科皓信息
KEHAOINFO

Environmental Monitoring Equipment

Hydrology Water Quality Meteorology Agriculture IoT Sensors and Solutions

Company Profile of KEHAO

Shenzhen KEHAO Information Technology Co., Ltd. (“KEHAO”) was established in June 2001 with a registered capital of RMB 30 million. It is located in Shenzhen, Guangdong, China's innovation city. It focuses on product research and development and sales in the fields of water conservancy, water affairs, meteorology, and agricultural monitoring . It is China's leading new smart special field solution provider.

KEHAO is a “Chinese High-tech Enterprise”, ”Key Software Enterprise”, “Specialized and New Enterprise”, “Internet of Things Engineering Technology Research Center” and a “Member Unit of the Engineering Association”. It has passed CMMI3, ISO9001, ISO14001, ISO27001, ISO45001 and other series of certifications , has many patents, many products have passed EMC and RHOS testing, and has rich experience in R&D, manufacturing and sales.

KEHAO has formed industry-university-research cooperation with the Chinese Academy of Water Resources and Hydropower Research and Development and sells a variety of sensor products and monitoring pole stations suitable for surface water, water supply networks, agriculture, and meteorology. They are widely used in lakes, reservoirs, rivers, water conservancy projects, pumps and sluices, water supply and drainage networks, meteorology, agriculture, transportation, construction engineering and other fields. More than 100,000 sets of products have been sold in China and exported to overseas markets, and are well received by customers.

KEHAO is dedicated to delivering high-quality products and exceptional service. We are committed to a customer-centric approach, striving to be a reliable and trusted supplier for our clients.

科皓信息 KEHAOINFO 深圳市科皓信息技术有限公司
SHENZHEN KEHAO INFORMATION TECHNOLOGIES CO., LTD.

WATER

WEATHER&AGRICULTURE

POLE STATION

CONTENT

Instrument Sensor Series/KH.WQX Bubble Preesure Water Level Meter

Product Overview

The KH.WQX Bubble Water Level Meter is a high-precision water level sensor independently developed and manufactured by KEHAO. It measures water level by introducing compressed air from a piston pump into a measuring tube and bubble chamber. The resulting static pressure in the tube is proportional to the water level above the bubble chamber. By sequentially measuring atmospheric pressure and bubble pressure, the sensor calculates the water level with high accuracy.

Key Features

- Industry-Leading Performance: KEHAO is the first to use imported three-way solenoid valves to address the “zero drift” issue. The intelligent control unit periodically switches the solenoid valve to use the measured flow as a zero point. This automatic adjustment compensates for temperature and time drifts of the differential pressure sensor.
- Patented Technology: Automatic zero calibration improves long-term data stability and reliability. The crank-connecting rod plug-type cylinder reduces piston seal friction, extending service life.
- Certified Accuracy: Achieves Level 1 accuracy for measurement ranges of 0–10 m, meeting standard requirements.

Applications

Ideal for monitoring water levels in:

- Reservoirs, rivers, streams, and channels
- Hydrological and oceanographic stations
- Pumping stations and hydropower plants

Technical Specifications

Power Supply: 9.6–30 VDC

Standby Current: ≤1 mA

Average Current: ≤10 mA (1-minute measurement interval, RS485 or SDI-12 output)

Measuring Range: 20, 30, 40, 50, 60 m standard; 70–100 m customizable

Resolution: 1 mm

Accuracy Compensation: Temperature and latitude compensation supported

Measurement Accuracy: ±0.03% FS

Maximum Water Level Change Rate: 60 cm/min

Measurement Interval: 1 minute to 24 hours, configurable (default 5 minutes)

Communication Interface: RS485 or SDI-12

Analog Output: 4–20 mA

Measuring Tube: Inner Ø3 mm / Outer Ø8 mm

Temperature Sensor: NTC 103 (optional)

Measuring Medium: Water (rivers, lakes, groundwater); special liquids can be customized

Operating Temperature: -20 to 80°C

Storage Temperature: -40 to 85°C

Ambient Humidity: ≤95%

Instrument Sensor Series/KH.WLX Radar Water Level Meter

Product Overview

The KH.WLX Radar Water Level Meter is a high-precision, low-power, non-contact sensor suitable for a wide range of water level monitoring applications. Using FMCW (Frequency Modulated Continuous Wave) radar technology, the device offers compact size, high accuracy, strong anti-interference performance, and maintenance-free operation, making it ideal for challenging field environments.

Key Features

- Durable and Reliable: Industrial-grade design with anti-condensation, waterproofing, lightning protection, and ultra-wide operating temperature ensures long-term operation in diverse field conditions.
- FMCW Non-Contact Measurement: Measures water levels without contact, unaffected by weather, sediment, or floating debris. Simple to operate and requires minimal maintenance.
- Energy Efficient: Combines active measurement and sleep modes to minimize power consumption.
- Fast Response: Quick measurement with a fastest response time of 100 ms.
- Certified Accuracy: Complies with GB/T 15966-2017 “Basic Parameters and General Technical

Conditions for Hydrological Instruments.”

Applications

Ideal for monitoring water levels in:

- Natural water bodies, including rivers, lakes, tidal zones, and reservoirs
- Urban flood and waterlogging monitoring during rainy seasons, including low-lying areas and drainage outlets
- Auxiliary water management, such as urban water supply and sewage systems

Technical Specifications

Measuring Range: 0.15–40 m

Measurement Accuracy: ±2 mm

Resolution: 1 mm

Startup Time: As fast as 100 ms

Working Voltage: 9–24 VDC (typical 12 V)

Working Current: 20 mA

Output: RS485, default baud rate 9600; supports ASCII or Modbus protocol

Radar Frequency: 80 GHz, 60 GHz, or 24 GHz optional; 4 GHz bandwidth

Output Power: 13–20 dBm

Beam Width: 14° horizontal, 10° vertical

Operating Temperature: -45 to +85°C

Protection Level: IP68

Instrument Sensor Series/KH.LDX Radar Velocity Meter

Product Overview

The KH.LDX Radar Velocity Meter is a high-precision, low-power, non-contact flow velocity sensor suitable for a wide range of hydrological monitoring applications. Integrating a microstrip antenna, RF circuit, and signal processing unit, it directly outputs accurate target velocity data. The built-in pre-low-noise amplifier provides ultra-high sensitivity for reliable measurements even in challenging environments.

Key Features

- Durable and Industrial-Grade: Anti-condensation, waterproof, lightning-protected design with ultra-wide operating temperature range, ensuring reliable performance in diverse field conditions.
- Non-Contact Measurement: Provides fast and accurate velocity measurements unaffected by weather, sediment, or floating debris. Ideal for high-flow environments during floods.
- Energy Efficient: Combines active measurement and sleep modes to reduce power consumption.
- Compact and Easy to Use: Small form factor for easy installation, operation, and maintenance.
- Stable and Reliable Data: Consistent data output ensures dependable monitoring results.

Applications

Ideal for flow velocity monitoring in:

- Rivers, channels, inlets, and outlets

- Hydrological monitoring when combined with water level measurements
- Urban flood monitoring, including low-lying areas and drainage outlet flow monitoring
- Flow monitoring in channels, culverts, pipelines, and underground pipe networks

Technical Specifications

Measuring Range: 0.1–20 m/s

Measurement Accuracy: ±0.01 m/s

Resolution: 0.01 m/s

Flow Direction: Automatic bi-directional detection with configurable filtering

Measuring Rate: 1 measurement per second

Digital Interface: RS485, default 9600 bps

Supply Voltage: 9–24 VDC (typical 12 V)

Supply Current: 100 mA (standard power) / 29 mA (low-power version)

Radar Frequency: 24 GHz

Radiated Power (EIRP): 20 dBm

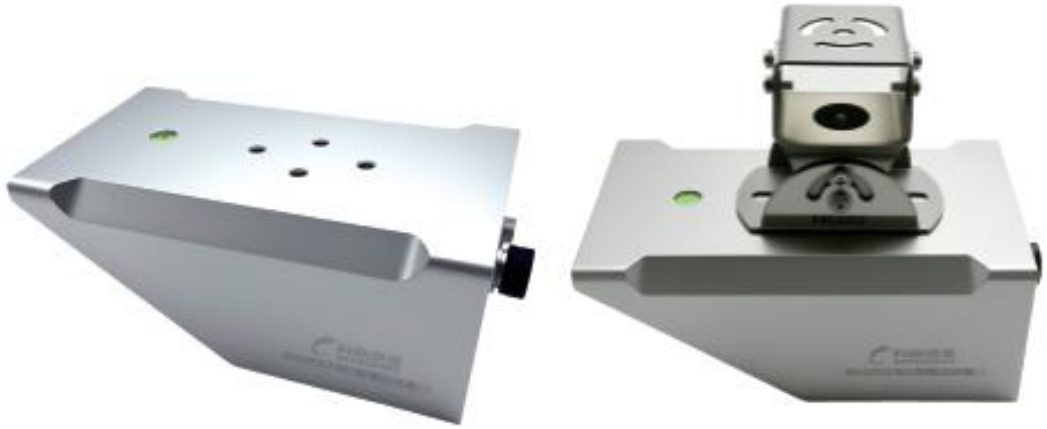
Antenna Gain: 18.5 dB

Antenna Angle: ±12°

Operating Temperature: -45 to +85°C

Protection Level: IP68

Instrument Sensor Series/KH.UOCF Radar Flow Meter



Product Overview

The KH.UOCF Radar Flow Meter combines water level and flow velocity measurement using advanced microwave radar technology. It integrates a radar velocity sensor, a radar water level sensor, and a flow totalizer module to provide accurate and reliable flow monitoring. The device features low power consumption, compact size, high reliability, and easy maintenance, making it ideal for a wide range of hydrological applications.

