



**allweatherinc**

# Ultrasonic Wind Sensor Model 2040

## Overview

The AWI Model 2040 Ultrasonic Wind Sensor provides the best solution on the market for reliable, accurate and cost-effective wind speed and directional measurement. It combines the latest patented advances in ultrasonic technology together with AWI's years of experience as the recognized world leading supplier of all-weather sensors. The elimination of moving parts, together with a rugged stainless steel construction, means that AWI Ultrasonic Wind Sensor is virtually maintenance-free and requires no calibration on site. The heated head keeps the unit free from ice and snow, providing continuous use even in the most extreme weather conditions.

A new flexible design ensures that the AWI Ultrasonic Wind Sensor can be configured by the user to their exact requirements, which may include analog outputs, 10 Hz output, heating or sonic temperature.

The Windows™ based WindCom communications package allows the use to operate the anemometer in various modes, permitting the measurement of U & V vectors, or wind speed and direction. Communication is via an RS-422 bidirectional link, which allows several units to be networked together and data to be logged on demand. The AWI Ultrasonic Wind Sensor has been rigorously tested to internationally recognized standards and meets the stringent performance criteria specified by airport, marine, oil, production, meteorological and utility organizations around the world.

## Design

The Model 2040 Wind Sensor is a very robust, lightweight unit with no moving parts, outputting wind speed and direction. The units of wind speed, output rate, and format are all user selectable.

The Model 2040 is available with or without de-icing heating (recommended if icing is likely), and with or without analog outputs.

This wind sensor can also be used in conjunction with a PC, datalogger or other device, provided it is compatible with the RS-422 output or the analog outputs. Multiple units can be networked if required.

Alternatively, the Model 2040 is designed to connect directly to the AWI

- **Virtually Maintenance Free**
- **No On-Site Calibration**
- **Great Solution for Extreme Weather Conditions**
- **FAA Certified**



WindDisplay unit to provide a complete wind speed and direction system without any configuration required by the user.

The output message format can be configured in Polar, UV (2-axis), NMEA (0183 Version 3), Tunnel formats, and as either a Continuous output or Polled (requested by host system).

The Model 2040 may be configured using standard communications software on a PC.

The Model 2040 is Federal Aviation Administration (FAA) certified, meeting the most current regulatory requirements.

**SENSORS**

## SPECIFICATIONS

| MEASUREMENT             |                                                |
|-------------------------|------------------------------------------------|
| Output                  | 1, 2, 4, 5, 8, 10 Hz                           |
| Parameters              | UV, Polar, NMEA, Tunnel                        |
| Units                   | m/s, knots, mph, km/h, ft/min                  |
| Averaging               | Flexible 1-3600 seconds                        |
| WIND SPEED              |                                                |
| Range                   | 0 - 65 m/s (0 - 145 mph)                       |
| Accuracy                | ±2%                                            |
| Resolution              | 0.01 m/s                                       |
| Offset                  | ±0.01 m/s                                      |
| DIRECTION               |                                                |
| Range                   | 0 - 359°                                       |
| Dead Band Direction     | None                                           |
| Resolution              | 1°                                             |
| SONIC TEMPERATURE       |                                                |
| Range                   | -40°C to +70°C                                 |
| Starting Threshold      | 0.01 m/s                                       |
| DIGITAL OUTPUT          |                                                |
| Communication           | RS-422, full duplex                            |
| Baud Rates              | 1200, 2400, 4800, 9600, 19200, 38400           |
| Formats                 | 8 data bits; odd, eve, or no parity            |
| Anemometer Status       | Supplied as part of standard message           |
| OPTIONAL ANALOG OUTPUTS |                                                |
| Quantity-3              | Speed, direction, status, or sonic temperature |
| Scale                   | Multiples of ±10 m/s up to ±70 m/s max         |
| Type                    | ±2.5 V or 0-5 V                                |
| V(output) Resistance    | 60 Ω                                           |
| 4-20 mA Loading         | 10-300 Ω                                       |
| POWER REQUIREMENTS      |                                                |
| Anemometer Only         | 9-30 V DC(40 mA @ 12 V)                        |
| Heating Option          | 3 A @ 24 V AC/DC                               |
| ENVIRONMENTAL           |                                                |
| Operating Temp Range    | -55°C to +70°C                                 |
| Relative Humidity       | 5% to 100%                                     |
| Precipitation Tolerance | 300 mm/h                                       |
| Materials               | 316 stainless steel                            |
| Moisture Protection     | IP66 (NEMA4X)                                  |
| EMC                     | "EN 61000-6-2:2001<br>EN 61000-6-3:2001"       |

## ORDERING INFO

| Part Number | Description                           |
|-------------|---------------------------------------|
| 2040        | Ultrasonic Wind Sensor                |
| 2040H       | Ultrasonic Wind Sensor with Heat      |
| 2040HH      | Ultrasonic Wind Sensor with High Heat |
| M488270-01  | Corrosion Resistant Mounting Kit      |
| M488302-00  | Mounting Bracket - Pole Mounting      |

## DIMENSIONS & WEIGHTS

|        |                                     |
|--------|-------------------------------------|
| Size   | 15.94" x 8.27"<br>(405 mm x 210 mm) |
| Weight | 3.3 lb<br>(1.5 kg)                  |



All Weather Inc.

www.allweatherinc.com

Phone: 916-928-1000  
USA Toll Free: 800-824-5873  
Fax: 916-928-1165

Rev. D 05/2019