



CDF-21A Ultrasonic Wind Speed & Direction Sensor

For weather automation applications



Features

- Adapt to complex weather conditions
- No moving parts, long service life
- The surface preservative treatment
- Strong anti-interference
- High accuracy
- Automatic heating anti-frozen
- Ultrasonic anemometers usually use high-frequency ultrasound for measurement and can complete multiple measurements in a short period of time

CDF-21A Economical Ultrasonic Wind Sensor is a fully digital detector, high-precision sensors, integrated by the ultrasonic wind speed and direction sensors. It can accurately and quickly detect the wind speed, wind direction; built-in signal processing unit can output a corresponding signal in response to user needs, with the structure lightweight and compact, no moving parts, high-strength structural design can be accurately detected in the harsh climatic conditions, made the accurate and stable elements, low maintenance, an open communications protocol and so on. It can be widely used in meteorology, oceanography, environment, airports, ports, laboratories, industry and agriculture, and transportation and other fields.

Typical installation locations

- Top of building
- Walls
- Open areas
- Outdoor locations

Design structure

It mainly calculates the wind speed by measuring the time difference between the propagation of ultrasonic waves in the air. The sensor generally has two pairs of ultrasonic probes, which are mounted opposite each other. One of the pair of probes transmits ultrasonic waves and the other receives them.

Easy installation

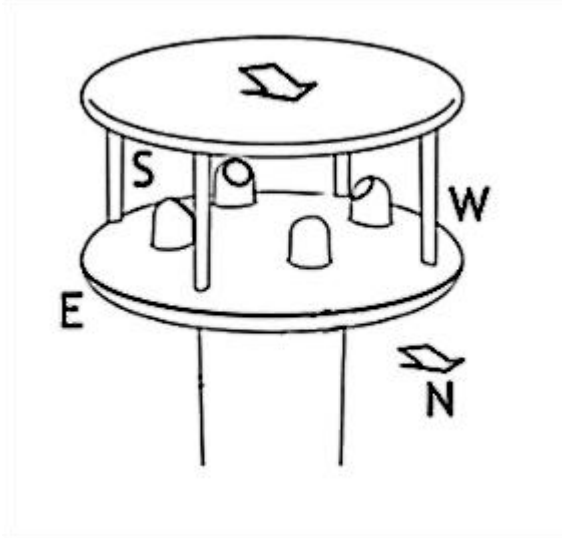
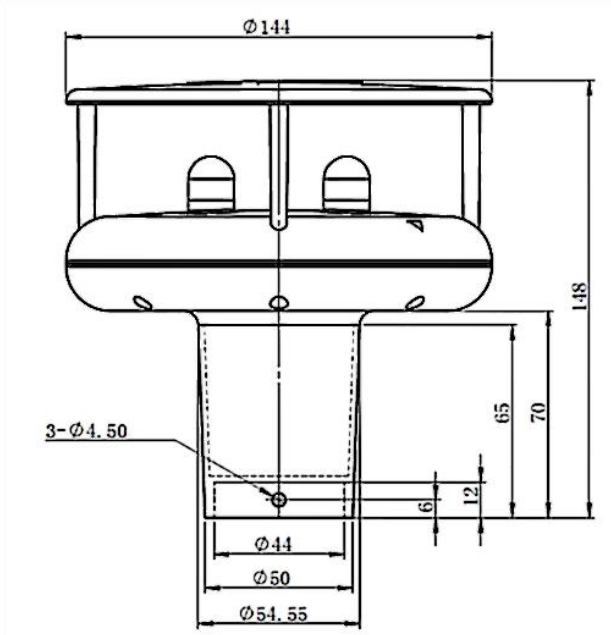
The ultrasonic anemometer is installed on the bracket and fixed by bolts or other fasteners. During installation, attention should be paid to the direction of the anemometer to ensure that the ultrasonic probe can work normally. After installation, the ultrasonic anemometer is adjusted and calibrated. By comparing the measurement results of the standard anemometer, the anemometer can be calibrated to ensure the measurement accuracy.

Reliable operation

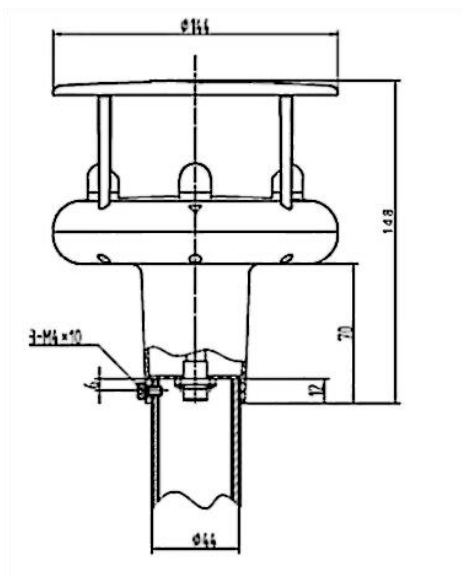
Strong anti-interference ability: ultrasonic anemometer is not affected by electromagnetic interference, vibration and other factors, and has strong anti-interference ability. In complex environments, such as industrial sites, field, etc., it can also work stably and reliably.

