Magellan MX™
WEATHER STATIONS
Wind | Temperature | Humidity | Pressure | Rainfall | Solar Radiation | GPS | Compass

Columbia Weather Systems
Especially ideal for mobile and portable applications, Magellan MX Weather Stations combine the convenience of an all-in-one multi-parameter weather sensor with an internal compass and GPS. Four different models offer sensor options including:

- Ultrasonic wind speed and direction measurement
- A combined temperature, pressure, humidity instrument mounted inside three double louvered, naturally aspirated radiation shields
- Rain gauge provides measurements based on drop size and number
- Solar radiation measurement

**Magellan MX Weather Stations Feature**

- Weather-protected sensor unit designed for maximum portability and utility
- GPS for compensated wind speed
- Automatic self-alignment of wind direction using internal compass
- No mechanical components means virtually no maintenance
- Low power consumption – ideal for battery or solar-powered installations
- One-year warranty

**MX600:** Rain Gauge, Ultrasonic Wind Speed and Direction, Temperature, Relative Humidity, Air Pressure, Compass, GPS

**MX500:** Ultrasonic Wind Speed and Direction, Pressure, Temperature, Relative Humidity, Compass, GPS

**MX501:** Solar Radiation, Ultrasonic Wind Speed and Direction, Pressure, Temperature, Relative Humidity, Compass, GPS

**MX300:** Pressure, Temperature, Relative Humidity (no Compass or GPS)

**MX200:** Ultrasonic Wind Speed and Direction only, Compass, GPS

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**System Diagram**

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Magellan MX500 Sensor Transmitter

Surge Arrestor

Earth Ground

50 foot Sensor Cable

Power Supply

Interface Module

Modbus TCP/IP DNP3 Ethernet BACnet SNMP FTP Weather Underground CW5 Cloud Server

Network

Weather Display Console

WeatherMaster Software

Modbus RTU DNP3 RTU Additional Sensors

Additional Analog Sensors

Additional Sensors

Weather MicroServer

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Call or email for a quote | toll-free 1-888-508-7375 | info@columbiaweather.com
Monitoring Options

Weather MicroServer™
A self-contained, proprietary weather computer utilizing an embedded Linux operating system.
- "Internet-ready" weather monitoring with FTP output, XML, and Internet browser user interface
- Industrial communication protocols (SNMP, Modbus, DNP3, BACnet)
- Datalogging capability

Two serial ports offer interface to the Weather Display Console and additional sensors such as visibility and ultrasonic wind sensors.

The Weather MicroServer can provide real-time weather data to WeatherMaster Software and Display Console over the network. This allows users to simultaneously monitor the weather using WeatherMaster on any network computer.

Color Weather Display Console™
“Intelligent” touch-screen technology incorporates programmable microprocessor and abundant memory to display weather information, perform complex computations, and store data.
- Seven-inch, TFT color LCD panel with 800 x 480 pixels resolution
- Connect directly to the weather station with a serial port or the Weather MicroServer utilizing existing Ethernet
- Three mounting options: Desktop/Wall-Mount, Panel Mount/Flush Mount, 19" Rack Mount

Cloud Weather Server™
Free with the Weather MicroServer, this service offers real-time weather data monitoring on the Internet.
- View display screen remotely from any device using a web browser
- Data uploaded every five seconds
- For one or more weather stations

All monitoring devices can be factory-customized to suit application-specific requirements.

WeatherMaster™ Software
Professional-grade software providing real-time computer weather monitoring with display and automatic logging of all measured and calculated parameters.
- Expandable SQL database to archive measured and calculated parameters
- Graphing and trend display of all parameters
- Alarm notification via computer, email, and/or text
- Multi-station monitoring and data acquisition
- Interface with CAMEO/ALOHA software for plume modeling and evacuation corridor predictions
- Interface with Weather Underground

4-20 mA Signal Output
For industrial PLC interface, the Magellan MX420™ offers 4-20mA signal output to interface to PLC, DCS, and SCADA systems.

