WDS826FL Special dual axis tilt angle sensor for wind turbine tower shaking

Product manual

V1.1-20260708

Technical Characteristics

- ❖ Dual axis inclination measurement;
- ❖ Range ±10°;
- ❖ Horizontal Installation;
- ❖ Resolution 0.0005°;
- ❖ Good low-frequency characteristics;
- ❖ Output options: RS485 / RS422 / RS232 (optional).

Product Introduction

WDS826FL is a dynamic tilt measurement product designed specifically for monitoring the shaking of wind turbine towers. It has excellent low-frequency response characteristics and can effectively capture slowly changing tilt signals, meeting the precise measurement needs in low-frequency dynamic scenarios. Before leaving the factory, the products undergo full temperature range calibration compensation and long-term stability testing to ensure reliable performance indicators are maintained under different working conditions and long-term use cycles. This product integrates two output protocols, including the industrial standard MODBUS protocol, and comes with dedicated analysis software that can display, record, and analyze measurement data in real-time. The output interface supports RS485, RS422, RS232 optional. Adopting non-contact installation method, it has strong system integration convenience; Users only need to fix the sensor on the surface of the object being measured with screws, and the system can automatically calculate the horizontal angle, making it easy to use. The product has good resistance to external electromagnetic interference and vibration impact, and is suitable for scenarios such as wind turbine swing monitoring.

Application Field

The typical application scenarios of this series of products include: wind power monitoring, bridge and dam monitoring, ancient building monitoring, high-speed rail track monitoring, ground satellite communication vehicles, railway gauge gauges, gauge instrument leveling, satellite communication vehicles, geological equipment tilt monitoring, and engineering vehicle leveling.

Specifications

WDS826FL	Condition	Parameters	Unit
Measure range	-	±10	°
Measure axis	-	X Y	axis
Resolution [1)]	-	0.0005	°
Measure accuracy [2)]	Room temp.	0.05	°
Zero temp coefficient [3)]	-40 ~ 85℃	0.0003	°/℃
Sensitivity temp. coefficient [4)]	-40 ~ 85℃	≤50	ppm/℃
Power on time		<0.5	S
Response frequency		20	Hz
Output rate	5Hz / 10Hz / 25Hz / 35Hz / 50Hz / 100Hz Can be set		
Output signal	RS485/RS232/RS422 Optional		
EMC	According to EN61000 and GBT17626		
MTBF	≥98000 hour/time		
Insulation Resistance	≥100 MΩ		
Shockproof	100g@11ms / 3 Axial Direction (Half Sinusoid)		
Anti-vibration	10grms / 10~1000Hz		
Protection grade	IP67		
Cables	Standard 1 meter long wear-resistant, wide temperature, shielded cable, aviation connector, weight ≤150g		
Weight	≤400g (Excluding cable)		

1)Resolution: The smallest change in the measured quantity that a sensor can detect and distinguish within its measurement range.
2)Accuracy: The accuracy value obtained by measuring multiple angle points within the measurement range.
3)Zero-point temperature coefficient: The rate of change of the sensor's reading relative to room temperature within its rated operating temperature range when the sensor is at zero.
4)Sensitivity temperature coefficient: The rate of change of the sensor's full-scale reading relative to its full-scale reading at room temperature within its rated operating temperature range as a percentage of temperature.

Order selection

Model		Range		Output Interface	communication protocol		Installation direction
WDS826FL	-	10: ±10°	-	232: RS232	SP: Serial Communication Protocol	-	H: horizontal installation
				485: RS485	MB: MODBUS Protocol		V: vertical installation
				422: RS422			

E.g: WDS826FL-10-232SP-H: ±10° measurement range/RS232 signal output/SP serial communication protocol/horizontal installation.

Electrical parameters

Parameters	Condition	Min	Standard		Max	Unit
Power supply	Standard	9	12	24	36	V
	customized		Other voltage			V
Working current	12V		33			mA
	24V		19			mA
Working temp		-40			+85	℃
Store temp		-40			+85	℃

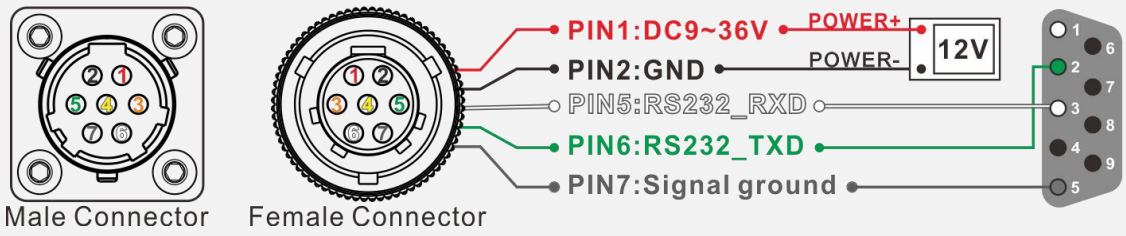
Function Description Of Indicator Light

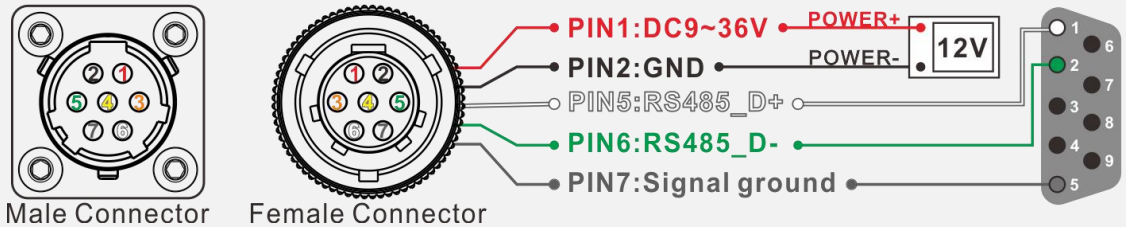
The red work indicator light is always on when powered on and flashes during communication.

