



# ALL-IN-ONE (AIO) WEATHER SENSOR

## FEATURES

- **All-In-One Measurement of Temperature, Relative Humidity, Wind Speed, Wind Direction, and Barometric Pressure**
- **Integrated Sonimometer™ Wind Sensor**
- **Automatic Wind Direction Alignment to Magnetic or True North**
- **Rugged, Reliable, Quick to Deploy**
- **All Metal Construction**
- **Weather Protected Multi-Sensor Design**
- **No Moving Parts**
- **Low Power Consumption**
- **Digital Output**
- **Proven Field-Use History**

The All-In-One (AIO) Weather Sensor, P/N 102780, is the next-generation weather instrument that measures temperature, relative humidity, wind speed, wind direction, and barometric pressure in a single compact, rugged unit.

This Sensor integrates a unique folded-path, low-power sonic anemometer, the Sonimometer™, with a multi-element temperature sensor, fast-response capacitive relative humidity sensor, state-of-the-art barometric pressure sensor and an internal flux-gate compass for automatic alignment of wind direction to magnetic north for quick deployment (true/magnetic North offset is adjustable by the user through software command). The result is a professional grade All-In-One Weather Sensor designed for reliability, longevity, and ease of installation.

The small footprint and power efficiency of the AIO Weather Sensor make it ideal for remote regions, urban environments, air quality networks, construction/remediation sites, and other network applications. The unit can be used in permanent (cooperative weather networks, schools, public information dissemination) or temporary (emergency response, audit, research program support) installations.



Designed for maximum portability and utility, the AIO Weather Sensor is uniquely applicable for rapid deployment and use by one person under all conditions. The unit may be mounted on a tripod or vehicle mast.

Data output is a serial, digital message that can be interfaced to most data logging systems. Software is provided for user interface. Options are offered for wireless communication.

The AIO Weather Sensor is supported by a number of accessories, including carrying cases, a compact quick deploy lightweight tripod, and external power options. Additional complete and custom packages are available for HAZMAT and air quality applications.

## SPECIFICATIONS

### PERFORMANCE

#### Wind Speed

Range	0 to 50 m/sec (0 to 112 mph)
Accuracy	$\pm 0.5$ m/s or 5% of reading <sup>1</sup>
Resolution	0.1 m/s

#### Wind Direction

Range	0° to 360°
Accuracy	$\pm 5^\circ$ @ wind speed > 2.2 m/s
Resolution	1.0°

#### Temperature

Range	-40°C to +50°C (-40°F to +122°F)
Accuracy	$\pm 0.2^\circ\text{C}$ <sup>2</sup>
Resolution	0.1°C

#### Relative Humidity

Range	0 to 100%
Accuracy	$\pm 3\%$
Resolution	1.0%

#### Pressure

Range	600 to 1100 hPa
Accuracy	$\pm 0.35$ hPa <sup>3</sup>
Resolution	0.1 hPa

#### Compass

Accuracy	$\pm 2^\circ$
Resolution	1°

#### Notes:

1. Whichever is greater
2. Sensor element
3. At constant temperature (25°C)

## STANDARD

- Quick Mount (P/N 102778) with 10 meter connecting cable
- Universal mounting bracket
- RS-232C, RS-485, SDI-12 communications configuration
- RS-232C to USB adapter and RS-232C cable
- +12 VDC power supply
- AIOWeather software for user interface (set parameter units, averaging time, log data, view current readings)

## OPTIONAL FEATURES AND ACCESSORIES

- MODBUS Protocol
- Wireless radio communications (internal spread spectrum transmitter)
- Support tripod
- Carrying case
- External battery
- Analog converter

### ELECTRICAL

Measurement Rate  
Signal Output

Output: 1 Hz  
RS-232C, RS-485, SDI-12  
(MODBUS protocol optional)  
8 to 36 VDC @ 25 mA nominal,  
option dependent

Power Requirements

### ENVIRONMENTAL

Temperature  
Humidity

-50°C to +70°C (-58°F to +158°F)  
0 to 100%

### PHYSICAL

Construction  
Weight  
Size

Aluminum and stainless steel  
0.91 kg (2.0 lbs)  
292.1 mm (11.5 in) high by  
101.6 mm (4.0 in) dia.

Mounting

Universal mounting bracket  
(standard) for use with horizontal  
or vertical 1 to 3 inch pipe  
Gloss white powder coat

Color

### SHIPPING

Weight

1.82 kg (4.0 lbs)