



*Pulsar*TM Weather Stations

Wind | Precipitation | Temperature | Humidity | Pressure | Solar | Compass





Innovative Weather Monitoring

Raising weather monitoring to a new level, Pulsar Weather Stations combine the convenience of all-in-one configuration with the flexibility of multiple high-accuracy sensor options. Wind speed and direction utilize ultrasonic technology. All wind models include an electronic, flux-gate compass for auto-align of wind direction. Precipitation measured with 24 GHz Doppler radar or tipping bucket.

Pulsar 800: Lightning Detection, Solar Radiation, Doppler Radar Precipitation, Temperature, Humidity, Pressure, Wind Speed and Direction

Pulsar 700: Solar Radiation, Doppler Radar Precipitation, Temperature, Humidity, Pressure, Wind Speed and Direction

Pulsar 601: Temperature, Humidity, Pressure, Wind, Tipping Bucket Precipitation, and optional Leaf Wetness

Pulsar 600: Temperature, Humidity, Pressure, Wind and Doppler Radar Precipitation

Pulsar 502: Temperature, Humidity, Pressure, Wind and Solar Radiation

Pulsar 501: Temperature, Humidity, Pressure, Wind and Solar Radiation (second-class pyranometer)

Pulsar 500: Temperature, Humidity, Pressure, Wind Speed and Direction

Pulsar 200: Wind Speed and Direction

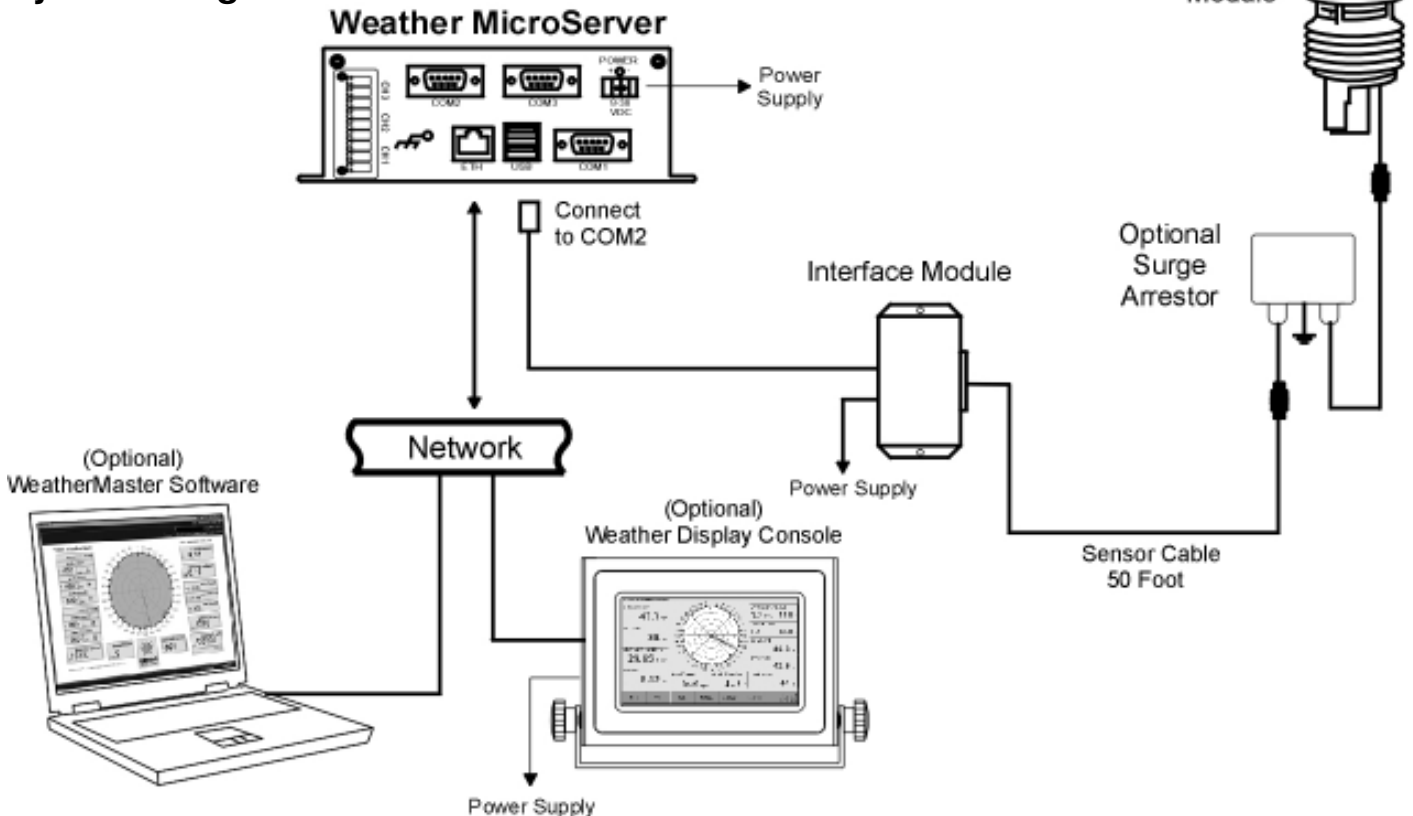
Pulsar 100: Doppler Radar Precipitation (type, intensity, accumulation)