Dimensions & installing

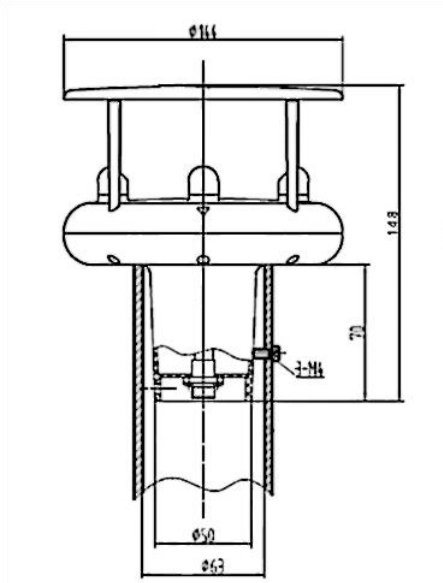
CDF-21A connector dimension



Installing type 1



Installing type 2



Output characterist

RS485

Modbus-rtu bus protocol Baud rate: 9600bps,Data bits:8,Stop bit:1,Check bit:Even

SDI-12

Band rate: 1200, Start bit:1,Data bits:7,Check bit: EVEN, Stop bit:1,sensor address: factory default 0

NMEA0183

Actively sends data to the specified serial port(Sea wind speed test)

0-5V 4-20mA

Technical data

Measurement performance, models CDF - 21 A

Item	Technical Specification
Power Supply	12-24VDC
Power consumption	<1W(Heating not activated); <3W(Heating activated)
Output Signal	RS232/RS485(Modbus/NMEA-0183),4-20mA/0-5V(only for wind speed & direction) optional
Operating Temperature	-40℃~+80℃
Ingress Protection	IP66
Heating power	Automatically turn on when the ambient temperature is below 0℃
Electronic compass	optional
Atmospheric pressure	optional
Dimension	Φ 144*148mm
Weight(unpacked)	0.8kg
Main material	ASA

Item	Technical Specification		
	Wind speed	Wind direction	Atmospheric pressure
Range	0-45m/s,0-60m/s	0-360°	150-1100hPa
Resolution	0.01m/s	1°	0.1hPa
Accuracy	≤10m/s: ±0.2m/s>10m/s: < ±2% the current value	±3°	±0.5 hPa
Starting Threshold	0.1m/s	0.1m/s	
Extreme Wind Speed	60m/s		

Model number	Type	Output	Special features
CDF-10A	Wind speed	Pulses(PNP) RS485 4-20MA 0-5V	Three cup plastic wind speed
CDF-11A	Wind direction	RS485 4-20MA 0-5V	Plastic wind direction sensor
CDF-12A	Pipe wind speed	RS485 4-20MA 0-5V 0-10V	Duct type wind speed sensor
CDF-13B	Wind speed display controller	LED display	Wireless output relay output
CDF-15A	Digital Anemometer	LCD display	Hand-held anemometer
CDF-20B	Combined Wind Speed & Direction	RS485 4-20MA 0-5V 0-10V	Integrated wind speed and direction
CDF-21A	Ultrasonic Wind Speed & Direction	RS232/RS485(Modbus/NMEA-0183), Voltage(0-5V),Current(4-20mA) optional	Ultrasonic principle
CDF-22A	Mini Ultrasonic Wind Speed & Direction	4-20mA,RS232/RS485(Modbus or NMEA-183), SDI-12	Ultrasonic principle
CDF-26B	Recorder station for wind	LCD display & 4G WIFI Ethernet	Wind speed & direction recorder
CDQ-T6A	Miniature Ultrasonic Automatic Weather	RS485	Wind speed & direction temp & humidity & pressure
CDW-33A	Atmospheric Temperature, Humidity & Pressure	RS485	Shelter installation
CDY-12A	Economical Tipping Bucket Rainfall	Pulses(@10kΩ&0.01uF),RS485	Diameter :φ200mm, height: 271mm
CDG-10B	Solar Radiation	0-5V,4-20mA,RS485	Spectral range:300~1100nm

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