Key Features

- Industrial-Grade Design: Anti-condensation, waterproof, lightning-protected, and ultra-wide operating temperature range ensures stable performance in diverse field conditions.
- Non-Contact Measurement: Unaffected by temperature, fog, silt, or floating debris. Provides efficient, accurate, and stable data output.
- Energy Efficient: Combines active measurement and sleep modes to reduce power consumption.
- Easy Configuration: Parameters can be set via Bluetooth connection, with real-time output of water level, flow velocity, and flow rate.

Applications

Ideal for measuring flow velocity, water level, or flow in:

- Rivers, lakes, tidal zones, and reservoirs
- Groundwater pipe networks and irrigation canals
- Reservoir gates and water control structures

Technical Specifications

Working Voltage: 9–24 VDC (typical 12 V)

Working Current: ≤160 mA (typical 140 mA)

Operating Temperature: -45 to +85°C

Communication Interface: RS485, configurable baud rate (default 9600 bps)

Flow Velocity Range: 0.05–20 m/s

Flow Velocity Accuracy: ±0.01 m/s

Distance/Water Level Range: 0.15–40 m

Distance/Water Level Accuracy: ±2 mm

Resolution: Flow velocity 0.01 m/s; water level 1 mm

Antenna Angle: Flow velocity 12°; water level 14°

Transmitting Frequency: Flow velocity 24 GHz; water level 80 GHz, 60 GHz, 24 GHz optional

Flow Direction: Automatic bi-directional detection with configurable filtering

Protection Level: IP68

Instrument Sensor Series/KH.YLS Submersible Water Level Sensor

Product Overview

The KH.YLS Submersible Water Level Sensor is a fully stainless steel, fully sealed intelligent liquid level meter designed for high-precision applications. It uses a highly stable piezoresistive OEM pressure sensor combined with a high-precision intelligent transmitter. With advanced digital temperature compensation and nonlinear correction technologies, it delivers reliable, accurate, and long-term stable measurements in diverse environments.

Key Features

- Stable and Reliable: Fully sealed, integrated structure with precise digital temperature compensation and nonlinear correction ensures consistent and accurate readings.
- Two-Wire Operation: Supports direct replacement of standard two-wire analog 4–20 mA transmitters.
- Compact and Easy to Install: Small, lightweight design allows for simple installation, supports networking, and is suitable for a wide range of applications.

Applications

Ideal for monitoring water levels in:

- Flowing water bodies, rivers of all sizes, and reservoirs
- Hydrology and water conservancy projects
- Upstream and downstream dam monitoring
- Groundwater measurement
- Chemical industry and sewage treatment plants
- Urban drainage and pumping stations

Technical Parameters

Basic Range (mH_2O)	3.5	7	10	20	35	70	100	200
Overpressure (mH_2O)	5	10	15	30	50	100	150	300
All Intermediate Range Analog Output Transmitters (Not Overpressure) Are Implemented With Basic Range Expansion. The Minimum Range Expansion Is 1/5 Of The Basic Range.								
Normal Working Conditions:								
Temperature Range	Working Temperature: -10℃ ~ 70℃, Intrinsically Safe: -20°C–60°C							
	Compensation Temperature -10℃ ~ 70℃; Storage Temperature -20℃ ~ 85℃;							
	Special Temperature Ranges Can Be Negotiated With Us.							
Comprehensive Accuracy	±0.075%Fs (Minimum), ±0.1%Fs (Typical), ±0.25%Fs (Maximum);							
	Comprehensive Accuracy Includes Nonlinearity, Hysteresis, Repeatability And Temperature Errors;							

	3.5 mH_2O and 7 mH_2O sensors: ±0.5% FS typical after range scaling
Long-Term Stability	±0.2%FS/year
Output Signal	4mA ~ 20mA Dc; RS485 Interface (Custom Protocol) Or HART® protocol
Power Supply	10–28 VDC (RS485), 12–30 VDC (HART®), 10–12 VDC (Intrinsically Safe via safety barrier)
Load Capacity	4–20 mA DC output: (U-10V/12V)/0.02 A; RS485 supports up to 99 transmitters
Insulation Resistance	100 MΩ, 50 V
Vibration	20 g, 20–5000 Hz
Shock	20g, 11 ms.
Protection Level	IP68 (transmitter), IP65 (junction box)
Material Compatibility	Diaphragm: Stainless Steel 316L; Shell: Stainless Steel 1Cr18Ni9Ti; O-Ring: Fluororubber

Instrument Sensor Series/KH.LBRD Radar Water Level Meter

Product Overview

The KH.LBRD Radar Water Level Meter uses electromagnetic wave ranging technology with precise time measurement to provide high-precision, non-contact water level monitoring. The sensor emits electromagnetic waves toward the water surface and receives the echo, determining parameters such as the distance to the water surface, rate of change (radial velocity), azimuth, and height. This innovative industrial radar application achieves millimeter-level accuracy, long-range measurement (up to 70 m), high reliability, easy installation, and maintenance-free operation. The device can connect to computers, PLCs, or display and control systems (such as RTUs) through standard signal interfaces to form a comprehensive water level monitoring system.

Key Features

- High Precision: High-frequency microwave ranging technology ensures millimeter-level accuracy (±3 mm).
- Easy Installation and Maintenance: Non-contact measurement eliminates mechanical wear; supports continuous online data collection and unattended operation.
- Strong Anti-Interference: Independent of water quality, unaffected by floating objects (ice, debris), water flow, or wave effects; does not require wave-breaking wells.
- Cost-Effective and Durable: Long service life with low operating costs.

Applications

Ideal for monitoring water levels in:

- Rivers, reservoirs, and open channels
- Upstream and downstream of dams, including tailwater levels
- Hydrology and water conservancy projects such as mountain torrents, flood control, and water level measurement in pressure regulating towers or wells

Technical Specifications

Measuring Range: 30 m, 70 m

Accuracy: ±3 mm

Working Temperature: -40 to +80°C

Working Voltage: Four-wire DC 12 V; Two-wire DC 24 V

Wiring: Four-wire shielded cable with waterproof M20×1.5 terminal; supports cable OD 9–13 mm

Power Consumption: Max 0.15 W

Output Signal: RS485 (MODBUS RTU); RS232 4–20 mA / HART optional

Housing: Cast aluminum, IP67

Color: Yellow / Blue

Horn Antenna: Stainless Steel 304, diameter 76–120 mm

Installation Accessories: Stainless steel hexagonal nut G1-1/2

Instrument Sensor Series/KH.CSB Ultrasonic Water Level Sensor

Product Overview

The KH.CSB Ultrasonic Water Level Sensor is a digital, microprocessor-controlled, non-contact liquid level meter. Using ultrasonic pulse technology, it delivers reliable, cost-effective, and easy-to-install measurements. Equipped with real-time temperature compensation and anti-interference features, it ensures stable and accurate readings in various environments.

Key Features

- Stable and Reliable: Built-in temperature sensor provides real-time sound velocity compensation; automatically detects and suppresses electrical interference on site; provides alarm current output to prevent readings from entering blind zones or exceeding the measurement range.
- Long Service Life: Non-contact measurement minimizes wear. All input and output lines feature

overvoltage and overcurrent protection, ensuring durable operation.

- Flexible and User-Friendly: Supports multiple output types and configurations for different installation scenarios.

Applications

Ideal for monitoring water levels in:

- Rivers, lakes, reservoirs, and other natural water bodies
- Tap water and sewage treatment plants
- Pumping stations and urban water supply and drainage systems
- Municipal, water conservancy, and petrochemical applications

Technical Specifications

Type / Content	Two-wire system	Four-wire system	
	All-in-one	All-in-one	Split type
Measuring Range	0 ~ 5m, 0 ~ 10m, 0 ~ 15m, 0 ~ 20m		
Blind Spot	0.25m ~ 0.8m (depending on range)		
Measurement Accuracy	±0.3% FS(standard conditions)		
Resolution	1mm		
Instrument Display	Liquid level, distance, current, echo waveform, and historical curve are displayed in Chinese and English		
Supply Voltage	DC12V ~ 36V / 22mA	DC12V ~ 36V / 80mA or AC85V ~ 265V / 5W	
Analog Output	4–20 mA, load < 400 Ω	4–20 mA / 12 bit, load < 500 Ω	
Digital Output	HART 5.0 (optional)	RS485 interface / Modbus-RTU protocol	

<table>
<tr><td></td><td colspan="2"></td><td colspan="3">HART 5.0 (optional)</td></tr>
<tr><td rowspan="2">Switching Output</td><td colspan="2" rowspan="2">None</td><td colspan="2">2-way</td><td>4-way</td></tr>
<tr><td colspan="3">Contact 3A 250VAC / 5A 30VDC</td></tr>
<tr><td>Transmitter Material</td><td>ABS</td><td>Aluminum Alloy</td><td>ABS</td><td>Aluminum Alloy</td><td>ABS</td></tr>
<tr><td>Probe Material</td><td colspan="5">Ordinary waterproof ABS / Corrosion-resistant ETFE / Customizable polytetrafluoroethylene PTFE probe</td></tr>
<tr><td>Electrical Interface</td><td>PG9 interface</td><td>M20×1.5</td><td>PG9 interface</td><td>M20×1.5</td><td>G11 interface</td></tr>
<tr><td>Process Interface</td><td colspan="5">G2 (customizable G1 1/2)</td></tr>
<tr><td>Ambient Temperature</td><td colspan="5">-20℃ ~ +60℃*</td></tr>
<tr><td>Process Temperature</td><td colspan="5">-20℃ ~ +90℃ (if the temperature is over +60℃, please indicate the requirement when ordering)</td></tr>
<tr><td rowspan="2">Waterproof Grade</td><td>IP65</td><td>IP67</td><td>IP65</td><td>IP67</td><td>IP65</td></tr>
<tr><td colspan="5">In a humid environment all year round, it is recommended to apply glass glue on the waterproof joints and instrument cover seams</td></tr>
<tr><td>Explosion-Proof Grade</td><td>-</td><td>have*</td><td>-</td><td>have*</td><td>-</td></tr>
<tr><td>Process Pressure</td><td colspan="5">0.8–3 bar (altitude < 2000 m)</td></tr>
<tr><td colspan="6">*FS: Full Scale. Standard conditions: Temp 20±5°C, Humidity 45–75%, No wind, 1 Bar.