Wiring Definition

RS232/RS485 Pin Color Definition

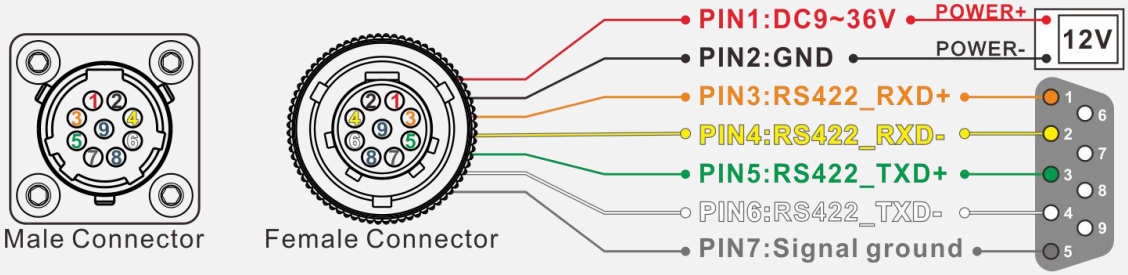
Pin/Wire Color	Definition	Description
Pin1 / Red	Dc9~36V	Positive Power Terminal
Pin2 / Black	GND	Negative Terminal Of Power Supply
Pin3 / White	Rs232_RXD / Rs485_D+	-
Pin4 / Green	Rs232_TXD / Rs485_D-	-
Pin5 / Gray	Signal Ground	Signal Ground
Pin6 / --	-	Internal Use In The Factory
Pin7 / --	-	Internal Use In The Factory



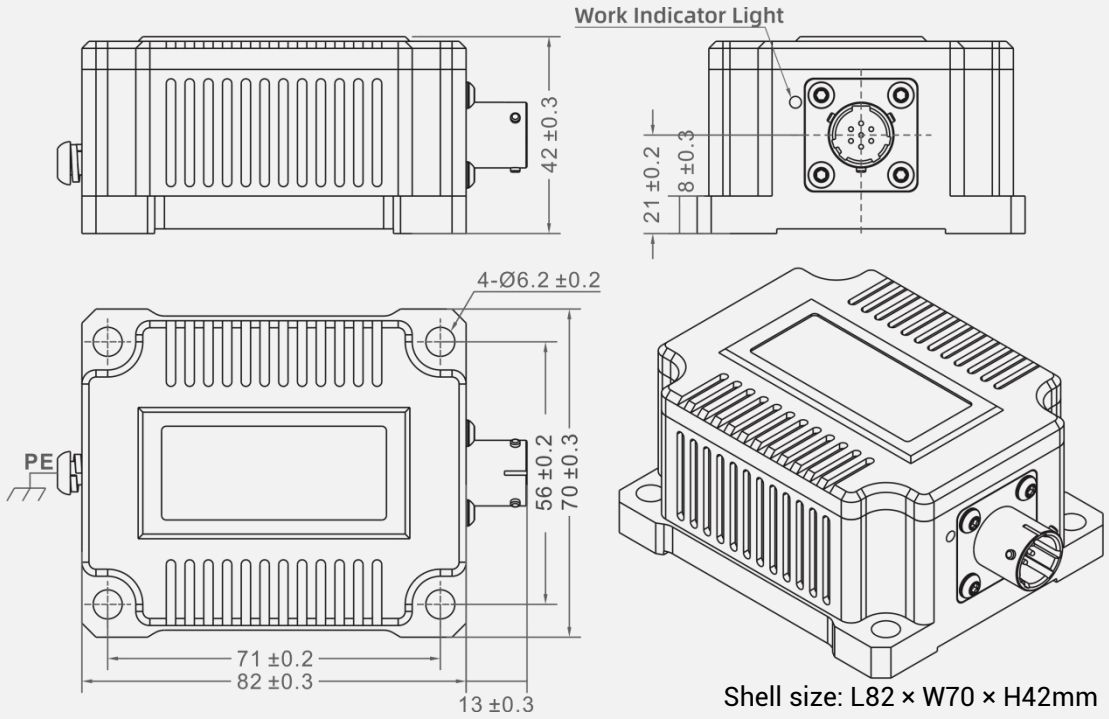


RS422Pin Color Definition

Pin/Wire Color	Definition	Description
Pin1 / Red	DC9~36V	Positive Power Terminal
Pin2 / Black	GND	Negative Terminal Of Power Supply
PIN3 / Orange	RS422_RXD+	-
PIN4 / Yellow	RS422_RXD-	-
PIN5 / Green	RS422_TXD+	-
PIN6 / White	RS422_TXD-	-
PIN7 / Gray	Signal Ground	Signal Ground
PIN8 / --	-	Internal Use In The Factory
PIN9 / --	-	Internal Use In The Factory

