

XZ-DSD Serial Wireless Sensor Manual

In this dynamic and ever-changing world, people have increasingly high demands for their lives and production. The application of wireless sensor technology is transforming our way of life, bringing us smarter and safer environments. The XZ-DSD series of wireless sensor products not only possess high-precision measurement capabilities but also feature stable and reliable data transmission and real-time monitoring functions.

Whether it's home security, industrial production, or commercial environments, they can meet your sensing needs.



1、XZ-DSD Features

- Temperature, Humidity, Air pressure, CO2, CO multiple types are available;
- Wireless transmission without construction debugging, Out of the box ;
- 3pcs AA batteries can work more than 1 year;
- Multi-parameter background can be set, flexible application;
- To report the response, the gateway caches a large capacity to ensure data integrity;
- Open gateway protocol, API interface, cloud platform and other multi-mode access.

2、XZ-DSD Application

- Smart home, smart office, smart factory;
- Laboratory, incubator, bright kitchen stove;
- Cold storage cold chain, planting and breeding;
- Libraries, museums, campuses;
- Industrial sites and other fields.



3、XZ-DSD Sensor Parameters

Name	Model No.	Sensor	Range	Accuracy
Temperature & Humidity	XZ-DSD1-TH	Temperature	-20 ~ 65°C	<±0.2°C(0 ~ 65°C) & <±0.4°C(<0°C)
		Humidity	0 ~ 100%	<±2% (10~90%) & >±3.5% (<10%,>90%)
	XZ-DSD1-TH-L	Temperature	-40 ~ 80°C	<±0.2°C(0 ~ 65°C) & <±6°C(<0°C,>65°C)
		Humidity	0 ~ 100%	<±2% (10~90%) & >±3.5% (<10%,>90%)
Air pressure	XZ-DSD1-THA	Air pressure	260-1260mbar	±0.1mbar (P = 800 - 1100 mbar T = 25 °C)
CO2	XZ-DSD1-CO2A	CO2	0~25 vol%	0.5 vol% + 3% measured value
			0~100vol%	1vol% + 3% measured value
	XZ-DSD1- CO2C	CO2	400-5000 ppm	±(50 ppm + 5% of reading)
CO	XZ-DSD1- CO	CO	0~1000ppm	±5%

4、XZ-DSD General Parameters

XZ-DSD General Parameters			
Frequency	470MHz、868MHZ、915MHZ	Communication	Lora private protocol
Transmitting Power	<17dBm	Transmitting Current	<120mA
Transmissio	<3KM (LOS)	Power supply	3pcs AA batteries

n Distance			
Battery Lifetime			
Name	Model No.	Lifetime	
Temp&RH	XZ-DSD1-TH	>12 months@5mins (3pcs AA batteries, 2000mAH)	
Air pressure	XZ-DSD1-THA	>12months@5mins (3pcs AA batteries, 2000mAH)	
CO2	XZ-DSD1-CO2A	>8months@30mins (3pcs AA batteries, 2000mAH)	
CO	XZ-DSD1- CO	>6months@30mins (3pcs AA batteries, 2000mAH)	

5、XZ-DSD Sensor Selection

Name	Model No.			Measurement
	470MHZ	868MHZ	915MHZ	
Temperature & Humidity	XZ-DSD1-TH-4	XZ-DSD1-TH-8	XZ-DSD1-TH-9	TEMP & RH
	XZ-DSD1-TH-L4	XZ-DSD1-TH-L8	XZ-DSD1-TH-L9	Extra Probe
Air Pressure	XZ-DSD1-THA-4	XZ-DSD1-THA-8	XZ-DSD1-THA-9	Air Pressure, TEMP &RH
CO2	XZ-DSD1-CO2A-4	XZ-DSD1-CO2A-8	XZ-DSD1-CO2A-9	0-100%CO2, Air Pressure,TEMP &RH
	XZ-DSD1- CO2C -4	XZ-DSD1-CO2C-8	XZ-DSD1-CO2C-9	CO2、 Air Pressure、 TEMP &RH
CO	XZ-DSD1- CO -4	XZ-DSD1- CO -8	XZ-DSD1- CO -9	CO、 Air Pressure、 TEMP &RH

6、 XZ-DSD Sensor data protocol

6.1 XZ-DSD1-TH Temperature and Humidity sensor protocol

ASCII :

GW_ID:19660801,TYPE:T&H,ID:110000001,STAT:00000011,T:25.8°C,H:43.9%,STAT2:00000000,
ST:5M,V:4.58v,SN:55,RSSI:-76dBm,E:114.0552,N:22.3817,Time:2022-01-02 12:26:40,T_RSSI:-60dBm

JESON :

```
{ "ID": "110000001", "DSGID": "19660801", "TYPE": "T&H", "STATUS": "00000011", "TEMP": "25.8°C",
"HUM": "43.9%", "STATUS2": "00000000", "ST": "5M", "VOL": "4.58V", "SN": "55", "RSSI": "-76dBm",
```