*At ambient temperatures -40 to -20°C, LCD may not display and instrument operates slowly; normal operation resumes above -20°C.</td></tr>
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Instrument Sensor Series/KH.WFH Float Water Level Meter

Product Overview

The KH.WFH Float Water Level Meter (with digital water level display) is a high-precision sensor that integrates mechanical and electrical technologies. It converts the angular displacement of the output shaft into a corresponding digital value, allowing accurate measurement of liquid level height. The instrument consists of a float, wire rope, counterweight, measuring wheel, sensor, bracket, and output interface.

As the liquid level changes, the float rises and falls, driving the wire rope to rotate the measuring wheel. The encoder then outputs the corresponding real-time water level value.

Key Features

- Stable and Reliable: Robust mechanical design, strong anti-interference capability, stable performance, and long service life.
- High Precision: High resolution and wide measuring range. Measurement accuracy ≤ ±2 cm or 0.2% FS.

- Power-Off Memory: Supports signal tracking and memory after power interruption, ensuring continuous data recording.

Applications

Ideal for monitoring water levels in:

- Reservoirs, rivers, and lakes
- Pumping stations and water treatment facilities
- Hydrology and water conservancy projects
- Industrial applications requiring precise liquid level measurement

Technical Specifications

Measuring Range	0–5, 10, 20, 40, 80 m (customizable)
Water Level Change Rate	＜100 cm/min
Resolution	1cm
Water Level Wheel Starting Torque	＜100 g·cm （0.0098N・m）
Measurement Accuracy	≤±2cm or 0.2%FS
Monitor	Mechanical decimal counter
Working Circumference of Water Level Wheel	32cm
Counterweight Diameter	φ20mm
Measuring Cable	Φ0.8mm stainless steel cable
Float Diameter	φ50, φ100, φ150 mm (optional)
Contact Resistance	≤0.5Ω
Insulation Resistance	≥10MΩ
Output Signal	Parallel Gray code (B), 4–20 mA analog (A), RS485 (M), SSI Gray code (S)
Ambient Temperature	-30℃～85℃
Relative Humidity	≤95%(RH 40℃)
Reliability (MTBF)	≥ 25,000 hours
Operating Voltage	Matches selected encoder

Instrument Sensor Series/KH.DMS Water Accumulation Monitor

Product Overview

The KH.DMS Water Accumulation Monitor is a dedicated device for urban waterlogging monitoring and data collection. Using ultrasonic sensing technology, it accurately measures water depth and operates reliably in low-temperature and corrosive environments. The modular design integrates an embedded acquisition terminal and a monitoring host. All components—including water detection module, ultrasonic liquid level sensor, data acquisition module, data storage module, GPRS communication module, and lithium battery—are housed in a waterproof shell with no external connections. The device is compact, highly precise, and easy to install.

Key Features

- Compact and Easy Installation: Only 10 cm in size; can be installed by drilling into road surfaces and integrated with roads, bridges, and other infrastructure.
- Low Power Consumption: Supports sleep mode when no water is detected; powered by built-in lithium battery, eliminating the need for external power.
- High Precision and Stable Transmission: 1 mm resolution; LoRa communication between sensor and host, 4G communication between host and monitoring center.

- Data Storage and Retransmission: Stores water accumulation data for over 5 years; automatically retransmits stored data after communication failure.
- Intelligent Collection Frequency: Adjustable collection frequency; higher water levels trigger more frequent data collection.

Applications

Ideal for monitoring water accumulation in:

- Urban drainage and municipal water systems
- Road traffic and smart city infrastructure
- Smart communities and emergency response systems
- Flood control and drainage monitoring in low-lying areas

Technical Specifications

Embedded Acquisition Terminal:

Water Level Range: >1 m

Water Level Accuracy: <1 cm

Collection Blind Zone: ≤3 cm

Display Resolution: <1 mm

Data Storage: 16 MB

Signal Penetration: >1 m of road surface water

Waterproof Rating: IP68 (can operate continuously in ≤1 m water for 30 days)

Shell Material: Stainless steel, top made of engineering plastic

Battery: DC 3.6 V / 26,000 mAh lithium battery

Communication Module: LoRa

Load Bearing: Supports 10-ton vehicle passage after installation

Standby Time: >3 years without water accumulation

Working Time: Collects data every 5 minutes during water accumulation, lasting >30 days

Monitoring Host:

Data Storage: 128 MB

Waterproof Rating: IP67

Shell Material: Aluminum alloy

Battery: DC 3.7 V / 10,000 mAh

Communication Module: 4G

Instrument Sensor Series/KH.SC Electronic Water Gauge

Product Overview

The KH.SC Electronic Water Gauge is an integrated inductive water level meter combining a measuring module and a circuit conversion and transmission module. The sensor uses a mechanical positioning method to detect water level changes. After digital coding, the device performs digital division, sampling, and transmission, providing fully digital water level measurements.

The gauge can be connected to PCs, PLCs, or display, recording, and control devices (such as RTUs) via the RS485 interface to form a complete water level measurement and control system.

Key Features

- Long Service Life: Internal components use high-performance sealing materials and include built-in lightning protection; resistant to corrosion, freezing, heat, and aging.
- Stable and Reliable: Stainless steel protective shell, high reliability, and anti-interference performance; unaffected by pollutants, sediments, corrosive liquids, or environmental factors such

as temperature, pressure, humidity, sand, and freezing.

- High Accuracy and Fast Sampling: Sampling resolution 1 cm (full-range equal accuracy); sampling frequency 1 second.
- Digital Filtering: Water level wave data is digitally filtered to ensure true water level readings.

Applications

Ideal for monitoring water levels in:

- Rivers, lakes, reservoirs, hydropower stations, irrigation areas, and water delivery projects
- Municipal projects including tap water supply, urban sewage treatment, and urban road waterlogging
- Industrial applications, including liquid level monitoring in food and chemical industries (e.g., beverages, wine production)

Technical Specifications

Parameter	Value
Unit Lengths	40, 64, 80, 104, 120, 160 cm (freely combinable)
Amplitude Range	Configurable by combining unit lengths
Accuracy	1 cm (full-range equal accuracy, vertical installation)
Power Supply	DC 9–36 V
Output Signal	RS485 (Modbus-RTU)
Sampling Frequency	1 second
Static Current	≤ 18 mA (100 cm sensor, DC 12 V)
Power Consumption	≤ 200 mW (100 cm sensor, DC 12 V)
Working Temperature	0–60°C
Installation	Vertical or inclined (angle adjustable)

Instrument Sensor Series/KH.DPL Doppler Flow Meter

Product Overview

The KH.DPL Doppler Flow Meter measures flow velocity using the ultrasonic Doppler principle, and water level using ultrasonic time difference or static pressure methods. Flow is calculated based on the cross-sectional area. The Doppler effect determines the frequency difference between transmitted and received signals, while the ultrasonic time difference and static pressure are used to measure liquid level under various conditions. Ambient temperature is used to correct the actual ultrasonic wave propagation speed.

Key Features

- Long Service Life: Waterproof, corrosion-resistant, and highly durable; probe protection rated IP68, supporting long-term underwater operation.
- Low Maintenance: No consumable parts; purely physical measurement method requiring no calibration.
- High Measurement Accuracy: Flow velocity error as low as 1 mm/s; ultrasonic level measurement error 1 mm (within 2 m); unaffected by chemical reagents, liquid viscosity, or other interference.

Applications

Ideal for monitoring water flow and levels in:

- Rivers, open channels, reservoirs, and pipelines
- Online monitoring of flow velocity, water level, temperature, instantaneous flow, and accumulated flow

Technical Specifications

Parameter	Value
Flow Rate Range	0–10 m/s, bidirectional
Flow Rate Resolution	0.001 m/s
Flow Rate Accuracy	≤5 m/s: ±0.001 m/s; >5 m/s: ±0.02 m/s or ±0.3% of peak velocity (larger value)
Ultrasonic Level Range	6.5 m
Ultrasonic Level Accuracy	0.001 m
Ultrasonic Level Resolution	0.0005 m
Static Pressure Level Range	0–10 m
Static Pressure Level Accuracy	±0.1% FS
Static Pressure Level Resolution	0.001 m
Temperature Range	-20–60°C
Sensor Size	165 × 50 × 29.5 mm
Transmitter Size	231 × 185 × 119 mm
Protection Grade	IP68

Parameter	Value
Power Supply	DC 12 V / 24 V
Power Consumption	<70 mA (measuring), <25 mA (sleep mode)
Communication Interface	RS485, Modbus
Additional Protection	Lightning protection, surge protection, EMI suppression

Instrument Sensor Series/KH.JD Series Tipping Bucket Rain Gauge

Product Introduction

The KH.JD series tipping bucket rain gauge is a precision instrument designed for accurate precipitation measurement. It complies with GB/T 11832-2002 Tipping Bucket Rain Gauge, SL61-2003 Hydrological Automatic Measurement and Reporting System Specification, and GB11831-2002 Telemetering Rain Gauge Standard.

The gauge can be connected to a data logger or computer and is suitable for various rainfall observation stations. It measures rainfall start and end time, cumulative precipitation, and rainfall intensity, supporting continuous and unattended operation.

