WTVB-Vibration Sensor User Manual

Product Specifications:

Model: WT-VB01-485

Description: Vibration Sensor

1. Product Overview

1. The module has its own voltage stabilization circuit, the working voltage is 5V~36V, and the connection is convenient.

2. The use of advanced digital filtering technology can effectively reduce measurement noise and improve measurement accuracy.

3. At the same time, we provide users with various host computers, instructions for use, and development manuals, so as to minimize the R&D time for various needs.

4. Support 485 interface. It is convenient for users to choose the best connection method. The serial port rate is adjustable from 4800bps to 230400bps, the cutoff frequency is adjustable from 0 to 100Hz, and the detection cycle is adjustable from 1 to 100Hz.

5. Application areas: It can be widely used in bearing vibration measurement and real-time monitoring of rotating machinery such as submersible pumps, fans, steam turbines, coal mills, oxygen generators, generators, centrifuges, compressors, water pumps, motors, etc.

6. The three-axis displacement, three-axis speed, three-axis angle, and three-axis frequency outputs satisfy users' all-round measurement of vibration and impact, and determine whether the measured object (motor pump) is damaged. If there is a machine failure caused by bearing wear, bearing cracking, poor dynamic balance, and misalignment, the vibration sensor can detect the failure in advance and issue an early warning to prevent the machine from continuing to work under bad conditions and causing damage, thereby causing economic losses.

7. Multiple installation methods: magnetic connection, threaded connection. Firm and stable, easy to install and disassemble.

8. Stud bolts: stainless steel hexagonal stud bolts, stud screws, left-hand and right-hand bidirectional screws

2. Parameter indicators

Basic parameters

parameter	condition	Minimum value	default	Maximum value
Communication interface	485 interface	4800bps	9600bps	230400bps
Output		On-chip time, 3-axis vibration speed, 3-axis vibration angle, 3-axis vibration displacement, 3-axis vibration frequency, temperature		
Range		Measuring range: vibration speed: 0~50mm/s, vibration angle: 0~180°, vibration displacement: 0~30000um, vibration frequency: 1-100hz		
Accuracy		<FS±5%		
Detection cycle		1Hz	100Hz	100Hz
Cutoff frequency		1Hz	10Hz	100Hz
Operating temperature		- 40℃		85℃
Storage temperature		- 40℃		85℃
Impact resistance				20000g

Protection level				IP67

Parameter comparison

产品外观	 无角度			
产品型号	WTVB02-485	WTVB01-485	WTVB01-BT50 (蓝牙5.0)	WTVB01M
输出内容	三轴振动速度、角度（WTVB02-485无角度） 位移、频率，内部芯片温度、片上时间			
截止频率	1-100Hz (默认100Hz)			
输出速率	高速模式 可达1000Hz		1-200Hz	高速模式 可达1000Hz
量程	振动 (速度：0-100mm/s， 位移：0-30000um， 频率：1-1000Hz)	振动速度：0-50mm/s， 振动角度：0-180° 振动位移：0-30000um，振动频率：1-100Hz		
精度	<F.S±4%	<F.S±5%		
采样速率	16KHz	1KHz		
通信接口	485接口 (Modbus协议)	485接口 (Modbus协议)	蓝牙5.0、TYPE-C	TTL接口 Modbus协议
波特率	4800-230400bps 可调(默认9600bps)	4800-230400bps可调 (默认9600bps)	115200bps	4800-230400bps 可调(默认9600bps)
工作温度				

工作温度	-40°C-+85°C	-40°C-+85°C	-20°C-+60°C	-40°C-+85°C
防水等级	IP67	IP67	不防水	不防水
工作电压	5-36V	5-36V	5V	3.3-5V
工作电流	12mA	12mA	15mA	16mA
重量	182g	182g	20g	1g
尺寸	47*38*33mm	47*38*33mm	51.5*36.1*15mm	15.24*15.24*2.8mm

Electrical parameters

parameter	condition	Minimum value	default	Maximum value
Supply voltage		5V	12V	36V
Working current	Working (12V)		12mA	

Vibration angle: The angle of the object's vibration.

Vibration velocity: the speed at which the vibration point of an object moves when it vibrates

Amplitude: The amplitude of the vibration point when the object vibrates (vibration displacement)

Vibration frequency: the number of times an object vibrates per unit time when it vibrates ,Vibration frequency measurement range

1Hz~100Hz

3. Hardware connection method

(485接线方式)

线色功能	红色 RED	黄色 YELLOW	绿色 GREEN	黑色 BLACK
	VCC 电压 5~36V 供电电源正极	A	B	GND 电源负极

Loose tube purchase link

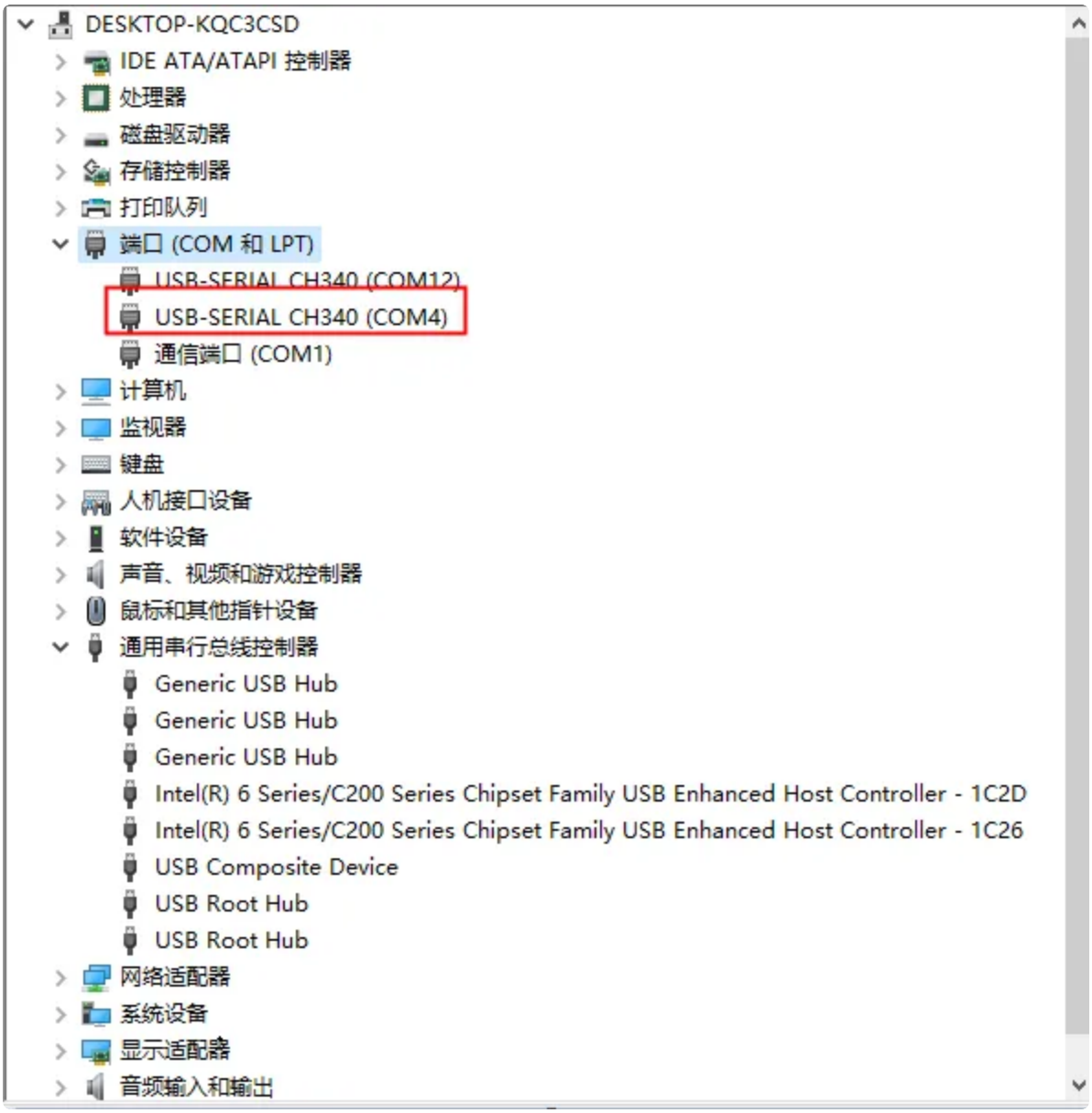
Screw link

4. How to use the software

4.1 CH340 driver installation

Note: If the host computer cannot run, please download and install.net framework4.0:

Connect the USB to 485 module to the computer, open the host computer, and install the CH340 driver corresponding to the serial port module (CH340 driver load) later, you can query the corresponding port number in the device manager, as shown in the figure:



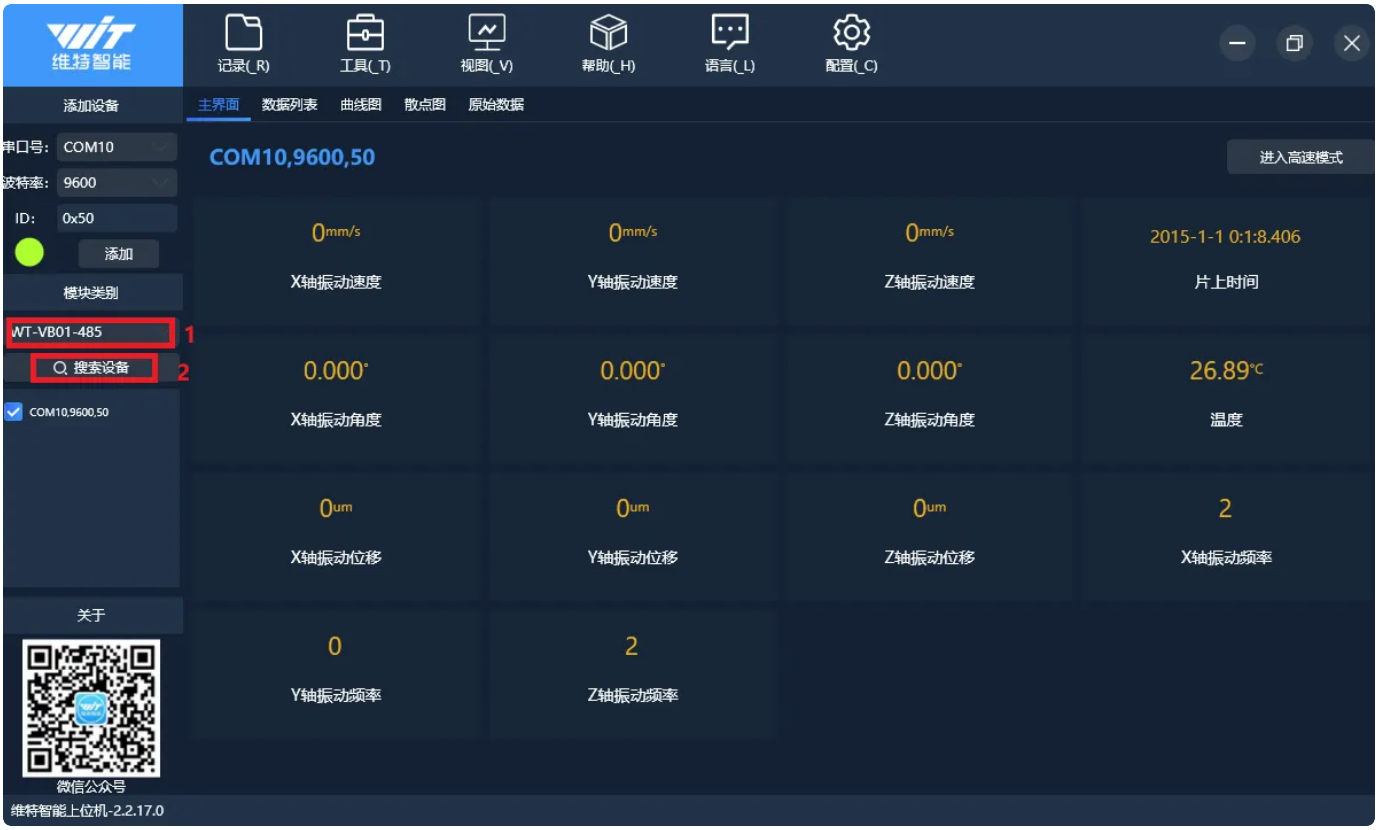
After the device is connected, open the Witt intelligent host computer software (the software is inData URLDownload from , here we take WTVB01-485 as an example);

4.2 Connect to the host computer

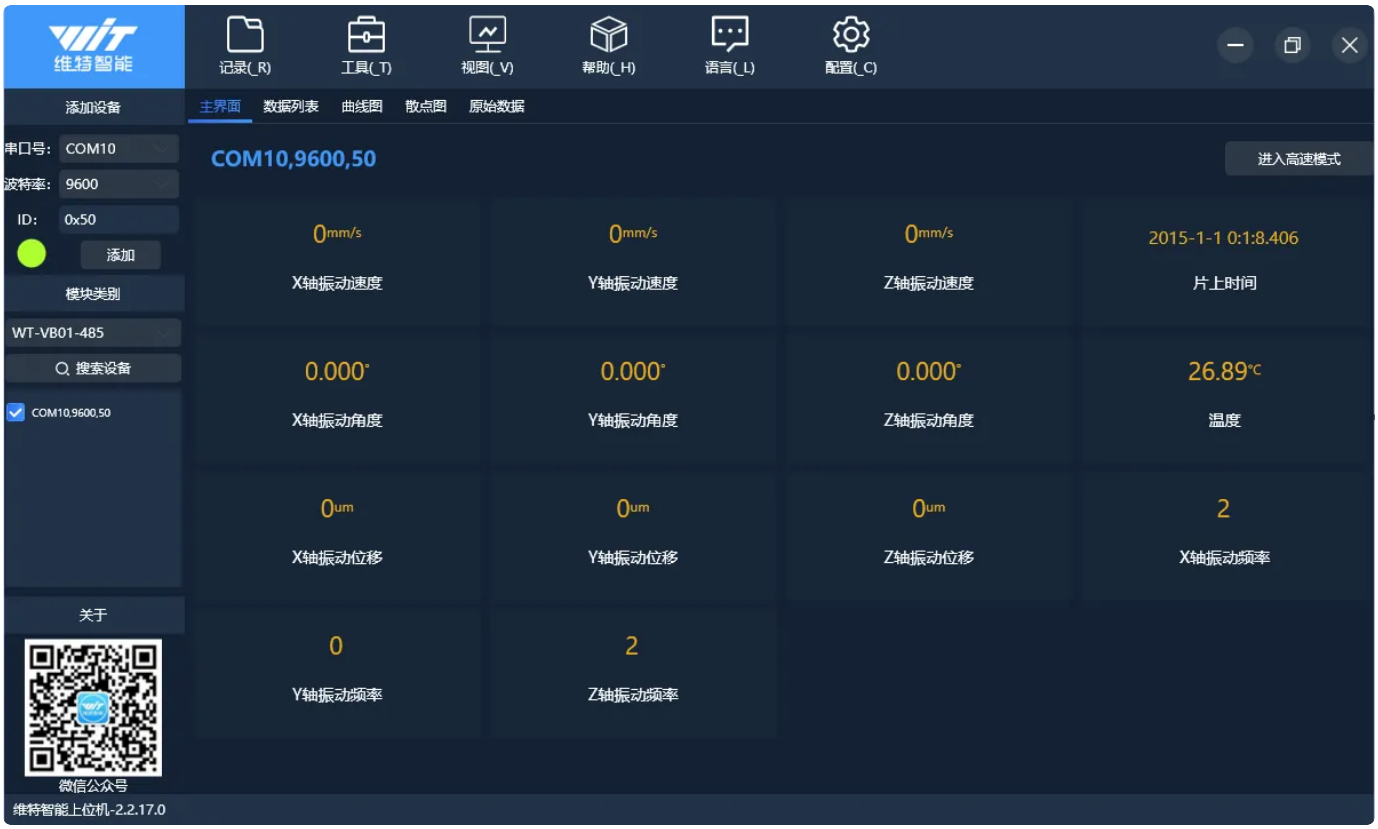
1. Automatic Search

1.Search for the corresponding sensor model.

2. Click Search device.



After the connection is successful, the data can be displayed on the software, as shown below:



2. Manual connection

1. Search for the corresponding model.

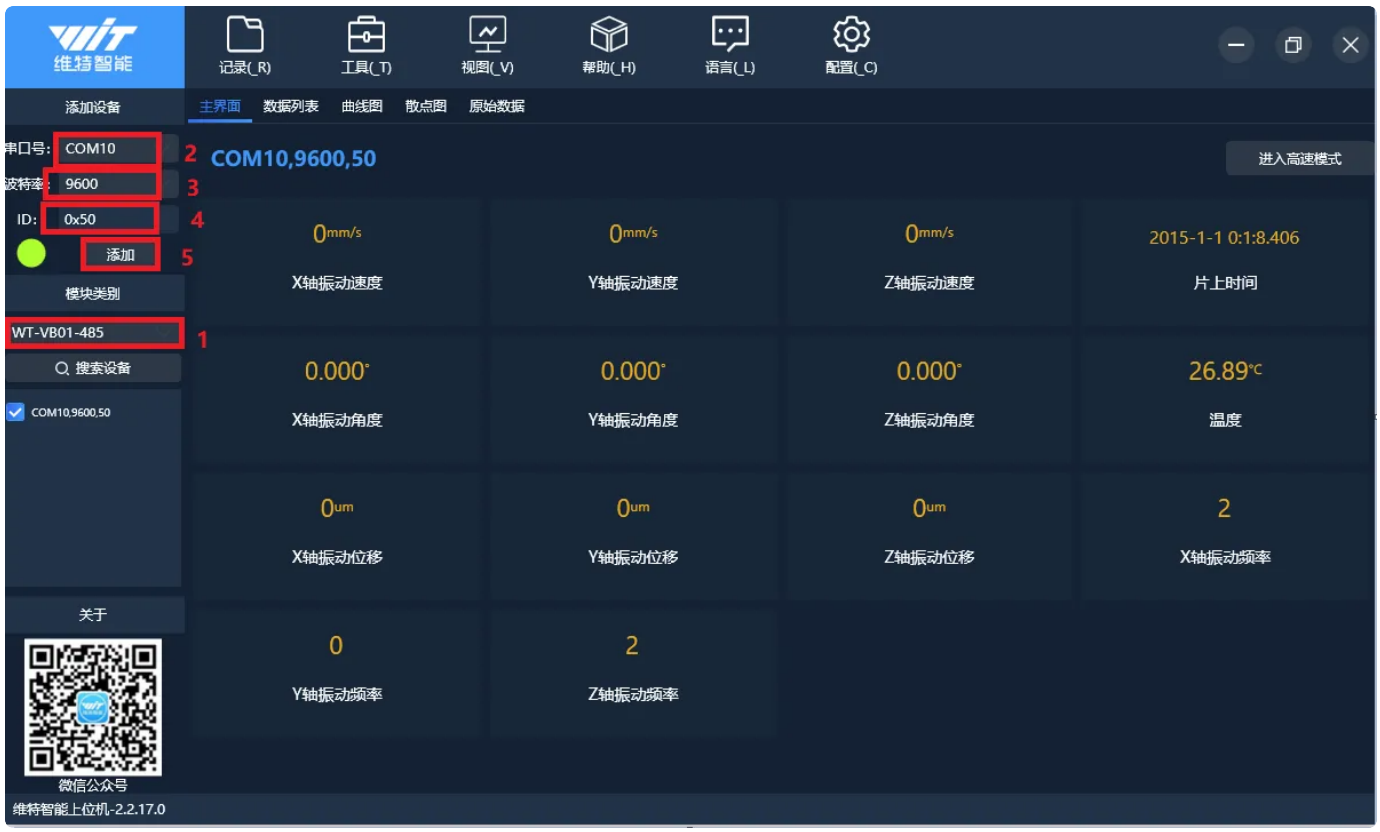
2. Select the corresponding port.