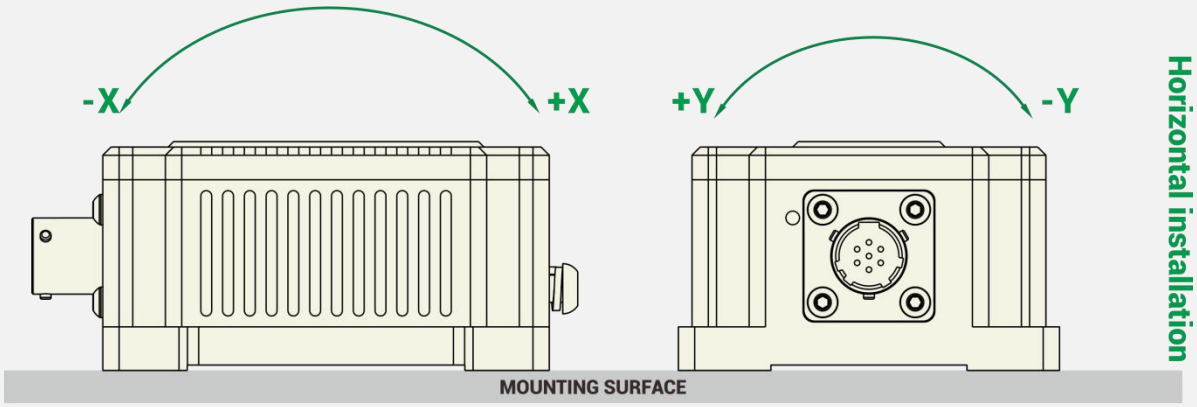


Size Chart

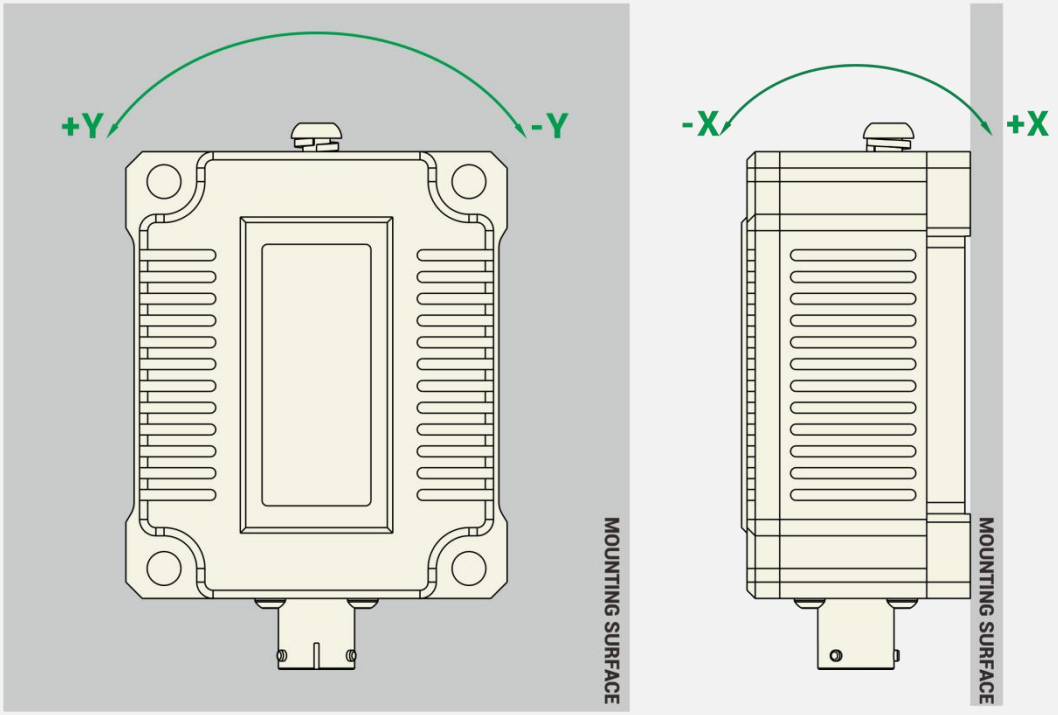


Shell size: L82 × W70 × H42mm
Installation size: L71 × W56 × H8mm
Suggested screws: 4 M6 screws

