Ultrasonic Wind Sensor
Model 2040/2041 Series

AWI
allweatherinc
An ADB SAFEGATE Company

Overview

The AWI Model 2040/2041 series ultrasonic wind sensors are robust, lightweight, corrosion-resistant, and have no moving parts. They output wind speed and direction.The wind speed units, output rate and data formats are all user-selectable.

The wind sensors are available with or without de-icing heating (recommended when icing is likely).

The wind sensors can be used in conjunction with a PC, and integrate the raw data to a data logger for pre-processing and/or transmission to other devices, provided it is compatible with the RS-422 output. Multiple units can be networked as required.

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

The wind sensors are configured using standard communications software on a PC.

- **Virtually Maintenance Free**

- **No On-Site Calibration Needed**

- **Great Solution for Extreme Weather Conditions**

- **FAA Certified**

- **ICAO/WMO Compliant**

ORDERING INFO

The following Ultrasonic Wind Sensor models are available. Models with a cable have the specified cable length attached through a gland to the electronics in the wind sensor. Select a cable from the Accessories for models with a connector; cable lengths from 10 to 30 m are available. Connectorized versions allow for replacement of the wind sensor without having to reinstall a new wind sensor and cable.

Model	Description	Cable	Connector	Unheated	Heated	High Heat
2040	With 10 m cable	10 m		X		
2040C	With connector		X	X		
2040H	Heated, with 10 m cable	10 m			X	
2040HC	Heated, with connector		X		X	
2040HH	High Heat, with 10 m cable	10 m				X
2040HHC	High Heat, with connector		X			X
2040L	With 15 m cable	15 m		X		
2040HL	Heated, with 15 m cable	15 m			X	
2041C	Wind speed to 75 m/s, w/ connector		X			
2041HH	Wind speed to 75 m/s, w/ cable	10 m				X

SENSORS

SPECIFICATIONS

Measurement	
Output Frequency	1, 2, 4, 5, 8, 10 Hz
Output Interval	100, 125, 200, 250, 500, 1000 ms
Parameters	UV, Polar, NMEA, Tunnel
Units	m/s, knots, mph, km/h, ft/min
Averaging	Flexible 1–3600 seconds
Threshold	0.01 m/s

Wind Speed		
Range	2040, 2040C, 2040H, 2040HC, 2040L, 2040HL	0 – 65 m/s (0 – 145 mph)
	2040HH, 2040HHC	0 – 70 m/s (0 – 156 mph)
	2041C, 2041HH	0 – 75 m/s (0 – 168 mph)
Accuracy		±2%
Resolution		0.01 m/s
Offset		±0.01 m/s

Direction	
Range	0 – 360°
Dead Band Direction	None
Accuracy	±2°
Resolution	1° standard (0.01°optional)

Digital Output	
Communication	RS-422, full duplex
Baud Rates	1200, 2400, 4800, 9600, 19200, 38400
Formats	8 data bits; odd, even, or no parity
Sensor Status	Supplied as part of standard message

Optional Analog Outputs	
Quantity—3	Speed, direction, status
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		
Sensor Only		9–30 V DC(40 mA @ 12 V)
Heating Option	2040H, 2040HC	3 A @ 24 V AC/DC
	2040HH, 2040HHC	7 A @ 24 V AC/DC

Environmental	
Operating Temp Range	-55°C to +70°C
Relative Humidity	0% to 100%
Precipitation Tolerance	300 mm/h
Materials	316 stainless steel
Moisture Protection	IP66 (NEMA 4X)
EMC	EN 61000-6-2:2001, EN 61000-6-3:2001

ACCESSORIES

Part Number	Description
M493080-00*	30 m (100 ft) cable for wind sensors with connectors
M493104-00*	20 m (70 ft) cable for wind sensors with connectors
M493081-00*	10 m (35 ft) cable for wind sensors with connectors
M105548-00	Zero Wind Chamber for Maintenance
M488623-00	2040/2041 Universal Mounting Kit
M488270-01	Corrosion-Resistant Mounting Kit
M488302-00	Mounting Bracket for Pole Mounting

* Select one of these cables for "connectorized" wind sensors (sensors with "C" in the Model number)

DIMENSIONS & WEIGHTS

Size	2040, 2040H	405 × 210 mm (15.94" x 8.27")
	2040HH	426 × 213 mm (16.77" x 8.39")
	2041HH	438 × 213 mm (17.25" x 8.39")
	2040L, 2040HL	446 × 213 mm (17.56" x 8.39")
	2040C.2040HC, 2040HHC, 2041C	489 × 213 mm (18.68" x 8.39")
Nominal Weight (wind sensor without cable)		1.4 kg (3.1 lb)