FA213A wind speed and vane sensor

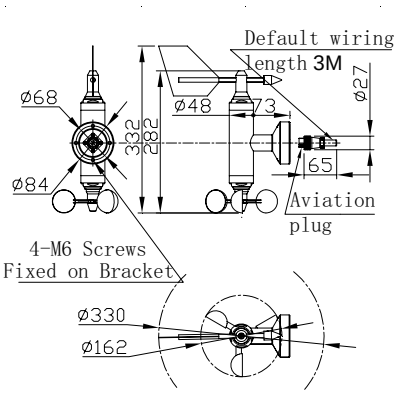
FA213A-E1-V10

FA213A

FA213A +PJ3001

FA213A +PJ3002

FA213A mounting diagram(Unit:mm)



Application

Special design for plant, electric power, harbor, factories and mines, wind generator etc large mechanical equipments.

Major functions & features

FA213A

- Wind sensor use magnetic sensor measuring principle.
- Sensor data collected with high precision and reliability.
- Wind speed measurement with wide range, low wind speed start.
- Wind speed sensor use metal enclosure, corrosion resistant and strong anti-wind capability
- Wind cup stainless steel, can be used in harsh conditions.
- Compact sensor design, set wind speed measurement, heating device in one, easy installation and maintenance.
- Sensor fault-tolerant design, sensor will not be damaged even wrong wiring.
- Surge protection design.
- Wide voltage range.

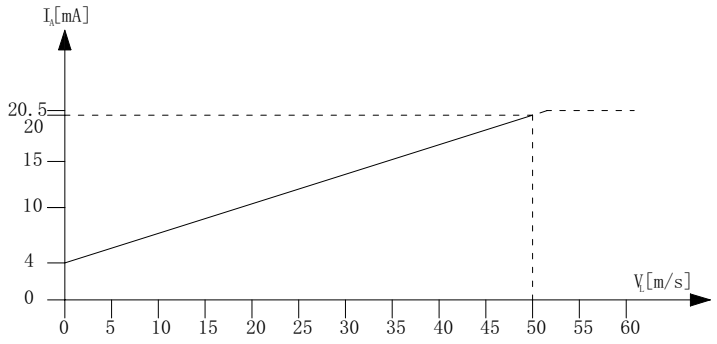
Specifications

FA213A:

Voltage	VCC=DC12V-DC30V	Current	<100mA
Threshold	≤0.5m/s	Anti-wind level	>70 m/s
Wind speed resolution	0.01m/s	Wind direction resolution	0.35°
Wind speed range	0.5-50m/s	Wind speed measure accuracy	±0.5 m/s (<5m/s) Measuring vale±3% (≥5 m/s)
Wind speed signal output	4～20mA current (linear correspond 0~50m/s), load resistance ≤500Ω		
Wind direction range	0～360°	Wind direction meausure accuracy	±2°
Wind direction signal output	4～20mA current (linear correspond 0~359°), load resistance ≤500Ω		
Heating voltage	DC24V±6V	Heating power	≤100W
Heating type	PTC Automatic		
Surge protection	4KV/2KA	ESD protection	15KV
Ambient temperature	-40℃~+70℃	Humidity	0%~95%(no coagulation)
Insatallation	PJ3001 or PJ3002 or customized	Wire method	Aviation plug
Body material	Aluminum alloy/ polyester coating	IP rate	IP65
Wind cup material	Stainless Steel 304	Vane material	Carbon fiber+ stainless steel 304
Bearing material	Stainless Steel 440C	Bearing supplier	NMB/EZO
Weight	2.8KG		

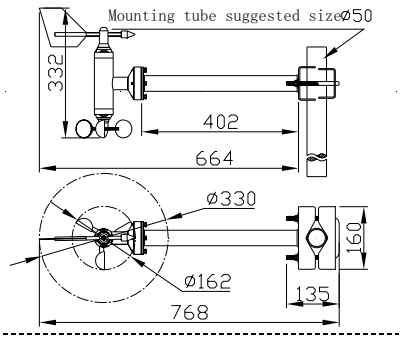
Can be used with the displayer FA130C or FA220C

Wind direction current output curve:

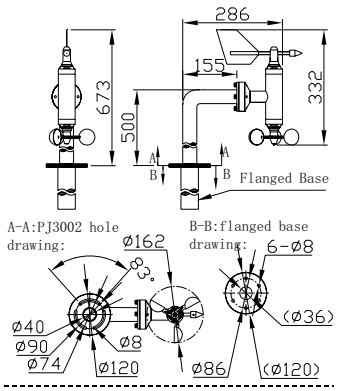


Current output characteristic curve (wind speed corresponding current)

FA213A +PJ3001 mounting dimension (unit:mm)



FA213A +PJ3002 mounting dimension (unit:mm)

