

Technical Datasheet

INTEGRATED WEATHER STATION PLXWS800



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PLXWS800

The Polwax PLXWS800 Integrated Weather Station is a compact, industrial-grade environmental monitoring solution engineered to deliver accurate, reliable, and continuous weather and air-quality data in demanding outdoor conditions. Designed with an all-in-one architecture, the PLXWS800 consolidates multiple meteorological and environmental sensors into a single rugged enclosure, eliminating the need for separate sensor installations, complex wiring, and frequent maintenance.

Built for long-term unattended operation, the PLXWS800 utilizes high-precision sensing elements and stable signal processing technology to ensure consistent performance across varying climatic conditions. Its UV-resistant and weatherproof housing protects internal electronics from dust, moisture, and prolonged sun exposure, making it suitable for permanent outdoor deployment in industrial, commercial, and infrastructure environments.

Features

- All-in-One Integrated Design
- Industrial RS485 Modbus RTU Output
- Wide Power Supply Range
- High Accuracy & Stability
- Rugged Design
- Protection Rating: IP65 for Outdoor and Harsh environment use
- Low Power Consumption
- Compact and Durable Design
- Energy Efficient
- Easy Integration
- Fast Response Time
- Advanced Communication RS-485



Measured Parameters

- Wind Speed
- Wind Direction
- Ambient Temperature
- Relative Humidity
- Noise
- Atmospheric Pressure
- PM2.5 & PM10 (Particulate Matter)
- Carbon Dioxide (CO₂)





Technical Details

Measurement Ranges

Wind Speed	0 to 60 m/s
Wind Direction	8 Directions
Temperature	-40 °C to +120 °C
Humidity	0 to 99 %RH
Atmospheric Pressure	0 to 120 kPa
PM2.5 / PM10	0 to 1000 µg/m³
Noise	30dB~120dB
Co2	0-5000ppm

NOTE:PM2.5&PM10 and CO2 cannot be selected at the same time, please note that PM or CO2 is required when placing the order

Accuracy

Wind Speed	±0.3 m/s
Temperature	±0.5 °C @ 25 °C
Humidity	±3 %RH (5-95 %RH @ 25 °C)
Atmospheric Pressure	±0.15 kPa @ 25 °C
PM2.5 / PM10	±3 % FS
Noise	±0.5dB
Co2	±(50ppm+ 3%F·S) (25°C)

Electrical

Power Supply	10-30 VDC
Max Power Consumption	≤ 0.8 W
Communication Interface	RS485 Modbus RTU

Applications & Case Studies

Case Study 1: Smart City Air Quality & Weather Monitoring

Location: Urban Municipal Corporation

Application: Smart City Environmental Monitoring

Challenge: The municipal authority required a compact solution to monitor weather parameters, air pollution (PM2.5 & PM10), CO₂ levels, and ambient noise across busy urban zones. The challenge was to deploy a system that could operate continuously outdoors, integrate with existing monitoring platforms, and require minimal maintenance.

Solution: The Polwax PLXWS800 Integrated Weather Station was installed at strategic locations across the city. Its all-in-one design allowed simultaneous measurement of meteorological and air quality parameters. Using RS485 Modbus RTU, data was seamlessly integrated into the city's centralized monitoring dashboard.

Outcome:

- ✓ Continuous real-time monitoring of environmental conditions
- ✓ Improved air pollution trend analysis and reporting
- ✓ Reliable long-term outdoor performance with minimal servicing
- ✓ Data-driven decision-making for pollution control initiatives



Case Study 2: Industrial Zone Environmental Compliance

Location: Industrial Manufacturing Cluster

Application: Environmental & Safety Compliance

Industries operating in a regulated zone were required to continuously monitor ambient air quality, particulate matter, and noise levels to comply with environmental norms and ensure worker safety.

Solution:

The Polwax PLXWS800 was deployed at multiple boundary and internal monitoring points. The integrated PM2.5, PM10, and noise sensors provided accurate and synchronized data, eliminating the need for multiple standalone instruments.

Outcome:

- ✓ Continuous compliance with environmental regulations
- ✓ Simplified reporting for audits and inspections
- ✓ Reduced equipment and maintenance costs
- ✓ Improved workplace environmental awareness





POLWAX Group has got an experienced, highly-qualified project team conducting extensive R&D operations. Owing to that, goods holding the POLWAX brand feature customer-tailored flexibility and meet requirements of various industries.

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