

**True Wind and
GPS in Moving Vehicle**

TOTAL ULTRASONIC WEATHER STATION AND GPS

- PC based with remote monitoring
- True and apparent wind speed and direction
- Barometric pressure
- Temperature
- Relative humidity
- Dew point
- GPS, Compass

Mobile

- True wind speed and direction while moving
- GPS Coordinates

Portable

- Pocket PC compatible

Fixed

- Rugged
- No moving parts
- 18 month guarantee



**Affordable for Storm Chasers,
Government, Business,
School, & Home.**

**Free Weather View 32
Standard Edition Included**



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860-691-1876**



New Mountain Ultrasonic Weather Station Instrument

The New Mountain weather station Instrument is the only all-in-one weather sensor that calculates apparent wind speed and direction, barometric pressure, air temperature, relative humidity, dew point and wind chill temperature. With the optional internal compass and Global Positioning System, true wind speed and direction can also be calculated. The UV stabilized, compact housing is fully waterproof and resistant to chemicals.

The NM 100 Weather Station Instrument comes with our exclusive Weatherview32 Software. Data can be viewed in both digital and analog format and can be saved for a set period of time. Data can be accessed from other computers as well as uploaded to host sites such as weatherunderground.com Standard NMEA sentences and an RS485 interface allows for the flexibility of designing your own software program to fit your specific application. Our comprehensive technical manual makes the job easy!

The New Mountain NM100 weather station Instrument utilizes a standard 1-14" UNS thread connection to accommodate standard mounting hardware. The waterproof base connector assures trouble-free installation and servicing, while a quick disconnect feature allows for easy removal. Standard cable lengths of 25 m connects to our serial interface. An optional USB converter is available



State-of-the-Art Wind Tunnel Every Weather Station Instrument is individually calibrated in a wind tunnel, whose wind measurements are traceable to a National Institute of Standards and Technology (NIST) Standard Reference Material

How the New Mountain NM100 Weather Station Instrument Works

The ultrasonic wind sensor (an ultrasonic anemometer) measures apparent wind speed and direction. The weather station Instrument contains four ultrasonic transducers, visible through the four holes in the top of the sensor's wind channel (see figure 1). These transducers operate in pairs—one transducer injects a pulse into the air, and the other (directly opposite to it) listens for the arrival of that pulse (see figure 2). Each pulse bounces off the anodized aluminum plate at the bottom of the wind channel and is carried by the wind to arrive at the opposing transducer a short time later. When there is no wind, the pulse travels at the speed of sound from the sender to the receiver. Whenever the wind is blowing in that direction, the pulse will arrive sooner than if the air is still. Similarly, whenever the wind is blowing in the opposite direction, the pulse will arrive later than if the air is still. The four transducers take turns in sending and receiving pulses to cover all eventualities of wind direction. A built-in microprocessor combines the measurements from all four transducers to calculate the resultant wind speed and direction. The sensor monitors the air temperature, to compensate for the fact that the speed of sound in air changes with temperature. (The aluminum plate heats up to prevent frost and moisture from altering the wind readings.) Flow disturbances caused by the five posts are compensated for in software. Each Weather Station Instrument is calibrated in a wind tunnel to provide compensation for variations in production as well as asymmetry in the airflow channel.

The Weather Station Instrument has the unique ability to display both true and apparent wind. True wind is the actual motion of the air relative to the earth. Apparent wind is the wind which an observer experiences while moving or on a moving vehicle. It is the result of these two motions—the actual motion of the air (the true wind) and the motion of the vehicle. If the vehicle is not moving, then the true and apparent wind will be the same.

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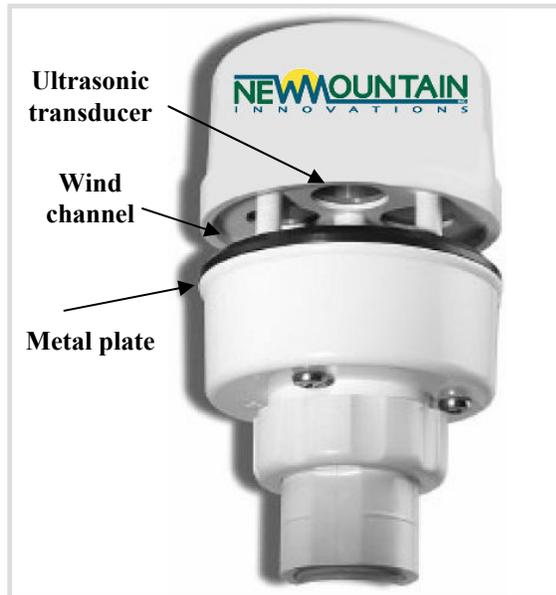


