

GNSS

DISPLACEMENT MONITORING STATION

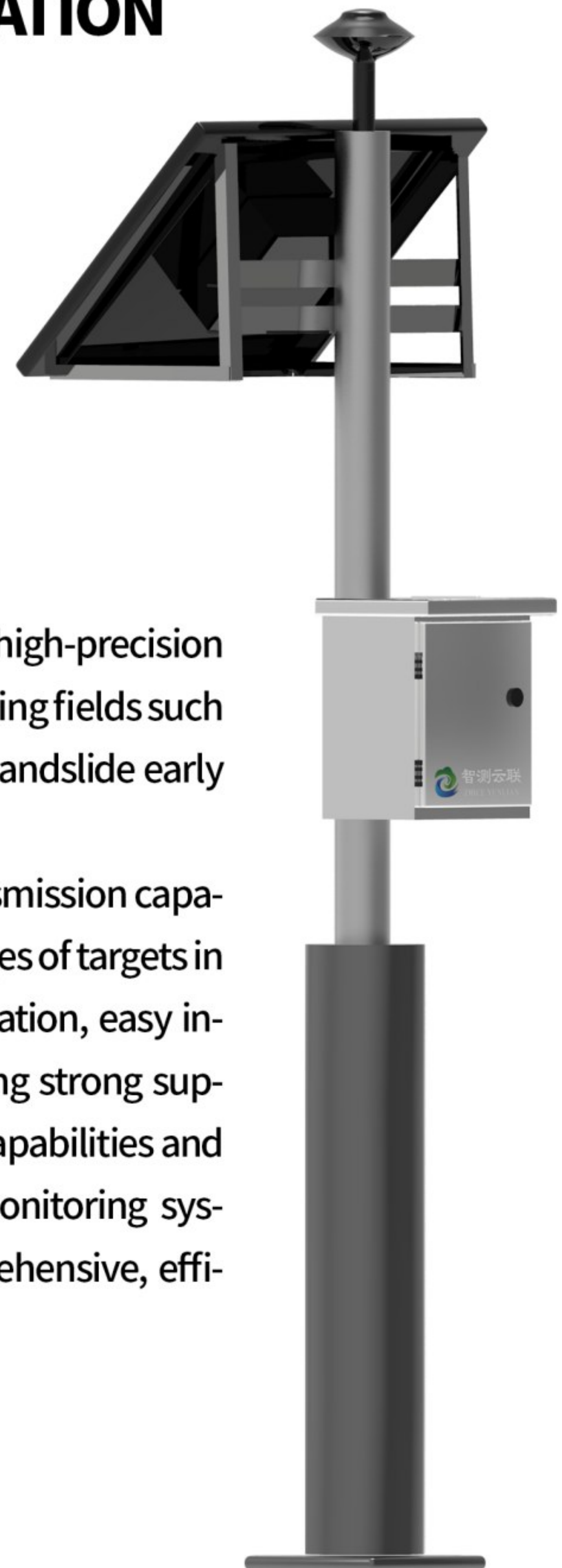
Product Introduction

Zhice Yunlian GNSS Displacement Monitoring Station is a high-precision displacement monitoring product widely used in engineering fields such as dam safety monitoring, bridge health inspection, and landslide early warning.

