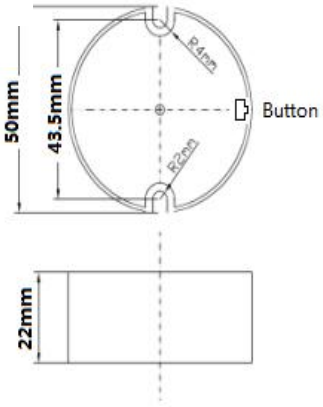
Low Power Consumption Wireless Temperature Sensor

1.Overview

1.1 Features

- Install and play, starting by pressing a key
- Built-in battery and battery replaceable by user
- Wireless router can expand transmission distance;
- Brief and clear ASCII code output.

1.2 Applications



It can be used in environmental monitoring, medical and health care, energy and chemical industry, storage and transportation, refrigeration and cold chain, constant temperature and humidity production workshop, office space and other fields.

1.3 Description

XZ-TP10 is a terminal of wireless temperature sensor with low power consumption; can also made with probe. Adopting digital sensors, battery-powered, periodic detection of ambient temperature, and active reporting of the test data. With the function as following: active power consumption control, battery voltage detection, wireless frequency hopping.

2.Data Protocol

The XZ-TP10 sensor data is encrypted and transmitted, and then the XZ-TAG series gateway analyzes and outputs data protocol.

ID=xxxxxxxx,TEP=±xx.x·C,HUM=xxx.x%,S=0xxxxxxx,V=x.xxV,SN=xxx,RSSI=-xxxdBm

ID=xxxxxxxx,TEP=±xx.x·C,HUM=xxx.x%,S=1xxxxxxx,V=x.xxV,SN=xxx,RSSI=-xxxdBm,RPRI=-xxxdBm

ID: Address data is number 0~9 of 8-bit ASCII;
TEP: Temperature data is ACSII's -40.9~ +80.9. "℃"is ACSII's "."and "C".
HUM: Humidity data is ACSII's 000.0 ~ 100.0. The humidity data of XZ-TP10 is always 000.0;
Status word is number 0~1 of 8-bit ASCII;

Flag bit	Explanation
Bit7	0,host receives data directly； 1, Forward data through repeater.

Bit6~bit1	Reserved
Bit0	0, Report data normally;1, Report data by pressing button and triggering

V: The data of voltage is actual value, unit is “V”;

SN: Serial number of the transmitted data. The serial number of the frequency hopping will be increased when there is data hopping.

RSSI: Received signal strength indicator. The signal will be weaker when the value is smaller.

