

BULFRO

WEATHER STATION

(BWS – RHTPSD-26)

Automatic Weather Station — Multi-Sensor Integration, RS485 / GPRS Telemetry

The Bulfro BWS-RHTPSD-26 is a solar-powered, IoT-enabled automatic weather station with multi-sensor integration, RS485 / GPRS telemetry, and real-time cloud data transmission — engineered for environmental monitoring, water governance, and climate resilience.

The station captures rainfall, wind speed, wind direction, temperature, humidity, and pressure from a single rugged, field-ready structure, reporting via RS485 (ModBus-RTU) or GPRS/4G to Bulfro's remote monitoring dashboard.

The Bulfro BWS-RHTPSD-26 is a solar-powered, IoT-enabled automatic weather station with multi-sensor integration, RS485 / GPRS telemetry, and real-time cloud data transmission — engineered for environmental monitoring, water governance, and climate resilience.

The station captures rainfall, wind speed, wind direction, temperature, humidity, and pressure from a single rugged, field-ready structure, reporting via RS485 (ModBus-RTU) or GPRS/4G to Bulfro's remote monitoring dashboard.

RAINFALL • WIND SPEED • WIND DIRECTION • TEMPERATURE • HUMIDITY • PRESSURE • GPRS RTU • SOLAR POWERED • RS485



WHY CHOOSE BULFRO WEATHER STATION?

- **Real-Time Cloud Connectivity** - RS485 & 4G/GPRS for instant remote monitoring.
- **Solar Powered & Field Ready** - Reliable operation with up to **5 days** battery backup.
- **All-in-One Weather Monitoring** - Measures rainfall, wind, temperature, humidity & pressure.

FEATURES

- **Multi-Sensor Integration** - Rainfall, wind speed, wind direction, temperature, humidity, and pressure captured from a single compact station.
- **Solar + Battery Powered** - 40W monocrystalline solar panel with integrated MPPT/PWM charge controller; autonomy of 5+ days without sun.
- **Dual Telemetry Options** - RS485 (ModBus-RTU) wired output plus GPRS/4G wireless for real-time cloud data transmission.
- **Rugged, Field-Ready Build** - IP65 hinged dual-compartment RTU enclosure, corrosion-resistant SS304 rain gauge, and powder-coated MS mounting structure.
- **Water e-Governance Classified** - Engineered for hydrology, flood early warning, and ESG water reporting compliance.

STATION COMPONENTS & ASSEMBLY

COMPONENT A

SS304 Automated Rain Gauge

Bird-spike protected stainless steel tipping-bucket. 500 mm tall, Ø168 mm collector. Each tip = 0.5 mm rainfall. Corrosion-resistant for continuous outdoor use.

Resolution 0.5 mm · Accuracy ±2 mm

COMPONENT C

RTU Enclosure

IP65 hinged dual-compartment panel. Upper chamber: GPRS RTU. Lower chamber: solar charge controller & battery. Detachable door with lock slot for field servicing.

Model BWS-RHTPSD-26 · 12V DC input

COMPONENT E

Wind Vane (Direction)

Polycarbonate vane with internal smooth bearing system. Analog 0–5V output proportional to compass direction. Arrow must align True North during installation.

0–360° · Resolution 1° · Accuracy ±3°

COMPONENT B

Solar Panel & Bracket

40W monocrystalline panel on a cantilevered MS bracket (350×250 mm). Angular tilt optimised for Indian latitudes. Feeds the integrated solar charge controller.

40W · 0–24V DC · MS RAL 7035

COMPONENT D

3-Cup Anemometer

Carbon-fibre cup assembly with high-performance imported bearings. Bottom cable exit for long-term waterproofing. RS485 ModBus-RTU output with configurable baud rate.

0–65 m/s · Resolution 0.1 m/s

COMPONENT F

Stand Pole Assembly

Hollow square-section MS pole (BFEWS-SP-300525). Integrated cable routing channel. Mounts on 250×250 mm base plate via 4×Ø14 anchor bolts. Powder-coated RAL 7035.