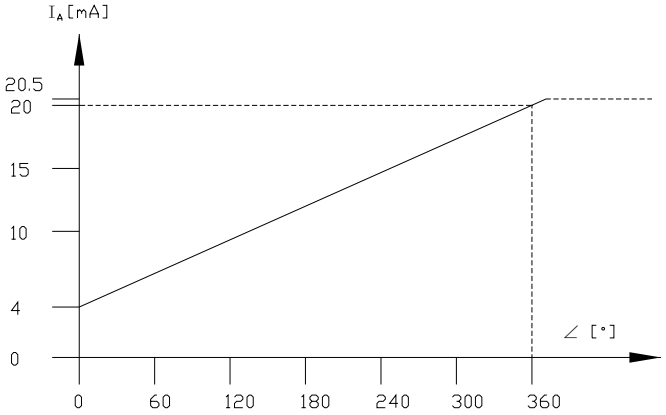


North Point

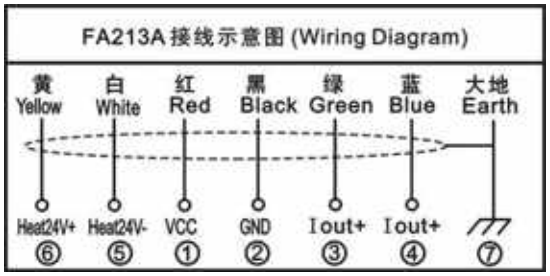
Compass

Application

Wind direction current output curve:



Current output characteristic curve (wind direction corresponding current)



The "green" signal cable of aviation plug is marked Winds showing wind speed signal output, and the "blue" cable is marked WindD showing wind direction signal ouput Communication cable RVVP / 6 core / 0.5mm ² / copper / low-temperature shield cord, the default wiring length L = 3m (customizable); maximum communication distance of 1000m.

Installation and operation

- **FA213A fix on bracket:** Refer to FA21xA mounting diagram
- **FA213A +PJ3001 installation**:

A. Insert aviation plug to socket, put cable through PJ3001 bracket, fix FA21xA on bracket.

B. Fix PJ3001 on mounting tube (customer owned).

C. Aviation plug: green wire marked WindS, indicate wind speed signal output ; blue wire marked WindD, indicate wind direction signal output.

- **FA213A +PJ3002 installation:**

A. Insert aviation plug to socket, put cable through PJ3002 bracket, fix FA21xA on bracket.

B. Fix PJ3002 on mounting tube (customer owned).

- **Wind vane point to North,**

Please keep North point of wind vane and geomagnetic pole consistent. (Can use compass for calibration).

Notice

- Please use the product strictly in accordance with the instruction above.
- Ensure wire connection correctly before power on.
- Cable shielding layer and housing must be reliably grounded.
- It is recommended to inspect every 18 months.

Annex1 : wind direction and angle reference table

Wind direction and angle reference table			
Direction	Symbol	Centre angle	Angle range
north	N	0	348.76~11.25
north-north-east	NNE	22.5	11.26~33.75
north-east	NE	45	33.76~56.25
east-north-east	ENE	67.5	56.26~78.75
east	E	90	78.76~101.25
east-south-east	ESE	112.5	101.26~123.75
south-east	SE	135	123.76~146.25
south-south-east	SSE	157.5	146.26~168.75
south	S	180	168.76~191.25
south-south-west	SSW	202.5	191.26~213.75
south-west	SW	225	213.76~236.25
west-south-west	WSW	247.5	236.26~258.75
west	W	270	258.76~281.25
west-north-west	WNW	292.5	281.26~303.75
north-west	NW	315	303.76~326.25
north-north-west	NNW	337.5	326.26~348.75
calm	C	Angle uncertain, wind speed is 0.2m/s or less.	

Annex : wind scale, wind speed, wind presssure check list （structural design reference）

Wind scale	Name	Wind speed		Wind pressure	Status on ground	Status at sea
		km/h	m/s	W0=V2/16(kg/m²),10N/m²		
0	Calm	<1	0～0.2	0～0.0025	Calm	Sea like a mirror
1	Gentle breeze	1～5	0.3～1.5	0.0056～0.014	Smoke rises vertically. Direction of windshown by smoke drift, but not by windvanes.	Ripples
2	Light wind	6～11	1.6～3.3	0.016～0.68	Wind felt on face; leaves rustle; ordinary vanes move by wind.	Small wavelets
3	Gentle breeze	12～19	3.4～5.4	0.72～1.82	Leaves and small twigs in constand motion; wind extends light flag	Small wavelets
4	Moderate breeze	20～28	5.5～7.9	1.89～3.9	Raises dust and loose paper;	Small waves, becoming larger;
5	Fresh breeze	29～38	8.0～10.7	4～7.16	Small trees in leaf begin to sway	Moderate waves
6	Strong breeze	39～49	10.8～13.8	7.29～11.9	Large branches in motion; whistling heard in telegraph wires;	Large waves
7	Moderate gale	50～61	13.9～17.1	12.08～18.28	Whole trees in motion; inconvenience felt when walking against the wind	Sea heaps up
8	Fresh gale	62～74	17.2～20.7	18.49～26.78	Breaks twigs off trees; generally impedes progress.	Moderately high waves
9	Strong gale	75～88	20.8～24.4	27.04～37.21	Slight structural Damage occurs(chimney-pots and slates removed).	Moderately high waves
10	Very strong wind	89～102	24.5～28.4	37.52～50.41	Trees uprooted;considerable structural damage occurs	Moderately high waves
11	Storm	103～17	28.5～32.6	50.77～66.42	Seldom experienced inland; accompanied by wide-spread damage	Moderately high waves

12	Hurricane	>117	32.7～36.9	66.42～85.1	Very rarely experienced; accompanied by serious damage	The air is filled with foam and spray
13			37.0～41.4			
14			41.5～46.1			
15			46.2～50.9			
16			51.0～56.0			
17			56.1～61.2			