Lora Wireless Temperature Humidity Sensor XZ-DS01-TH2C

1.Product Overview

1.1Feature

- Install and work, with LCD display;
- Cycle detection, cycle can be set
- Automatic registration, adapt to the concentrator;
- Automatic routing, adapt to repeater;
- Battery powered and replaceable;
- wireless transmission up to 5km
- Pressing-key setting, give an alarm when exceeding threshold value;
- Centralized acquisition, multi-mode output.

1.2Application

- environmental and meteorological monitoring
- medical and health care
- energy and chemical industry
- storage and transportation
- refrigeration and cold chain
- production workshop

1.3 Sensor Data Protocol

Example：GW_ID:45658,TYPE:T&H,ID:1100001002,STAT:00000001,T:24.0℃,H:92.8%,ST:30M,V:3.50v,

SN:109,RSSI:-106dBm,E:160.2020,S:110.2020,Time:2018-2-4 14:20:39,T_RSSI:-91dBm

Explain：

GW_ID: Gateway ID （45658）	TYPE: T&H（temp&humidity sensor）	ID:sensor address（1100001002）
STAT: sensor status word BIT7=1 trigger and report; BIT6= 0CH,1CH; BIT5=1 repeater; BIT4=1 invalid data; BIT3= reserve; BIT2=1 searching for network; BIT1=0, low speed,1high speed; BIT0=1start		

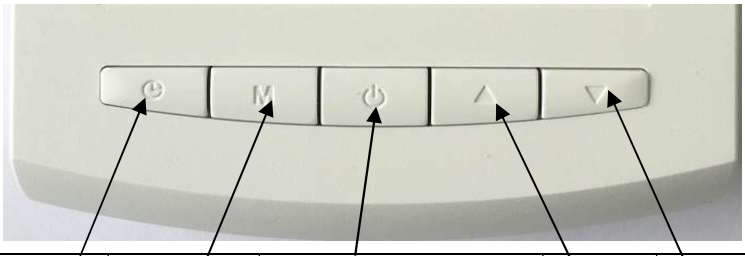
T:environmental temperature 24.0℃	H: environmental humidity 92.8%	ST: reading time interval 30mins
V: battery voltage 3.50V	SN: sending serial No. 109	RSSI: wireless signal strength -106dBm
East longitude E: 160.2020, Northern latitude N:110.2020		Time: 2018-2-4 14:20:39
T_ RSSI: sensor receiving signal strength -91dBm		

1.4 Technical parameter

Sensor parameter	Basic Parameter
Temperature Accuracy:<±0.3℃（0℃～65℃）& < ±1℃（<0℃,>65℃）	Working frequency:476.505 & 488.505MHz（frequency can be customized）
Humidity Accuracy:<±3% (10% -90%) & <±4.5% (<10%, >90%)	Transmitting power:<17dBm
Acquisition cycle:5mins default,5～240mins settable by user	Transmitting current:<120mA
Working temperature:-40～80℃	Transmission distance:>5KM(LOS)
Power supply:3pc AA Li- -SOCI2 battery (replaceable but not included) Battery Life:18months@2000mAH	

2.Using Instruction

2.1 Key Setting Function



Key No. 1	Key No. 2	Key No.3	Key No.4	Key No. 5
Clock set	Mode switch	Trigger set/Setting bit switch	Value +	Value -

2.1 Key-setting function Instruction

Key	Definition	Description

Key No.3	Trigger set/setting bit switch	After power-up, short press this key to enter setup mode, LCD backlight will light up. If no other key is pressed within 4 seconds, it will automatically exit the setting mode and trigger the wireless data transmission. In setting the alarm threshold mode, pressing this key will switch the high and low bits of the value. In the clock setting mode, the clock's minutes and seconds can be switched and the threshold value can be quickly set.
Key No.2	Mode switch	In the setting mode, short press the key will cycle into following setting scenario: the upper temperature threshold, the lower temperature threshold, the temperature alarm back-off value, the humidity upper threshold, the humidity lower threshold, and the humidity alarm back-off value. In any of these scenarios, various thresholds can be quickly set by pressing key No. 3, No. 4 and No.5
Key No.4	Value +	Temperature plus/minus sign bit/ increment of selected value (0~9)
Key No. 5	Value -	Temperature plus/minus sign bit/decrement of selected value (0~9)
Key No. 1	Clock set	In the setting mode, enter the clock setting function, the clock is 24 hours

