FA16IceFree Wind Direction Sensor

Products description and application

This FA16 wind direction sensor is maintenance free and ice free type, built-in max. 120W high efficient heating system ensures produce anti ice and freezing. Product has unique structure design, prevent body create turbulence which interfere wind vane, improve the wind data accuracy. Multi-layer windproof, sandproof and dustproof design protect the bearing which lifetime is 100,000 hours. Wind cup is integral forming, aluminum alloy material with coating ensure product capability of windproof, corrosion resistant and abrasion resistant. Product is specially designed for the wind turbines application that the environment are very cold, iced and has strong wind and sand.

Features

- Self-heating system, PTC constant temperature design, -40℃ whole wind cup ice melting[1]
- Four lay windproof and sandproof design prevents sand, dust, rain water ingress into bearing; improve the bearing performance and lifetime.
- Module design type wind vane, heating device, PCB etc. easy to assemble and on-site maintain.
- Double wind vane design ensures product has strong ability of anti-turbulence.
- Product adopts non-contact magnetic sensing detect principle, has strong anti-interference capacity, 360° measuring range, resolution is 0.35.
- Aluminium alloy structure has the character of high strength and deformation resistant, product has high ability of anti-wind.
- Reverse connect protection.
- Signal output method is optional: 4~20mA current, Pulse signal, RS485
- Pulse signal output：Pulse signal range can be customized

Test condition MIL-STD-810G: expose product in -40℃ environment, wind vane ice layer thickness is more than 6mm, turn on heating device, ambient temperature remains at -40℃, whole wind vane recover to ice-free condition in 58 minutes.

General Specifications

Electrical		**Mechanical**	
Rated voltage	DC18V~30V[1]	Housing material	Aluminum alloy + Specific coating
Operating current	Max. 50mA[2]	Wind vane	Aluminum alloy + Specific coating
Signal output	4~20mA[3]	Bearing	SS 440C
Heating voltage	DC18V~30V	Humidity	0%~100%RH
Heating power	≤120W	Operating temperature	Ta-40℃ ~ +70℃
Heating type	PTC auto heating [4]	IP rate	IEC 60529 IP65
Lightning surge	IEC 61000-4-5 4kV /2kA	Wiring	Aviation socket [5]
Electrostatic	IEC 61000-4-2 air discharge 16kV	Housing color	Black RAL9005
discharge	IEC 61000-4-2 contact discharge 8kV	Weight	1.3 kg

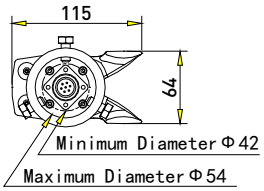
Meteorological	
Starting threshold	≤1.2m/s Vu=20℃
Anti-wind level	＞70m/s
Range	0°~360°
Accuracy	±1°
Resolution	0.35°

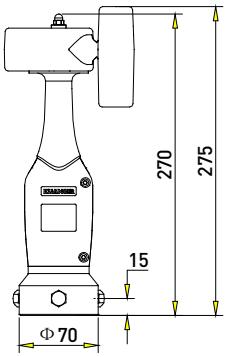
1. Rated voltage, see How to Order.

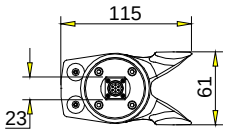
2. Current at signal end.
3. Signal output, see How to Order
4. ⩽5℃ heating on, ⩾15℃ heating off
5. Lead wire type, see How to Order.

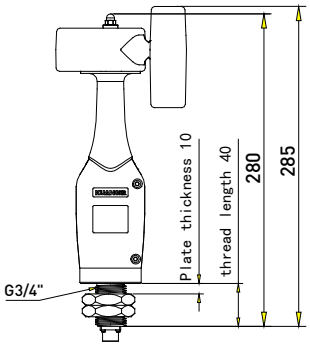
Mounting dimensions

Unit: mm







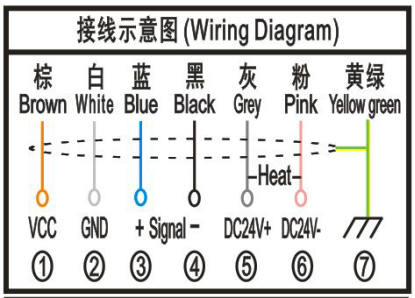


Mast tube mount
1. Connect and fix the aviation plug and socket.
2. Mount product on the top of equipment with 3 nos. M8 screws, Align the north pointing mark of product with Geographic pole (calibrating with compass) .