RPRI:The signal strength of the repeater forwarding data

Example：

ID=12345678,TEP=+26.6·C,HUM=000.0%,S=00000000,V=3.60V,SN=120,RSSI=-070dBm

ID=34562345,TEP=-20.5·C,HUM=050.5%,S=10000001,V=3.30V,SN=214,RSSI=-080dBm，RPRI=-78dBm

3. Product parameter

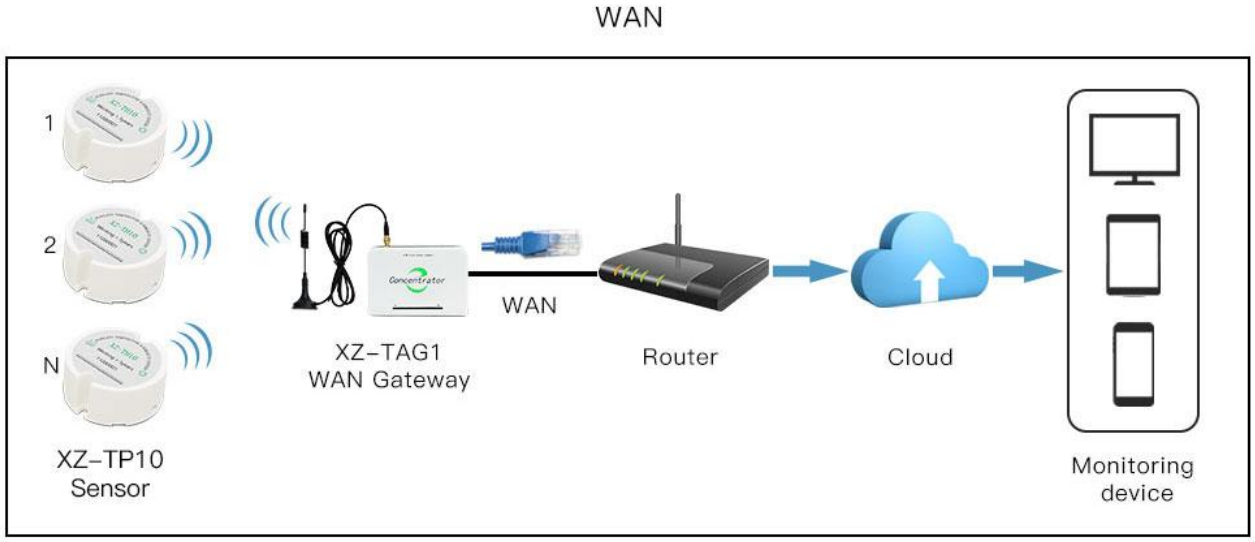
Working Frequency	433mhz MHz，868mhz,915mhz,925mhz
TX Power	<10dBm
Sensitivity	<-112dBm
TX Current	<60mA
RX Current	<40mA
Power Supply	1pc ER14250 Li-SOCI2 battery (replaceable and included)
Transmission Distance	>500meters(in open place）
Temperature Range	-40℃～80℃
Temperature Accuracy	<+0.3℃（0℃～65℃）&<+1℃（<0℃,>65℃）
Probe Temperature Range	-45℃～125℃
Probe Temperature Accuracy	<±0.5℃（-10℃～85℃）& < ±1℃（<-10℃,>85℃）
Acquisition cycle	5 minutes default,1-60mins settable
The average power consumption	<15uA
Operating temperature	-40℃～+80℃
Operating lifespan	>5years @ 1000mAH

3.Five Types Gateway for choosing

3.1 RJ45 Network Gateway XZ-TAG1

- ●Install and use; DC power supply;
- ●Dynamic and static IP, adaptive public netwo
- ●Automatic routing to adapt to repeaters;
- ●Wireless transmission more than 500meters;
- ●Centralized acquisition, multimode sensor.
- ●One gateway can work with more than 100pcs sensors

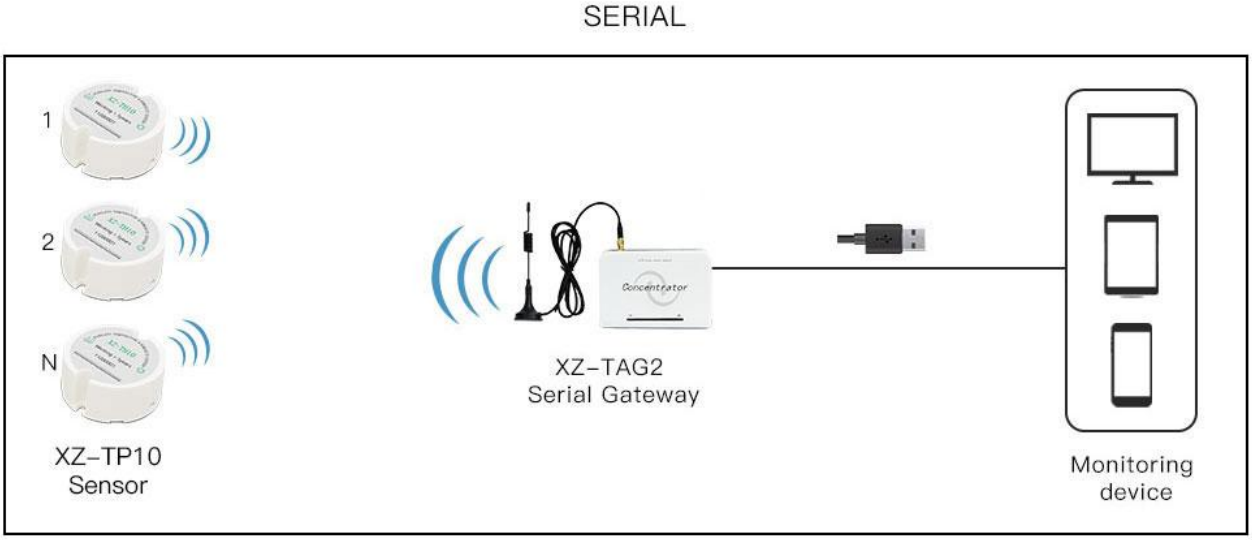
Basic parameters		Network Parameters		Wireless Parameters	
Working voltage	DC: 5V	Wired network:	RJ45	Working frequency	Working frequency:433Mhz （868/915mhz customized）
Working current	<1A	Communication Method	TCP/IP	Receive sensitivity	-112dBm
Working Temperature	-40～80℃	Parameters Configuration	Serial port configuration IP or domain name	Transmission distance	500meters (LOS)



