WIND MONITORING / DATA SHEET

SS106-01

Wireless Wind Alarm System

Wireless wind speed and direction monitoring system with LED display, audible/visual alarm and relay output for cranes, ports, railways and construction sites.



Overview

- SS106-01 combines a wireless wind speed/direction sensor set with an intelligent alarm host for real-time wind monitoring.
- 470 MHz wireless transmission eliminates cabling; visible range up to 1.5 km.
- High-bright 3-digit LED display and 16-direction LED wind indicator, suitable for outdoor and night operation.
- Built-in audible/visual alarm and relay switch output activate when preset wind-speed thresholds are exceeded.

Wind Speed Range	Wind Direction	Transmission	Output
0 ~ 32.4 m/s	16 azimuths	470 MHz wireless	Relay + RS485

Key Advantages

- Wireless 470 MHz transmission up to 1.5 km visible range, no cabling required.
- Solar + rechargeable lithium battery powered sensor set, flexible outdoor installation.
- High-bright LED digital tube and 16-direction LED wind indicator for night use.
- Fast response: relay alarm output delay <100 ms when threshold is exceeded.
- Audible/visual alarm and dual relay outputs for pre-alarm and alarm levels.

Application Scenarios

- Construction machinery: tower cranes, gantry cranes, crawler cranes, portal cranes.
- Ports, wharves, railways and transportation weather safety systems.
- Power plants, meteorological stations, cableways and environmental monitoring.
- Greenhouses, farms and aquaculture wind warning.
- Any outdoor site requiring real-time wind-speed monitoring and threshold alarm.

MEASUREMENT PRINCIPLE

Technical Principle

The SS106-01 Wireless Wind Alarm System consists of an intelligent alarm host, a wireless wind speed and direction sensor set, and a solar power supply box. The wind sensor uses a cup anemometer and wind vane to capture instantaneous wind speed and direction. The transmitter converts the mechanical rotation into electrical signals and sends them to the alarm host via 470 MHz wireless communication. The host displays real-time wind data on a high-bright LED tube and a 16-direction LED indicator, and triggers audible/visual alarm and relay output when the wind speed reaches the preset pre-alarm or alarm thresholds.

SYSTEM DATA

Technical Specifications

Item	Specification
Power supply	Alarm host: 12 V DC; Sensor: solar (3 W) + 5200 mAh Li battery
Power consumption	Alarm host: ≤50 mA
Wind speed	Range 0 ~ 32.4 m/s; accuracy ±1 m/s; starting 0.2 ~ 0.4 m/s
Wind direction	16 azimuths, indicated by 8 dual-color LEDs
Input signal	470 MHz wireless or RS485
Transmission distance	Up to 1.5 km (visible range)
Probe cable length	1.5 m (standard)
Alarm thresholds	Pre-alarm ≥0.8 m/s; alarm ≥1.3 m/s (user configurable)
Alarm output	2× relay switch outputs (pre-alarm and alarm)
Display	3-digit high-bright red LED tube; 16-direction LED indicator
Protection rating	Sensor IP66; alarm host & power box IP67
Operating conditions	-40 °C ~ +85 °C; 0 ~ 100%RH
Storage conditions	-40 °C ~ +125 °C; <80%RH non-condensing

ORDERING INFORMATION

Product Selection

Code	Description
SS	SpeSense company code
106-01	Wireless wind alarm system
N01-	RS485 signal output, standard Modbus-RTU protocol
W-	470 MHz wireless communication

1-	Housing selection
blank	Standard configuration
H	With heating option (if applicable)

Example ordering codes: SS106-01N01-W-1 for RS485 output with wireless sensor; SS106-01W-1 for wireless-only version.

MECHANICAL DATA

Mechanical Dimensions & Structure

Dimensions and weights are listed below. All numeric values are retained from the source material; component labels are translated to English.



Dimensions & Weight

Wind speed sensor: 194×65×123 mm / 98 g

Wind direction sensor: 264×65×153 mm / 104 g

Alarm host: 149×120×63 mm / 355 g

Power box: 149×120×63 mm / 398 g

ELECTRICAL CONNECTION

Wiring Instructions

The alarm host is powered by 12 V DC. The wireless sensor set is powered by the solar supply box and communicates with the host via 470 MHz RF. An optional RS485 interface is available for integration with acquisition systems.

Wiring summary: alarm host 12 V DC (observe polarity); sensor powered by solar panel and battery; relay dry contacts for pre-alarm / alarm load control; optional RS485 A/B/GND for Modbus-RTU acquisition.

Structure

Cup anemometer converts wind speed to rotation; wind vane gives 16-azimuth direction; transmitter integrates signal conditioning and 470 MHz RF; solar box provides 3 W panel + 5200 mAh battery; alarm host provides LED display, buzzer, relays and setting

Mounting

Install sensor on an open mast clear of obstructions, align vane to north, place alarm host in operator view, and keep solar panel clean and sun-facing.

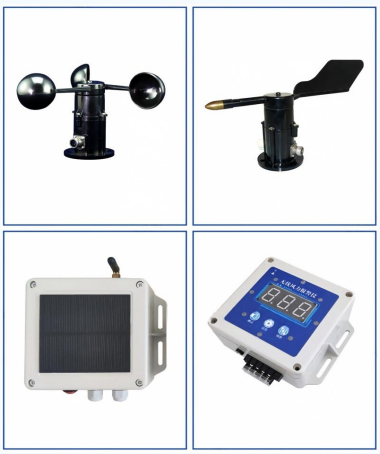




INSTALLATION & OPERATION

- Install the wind sensor vertically on a stable mast in an open area, clear of buildings or structures that may disturb wind flow.
- Align the wind vane reference mark to true north so that the 16-azimuth indication is accurate.
- Place the alarm host where the LED display and buzzer are easily observed by operators.
- Ensure the solar panel is clean and receives sufficient sunlight to keep the sensor battery charged.
- Use the TEST, SET and ADJUST keys to configure pre-alarm and alarm thresholds; settings are saved automatically and retained after power-off.

SS106-01 Wireless Wind Alarm System



Configuration & Support Summary

470 MHz wireless or RS485 versions available; solar+battery sensor set for cable-free installation; LED display and audible/visual alarm for crane cabs and outdoor sites; engineering support for selection, integration and thresholds.

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

WhatsApp / WeChat