Drawing: BFEWS-SP-300525 · MS

SENSOR BOOM ARM (BFEWS-BM-300525): 1200 mm MS boom with sliding bracket and welded M8 nut. Tilted upward to position sensors clear of structure for unobstructed airflow measurement. 430 mm lateral reach. Handles both anemometer and wind vane simultaneously.

KEY DIMENSIONS REFERENCE

Ref	Description	Dimension
H1	Overall Station Height (base to rain gauge top)	1250 mm
H2	Stand Pole Height (base plate to rain gauge mount)	860 mm
H3	Rain Gauge Height	500 mm
D1	Rain Gauge Collector Diameter	Ø 168 mm
W1	Base Plate Footprint	250 × 250 mm
W2	Solar Panel Size	350 × 250 mm
R1	Boom Arm Reach (wind sensor lateral offset)	430 mm
M1	Anchor Bolt Pattern	4 × Ø14 mm holes

SENSOR SPECIFICATIONS

#	Sensor / Component	Model / Spec	Range	Resolution	Accuracy (±)
01	Automated Rain Gauge (ARG)	SS304 Tipping Bucket	—	0.5 mm	±2 mm
02	Wind Direction	SN-3000-FXJT-V05-360	0–360°	1°	±3°
03	Wind Speed	SN-3000-FSJT-N01 (RS485)	0–65 m/s	0.1 m/s	±0.5 m/s
04	Barometric Pressure	BWS-PHT-26 Integrated	300–1100 hPa	0.1 hPa	±0.2 hPa
05	Air Temperature	BWS-PHT-26 Integrated	–5–60 °C	0.05 °C	±0.1 °C
06	Relative Humidity	BWS-PHT-26 Integrated	0–100 %RH	0.5 %RH	±3 %RH
07	RTU / Telemetry	BWS-RHTPSD-26	—	—	—
08	Solar Panel	40W Monocrystalline	0–24V DC	—	—
09	Battery / Charge Controller	15 Ah SLA / Li	12V DC	—	—
10	Mounting Structure	MS RAL 7035 (BFEWS-SP-300525)	—	—	—

POWER SYSTEM

SOLAR + BATTERY OPTION		GRID / AC MAINS OPTION	
Solar Panel	40 W, 0–24 V DC	Input	230 V AC, 50 Hz
Battery	15 Ah Li / SLA	Adapter Output	12 V DC regulated
Charge Controller	Integrated MPPT/PWM	Battery Backup	Optional (15 Ah)
Autonomy (no sun)	≥ 5 days	Surge Protection	Built-in OVP
RTU Input Voltage	12 V DC	RTU Input Voltage	12 V DC
Enclosure Rating	IP65 hinged panel	Best For	Urban / facility sites

RTU — REMOTE TERMINAL UNIT

Model	BWS-RHTPSD-26
Wired Output	RS485
Wireless	GPRS / 4G
Protocol	ModBus-RTU
Power Input	12 V DC
Classification	Water e-Gov

APPLICATIONS

Hydrology & Water Governance • Flood Early Warning Systems • Rainwater Harvesting Monitoring • Smart Cities & Urban Infrastructure • Industrial & Environmental Compliance • Agriculture & Irrigation Planning • Research & Academic Institutions • Ports, Airports & Logistics • Mining & Energy Sites • Government Weather Networks • ESG Water Reporting • Dam & Reservoir Management

Integration Note: The BWS station outputs data via RS485 (ModBus-RTU) and GPRS/4G — compatible with SCADA systems, cloud platforms, and Bulfro's remote monitoring dashboard. Sensor baud rates, device addresses, and reporting intervals are field-configurable. Custom sensor integration available on request.



Wind Sensor Boom — Close-up



RTU & Charge Controller



Automated Rain Gauge

GET IN TOUCH

PHONE +91 84590 04436 +91 76660 53957 LINKEDIN linkedin.com/company/ bulfro-monitech-research	EMAIL Sales@bulfro.com support@bulfro.com	WEB www.aquaesg.com SCAN FOR WEBSITE 
--	---	---

Survey Number 36/1/2, Near Bhagawati Boys Shelter, Dhayari Narhe Rd, Ashtavinayak Industrial Estate, Narhe, Pune, Maharashtra 411041