

## 110-WS-25 Modular Weather Station

The **110-WS-25 Modular Weather Stations** are meteorological systems designed to be a “user friendly” solution for data storage and real-time monitoring of weather conditions.

The standard sensor package includes 6 weather parameters: *Wind Speed and Direction, Temperature and Relative Humidity, Barometric Pressure, and Precipitation*, (additional optional sensors can be added), a *5-Foot Tripod and Vertical Mast* for sensor mounting, and a *Data Logger with LCD Display*.

No computer is required for setup and viewing data. A simple menu interface using the LCD display and three front panel buttons makes setup easy.

Data is recorded directly to a Secure Digital (SD™) card, providing convenient data downloads and storage for many months of data. The data logger is compatible with standard SD cards up to 2GB. Logging at 1 minute intervals, a 2GB card will store over 5 years of data. A new file is created and saved to the card each day.

Using the recorded data is simple. The SD card is inserted into a card reader attached to the USB port on your computer (Windows, Macintosh, and Linux) and will then show up as a drive. To view and graph the data, click on the file corresponding to the day of interest. Microsoft Excel, OpenOffice.org, or other spreadsheet program can be used to view, graph, and analyze your data.



110-WS-25 Weather Station with NEMA Enclosure



110-WS-25DL-D Data Logger in Desktop Enclosure



110-WS-25 Portable Weather Station Carrying Case

# 110-WS-25 Modular Weather Station

## Specifications

### Data Logger Module

(Available in Desktop, NEMA, and Portable versions)  
 Inputs: 8 analog and 3 digital channels  
 Resolution: 12-bit A/D converter on 4 channels  
           10-bit on other channels  
 Logging interval: Adjustable logging interval 10 sec to 60,000 seconds  
 Display: 16 character x 2 line backlit LCD screen  
 Power source: 10 to 30 Volts DC at 20 mA  
 Clock: Real-time clock is used to time-stamp each measurement,  
         battery backed, and accurate to within 10 minutes per year  
 Serial port: RS232 9-pin connector, selectable baud rate, real-time data  
               output to PC (using Hyperterminal or Optional Graphic Software)  
 Memory: 512MB SD memory card and USB card reader included  
 Operating temperature: -40° to 140° F (-40° to 60° C)

### Standard Sensor Package

#### Wind Speed

Range: 0 to 125 mph (0-57 m/s)  
 Resolution: > 0.1 mph  
 Accuracy: ± 1 mph  
 Starting threshold: 0.8 mph  
 Time constant: 2 seconds

#### Wind Direction

Range: 0-360°  
 Resolution: > 1°  
 Accuracy: ± 3%  
 Starting threshold: 200-WS-02F: 1.2 mph / 200-WS-05F: 0.5 mph

#### Temperature & Humidity

Humidity measurement range: 10 to 90% (for which accuracy is specified)  
 Humidity accuracy: Better than ± 3% @ +68°F (+20°C)  
 Humidity operating range: 0-100% RH  
 Stability: ± 2% RH over 2 years  
 Temperature measurement range: -40° to +140°F (-40° to +60°C)  
 Temperature accuracy: 1.1°F (± 0.6°) @ +68°F (+20°C)  
 Input power: 7-28 Vdc  
 Current consumption: 2 mA typical  
 Output signal: 0 to 1 Vdc

#### Barometric Pressure

Range: 500-1100 mb (14.7-32.5 inHg)  
 Operating temperature: -40° to 60°C  
 Resolution: ± 0.3 mb or ± 0.01 inHg  
 Altitude offset (for sea level correction): User adjustable in logger

#### Rain Gauge

Resolution: 0.01"/tip  
 8" diameter (20.5cm) collector meets NWS specifications  
 Switch: Dry reed switch  
 Output: < 0.1 sec switch closure  
 Accuracy: ± 2% at < 2" per hour

### Typical Data Sample

2017-03-20 13:51:50,4.2,10.1,190,,,,,,,,,0.04,223,12.14,,,,,57.807,67.471,28.700,,192  
 2017-03-20 13:52:50,2.6,9.9,233,,,,,,,,,0.05,269,12.10,,,,,57.547,68.618,28.700,,59

## Ordering Information

110-WS-25	Modular Weather Station 110-WS-25DL-D Data Logger in Desktop Enclosure 200-WS-02F Wind Speed & Direction Sensor 110-WS-25BP Barometric Pressure Sensor 110-WS-25TH Temperature & Relative Humidity Sensor with Solar Radiation Shield 110-WS-25RG Rain Gauge with Tower Mounting Arm 110-WS-25TM Tripod & Sensor Mast
110-WS-25N	Modular Weather Station 110-WS-25DL-N Data Logger in NEMA-4X Enclosure includes mounting hardware, surge protection, backup battery 200-WS-02F Wind Speed & Direction Sensor 110-WS-25BP Barometric Pressure Sensor 110-WS-25THA Temperature & Relative Humidity Sensor with Solar Radiation Shield 110-WS-25RG Rain Gauge with Tower Mounting Arm 110-WS-25TM Tripod & Sensor Mast
110-WS-25P-A	Portable Weather Station 110-WS-25DL-CC Data Logger in Carrying Case 200-WS-02F Wind Speed & Direction Sensor 110-WS-25T Temperature Sensor with Solar Radiation Shield 110-WS-25TM-P Tripod & Sensor Mast
110-WS-25P-B	Portable Weather Station 110-WS-25DL-CC Data Logger in Carrying Case 200-WS-02F Wind Speed & Direction Sensor 110-WS-25TH Temperature & Relative Humidity Sensor with Solar Radiation Shield 110-WS-25TM-P Tripod & Sensor Mast
110-WS-25SSRD	Solar Radiation Sensor with Tower Mounting Arm
110-WS-25SP	10W Solar Panel with Regulator
110-WS-25SP-20	20W Solar Panel with Regulator
110-WS-25SP-2033	20W Solar Panel with Regulator, 33AH Battery, Battery Case
140-401-P	Spread Spectrum Radio
110-WS-25STR	Graphical Display Software