Pulsar Weather Station Model 600 with Doppler radar precipitation sensor

Pulsar Weather Stations Feature

- Multi-parameter all-in-one sensor design for easy installation
- Fan-aspirated radiation protection
- Heater for extreme cold environments
- Maintenance-free measurement advantage over mechanical sensors
- One-year warranty

Pulsar Weather Station System Diagram



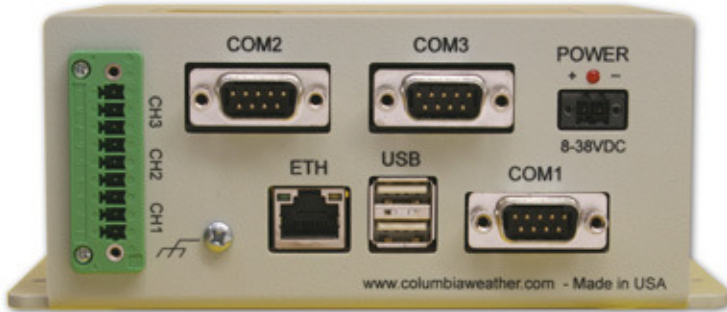
Call or email for a quote • toll-free 1 888-508-7375 • info@columbiaweather.com

Pulsar™ Weather Stations

Weather MicroServer™

Required with the Pulsar Weather Station, the Weather MicroServer converts the sensor data into a format that can be monitored through the MicroServer's user interface, the Weather Display Console and/or Weather Master Software. The Weather MicroServer creates an "Internet-ready" weather monitoring system by automatically providing FTP output, XML web service, and Internet browser user interface.

SNMP and Modbus/OPC communication protocols are standard for Industrial Management applications.



The Weather MicroServer has datalogging capability. It connects to your network with an included Ethernet cable.

Two serial ports offer interface to both the Weather Display Console and additional peripheral devices or sensors.

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

MicroServer Optional Sensors:

Additional sensors can be added to a Pulsar Weather Station by connecting directly to the MicroServer. This allows for an even wider variety of parameter measurements. These include visibility, solar radiation, photosynthetically active radiation (PAR), and temperature (panel, soil, water or ambient).



Visibility Sensor

Weather Display Console™

The Weather Display Console uses "intelligent" touch-screen technology. With its programmable microprocessor and abundant memory, the console displays weather information, performs complex computations, and stores data.

The Weather Display Console features a seven-inch, TFT color LCD panel with 800 x 480 pixels resolution. It can connect directly to the weather station with a serial port or to the Weather MicroServer utilizing existing Ethernet.

The display console can be factory-programmed to suit specific market and industry requirements. It is available in three mounting options:

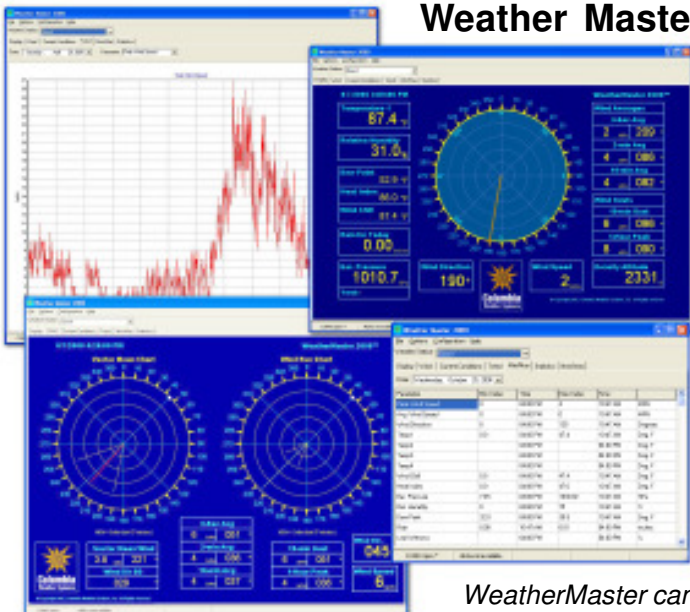
- Desktop/Wall-Mount
- Panel Mount/Flush Mount
- 19" Rack Mount