3. Select the baud rate of the module (the default baud rate is 9600).

4. Enter the corresponding ID (the default is 0x50).

5. Click Add Device

As shown in the following figure:

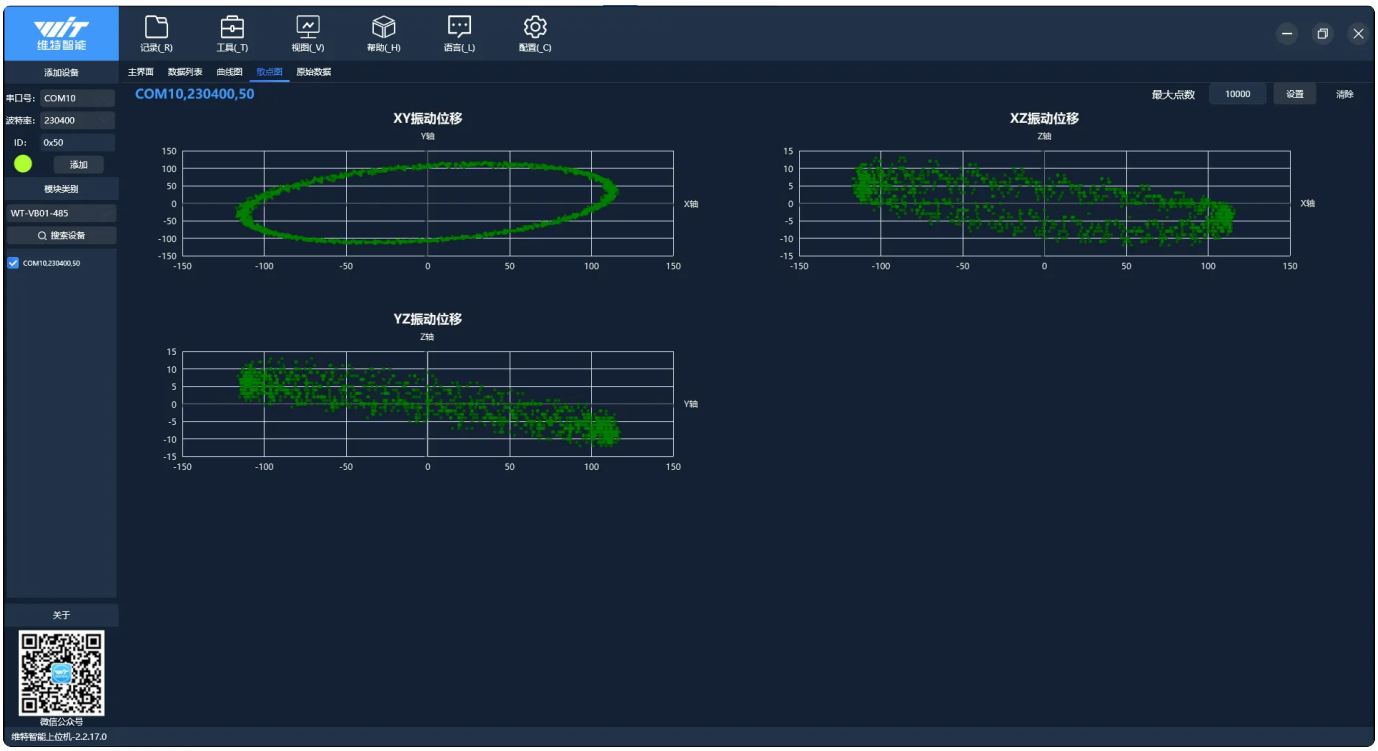


4.3 Graph

Click on the graph to see the graphs of vibration speed, vibration angle, vibration displacement and temperature (normal mode); high speed mode onlyVibrationThe dynamic displacement curve has data, as shown below:

4.4 Scatter plot

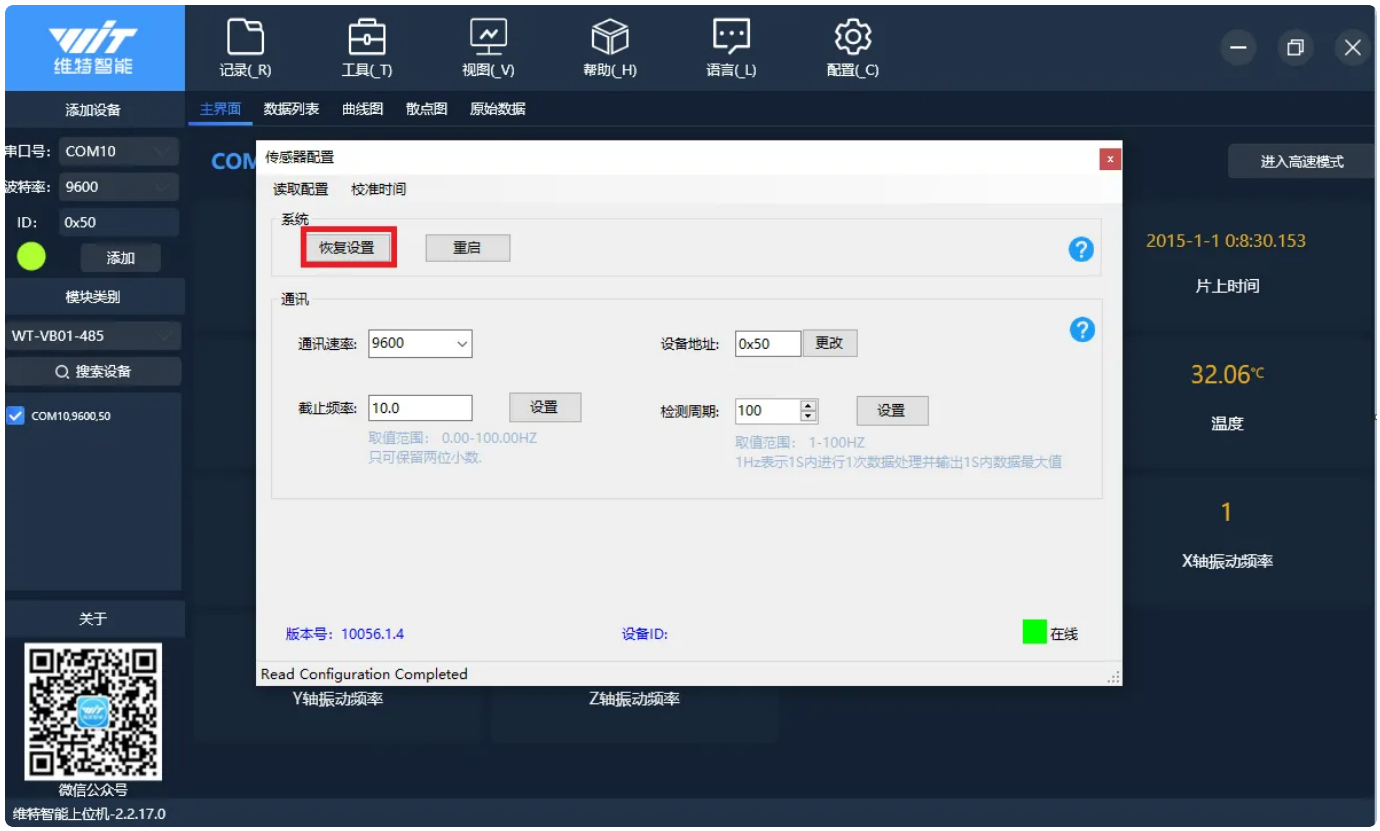
If you need to obtain a complete vibration displacement scatter plot, it is recommended to use high-speed mode to view it.



