

WEATHER STATION / DATA SHEET
SS1000-03

Fixed Weather Station

Outdoor fixed weather station platform for real-time environmental monitoring, IoT-oriented data acquisition and weather warning applications across agriculture, industry and meteorology.

Overview

SS1000-03 is a fixed outdoor weather station platform for monitoring real-time environmental changes and supporting warning applications.

The product family supports multiple station structures and sensor configurations, covering wind, soil, air quality, radiation, rainfall and other environmental variables according to the selected configuration.

The station can be configured with AC power, solar power or dual power, and supports data upload through GPRS, 4G, RJ45 network port or ModBus-RTU integration.



Station types	Measured elements	Data upload	RS485 distance
M1 / M2 / M3 M4 / M5	Wind / Soil / Air PM / CO2 / Rainfall	GPRS / 4G RJ45 / ModBus-RTU	>=1500 m main RS485 interface

Key Advantages

- Multiple fixed station structures for different installation environments.
- Supports split wind sensors or ultrasonic integrated wind measurement configurations.
- Flexible sensor selection covering meteorological, soil, radiation, air-quality and rainfall monitoring.
- Multiple power and data-upload configurations for fixed outdoor sites.

Application Scenarios

- Meteorological and environmental monitoring stations.
- Agricultural and soil-condition monitoring systems.
- Industrial sites requiring outdoor environmental alerts.
- IoT-based remote weather data collection and platform integration.

MEASUREMENT PRINCIPLE

Technical Principle

The station combines outdoor meteorological sensors, data acquisition modules and communication interfaces in a fixed installation structure. Sensor data can be collected through the main RS485 interface and uploaded using network or mobile communication options, or queried by external systems through ModBus-RTU.

SYSTEM DATA

Configuration Types

Type	Configuration and Measurement Scope
M1 type	Fixed station with split or ultrasonic wind configuration. Measures wind speed, wind direction, soil temperature, soil moisture, soil EC, soil pH, air temperature and humidity, noise, CO ₂ , atmospheric pressure, sunlight, rain and snow, UV, solar radiation, PM _{2.5} , PM ₁₀ , negative oxygen ions, rainfall and soil NPK.
M2 type	Tripod fixed-station structure with split or ultrasonic wind configuration. Measurement scope is consistent with the M1 type list from the source.
M3 type	Portable installation pole without LED display. C-type configuration measures wind, air temperature and humidity, noise, CO ₂ , atmospheric pressure, PM _{2.5} , PM ₁₀ and negative oxygen ions. Ultrasonic configuration also includes light.
M4 / M5 type	Fixed structures for C-type or ultrasonic integrated stations with rainfall. Ultrasonic configuration also includes light measurement.

MEASUREMENT OPTIONS

Monitoring Element Coverage

Category	Supported Measurement Elements
Meteorology	Wind speed, wind direction, air temperature and humidity, atmospheric pressure, rainfall, rain and snow, UV and sunlight.
Soil and agriculture	Soil temperature, soil moisture, soil EC, soil pH and soil NPK.
Air quality	Noise, carbon dioxide, PM _{2.5} , PM ₁₀ and negative oxygen ions.
Radiation	Solar radiation, light / sunlight and optional radiation-related monitoring depending on configuration.

TECHNICAL SPECIFICATIONS

Power, Communication and Data Interfaces

Parameter	Specification
External power supply	220V AC alternating current.
Dual power supply	Supports 220V mains and solar panels; mains power has priority, while solar panels and batteries keep the equipment operating when mains power is cut off.
Solar powered	Supports matched solar panels and batteries; source states battery life is about 7 days.
Data upload interface	GPRS, 4G and RJ45 network port. Network-port uploading and GPRS / 4G uploading cannot coexist.
ModBus-RTU	Supports external devices querying station data through ModBus-RTU.
Data acquisition interface	Main RS485 interface collects data from 485-interface transmitters; longest communication distance ≥ 1500 m.
LED screen interface	Default 96 x 48 dot-matrix outdoor screen.
2-way relay output	Optional relay dry-contact output; relay capacity 250VAC / 30VDC 5A; can be used for remote control.
Rain gauge input	One-channel tipping-bucket rain gauge pulse input. Default pulse equivalent: 0.2 mm. Supports instantaneous rainfall, daily rainfall, current rainfall and accumulated rainfall values.
Data upload interval	2 s to 10000 s adjustable; default 30 s.

CONFIGURATION

Product Selection

Code	Description
SS	SpeSense company code
1000-03	Fixed weather station

M1 / M2	Fixed pole or tripod station structures with optional split or ultrasonic wind configuration
M3	Portable installation pole without LED display; retracted height 1 m, installation height 1.1 to 2.1 m
M4 / M5	Fixed integrated weather-station structures with rainfall-capable configurations
GPRS / 4G / RJ45	Available data-upload interface options
ModBus-RTU	External query and integration protocol

MECHANICAL DATA

Installation Notes

Item	Source-Based Note
M1 / M2 fixed structures	Source examples show fixed outdoor pole or tripod configurations for solar-powered and LED-display versions.
M3 portable pole	Source states retracted height is 1 m, minimum installation height is 1.1 m and maximum installation height is 2.1 m.
M4 / M5 structures	Fixed C-type or ultrasonic integrated structures with rainfall-capable configurations.
Model selection	Select structure, power supply, communication method and measurement elements by site.

CONTACT / SUPPORT

SpeSense Technologies Inc.

Add: No. 9 Yuhe Road, Guitang Subdistrict, Yuhua District, Changsha City

Tel: +86-15386478166

Email: info@spesense.com

Web: www.spesense.com



WhatsApp / WeChat