



Wireless pressure transmitter

Instruction of product



TIANSHUI HUATIAN SENSOR

Wireless pressure transmitter

I Introduction

Wireless pressure transmitter belongs to the supporting products of the wireless monitoring system of oil and water wells, which is suitable for monitoring the pressure of oil and water well production, storage and transportation process. It adopts micro-power wireless communication mode, no wiring is required, installation is faster, safer and more convenient, and there is a supporting wireless adapter device, which can convert many wireless pressure signals into MODBUS standard signals for transmission through Ethernet or serial port, which can be easily connected to the measurement and control system and has a wide range of applications.

II Principle of operating

The sensing element of this wireless pressure transmitter is a diffusion silicon force-sensitive device, and the Lora module is used for wireless communication. The sensitive chip is made into a sensitive piezoresistive on a crystalline silicon wafer using an integrated circuit



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process to form a Wheatstone bridge as a sensitive device for force-electric conversion. When subjected to an external force, the bridge loses its balance. When a constant current excitation power supply is added to the bridge, the pressure signal can be linearly converted into a millivolt voltage signal, which is amplified and converted into a digital signal, and then sent to the host computer by the wireless module.

III Technicalities

1. Measured medium: liquid, gas
2. Pressure range: 0 ~ 100MPa Can be customized
3. Accuracy grade: 0.5 grade
4. Overload pressure: 150%F.S.
5. Reporting period: 1 minute ~ 12 hours can be set
6. Decimal digit: 0 ~ 3 digits can be set
7. Signal transmission: Lora wireless
8. Transmission power: $\leq 150\text{mW}$
9. Transmission distance: ordinary type 2Km



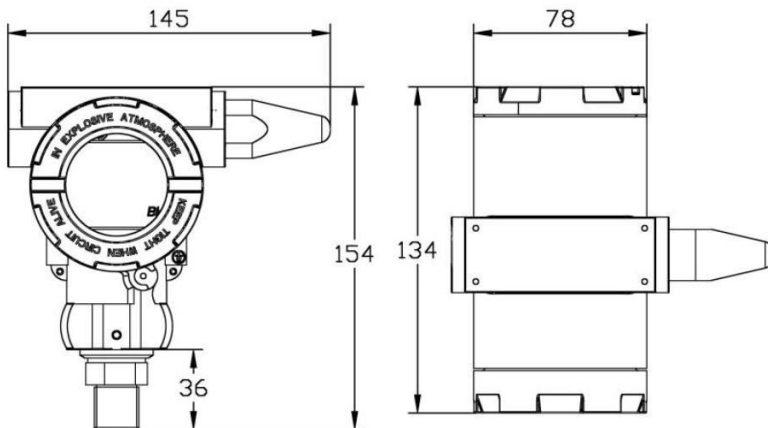
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10. Working power: 3.6V lithium battery
 11. Battery life: ≥ 2 years (120 minutes to upload once)
 12. Process interface: standard M20 \times 1.5 (or customized on request)
 13. Explosion-proof grade: Exia II BT4 Ga
 14. Shell protection grade: IP66
 15. Working ambient temperature: $-40^{\circ}\text{C} \sim 70^{\circ}\text{C}$
 16. Working environment humidity: $\leq 95\%RH$
 17. Product weight: 1350g (net weight)

IV Configuration



V Display panel description

The display panel of wireless pressure transmitter is depicted below:



Code	The instruction of code
1	Overpressure alarm indicator, flashing when the pressure value exceeds the gauge range
2	Debugging Interface
3	Button Settings
4	Button1
5	Button2
6	Battery level indicator



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7	Battery level indicator
8	Lora signal indicator
9	Lora signal intensity indicator
10	Lora channel instructions
11	Pressure value
12	Pressure value unit
13	Full pressure indicator
14	Group and number

VI Installation instructions

1. Make sure that the pressure measurement range required by the process is consistent with the pressure transmitter to be installed.
2. Process installation of the connector thread specifications must be matched with the wireless pressure transmitter.
3. Pipeline installation of pressure transmitters, the pipeline will first be prepared to install pressure transmitter valve (needle valve or gate valve) closed, and then the transmitter will be screwed directly into the upper port of the valve. After installation, open the valve to confirm that there is no leakage, that is, the installation qualified.



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VII Parameter setting

1. Set the instrument parameters with the hand writer

1) Select "Initialize" on the hand writer, enter the wireless channel, network, group number and number to be set in the pop-up dialog box, and press "Set" button to save.

2) Place the magnet in the magnetic induction area of the wireless pressure transmitter for 6 seconds, the transmitter will reset and get the parameters from the hand writer.

3) Hear the "beep" of the hand writer, indicating that the wireless pressure transmitter parameters have been set successfully.

2. Use the button to set the instrument parameters

1) Press the Zero button, the instrument enters the parameter setting mode and displays [01].

2) Press the W2 button to enter the communication address setting state, the modified number flashes, at this time, press the W1 button can be modified, hexadecimal from 0-F cycle increment. After selecting



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the specified number, press the W2 button to switch to the next digit, after the highest bit is set, press W2 to automatically exit the address setting and go to the next parameter setting item [02]

3) Press the W1 button to switch the parameter setting item. To make the parameter effective after modification, you must press W1 button, switch to [99] setting item, press W2 button to enter setting, set its value to 1111, press W2 button to confirm after setting, the instrument will restart automatically and the new parameter is saved.

4) If you do not enter the [99] setting item, the parameters modified in front will not take effect, and the button will automatically exit the setting state after timeout.

5) Description of the parameter list

Code	Instruction
【01】	Specify the target Lora address, default 0
【02】	Target Lora address, valid when [01] is enabled
【03】	Regular data waiting time for response



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【04】	Lora channel, calculated from the well name and subtracted from the channel 11
【05】	Lora Network ID
【06】	Instrument Lora address, default 0xffff, assigned by the coordinator
【07】	Group and number
【08】	Maximum Sleeping Time
【99】	Save the parameters, set to 1111 valid

Note: The setting values are all hexadecimal HEX codes

VIII Common faults approach

When the instrument does not work properly, the user can refer to the following table for simple maintenance, if the fault cannot be eliminated, please contact the manufacturer.

Phenomenon	Causes analysis	Method
No display on the meter	Dead battery	Battery Replacement
No data received by the host computer	Wireless parameters are not the same	Set the wireless channel and ID of the instrument to be consistent with the host computer
Pressure value is low	Blocked pressure-priming hole	Remove the instrument to clean the pilot hole

IX Post-sales service



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The product is warranted for one year under the condition that the user fully complies with the requirements specified in the instructions, the usage is correct, and no one has caused any damage.

X Contact information

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