FA130C Wind Data Display

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)	Application	Indoor
	Built-in buzzer alarm	Humidity	0%~100%RH
	RS485 protocol	Operating temperature	Ta-30℃ ~ +70℃
	4～20mA current signal, linearly proportional to wind speed	Housing color	Black RAL9005
	Load less than 500Ω	Weight	0.5 kg
Diaplay	Wind speed display – 3 digits 16 wind direction 1 frequency per second		
Signal input	4～20mA current		
Meteorological			
Range(wind speed)	0～99.9m/s	Range(winddirection)	0～359°
Resolution(wind speed)	0.1m/s	Resolution(wind direction)	1°

1.   Rated voltage, see How to Order

Mounting dimensions

Unit: mm
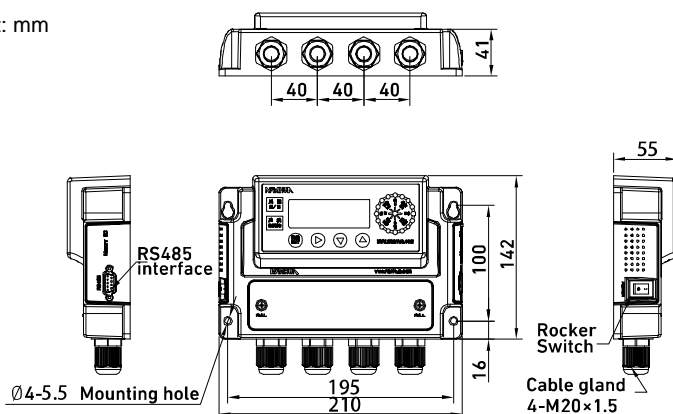
Installation
1. Ensure that the input voltage is correct.
2. Ensure mount face is flat.
3. Fix product to mount face by using four nos. M5 screws(not provided), ensure mount face is flat and has enough mechanical strength.
4. Remove screws from front cover, see terminal blocks.
5. Insert the cable through 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.
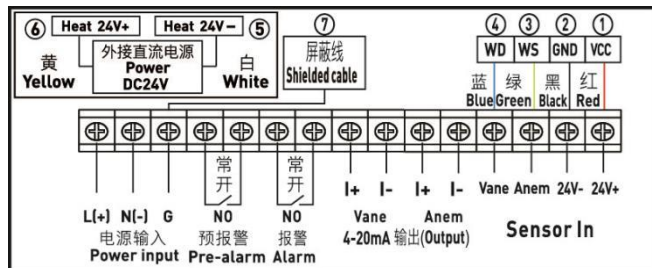7. To prevent short circuit, fix well the unused terminals.

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

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

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Wiring diagram

When only current output type wind speed sensor is connected to FA130C display, connect the lines marked with "VCC", "GND" and "Singal" to "24V+", "24V-" and "Anem" terminals respectively.

When current output type wind speed sensor and wind direction sensor are simultaneously connected to FA130C display, refer to the wiring diagram on the left:

1.RVVP/0.5mm2/copper core/high and low temperature shielded cord is recommended as communication cable.

2. For the equipped cable
The green signal line of the aviation plug is marked with Wind S and indicates the sensor wind speed signal.
The blue signal line of the aviation plug is marked with Wind D and indicates the sensor wind direction signal.

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.

0xAA	0x04	0xXX	0xXX	0xZZ	0xZZ	checksum

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

4. For example 0xAA 0x04 0x01 0x6A 0x01 0x2C 0x98
Indicate: 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
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 untill digit **A** flash.
Mode b: When characterC or A is flashing, shore press▼ or ▲ unitl digit **b** flash.
Mode C: While characterA or b is flashing, shore press ▼ or ▲ unitl digit **C** flash.
Mode d: While characterA or C is flashing, shore press ▼ or ▲ unitl 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 compeleted, 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.

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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

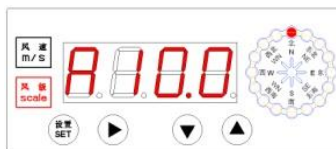FA130C display panel diagram:

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.

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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)
1000265-015	FA130C	AC85V-AC265V	4-20mA current signal	Wind speed 4-20mA current signal, Wind direction 4-20mA current signal, RS485 (Baud rate 9600bps),Wind speed measurement range factory default is 0-60m/s