Key Features

- **Durable construction:** Stainless steel outer housing with strong corrosion resistance, suitable for long-term outdoor deployment

- **Stable measurement performance:** High-sensitivity tipping bucket mechanism ensures reliable and repeatable rainfall data
- **Automatic operation:** Fully automatic, 24/7 monitoring without manual intervention
- **Easy installation:** Simple structure allows fast installation and convenient maintenance

Applications

Ideal for monitoring rainfall in:

- Hydrological observation and remote water monitoring systems
- Flood control and early warning systems for mountain torrent disasters
- Agricultural, environmental, and meteorological monitoring
- Roads, railways, airports, and port infrastructure

Technical Specifications

Models: KH.JD02, KH.JD05

Rain collector diameter: Φ200 ±0.6 mm

Resolution: 0.2 mm / 0.5 mm

Rainfall intensity range: 0–4 mm/min (maximum allowable intensity: 8 mm/min)

Measurement accuracy: ≤ ±3%

Operating conditions: Temperature -10°C to +50°C; humidity <95% (at 40°C)

Mean time between failures (MTBF): ≥25,000 hours

Cutting edge angle: 40°–45°

Instrument Sensor Series/KH.YDS Piezoelectric Rain Gauge

Product Overview

The KH.YDS piezoelectric rain gauge uses a PVDF piezoelectric film as the rainfall sensing element and incorporates an embedded AI neural network to identify true raindrop signals. This effectively eliminates false triggering caused by sand, dust, vibration, or other environmental interference.

With a fully solid-state design and no mechanical moving parts, the KH.YDS offers higher durability, sensitivity, and long-term stability compared with traditional tipping bucket rain gauges. Its compact size, wide measurement range, and maintenance-free operation make it suitable for continuous rainfall monitoring in demanding field conditions.

Key Features

- Solid-state piezoelectric sensing technology with no mechanical components, ensuring high reliability and long service life
- Embedded AI signal recognition to accurately distinguish rainfall from environmental interference
- High measurement accuracy with wide dynamic range and excellent long-term stability
- Low power consumption, maintenance-free operation, and no calibration required
- Compact integrated design, easy installation, suitable for all-weather outdoor deployment

Applications

Ideal for monitoring rainfall in:

- Remote hydrological and rainfall observation systems
- Flood control and flash flood early warning systems
- Agricultural and environmental monitoring
- Meteorological stations
- Roads, railways, airorts, and port infrastructure

Technical Specifications

Measurement type: Rain

Measuring range: 0-4mm/min

Measurement accuracy: ≤±4%

Resolution: 0.01mm

Sampling frequency: <1s

Communication interface: RS485

Communication protocol: MODBUS

Power supply: DC 12 V

Power consumption: 0.12 W

Operating temperature: -40 to +85℃

Operating humidity: 0～100% RH

Instrument Sensor Series/KH.SZ Water Quality Multi-Parameter Sensor

Product Overview

The KH.SZ multi-parameter water quality sensor is designed for integrated water quality monitoring and supports simultaneous measurement of up to five core parameters, including pH, electrical conductivity, dissolved oxygen, turbidity, and temperature.

In addition to the standard configuration, the system can be expanded with optional digital sensors such as salinity, ammonium nitrogen, residual chlorine, nitrate nitrogen, nitrite, oxygen demand, and total hardness.

The sensor system adopts a modular digital design with automatic probe recognition, enabling plug-and-play installation and flexible configuration for different monitoring requirements.

Key Features

- Modular multi-parameter design supporting automatic recognition of digital sensor probes
- Plug-and-play installation, simplifying deployment and sensor replacement
- Support for remote upgrade, configuration, fault diagnosis, and networked sensor management
- Automatic reset and data recovery after power interruption
- Suitable for long-term continuous monitoring in field and industrial environments

Applications

Ideal for water quality monitoring in:

- Water treatment and sewage treatment facilities
- Industrial wastewater discharge monitoring
- Rivers, lakes, and reservoirs
- Aquaculture and environmental monitoring systems

KH.SZ-PHG pH Sensor

The KH.SZ-PHG pH sensor operates based on the glass electrode measurement principle and incorporates a microcontroller-based digital circuit for accurate measurement and automatic temperature compensation. The pH value is calculated digitally and displayed directly on the instrument.

Method of measurement: Glass electrode method

Measurement range: 0–14 pH, adjustable

Accuracy (reading error): ±0.1 pH

Repeatability (precision): ≤0.1 pH

Resolution: 0.01 pH

pH drift (pH = 4, 7, 9): ±0.1 pH

Temperature compensation: Automatic, 0°C to 60°C, ±0.1 pH

Response time: <30 s

MTBF: ≥720 hours per cycle

Actual water sample comparison test: ±0.1 pH

Voltage stability: ±0.1 pH variation in indication

Calibration cycle: 6 months

Protection rating: IP68, rated for submersion up to 60 m

Communication method: RS485 (Modbus RTU)

KH.SZ-DDM Electrical Conductivity (EC) Sensor

KH.SZ-DDM electrical conductivity sensor operates based on the electrolytic conductivity measurement principle and uses a microcontroller-based digital circuit for signal acquisition and automatic temperature compensation. The sensor provides stable and accurate conductivity measurements through digital processing and is suitable for long-term online monitoring.

Method of measurement: Electrode method

Measurement range: 0–200 / 500 mS/cm, adjustable

Accuracy (display error): ±1%

Repeatability (precision): ≤1%

Resolution: 0.01 μS/cm

Response time: <30 s

Zero drift: ±1%

Range drift: ±1%

Temperature compensation accuracy: ±1%, automatic compensation from 0°C to 60°C

Actual water sample comparison test: ±1%

Voltage stability: ±1% variation in indication

Protection rating: IP68, rated for submersion up to 60 m

Communication method: RS485 (Modbus RTU)

KH.SZ-RDO Optical Dissolved Oxygen Sensor

KH.SZ-RDO optical dissolved oxygen sensor operates based on the physical principle of fluorescence quenching. When excitation light illuminates the fluorescent material on the sensor surface, fluorescence is emitted. The quenching time of the fluorescence varies with the oxygen concentration at the sensor surface.

By measuring the phase difference between the excitation light and the emitted fluorescence and comparing it with an internal calibration curve, the dissolved oxygen concentration is calculated. The final output value is further compensated for temperature and salinity to ensure high measurement accuracy.

Method: Fluorescence

Measurement range: 0.0–20.0 mg/L or 0–200%, adjustable

Accuracy (reading error): ±0.3 mg/L

Repeatability (precision): ≤0.3 mg/L

Resolution: 0.01 mg/L

Response time (T90): <60 s

Zero drift: ±0.3 mg/L

Range drift: ±0.3 mg/L

Temperature compensation accuracy: ±0.3 mg/L

MTBF: ≥720 hours per cycle

Actual water sample comparison: ±0.3 mg/L

Voltage stability: ±0.3 mg/L variation in indication

Insulation resistance: >5 MΩ

Protection rating: IP68, rated for submersion up to 60 m

Communication method: RS485 (Modbus RTU)

KH.SZ-ZS Turbidity Sensor

KH.SZ-ZS turbidity sensor measures turbidity based on the light scattering principle. A light source emits a beam into the water sample, and suspended particles scatter the light. The scattered light at a 90-degree angle to the incident beam is detected by a photodetector.

Through photoelectric conversion, signal processing, and software-based calculation, the sensor outputs stable and accurate turbidity values suitable for continuous online monitoring.

Method: Light scattering

Measurement range: 0–4000 NTU, adjustable

Accuracy (display error): ±5%

Repeatability (precision): ≤5%

Resolution: 0.01 NTU

Zero drift: ±3%

Range drift: ±3%

Actual water sample comparison: ±10%

Voltage stability: ±3% variation of indicated value

Protection rating: IP68, rated for submersion up to 60 m

Communication method: RS485 (Modbus RTU)

Instrument Sensor Series / KH Pen-Type Water Quality Meters

Product Introduction

The KH Pen-Type Water Quality Meter series is designed for rapid on-site and field water quality assessment. The series supports measurement of pH, salinity (YD), TDS, dissolved oxygen (DO), residual chlorine (CL), electrical conductivity (EC), and temperature. Each meter features a compact and portable design suitable for field operations, providing accurate and reliable results without installation requirements. The meters are widely used in drinking water source monitoring, aquaculture, environmental protection, textile and dyeing, electroplating, beverage production, and scientific research applications.

Key Features

- Compact, portable, and no installation required
- Automatic recognition of digital sensing probes; plug-and-play operation
- High accuracy, fast response, and stable performance
- Suitable for field monitoring and daily rapid inspection
- Optional models for different measurement needs
- Intelligent data analysis and graded warning

- Hourly data collection and reporting
- FOTA remote upgrade, remote or local parameter configuration
- Resume data transmission after network disconnection
- Protection level: IP68, anti-mildew, anti-salt spray, high and low temperature resistance
- Explosion-proof grade: Ex ia IIC T3 Ga
- Electromagnetic compatibility: GB/T 17626
- Operating temperature: -20–70℃; Storage temperature: -20–60℃

Applications

Ideal for water treatment, wastewater monitoring, industrial effluent detection, rivers, lakes, reservoirs, aquaculture, and other water quality monitoring environments.

Technical Specifications

KH.LPH-101 pH
The KH.LPH-101 pH meter uses the glass electrode principle, with a microcontroller-based digital circuit for measurement and automatic temperature compensation. The pH value is displayed directly on the instrument.

Measurement range: pH 0.1–14.0; Temperature 0–50°C

Resolution: pH 0.1; Temperature 0.1°C / 1°F

Accuracy: pH ±0.2; Temperature ±1°C / ±2°F

Calibration: 3-point calibration at 25°C (4.0 / 6.9 / 9.2)

Operating temperature: 0–50°C

Power supply: 1.5 V battery × 4 pcs

Dimensions: Φ40 × 190 mm

Weight: 88 g

KH.LYD-101 Salinity

The KH.LYD-101 salinity meter measures water salinity using digital sensing probes with automatic temperature compensation.

Measurement range: 0–10%

Resolution: 0.1%

Accuracy: ±0.2%

Temperature range: 0–50°C

Automatic temperature compensation: 0–50°C

Dimensions: Φ40 × 185 mm (Electrode Included)

Weight: 88 g (Electrode Included)

KH.LTDS-101 TDS

The KH.LTDS-101 TDS meter uses a digital electrode method to measure total dissolved solids and performs automatic temperature compensation.

