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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.



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

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 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, KPH, 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 EN 61000-6-3:2001"

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" (405 mm x 210 mm)
Weight	3.31 lbs (1.5 kg)

ORDERING INFO



allweatherinc www.allweatherinc.com

All Weather Inc.
1165 National Dr.
Sacramento, CA 95834

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

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