2.3 Key setting temperature upper/lower threshold, humidity upper/lower threshold, temperature alarm back-off value, humidity alarm back-off value, real time clock

2.3.1 Key setting temperature or humidity upper limit alarm threshold

- Setting step 1: Press key No.3 shortly to enter key setting mode. At this time, the LCD backlight is lit.
- Step 2: Shortly press key No.2 to switch the setting items. The positive/negative sign of the temperature/humidity upper limit alarm value starts to flash, and the upper triangle mark appears.
- Step 3: Shortly press key No.3 to quickly switch the ten, one, and decimal places of the set value.
- Step 4: Shortly press key NO.4 or key No.5 to increase/decrease the set value.

2.3.2 Key setting temperature or humidity lower limit alarm threshold

- Setting step 1: Press key No.3 shortly to enter key setting mode. At this time, the LCD backlight is lit.
- Step 2: Shortly press key No.2 to switch the setting items. The positive/negative sign of the temperature/humidity upper limit alarm value starts to flash, and the lower triangle mark appears.
- Step 3: Shortly press key No.3 to quickly switch the ten, one, and decimal places of the set value.
- Step 4: Shortly press key No.4 or key No.5 to increase/decrease the set value.

2.3.3 Key setting the temperature or humidity alarm return threshold

- Setting step 1: Press key No.3 shortly to enter key setting mode. At this time, the LCD backlight is lit.
- Step 2: Shortly press key No.2 to switch the setting items. The tens digit of the temperature/humidity alarm back-off threshold starts to flash, and the up/down triangle mark appears.
- Step 3: Shortly press key No.3 to quickly switch the ten, one, and decimal places of the set value.
- Step 4: Shortly press key No.4 or key No.5 to increase/decrease the set value.

2.3.4 Key setting the real-time time

- Setting step 1: Press key No.3 shortly to enter key setting mode. At this time, the LCD backlight is lit.
- Setting step 2: Shortly press key No.1 to enter the clock setting mode, and tens digits of the hour flash.
- Setting step 3: Shortly press key No.3 to quickly switch the tens digits and units digit of the set value.
- Setting step 4: Shortly press key No.4 or key No.5 to increase/decrease the set value.

3. Four Types Gateway for choosing

3.1 RJ45 Network Gateway XZ-DSG1

●Install and use; DC power supply;

●Dynamic and static IP, adaptive public network;

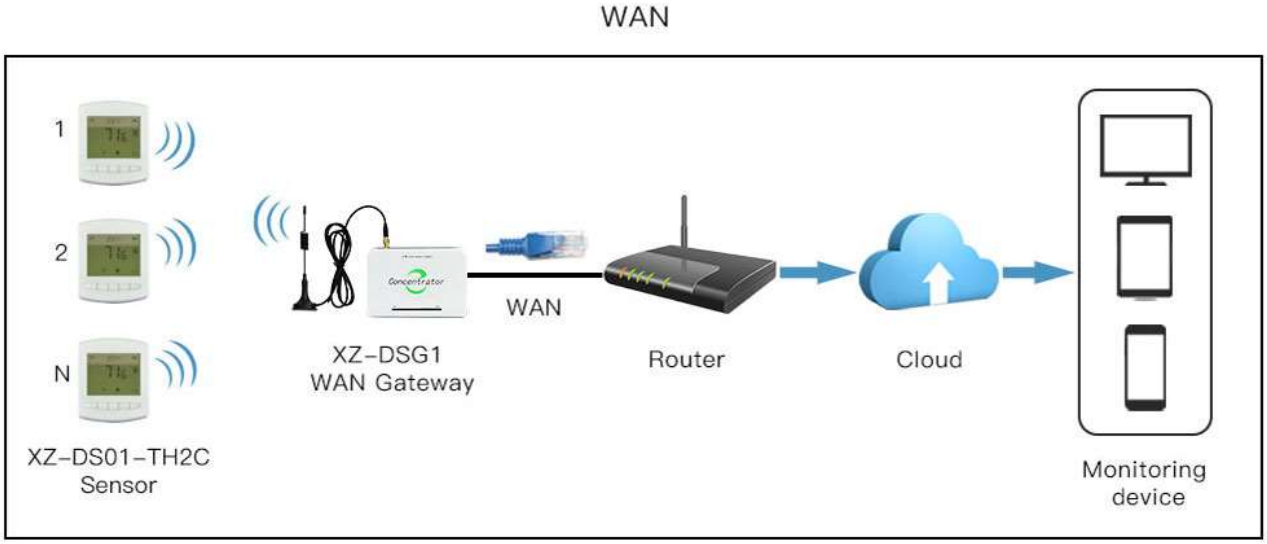
●Automatic routing to adapt to repeaters;

