RAINFALL WEATHER MONITORING / DATA SHEET

SS1000U-09

Automatic Rainfall Weather Station

A complete outdoor rainfall weather station combining a tipping-bucket rain gauge, wind sensor, wind direction, temperature / humidity / pressure module and solar-powered 4G telemetry.

Overview

- Designed for long-term outdoor monitoring where grid power is unavailable, including flood, forest-fire and watershed observation.
- Collects rainfall, wind speed, wind direction, temperature, relative humidity and atmospheric pressure according to the selected configuration.
- A solar power system with a wide-temperature maintenance-free gel battery supports autonomous field operation.
- U-shaped support geometry, a 3 m mounting structure and internal cable routing improve stability and protection in severe weather.

Wireless	Rain resolution	Power	Upload interval
4G upload	0.2 mm pulse	Solar + gel battery	300 s default

Key Advantages

- Solar charging and a wide-temperature gel battery enable unattended deployment.
- 4G automatic upload provides web and mobile access to current data and alarms.
- U-shaped installation design and internal cable routing reduce interference and cable aging.

Applications

- Flood, rainfall and watershed monitoring.
- Forest-fire prevention and ecological observation.
- Agriculture, hydrology, ports and remote outdoor stations.

SENSOR DATA

Rainfall and Weather Measurements

Measured element	Range / capability	Accuracy / response
Rainfall	0–60 mm/h measurement; 0.2 mm pulse equivalent	Uploads instantaneous, daily, current and cumulative rainfall values
Wind speed	0–60 m/s	Accuracy ±0.3 m/s; dynamic response ≤0.5 s
Wind direction	Eight-direction indication	Point the sensor arrow north during installation
Temperature	−20 to +60 °C	Integrated louver-box temperature / humidity module
Relative humidity	0–100%RH	Integrated louver-box temperature / humidity module
Atmospheric pressure	0–120 kPa	Pressure channel from the louver-box module
Data upload	4G; 300 s default interval	Solar-powered station uploads to the configured monitoring platform
Power autonomy	Battery runtime ≥3 days	Solar panel and wide-temperature maintenance-free gel battery

Rainfall resolution is specified as a 0.2 mm pulse equivalent; wind direction is provided as an eight-direction indication.

LONG-TERM STABILITY

Channel	Typical long-term stability
Temperature / humidity	≤0.1 °C/y / ≤1%RH/y
Pressure / noise	−0.1 kPa/y / ≤3 dB/y
PM10 / PM2.5 / CO_2	≤1%/y / ≤1%/y
Illuminance / solar radiation	≤5%/y / ≤±3%

ACQUISITION UNIT

Control Enclosure and Data Handling

Item	Specification
Power system	Solar panel + wide-temperature maintenance-free gel battery
Autonomy	Battery runtime ≥3 days under the stated configuration
4G upload	Automatic upload; default interval 300 s
Rainfall channels	Instantaneous, daily, current and cumulative rainfall
Structure	High-strength 3 m mounting structure for long-term outdoor work
Cable routing	Internal routing through the pole protects cables from sun and animals
Platform access	Web platform and mobile APP for current data and device management

Outdoor station: solar panel, rain gauge, wind sensor and control enclosure

Mounting Options

- Choose the fixed expansion-bolt mast or the U-shaped tripod mast according to the selected package.
- Install the collector and louver-box module normally; orient the wind-direction arrow north.
- Install the rain gauge on its tray and remove the transport foam before operation.
- Attach the 4G antenna outside the enclosure and keep the site level and unobstructed.

DIMENSIONS & PACKAGE

Case, Connections and Standard Package

Assembly	Approx. specification	Notes
Mounting structure	High-strength 3 m outdoor mast; 1.5 m pole + 1.3 m extension	Fixed expansion-bolt or tripod support
Rain gauge	National-standard stainless-steel rain gauge with circular tray	0.2 mm pulse equivalent
Control enclosure	Water-resistant enclosure with controller, battery and wiring	Keep antenna outside the enclosure
U-shaped support	Internal cable route through mast and central flange opening	Protects cables from sunlight and animals

Assembly	Approx. specification	Notes

Included / Option-Dependent

- Solar panel, mounting support, outdoor mast or tripod, and control enclosure.
- Rain gauge with tray, C-type integrated weather station, louver-box module and battery.
- 4G antenna, waterproof cables, U-clamps, installation hardware, certificate and warranty card.

Selectable Elements

- Package 1: rainfall only; Package 2: rainfall + wind speed + wind direction.
- Package 3: rainfall + wind + temperature / humidity + atmospheric pressure.
- Package 4: rainfall + temperature / humidity; 4G upload is the default telemetry mode.

COMMUNICATION

4G Data Upload and Cloud Access

Parameter	Setting
Upload interface	4G wireless upload to the configured monitoring platform
Upload interval	300 s default; configure according to platform requirements
Access	Web platform and mobile APP for real-time data and device management
Data channels	Rainfall, wind, direction, temperature, humidity and pressure
Register group	**Data mapping**
Node 1	Wind force; wind speed ×0.1, unit m/s
Node 2	Wind direction; eight-direction value
Node 11	Louver-box temperature ×0.1 and humidity ×0.1
Node 14	Atmospheric pressure ×0.1, unit kPa, range 0–120 kPa
Node 20	Cumulative rainfall, 32-bit unsigned value, coefficient 0.2, unit mm
Node 21–22	Instantaneous, current and daily rainfall, coefficient 0.2, unit mm

Software & Cloud

- After installation and power-up, log in to the configured cloud platform to view live station data.
- 4G telemetry supports remote monitoring, historical records and device management.
- Use the platform upload-node mapping when integrating rainfall, wind and climate channels.

Screen & Export

- Check the station status, signal and uploaded channels from the web or mobile interface.
- Keep the antenna outside the control enclosure to avoid signal shielding.
- Inspect the rainfall, wind and climate channels after commissioning before unattended operation.

INSTALLATION

Outdoor Installation and Commissioning

Level the mast and rainfall gauge before tightening supports, orient the wind-direction arrow toward true north, route cables through the pole and central flange opening, and confirm the 4G antenna, solar charging and battery status before leaving the site.

SERVICE

Installation and Care

Do not use the station as a safety or emergency-stop device. Disconnect power before wiring or maintenance. Keep the equipment away from strong electromagnetic interference, prevent water from entering the enclosure, and do not disassemble the sensors or touch the sensing elements. Inspect the rain gauge, mast, battery, solar panel and connectors regularly for long-term outdoor service.

CONTACT / SUPPORT

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