



# CAMEO/ALOHA HAZMAT WEATHER SYSTEM

## FEATURES

- **Solid-State (No Moving Parts) Sensors**
- **Flux-Gate Compass**
- **ALOHA Compatible Digital Output**
- **Vehicle Mounted or Radio Telemetry**
- **Up to 20 Miles Line-Of-Sight Telemetry Distance**
- **Optional Hand-Held Data Display**

Climatronics' CAMEO/ALOHA HAZMAT Weather System is the perfect choice for any application requiring a lightweight, low power, rapidly deployable first response weather station. Supplied in one of two rugged transit cases (depending on system version), this system is applicable to any emergency response application associated with homeland security, hazardous material spills, NBC threats, man-made or natural disasters, and other similar situations.

The CAMEO/ALOHA HAZMAT Weather System is a Commercial-Off-The-Shelf (COTS) system used to determine surface meteorological conditions and the data can be used in a multitude of both civil and military applications. Set up of the system is easily done in minutes and requires no tools or orientation of the sensor. The total sensor package is only 12 inches high and 4 inches in diameter and weighs a mere 2.5 pounds, which is less than a third of that of our competitors' systems.

The basic vehicle mounted system consists of Climatronics' AIO Compact Weather Sensor, a "Quick-Connect" sensor mount with a power/data interface cable, and a sensor transit case. The data output from the system is a CAMEO/ALOHA compatible serial data stream. The user supplies the PC to run the application software such as CAMEO/ALOHA with MARPLOT or Climatronics' "WeatherView" display and data logging program. The telemetry version of the system adds two spread-spectrum radio transceivers operating in the 900 MHz band, a tripod, and any necessary antennas, cables, batteries, charger and the appropriate transit case. Optionally, a 2.4 GHz radio is also available for applications requiring deployment in countries other than the USA, Canada, Australia or Israel.



## TRANSIT CASE ASSEMBLY FOR THE BASIC VERSION OF THE RADIO TELEMETRY HAZMAT SYSTEM



- Battery
- AIO Compact Weather Sensor
- Power Control Panel
- Quick-Connect Charger and Data Interface Connections (side of case)
- Base Station Radio and Cables

Power for the AIO Compact Weather Sensor and the rest of the remote site system components is provided from a commercially available, 8AH rechargeable battery. This battery, when fully charged, will operate the basic CAMEO/ALOHA HAZMAT Weather System more than 4 days before requiring recharging or replacement. The basic system transit case holds the AIO Compact Weather Sensor, the battery and a power and data control panel.

The AIO Compact Weather Sensor is built around Climatronics' novel Sonimeter™ wind sensor, and measures the wind speed and wind direction, air temperature, relative humidity, and barometric pressure. An internal flux-gate compass is used to automatically orient the AIO Compact Weather Sensor wind direction data to magnetic North. This means that the sensor **DOES NOT** require any special alignment during deployment. Software access to the AIO Compact Weather Sensor processor is provided so that the magnetic declination can be entered to provide wind direction data referenced to True North, which is required by the CAMEO/ALOHA program. The range of the basic telemetry version system is about 1500 feet indoors and 6 - 7 miles line-of-sight (LOS) outdoors with the basic dipole antennas. The AIO fastens onto the "Quick Mount" which fits on a 3/4-inch IPS (1 inch OD) vertical pipe stub and is supplied with a 35-foot power and data interface cable.

For extended or long-term operations, a larger transit case including a higher capacity battery and a flexible solar panel charger is available as an option. This same option also extends the telemetry range of the system to approximately 20 miles LOS, by adding an 8 db gain Yagi directional antenna.



HAZMAT SYSTEM COMPONENTS

Climatronics' AIO Compact Weather Sensor, P/N 102780, is a second-generation weather sensor, which includes a number of new features now possible with improved sensor technology resulting from our commitment to product improvement. The AIO Compact Weather Sensor incorporates Climatronics' new and unique folded-path, low-power sonic anemometer, the Sonimeter™, with a temperature sensor, a fast-response, capacitive relative humidity sensor, a barometric pressure sensor, and a flux-gate compass to automatically orient the wind direction data to North. An on-board microprocessor controls the sensor and provides a serial ASCII output that is RS-232C compatible.

The AIO Compact Weather Sensor is designed for maximum durability, portability, and utility, making it uniquely applicable for rapid deployment and use by one person under adverse conditions.



**AIO COMPACT WEATHER SENSOR**

**SPECIFICATIONS**

**PERFORMANCE:**

<b>Wind Speed</b>	
Range	0-50 m/s (0-112 mph)
Accuracy *	±0.5 m/s (1.1 mph) or 5%
Resolution	0.1 m/s (0.1 mph)
<b>Wind Direction</b>	
Range	0-360°
Accuracy *	± 5° @ wind speed > 2.2m/s (5 mph)
Resolution	±1.0°
<b>Compass</b>	
Accuracy	±2°
<b>Temperature</b>	
Range	-50°C to +50°C (-58°F to 122°F)
Accuracy	±0.2°C (±0.4°F)(sensor element)
Resolution	±0.1°C
<b>Relative Humidity</b>	
Range	0 - 100 percent
Accuracy	±3 percent
Resolution	±1.0 percent
<b>Pressure</b>	
Range	600 - 1100 hPa
Accuracy	± 0.35 hPa @ 25°C
Resolution	±0.1 hPa

**ELECTRICAL:**

Power Requirements	10-18 Vdc @ 50 mA nominal 75 mA average, w/SS radio option
Signal Output	RS-232C Serial data, ALOHA compatible

