1. Are the communication parameters consistent?	The network number, frequency, and air transmission rate must be the same
	2. Is the module antenna suitable?	The wireless communication mode of this module is 902~928MHz. If the communication distance is greater than 500 meters, please use a high-gain antenna.
485 interface	1. The instrument communication parameters are inconsistent	Check the communication parameters and reset them.
	2. The instrument communication module is damaged	Factory repair