CODA

CDF-12A Pipe Wind Speed Sensor
For weather automation applications
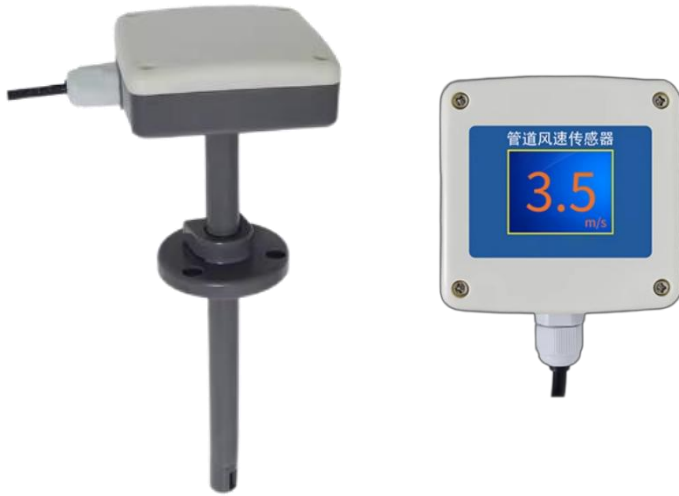
CDF-12A Pipe Wind Speed Sensor is designed on the basis of the principle of hot wire, the probe and housing adopt resistance to high temperature and anticorrosion materials. In the bad environment, it also can work stablely and reliably.It can quickly and accurately tiny air flow measurement. The product has realized high precision and high resolution through internal linear compensation and temperature calibration, and long term stability is extremely good, which should be installed directly .

Typical installation locations

• Circular pipe
• Air conditioning system
• Workshop of plant
• Oil fume purification system

Design structure

There is a heating element in the sensor, which is kept at a certain temperature by a constant current. When there is an air flow, the heat of the heating element is taken away by the air flow, and the temperature is reduced. To keep the temperature constant, the circuit automatically increases the current. By measuring the change in current, the wind speed can be calculated. The greater the wind speed, the more heat it carries away, and the greater the current required.

Easy installation

For circular pipes, the sensor should be installed in the straight section of the pipe. Generally speaking, the installation position should be at least three times the diameter of the pipe from the elbow, tee, valve and other pipe fittings to ensure that the measured wind speed is not interfered with the local flow field.

The installation position should be selected as far as possible in an area with uniform air flow. Areas of uniform airflow can be identified by observing the flow of air in the pipe or by using professional fluid dynamics software for simulation analysis. More accurate wind speed measurements can be obtained by installing sensors in the uniform flow area.

Reliable operation

Good sealing design prevents dust, moisture and other impurities from entering the sensor and affecting its performance and reliability.

Various mounting methods are available, such as flange mounting, thread mounting, etc., to adapt to different types of pipes. The mounting bracket should have sufficient strength and stability to ensure that the sensor is firmly installed in the pipeline and will not be loosened or displaced by vibration or airflow impact.

Dimensions & installing
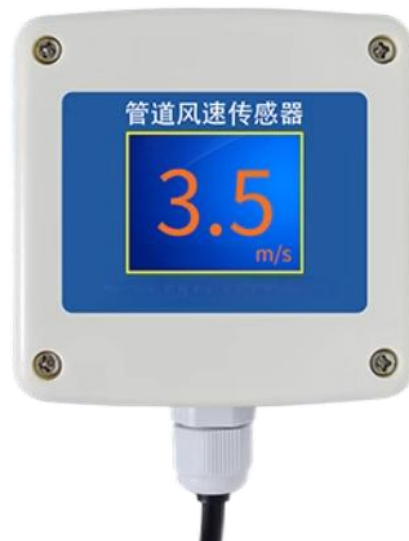
CDF-12A connector dimension
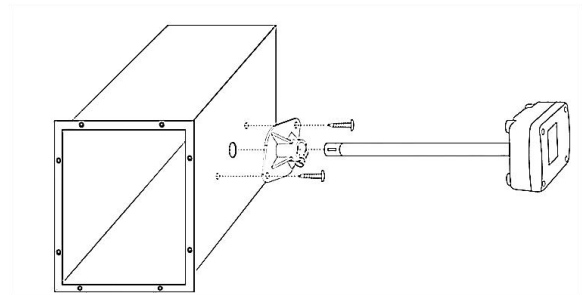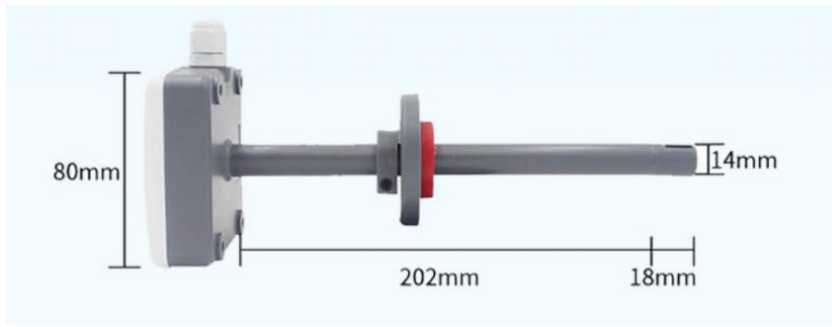
When installing the product, please keep the direction of the arrow on the probe and the direction of the wind.

Output characterist

LED display

LCD display

Technical data

Measurement performance, models CDF-12A

Output	4-20mA,,0-2V,0-10V,RS485,0-5V
Supply	12-24VDC
Range	0-5m/s,0-10m/s,,0-15m/s,0-20m/s,0-30m/s
Response time	<1s
Accuracy(0-50℃)	±0.2%FS
Resolution	<0.05m/s
Power consumption	<80mA@24VDC(4-20mA) <60mA@24VDC(RS485,0-5V,0-10V)
Long-term stability	±0.1m/s per year
Display	optional
Ingress Protection	IP55
Operating Temperature	-20℃-+70℃
Main material	ABS
Probe length	200mm type., Other length can be customized
Storage Condition	10℃-60℃@20%-90%RH

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