Pressure Transmitter HPT-21 Specification

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LoRaWAN Wireless pressure sensor Operating instruction



I. product overview

LoRaWAN Wireless pressure sensor with high precision and sensitivity and the ultra-low power consumption microprocessor are adopted to process the pressure signal of the medium under test into digital signal, which can display the pressure value on site and transmit the measured data wireless through the standard LoRaWAN protocol. It has the advantages of convenient installation and use, further transmission distance, stable and reliable performance and so on. It is widely used in intelligent fire protection, intelligent water supply, intelligent factory and other wireless pressure monitoring field.

II. Technical parameters

- 1. Display mode: Five-digit liquid crystal display
- 2. The test medium: Liquid or gas compatible with material
- 3. Scale range:-0.1~ 60MPaInner arbitrary interval
- 4. Precision grade: 0.5%FS
- 5. Stability: ±0.5%FS/Y
- 6. Working voltage:3.6VDC battery
- 7. Battery capacity:19000mAh
- 8. Sleep currency: <30uA
- 9. Transmit currency: <140mA
- 10. Receive currency: <15mA
- 9. LoraWan frequency: CN470MHz~510MHz, EU863MHz~870MHz, US 902MHz~928MHz, AS923MHz, AU915~928MHz
- 10. Communication protocol: Lora
- 11. Working temperature:-20~60°C
- 12. Overload capacity:300%
- 13. Service life:>9 million Pressure cycle
- 14. Install the screw:M20*1.5, G1/2, etc.



Warning: Unauthorized disassembly of the product is strictly prohibited! Never press the measuring element

diaphragm with your finger!

Do not insert any sharp object into

the pressure orifice!

- 15. Protection grade: IP65
- 16. Data transmission rate: 300bps \sim 5.4Kbps
- 17. Maximum transmission power: 25db
- 18. Receiving sensitivity: -150dBm (SF=12)

III. Operation guide

1. Power on and network access:

Open the front cover, press the right button below the display screen frequently, and the sensor will start to power on. It will display "ON" and "Init" for a few seconds, and then display the main interface for a few seconds, starting to automatically search for the network.

The display of "HI" in the lower left corner indicates successful network access, and the sensor enters standby mode (timed data upload).

2. Proactively trigger upload:

Click the left button at the bottom of the display screen, and the screen will light up and show "SEND", indicating that data is being uploaded. After "SEND" disappears, the main interface will be displayed, indicating that data upload is complete. Enter standby mode and log in to the platform to check if the data has been successfully uploaded.

Note: Before powering on, devices should be correctly added to the platform. If devices are added to the platform after powering on, the sensor uploaded data can only be seen on the platform after the scheduled upload time has passed, or the "active trigger upload" operation can be performed.

3. Check the power supply voltage and signal value:

Right click on the bottom of the display screen, the screen will light up and show the current voltage value (normal range is between 3.1~3.7V).

Right click again to display the current signal value (normal range is between 1-4, the smaller the value, the stronger the signal).

Right click again to return to the main interface.

4. Shutdown: Press and hold the right button at the bottom of the display screen, and it will show "OFF" for a few seconds. If "OFF" disappears and the display screen becomes dark, the shutdown is complete.

IV. Button Instructions

Left-click :Backlit switch / shift M key:Menu Settings / Confirm

Right-click: Supply voltage/AD value/Numerical change

Long press M key 5 sec, Enter the menu password setting, then press M key confirm and enter menu. After amend the parameter, the amended parameter only be taken effect after trigger to uplink the data or after the data uplinked next time.

Group 1 Menu old password 0001; new password 0006

NO	symbol	Menu	Value range	Menu description
1	8888	Unit selection	MPa;KPa;Bar,etc.	Pressure, liquid level and other units
2	8888	Decimal number	0~3	Up to three decimal places can be set
3	8.8.8.8	lower limit range	-19999~99999	Factory Settings, do not change
4	8888	Maximum range	-19999~99999	Factory Settings, do not change

5	8888	Display value switching	DSP/PRESS	Display AD value/display pressure value
6	8888	Zero compensation	-9.99~9.99	Default 0, set opposite compensation for the deviation
				of actual measured values
7	8888	Zero point resection	0~9999	Default 5, decimal point follows display
8	8888	filter constant	1~9	Default 1. Display value refresh frequency,1 fastest
9	8888	Sampling interval	1~9999sec	Default 20sec
10	<u>BBBB</u>	Upload interval	1~9999min	Default 240min
11	8888	Reserved	Reserved	Reserved
12	8888	Reserved	Reserved	Reserved
13	8888	Reserved	Reserved	Reserved
14	5838	Save Settings	YES/NO	Modify the parameters to save the Settings, otherwise
				invalid
15	8888	Exit menu	EXIT	Exit menu Settings

Group 3 Menu password 0003; new password 0166

NO	Symbol	Menu	Value range	Menu description
1	8888	High alarm value	-1999~9999	Default 9999, decimal point follows display
2	8888	Low alarm value	-1999~9999	Default -9999, decimal point follows display
3		Alarm way	HL/IN/CAPH/CAPL	Upper and lower alarm / Range alarm
4		Reserved	Reserved	Reserved
5	8888	Sensor alarm delay	1~99	Default 2 times
6	8.8.8.8	Reserved	Reserved	Reserved
7	8888	Alarm sampling rate	1~9999sec	Alarm sampling interval, Default 5sec
8	8888	Alarm upload rate	1~9999min	Alarm upload interval,Default 1min
9	5888	Save Settings		Modify the parameters to save the Settings, otherwise
		Save Settings		invalid
10	8888	Exit menu	EXIT	Exit menu Settings

[1] Compensation coefficient: Set a compensation value for the deviation between the displayed value of the sensor and the actual measured value, so that the entire range is close to the measured value, with a default value of 0.

[2] Zero point removal: Remove the error value in the zero point state, default to 5, followed by the decimal point (e.g. if the decimal point is 2, default to 0.05).

[3] Filter constant: The frequency at which the displayed value is refreshed, which is related to the sampling rate; For example, in the default state, the latest collected data is displayed every 20 seconds. If the filtering constant is set to 2 and the sampling rate is set to 20 seconds, the data is displayed every 40 seconds, and the displayed value is the average of the last 2 collected data.

[4] Sampling rate: The speed at which sensors collect data, with a default of collecting data every 20 seconds.

[5] Upload speed: The speed at which the most recent collected data is uploaded to the platform, with a default

upload of once every 240 minutes.

[6] Sensor alarm delay: determines whether the sensor enters/exits the alarm state. For example, in the default value state, when the measured value touches the alarm range twice in a row, the alarm is executed, and when it does not touch the alarm range twice in a row, the alarm state is exited.

* Replace the battery steps: The battery compartment can be opened by rotating the back cover anticlockwise. After replacing the battery, close the back cover and turn clockwise to lock the back cover to achieve waterproof effect;

IV. After-sales service

1. All orders of our products are guaranteed for one year;

2. If the product fails within the warranty period, it is a quality problem detected by the company, and the company shall bear all the maintenance costs;

3. Failure to follow this manual or disassemble of the product, resulting in damage to the components or pressure diaphragm, is not covered by the product warranty.

4. Please contact our company to confirm the repair after product failure. Please attach the following information:

a. Product failure phenomenon;

b. Description of the product using site environment;

c. Delivery address and contact information;