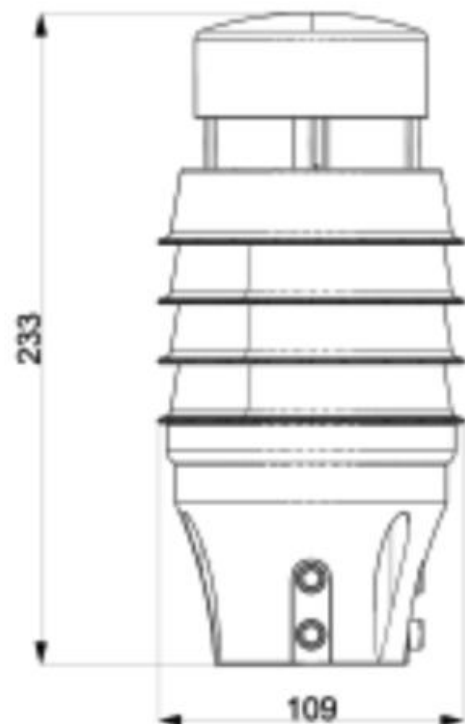


User Manual of Small Ultrasonic Wind Speed and Direction Transmitter (2 x 4/20mA)



'Dimensions



Equipment size drawing (unit: mm)

Product introduction

1 Product overview

The small ultrasonic wind speed and direction sensor is a wind speed and direction measuring instrument developed based on the principle of ultrasonic waves. It uses the transmitted sound wave pulse to measure the phase difference at the receiving end to calculate the wind speed and direction. The sensor can measure the instantaneous value of wind speed and wind direction at the same time, and is widely used to measure wind speed and wind direction in the fields of meteorology, ocean, environment, airports, ports, laboratories, industry, agriculture and transportation.

The equipment with built-in electronic compass selection, no longer have the orientation requirement during installation, just ensure the horizontal installation. The equipment adopts wide voltage 10~30V DC power supply, analog signal output, 4~20mA and the shell with high protection grade, which can adapt to the measuring occasions of onsite harsh environment.

2 Features

- ◆ No angle limit, can measure both wind speed and direction data
- ◆ No moving parts, low wear and long service life
- ◆ Using random error recognition technology, it can ensure low dispersion error of measurement even under strong wind, making the output more stable
- ◆ ABS engineering plastic shell, lightweight design, easy to carry, easy to install and disassemble
- ◆ Analog signal output, 4~20mA,
- ◆ Devices with built-in electronic compass, no direction requirements during installation, just install horizontally
- ◆ 7. No maintenance and on-site calibration need

5 Working principle

Ultrasonic wind measurement is an application of ultrasonic detection technology in gaseous media. It uses the influence of air flow (wind) to measure wind speed by using the propagation speed of ultrasonic waves in the air. Compared with conventional wind cups or rotary wing anemometers, the biggest feature of this measurement method is that the entire wind measurement system does not have any mechanical rotating parts, which is a non-inertial measurement, so it can accurately measure the high frequency parts of gusts pulse in natural wind. .

The ultrasonic wind speed and direction transmitter uses four ultrasonic probes to send and receive ultrasonic waves in a two-dimensional plane circularly, and realizes the measurement of wind speed and direction through the principle that ultrasonic waves are affected by wind speed to increase or decrease.

6 Technical parameter

DC power supply (default)	10-30V DC power supply)	
Maximum power consumption	1.2W	
Range	wind speed	0~40m/s(2/366mph), 0.5m Starting wind speed
	wind direction	0~360°
Precision	wind speed	±0.5+2%FS(60%RH,25°C)
	wind direction	±3°(60%RH,25°C)
Resolution	wind speed	0.01 m/s
	wind direction	1°
working environment	-40~80°C, 0~95%RH(non-condensation)	
Wind strength	75 m/s	
Response time	1s	
Protection level	IP54	
output signal	4~20mA,	
load capacity	Current output	≤600Ω

7 Installation method

Beam installation (optional):

The installation of devices without electronic compass is shown in the figure below, and devices with built-in electronic compass only need to be installed horizontally.



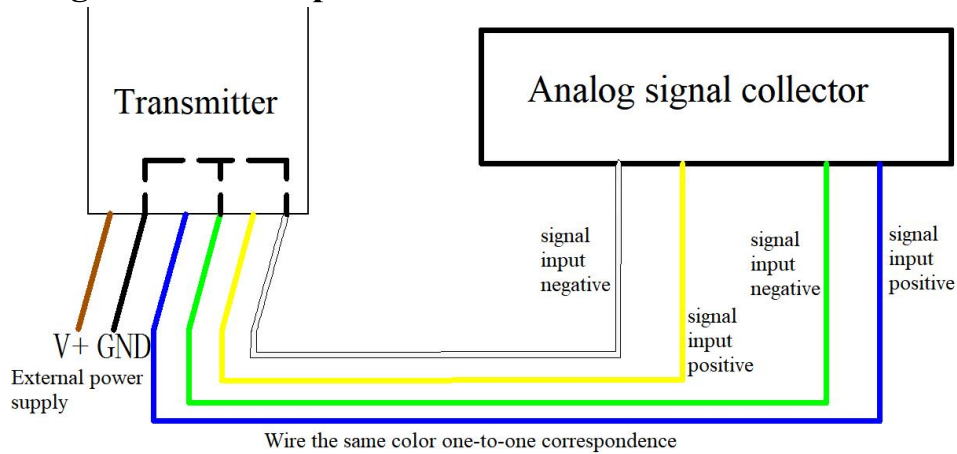
8'Interface Description

Wide voltage power input 10-30V DC power supply.

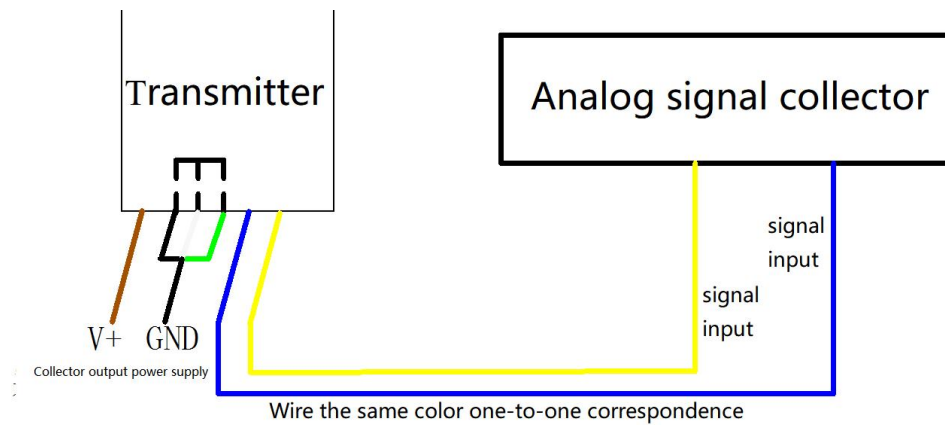
output equipment.

	Thread color	Description
Power supply	brown	Power supply positive
	black	Power supply negative
Output	yellow	Wind speed signal positive
	white	Wind speed signal negative
	blue	Wind direction signal positive
	green	Wind direction signal negative

7 Wiring method example



Four-wire wiring diagram



Three-wire wiring diagram