

Products description and application



FA130C is a smart wind data display and alarm device, specially designed for large machinery. It has unique design, durable and reliable, high interference resistant capacity, ease to mount.

Features

- All NANHUA FA series wind sensors are compatible.
- Two-way relay alarm output, buzzer alarm, alarm point setting is available.
- Mini display panel, four digits, 16 wind direction indication, wind speed and wind scale display is switchable.
- RS485 interface, PC connection, display, logging, analysis wind data on PC by using the software (download from NANHUA website).
- 4-20mA current output, PLC connection is available.

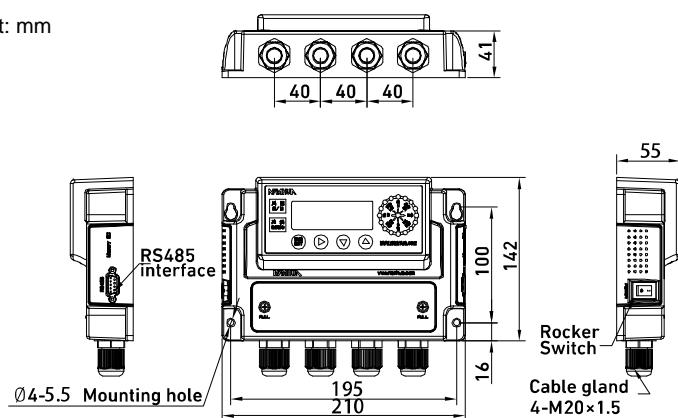
General Specifications

Electrical	Mechanical		
Rated voltage	AC85V~AC265V ¹	Housing material	ABS
Wind speed alarm	Two-way relay alarm output (Pre-alarm – NO, Alarm – NO) Built-in buzzer alarm	Application	Indoor
	RS485 protocol	Humidity	0%~100%RH
	4~20mA current signal, linearly proportional to wind speed	Operating temperature	Ta-30°C ~ +70°C
	Load less than 500 Ω	Housing color	Black RAL9005
Display	Wind speed display – 3 digits 16 wind direction 1 frequency per second	Weight	0.5 kg
Signal input	4~20mA current		
Meteorological			
Range(wind speed)	0~99.9m/s	Range(wind direction)	0~359°
Resolution(wind speed)	0.1m/s	Resolution(wind direction)	1°

1. Rated voltage, see How to Order

Mounting dimensions

Unit: mm



Installation

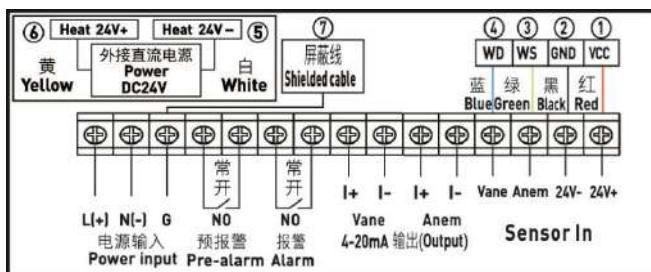
1. Ensure that the input voltage is correct.
2. Ensure mount face is flat.
3. Fix product to mount face by using four nos. M5 screws(not provided), ensure mount face is flat and has enough mechanical strength.
4. Remove screws from front cover, see terminal blocks.
5. Insert the cable through cable gland, correctly connect power line, data line and control line and control line to terminals according to the indication tags on wires (wiring diagram is provide on the left).
6. Product start to operate when power on, display wind data when wind speed sensor is operating.
7. To prevent short circuit, fix well the unused terminals.

Caution

1. Ensure cable connection is correct before power on
2. Cable shield layer and housing must be well grounded.

3. Manage and fix wind speed sensor cables well.
4. Indoor application, work with 4-20mA current signal wind sensor.

Wiring diagram



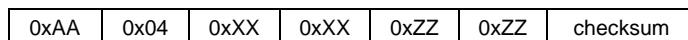
Wind speed sensor connect to Red, Black, Blue wire to VCC, GND, WD terminals.

Wind speed and direction sensor connect to Red, Black, Green, Blue wires to *VCC*, *GND*, *WS*, *WD* terminals.

It is recommended to use RVVP/0.5mm² /copper core/high and low temperature resistant shielding cable

RS485 protocol

1. Baud rate: 9600 bit/s, 8 bit data, no parity check, one stop bit .
2. Data definition: auto-output a frame per 1s, total 7 bytes.



3. Byte definition: 0xAA is synchronous head, 0x04 is message length, the next 0xXX bytes combine a word which indicates wind speed, the next two bytes combine a word which indicates wind direction, checksum = 0xXX+0xXX+0xZZ+0xZZ, indicates checksum.