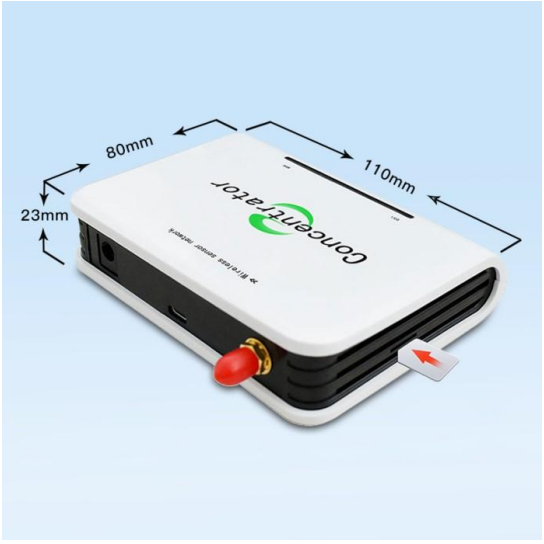
3.2 USB Serial Gateway XZ-TAG2

- Install and use; DC power supply;
- Micro USB to serial port,115200bps;
- Automatic routing to adapt to repeaters;
- Wireless transmission more than 500meters LOS;
- Centralized acquisition, multimode sensor.
- One gateway can work with more than 100pcs sensors

Basic parameters		Serial Port Parameters	Wireless Parameters	
Working voltage	DC: 5V	Micro USB to serial port	Working frequency	Working frequency:433Mhz (868/915mhz customized)
Working current	<1A	115200bps	Receive sensitivity	-112dBm
Working Temperature	-40～80℃	8N1	Transmission distance	500meters (LOS)



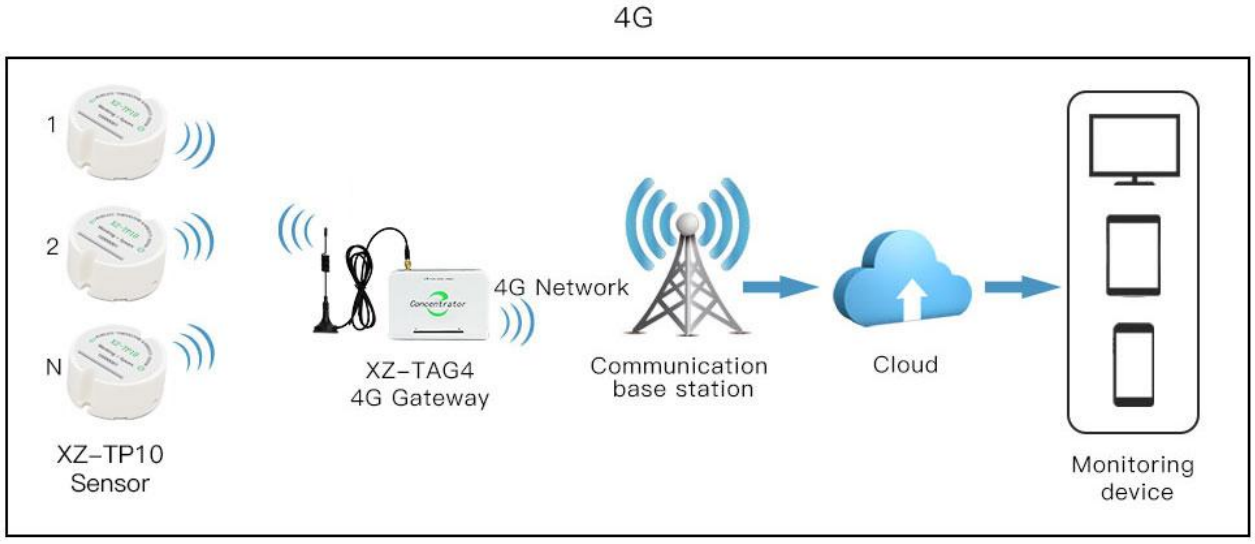
3.3 4G Gateway XZ-TAG4



- Install and use, DC power supply;
- Support full netcom,4G/3G/2G
- Automatic routing, adapting to repeaters;
- Wireless transmission, more than 500meters LOS
- Centralized acquisition, multi-mode sensor.
- Working on hopping frequency, Strong anti-interference ability
- One gateway can work with more than 100pcs sensors