Measurement Direction

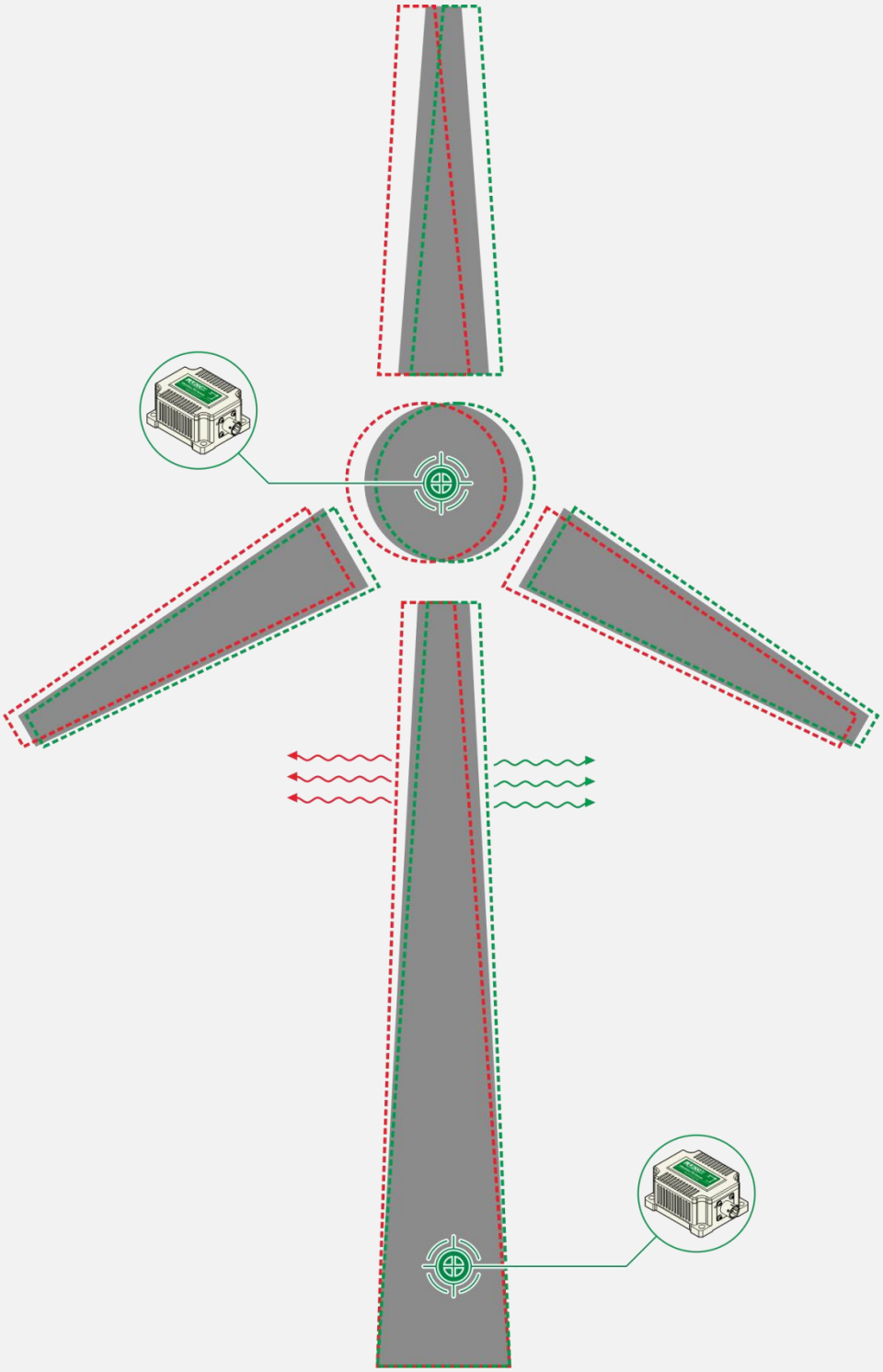


Horizontal installation



Vertical installation

Vibration Swing Measurement Legend



Low Frequency Directional Oscillation Data

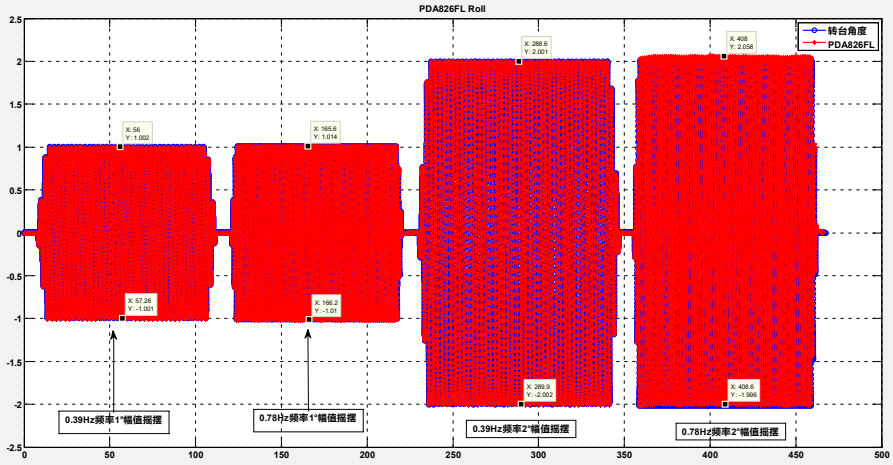


Figure 1. Roll direction swing data, including 0.39Hz frequency 1° amplitude swing, 0.78Hz frequency 1° amplitude swing, 0.39Hz frequency 2° amplitude swing, and 0.78Hz frequency 2° amplitude swing.