5. Software Configuration

5.1 Restore settings

Click "Configuration" and then click "Restore Settings" in the sensor configuration interface to restore the factory settings, as shown below:

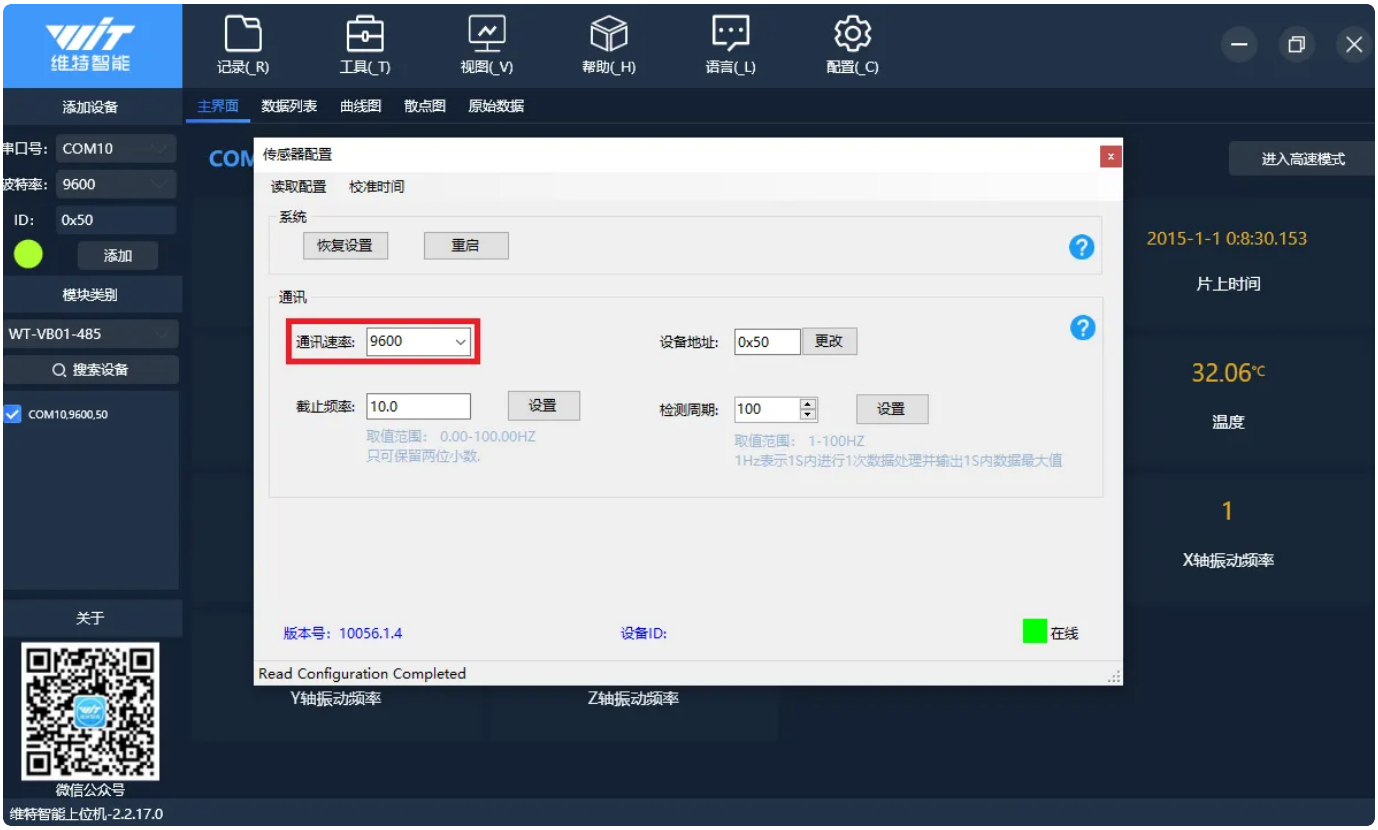


5.2 Restart

Click "Configure", and then click "Restart" in the sensor configuration interface to restart the sensor, as shown in the following figure:

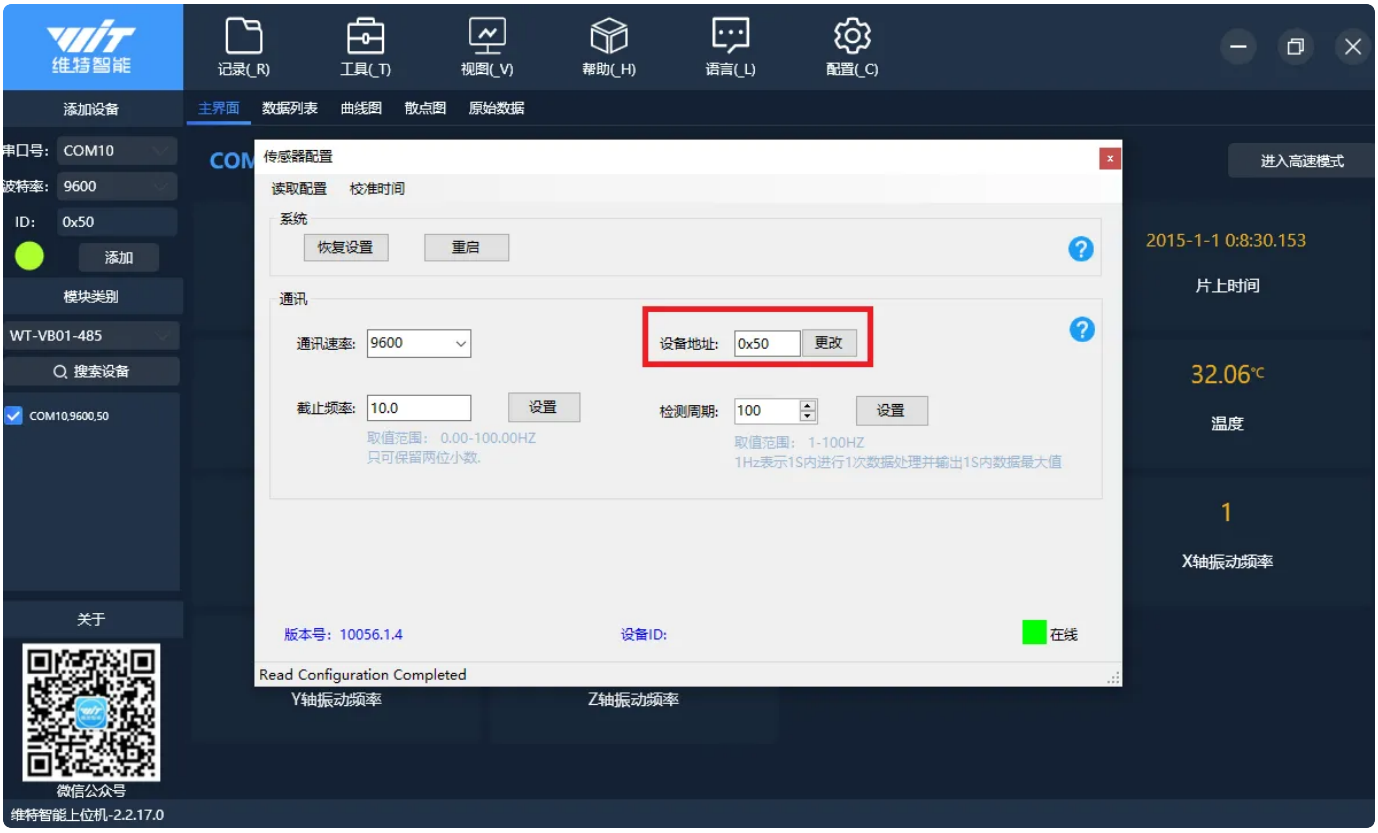
5.3 Communication Rate

Open "Configuration", click the drop-down menu of "Serial Port Baud Rate" in the sensor configuration interface, select the serial port baud rate to be modified, and you can change the current serial port baud rate (the default serial port baud rate is 9600). The serial port baud rate can be 4800, 9600, 19200, 38400, 57600, 115200, 230400, as shown in the figure below:



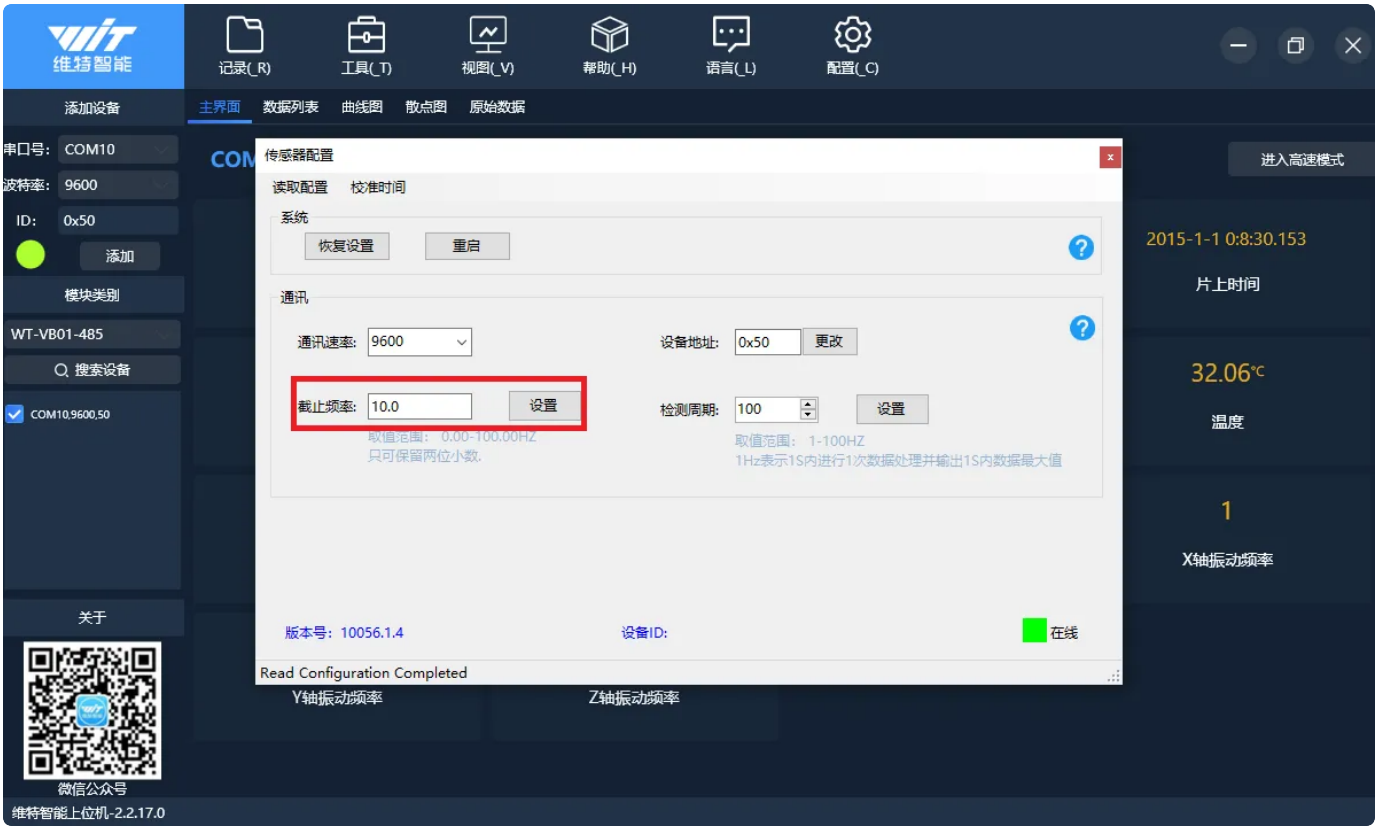
5.4 Device Address

Open "Configuration", click the "Modbus Address" input box in the sensor configuration interface, enter the Modbus address and then click Set to change the Modbus address (the default Modbus address is 0x50). The Modbus address ranges from 0x00 to 0x7F, as shown in the figure:



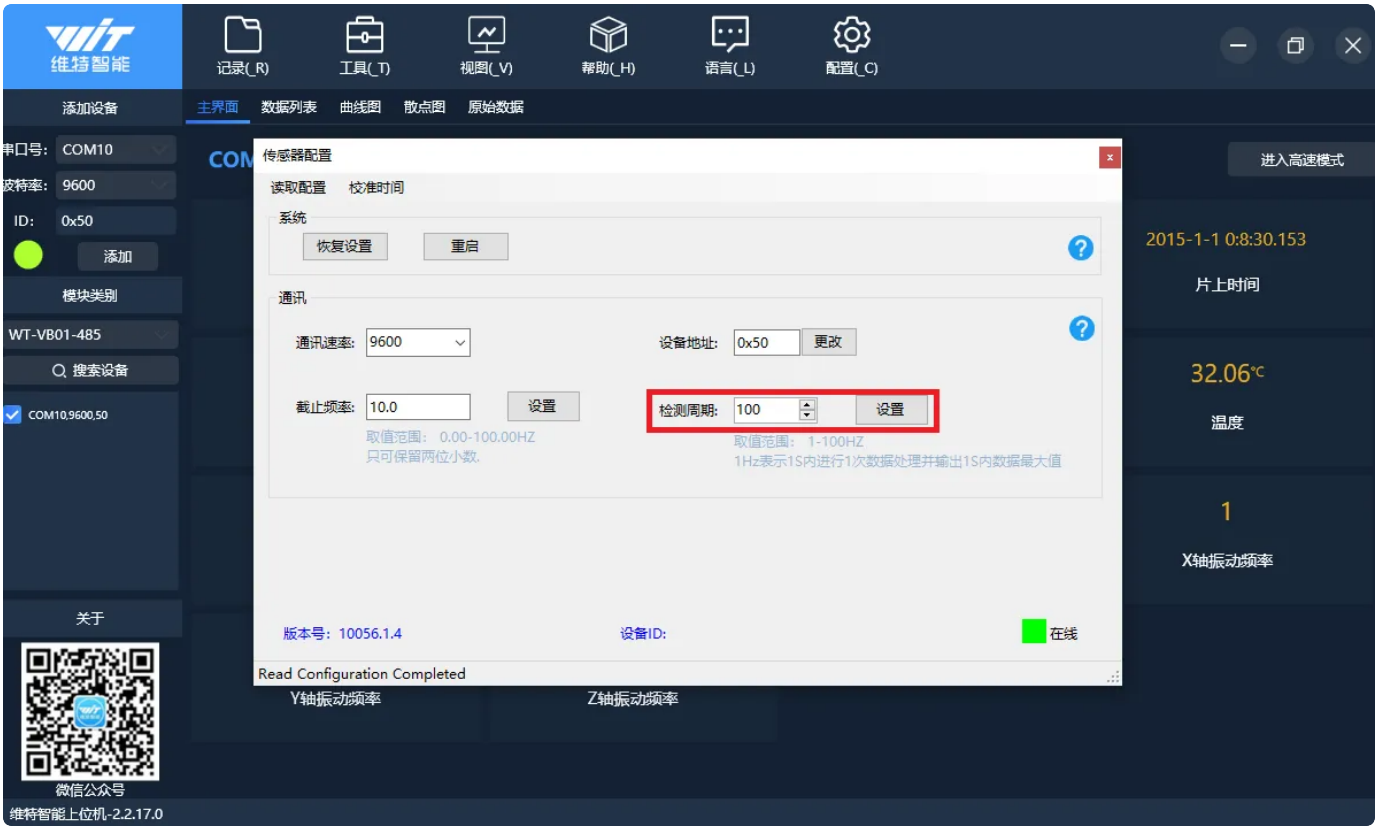
5.5 Cut-off frequency

Open "Configuration", click the drop-down menu of "Cutoff Frequency" in the sensor configuration interface, select the corresponding cutoff frequency, and you can set the cutoff frequency (the default cutoff frequency is 10.0Hz). Our cutoff frequency is used like this (using a sinusoidal signal to excite, constantly changing the frequency, and the corresponding frequency when the output amplitude drops to 0.707 times the input amplitude is the cutoff frequency. The frequency range where the output amplitude is greater than or equal to 0.707 times the input amplitude is the working frequency range. We change the cutoff frequency to filter out clutter of other frequencies. For example, if the frequency of other clutter is 30Hz and the sensor works at 50Hz, you may wish to set the cutoff frequency to 40.0, 50.0Hz). The host computer modification is shown in the figure:



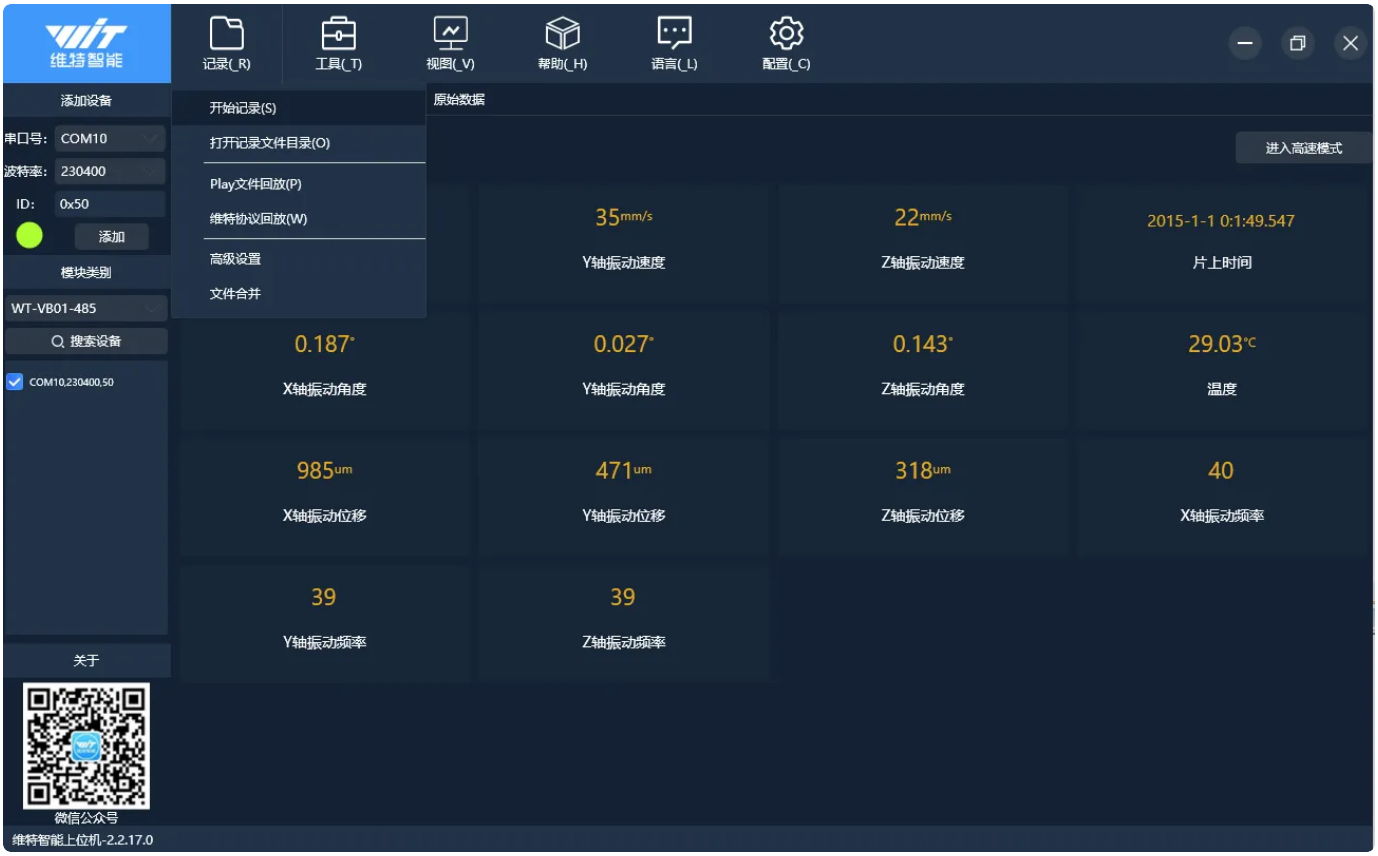
5.6 Detection cycle

Open "Configuration", click the drop-down menu of "Detection Cycle" in the sensor configuration interface, select the corresponding detection cycle, and then set the detection cycle (the detection cycle is equivalent to the sampling rate of the product), as shown in the figure:



5.7 Recording Data

Open "Record" and click "Start Recording" to record the output data of the sensor.