Measurement range: 0–9999 mg/L

Resolution: 1 ppm

Accuracy: ±2% FS

Automatic temperature compensation: 0–50°C

Operating temperature: 0–50°C

Calibration: 1am automatic calibration

Dimensions: Φ40 × 185 mm (including electrode)

Weight: 88 g

KH.LDO-101 Dissolved Oxygen

The KH.LDO-101 dissolved oxygen meter uses an optical dissolved oxygen probe for real-time DO measurement with high accuracy and temperature compensation.

Measurement range: 0–20.00 mg/L

Resolution: 0.01 mg/L

Accuracy: ±1% FS; Temperature ±0.3°C

Operating temperature: 0–50°C

Dimensions: Φ46 × 204 mm (Electrode Included)

Weight: 128 g (Electrode Included)

Protection rating: IP65

KH.LCL-101 Residual Chlorine

The KH.LCL-101 residual chlorine meter uses an electrochemical method to detect chlorine levels with temperature compensation.

Measurement range: 0–2.00 mg/L

Resolution: 0.01 mg/L

Accuracy: ±1% FS; Temperature ±0.3°C

Operating temperature: 0–50°C

Dimensions: Φ46 × 204 mm

Weight: 128 g

KH.LEC-101 Conductivity

The KH.LEC-101 conductivity meter measures water conductivity digitally and automatically compensates for temperature.

Measurement range: 0–2000 μS/cm

Resolution: 1 μS/cm

Accuracy: ±2% FS

Temperature display: 0.1°C / °F

Operating temperature: 0–50°C

Automatic temperature compensation: 0–50°C

Dimensions: Φ40 × 185 mm

Weight: 88 g

Features	Edge warning: intelligent data analysis, intelligent graded warning Data reporting: data collection and reporting at the hour Remote upgrade: FOTA remote upgrade Parameter configuration: remote configuration, local configuration Resume data transmission after network disconnection: restore data after network disconnection
Protection level	IP68
Protection features	Anti-mildew, anti-salt spray, high and low temperature resistance
Explosion-proof grade	Ex ia IIC T3 Ga
Electromagnetic compatibility	GB/T 17626
Operating temperature	-20~70℃
Storage temperature	-20~60℃

Instrument Sensor Series/KH.QX-2 Wind Speed And Direction Sensor

Product Overview

The Mechanical Wind Speed and Direction Sensor measures wind speed and direction by converting the mechanical motion caused by wind into electrical signals. This intuitive mechanical design ensures high reliability and stable performance under harsh environmental conditions, providing accurate, real-time wind data with minimal maintenance requirements.

Key Features

- Proven mechanical principle; mature and reliable technology

- High accuracy and stability in harsh environments
- Low-cost solution without complicated power requirements
- Direct measurement of wind speed and direction
- Simple, intuitive maintenance and calibration

Applications

Ideal for use in weather stations, environmental monitoring stations, transportation systems, airports, bridges and buildings, agriculture, and industrial ventilation monitoring.

Technical Specifications

Power supply: DC 12V
Working environment: -40~70℃, humidity ≤100% without condensation
Communication interface: RS485
Working current: 55mADC12V
Starting wind speed: 0.5m/s
Shortest data interval: 0.5S
Shell material: polymer engineering plastic

Sensor Parameters

Parameter	Measuring Range	Resolution	Accuracy
Wind speed	0-60m/s	0.01m/s	±0.2m/s
Wind direction	0-360 degrees	0.1 degrees	±1 degree
Average Wind Speed☆	0-60m/s	0.01m/s	±0.2m/s

Instrument Sensor Series/KH.QX-3 Temperature, Humidity and Atmospheric Pressure Sensor

Product Overview

This multi-parameter weather instrument integrates temperature, humidity, and atmospheric pressure measurement in a single compact device. It features mature and reliable technology, providing stable and accurate environmental data for a wide range of applications. The sensor is designed for long-term outdoor use with minimal maintenance and high durability.

- ### Key Features

  High anti-interference capability with built-in watchdog circuit and automatic reset for stable system operation

- No moving parts; zero wear and maintenance-free, no on-site calibration required
- High integration and reliable performance
- Durable ASA engineering plastic housing for long-term outdoor exposure without discoloration
- Standard RS485 communication interface (MODBUS protocol); optional RS232, USB, and Ethernet interfaces
- Supports optional wireless transmission with a minimum reporting interval of 1 minute

Applications

Ideal for smart agriculture, meteorological monitoring, urban and environmental monitoring, wind power generation, marine vessels, aviation airports, highways, bridges, tunnels, and other applications requiring reliable weather data.

Technical Specifications

Air temperature: -40~60℃ (±0.3℃);
Air humidity: 0-100%RH (±3%RH);
Atmospheric pressure: 300-1100 hPa (±0.25%);
Power consumption: 0.12 W

Instrument Sensor Series/KH.CQX-5 Ultrasonic Five-Parameter Weather Station

Product Overview

KH.CQX-5 is a highly integrated micro-meteorological instrument that measures five key meteorological parameters—wind speed, wind direction, air temperature, relative humidity, and atmospheric pressure—simultaneously. It uses continuous frequency-converting ultrasonic signals to detect wind speed and direction by measuring relative phase, overcoming inaccuracies caused by sensor startup delays, demodulation circuit delays, and temperature variations. The device supports 24-hour continuous online monitoring and outputs six parameters in real time through digital communication interfaces.

- ## Key Features

  Hidden ultrasonic probe design prevents interference from rain, snow accumulation, and wind shielding

- Continuous frequency-converting ultrasonic measurement for wind speed and direction
- Integrated measurement of wind speed, wind direction, temperature, humidity, and atmospheric pressure
- Advanced sensing technology enables real-time measurement without starting wind speed
- Strong anti-interference capability with built-in watchdog circuit and automatic reset
- No moving parts; zero wear and maintenance-free, no on-site calibration required
- Durable ASA engineering plastic and 304 stainless steel housing for long-term outdoor use without discoloration
- Standard RS485 communication interface (MODBUS protocol); optional RS232, USB, Ethernet interfaces
- Optional wireless transmission module with a minimum reporting interval of 1 minute
- Snap-on probe design ensures secure installation and transport without affecting accuracy

Applications

Ideal for meteorological monitoring, urban environment monitoring, wind power generation, marine vessels, aviation airports, highways, bridges, tunnels, and other outdoor monitoring scenarios.

Technical Specifications

Wind speed: Ultrasonic measurement, 0–60 m/s, accuracy ±0.1 m/s, resolution 0.01 m/s

Wind direction: Ultrasonic measurement, 0–360°, accuracy ±2°, resolution 1°

Air temperature: Diode junction voltage method, -40–80°C, accuracy ±0.3°C, resolution 0.01°C

Air humidity: Capacitive measurement, 0–100% RH, accuracy ±3% RH, resolution 0.01% RH

Atmospheric pressure: Piezoresistive measurement, 300–1100 hPa, accuracy ±0.25%, resolution 0.1 hPa

Power consumption: 0.72 W

Instrument Sensor Series/KH.CQX-6 Ultrasonic Six-Parameter Weather Station

Product Overview

KH.CQX is a highly integrated six-parameter micro-meteorological instrument that measures wind speed, wind direction, air temperature, relative humidity, atmospheric pressure, and optical rainfall simultaneously. It uses continuous frequency-converting ultrasonic signals to detect wind speed and direction by measuring the relative phase, overcoming inaccuracies caused by sensor startup delays, demodulation circuit delays, and temperature variations. The instrument supports 24-hour continuous online monitoring and outputs all six parameters through digital communication interfaces.

Key Features

- Hidden ultrasonic probe design prevents interference from rain, snow accumulation, and natural wind shielding
- Continuous frequency-converting ultrasonic measurement for wind speed and direction
- Integrated measurement of wind speed, wind direction, air temperature, humidity, atmospheric pressure, and optical rainfall
- Advanced sensing technology enables real-time measurement without requiring starting wind speed

- Strong anti-interference capability with watchdog circuit and automatic reset
- No moving parts; zero wear and maintenance-free, no on-site calibration required
- Durable ASA engineering plastic housing for long-term outdoor use without discoloration
- Standard RS485 communication interface (MODBUS protocol); optional RS232, USB, Ethernet interfaces
- Optional wireless transmission module with a minimum reporting interval of 1 minute
- Snap-on probe design ensures secure installation and transport without affecting accuracy

Applications

Ideal for meteorological monitoring, urban environment monitoring, wind power generation, marine vessels, aviation airports, highways, bridges, tunnels, and other outdoor meteorological monitoring scenarios.

Technical Specifications

Wind speed: Ultrasonic measurement, 0–60 m/s, accuracy ±0.1 m/s, resolution 0.01 m/s

Wind direction: Ultrasonic measurement, 0–360°, accuracy ±2°, resolution 1°

Air temperature: Diode junction voltage method, -40–80°C, accuracy ±0.3°C, resolution 0.01°C

Air humidity: Capacitive measurement, 0–100% RH, accuracy ±3% RH, resolution 0.01% RH

Atmospheric pressure: Piezoresistive measurement, 300–1100 hPa, accuracy ±0.25%, resolution 0.1 hPa

Optical rainfall: 0–4 mm/min, accuracy ≤ ±4%

Power consumption: 0.84 W

Instrument Sensor Series / KH.DC Atmospheric Electric Field Meter (Lightning Early Warning)

Product Introduction

KH.DC Atmospheric Electric Field Meter is a high-precision lightning detection and early warning instrument designed for real-time monitoring of atmospheric electric field variations. It accurately detects lightning activity and provides critical data for lightning disaster prevention, risk management, and meteorological forecasting. By analyzing changes in the atmospheric electric field, it enables meteorological departments to predict lightning probability, intensity, and development trends, issuing timely warnings to protect public safety and aviation or maritime operations. Data can be transmitted via RS485 communication for integration into monitoring systems.