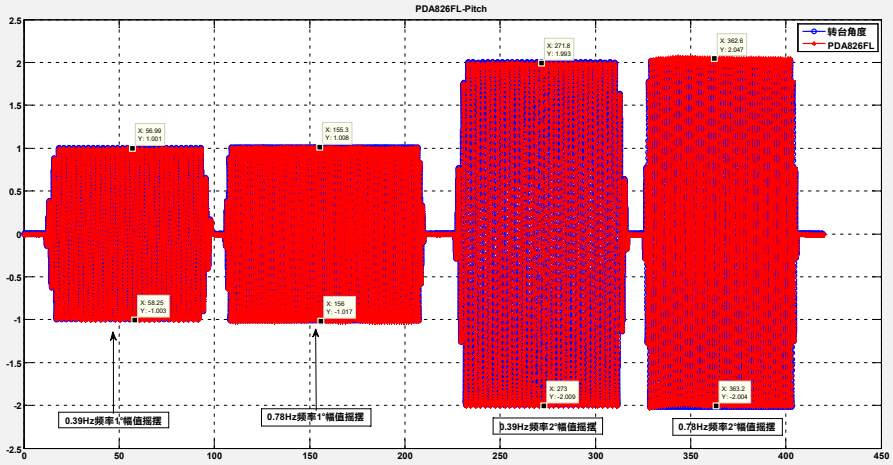


Figure 2. Pinch directional swing data, including 0.39Hz frequency 1° amplitude swing, 0.78Hz frequency 1° amplitude swing, 0.39Hz frequency 2° amplitude swing, and 0.78Hz frequency 2° amplitude swing.

Communication Protocol

The product includes Serial Communication Protocol and MODBUS RTU two protocols. The default configuration parameters of the protocol are as follows:

Protocol	Serial Communication Protocol	MODBUS-RTU protocol
Address code	0	1
Broadcast address	255	0
Baud rate	9600	9600
Parity bit	No parity	Even parity
start bit	1 bit	1 bit
data length	8 bits	8 bits
stop bit	1 bit	1 bit
Output mode	Q&A	Q&A
Data Format	Data format	Data format
Data check method	Check sum	CRC16

Serial Communication Protocol

1. Data frame format:

Identifier (1byte)	Date Length (1byte)	Addr code (1byte)	Cmd Word (1byte)	Date domain	Check sum (1byte)
68					

Default parameters: address 0, baud rate 9600, 1 start bit, 8 data, no parity, 1 stop bit.

Valid setting address: 0~254

Identifier: fixed as 0x68;

Data length: the length from data length to checksum (including checksum);

Data field: according to the different content and length of the command word changes accordingly;

Checksum: The sum of data length, address code, command word and data field, regardless of carry, that is, Sum&0xFF.

Note, please read the description below carefully before using:
1> To ensure normal communication, please leave a time interval of 10ms between each data frame. The host sends a command -- 10ms idle -- the slave replies to the command -- 10ms idle -- the host sends a command...
2> The protocol stipulates the broadcast address----255, the sensor can also accept the content of the broadcast address, but will not reply (except for the function of reading the address code). Therefore, the broadcast address 255 can be used for the following purposes, for reference only.
1. Set the addresses of all the tilt sensors of this model mounted on the bus to a certain address.
2. Set all the tilt sensors of this model mounted on the bus to relative/absolute zero point.
3. Test the sensor of this type on the entire bus, that is, the host sends a 255 address to the bus to inquire the angle command, and the communication indicate light can flash, then the communication is normal.
3> Setting instructions and procedures
1. All setting operations will not be saved when power is off, and the command setting will be effective immediately. If you need to save, you need to send a save command.
2. The operation is to send a setting command → return successfully, the setting takes effect → send a save command -> return successfully, the setting is saved.
4> when normal communication, the indicator flashes once every 1S.

2. COMMAND word analysis

CMD	Meaning/Example	Description
0X01	**Read X angle command** e.g.: ***68 04 00 01 05***	Data field (0byte) No data field command
0X81	sensor reply e.g.: **68 08 00 81 00 00 20 08 B1**	Parse the same as 0x04 command
0X02	**Read Y angle command** e.g.: ***68 04 00 02 06***	Data field (0byte) Return data format, parse as X angle
0X03	**Read temp. command** e.g.: ***68 04 00 03 07***	Data field (0byte) Return data format, parse as X angle
0X04	**Read X,Y and temp. command** e.g.: ***68 04 00 04 08***	Data field (0byte) No data field command
0X84	sensor reply e.g.: **68 10 00 84 00 00 20 08 10 00 25 28 10 35 00 80 DE**	Data field (12 byte) **00 00 20 08** The four red bytes are the X-axis return angle value, which is the compressed BCD code. The high bit **0** of the first byte is the sign bit (0 is positive, 1 is negative) **00 0** is a three-digit integer value, and **20 08** is four decimal places. The analysis method for other axis data is the same; this angle is resolved as +000.2008°. The blue Y-axis angle and green temperature data analysis methods are the same. **DE** checksum, the hexadecimal sum of all data, without prefix 68, if more than one byte, take the low byte.
0X05	**Set relative/absolute zero:** The current angle can be set to zero degrees for relative measurement, or it can be set back to absolute zero degrees. e.g.: ***68 05 00 05 00 0A***	Data field (1byte) 00:absolute zero 01:relative zero
0X85	sensor reply command e.g.: **68 05 00 85 00 8A**	Data field (1byte)The No. in the data field indicates the result of the sensor response 00: set successfully FF: set failed
0X0B	**Set baud rate** **e.g.: *68 05 00 0B 03 13*** power offer and restart to validate the command	Data field (1byte) 00 represent 2400 01 represent 4800 **02 represent 9600(factory default)** 03 represent 19200 04 represent 38400 05 represent 115200
0X8B	sensor reply command e.g.: **68 05 00 8B 90**	Data field (1byte)The No. in the data field indicates the result of the sensor response 00: set successfully FF: set failed
0X0C	**Set output mode** Q&A mode: The upper computer needs to send a reading angle command	Data field(1byte) **00 Q&A mode(factory default)** 01 5Hz Auto output mode 02 10Hz Auto output mode

