



LASER SNOW DEPTH MONITORING METEOROLOGICAL STATION

Introduction

The laser snow depth monitoring meteorological station is a professional snow monitoring device based on laser ranging technology. It accurately measures snow depth via non-contact laser pulses, barely disturbed by snow corrosion, temperature and pressure fluctuations. Its measurement accuracy reaches centimeter level with excellent data stability.

Integrated with temperature/humidity, wind speed and other meteorological sensors, matched with low-power data collector and multi-mode transmission modules, the equipment uploads real-time data to the cloud platform, supporting remote viewing, curve analysis and multi-terminal over-limit alarm. It features high protection grade, suitable for harsh environments such as frigid zones and wild fields, with easy installation and low maintenance frequency.

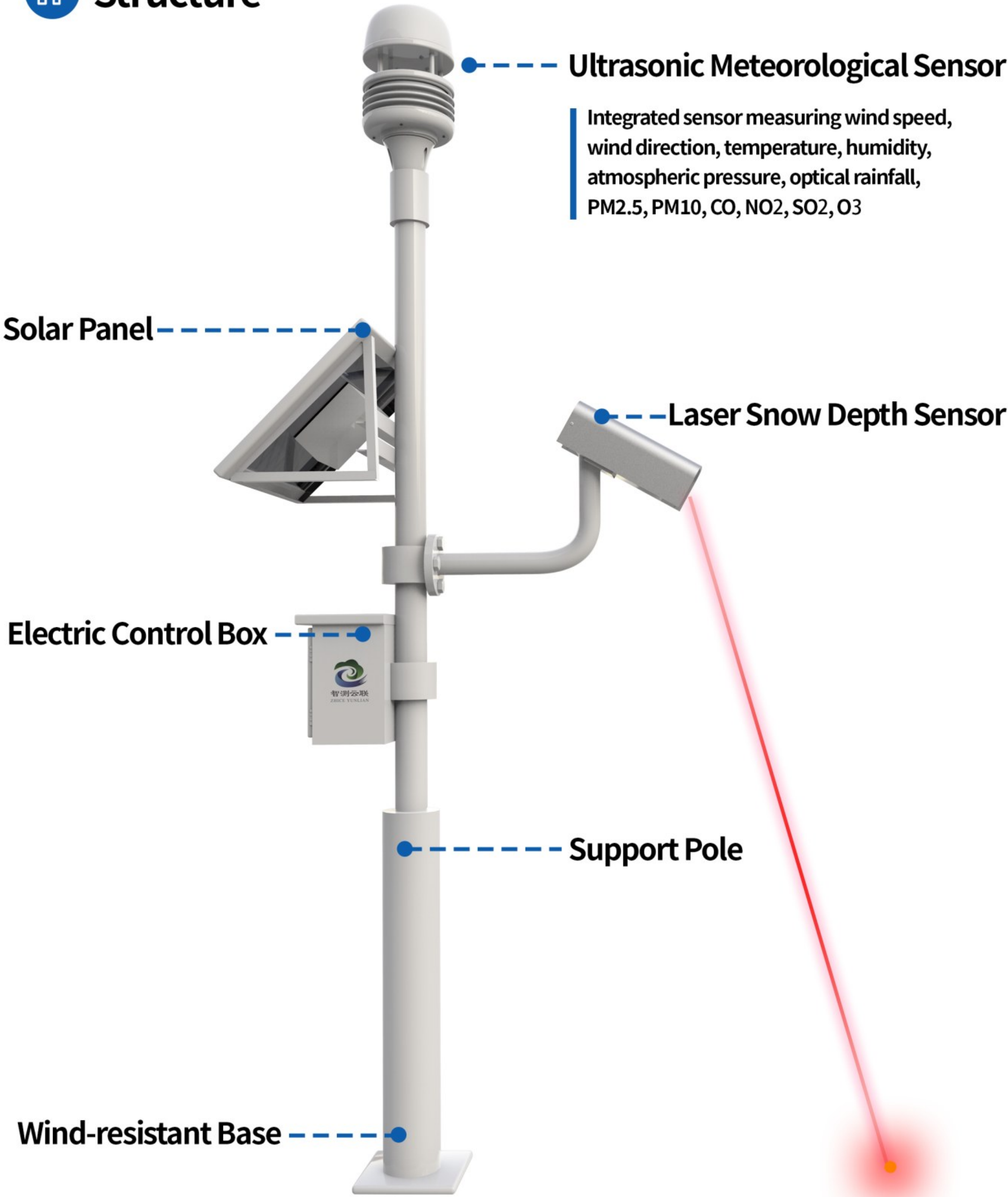
Core Configuration

- Laser Snow Depth Sensor
- Ultrasonic Meteorological Sensor
- Data Transmission Module
- Solar & Mains Complementary Power Supply System





Structure



* Laser Snow Depth Sensor Introduction

1. High-precision snow monitoring device based on non-contact laser ranging technology. It calculates snow depth by emitting laser pulses and receiving reflected signals, with zero mechanical wear, no pollution and ultra-low failure rate during measurement.
2. IP67 protection grade, nearly immune to corrosion and foam interference, stable measurement accuracy against atmospheric steam and temperature/pressure changes. Compact and lightweight for easy installation, it can be rapidly deployed in mountainous and pastoral snow-covered areas to supply reliable data support for snow condition monitoring.

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 push to designated mobile phones

Parameters

Classification	Parameter Item	Specific Specification
Core Measurement Parameters	Measuring Range	5–2500mm
	Measurement Accuracy	±1mm
	Resolution	1mm
	Single Measurement Time	0.05–1s
Adaptable Environmental Parameters	Operating Temperature	-40°C ~ +80°C
	Operating Humidity	0%–100% RH (non-condensing)
Power Supply & Operation Parameters	Power Supply Specification	DC10–30V
	Max Power Consumption	0.8W (3.5W when heating)
	Communication Interface	RS485 (ModBus protocol)

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