Key Features

• Integrated design with elegant appearance, easy installation, and maintenance-free operation

• Advanced sensing technology ensures real-time, high-precision, and stable measurement

• Low power consumption and strong anti-interference capability for continuous 24/7 outdoor monitoring

• Fully solid-state design with durable aluminum alloy housing, excellent weather resistance, corrosion resistance, and waterproof performance

• Long service life and suitable for continuous outdoor operation

Application Scenarios

Ideal for meteorological stations, environmental protection monitoring, lightning safety management in agriculture, transportation networks, airports, ports, and other open environments requiring lightning monitoring and early warning.

Technical Specifications

Parameter	Specification
Measuring Range	-100 kV/m to +100 kV/m
Accuracy	±0.001% F.S
Response Time	3 s
Housing Material	6061 Aluminum Alloy
Power Supply	12 VDC, 0.5 W
Communication interface	Modbus-485

Instrument Sensor Series/KH.GZW Light Ultraviolet Radiation Sensor

Product Overview

KH.GZW Ultraviolet Radiation Meter uses a photoelectric detector to measure the intensity of ultraviolet radiation from sunlight or artificial light sources. The received UV photons are converted into weak electrical signals, which are amplified and processed by the internal electronic circuit. Radiation intensity is calculated based on a calibration coefficient, and the value can be output via RS485 communication for monitoring and data collection. This instrument provides accurate, real-time UV measurement for long-term outdoor or industrial applications.

Key Features

- Integrated design with compact and durable structure, easy installation, and maintenance-free operation
- Advanced sensing technology enables high-accuracy, stable, low-power, and all-weather continuous monitoring
- Fully solid-state construction with high-strength, corrosion-resistant, and waterproof housing ensures long service life

- Strong anti-interference capability suitable for harsh environmental conditions

Applications

Ideal for light intensity and UV monitoring in agriculture, environmental protection, meteorology, highways, railways, airports, ports, and other industrial or outdoor scenarios.

Technical Specifications

Power supply: DC 12V

Working environment: -40~85℃

Communication interface: RS485

Working current: 20 mA @ DC12V

Shortest data interval: 0.5 s

Shell material: polymer engineering plastics

Parameter	Measuring Range	Resolution	Accuracy
Illumination	0~ 157,286 Lux	1 Lux	< ±3%
Total radiation	0 ~ 1,242 W/㎡	1W/㎡	< ±3%
Ultraviolet radiation	0 ~ 262,144m W/㎡	1mW/㎡	< ±3%

Instrument Sensor Series/KH.GDF Photoelectric Global Radiation Sensor

Product Overview

KH.GDF Photoelectric Global Radiation Sensor uses a photoelectric detector to measure the total short-wave radiation value under sunlight. The measured data can be output via RS485 communication, enabling real-time monitoring and data collection. The sensor is designed for reliable, long-term outdoor operation and provides accurate measurements under various environmental conditions.

Key Features

- Integrated, compact, and durable design with easy installation and maintenance-free operation
- Advanced sensing technology for high-accuracy, stable, and low-power continuous measurement
- Fully solid-state construction with robust, corrosion-resistant, and waterproof housing for long service life
- Strong anti-interference capability, suitable for all-weather, long-term monitoring in harsh environments

Applications

Ideal for global radiation and light monitoring in agriculture, environmental protection, meteorology, renewable energy, transportation, and construction sites.

Technical Specifications

Power supply: DC 12V

Power consumption: 0.0–36 W

Working environment: -20~65℃

Communication interface: RS485

Working current: 3 mA @ DC12V

Shortest data interval: 0.5 s

Response time: ≤10 s

Annual stability: ≤ ±3%

Zero drift: ≤ 6 W/m²

Sensor Parameters

Parameter	Scope	Resolution	Accuracy	Unit
Irradiance	0-2000	1	< ± 3 %	W/m²
Sunshine hours	0-6500	0.1	< 0.2	h

Instrument Sensor Series/KH.TSQ Soil Moisture Sensor

Product Overview

KH.TSQ Probe Soil Sensor can simultaneously measure four key soil parameters: soil moisture content, soil temperature, soil conductivity, and total salt content. The measured values can be output via RS485 communication, enabling integration into smart agricultural, hydrological, and ecological monitoring systems. The sensor is designed for reliable long-term outdoor operation with accurate and stable measurements.

Key Features

- Integrated design with compact, durable, and maintenance-free structure
- Advanced sensing technology ensures high accuracy, fast response, and strong anti-interference capability
- Low power consumption suitable for continuous all-weather monitoring in harsh environments
- Easy installation and plug-and-play operation

Applications

Ideal for agriculture and irrigation management, hydrological monitoring, geological disaster warning, ecological research, and engineering construction. Supports smart irrigation systems to optimize watering based on crop water demand, potentially saving 20–40% of water.

Technical Specifications

Power supply: DC12V

Power consumption: <0.1 W

Working temperature: -30~70℃

Communication interface: RS485

Working current: 8 mA @ DC12V

Minimum data interval: 60 s

Parameter	Measuring Range	Accuracy	Resolution	Unit
Soil Temperature	-30 ~ 70 ℃	± 0.3 (-10 ~ 50 ℃)	0.01	℃
Soil Moisture Content	0~100%	±3% (loam) Calibration may be required for high organic matter soils (>12% carbon) or high clay soils (>45% clay) due to dielectric relaxation	0.01%	---
Soil Conductivity	0~20000	±3% (15℃, 0–10000 μS/cm) ±5% (full scale)	1	us/cm
Soil Salt Content	0~12800	± 3 %	1	mg/L

Agricultural Lighting Series / KH.ZDP Greenhouse LED Plant Grow Light

Product Overview

KH.ZDP LED Plant Grow Light is scientifically designed based on plant growth data and photosynthesis principles. It provides supplemental lighting for greenhouse and indoor plants to enhance growth, promote flowering, and improve overall crop quality. The light spectrum and intensity are optimized for different plant growth stages, ensuring efficient photosynthetic activity and healthier development.

Key Features

- Accelerates seedling growth, reducing cultivation time by up to 50%
- Promotes earlier flowering, fruiting, and maturation by 15–20 days
- Helps reduce incidence of pests, diseases, and malformed fruits

- Long service life of approximately 8,000 hours per lamp
- Energy-efficient design suitable for intensive greenhouse cultivation

Applications

Ideal for greenhouse crops, potted flowers, seedlings, succulents, and other indoor or protected-environment plants requiring supplemental lighting.

Techinical Specifications

Light Type: LED Plant Grow Light

Power: 30W/50W/80W

Lifespan: ~8,000 hours

Effectiveness: Enhances plant growth, extends flowering period, improves crop quality

Energy Efficiency: Low power consumption design

Target Crops: Vegetables, flowers, succulents, potted plants, seedlings

Instrument Sensor Series / KH.YP Leaf Temperature and Humidity Sensor

Product Overview

KH.YP Leaf Temperature and Humidity Sensor integrates a high-precision thermistor and dielectric-based humidity sensor to accurately monitor leaf surface temperature and humidity. The sensor is designed in the shape of a real leaf to mimic physical characteristics of plant surfaces, enabling precise measurement of surface humidity through changes in the dielectric constant. Measurement data can be transmitted via RS485 communication for real-time monitoring.

Key Features

- Integrated design with elegant appearance and easy installation
- Maintenance-free with high reliability and stable performance
- Advanced sensing technology for real-time, precise measurement
- Low power consumption and strong resistance to external interference
- Suitable for long-term, continuous monitoring in harsh outdoor environments

Applications

Ideal for agricultural monitoring, crop growth analysis, meteorological observation, and ecological or environmental research.

Technical Specifications

Power Supply: DC 5–30 V

Maximum Power Consumption: 0.75 W (12 V DC)

Operating Temperature: -40°C to +60°C

Protection Level: IP67

Sealing Material: Black flame-retardant epoxy resin

Default Cable Length: 2 m (customizable)

Dimensions: 45 × 15 × 123 mm

Output Signal: RS485 (Modbus Protocol)

Humidity Parameters

Measuring Range: 0–100% RH

Resolution: 0.1% RH

Accuracy: ±5% RH (@25°C)

Temperature Parameters

Measuring Range: -40°C to +80°C

Resolution: 0.1°C

Accuracy: ±0.5°C (@25°C)

Instrument Sensor Series/KH.TR-4 4-in-1 Soil Tester

Product Introduction

KH.TR-4 4-in-1 Soil Tester is designed for rapid and convenient on-site soil assessment. It simultaneously measures soil moisture content, soil temperature, soil pH, and light intensity, with values directly displayed on a high-definition backlit LCD screen. The tester combines portability with reliable performance, making it ideal for field or home use.

Key Features

- Integrated and compact design, easy to carry and install
- High-precision sensors for real-time, stable, and accurate measurement
- Low power consumption and strong anti-interference capability
- Simple operation with backlit LCD screen for easy reading
- Automatic shutdown after 5 minutes of inactivity to conserve battery
- Low battery warning function and temperature display in English.

Applications

Suitable for agricultural soil testing, garden soil assessment, potted plants, and general crop management.

Technical Specifications

Power Supply: 9V battery

Operating Temperature: -5 to +40°C

Size: 310 × 63 × 36 mm

Net Weight: 0.23 kg

Product Case Material: ABS

Parameter Details

Parameter Type	Project	Measuring Range	Resolution	Accuracy / Error Range
Soil pH	Essential	3.5 – 9	0.5	±0.5
Temperature	Essential	-9°C – +50°C (16–122°F)	1°C / 1°F	±1°C / ±1°F
Lighting	Essential	LOW-, LOW, LOW+, NOR-, NOR, NOR+, HGH, HGH-, HGH+	—	—
Humidity	Essential	DRY+, DRY, NOR, WET, WET+	—	—

Product & Packaging Dimensions

Product Size: 190 × 60 × 35 mm

Packing Measurement: 72 × 53 × 328 mm

Product Net Weight: 54 g

Product Gross Weight: 135 g (including battery)

Internet of Things Intelligent Terminal Series/KH.WTU-E Telemetry Terminal

Product Overview

KH.WTU-E telemetry terminal is a versatile data collection and transmission device. It can directly connect to sensors and transmit on-site data such as rainfall and water level to remote monitoring centers via 4G or other communication methods. It is compatible with IoT platforms and mobile applications, enabling real-time monitoring and management.