**TELEMETRY:**

Frequency	902 – 928 MHz (2.4 – 2.4835 GHz)
Serial Data Interface	RS-232/422/485, switch selectable
Antenna	½- wave dipole whip (Yagi optional)
RF Baud Rate	9600 bps
Transmit Power Output	100 mW, (50 mW)
Certifications	
FCC Part 15.247	OUR9XSTREAM
Industry Canada	4214A-9XSTREAM

**ENVIRONMENTAL:**

Temperature	-40° to 60°C (-40° to 140°F)
Humidity	0-100%
Altitude	-100 to +10,000 ft MSL
<i>This accuracy is maintained when the sensor is within ± 10 degrees of vertical</i>	

**SHIPPING:   Basic   Wireless   Ext. Range**

Weight	20 Lbs	50 Lbs	75 Lbs
Volume	3 ft <sup>3</sup>	10 ft <sup>3</sup>	12 ft <sup>3</sup>

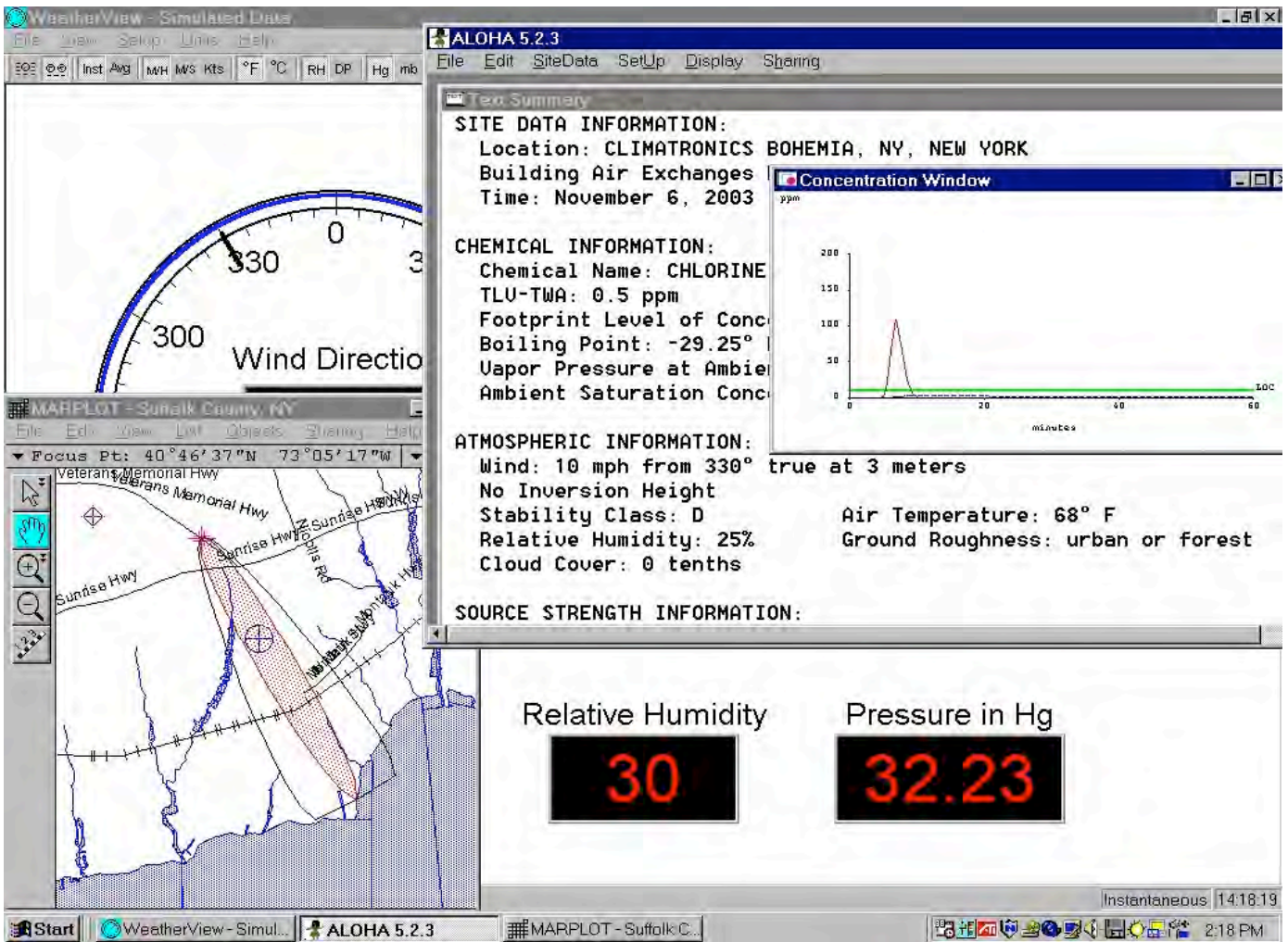
## HAND-HELD DATA DISPLAY (OPTIONAL)

The Hand-Held Data Display package is an option consisting of a personal digital assistant (PDA) housed in a waterproof, rugged case, serial interface cable and a desktop charging cradle. The PDA can either function as a supplementary display to the PC running your dispersion software or as a system-testing device for checking out the sensor and communications without the PC.

A display software package called AIOWeather is available for the PDA to allow you to operate the system as a general weather station.



## CLIMATRONICS' "AIOWEATHER" SOFTWARE



## CAMEO/ALOHA PROVIDES A REAL-TIME DISPLAY OF DISPERSION DATA ON YOUR PC



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