PM450 Series Wireless Pressure / Pressure & Temperature Transmitter

V.26.05

MAIN FEATURES

- Wireless transmission without single point wiring
- One-key switch function + timer switch function
- Data interface and material can be customized
- Battery powered, can work in the wild environment

OVERVIEW

PM450 wireless pressure / pressure & temperature transmitter is suitable for pressure/temperature monitoring of petroleum 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. It has built-in high-precision sensor, which can accurately display the measured data in real time, and has the characteristics of long-term stability. It is equipped with large-scale HD LCD display and built-in MCU. With mature Lora/4G/IOT network, the on-site pipeline pressure & temperature are uploaded to the data center.
Or, it is can be matching with wireless switching device, which can convert many wireless signals into MODBUS standard signals and transmit them through Ethernet or serial port.

SPECIFICATION

Measured medium	Liquid / gas / oil and 316 stainless steel compatible media			
Range	-0.1MPa...0kPa~10kPa...100MPa		-30 ° C ~ 300 ° C (or customized)	
Overload capability	≤ 2 times (<10MPa); ≤ 1.5 times (≥ 10MPa)			
Accuracy	0.1% (custom), 0.25% (typical), 0.5% (maximum)			
Long-term stability	±0.1%FS/year (typical), ±0.2%FS/year (maximum)			
Working environment	temperature: -20 ° C ~ 75 ° C , humidity: ≤ 95% RH			
Display	5-digit LCD			
Power supply	3.6 VDC Lithium-ion battery (38Ah) or solar rechargeable battery (8000mAh)			
Process interface	Customized according to customer requirements (refer order guide)			
Protection level	IP65, IP67			
Explosion-proof grade	Ex II 1G Ex ia da op is IIC T4 Ga			
Reporting period	30 seconds to 24 hours can be set			
Upload information	pressure, temperature, signal strength, battery power, etc.			
Wake-up mode	key-press wake-up, timing wake-up			
Battery life	1～3 years (related to data upload interval)			
Communication signal	Lora(Semtech)	Lorawan	NB-IOT	4G
Transmission distance	Sight distance 1000m	Sight distance 3-5KM	Unlimited (depends on base station signal coverage)	
Configuration method	serial port, button, gateway configuration	serial port, button, gateway configuration	serial port configuration, button configuration	
Communication protocol	PetroChina A11 (other protocols customized)	ME6001LW(other protocols customized)	LwM2M, TCP, MQTT	
Power	≤150mW	≤50mA@3.6V DC	<20uA in sleep mode	
Signal frequency band	Default 433Mhz (915Mhz, 868Mhz,	All ISM bands from 150MHz to 960MHz	Band 3/5/8	
SIM card	-	-	Mobile, Telecom, China Unicom	
Data platform	-	-	Mobile OneNET (More platform protocol customized)	

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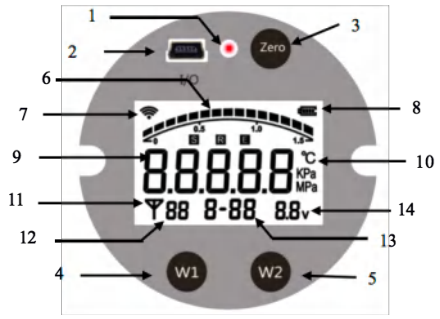
PANEL INTRODUCTION



Code	Description	Code	Description
1	Over-range alarm indicator, flashes when the real-time engineering value is over	8	Battery level indicator
2	Debug interface	9	Real-time engineering values
3	Clear button	10	Engineering value unit
4	Function button 1	11	Wireless signal indication
5	Function button 2	12	Wireless channel indication
6	Engineering value full scale percentage	13	Group number and number
7	Wireless signal strength indicator	14	Battery voltage