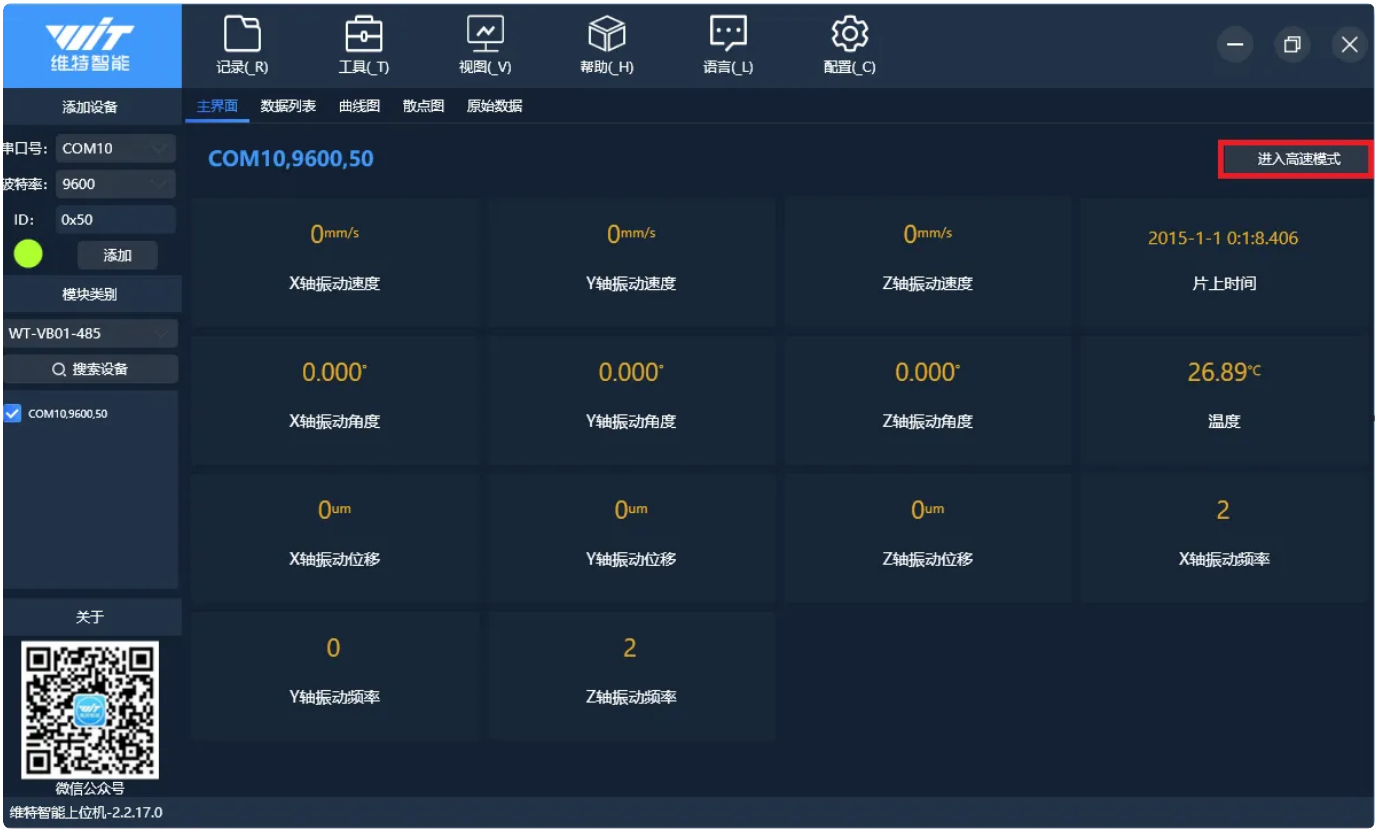


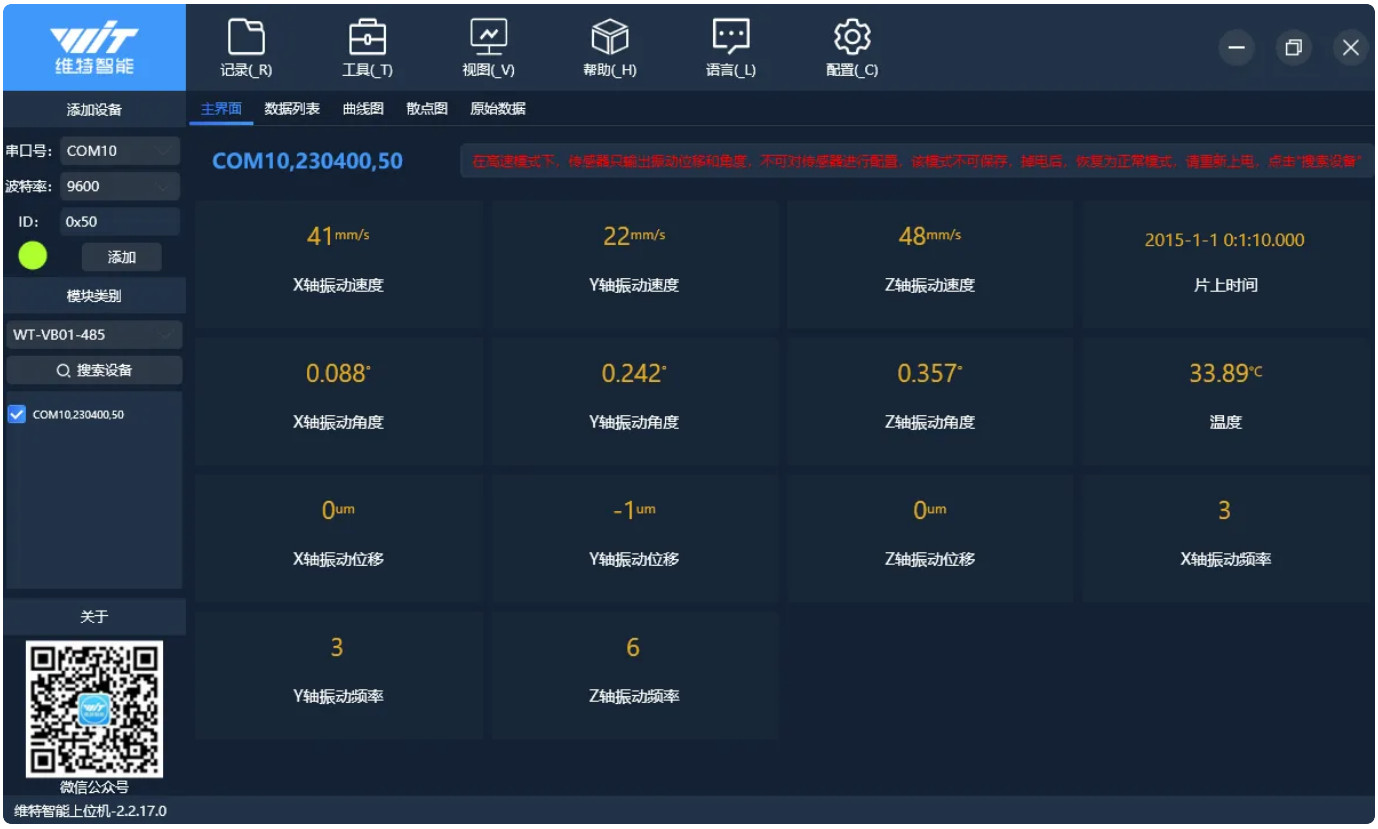
5.8 High-speed mode

Note: The high-speed mode actively outputs vibration displacement data at high speed, which can be used to analyze complex motion trajectories.

Operation: Click the high-speed mode button, the sensor will enter the high-speed active output mode (1000Hz), only output the three-axis high-frequency vibration displacement, and the baud rate of the sensor will automatically switch to 230400.

Configuration is not possible at this time. If you want to restore to normal mode, you can power on the sensor again and search or add devices again.