Figure 1

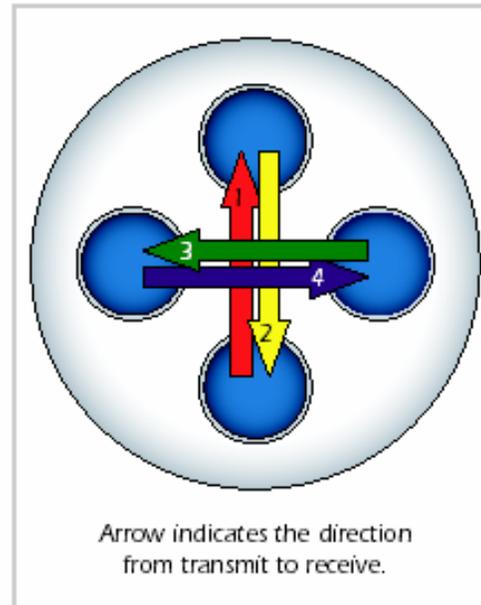


Figure 2

Data can be displayed in the following units of measure:

Wind Speed

- MPH—miles per hour
- Knots—1 knot = 1.15 miles MPH
- KPH—kilometers per hour

Barometric Pressure

- inHg—inches of mercury
- mbars—mill bars

Temperature

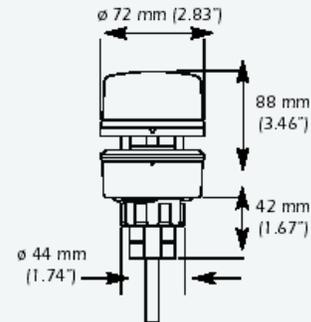
- °F—Fahrenheit
- °C—Celsius

Wind Speed Range	0.5 to 99.5 knots (0.6 MPH to 114.5 MPH)
Wind Speed Resolution	0.1 knot (0.1 MPH)
Wind Speed Accuracy	±1 knot (±1.1 MPH) or ±4%, whichever is greater
Wind Direction Azimuth	0° to 360°
Wind Direction Resolution	1°
Wind Direction Sensitivity	±1.5°
Temperature Range	-30°C to 50°C (-22°F to 122°F)
Temperature Accuracy	±1.5°C (±2.7°F) @ 2 knots (2.3 MPH) wind
Temperature Resolution	0.1°C (0.1°F)
Compass Accuracy	±2° static heading
Barometric Pressure Range	850 to 1150 mbar (25 to 34 inHg)
Barometric Pressure Accuracy	±1.5%
Relative Humidity Range	10 to 95% RH
Relative Humidity Accuracy	±4% RH
Operating Frequency	40 kHz
Supply Voltage	10 VDC to 16 VDC
Weight	285 grams (0.6 lb)
Power Consumption	<100 mA in normal operation (up to 1 Amp with heater)
Sensor Baud Rate	4800 bps can be increased to 38,400 bps with a command
Thread Size	1-14" UNS (Unified National Standard)

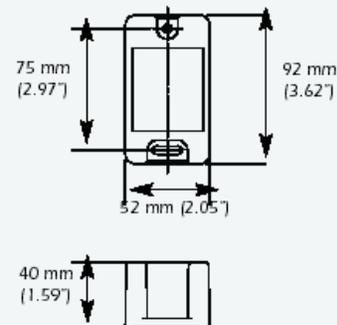
*Below 0°C (32°F), the wind speed and direction may be less accurate.

**When wind speed is less than 2 knots (2.3 MPH), temperature and humidity readings will be less accurate.

WeatherStation™ Instrument



USB Converter



Sensors Provide

Apparent Wind Speed And Direction	Ultrasonic anemometer
Air Temperature	Based on a negative temperature coefficient thermistor that measures the ambient air temperature.
Relative Humidity	Measured with a capacitive cell humidity sensor.
Barometric Pressure	Measured using a temperature-compensated silicon piezoresistive pressure sensor.
Magnetic Compass Heading	Two-axis magneto-inductive sensors
Pitch And Roll Angles	Three-axis MEMS accelerometer
Position, Speed And Course Over Ground	Global Positioning System (GPS) receiver