4. For example 0xAA 0x04 0x01 0x6A 0x01 0x2C 0x98
Indicates: Wind speed is 0x016A = 36.2m/s, wind direction is 0x012C = 300°.

Caution: RS485 interface is standard 9-pin DB9 connector. Foot 1 is A line of RS485, foot 2 is B line.

Operating and Debugging

Operating and Debugging

1. Mode and parameter setting:
 - 1) A is wind speed and scale: A00.0 is wind speed (see fig.1), A10.0 is wind scale (see fig.2).
 - 2) b is Pre-alarm setting: For example, if display "b18.0", wind speed indicator is lit up, wind speed is 18m/s (see fig. 3). When wind speed or wind scale reach the set value, product output pre-alarm signal, built-in buzzer start to alarm, frequency is 1HZ.
 - 3) C is Alarm setting: For example, if display "c09.0", wind scale indicator is lit up, wind scale is 9 (see fig. 4).When wind speed or wind scale reach the set value, product output alarm signal, built-in buzzer start to alarm, frequency is 2HZ.
 - 4) d is wind speed range: For example, if display "d50.0", it means wind speed range is 0-50m/s (see fig.5)
If wind speed range is linearly proportional to wind speed 0-50m/s, please set d mode as „d50.0“
If wind speed range is linearly proportional to wind speed 0-30m/s, please set d mode as „d30.0“
 - 5) Mode setting (Automatic return to normal mode and don't save changing data if no action within 10 seconds in SETTING mode.)
Mode A: Press the SET button for 3 seconds until digit **A** flash.
Mode b: When character C or A is flashing, short press **▼** or **▲** until digit **b** flash.
Mode C: While character A or b is flashing, short press **▼** or **▲** until digit **C** flash.
Mode d: While character A or C is flashing, short press **▼** or **▲** until digit **d** flash.
 - 6) Parameter setting (Switching wind speed to wind scale is not linear, wind speed number has a little change when switch wind speed to wind scale.)
(In mode setting, short press **►** and move the cursor to the required position, then short press **▼** or **▲** to change the number, when the setting is completed, press SET button for 3 seconds to save and quit.)

2. Wind direction setting

Product displays 16 wind direction. In normal mode, press ► a second, enter into wind direction mode, it displays 0~359 degree and 16 wind direction; press ► a second again, quit wind direction mode, return to normal mode (see fig. 6).

Caution:

1. Long press ▼ and ▲ for 3 seconds to reset product to factory default configuration.
2. Entering into or quitting parameter setting and resting product to factory default configuration come with a “Di” sound.

Ex-factory setting:

Nos.	Parameter	Value
1	Wind speed range	0~50m/s
2	Pre-alarm	18m/s scale 8
3	Alarm	22m/s scale 9
4	Display	Wind speed

Trouble shooting:

Nos	Failure description	Possible cause	Solution
1	Display panel not work	Wiring error	Check power cable, ensure line L, N, G connection is correct
		Rocker switch is OFF position	Check Rocker switch and turn it on
2	Product display "----"	24V power output is failure	Use multimeter to check product 24V power(see wiring diagram)
		Wind sensor does not have signal output	Check wind sensor's wiring connection, if wiring is good, then wind sensor is failure

FA130C display panel diagram:



Fig.1: wind speed



Fig. 2: wind scale



Fig. 3: Pre-alarm setting



Fig. 4: Alarm setting



Fig. 5: wind speed range setting



Fig. 6: Wind direction setting

You can download FA220S Wind data logging and analysis software on our website.



How to Order

P/N	Model	Rated voltage	Signal input	Output
1000264-001	FA130C	AC85V-AC265V	4-20mA current signal	Wind speed 4-20mA current signal, Wind direction 4-20mA current signal, RS485 (Baud rate 9600bps)
1000264-002	FA130C	DC12V	4-20mA current signal	Wind speed 4-20mA current signal, Wind direction 4-20mA current signal, RS485 (Baud rate 9600bps)
1000264-003	FA130C	DC24V	4-20mA current signal	Wind speed 4-20mA current signal, Wind direction 4-20mA current signal, RS485 (Baud rate 9600bps)

Thanks for choosing our products, NANHUA Electronics is the professional brand of signal transmission and high quality industrial lighting which is trusted and loved by global users from various industries.

Read and understand these instructions completely and carefully. Wrong installation and operation may lead to fires, electric shock, and others. Due to our continued efforts to improve our products, product specifications are subject to change without notice. ©NANHUA Electronics Co., Ltd. All rights reserved. www.nanhua.com