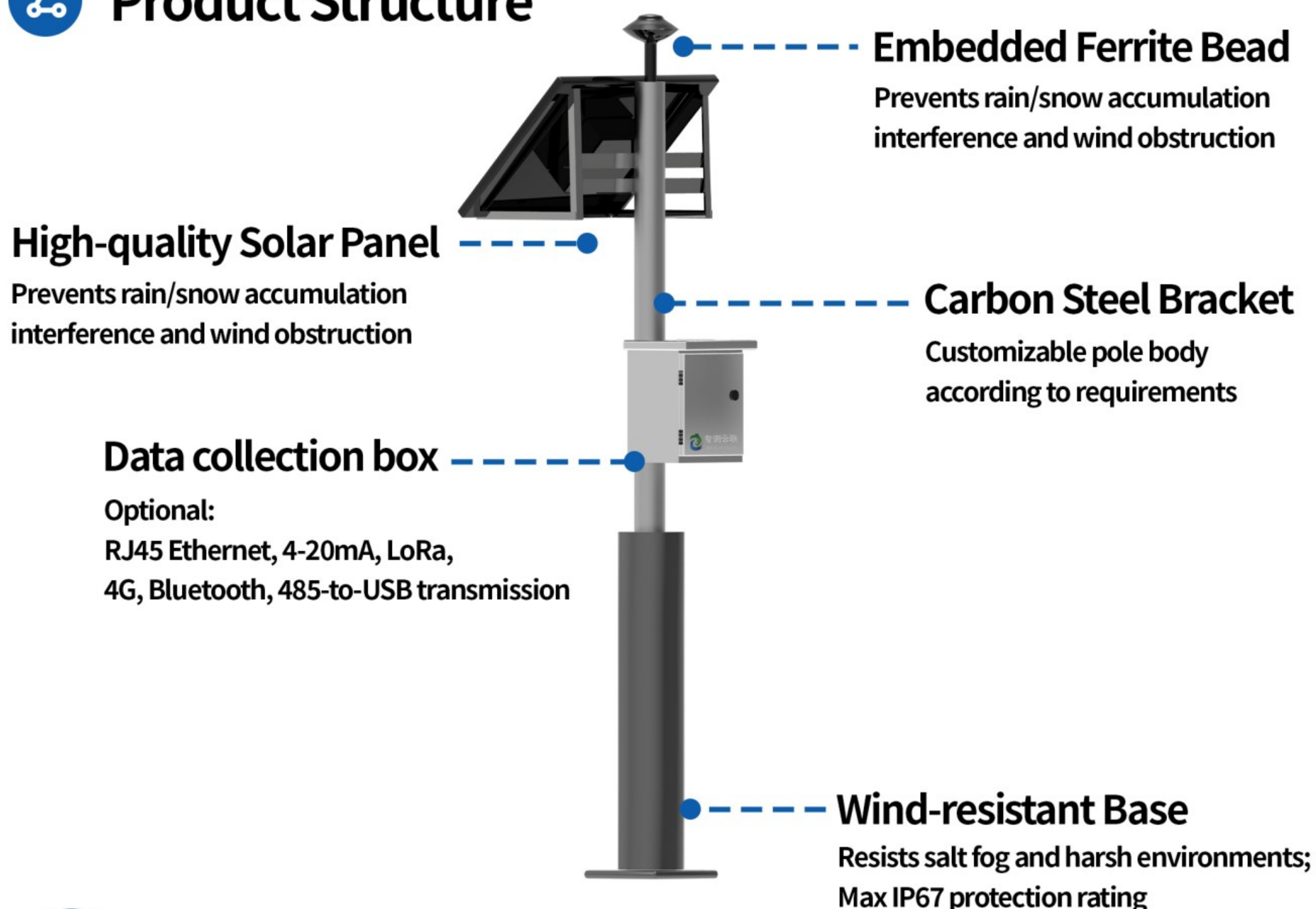
With high precision, high stability, and real-time data transmission capabilities, it can accurately detect subtle displacement changes of targets in complex environments. The station features simple operation, easy installation, remote monitoring, and data analysis, providing strong support for engineering safety. Its powerful data processing capabilities and compatibility allow seamless integration into various monitoring systems, enabling data sharing and fusion to deliver comprehensive, efficient solutions for engineering safety monitoring.

Product Advantages

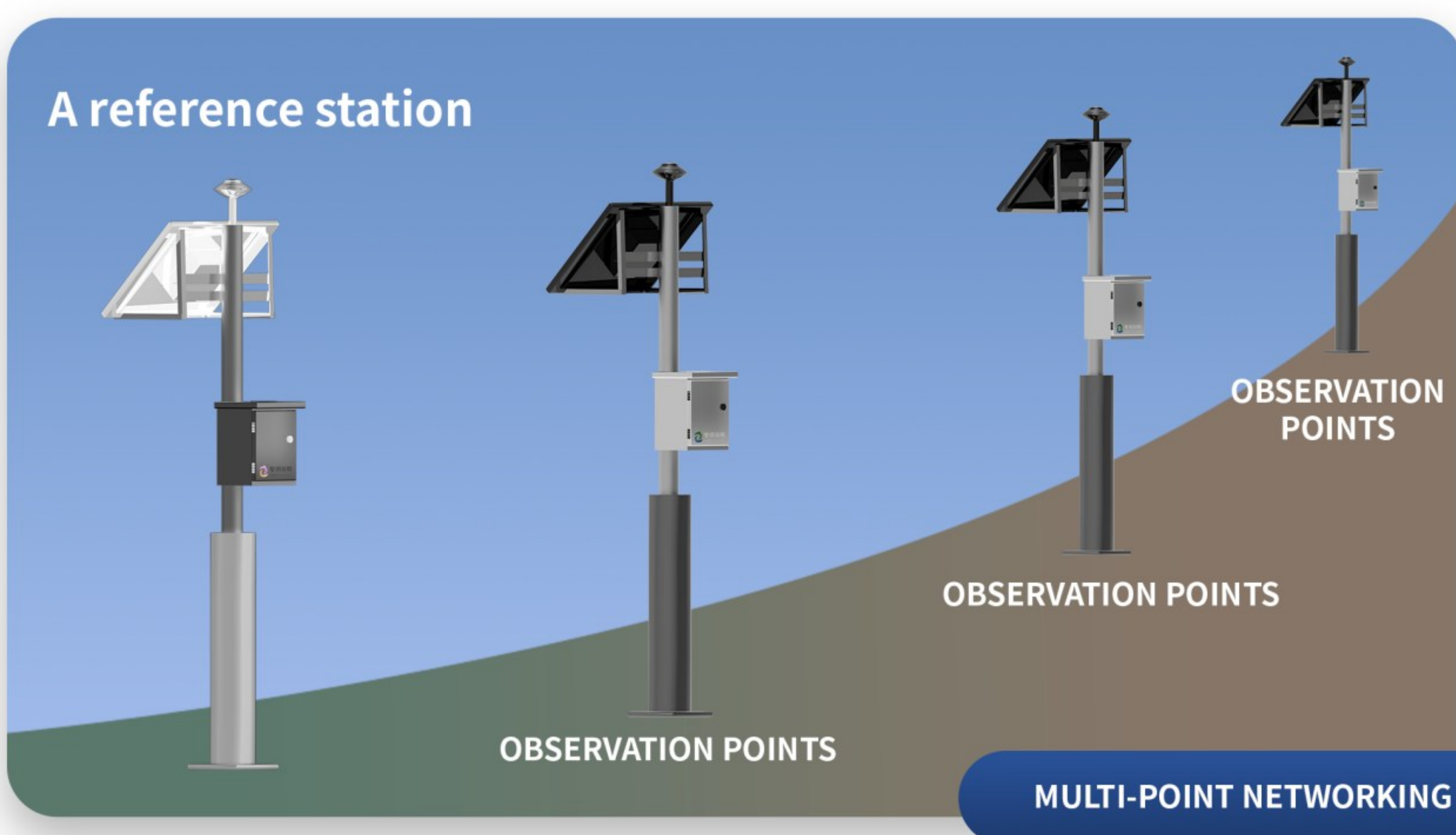
- Precise Monitoring
- Integrated Design
- No On-site Debugging Required
- Reliable Data Transmission