6. Communication Protocol

Protocol: MODBUS protocol

Level: 485 level (default baud rate: 9600)

6.1 Read Register Format

- The data is sent in hexadecimal format, not ASCII.
- Each register address, register number, and data are represented by two bytes. The high and low bits of the register address are represented by ADDRH and ADDRL, the high and low bits of the register number are represented by LENH and LENL, and the high and low bits of the data are represented by DATA1H and DATA1L.
- The last two digits of the read instruction are standard CRC check bits. You can use the CRC check bit calculation tool to calculate.CRC online calculation website.

Send command

Modbus Address site	Function code	Register high 8 bits	Register low 8 Bit	Read length height 8-bit	Low read length 8-bit	Check digit height 8 Bit	Check digit lower 8 bits
ID	0x03 (Read)	ADDRH[15:8]	ADDRL[7:0]	LENH[15:8]	LENL[7:0]	CRCH[15:8]	CRCL[7:0]

Data return

Modbus s Address	Function code	Read length Spend	Data High 8 Bit	Data low 8-bit	Data High 8-bit	Data low 8-bit	Data High 8-bit	Data low 8-bit	Check digit High 8 bits	Check digit Lower 8 bits
ID	0x03 (read)	LEN[7:0]	DATA1H [15:8]	DATA1 L[7:0]	...	...	DATA H	DATA L	CRCH[15:8]	CRCL[7:0]

6.2 Write Register Format

- The data is sent in hexadecimal format, not ASCII.
- Each register address and written data are represented by two bytes. The high and low bits of the register address are represented by ADDRH and ADDRL, and the high and low bits of the written data are represented by DATAH and DATAL.

Send command

Modbus Address site	Function code	Register high 8 bits	Register low 8 Bit	Data high 8 bits	Data lower 8 bits	Check digit height 8 Bit	Check digit lower 8 bits
ID	0x06 (Write)	ADDRH[15:8]	ADDRL[7:0]	DATAH[15:8]	DATAL[7:0]	CRCH[15:8]	CRCL[7:0]

Data return

Modbus Address site	Function code	Register high 8 bits	Register low 8 Bit	Data high 8 bits	Data lower 8 bits	Check digit high 8 digits	Check digit lower 8 bits
ID	0x06 (Write)	ADDRH[15:8]	ADDRL[7:0]	DATAH[15:8]	DATAL[7:0]	CRCH[15:8]	CRCL[7:0]

Note:

The instruction writing operation needs to be performed in three steps.

The first step is to unlock 0x50 0x06 0x00 0x69 0xB5 0x88 0x22 0xA1. The unlocking will take effect within ten seconds.

The second step is to send the instruction that needs to be modified.

The third step is to save the instruction 0x50 0X06 0X00 0X00 0X00 0X84 0X4B. The flow chart is as follows.

6.3 Register Address Table

address	symbol	meaning
0x00	SAVE	Save/Restart/Restore to Factory
0x04	BAUD	Serial port baud rate
0x1A	IICADDR	Device Address
0x30	YYMM	Month
0x31	DDH	Date
0x32	MMSS	Seconds and minutes
0x33	MS	millisecond
0x34	AX	X-axis acceleration
0x35	AY	Y-axisAcceleration
0x36	AZ	ZAxis acceleration
0x3A	VX	X-axis vibration speed
0x3B	VY	Y-axis vibration speed
0x3C	VZ	Z-axis vibration speed
0x3D	ADX	X-axis angular vibration angle
0x3E	ADY	Y-axis angular vibration angle
0x3F	ADZ	Z-axis angular vibration angle
0x40	TEMP	Product temperature
0x41	DX	X-axis vibration displacement
0x42	DY	Y-axis vibration displacement
0x43	DZ	Z-axis vibration displacement
0x44	HX	X-axis vibration frequency
0x45	HkDJ	Y-axis vibration frequency
0x46	HZZ	Z-axis vibration frequency
0x47	FDNFX	X-axis vibration displacement (high speed mode)

0x48	FDN	Y-axis vibration displacement (high speed mode)
0x49	FZD	Z-axis vibration displacement (high speed mode)
0x62	MODBUSMODEL	High Speed Mode
0x63	CUTOFFFREQI	Cutoff frequency integer
0x64	CUTOFFFREQF	Cutoff frequency decimal
0x65	SAMPLEFREQ	Detection cycle

6.4 Register Description

All the following examples are instructions when the Modbus address is 0x50 (default). If you change the Modbus address, you need to change the address and CRC check bit in the instruction accordingly.

SAVE (Save/Restart/Restore to Factory)

Register Name: SAVE

Register address: 0 (0x00)

Read/write direction: R/W

Default value: 0x0000

Bit	NAME	FUNCTION
15:0	SAVE[15:0]	Save: 0x0000 Restart: 0x00FF Factory Reset: 0x0001

Example: Send: 50 06 00 69 B5 88 22 A1 (unlocked for 10 seconds) Return: 50 06 00 69 B5 88 22 A1

50 06 00 00 00 FF C4 0B (Restart) Return: 50 06 00 00 00 FF C4 0B

BAUD (serial port baud rate)

Register name: BAUD Register address: 4 (0x04) Read/write direction: R/W Default value: 0x0002		
Bit	NAME	FUNCTION
15:4		
3:0	BAUD[3:0]	Set the serial port baud rate: 0001(0x01) 4800bps 0010(0x02): 9600bps 0011(0x03): 19200bps 0100(0x04): 38400bps 0101(0x05): 57600bps 0110(0x06): 115200bps 0111(0x07): 230400bps
Example: Send: 50 06 00 69 B5 88 22 A1 (unlocked for 10 seconds) Return: 50 06 00 69 B5 88 22 A1 50 06 00 04 00 06 45 88 (set the serial port baud rate to 115200) 50 06 00 00 00 00 84 4B (saved at 115200baud) returns: 50 06 00 00 00 00 84 4B		

IICADDR (device address)

Register Name: IICADDR Register address: 26 (0x1A) Read/write direction: R/W Default value: 0x0050		
Bit	NAME	FUNCTION
15:8		
7:0	IICADDR[7:0]	Set the device address for I2C and Modbus communication uses 0x01~0x7F

Example: Send: 50 06 00 69 B5 88 22 A1 (unlocked for 10 seconds) Return: 50 06 00 69 B5 88 22 A1

50 06 00 1A 00 02 24 4D (set device address to 0x02) returns: 50 06 00 1A 00 02 24 4D

02 06 00 00 00 00 89 F9 (Save) Return: 02 06 00 00 00 00 89 F9

YYMM~MS (online time)

Register name: YYMM~MS

Register address: 48~51 (0x30~0x33)

Read/write direction: R/W

Default time: (2015, 1, 1, 00, 00, 59, 00)

Bit	NAME	FUNCTION
15:8	YYMM[15:8]	Month
7:0	YYMM[7:0]	Year
15:8	DDHH[15:8]	hour
7:0	DDHH[7:0]	Day
15:8	MMSS[15:8]	Second
7:0	MMSS[7:0]	point
15:0	MS[15:0]	millisecond

Example:

50 06 00 69 B5 88 22 A1 (unlocked for 10 seconds) Return: 50 06 00 69 B5 88 22 A1

Send: 50 06 00 30 03 16 05 7A (set year and month 22-03)

Return: 50 06 00 30 03 16 05 7A

Send: 50 06 00 31 09 0C D3 D1 (set date and time 12-09)

Return: 50 06 00 31 09 0C D3 D1

Send: 50 06 00 32 3A 1E B7 2C (set minutes and seconds to 30:58)

Return: 50 06 00 32 3A 1E B7 2C

Send: 50 06 00 33 01 F4 74 53 (set milliseconds to 500)

Return: 50 06 00 33 01 F4 74 53

50 06 00 00 00 00 84 4B (save) returns: 50 06 00 00 00 00 84 4B

AX~AZ (acceleration)

Register name: AX~AZ

Register address: 52~54 (0x34~0x36)

Read/write direction: R

Default value: 0x0000

Bit	NAME	FUNCTION
15:0	AX[15:0]	Acceleration X = AX[15:0]/32768*16g (g is the acceleration of gravity, which can be 9.8m/s2)
15:0	AY[15:0]	Acceleration Y = AY[15:0]/32768*16g (g is the acceleration of gravity, which can be 9.8m/s2)
15:0	AZ[15:0]	Acceleration Z = AZ[15:0]/32768*16g (g is the acceleration of gravity, which can be 9.8m/s2)

Example:

Send: 50 03 00 34 00 03 49 84 (read three-axis acceleration)

Return: 50 03 06 AXH AXL AYH AYL AZH AZL CRCH CRCL

AX[15:0]=((short)AXH <<8)|AXL;

AY[15:0]=((short)AYH <<8)|AYL;

AZ[15:0]=((short)AZH <<8)|AZL;

VX~VZ (vibration speed)

Register name: VX~VZ

Register address: 58~60 (0x3A~0x3C)

Read/write direction: R

Default value: 0x0000

Bit	NAME	FUNCTION
15:0	VX[15:0]	Vibration speed VX (mm/S) = ((VXH << 8) | VXL)
15:0	VY[15:0]	Vibration velocity VY (mm/S) = ((VYH << 8) | VYL)
15:0	VZ[15:0]	Vibration velocity VZ (mm/S) = ((VZH << 8) | VZL)

Example: Send: 50 03 00 3A 00 03 28 47 (read the three-axis vibration speed)

Return: 50 03 06 VXH VXL VYH VYL VZH VZL CRCH CRCL

VX[15:0]=(((short)VXH <<8)|VXL);

VY[15:0]=(((short)VYH <<8)|VYL);

