

ETT375 Wireless Communication Temperature Transmitter

Product Introduction



The ETT375 Wireless Communication Temperature Transmitter is part of the wireless monitoring system for oil and water wells, designed for temperature monitoring during production and transportation processes. It utilizes low-power wireless communication, eliminating the need for cable power, which simplifies installation and enhances safety and convenience.

Compatible wireless adapters can convert various wireless temperature signals into MODBUS standard signals for transmission via Ethernet or serial port, facilitating easy integration into measurement and control systems with extensive application possibilities.

The sensing element/rod of ETT375 is a thermistor or thermocouple, and it employs any of Zigbee/LoRa/4G/NB-IoT Protocol Module for Wireless Communication, the available measurement temperature range can be -60°C~450°C, the remote distance from 200m(ZigBee) to 1000m(LoRa).

The sensing element measures temperature directly, converting it into an electrical signal. This signal is then amplified and transformed into a digital signal by the transmitter board, which is sent to the host computer via the wireless module.

Highlight Features

- **Wireless:** Zigbee, LoRa, NB-IoT, 4G
- **Power Supply:** 3.6V Lithium Battery
- **Temperature Element:** Thermistor/Thermocouple
- **LCD Display:** For Temperature/Battery value
- **LED Indicator:** For Resetting/Setting/Network/Data Collection
- **Field Installation:** Connecting via connector/adaptor with Pipeline Valve
- **Direction Adjusting:** Available
- **Ingress Protection:** IP66-68
- **Waterproof:** Fully sealed waterproofing
- **Ex-Proof:** Intrinsically Safe Circuit

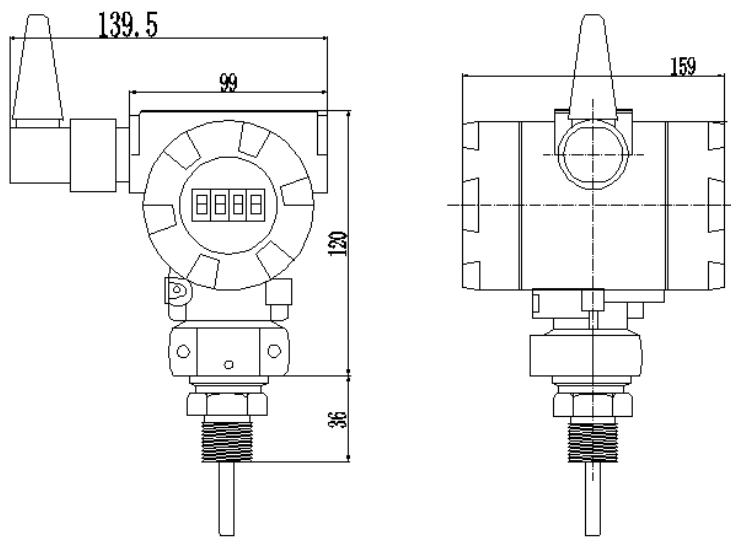
Applications

- Oil-water well
- Gasoline Monitor
- Petroleum
- Environment
- Pharmacy
- Health
- Protection
- Dairy

Technical Specification

Measure Medium	Liquid/Gas /Oil Liquid	Sensing Element	Thermistor/Thermocouple
Temperature Range	-60℃~450℃ (customization available)	Distance	200m(ZigBee)~1000m(LoRa)
Environment Temperature	-40℃~80℃ (customization available)	Power Supply	3.6V Lithium Battery
Measurement Error	±1.0℃	Battery Life	3-year
Upload Period	Between 1min to 1h	Ingress Protection	IP66-IP68
Decimal	0-2 (setting)	Ex-Proof	Ex d IIC T5 Gb
Signal Transfer	As per protocol	Working Humidity	≤97% RH
Transmitting Power	≤40mW	Net Weight	950g-1200g

Outline Drawing



Note for installation:

- 1. Ensure that the temperature range specified in the process requirements matches the temperature transmitter to be installed.
- 2. Insert the thread of casing into the pipeline to be measured and weld it securely, then screw the temperature transmitter into the casing.