DISPLAY HEAD TYPES

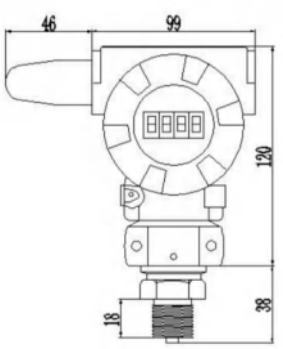
Picture	Signal type	Modify parameters	Default functions(customizable)
	Lora	Through USB cable	Reporting cycle: ≥1 min Frequency: 410~441MHz, 850~950MHz Transmission distance: ≤1000m Alarm function: Available
	Zigbee	Through USB cable	Reporting cycle: ≥1 minute Frequency: 2.4 GHz Transmission distance: ≤150 m Alarm function: Available
	NB-IOT	Through USB cable	Reporting cycle: ≥1 minute Transmission distance: Unlimited Alarm function: Available
	4G（TCP/MQTT）	Through USB cable	Reporting cycle: ≥1 minute Transmission distance: Unlimited Alarm function: Available
	4G（MQTT）	Through Bluetooth	Reporting cycle: ≥1 minute Transmission distance: Unlimited Alarm function: Available
	4G（MQTT）+GPS	Through Bluetooth	Reporting cycle: ≥1 minute Transmission distance: Unlimited Alarm function: Available
	LoRaWan	Through Bluetooth	Frequency: 410~441MHz, 850~950MHz Transmission Distance: ≤1000m Alarm Function: Available

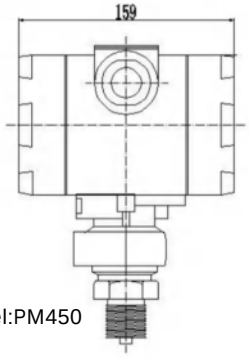
BATTERY TYPES & FEATURES

Picture	Battery type	Specification	Estimated battery life
	Disposable batteries	Voltage: 3.6V Capacity: 38000mAh(default) Max. Continuous discharge: 300mA Max. Pulse discharge current: 600mA	Data collection frequency different, battery life different. For reference: 1 minute (60 seconds) = estimated 1-2 years 5 minutes (300 seconds) = estimated 2 years Working environment, time, power consumption loss will also affect the battery life. Please refer to the actual usage time for details.
	Solar panel + rechargeable battery	Voltage: 3.6V Capacity: 8000mAh(default) Solar panel dimensions: 104*140 mm, output: 6V/ 320mA	*An 8000mAh solar cell, without sunlight, with data uploaded in 1 minute, has an estimated lifespan of half a month. *An 8000mAh battery would take 2.5 days to fully charge under strong sunlight (calculated based on peak current).