VZ[15:0]=(((short)VZH <<8)|VZL);

ADX~ADZ (vibration angle)

Register name: ADX~ADZ

Register address: 61~63 (0x3D~0x3F)

Read/write direction: R

Default value: 0x0000

Bit	NAME	FUNCTION
15:0	ADX[15:0]	Vibration angle ADX(°)=((ADXH << 8)|ADXL)/32768*180

15:0	ADY[15:0]	Vibration angle ADY(°)=((ADYH << 8)| ADYL)/32768*180
15:0	ADZ[15:0]	Vibration angle ADZ(°)=((ADZH << 8)| ADZL)/32768*180

Example: Send: 50 03 00 3D 00 03 99 86 (read the three-axis vibration angle)

Return: 50 03 06 ADXH ADXL ADYH ADYL ADZH ADZL CRCH CRCL

ADX[15:0]=(((short)ADXH <<8)|ADXL)/32768*180;

ADY[15:0]=(((short)ADYH <<8)|ADYL)/32768*180;

ADZ[15:0]=(((short)ADZH <<8)|ADZL)/32768*180;

TEMP(Temperature)

Register Name: TEMP

Register address: 64 (0x40)

Read/write direction: R

Default value: 0x0000

Bit	NAME	FUNCTION
15:0	TEMP[15:0]	Temperature = TEMP[15:0]/100°C

Example: Send: 50 03 00 40 00 01 88 5F (read chip temperature)

Return: 50 03 02 TEMPH TEMPL CRCH CRCL

TEMP[15:0]=(((short)TEMPH <<8)|TEMPL);

DX~DZ (vibration displacement)

Register name: DX~DZ

Register address: 65~67 (0x41~0x43)

Read/write direction: R

Default value: 0x0000

Bit	NAME	FUNCTION

15:0	DX[15:0]	Vibration displacement DX(um)=((DXH << 8)| DXL)
15:0	DY[15:0]	Vibration displacement DY(um)=((DYH << 8)| DYL)
15:0	DZ[15:0]	Vibration displacement DZ(um)=((DZH << 8| DZL)

Example: Send: 50 03 00 41 00 03 58 5E (read triaxial vibration displacement)

Return: 50 03 06 DXH DXL DYH DYL DZH DZL CRCH CRCL

DX[15:0]=(((short)DXH <<8)|DXL);

DY[15:0]=(((short)DYH <<8)|DYL);

DZ[15:0]=(((short)DZH <<8)|DZL);

HX~HZZ（Vibration frequency）

Register name: HZX~HZZ

Register address: 68~70 (0x44~0x46)

Read/write direction: R

Default value: 0x0000

Bit	NAME	FUNCTION
15:0	HZX[15:0]	Vibration frequency HZX(Hz)=((HZXH << 8)| HZXL)
15:0	HZY[15:0]	Vibration frequency HZY(Hz)=((HZYH << 8)| HZYL)
15:0	HZZ[15:0]	Vibration frequency HZZ(Hz)=((HZZH << 8| HZZL)

Example: Send: 50 03 00 44 00 03 48 5F (read the three-axis vibration frequency)

Return: 50 03 06 HZXH HZXL HZYH HZYL HZZH HZZL CRCH CRCL

HZX[15:0]=(((short)HZXH <<8)|HZXL);

HZY[15:0]=(((short)HZYH <<8)|HZYL);

HZZ[15:0]=(((short)HZZH <<8)|HZZL);

FDNFX~FZD(High Speed　ModeVibration displacement）

Register name: FDNFX~FDNFZ

Register address: 71~73 (0x47~0x49)

Read/write direction: R

Default value: 0x0000

Bit	NAME	FUNCTION
15:0	FDNFX[15:0]	High frequency vibration displacement FDNFX(um)=((FDNFXH << 8)| FDNFXL)
15:0	FDNFY[15:0]	High frequency vibration displacement FDNFY(um)=((FDNFYH << 8)| FDNFYL)
15:0	FDNFZ[15:0]	High frequency vibration displacement FDNFZ(um)=((FDNFZH << 8| FDNFZL)

Example: Send: 50 03 00 47 00 03 B8 5F (read three-axis high-frequency vibration displacement)

Return: 50 03 06 FDNFXH FDNFXL FDNFYH FDNFYL FDNFZH FDNFZL CRCH CRCL

FDNFX[15:0]=(((short)FDNFXH <<8)|FDNFXL);

FDNFY[15:0]=(((short)FDNFYH <<8)|FDNFYL);

FDNFZ[15:0]=(((short)FDNFZH <<8)|FDNFZL);

MODBOUSMODEL（High Speed Mode）

Register Name:MODBOUSMODEL

Register address: 98 (0x62)

Read/write direction: R/W

Default value: 0x0000

Bit	NAME	FUNCTION
15:0	SAVE[15:0]	High-speed mode is 0x0001

Example: Send: 50 06 00 69 B5 88 22 A1 (unlocked for 10 seconds) Return: 50 06 00 69 B5 88 22 A1

50 06 00 62 00 01 E4 55 (High Speed Mode) returns (230400 Baud)

Note: After sending, it will enter high-speed mode. This mode actively transmits high-frequency dynamic displacement data. At this time, no instructions can be sent. The normal mode can be restored by powering off.

In high-speed mode, do not send setup and save commands to avoid incorrectly modifying the sensor configuration. To exit high-speed mode, power on the sensor again.

CUTOFFFREQI, CUTOFFFREQF (cutoff frequency)

Register name: CUTOFFFREQI (integer 0~100)

Register address: 99(0x63)

Read/write direction: R/W

Default value: 0x000A

Bit	NAME	FUNCTION
15:2		
1:0	CUTOFFFREQI[1:0]	Cutoff frequency, used to filter out The influence of other clutter on the sensor Interference, can be set 0.00~100.00Hz

Example:Set the cutoff frequency to 10.99Hz

Send: 50 06 00 69 B5 88 22 A1 (unlocked within 10S) Return: 50 06 00 69 B5 88 22 A1

50 06 00 63 00 0A F4 52(Set the integer part of the cutoff frequency to 10) Returns:50 06 00 63 00 0A F4 52

50 06 00 64 00 63 85 BD(Set the cutoff frequency fraction to 99) Returns:50 06 00 64 00 63 85 BD

50 06 00 00 00 00 84 4B (save) returns: 50 06 00 00 00 00 84 4B

The cutoff frequency setting requires the use of two registers, CUTOFFFREQI and CUTOFFFREQF.

Description of the cutoff frequency decimal part: set decimal value x100 (set .99, actually need to set the decimal part to 99)

Register name: CUTOFFFREQF (setting a decimal of 0 to 99 is equivalent to setting 0.00 to 0.99)

Register address: 100(0x64)

Read/write direction: R/W

Default value: 0x000A

Bit	NAME	FUNCTION
15:2		
1:0	CUTOFFFREQF[1:0]	Cutoff frequency, used to filter out other clutter To prevent interference with the sensor, you can set 0.00~100.00Hz

Example: Send: 50 06 00 69 B5 88 22 A1 (unlocked for 10 seconds) Return: 50 06 00 69 B5 88 22 A1

50 06 00 63 00 0A F4 52(Set the integer part of the cutoff frequency to 10) Returns:50 06 00 63 00 0A F4 52

50 06 00 64 00 63 85 BD(Set the cutoff frequency fraction to 99) Returns:50 06 00 64 00 63 85 BD

50 06 00 00 00 00 84 4B (save) returns: 50 06 00 00 00 00 84 4B

The cutoff frequency setting requires the use of two registers, CUTOFFFREQI and CUTOFFFREQF.

Explanation of the decimal part of the cutoff frequency: multiply the decimal value by 100 (set .99, the decimal part actually needs to be set to 99)

SAMPLEFREQ(Detection cycle)

Register Name:SAMPLEFREQ

Register address: 101 (0x65)

Read/write direction: R/W

Default value: 0x0064

Bit	NAME	FUNCTION
15:2		
1:0	SAMPLEFREQ[1:0]	Detection cycle, its reciprocal is per second The amount of output data can be set in Between 1 and 100 Hz

Example: Send: 50 06 00 69 B5 88 22 A1 (unlocked for 10 seconds) Return: 50 06 00 69 B5 88 22 A1

50 06 00 65 00 64 14 53 (set the detection cycle to 100Hz) returns: 50 06 00 65 00 64 14 53

50 06 00 00 00 00 84 4B (save) returns: 50 06 00 00 00 00 84 4B

7. FAQ

7.1 The return frequency is too low in normal mode

Cause: The baud rate is set too low

7.2 The number of recorded data frames in normal mode is too small

Reason: In normal mode, the modbus communication protocol is a question-and-answer protocol. The higher the baud rate is, the higher the frequency of reading data is.

7.3 Unable to exit in high speed mode

Cause: The sensor is not powered off. Power off the sensor and then power it on again. The sensor will automatically return to normal mode. You can now use the host computer to search for devices or add devices yourself.

7.4 No data after power cycle

Reason 1: The baud rate of the host computer is set incorrectly. Click Search Device

Reason 2: The serial port is lost. You can check whether the serial port exists. If the device cannot be found, you can re-plug the 3-in-1 or 6-in-1, refresh the computer, find the recognized COM port and reconnect it.

7.5 The host computer cannot search for the device

Cause: The sensor address or baud rate may have been modified. Please be patient and wait for several minutes for the search process to complete.

8. Contact Us

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If you have any gains, please give a thumbs up!