WXRS WeatherStation® Multisensor – Ultrasonic Measurement of Wind and Rain
Delivering a Compact, Rugged Instrument for Informed Decision-Making

150WXRS Multisensor

AIRMAR’s WeatherStation WXRS provides real-time information on rain intensity, accumulated rainfall and event duration. An acoustic sensor measures the impact energy of individual raindrops on the patented “umbrella” sensor located on the top of the WeatherStation instrument. This rain detecting sensor is virtually maintenance free as it has no moving parts or components that need to be emptied, cleaned or will become clogged by debris.

With minimal maintenance plus the integration of a full suite of ultrasonic wind, temperature, barometric pressure and relative humidity, WeatherStation WXRS delivers a significantly lower total cost of ownership (TCO) than traditional measurement devices.

FEATURES
- Ultrasonic measurement of apparent, true wind speed and direction
- Ultrasonic measurement of rain accumulation, intensity and duration
- GPS for time stamping and internal compass for true wind data
- Maintenance-free operation – Superior to tipping buckets, weighing gauges, optical measurement. No obstruction and data integrity loss due to debris.
- Rugged, compact, UV stabilized housing with no moving parts
**Specifications**

**Rainfall Amount**: Cumulative accumulation after the latest automatic or manual reset
- Output Resolution: 0.01 mm
- Accuracy: 5% Typical

**Rainfall Intensity**: One minute running average in 10 second intervals
- Range: 0 to 200 mm/h (broad range with reduced accuracy)
- Output Resolution: 0.1 mm/h

**Rainfall Duration**: Counting each second whenever water droplet is detected
- Output Resolution: 1 second

**Wind Speed Range**: 0 MPH to 90 MPH, 0 m/s to 40 m/s

**Wind Speed Resolution**: 0.1 MPH, 0.1 m/s

**Wind Speed Accuracy @ 0°C to 55°C (32°F to 131°F), no precipitation**:
- Low Wind Speeds:
  - 0 MPH to 11.5 MPH: 1.1 MPH + 10% of reading
  - 0 m/s to 5 m/s: 0.5 m/s + 10% of reading
- High Wind Speeds:
  - 11.5 MPH to 90 MPH: 2.3 MPH or 5%, whichever is greater
  - 5 m/s to 40 m/s: 1 m/s or 5%, whichever is greater

**Wind Speed Accuracy in wet conditions**:
- 5.7 MPH RMS, 2.5 m/s RMS

**Wind Direction Range**: 0° to 360°

**Wind Direction Resolution**: 0.1°

**Wind Direction Accuracy @ 0°C to 55°C (32°F to 131°F), no precipitation**:
- Low Wind Speeds (5° RMS typical):
  - 4.6 MPH to 11.5 MPH, 2 m/s to 5 m/s
- High Wind Speeds (2° RMS typical):
  - >11.5 MPH, >5 m/s

**Wind Direction Accuracy in wet conditions** (8° RMS Typical):
- >9.2 MPH, >4 m/s

**Two-Axis Compass Accuracy**:
- 1° RMS when level

**Pitch and Roll Range / Accuracy**: ±50° / <1°

**Air Temperature Range**: -40°C to 55°C (-40°F to 131°F)

**Air Temperature Resolution**: 0.1°C (0.1°F)

**Air Temperature Accuracy**:
- ±1.1°C (±2°F) @ >4.6 MPH wind, >2 m/s wind

**Barometric Pressure Range**: 300 mbar to 1100 mbar (24 inHg to 33 inHq, 800 hPa to 1100 hPa)

**Barometric Pressure Resolution**: 0.1 mbar (0.029 inHg, 0.1 hPa)

**Barometric Pressure Accuracy**:
- ±1 mbar (±0.029 inHg, ±1 hPa) when altitude correction is available

**Relative Humidity Range**: 10% to 95% RH

**Relative Humidity Accuracy**: ±1% units RH

**GPS Position Accuracy**: ±2.5 m (95% of the time)

**GPS Data Output**: NMEA 0183, NMEA 2000®, NMEA 2020® (CAN bus)

**Mounting Thread Size on Base**: M6 (10-32), M8 (1/4-28)

**Certifications and Standards**:
- CE, IP66 (Relative Humidity/IPX4), RoHS, IEC61000-4-2, IEC60945, IEC60950_1C, IEC60950_22A, EN55022, EN55024, EN15014982

**RMS—Root Mean Square**

*When the wind speed is less than 2 m/s (4.6 MPH) and/or air temperature is below 0°C (32°F), wind, temperature, and relative humidity readings will be less accurate.

**Wet conditions include moisture, rain, frost, dew, snow, ice and/or sea spray in the wind channel.

***AIRMAR has made the address claiming modifications to enable compatibility with the ISO 11783 communication protocol for the agriculture industry – that is based on the SAE J1939 protocol.

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