●Wireless transmission more than 5km;

●Centralized acquisition, multimode sensor.

●One Gateway can work with more than 100pcs sensors

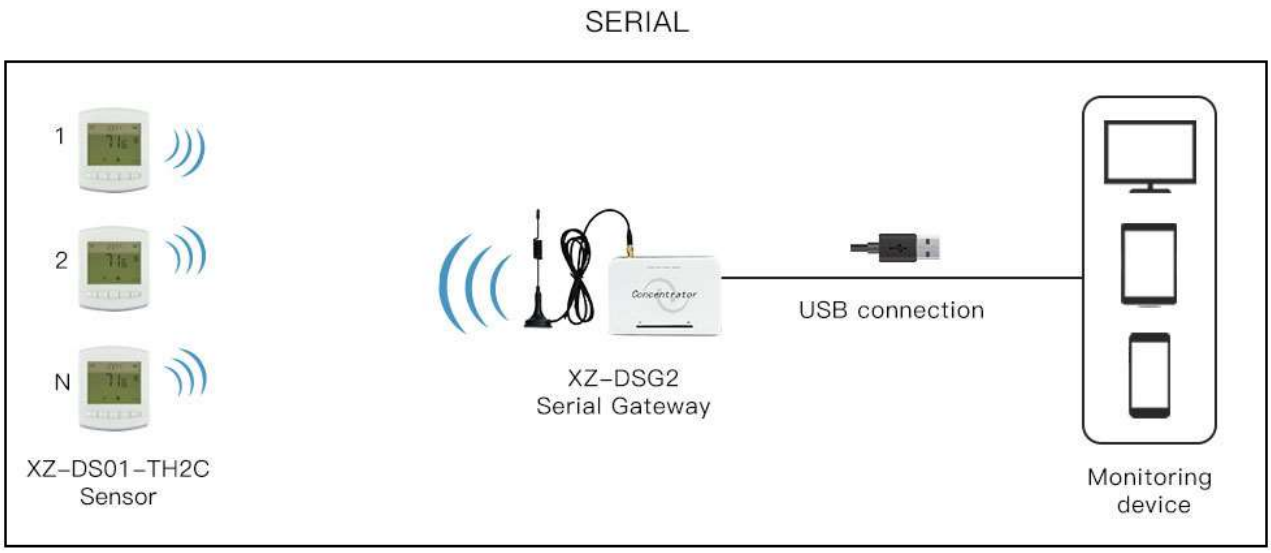
Basic parameters		Network Parameters		Wireless Parameters	
Working voltage	DC：5V	Wired network:	RJ45	Working frequency	Working frequency:470Mhz （433/868/915mhz customized）
Working current	<1A	Communication Method	TCP/IP	Receive sensitivity	-136dBm
Working Temperature	-40～80℃	Parameters Configuration	Serial port configuration IP or domain name	Transmission distance	5KM (LOS)