Product Structure



Application Scenarios





Transmission Methods

Transmission Method	Wired / Wireless	Internet Required	Supports Local Network	Offline Compatibility
RJ45 / Ethernet	Wired	Optional (Preferred)	Yes	Yes (Internal Network Only)
4-20mA	Wired	No	No	Fully Compatible
LoRa Transmission	Wireless	No	Yes (Self-organizing Network)	Fully Compatible
4G Transmission	Wireless	Yes	No	Not Compatible

Measurement Accuracy

Category	Measurement Range	Accuracy
Sensor Power Supply	DC 10V–15V	-
Sensor Power Consumption	0.25W	-
Static Accuracy (Differential Mode)	Horizontal / Vertical	Horizontal: $\pm(2.5\text{mm} + 1\text{PPM})$; Vertical: $\pm(5\text{mm} + 1\text{PPM})$
Antenna	Ferrite bead antenna, microwave absorbing material	Effectively reduces multipath effects
Communication Protocol	MODBUS-RTU, supports RTCM3 differential data	Supports offline displacement calculation on the device side
Dimensions	Diameter 360mm, Height 163mm	-
Operating Environment	Temperature: $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$; Humidity: 0% RH–95% RH (Non-condensing)	-

Product Parameters

Parameter Category	Specifications
Station Power Supply	30W Solar Panel, 20AH Battery
Station Power Consumption	Sensor + LoRa: 0.6W; Sensor + LoRa + Data Upload: 0.96W
Standalone Mode Function	Supports displacement alarm, displacement output, and angle output (cloudless operation)
Communication Methods	4G, Wireless Bridge, WIFI, Ethernet
Direct Platform Support	Supports TCP, HTTP, UDP protocols for third-party integration
On-site Data Output Format	Supports RS485 ASCII data format
Sensor Expansion Support	Supports on-site addition of RS485 MODBUS-RTU environmental sensors
Antenna Configuration	Supports built-in 4G FPC antenna





Introduction to the upper computer software

Function Category	Specific Description
Core Functions	Realize integrated management of data reception, storage, viewing and analysis in the PC standalone environment
Data Reception and Processing	1. Support data reception via serial port, as well as data processing and visual display 2. Compatible with communication methods such as JSON string and MODBUS485
Parameter Configuration	1. Allow independent setting of data storage time 2. Support custom collection time in MODBUS485 collection mode
Monitoring Parameter Management	Support users to independently add, delete and modify monitoring parameters, including information such as parameter protocols, names and icons
Data Processing Expansion	1. Equipped with data post-processing function 2. Support external running of JAVASCRIPT scripts



Introduction to Cloud Platform

Function Category	Specific Description
Architecture & Access Method	Adopts a CS architecture software platform, supporting direct access and observation via mobile phones and PC browsers without additional software installation
Account & Device Management	Supports multi-account and multi-device login, meeting the collaborative management needs of multiple users and terminals
Data Display Function	1. Provides dashboards for real-time data display and historical data display 2. Supports data curve analysis 3. Supports map display and device information viewing
Data Storage & Stability	Implements cloud data storage based on cloud servers, featuring stability, reliability, easy scalability and load balancing
Alarm & Threshold Management	Supports SMS alarm function, allowing custom alarm threshold settings to respond to abnormal data in a timely manner
Data Processing & Output	1. Supports data export in table format 2. Has data post-processing function 3. Supports external running of JAVASCRIPT scripts to enhance customization capabilities
Data Forwarding Function	Supports data forwarding via multiple protocols, including HJ-212 protocol, TCP forwarding, HTTP protocol, etc.

