



ULTRASONIC SNOW DEPTH MONITORING METEOROLOGICAL STATION

Introduction

The ultrasonic snow depth sensor monitoring station is a snow monitoring device based on ultrasonic ranging technology. It measures snow depth by transmitting and receiving sound wave signals without contacting snow cover. Integrated with auxiliary sensors such as temperature and humidity, it synchronously collects meteorological data. Matched with low-power data collector and multiple transmission modes, data can be uploaded to the cloud platform in real time to support remote viewing and over-limit alarms.

The equipment is deployed at urban roads, snowfields, mountainous areas and other points via carbon steel brackets without manual on-duty. It provides continuous and stable snow and meteorological data support for traffic early warning, agricultural cold prevention and ecological research.

Core Configuration

Ultrasonic Snow Depth Sensor

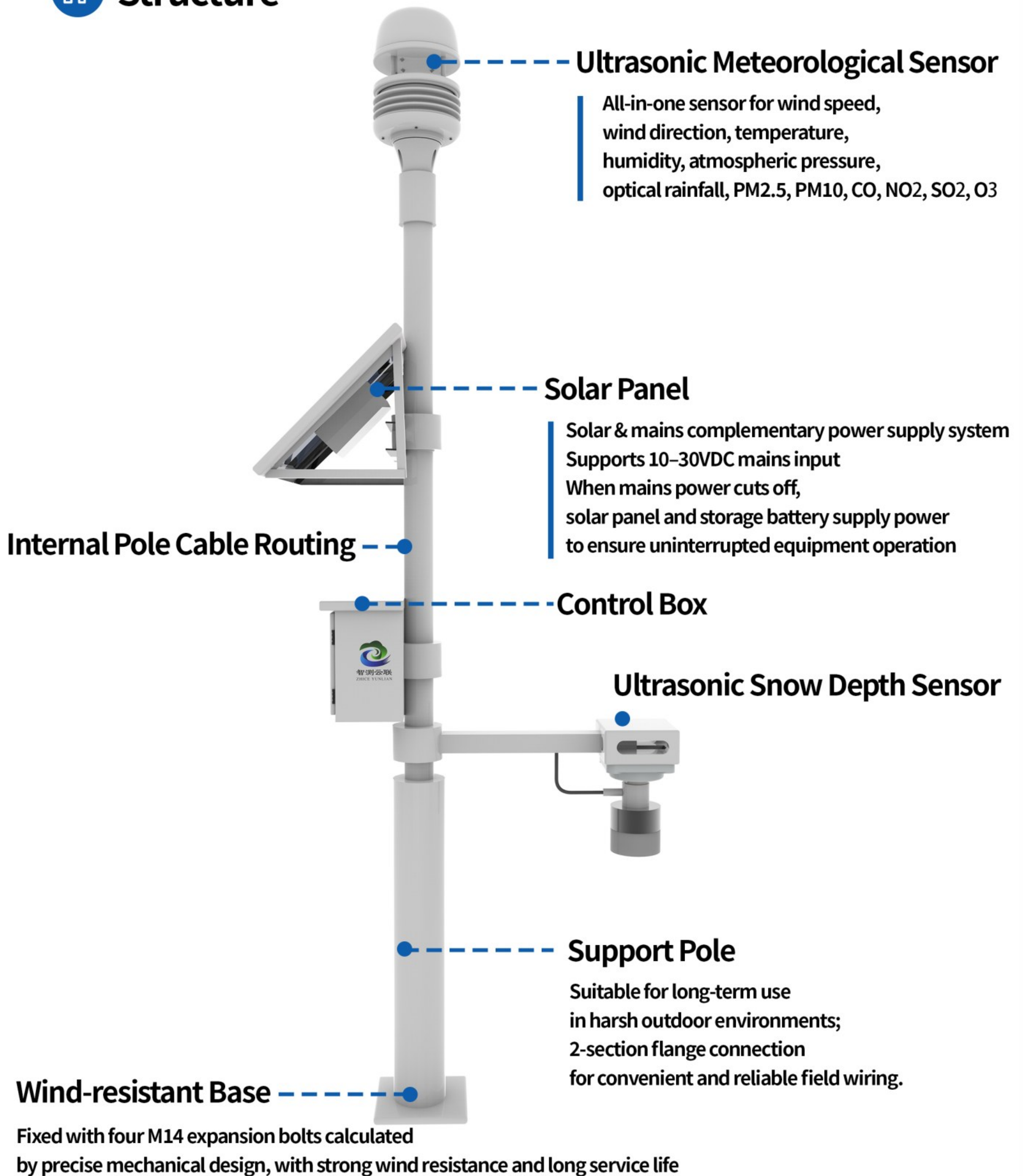
Ultrasonic Meteorological Sensor

Data Transmission Module

Solar & Mains Complementary Power Supply System



Structure



* Snow Depth Sensor Introduction



- Adopts ultrasonic technology with zero mechanical wear, pollution-free and low failure rate, meeting the demand of long-term stable monitoring. All input and output lines of the equipment are equipped with lightning protection and short-circuit protection for safer operation under severe weather.
- IP67 protection grade, almost free from corrosion and foam interference, stable measurement accuracy against atmospheric water vapor and temperature & pressure changes. Compact and light-weight for easy installation,.

Specifications

Category	Specification Details
Collector Power Consumption	Static power consumption < 50uA
Networking Mode	Standard GPRS; expandable Bluetooth and wired transmission
Sensor Expansion	Supports Modbus485 sensor expansion
Charging Management	Solar charging management (MPPT automatic maximum power point tracking)
Bracket Configuration	Carbon steel bracket
Alarm Mode	Synchronous alarm via SMS, mini-program and PC cloud platform; over-limit SMS pushed to designated mobile phones

Parameters

Classification	Parameter Item	Specific Specification
Core Measurement Parameters	Measuring Range	0 – 2000mm
	Measurement Accuracy	1mm ±0.2% F.S
	Resolution	1mm
	Minimum Data Interval	0.2S
Adaptable Environmental Parameters	Operating Temperature	-40°C ~ +60°C
	Operating Humidity	≤100% RH (non-condensing)
Operating Auxiliary Parameters	Power Supply Specification	DC12V
	Operating Current	18mA (DC12V)
	Communication Interface	RS485

Ultrasonic Meteorological Sensor

12 Meteorological Elements

Wind speed, wind direction, temperature, humidity, air pressure, optical rainfall, PM2.5, PM10, CO, NO2, SO2, O23



Inverted Ultrasonic Transducer Design

Dust-proof and waterproof, no on-site manual maintenance required, free from rain and snow interference



Bottom Clamp Mount



Accessory

Four Installation Methods



1. Pole-clamp Crossbeam Bracket



2. Vertical Pole Adapter



3. Special Crossarm for Weather Station Pole



4. Pole-top Clamp Mount

