



Products description and application

FA101C Wind Data Display is a smart wind data display and alarm device, specially designed for large machinery. Unique designs, durable and reliable, ease to mount.

Features

- Adopts digital communication between wind sensor and wind data display, effectively improve product reliability and anti-interference capacity.
- 12 bit resolution current signal output.
- Two-way relay alarm output, buzzer alarm, alarm point setting is available.
- RS485 interface
- Mini display panel, four digits.

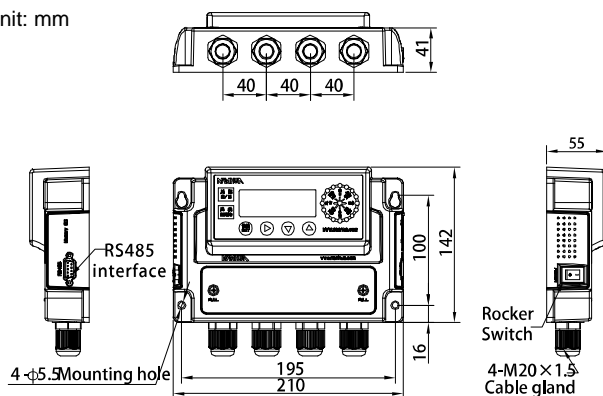
General Specifications

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

1. Rated voltage, see How to Order

Mounting dimensions

Unit: mm



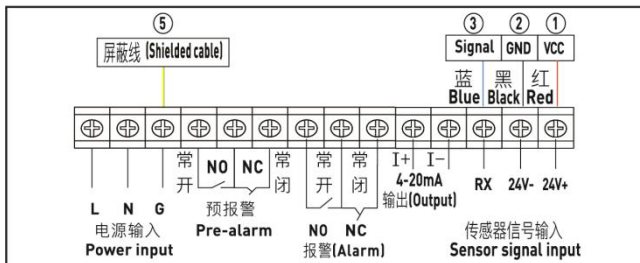
Installation

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 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 UART signal wind speed sensor only.

Wiring diagram



Wiring connection:

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

Caution:

1. Yellow wire and white wire are the heating line, connect to 24VDC power when using the heating function.
2. To prevent short circuit, fix well the unused terminals.
3. Cable shield layer must be well grounded.

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	0x00	0x00	checksum
------	------	------	------	------	------	----------

3. Byte definition: 0xAA is synchronous head, 0x04 is message length, next 0xXX bytes combine a word which indicate wind speed, the next two bytes are useless, checksum = 0xXX+0xXX+0x00+0x00, indicate checksum.
4. For example: 0xAA 0x040x01 0x6A 0x000x6B
Wind speed is 0x016A = 36.2m/s (data is binary number, convert to decimal number indicate wind speed)
Checksum is 0x6B=0x01+0x6A+0x00+0x00

Caution:

RS485 interface is standard 9—pin DB9 connector. Foot 1 is A line of RS485, foot 2 is B line, the others are useless.

Operating and Debugging

1. Power on self-test

Ensure installation and wiring are correct well and then turn on the product, self-test takes 1~3 seconds. If display “----”, indicate wind speed sensor has poor connect, go to check cables connection, or check whether the wind speed sensor was damaged.

2. Mode and parameter setting

- 1) A is wind speed and scale setting: 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) Mode setting
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.
- 5) Parameter setting
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.

3. Remark

- 1) Automatic return to normal mode and don't save changing data if no action within 10 seconds in SETTING mode.
- 2) Switching wind speed to wind scale is not linear; wind speed number has a little change when switch wind speed to wind scale.
- 3) Short press “SET” button (less than 1 second) to switch wind speed and wind scale.
- 4) Long press ▼ and ▲ for 3 seconds to reset product to factory default configuration.
- 5) Entering into or quitting parameter setting and resting product to factory default configuration come with a “Di” sound.
- 6) In wind speed and scale setting, A15.4 and A15.5 are factory self-test numbers, do not set these two numbers in your application.

4. Factory setting

S/N	Parameter	Value
1	Pre-alarm	18m/s, scale 8
2	Alarm	22m/s, scale 9
3	Display	Wind speed

FA101C Wind Data Display



FA101C display panel diagram:



Fig. 1: wind speed



Fig. 2: wind scale



Fig. 3: Pre-alarm setting

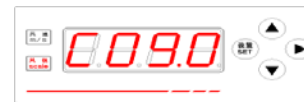


Fig. 4: Alarm setting

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



Troubleshooting

S/N	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 operate abnormally when large electric equipment is operating.	Cable shield layer is not well grounded	Check wind sensor's wiring connection, if wiring is good, then wind sensor is failure
3	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

How to Order

P/N	Model	Rated voltage	Wind speed signal	Output
1000056-001	FA101C	AC85V-AC265V	300bps UART	4-20mA current output (0-60m/s) and RS485 output (Baud rate 9600bps)
1000056-002	FA101C	DC24V	300bps UART	4-20mA current output (0-60m/s) and RS485 output (Baud rate 9600bps)
1000056-005	FA101C	AC48V	300bps UART	4-20mA current output (0-60m/s) and RS485 output (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