G3/4″ thread mount
1. Fix product with 2 nos. G3/4″ thread. Align the north pointing mark of product with Geographic pole (calibrating with compass).
2.Connect and fix the aviation plug and socket.

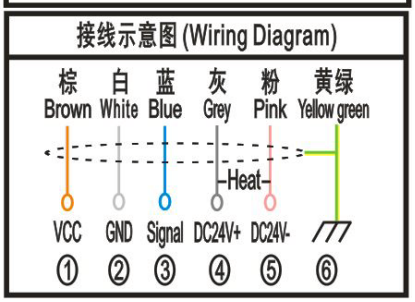
Caution: Mount the product on a horizontal level, wind vane on the top, fix product well to prevent drop.
Product should be mounted in lightning protection area LPZ 0B, connect shielded layer to earth.

Wiring diagram



4~20mA current signal and pulse signal:
Cables Use RVVP/6 core/4C*0.3mm²+2C*1 mm²/copper core/ high and low temperature resistant shielding cable,
maximum communication distance is 1000m.
Caution: Actual communication distance is related onsite condition.

Caution:
1. Ensure wiring connection is correct before power on.
2. Cable shielded layer and housing must be earthed.

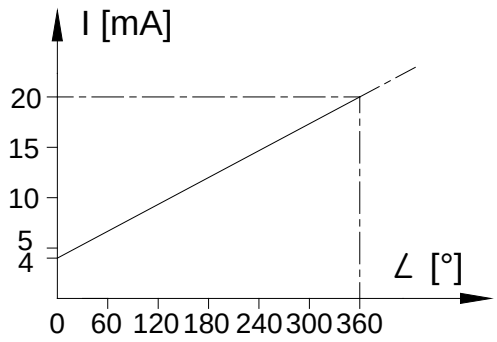


4~20mA current signal and pulse signal:
Cables Use RVVP/5 core/3C*0.3mm²+2C*1 mm²/Copper core/ high and low temperature resistant shielding cable,
maximum communication distance is 1000m.
Caution: Actual communication distance is related onsite condition.

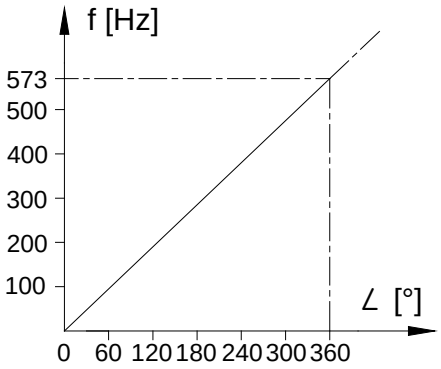
Caution:
1.Ensure wiring connection is correct before power on.
2.Cable shielded layer and housing must be earthed.

Outputcharacteristiccurve

Current signal output



Pulse signal output



How to Order

P/N	Model	Rated voltage	Signal output	Heating	Mount
1000347-001	FA16	DC18V-DC30V	4-20mA current signal，0-360°	Yes (heating power ≤120W)	G3/4 thread mount, 7-core aviation socket
1000347-002	FA16	DC18V-DC30V	4-20mA current signal，0-360°	Yes (heating power ≤120W)	Ø54 mast tube mount, 7-core aviation socket
1000347-003	FA16	DC18V-DC30V	4-20mA current signal，0-360°	Yes (heating power ≤120W)	G3/4 thread mount, 7-core aviation socket two signal-wires
1000347-004	FA16	DC18V-DC30V	NPN pulse signal，0-360° = 0-573Hz	Yes (heating power ≤120W)	G3/4 thread mount, 7-core aviation socket two signal-wires

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