Key Features

- Digital and switch interfaces support connection to a wide range of sensors and data acquisition units
- Supports self-reporting, incremental reporting, call/test response, and automatic time synchronization
- On-site and remote firmware upgrades; remote configuration and inquiry of working parameters
- Network detection, power supply monitoring, and abnormal condition alerts
- Wide voltage design with reverse polarity protection, overvoltage/overcurrent protection, and lightning surge absorption

Applications

Ideal for distributed data acquisition systems, including rainfall monitoring, water level monitoring, and environmental telemetry projects.

Technical Specifications

Supply Voltage: 10–30 VDC

Static Power Consumption: <40 mA (with communication module)

Switch Input: 2 channels (low-level valid)

RS485 Interface: 1 channel (supports connection to digital sensors and other data acquisition modules)

RS232 Interface: 2 channels

Ambient Temperature: -20 to 65°C

Ambient Humidity: <95%

Internet of Things Intelligent Terminal Series/KH.WTU-V Telemetry Terminal

Product Overview

KH.WTU-V telemetry terminal is an advanced RTU device that supports data collection, storage, and transmission. It integrates seamlessly with IoT platforms and mobile applications for real-time monitoring and management. The terminal combines multiple functions in a single unit, providing an economical and reliable solution for field telemetry applications.

Key Features

- Industry-leading all-in-one design: built-in 4G full-network DTU, image capture module, solar charging controller, lightning arrester, etc., eliminating the need for separate equipment
- Invention patent: integrated RF transmission module supports local wireless networking, reducing field wiring and simplifying installation and maintenance
- Solar battery management with three-stage intelligent charging, power monitoring, and alarm functionality
- Low power consumption and robust performance for long-term outdoor operation

Applications

Suitable for reservoirs, flood control monitoring stations, mountain torrents, urban waterlogging,

irrigation areas, hydrological and oceanographic stations, pumping and sluice stations, hydropower stations, meteorology, and agricultural soil moisture monitoring stations.

Technical Specifications

Supply Voltage: 10–30 VDC

Static Power Consumption: ≤1 mA (basic type, 12V)

Working Current: ≤6.5 mA (basic type, 12V)

Analog Input: 2 channels (4–20 mA)

Analog Acquisition Accuracy: 0.1% FS

Switch Input: 2 channels (low level valid)

Switching Output: 2 channels (12V/500 mA driving capability)

RS485 Interface: 2 channels (connects various digital sensors)

RS232 Interface: 2 channels (connects communication devices or servers)

Multiplexing Interface: 1 channel (RS485/RS232 configurable)

Gray Code Input: 14-bit

RF Operating Frequency: 433 MHz (visible transmission distance: 3 km)

Operating Temperature: -45 to +70°C

Ambient Humidity: <98% RH

Storage Temperature: -45 to +80°C

MTBF: ≥50,000 h

Clock Accuracy: Better than ±1 s/d

Internet of Things Intelligent Terminal Series/KH.WTU-R Internet of Things Gateway

Product Overview

The WTU-300R telemetry terminal is an industrial-grade IoT wireless gateway designed to meet industrial standards and the demanding needs of industrial users. It integrates a high-performance 32-bit industrial communication processor, multi-level software detection, and multiple hardware protection mechanisms to ensure system stability. This terminal supports rapid access to high-speed internet and enables reliable collection and transmission of video and sensor data. It can be seamlessly integrated with IoT platforms and mobile applications.

Key Features

- Rich Interfaces: Supports connection to various devices, including 3 LAN ports, 1 WAN port, 2 relay outputs (optional), 2 DI, 2 ADC, 1 CAN (optional), 2 RS232, and 3 RS485
- Industrial-grade Stability: Designed for harsh environments, EMC indicators reach level 3
- Data Security: Supports multiple VPN protocols (OpenVPN, IPSEC, PPTP, L2TP, etc.) for secure data transmission
- Flexible Power Management: Wide input voltage range with reverse and overvoltage protection
- Comprehensive Monitoring: Built-in indicators for power, system status, WiFi, communication, online status, signal strength, and alarms

Applications

Suitable for reservoirs, flood control monitoring stations, mountain torrents, urban waterlogging, irrigation areas, hydrological and oceanographic stations, pumping and sluice stations, hydropower

stations, meteorology, and agricultural soil moisture monitoring stations.

Technical Specifications

Power Interface: Standard DC 12V/1.5A; range DC 5–35V; built-in reverse and overvoltage protection

Relay Interface: 2 channels, max switching voltage 30VDC/220VAC, max current 5A

RS232 Interface: 2 ports, built-in 8KV ESD protection

RS485 Interface: 3 ports, built-in 15KV ESD protection

Ethernet Interface: 1 WAN, 3 LAN (10/100M RJ45), adaptive MDI/MDIX, 1.5KV isolation

ADC Input: 2 channels, support 4–20 mA or 0–5V

DI Input: 2 channels, optical isolation, logic 0: 0–3V or dry node conduction; logic 1: 5–30V or dry node disconnection

CAN Interface (Optional): 1 port

Power Output: 1 controlled output, 12V default, max 1A, overcurrent protected

Antenna Interface: SMA female, 50Ω impedance

SIM/UIM Card Interface: Drawer type, supports 1.8V/3V cards, 15KV ESD protection

Operating Temperature: -40–+75°C

Storage Temperature: -40–+80°C

Relative Humidity: 93%±3%

Power Consumption: Standby 220–265 mA@12VDC; Communication 280–330 mA@12VDC

Anti-Interference Level: Class 3, suitable for industrial environments

Reliability: MTBF ≥100,000 h; EMC level 3; built-in NTP and RTC

Protection Level: IP30, housing and system safely isolated

Dimensions: 145 × 114 × 45 mm (excluding antenna and mounting parts)

Scenario-Based Monitoring Station Series / KH.BXS Portable Hydrological Emergency Monitoring System

Product Overview

The KH.BXS is a portable hydrological emergency monitoring system featuring an integrated and modular design. It combines a rain gauge interface, water level sensor, lithium battery with power adapter, and hydrological telemetry terminal for on-site data collection, analysis, storage, and transmission. Each module is independently designed and connected via standard interfaces. Its compact and lightweight structure makes it ideal for rapid deployment and field use.

Key Features

- Ultra-low power consumption with lithium battery; compatible with solar or AC power supply
- Compact, lightweight, and easy to carry and install
- Simple sensor installation and on-site setup
- Multiple communication channels for stable and reliable data transmission

- Designed for rapid deployment in emergency situations

Applications

Ideal for hydrological emergency monitoring, temporary field observations, flood risk management, and rapid deployment in remote or harsh environments.

Technical Specifications

Battery Capacity: 20Ah / 12V

Battery Type: Lithium battery pack

Operating Duration: Up to 30 days per full charge

Water Level Measurement: Pressure-type water level sensor; compatible with other sensor types

Measuring Range: 0 mH_2O – 1 mH_2O … 300 mH_2O (customizable)

Accuracy: ±0.05% FS (minimum), ±0.1% FS (typical), ±0.25% FS (maximum)

Resolution: 0.1 cm

Communication: 4G full-network coverage

Monitoring Parameters: Water level, rainfall, image data, etc.

Transmission Interval: Configurable from 1 minute to 24 hours

Protection Level: Enclosure IP67; water level sensor IP68

Total Weight: Approx. 3 kg

Scenario-Based Monitoring Station Series / KH.JDB Household Early Warning Rain Gauge

Product Overview

The KH.JDB Rain Gauge Station is an integrated terminal for rainfall data collection, storage, real-time monitoring, and communication. It supports LORA wireless self-organizing network transmission and can also connect to 4G IoT networks to synchronize data to IoT management software. The system is highly integrated, easy to deploy, and suitable for areas without strict geographical constraints.

Key Features

- Easy installation, maintenance-free, and high reliability
- Advanced sensing technology for real-time, high-accuracy measurement with low power consumption
- Fully solid-state design with strong structure, corrosion resistance, weather resistance, and waterproofing
- Supports 5 time periods and 3 alarm thresholds for timely alerts

- Multi-point data group sending and serial port data configuration
- Ultra-low power sleep/wake capability
- Data reissue and remote firmware upgrade functions
- Rainfall statistics and alarm record storage
- Compatible with multiple IoT management platforms

Applications

Ideal for rainfall monitoring in agriculture, meteorology, mountain flood-prone areas, geological survey sites, residential communities, and household environments.

Technical Specifications

Real-time Rainfall Collection: Continuous

Cumulative Rainfall: Counted every 5 minutes

Device Status Upload: After startup; rainfall data uploaded every 1 hour

Rainwater Inlet Diameter: Φ200 ± 0.6 mm, blade edge at 45°

Rainfall Resolution: 0.1–0.5 mm (configurable)

Measurement Range: 0–8 mm/min

Measurement Accuracy: ≤ ±4%

Communication: 4G full-network, LORA wireless

Battery: 3.7 V / 10 Ah lithium battery

Solar Panel: 5 V / 3 W

Operating Temperature: -10°C to +75°C

Working Humidity: <95% RH

Standby Current: <12 mA

Scenario-based Monitoring Pole Station Series/Rain Gauge Monitoring Station

Product Overview

The Rainfall Monitoring Pole Station is a fully integrated system for real-time rainfall data collection, processing, and transmission. All equipment—including rain gauge, telemetry terminal, transmission module, lightning arrester, solar charge controller, solar panels, and batteries—is mounted on a galvanized steel pole and housed in an outdoor terminal box. The system can send data simultaneously to multiple monitoring centers via 4G network.

Key Features

- Modular design for convenient installation, centralized assembly, and standardized deployment
- Integrates data collection, data aggregation, broadcast warning, voice intercom, and local LED display
- Real-time monitoring with stable and reliable performance
- Supports remote management via IoT platform and mobile APP

Applications

Ideal for rainfall monitoring in mountain torrents, flood control areas, agricultural fields, meteorological stations, and engineering sites.