Product Parameters:

Basic parameters		Network Parameters		Wireless Parameters	
Working voltage	DC：5V	All Netcom	4G/3G/2G	Working frequency	Workingfrequency:433Mhz （868/915mhz customized）
Working current	<1A	Communication Method	TCP/IP	Receive sensitivity	-112dBm
Working Temperature	-40～80℃	Parameters Configuration	Serial port configuration IP or domain name	Transmission distance	500meters (LOS)



3.4 Modbus Gateway XZ-SRM-MUS

XZ-SRM-MUS can receive lora sensor data and store it into the corresponding configured space then read out from the serial port through the MODBUS protocol

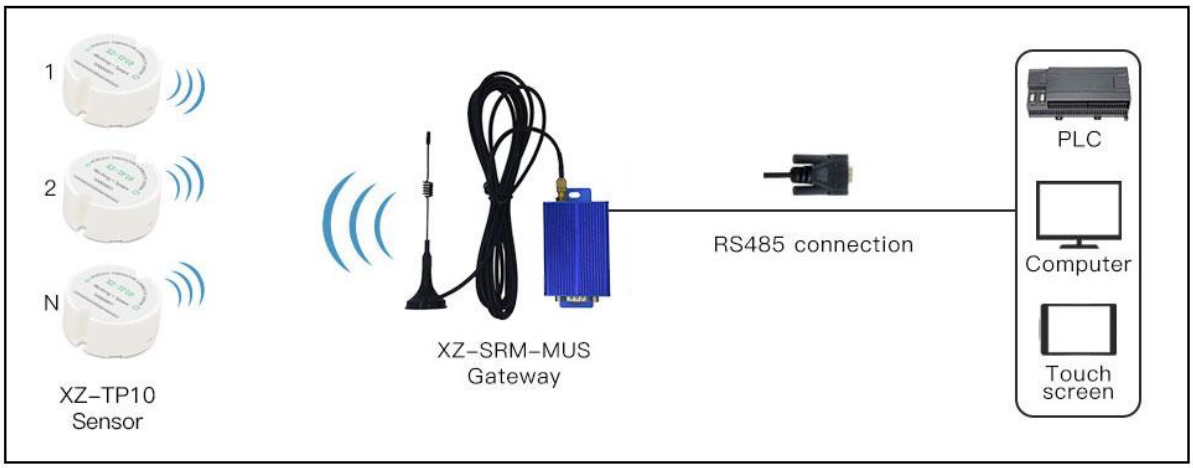
One Modbus gateway can work with 30pcs sensors

Product parameter

Working Frequency	433MHz/868MHz/915MHz/925mhz
Transmit Power	<10dBm
Sensitivity	<-112dBm
Transmit current	<60mA
Receiving current	<40mA
Working Voltage	5V@XZ-SRM-MUS (5-36v customized)
Transmission distance	>500meters(Line of sight)
Working temperature	-40℃～+80℃
Interface	9600bps,8N1, RS485

Pin	Definition	Description	Level	Connect to terminal	Remark
1	VCC	Ground for power supply	5.0V		+4.5～5.5V
2	RxD/RS-232	Data input	RS-232 Level	TxD/RS-232	+4.5～5.5V
3	TxD/RS-232	Data output	RS-232 Level	RxD/RS-232	
4	GND	Ground for power supply	GND	Ground for power supply	
5	GND	Signal ground	GND	Signal ground	
6	A/RS485	RS485 Signal+	RS-485 Level	A/RS485	Customized in factory
7	B/RS485	RS485 Signal-	RS-485 Level	B/RS485	
8	NC	None connect			
9	NC	None connect			

MODBUS


1
2
N
XZ-TP10
Sensor
XZ-SRM-MUS
Gateway
RS485 connection
PLC
Computer
Touch
screen