"LONG": "E114.0552", "LAT": "N22.3817", "T_RSSI": "-60dBm", "TIME": "2022-01-02 12:26:40"}

Explain:

GW_ID: Collector ID (19660801)	TYPE: T&H (T&H sensor)	ID: Sensor address(110000002)
<p>STAT: sensor status word</p> <p>BIT7=1 Trigger reporting; BIT6= 0 CH, 1 CH; BIT5=1 Repeat; BIT4=1 Invalid data;</p> <p>BIT3=1 Reserve; BIT2=1 Data searching network; BIT1=0, Low speed, 1 High speed; BIT0=1</p> <p>Start</p> <p>STAT2: Sensor status word</p> <p>BIT7 BIT6 BIT5 BIT4 BIT3 Reserve;</p> <p>BIT2=1 Sensor sound and light alarm; BIT1=1, Setting data succeeded; BIT0=1 Sensor over threshold alarm sign</p>		
T: Environmental Temperature 25.5°C	H: Environmental Humidity 43.5%	ST:Acquisition interval 5mins
Eastern longitude E: 114.0552, Northern Latitude N:22.3817		RSSI: Signal strength-76dBm
T_RSSI: Sensor received signal strength-60dBm		Time:2022-01-02 12:26:40

6.2 XZ-DSD-THA Temperature, Humidity and Air pressure sensor protocol

ASCII :

GW_ID:19660801,TYPE:T&H,ID:110000002,STAT:00000011,T:25.5°C,H:43.5%,

P:1003mbar,STAT2:00000000,ST:5M, V:4.65v,SN:45,RSSI:-76dBm,E:114.0552,N:22.3817,Time:2022-01-02

12:26:40,T_RSSI:-60dBm

JESON :

```
{ "ID": "110000002", "DSGID": "19660801", "TYPE": "T&H", "STATUS": "00000011", "TEMP": "25.5°C",
"HUM": "43.5%", "PRES": "1003mbar", "STATUS2": "00000000", "ST": "5M", "VOL": "4.65V", "SN": "45",
"RSSI": "-76dBm", "LONG": "E114.0552", "LAT": "N22.3817", "T_RSSI": "-60dBm",
"TIME": "2022-01-02 12:26:40"
```

Explain:

GW_ID: Collector ID (19660801)	TYPE: T&H (T&H sensor)	ID: Sensor address (110000002)
<p>STAT: sensor status word</p> <p>BIT7=1 Trigger reporting; BIT6= 0 CH, 1 CH; BIT5=1 Repeat; BIT4=1 Invalid data;</p> <p>BIT3=1 Reserve; BIT2=1 Data searching network; BIT1=0, Low speed, 1 High speed; BIT0=1</p> <p>Start</p> <p>STAT2: Sensor status word</p> <p>BIT7 BIT6 BIT5 BIT4 BIT3 Reserve;</p> <p>BIT2=1 Sensor sound and light alarm; BIT1=1, Setting data succeeded; BIT0=1 Sensor over</p> <p>threshold alarm sign</p>		
T: Environmental Temperature 25.5°C	H: Environmental Humidity 43.5%	ST:Acquisition interval 5mins
Eastern longitude E: 114.0552, Northern Latitude N:22.3817		RSSI: Signal strength-76dBm
T_RSSI: Sensor received signal strength-60dBm		Time:2022-01-02 12:26:40

6.3 XZ-DSD1-CO2 CO2 Temperature Humidity and Air pressure Sensor protocol

ASCII :

```
GW_ID:19660801,TYPE:CO2,ID:120000003,STAT:00000011,CO2:410ppm,( CO2:20.5%,CO2_Para:16534,)
```

P:1003mbar,T:25.5°C,H:43.5%,STAT2:00000000, ST:60M, V:4.65v,SN:45,RSSI:-76dBm,

E:114.0552,N:22.3817, Time:2022-01-02 12:26:40, T_RSSI:-60dBm

JESON :

```
{"ID":"120000003","DSGID":"19660801","TYPE":"CO2","STATUS":"00000011","CO2":"410ppm",
("CO2":"20.5%","CO2_PARA":"16534"),)PRES":"1003mbar",TEMP":"25.5°C", "HUM":"43.5%",
"STATUS2":"00000000","ST":"60M","VOL":"4.65V","SN":"45","RSSI":"-76dBm",
"LONG":"E114.0552","LAT":"N22.3817","T_RSSI":"-60dBm","TIME":"2022-01-02 12:26:40"}
```

Explain:

GW_ID: Collector ID (19660801)	TYPE: T&H (T&H sensor)	ID: Sensor address (110000002)
<p>STAT: sensor status word</p> <p>BIT7=1 Trigger reporting; BIT6= 0 CH, 1 CH; BIT5=1 Repeat; BIT4=1 Invalid data;</p> <p>BIT3=1 Reserve; BIT2=1 Data searching network; BIT1=0, Low speed, 1 High speed; BIT0=1 Start</p> <p>STAT2: Sensor status word</p> <p>BIT7 BIT6 BIT5 BIT4 BIT3 Reserve;</p> <p>BIT2=1 Sensor sound and light alarm; BIT1=1, Setting data succeeded; BIT0=1 Sensor over threshold alarm sign</p>		
T: Environmental Temperature 25.5°C	H: Environmental Humidity 43.5%	ST:Acquisition interval 5mins
Eastern longitude E: 114.0552, Northern Latitude N:22.3817		RSSI: Signal strength-76dBm
T_RSSI: Sensor received signal strength-60dBm		Time:2022-01-02 12:26:40

6.4 XZ-DSD1-CO CO Temperature Humidity and Air pressure Sensor protocol

ASCII :

```
GW_ID:19660801,TYPE:CO,ID:250000004,STAT:00000011,CO:0ppm, P:1003mbar,T:25.5°C,
H:43.5%,STAT2:00000000, ST:60M, V:4.65v,SN:45,RSSI:-76dBm, E:114.0552,N:22.3817,
Time:2022-01-02 12:26:40, T_RSSI:-60dBm
```

JESON :

```
{"ID":"250000004","DSGID":"19660801","TYPE":"CO","STATUS":"00000011","CO":"0ppm",
"PRES":"1003mbar","TEMP":"25.5°C", "HUM":"43.5%","STATUS2":"00000000","ST":"60M",
"VOL":"4.65V","SN":"45","RSSI":"-76dBm","LONG":"E114.0552","LAT":"N22.3817",
"T_RSSI":"-60dBm","TIME":"2022-01-02 12:26:40"}
```

Explain:

GW_ID: Collector ID (19660801)	TYPE: T&H (T&H sensor)	ID: Sensor address(110000002)
<p>STAT: sensor status word</p> <p>BIT7=1 Trigger reporting; BIT6= 0 CH, 1 CH; BIT5=1 Repeat; BIT4=1 Invalid data;</p> <p>BIT3=1 Reserve; BIT2=1 Data searching network; BIT1=0, Low speed, 1 High speed; BIT0=1</p> <p>Start</p> <p>STAT2: Sensor status word</p> <p>BIT7 BIT6 BIT5 BIT4 BIT3 Reserve;</p> <p>BIT2=1 Sensor sound and light alarm; BIT1=1, Setting data succeeded; BIT0=1 Sensor over</p> <p>threshold alarm sign</p>		

T: Environmental Temperature 25.5°C	H: Environmental Humidity 43.5%	ST:Acquisition interval 5mins
Eastern longitude E: 114.0552, Northern Latitude N:22.3817		RSSI: Signal strength-76dBm
T_RSSI: Sensor received signal strength-60dBm		Time:2022-01-02 12:26:40

7、XZ-DSD Product instruction

7.1 Key setting function



Key No. 1	Key No. 2	Key No.3	Key No. 4	Key No. 5
TEMP&RH	Mode	Setting	Upper limit	Lower limit
Desktop switch	switch	trigger	threshold	threshold

7.2 Key using instruction

Key No.1: "TEMP&RH(desktop switch)" Operation: press the key 1S, desktop display the TEMP&RH(switchable).

This function is only valid for XZ-DSD-TH(temperature and humidity sensor) ,XZ-DSD-THA(temperature, humidity and air pressure sensor).



TEMP(desk switch)



RH(desk switch)

Key No.2: “Function query” operations: Press this button for 1S to display the product ID. Release 1S and then press 1S to display (launch period) TS(mins); Release 1S and then press 1S to display (sound and light alarm duration) TA(seconds); Release 1S and then press 1S to display (alarm transmission period) TAS(mins).



Product ID



TS(mins)



TA(seconds)



TAS(mins)

Key No. 3 “setting trigger” Operation: Press the key 2S, LCD backlight will light up. Product begin detection, IoT reporting data. Ending of report, LCD backlight light down.



LCD backlight light up

Key No.4: “upper limit threshold” operation: press the key 1S, temperature upper limit threshold; release the key 1S and press 1S again, Humidity upper limit threshold; release the key 1S and press 1S again, Air pressure upper limit threshold; release the key 1S and press 1S again, Co upper limit threshold.



TEMP upper limit
Threshold



RH upper limit
Threshold



Air pressure upper limit
Threshold



Co upper limit
Threshold

Key No.5: "lower limit threshold" operation: press the key 1S, temperature lower limit threshold; release the key 1S and press 1S again, Humidity lower limit threshold; release the key 1S and press 1S again, Air pressure lower limit threshold; release the key 1S and press 1S again, Co lower limit threshold.



TEMP lower limit
Threshold



RH lower limit
Threshold



Air pressure lower limit
Threshold



Co lower limit
Threshold

Note: All alarm thresholds, reporting cycle, alarm duration and alarm reporting cycle can be set on the software platform. By default, no alarm threshold is set. The lowest and highest alarm thresholds are the same, and there is no alarm function.

8、 XZ-DSD The appearance size of the sensor