Pole Station Configuration

Main Equipment	Configuration Options
Rain	Tipping bucket rain gauge / Piezoelectric rain gauge
Telemetry Terminal	WTU-300 E type / V type
Transmission Equipment	4G communication module / Network card + router
Lightning Arrester	RTU built-in / External independent module
Solar Charge Controller	RTU built-in / External independent module
Solar Panels	18V / 10W–30W
Battery	20Ah–56Ah
Outdoor Terminal Box	570 × 400 × 200 mm
Integrated Rod	Galvanized steel pipe, customized specifications
Remote Management Software	IoT platform, Mobile APP

Scenario-Based Monitoring Pole Station Series/Rainwater Situation Video Integrated Early Warning Broadcast Monitoring Station

Product Overview

The Rain and Water Early Warning Broadcast Monitoring Station is an integrated pole-mounted system combining rainfall, water level, video monitoring, and early warning broadcast functions. All equipment—including rain gauges, water level sensors, ball cameras, intercom broadcast devices, LED displays, telemetry terminals, transmission equipment, lightning arresters, solar charge controllers, solar panels, and batteries—is installed on a galvanized steel pole. The system collects real-time rainfall, water level, and video data, overlays monitoring data with video, and enables voice intercom and broadcast alerts. Data can be transmitted simultaneously to multiple monitoring centers

via 4G communication.

Key Features

- Fully integrated data collection, video overlay, broadcast warning, and local LED display
- Multi-sensor data acquisition: rainfall, water level, flow, and video
- Real-time early warning issuance to the public
- Modular design for centralized assembly, easy installation, and standardized deployment
- Supports remote management through IoT platform and mobile APP

Applications

Ideal for safety monitoring in engineering environments such as reservoirs, dams, railway bridges, mine tunnels, slopes, foundation pits, and flood-prone areas.

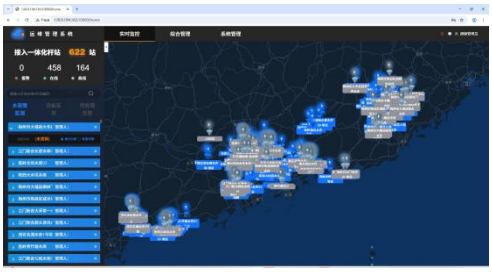
Pole Station Configuration

Main Equipment	Configuration Options
Rain	Tipping bucket rain gauge / Piezoelectric rain gauge
Water	Bubble water level gauge / Pressure water level gauge / Radar water level gauge / Float water level gauge / Ultrasonic water level gauge / Electronic water gauge
Flow Rate	Radar flow meter / Doppler open channel flow meter
Video	Intelligent security video surveillance camera
Intercom Broadcast	Active tweeter horn speaker / Pickup
Telemetry Terminal	KH.WTU R type / V type / E type
LED Screen	Outdoor display

Main Equipment	Configuration Options
Communication Equipment	4G router / 4G transmission for monitoring data and video overlay
Lightning Arrester	RTU built-in / External independent module
Solar Charge Controller	RTU built-in / External independent module
Solar Panels	18V / 30W–100W
Battery	12V / 20Ah–100Ah
Outdoor Terminal Box	570 × 400 × 200 mm
Grounding Accessories	Galvanized angle iron / Graphite grounding electrode
Integrated Rod	Galvanized steel pipe, customized specifications

Scenario-based Monitoring Pole Station Series/Water And Rain Monitoring Pole Station



Product Overview

The One-Pole Water and Rainfall Image and Video Monitoring Station is an integrated pole-mounted system that combines rainfall, water level, flow, and video monitoring with telemetry and early warning capabilities. All equipment—including rain gauges, water level meters, current meters, flow meters, telemetry terminals, communication modules, lightning arresters, solar charge controllers, solar panels, and batteries—is installed on a galvanized steel pole with mounting assembly. The system collects real-time data on rainfall, water level, and flow, and transmits it simultaneously to multiple monitoring management centers via 4G. The station can be configured to work with IoT platforms and mobile APPs.

Key Features

- Convenience: No field investigation or pre-embedding required. Simple on-site installation allows 1–2 stations to be deployed per day.

- Reliability: Factory-installed and pre-tested connections using aviation plugs; no on-site wiring needed, ensuring high project quality.
- Economical: Unified design, centralized assembly, standardized implementation, improving work efficiency and reducing costs.
- Aesthetics: Optimized layout of main poles and equipment, all wiring hidden, reflecting an integrated design concept.

Applications

Ideal for monitoring in reservoirs, mountain torrent warning systems, rivers, irrigation areas, hydropower stations, and similar water resource and flood prevention applications.

Pole Station Configuration

Main Equipment	Configuration Options
Rain	Tipping bucket rain gauge / Piezoelectric rain gauge
Water	Bubble water level gauge / Pressure water level gauge / Radar water level gauge / Float water level gauge / Ultrasonic water level gauge / Electronic water gauge
Flow Rate	Radar flow meter / Doppler open channel flow meter
Image / Video	Image capture / Video surveillance
Telemetry Terminal	KH.WTU E-type / V-type / R-type
Transmission Equipment	4G communication module / Network card + router
Lightning Arrester	RTU built-in / External independent module
Solar Charge Controller	RTU built-in / External independent module

Main Equipment	Configuration Options
Solar Panels	18V / 10W–100W
Battery	12V / 20Ah–100Ah
Outdoor Terminal Box	570 × 400 × 200 mm
Grounding Accessories	Galvanized angle iron / Graphite grounding electrode
Integrated Rod	Galvanized steel pipe, customized specifications

Scenario-based Monitoring Pole Station Series/Meteorological Monitoring Pole Station




Product Overview

The One-Pole Weather Station is an integrated monitoring system that installs all necessary equipment on a single galvanized steel pole with mounting assembly. The system includes rain gauges, weather sensors, telemetry terminals, communication modules, lightning arresters, solar charge controllers, solar panels, and batteries. It collects real-time weather data, such as rainfall, wind, temperature, humidity, and atmospheric pressure, and transmits it simultaneously to multiple monitoring management centers via 4G. The station can also be configured to work with IoT platforms and mobile APPs.

Key Features

- Convenience: No field investigation or pre-embedding required. Quick on-site installation allows 1–2 stations to be deployed per day.
- Reliability: Factory-installed and pre-tested connections using aviation plugs; no on-site wiring needed, ensuring high-quality and stable operation.
- Economical: Unified design, centralized assembly, standardized implementation, improving efficiency and reducing project costs.
- Aesthetics: Optimized layout of poles and equipment, all wiring hidden, reflecting a fully integrated design concept.

Applications

Ideal for meteorology, transportation monitoring, engineering sites, and other environmental monitoring applications.

Pole Station Configuration

Main Equipment	Configuration Options
Rain	Tipping bucket rain gauge / Piezoelectric rain gauge
Meteorological Sensors	Mechanical wind speed & direction sensor, Temperature & Humidity & Atmospheric pressure sensor, Ultrasonic five-parameter sensor / Ultrasonic six-parameter sensor
Image / Video	Image capture / Video surveillance
Telemetry Terminal	KH.WTU V-type / R-type
Transmission Equipment	4G communication module / Network card + router
Lightning Arrester	RTU built-in / External independent module
Solar Charge Controller	RTU built-in / External independent module
Solar Panels	18V / 10W–100W
Battery	12V / 20Ah–100Ah
Outdoor Terminal Box	570 × 400 × 200 mm
Grounding Accessories	Galvanized angle iron / Graphite grounding electrode
Integrated Rod	Galvanized steel pipe, customized specifications
Remote Management Software	IoT platform / Mobile APP

Scenario-Based Monitoring Pole Station Series/Agricultural Monitoring Pole Station

Product Overview

The Single-Pole Agricultural Monitoring Station is an integrated system that installs all equipment on a single galvanized steel pole with mounting assembly. The system includes rain gauges, meteorological sensors, light sensors, soil moisture sensors, telemetry terminals, communication modules, lightning arresters, solar charge controllers, solar panels, and batteries. It collects real-time agricultural and environmental data such as rainfall, weather conditions, light intensity, and soil moisture, and transmits the data simultaneously to multiple monitoring management centers via 4G. The station can also be connected to IoT platforms and mobile APPs for remote monitoring and management.

Key Features

- Convenience: No field investigation or pre-embedding required. Quick on-site installation allows 1–2 stations to be deployed per day.
- Reliability: Factory-installed and pre-tested connections using aviation plugs; no on-site wiring needed, ensuring high-quality and stable operation.
- Economical: Unified design, centralized assembly, standardized implementation, improving efficiency and reducing project costs.
- Aesthetics: Optimized layout of poles and equipment, all wiring hidden, reflecting a fully integrated design concept.

Appications

Ideal for agricultural monitoring, precision farming, irrigation management, and environmental monitoring.

Pole Station Configuration

Main Equipment	Configuration Options
Rain	Tipping bucket rain gauge / Piezoelectric rain gauge
Meteorological Sensors	Mechanical wind speed & direction sensor, Temperature & Humidity & Atmospheric pressure sensor, Ultrasonic five-parameter sensor / Ultrasonic six-parameter sensor
Agricultural Sensors	Light UV radiation sensor, Light global radiation sensor, Soil moisture sensor, Leaf temperature & humidity sensor
Image / Video	Image capture / Video surveillance
Telemetry Terminal	KH.WTU V-type / R-type
Transmission Equipment	4G communication module / Network card + router
Lightning Arrester	RTU built-in / External independent module
Solar Charge Controller	RTU built-in / External independent module
Solar Panels	18V / 10W–100W
Battery	12V / 20Ah–100Ah
Outdoor Terminal Box	570 × 400 × 200 mm
Grounding Accessories	Galvanized angle iron / Graphite grounding electrode
Integrated Rod	Galvanized steel pipe, customized specifications

Main Equipment	Configuration Options
Remote Management Software	IoT platform / Mobile APP

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