SEMARS DIGITAL

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Smart Equipment Monitoring
and Resolution System

SENSORS
DATA SHEET

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UAE : FDRK5907, Compass Building, Al Hamra Ind Zone-FZ, UAE
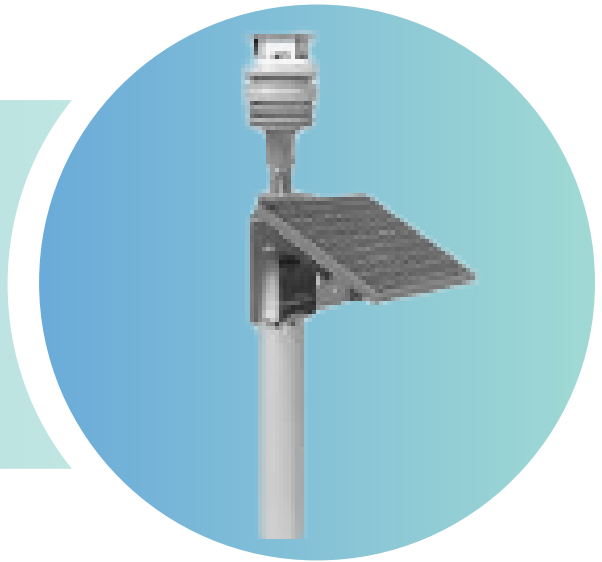**Oman :** OFC 2/16, Focus Business Center, Way56, Muscat, Oman
Netherlands : 23-Aramstraat, 1336 HR, Almere, Netherlands
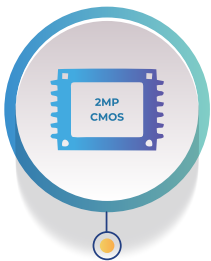**Contacts :** info@semarsdigital.com | https://semarsdigital.com

01

Weather Station Sensor

All-in-one LoRaWAN/NB IoT weather station (Temp, RH, pressure, wind, rainfall) with solar power and outdoor-rated enclosure. Collects and records atmospheric data to monitor and analyze weather conditions.
It typically consists of sensors and instruments that measure various meteorological parameters.

Its features and applications are as follows:

1.1 Key Features:

temperature, humidity, barometric pressure, wind speed, wind direction, rainfall
Integrated sensors

waterproof, UV-proof, salt-spray resistant

Outdoor-rated enclosure

Easy to carry and install;

pole mounting

Solar powered (high power) with rechargeable battery backup
NFC for quick configuration

Compliant with standard LoRaWAN® gateways and network servers
Manageable via Semars Cloud

1.2 Applications:

- **Meteorology & Forecasting**
- **Agriculture**
- **Aviation & Marine**
- **Disaster Management**
- **Environmental Monitoring**
- **Smart Cities & IoT**
- **Research & Education**

This type of sensor is particularly suitable for industrial or commercial environments requiring precise monitoring and integration with existing systems.

1.3 Specifications

SL No.	Specification	Principle	Range	Accuracy	Resolution
1	Temperature	Thermistor	-40 to 85 °C	±0.3 °C	0.1 °C
2	Humidity	Capacitive humidity sensor	0 to 100 %RH	±3 %RH	0.5 %RH
3	Wind Direction	Ultrasonic	0° to 360°	±3°	0.1°
4	Wind Speed	Ultrasonic	0 to 60 m/s	±0.3 m/s or ±3%	0.1 m/s
5	Barometric Pressure	Piezoresistive absolute (MEMS)	500 to 1100 hPa	±0.5 hPa	0.1 hPa
6	Rainfall	Piezoelectric	0 to 1000 mm	±0.5 mm (<10 mm), ±5% (>10 mm)	0.01 mm
7	Technology	LoRaWAN®			
8	Antenna	Internal			
9	Frequencies	CN470, RU864, IN865, EU868, US915, AU915, KR920, AS923-1/2/3/4			
10	Max Tx Power	16 dBm (868 MHz) / 22 dBm (915 MHz) / 19 dBm (470 MHz)			
11	Sensitivity	-137 dBm @ 300 bps			
12	Work Mode	OTAA / ABP			
13	**Connectivity**				
14	Connector Type	M12 A-coded male			
15	Power Connector	2-pin (15 V)			
16	Data Connector	For WTS Sensor			

SL No.	Specification	Description
17	Power On/Off	Mobile App via NFC; PC via USB C; Internal power button
18	Configuration	Mobile App via NFC; PC software via USB C
19	Advanced Features	Data Storage (19,000 entries), Retransmission, Retrievability, Threshold Alarm
20	Button	1× Power/Reset (internal)
21	USB	1× Type C (internal) for configuration/console
22	LED Indicator	1× Reboot/Reset (internal)
23	Dimensions	
24	Housing & Color	Aluminium Alloy, White
25	Weight	2.15 kg
26	Dimensions	Ø160 × 263 × Ø73 mm
27	Operating Temperature	-40 to 85 °C
28	Relative Humidity	0 to 100% (non condensing)
29	Ingress Protection	IP65
30	Installation	Pole mounting
31	Power Supply	External solar powered (15 W, 1 A) with 2× 2550 mAh ICR18650/26V rechargeable batteries
32	Operating Temperature	-20 to 60 °C
33	Relative Humidity	0 to 95% (non condensing)
34	Ingress Protection	IP67
35	Dimensions	116 × 116 × 45.5 mm (connectors excluded)
36	Installation	Screw mounting
37	Open Circuit Voltage	18 V (±0.3 V)
38	Rated Voltage	15 V (±0.3 V)
39	Rated Current	1 A (±5%)
40	Maximum Power	15 W (±5%)
41	Minimal Power	14.5 W (±5%)
42	Power Cable	50 cm, 2 pin M12 A coded male
43	Cell Type	Monocrystalline silicon

SL No.	Specification	Description
44	Operating Temperature	-20 to 80 °C
45	Weight	1 kg (without bracket), 2.2 kg (with bracket)
46	Dimensions	343 × 283 × 16.5 mm
47	Installation	Pole mounting

1.4 Note:

Operating and storage conditions :

- -40 to 85 °C (sensor); solar-powered hub -20 to 60 °C

Attention :

- Correct mast height/exposure; avoid turbulence/ obstructions; regional frequency compliance

Certifications :

- CE Certified
- RoHS Compliant
- IPV6 Packing
- ISO 9001 Manufacturing Standards