

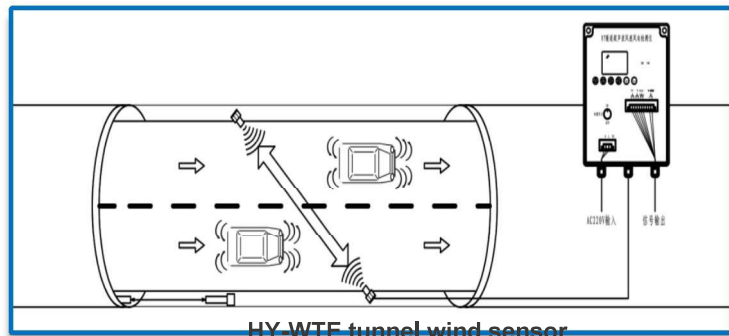
16.HY-WTE Crossed Tunnel Ultrasonic Wind Sensor



Introduction

HY-WTE crossed type tunnel ultrasonic wind speed and wind direction detector is specifically designed for the tunnel application, it's working based on ultrasonic time-difference method, the two ultrasonic probes were installed on both sides of the tunnel wall and face to each other, when tunnel airflow passes between the two ultrasonic probes, the time difference between the round-trip times of the ultrasonic waves transmitted by each other is changed by airflow. By measuring the time difference, the airflow velocity is obtained.

A built-in time delay, variable from 00-99 seconds can be set to prevent very short duration gusts from causing false alarms. Only when wind speed reach preset value limit and last time exceed time delay, will the corresponding relay be triggered. If additional connections are made, the alarm can cause a remote warning light to flash, sound a remote horn or siren, and automatically actuate the crane brakes to prevent the crane from rolling.



Main Features

- 1.Non-contact measuring system without any moving parts for lowest operating costs and long maintenance intervals
- 2.Integral measurement over the full tunnel width for representative measuring results,imperative according to tunnel experts, especially when the system is designed for fire hazards
- 3.Precise measurement also for very low flow velocities,therefore perfectly suitable for the assessment of portal emissions.
- 4.Measured and actual air velocity (averaged over the complete tunnel cross-section) are very much in agreement. Large differences can occur with single-point measurements—even indication of the wrong flow direction.

Application

Measuring the air velocity and flow direction

- ventilation control in road and railway tunnels or similar structures
- detection of smoke propagation during tunnel fires for efficient fire fighting

Technical Parameters

Principle	Ultrasonic time-difference technology
Installation	Wall of tunnel on opposite-side
Range	Wind speed -30m/s~30m/s
Sampling path	5m~25m
Accuracy	Wind speed ± 0.1 m/s
Relay output	2 ways dry-contact relay output
Output	RS485(MODBUS-RTU) and 4-20 mA output(load < 500 Ω)
Power supply	220VAC $\pm 10\%$, 50Hz/60Hz
Protection Grade	IP66
Operating Environment	Temperature:-30—65 $^{\circ}$ C; Humidity:0—95%RH