LCD Display Instruction- in case of ZigBee

1	Overload alarming, LED indicator	9	Zigbee signal strength
2	I/O interface	10	Zigbee signal channel
3	Zero resetting	11	Temperature value
4	Calibration button 1	12	Temperature
5	Calibration button 2	13	Temperature scale indicator
6	Battery capacity indicator	14	Networking setup number
7	Battery voltage indicator		
8	Zigbee signal indicator		



Data Setting

Setting via operator (handheld programmer)

- 1) Select "Initialize" on the handheld programmer, enter the desired wireless channel, network ID, group number, and ID in the pop-up dialog, and press the "Set" button to save.
- 2) Place the magnet in the magnetic induction area of the wireless temperature transmitter for 6 seconds to reset the transmitter and retrieve parameters from the handheld programmer.
- 3) A "beep" sound from the handheld programmer indicates that the parameters of the wireless temperature transmitter have been successfully set.

Setting via buttons

- 1) Press the Zero button to enter parameter setting mode, displaying **【01】**.
- 2) Press the W2 button to enter the communication address setting state. The digit to be changed will flash. Press the W1 button to modify it, cycling through hexadecimal values from 0 to F. After selecting the desired digit, press the W2 button to move to the next position. Once the highest position is set, press the W2 button to automatically exit address setting and move to the next parameter setting item **【02】**.
- 3) Press the W1 button to switch between parameter setting items. After making modifications, to activate the parameters, you must press the W1 button to switch to setting item **【99】**, then press the W2 button to enter the setting and change its value to 1111. After setting, press the W2 button to confirm; the instrument will automatically restart, and the new parameters will be saved.
- 4) If you do not enter setting item **【99】**, the previously modified parameters will not take effect, and the settings will automatically exit after a key timeout.

Parameter description list

【01】	Enables the specified target Zigbee address, default is 0	【06】	Instrument Zigbee address, default is 0xffff, assigned by the coordinator
【02】	Target Zigbee address, effective after 【01】 is enabled	【07】	Group number and ID
【03】	Regular data waiting response time	【08】	Maximum sleep time
【04】	Zigbee channel, calculated from the well name minus 11	【99】	Save parameters; setting to 1111 is valid
【05】	Zigbee network ID		

Note: All set values are in hexadecimal (HEX) code.

Troubleshooting

Problem		Analysis		Solution	
1	No display	1	Battery exhausted.	1	Replace with a new battery
2	Host computer receives no data	2	Wireless parameters are inconsistent	2	Set the instrument's wireless channel and ID to match the host computer.
3	Temperature value is inaccurate	3	No thermal oil in the outer casing	3	Add thermal oil to the outer casing where the transmitter is installed.

Note: Please refer to the table above for regular troubleshooting. If the problem still exists, please contact the manufacturer.

Ordering Procedure

ETT375		In-Line Smart Temperature Transmitter				
Code		Wireless Communication Protocol				
ZB		Zigbee Wireless				
LR		LoRa				
NB		NB-IoT				
4G		4G				
Code		Rang of Temperature				
1		-60℃~450℃	0	Others		
2		-40℃~350℃				
3		-40℃~200℃				
4		-30℃~150℃				
5		-10℃~200℃				
Cod		Accuracy				
A0		0.1% (Customized)				
A1		0.25% (70kPa~60Mpa)				
A2		0.5% (5kPa~35Mpa)				
Code		Construction Materials				
			Cast	Diaphragm Isolating	Fill	
12		CS	SS304	SS316L	Silicone	
14		CS	Cast Aluminium	SS316L		
22		SS316L	SS316L	SS316L		
23		SS316L	SS304	Hastelloy Alloy C		
24		SS316L	Cast Aluminium	Monel		
25		SS316L	SS304	Tantalum		
Code		Process Connection				
M		M20*1.5				
G2		G1/2				
R2		R1/2				
N2		NPT1/2				
Code		Options				
M4		LCD Digital Meter				
M5		LED Digital Meter				
Da		Explosion-Proof ExdsII BT5				
Fa		Intrinsically Safe ExialI CT5				
ETT375	LR	5	A2	22	M	M4 Da Fa

Note:

- Do not use the USB interface for debugging during battery operation.
- Consult the manufacturer for compatibility of sealing ring materials with the measured medium.
- To improve data transmission reliability, please install the antenna in an open area.
- When installing outdoors, ensure secondary protection; tighten and seal the front and back covers and sealing screws.
- For high-temperature models in ETT375 series, ensure proper ventilation around the heat sink.
- The EST375 series pressure gauge products with a range up to 3MPa have ventilation holes or cables; keep them clear to maintain testing accuracy.