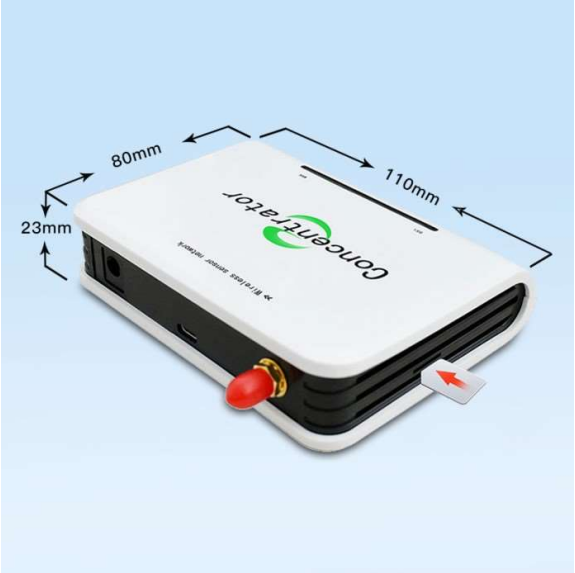
3.2 USB Serial Gateway XZ-DSG2

- Install and use; DC power supply;
- Micro USB to serial port,9600bps;
- Automatic routing to adapt to repeaters;
- Wireless transmission more than 5000m;
- 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:470Mhz （433/868/915mhz customized）
Working current	<1A	9600bps	Receive sensitivity	-136dBm
Working Temperature	-40～80℃	8N1	Transmission distance	5KM (LOS)



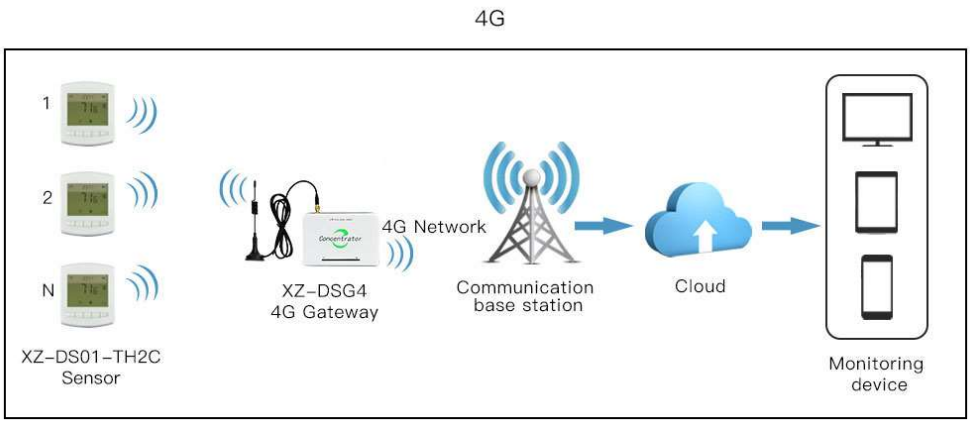
3.3 4G Gateway XZ-DSG4



- Install and use, DC power supply;
- Support full netcom,4G/3G/2G
- Automatic routing, adapting to repeaters;
- Wireless transmission, more than 5KM Line of sight;
- 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	Working frequency:470Mhz (433/868/915mhz customized)
Working current	<1A	Communication Method	TCP/IP	Receive sensitivity	-136dBm
Working Temperature	-40～80℃	Parameters Configuration	Serial port configuration IP or domain name	Transmission distance	5KM (LOS)



3.4 Modbus Gateway XZ-DS-MUS

XZ-DS-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 Gateway can work with 30pcs sensors.

Product parameter

Working Frequency	433MHz/470MHz/868MHz/915MHz
Transmit Power	<18dBm
Sensitivity	<-128dBm
Transmit current	<120mA
Receiving current	<40mA
Working Voltage	5~36V @ XZ-DS-MUS
Transmission distance	>2KM(Line of sight)
Working temperature	-40℃～+80℃
Interface	9600bps,8N1, RS485

XZ-DS-MUS Pin Definition

	Pins	XZ-DS-MUS	Remark
DB9male connector	1	VCC (+5V)	5 ～ 36V customized
	2	RS-232/RXD	
	3	RS-232/TXD	
	4	GND	Power Ground
	5	AGND	Signal grounding
	6	RS-485/A	
	7	RS-485/B	
	8		
	9