# FA02Wind Direction Sensor

**KUANKER**

## Products description and application

This product is an economic type maintenance free wind speed sensor. It adopts compact design, has light weight, low power consumption, low starting threshold, various signal output for option.
Application: wind monitoring and wind data collection for engineering machinery, container cranes, mines, power plants and so on.
CMC License for Manufacturing Measuring Instruments has been approved.

## Features

- Adopt non-contact magnetic measuring technology, high anti-interference ability and reliablility.
- Wide wind measuring range, low startingthreshold, resolution up to 0.35°
- Wind vane and housing adopts maze structure connection design.
- Modular design, ease to mount and maintain on site, suit to various industries and application.
- Fault tolerant design, product not damage in wrong wiring connection.
- Multistage lightning surge design.
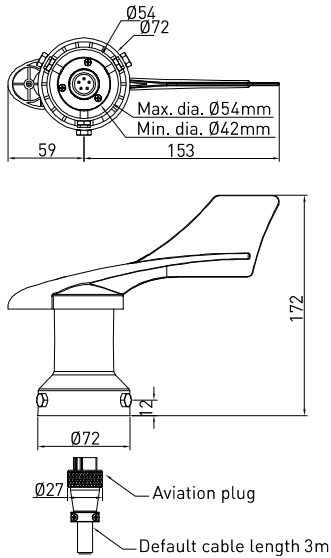- Wide voltage design.

## General Specifications

| Electrical | | Mechanical | |
|---|---|---|---|
| Rated voltage | DC5V~30V[1] | Housing material | PC+ABS |
| Operating current | Max. 35mA | Wind vane | PC+ABS |
| Lightning surge | IEC61000-4-5 4kV /2kA | Bearing | SS440C |
| Electrostatic discharge | IEC61000-4-2 air discharge 16kV | Humidity | 0%~100%RH |
| | IEC61000-4-2contact discharge8kV | Operating temperature | Ta-40℃ ~ +70℃ |
| | | IP rate | IEC60529 IP65 |
| | | Wiring | Aviation socket[2] |
| | | Housing color | Black RAL9005 |
| | | Weight | 0.3 kg |

| Meteorological | |
|---|---|
| Starting threshold | ≤0.5m/s Vu=20℃ |
| Anti-wind level | ＞70m/s |
| Range | 0°~360° |
| Accuracy | ±2° |
| Resolution | 0.35° |

**1. Rated voltage, see How to Order.**
**2. Default lead cable length is 3 meters.**

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## Mounting dimensions

Unit: mm



Max. dia. Ø54mm
Min. dia. Ø42mm

Aviation plug

Default cable length 3m

G3/4 thread

default cable length 3m
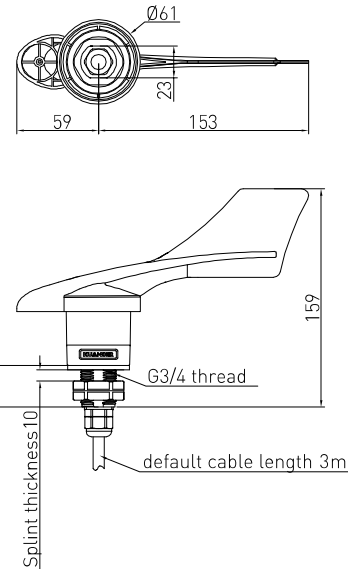
Mast tube mount
1. Connect and fix the aviation plug and socket.
2.Mount product on the top of equipment with 3 nos. M6 screws.

G3/4″ thread mount
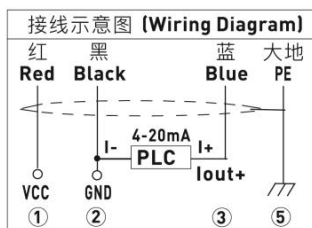1. Fix product with 2 nos. G3/4″ thread

**Caution:**
**1.**Mount theproduct on aflat surface, fix it well, prevent drop.
**2.** Align the north pointing mark of product with Geographic pole (calibrating with compass) **.**
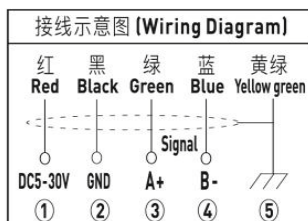
## Wiring diagram