	before the sensor responds to the relative angle. Auto output mode: The sensor will automatically output X, Y angle and temperature after power on. If high frequency output is required, please set the baud rate to 115200. e.g.: ***68 05 00 0C 00 11***	03 25Hz Auto output mode 04 35Hz Auto output mode 05 50Hz Auto output mode 06 100Hz Auto output mode
0X8C	sensor reply command e.g.: **68 05 00 8C 00 91**	Data field (1byte)The No. in the data field indicates the result of the sensor response 00: set successfully FF: set failed
0X0F	**Set address command** The default address of the sensor is 00; 1. If multiple sensors are connected to a set of buses at the same time, such as RS485. Each sensor needs to be set to a different address to achieve separate control and response angles. 2. If the new address is successfully changed, all subsequent commands and the address code in the response packet must be changed to the new address code to take effect, otherwise the sensor will not respond to the command. e.g.: **68 05 00 0F 01 15** Set the address as 01. **68 05 FF 0F 00 13** Use the general address to reset the address to 00	Data field(1byte) XX module address, the address ranges from 00 to EF. Note: All products have a common address: **FF, if you forget the set address during operation, you can use the FF address to operate the product.**
0X8F	sensor reply command e.g.: **68 05 00 8F 00 94**	Data field (1byte)The No. in the data field indicates the result of the sensor response 00: set successfully FF: set failed
0X53	Save sensor setting parameters e.g.: **68 04 00 53 57**	No data field
0XD3	sensor reply command e.g.: **68 05 00 D3 00 D8**	Data field (1byte)The No. in the data field indicates the result of the sensor response 00: The setting is saved successfully FF: The setting has failed to be saved
0X0D	Query relative/absolute zero point Used to query whether the current zero-degree mode of the	Data field (0byte) No data field command

	sensor is relative zero or absolute zero e.g.: **68 04 00 0D 11**	
0X8D	sensor reply command e.g.: **68 05 00 8D 00 92**	Data field(1byte)The No. in the data field indicates the result of the sensor response 00: Absolute zero 01: Relative zero
0X10	Set the serial port check bit e.g.: **68 05 00 10 00 15**	Data field(1byte) 00: Even parity 01: No parity 02: Odd parity
0X90	sensor reply command e.g.: **68 05 00 90 00 95**	Data field (1byte)The No. in the data field indicates the result of the sensor response 00: set successfully FF: set failed
0X1D	set filter length e.g.: **68 05 00 1D 10 32**	Data field (1 byte) **default value 25** Effective values: 10-100
0X9D	sensor reply command e.g.:**68 05 00 9D 00 A2**	data field (1byte) The number in the data field indicates the result of the sensor response 00: Setting succeeded FF: Setting failed
0X1C	Set latitude e.g.: **68 08 00 1C 10 23 56 01 AE**	Data field (4 bytes) **default value 22.6932** The data analysis is consistent with the data analysis method from the same angle If -23.5601, then the data field is 10 23 56 01
0X9C	The sensor responds to the reply command e.g.: **68 05 01 9C 00 A2**	Data field (1byte)The number in the data field indicates the result of the sensor response 00: set successfully FF: set failed
0X1F	Read software version number	No data domain
0X9F	sensor reply command e.g.: **68 14 00 9F 52 43 41 38 32 36 54 5F 56 32 31 30 34 30 38 41 A2**	Data field(16byte) The data field is in string format Such as version number:WDS826FL_V210408A

MODBUS COMMUNICATION PROTOCOL

MODBUS uses RTU mode, 'big-Endian' represents addresses and data items, adopts CRC16 check data, standard error code. Support 0x03 to read holding registers and 0x06 to write single registers.

1.Data frame format:

Default parameters: address 1, baud rate 9600, 1 start bit, 8 data, even parity, 1 stop bit;

Effective setting address: 1~247;

CRC check: The range is the check of all bytes before the CRC field, using 16-bit CRC check.

2.type of data:

Type	Description
INT16	Signed 16-bit integer
UINT16	Unsigned 16-bit integer
INT32	Signed 32-bit integer
UINT32	Unsigned 32-bit integer
R	Read only

Note, please read the description below carefully before using:
1> Because the MODBUS protocol stipulates that the time between two data frames should be at least 3.5 bytes (for example, at a baud rate of 9600, the time is 3.5×(1/9600)×11=0.004s). But in order to leave enough margin, please leave a time interval of 10ms between each data frame, please note that the automatic output of the product does not consider the T3.5 time.
The host sends a command -- 10ms idle -- the slave replies to the command -- 10ms idle -- the host sends a command...
2> The MODBUS stipulates the broadcast address----0, the sensor can also accept the content of the broadcast address, but will not reply (except for the function of reading the address code). Therefore, the broadcast address 0 can be used for the following purposes, for reference only.
1. Set the addresses of all the tilt sensors of this model mounted on the bus to a certain address.
2. Set all the tilt sensors of this model mounted on the bus to relative/absolute zero point.
3. Test the sensor of this type on the entire bus, that is, the host sends a 0 address to the bus to inquire the angle command, and the communication indicate light can flash, then the communication is normal.
3> In order to improve the reliability of the system, all commands must be sent twice in a row to be effective. Two consecutive transmissions are sent successfully (the slave has a reply each time), and the two queries and answers must be consecutive, that is, the host cannot insert other data frames in the middle of the two queries and answers, the setting process: send the set address command → wait for the slave send the successful set command→ (no other commands can appear) send the set address command again → wait for the slave send the successful set command → the setting is successful.
4> each power-on can change parameter once. The normal communication indicator flashes once for 1S.