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## Specifications

### Temperature
- **Range:** -40 to +70°C (-40 to +185°F)
- **Accuracy:** ±0.3°C (20°C); ±0.54°F (68°F)
- **Resolution:** 0.1°C (0.18°F)
- **Units:** °C, °F

### Barometric Pressure
- **Range:** 8.85 – 32.48 inHg (300 - 1100 hPa)
- **Accuracy:** ±0.015 inHg (±0.5 hPa) at 77°F (25°C)
- **Resolution:** 0.003 inHg (0.1 hPa)
- **Units Available:** kPa, hPa, mbar, inHg

### Wind Speed
- **Range:** 0-134mph (0-60 m/s)
- **Accuracy:** ±3% 0.02 mph to 90 mph (0.01m/s to 40 m/s), ±5% above 90 mph and up to 134 mph (40 m/s - 60 m/s)
- **Resolution:** 0.02 mph (0.1 m/s)
- **Units Available:** knots, mph, km/hr, m/s

### Wind Direction
- **Range:** 0 to 359°
- **Accuracy:** ± 3° 0.02 mph to 90 mph (0.01 m/s to 40 m/s), ±5° above 90 mph to 134 mph (40 m/s - 60 m/s)
- **Resolution:** 1°

### Relative Humidity
- **Range:** 0 to 100%
- **Accuracy:** ± 2% @ 68°F (10%-90% RH)
- **Resolution:** 1.0%

### Precipitation
- **Accuracy:** ±2% at <6 inches/hour
- **Resolution:** (0.007in/tip) (0.2mm/tip)
- **Units Available:** mm, inches

### Compass
- **Measurement Range:** 0-359°
- **Resolution:** 1°

### GPS
- **Horizontal Position Accuracy:** Less than 2.5M Circular Error Probability
- **Accuracy:** Longitude and Latitude report to 6 decimal places

### Parameter Measurements

**Temperature / Pressure / Humidity:** A combined instrument of solid state devices mounted inside three double louvered, naturally aspirated radiation shields with no moving parts. The special shield plate geometry, with its double louver design, provides excellent response time performance of quick ambient temperature changes while still working effectively as a baffle to stop larger contaminants such as salt or dirt from reaching the sensors. The result is high performance across each measurement.

**Wind Speed and Direction:** Measurements are provided via an ultrasonic sensor. An electronic compass provides apparent wind measurements. GPS provides true wind and other features.

**Precipitation:** An integrated optical rain gauge that automatically senses water hitting its outside surface and provides measurements based on the size and number of drops. Algorithms interpret this data and simulate the output of a tipping bucket rain gauge. The optical rain gauge has no moving parts associated with tipping bucket gauges.

**Compass:** The 2-axis compass and magnetic field sensing module uses MagnetolInductive (MI) sensors. The sensor incorporates a temperature and noise stabilized oscillator/counter circuit. The compass has a high degree of azimuth accuracy. Wind direction data iscorected for the orientation of the sensor. The output of the wind direction is relative to magnetic North. The compass is calibrated at at the factory for optimal declination at delivery location before the unit is shipped.

**GPS:** A highly accurate GPS antenna receiver module including a ceramic GPS patch antenna. Small size and higend GPS functionality are combined with low power consumption.

### Additional Calculated Parameters
With WeatherMaster Software or the Weather MicroServer, data from these sensors are computed to provide calculated parameters including Dew Point, Heat Index, Wind Chill, Degree-Day Temperatures and Density Altitude.

### System Configurations
All Magellan MX weather station systems include:
- Magellan Transmitter/Sensor Module (select model)
- Interface Module with dual communication ports
- Select the desired monitoring option(s) from the previous page
- One-year warranty, extended warranty available

**Fixed-Base Weather Stations** include 50-ft cable. Optional sensor mast, mounting hardware, and extra-length cable are available.

**Vehicle-Mount Weather Stations** include a detachable 9-ft telescoping sensor mast and mounting hardware.

**Magellan MX Portable Weather Stations** include wireless transceivers, batteries, transportation case and tripod with 10-ft telescoping mast.

*Contact us today for a free quotation!*