4-20mA current signal output: it is recommended to use RVVP/3-core/0.5mm² /copper core/high and low temperature resistant shielding cable, maximum communication distant is 1000m.
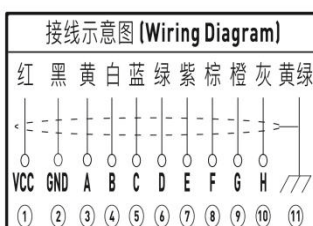Caution:
1. Blue wire is the signal line, marked as *Signal*, indicates the wind speed signal ouput.
2. Actual communication distance is in accordance with onsite environment.



RS485 signal output: it is recommended to use RVVP/4-core/0.5mm /coppercore/high and low temperature resistant shielding cable, maximumcommunication distant is 1000m.
Caution:
1. Greensignal line be marked as A+, Blue signal line be marked as B-.
2. Actual communication distance is in accordance with onsite environment.



Gray Code output:：it is recommended to use RVVP/10-core/0.3mm /coppercore/high and low temperature resistant shielding cable, maximumcommunication distant is 1000m.
Caution:
Actual communication distance is in accordance with onsite environment.

**Caution:**
**1.  Ensure cable connection is correct before power on.**
**2.  Cable shield layer and housing must be well grouded.**
**3.  Its suggested to return product to facotry for calibrating every 18 months.**

# FA02Wind Direction Sensor

RS485 protocol
Baud rate: 4800bit/s, 8bit data, no parity check, one stop bit.

Query wind data
Command:23H 04H 00H 07H 00H 01H 86H 89H
Response:23H 04H 02H xxH xxH CRCL CRCH

Byte definition:
23H is slave address in the command, 04H is function code,00H, 07H are the high and low address of the first register,00H, 01H are the high and low quantity of register, 89H, 86H are the high and low of previous six bytes' CRC check code.
23H is salve address in the response, 04H is function code, 02H is byte, xxH, xxH are high and low byte of returned wind direction data, e.g. 0AH, F0H it is 2800, indicate wind direction 280°, CRCH, CRCL are high and low of previous five returned bytes' CRC check code.

**Additional instruction:**
**1. One RS485 bus connect to only one wind sensor.**
**2. Error address and command not be responsed.**
**3. CRC chek uses ANSI CRC16: polynomial is X16+X15+X2+1。**

Current signaloutput curve:
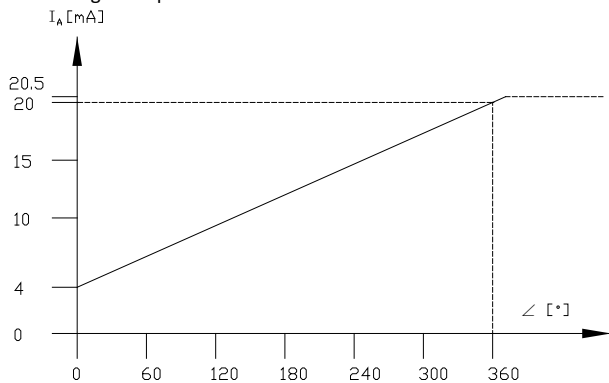


## How to Order

| P/N | Model | Rated voltage | Signal output | Mount |
|---|---|---|---|---|
| 1000055-001 | FA023 | DC18V-DC30V | 4-20mA current, 0-360° | Ø54 mast tube mount, 5-pin aviation soket |
| 1000055-004 | FA023 | DC18V-DC30V | 4-20mA current, 0-360° | G3/4thread mount, 3-core lead cable (L=3m) |
| 1000055-002 | FA026 | DC9V-DC15V | 8 bit Gray Code | Ø54 mast tube mount, 12-pin aviation soket |
| 1000055-003 | FA024 | DC5V-DC30V | RS485, modbus protocol, Baud rate 4800bps | G3/4thread mount, 4-core lead cable (L=5m) |
| 1000055-006 | FA024 | DC5V-DC30V | RS485, modbus protocol, Baud rate 4800bps | Ø54 mast tube mount, 5-pin aviation soket |