

MODULAR WEATHER STATION

WMS-16 Series



- ✓ Durable Modular Design
- ✓ Wind Speed and Direction
- ✓ Air Temperature and Relative Humidity
- ✓ Barometric Pressure and Precipitation
- ✓ Datalogging Ability
- ✓ Tripod, Mast and Solar Radiation Shield

The OMEGA® WMS-16 Modular Weather Station is a computer-based meteorological system designed as a “user friendly” solution for data storage and real-time monitoring of weather conditions. The standard package includes: wind speed, wind direction, air temperature, relative humidity for temp/humidity, barometric pressure, precipitation, data logging, tripod and mast, solar radiation shield, cables and mounts. Additional sensor options include solar radiation, water or soil temperature, auxiliary air temperature, or rain gauge upgrade.

The unique modular system design provides plug-and-play functionality for adding or replacing sensors. The WMS-16 is supplied with an attractive desktop data acquisition module with a memory capacity of 128KB RAM (approximately 45 days at 15 minute intervals with 6 sensors). The WMS-16D data acquisition module includes selectable averaging intervals, 12-bit analog conversion, 0.1% FS accuracy, 2 alarm outputs, and optional modem communications. The standard system includes a 120 Vac power adaptor and RS232 serial port for connection to a personal computer. For outdoor or remote applications, a NEMA 4X enclosure and rechargeable battery option is offered.

The optional software package provides a real-time text display, as well as a real-time graphical display, or an ASCII row and column format may be selected. In addition, the data acquisition module is compatible with Windows® HyperTerminal software and other terminal programs.

WMS-16NEMA-S, modular weather station with NEMA enclosure and solar power.



All units shown smaller than actual size.

WMS-16NEMA, modular weather station with NEMA enclosure.



SPECIFICATIONS

Data Acquisition Module

Reporting Units:

English or metric, all measurements

Operating Power: 10 to 16 Vdc

Power Consumption: 60 mA max

Serial Port: 9-pin d-sub connector, selectable baud rate, flow control

Memory: 128KB RAM, non-volatile (45 days at 15 minute intervals with 6 sensors)

Operating Temperature

Transducers:

-40 to 60°C (-40 to 140°F)

Data Acquisition Module:

-40 to 60°C (-40 to 140°F)

Timekeeping Format:

MM/DD and HH:MM

Accuracy: ±30 seconds/month

Barometric Pressure

Range: 28.25 to 30.75 inches Hg

Measurement Span:

2.50 inches Hg (85 mbar)

Resolution: ±0.01 inch Hg

or ±0.3 mbar

Altitude Offset: 0 to 3048 m

(0 to 10,000'), screwdriver adjustable

Absolute Accuracy: 0.05 inches Hg

Wind Speed

Range: 0 to 125 mph (0-57 m/s)

Resolution: > 0.1 mph

Accuracy: ±3% for sustained 2 second average

Starting Threshold: 0.8 mph

Time Constant: 2 seconds

Wind Direction

Range: 0 to 360°

Resolution: > 1°

Accuracy: ±3%

Starting Threshold:

WMS-16-2E: 1.2 mph

WMS-16-5E: 0.5 mph

Temperature Range: -40 to 60°C (-40 to 140°F)

Resolution: > 0.1°F

Accuracy: ±1°F

Relative Humidity

Range: 0 to 100% RH

Accuracy: ±3% midscale, ±6% @ 20% & 90% RH

Rain Gauge

Resolution: 0.01"/tip

Accuracy: ±2% up to 3"/hour

Maximum Rate: Unlimited

Solar Radiation (Optional)

Sensor: Photodiode detector

Spectral Response: 0.4 to 1.1 microns

Sensitivity: 100 mV/1000 w/m² approx

Accuracy: ±5%



WMS-16 modular weather station

To Order	
Model No.	Description
WMS-16	Modular weather station, includes desktop data acquisition module (WMS-16D), 115/230 Vac power supply (WMS-16P), wind speed/direction sensor (WMS-16-2E), temperature/RH sensor (WMS-16TH), radiation shield (WMS-16THS), barometric pressure sensor (WMS-16BP), rain gauge (WMS-16RC) and tripod/sensor mast (WMS-16TM)
WMS-16EPA	WMS-16 with high sensitivity wind sensor (WMS165E replaces WMS-16-2E sensor)
WMS-16NEMA	WMS-16 with NEMA 4X data acquisition module with 110/220 Vac charger and 7 A/hr battery (WMS-16N-B replaces WMS-16D and WMS-16P)
WMS-16NEMA-S	WMS-16 with NEMA 4X data acquisition module with solar panel charger and 7 A/hr battery (WMS-16N-A replaces WMS-16D and WMS-16P)
WMS-18	Portable weather station in a 9 kg (20 lb) 51 x 43 x 20 cm (20 x 17 x 8") carrying case. Includes sensors for wind speed/direction, temperature and a data logger with 128K RAM and 7 A/hour battery for up to 5 days between charging with 110/220 Vac charger

Comes complete with operator's manual.

Individual Components for Custom Systems

Model No.	Description
WMS-16D	Data acquisition module in desktop enclosure, includes a serial cable
WMS-16N-B	Data acquisition module in NEMA 4X enclosure 110/220 Vac charger assembly and 7 A/hour battery
WMS-16N-A	Data acquisition module in NEMA 4X enclosure 10 watt solar power charger assembly and 7 A/hour battery
WMS-16P	110/220 Vac power supply
WMS-16TM	1.5 m (5') tripod and 1.5 m (5') sensor mast [2.4 m (8') total]
WMS-16-2E	Wind speed/direction sensor, 12 m (40') cable (for WMS-16)
WMS-16-5E	High sensitivity wind sensor, 12 m (40') cable (for WMS-16EPA)
WMS-16TH	Outdoor temperature and relative humidity sensor, 12 m (40') sensor*
WMS-16THS	Solar radiation shield for temp/RH sensor
WMS-16BP	Barometric pressure sensor 0.45 m (18") cable (sensor always to be near base)
WMS-16RC	Rain gauge, includes mounting arm and 12 m (40') cable*
WMS-16SR	Solar radiation sensor, includes mounting arm and 12 m (40') cable*
WMS-16T	Auxiliary air temperature sensor, 12 m (40') cable*
WMS-16TWS	Water or soil temperature sensor, 12 m (40') cable*
RG-2501/40	Tipping bucket rain gauge, 12 m (40') cable
WMS-16MAC	Telephone modem, AC powered
WMS-16MDC	Telephone modem, DC powered
WMS-16STR	Windows graphical software package

* Standard length for all cables between base unit and sensors are 12 m (40'). To order items with longer cable length add suffix "-XFT" where X is length in feet, additional cost per cable per foot per sensor.

Ordering Examples: WMS-16T-100FT, with 30 m (100') cable.

WMS-16NEMA, modular weather station with NEMA enclosure and 110/220 Vac charger.

WMS-16NEMA-S, solar powered weather station with **RG-2501/40** rain gauge.