3.Part of the register table

Users can adjust the register address and length to access different axis data according to their needs. The register table is as follows:

Register add.	Data content	type of data	Coefficient	Unit	Remark
40003	X axis angle	UINT32(R)	-	°	Parse as table below
40005	Y axis angle	UINT32(R)	-	°	Parse as table below
40007	Temperature data	INT16(R)	0.01	℃	Parse as table below
40008-40009	Reserve	-	-	-	-
40010	Serial check digit	UINT16(R)	1	-	0~2
40011-40014	Reserve	-	-	-	-
40015	Filter length	UINT16(R)	1	-	12~64
40016	Reserve	-	-	-	-
40017	Relative zero	UINT16(R)	1	-	Relative: 0xFF Absolute: 0x00
40018	Product address	UINT16(R)	1	-	1~247
40019	Serial port baud rate	UINT16(R)	1	-	xA0~0XA4
40020	Sensor output mode	UINT16(R)	1	-	0~6
40021	latitude	INT16(R)	0.01	°	-90~90°
40022	Reserve	-	-	-	-
40023	X-axis angle	INT32(R)	0.0001	°	Data parsing method:Data value=Register data * Coefficient.
40025	Y-axis angle	INT32(R)	0.0001	°	
40027	temperature data	INT16(R)	0.01	℃	

40031	X-axis acceleration	INT16(R)	0.001	G	The analysis method is the same as above
40032	Y-axis acceleration	INT16(R)	0.001	G	
40033	Z-axis acceleration	INT16(R)	0.001	G	

4.Read angle data

MODBUS function code 03H, read data command application example 1:

Host query command:		Slave response:		
Sensor address	01H	Sensor address	01H	
Function code	03H	Function code	03H	
Access register first address	00H	Data length of 10 bytes	0AH	
	02H	Data word 1-4 bytes	50H	X-axis data
Data length of 5 words	00H		46H	
	05H		00H	
CRC	2409H		00H	
		Data word 5-8 bytes	23H	Y-axis data
			20H	
			00H	
			00H	
		Data word 9-10bytes	03	temperature
			57	
		CRC	FA0EH	

Example of reading measurement data command1:								
Host sending	01H	03H	00H	02H	00H	05H	24H	09H
Slave response	01H	03H	0AH	50H	46H	00H	00H	23H
	20H	00H	00H	03H	57H	FAH	0EH	

Note: The data fields of the slave reply frame are 50H, 46H, 00H, 00H, 23H, 20H, 00H, 00H, 03H, 57H

The X-axis represents the 1st to 4th bytes of the data field, the Y-axis represents the 5th to 8th bytes of the data field, and the lower bytes come first.The representation method of angle is dot notation, where one point corresponds to 0.0001 °, and 0.0001 × (dot offset) is the angle.If the measurement range is ± 10 °, the total number of points is 200000.So 0 corresponds to -10 °, 200000 corresponds to+10 °, and 100000 corresponds to 0 °.

Taking the above data frame as an example: the process of angle conversion is as follows:

1）Get the current angle point count, note that the low byte comes first, the X-axis is 00004650H, and the Y-axis is 00002023H.

2）Convert to decimal, X-axis: 00004650H → 18000, Y-axis: 00002023H → 8227.

3）Subtract the offset of 100000 (note: this value is a quantity related to the measurement range, multiply the measurement range value by 10000, if the offset of the measurement range ± 10 ° is 10 * 10000, and the offset of the measurement range ± 30 ° is 30 * 10000), X-axis: 18000-100000=-82000, Y-axis: 8227-100000=-91773.

4）Obtain the final angle, X-axis: -82000 × 0.0001=-8.200°, Y-axis: -91773 × 0.0001=-9.1773°.

The temperature is the 9th to 10th byte of the data field, and the number of temperature points is 0357H ->855, that is, temperature: 855 * 0.01=8.55℃.

5.Set the sensor relative / absolute zero:

MODBUS function code 06H

Set relative/absolute ZERO commands		Slave response :	
Sensor address	01H	Sensor address	01H
Function code	06H	Function code	06H
Access register first address	00H	Register Address	00H
	10H		10H
If the word is non-zero, it is a relative zero, and if it is zero, it is an absolute zero	00 H	If the word is non-zero, it is a relative zero point, and if it is zero, it is an absolute zero point	00H
	FFH / 00H Relative/ absolute		FFH / 00H Relative/ absolute
CRC	C84FH/ 880FH	CRC	C84FH/ 880FH

Commands must be sent twice in succession to be effective

Example of Set relative/absolute ZERO Command:								
Host sending	01 H	06 H	00 H	10 H	00 H	FFH	C8H	4FH
Slave response	01 H	06 H	00 H	10 H	00 H	FFH	C8H	4FH

Note: 0010 is the register address. This register controls the sensor output to be relative zero or absolute zero. If it is non-zero (as in the above example, 00FFH is written), the output is relative zero. Conversely, if it is zero (change the 5th and 6th bytes to 00H), it is an absolute zero. The last two bytes are the CRC checksum.