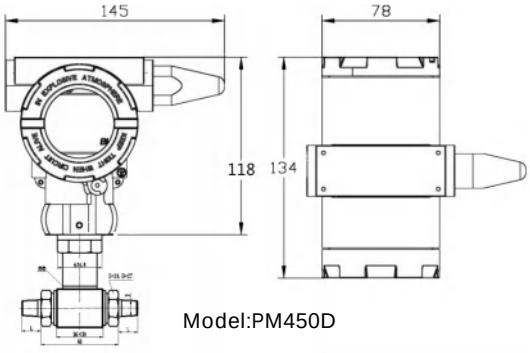
TYPICAL DIMENSION

Unit: mm

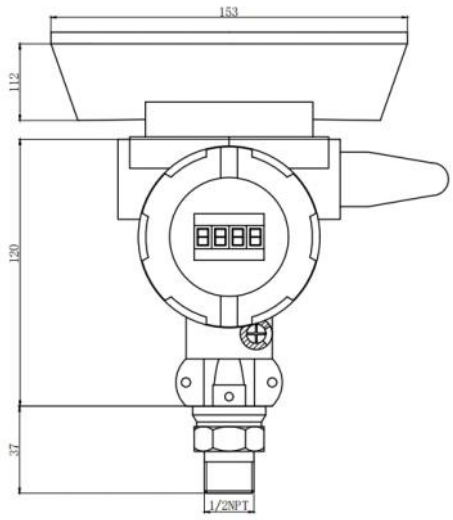




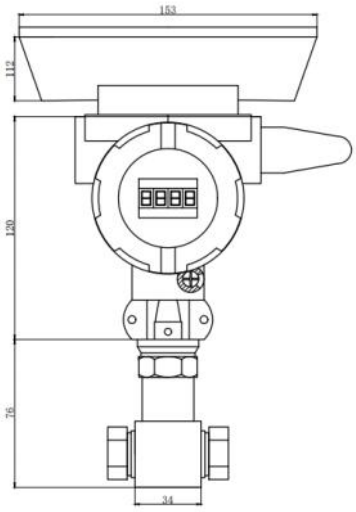
Model:PM450



Model:PM450D



Model:PM450S



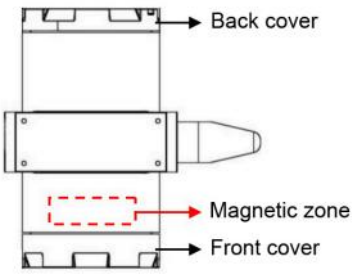
Model:PM450DS

*Remark: The dimension for reference only; the final size may vary depending on the order parameters, like thread size.

INSTALLATION NOTES

1. Make sure that the pressure measurement range required by the process is consistent with the pressure transmitter to be installed.
2. The thread specifications of the connector for process installation must be matched with the wireless pressure transmitter.
3. When installing the pressure transmitter on the pipeline, first close the pipeline valve (needle valve or gate valve) where the pressure transmitter is to be installed, and then screw the transmitter directly into the upper port of the valve. After installation, open the valve to confirm that there is no leakage, that is, the installation is qualified.
4. After the Lora product is installed, place the magnet in the magnetic induction area of the transmitter as shown in the figure below and stay for 6 seconds. After the screen flashes once (indicating that the power has been reset), the product will reconnect with the gateway and synchronize related parameters.

Note: After the gateway parameters are modified and saved, a magnet must be used to reset the product once to ensure that the relevant parameters are synchronized in time.



ORDER CODE

Code:	A	–	B	–	C	–	D	–	E	–	F	–	G
Model:	PM450	–	G	–	0-50bar	–	S	–	L	–	G 1/2	–	4G

Model	Code A
Wireless pressure transmitter	450
Pressure type	**Code B**
Disposable battery type - Pressure	-
Disposable battery type -Differential pressure	D
Disposable battery type - Pressure & temperature	C
Solar power type - Pressure	S
Solar power type - Differential pressure	DS
Solar power type - Pressure & temperature	CS
Pressure Range(X=specific range)	**Code C**
-0.1MPa ~100MPa	X MPa
-1Bar ~1000Bar	X Bar
-15psi ~15000psi	X psi
Accuracy	**Code D**
0.1% (custom)	C
0.25%(typical)	T
0.5%(standard)	S
Interface material	**Code E**
316L	L
304	S3
Other customized	C

Process connection	Code F
G1/2	G1/2
M20*1.5	M20
G1/4	G1/4
G1/8	G1/8
1/2NPT	1/2NPT
1/2PT	1/2PT
3/8PT	3/8PT
3/8NPT	3/8NPT
1/4NPT	1/4NPT
1/4PT	1/4PT
1/8NPT	1/8NPT
More customized	C
Output signal	**Code G**
NB-IOT	NB
Lora	LR
4G	4G
2.4G HART	HT
Lorawan	LRW
More customized	C

Remarks:
1. In order to improve the reliability of data transmission, it is recommended to use the antenna when installing on site.
In an open position.
2. When the product is installed in the field, please do the secondary protection of the product. The front and rear covers and sealing screws must be tightened and sealed.
3. Special requirements, use site conditions, please specify when ordering.