

110-WS-25HA High Accuracy Weather Station

The **110-WS-25HA High Accuracy Weather Station** includes the high performance RM Young Wind Monitor sensor, Vaisala temperature and humidity probe with excellent long-term stability, and the Setra barometric pressure sensor, which has a wide operating temperature range. A variety of optional sensors are available. The NovaLynx 260-2500 rain gauge completes the system, and is available in a variety of configurations including heated models for areas with ice and snow.

The logger is simple to operate, includes an LCD display, and is programmable without connecting a computer. Sensor readings are recorded on a 512MB Secure Digital (SD™) card along with the time and date. The data is available real-time via RS232 connection to terminal software or on the internet via optional device server.

Applications

Forestry
Research
Industrial
Agriculture
Meteorology
Climatology

Measurements

Wind Speed & Direction
Barometric Pressure
Relative Humidity
Air Temperature
Precipitation
Spare Inputs



Display	16 character by 2 line backlit LCD display
User Input	3 momentary buttons
Sensor Inputs	8 analog and 3 digital channels with surge protection
Resolution	12-bit A/D converter on 4 channels, 10-bit on other channels
Input Range	0-5 volts; Connect appropriate resistors for current inputs
Excitation	Internal 5 volt 1% band gap voltage reference
Logging Interval	Adjustable 10 to 16,000 seconds
Memory	512MB SD memory card and USB card reader included
Data Files	Comma Separated Values, daily, filename format: YYYYMMDD.csv
Serial Port	RS232 9-pin connector, selectable baud rate, real-time data output
Clock	Real-time clock, battery backup, accurate to within 10 minutes per year
Power	10 to 30 Volts DC at 20 mA (excluding sensors)
Operating Temperature	-40° to 140° F (-40° to 60° C)

110-WS-25HA High Accuracy Weather Station

- 110-WS-25DL-N Data Logger in NEMA-4X Enclosure *includes mounting hardware, surge protection, backup battery*
- 200-05103 Wind Monitor (Requires 200-6511 Amplifier)
- 200-6511 AC Anemometer Amplifier (RMY to WS-25)
- 225-HMP155A RH/Temp Sensor, 11' cable
- 380-41003 Solar Radiation Shield for humidity and temperature sensor
- 230-278 Barometric Pressure Transducer (mounts inside NEMA enclosure)
- 260-2500 8in Rain Gauge, 0.01in/tip
- 260-950 8in Rain Gauge Mounting Plate
- 110-WS-25TM 5' Tripod & 5' Sensor Mast
- 110-WS-25SP-20 Solar Panel, 1.2 Amp, 12 Vdc

Wind Speed (200-05103)

- Range: 0-100 m/s (224 mph)
- Speed Threshold: Propeller: 1.0 m/s (2.2 mph)*
- Speed Constant 1800 rpm (90 Hz) = 8.8 m/s (19.7 mph)
- Accuracy: ± 0.3 m/s (0.6 mph) or 1% of reading



Wind Direction (200-05103)

- Range: 360° mechanical, 355° electrical
- Potentiometer Gap: 5° open
- Vane Threshold: 1.1 m/s (2.4 mph)*
- Accuracy: $\pm 3^\circ$

* Nominal values, determined in accordance with ASTM standard procedures.

Temperature (225-HMP155A)

- Range: $-40 \dots +60^\circ\text{C}$ ($-40 \dots +140^\circ\text{F}$)
- Accuracy: $\pm(0.226 - 0.0028 \times \text{temperature})^\circ\text{C}$
At $-40 \dots +20^\circ\text{C}$ ($-40 \dots +68^\circ\text{F}$)
 $\pm(0.055 + 0.0057 \times \text{temperature})^\circ\text{C}$
At $+20 \dots +60^\circ\text{C}$ ($+68 \dots +140^\circ\text{F}$)



Radiation Shield

Relative Humidity (225-HMP155A)

- Range: 0-100% RH
- Factory Cal Uncertainty ± 0.6 %RH (0 ... 40 %RH)
At $+20^\circ\text{C}$ ($+68^\circ\text{F}$) ± 1.0 %RH (40 ... 95 %RH)

Barometric Pressure (230-278)

- Range: 500-1100 hPa, 600-1100 hPa, or 800-1100 hPa
- Accuracy: $\pm \sim 0.1\%$
- Long Term Stability 0.1 hPa (mb) per year
- Operating Temperature -40°F to $+140^\circ\text{F}$ (-40°C to $+60^\circ\text{C}$)



Rain Gauge (260-2500)

- Resolution: 0.01"/tip
- Orifice: 8" diameter (20.5 cm)
- Switch: Dry contact reed switch
- Output: < 0.1 sec switch closure
- Accuracy: $\pm 1\%$ at 5.1"/hr



Mounting Plate

Optional Sensors

- Wind Sensors: 200-05103-45, 200-05106, 200-05108, 200-05108-45, 200-05305
- Solar Radiation: 110-WS-25SR, 110-WS-25SRD, 240-SP-215-SS
- Evaporation: 255-100, 255-200, 255-100P/F (Gauge, pan & fittings)