Weather Master™ Software

This professional-grade software is designed to optimize the capabilities of Pulsar Weather Stations. Providing real-time computer weather monitoring, Weather Master offers:

- Display and automatic logging of all measured and calculated parameters
- Downwind vector wind and wind character-plotting screens
- Expandable SQL database
- On-the-fly graphing and trend display of all parameters
- Alarm notification via computer, email, pager or cell phone
- Multi-station monitoring and data acquisition
- Quick-North orientation
- Interface with CAMEO/ALOHA software for plume modeling and evacuation corridor predictions



WeatherMaster can be customized to meet specific industry requirements.

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

Precipitation Intensity, Type, Quantity (Models 100, 600, 700, 800)

Principle: Doppler Radar
 Precipitation Type: Rain/Snow
 Measuring Range Drop Size: 0.3 to 5 mm
 Reproducibility: Typ.>90%
 Resolution: 0.01mm

Precipitation Quantity (Model 601 only)

Principle: Tipping Bucket
 Accuracy: ±2 %
 Resolution: 0.2mm / 0.5 mm

Temperature

Range: -50 to +60°C
 Accuracy: ±0.2°C (0.36°F) (-20° to +50°C)
 otherwise ±0.5°C (>-30°C)

Air Pressure

Range: 300 to 1200 hPa
 Accuracy: ±0.5 hPa (0 to +40°C)

Relative Humidity

Range: 0 to 100%
 Accuracy: ±2%

Wind Speed

Range: 0 to 75 m/sec (601: 0 to 30 m/s)
 Accuracy: ±0.3 m/s or 3% (0 to 35 m/s)
 ±5% (>35 m/s)

Wind Direction

Range: 0 to 359.9°
 Accuracy: < 3°

Solar Radiation (Model 501)

ISO Classification: Second Class
 Non-stability (change/year): <1%
 Non-linearity (0 to 1,000 W/m²): <1%
 Directional error (at 80° with 1,000W/m²):
 <20W/m²
 Temperature dependence of sensitivity:
 <5% (-10 to +40°C)
 Tilt error (at 1,000W/m²): <1%
 Spectral Range (50% points):
 300 to 2,800 nm
 Maximum irradiance: 1,400 W/m²

Solar Radiation (Model 502, 700, 800)

Response time (95%): <1 s
 Accuracy: 5%
 Spectral Range (50% points): 300 to 1100 nm
 Maximum irradiance: 1400 W/m²

Wind Speed and Direction

The wind meter uses four ultrasonic sensors which take cyclical measurements in all directions. The resulting wind speed and direction are calculated from the measured run-time sound differential.

Air Temperature and Humidity

Temperature is measured by way of a highly accurate NTC-resistor while humidity is measured using a capacitive humidity sensor. To help mitigate the effects of external influences, these sensors reside in a fan-aspirated housing.

Air Pressure

Absolute air pressure is measured with a built-in micro-electro-mechanical sensor (MEMS). The relative air pressure referenced to sea level is calculated using the barometric formula configured with local altitude input by the user.

Precipitation

The Models 100, 600, 700, 800 precipitation sensor works with a 24GHz Doppler radar, which measures drop speed and calculates precipitation quantity and type by correlating drop size and speed.

Model 601 has a tipping-bucket and offers an optional leaf wetness sensor.

Solar Radiation

The Model 501 thermopile sensor construction measures the solar energy that is received from the total solar spectrum and the whole hemisphere (180 degrees field of view). Models 502, 700 and 800 use a silicon photodiode sensor.

Compass

The electronic compass helps orient the module and correlate wind direction.

Lightning Detection

An integrated sensor analyses the radio wave emission of lightnings. It delivers a count of lightnings and suppresses man-made electrical discharges.



601



500



200



501

Sensor Configurations

Pulsar Model	800	700	601	600	501/2	500	200	100
Compass	x	x	x	x	x	x	x	
Wind Speed/Direction	x	x	x	x	x	x	x	
Temperature/Humidity	x	x	x	x	x	x		
Pressure	x	x	x	x	x	x		
Precipitation	x	x	x	x				x
Solar Radiation		x			x			
Lightning Detection	x							

Please contact us today for a free quotation!

© 2018, Columbia Weather Systems, Inc. Specifications subject to change without notice.



Columbia Weather Systems, Inc.
 5285 NE Elam Young Pkwy, Ste C100
 Hillsboro, OR 97124
 Toll-free 1 888 508-7375
 Phone (503) 629-0887
 Fax (503) 629-0898
 info@columbiaweather.com
 ColumbiaWeather.com