6.Set sensor address :(sensor address default is 1)

Set sensor address code command:		Slave response :	
Sensor address	01H	Sensor address	01H
Function code	06H	Function code	06H
Address	00H	Register Address	00H
	11H		11H
Sensor new address	00H	Sensor new address	00H
	04H		04H
CRC	D80C	CRC	D80C

The command must be sent twice in a row to be effective

Example application of setting sensor address command:								
Host sending	01H	06H	00H	11H	00H	04H	D8H	0CH
Slave response	01H	06H	00H	11H	00H	04H	D8H	0CH

Note: 0011H is the register address, which controls the sensor address. In the above example, the address of the sensor is changed to 0004H, and the last two bytes are the CRC checksum.

7. Set sensor serial port baud rate: (Factory default is 9600bps)

Set sensor serial port baud rate command:		Slave response:	
Sensor address	01H	Sensor address	01H
Function code	06H	Function code	06H
Address	00H	Register Address	00H
	12H		12H
Sensor baud rate	00H	Sensor baud rate	00H
	XX		XX
CRC	CRC LH	CRC	CRC LH

XX : A0H:4800 A1H:9600 A2H:19200 A3H:38400 A4H:115200

The command must be sent twice in a row to be effective

Example application of setting sensor serial port baud rate command:								
Host sending	01H	06H	00H	12H	00H	A2H	A8H	76H
Slave response	01H	06H	00H	12H	00H	A2H	A8H	76H

Note: 0012H is the register address, which controls the sensor baud rate. In the above example, the baud rate of the sensor is set to 19200, and the last two bytes are the CRC checksum.

8.Set the parity bit of the sensor serial port: (factory default is even parity)

Set sensor serial port parity command:		Slave response:	
Sensor address	01H	Sensor address	01H
Function code	06H	Function code	06H
Address	00H	Address	00H
	09H		09H
Sensor serial port parity bit	00H	Sensor serial port parity bit	00H
	01H		01H
CRC	9808	CRC	9808

Example application of setting sensor serial port parity check command:								
Host sending	01H	06H	00H	09H	00H	01H	98H	08H
Slave response	01H	06H	00H	09H	00H	01H	98H	08H

The above example is to set the byte format to: one start bit+8 data bits without parity+1 stop bit

Effective after re powering on. The factory default is a start bit+8 data bit parity+1 stop bit

Note: 0009 is the register address, which controls the parity check bit of the sensor serial port.

0000H: One start bit+8 data bit parity checks+1 stop bit

0001 H: One start bit+8 data bits without checksum+1 stop bit

0002H: One start bit+8 data bits odd parity+1 stop bit

9.Set sensor output mode: (factory default 0HZ)

Command to set sensor output mode:		slave response:	
Sensor address	01H	Sensor address	01H
Function code	06H	Function code	06H
Address	00H	Register Address	00H
	13H		13H
Sensor output mode	00H	Sensor output mode	00H
	XX		XX
CRC	CRC LH	CRC	CRC LH

XX: 00H: Q&A mode 01H: 5Hz 02H: 10Hz 03H: 25Hz 04H: 35Hz 05H: 50Hz 06H: 100Hz

Set sensor output mode command example:								
Host sending	01H	06H	00H	13H	00H	02H	F9H	CEH
Slave response	01H	06H	00H	13H	00 H	02H	F9H	CEH

Note: 0013H is the register address, which controls the sensor output mode. In the above example, the sensor is set to output at 25Hz, and the last two bytes are the CRC checksum.

10.Set sensor latitude: (factory default 22.69 °)

Command for setting sensor latitude:		slave response:	
Sensor address	01H	Sensor address	01H
Function code	06H	Function code	06H
Address	00H	Register Address	00H
	14H		14H
Sensor latitude	XXH	Sensor latitude	XXH
	XXH		XXH
CRC	CRC LH	CRC	CRC LH

XXXX : UINT16 type, coefficient 0.01

Set sensor latitude command example								
Host sending	01H	06H	00H	14H	11H	20H	C4H	46H
Slave response	01H	06H	00H	14H	11 H	20H	C4H	46H

Note: 0014H is the register address, which controls the sensor latitude. In the above example, 1120H is converted to 4384 decimal and multiplied by a coefficient of 0.01 to obtain 43.84 °, which means setting the sensor latitude to 43.84 °. The last two bytes are the CRC checksum.

11.Set the sensor filter length

Set sensor filter length command:		slave response:	
Sensor address	01H	Sensor address	01H
Function code	06H	Function code	06H
Address	00H	Register Address	00H
	0EH		0EH
Filter length of sensor	00H	Filter length of sensor	00H
	XX		XX
CRC	CRC LH	CRC	CRC LH

XX : 0x0C~0x40

Set sensor filter length command example:								
Host sending	01H	06H	00H	0EH	00H	20H	E9H	D1H
Slave response	01H	06H	00H	0EH	00 H	20H	E9H	D1H

Note: 000EH is the register address, which controls the filter length of the sensor. In the above example, the sensor filter length is set to 32, and the last two bytes are the CRC checksum.

Note: After setting the filtering length, it needs to be powered on again to take effect.