

HD52.3D...



HD52.3D 2 AXES ULTRASONIC ANEMOMETERS

2 axes ultrasonic Anemometers series HD 52.3D...

The instruments of the series HD52.3D... are 2 axes ultrasonic static anemometers for measuring:

- Wind speed and direction, U-V Cartesian components of wind speed,
- Wind Gust - Measurement available only with MODBUS-RTU and SDI-12 protocols
- Relative Humidity and Temperature (optional, code '17'),
- Diffuse Solar Radiation (optional, code 'P'),
- Barometric pressure (optional, code '4').

All models are equipped with compass.

The average of wind speed and direction over a period configurable up to 10 minutes is calculated.

RS232, RS485, RS422 and SDI-12 serial interfaces are available with NMEA, MODBUS-RTU and SDI-12 communication protocols.

All versions have two analogical outputs, both for wind speed and for direction, factory configurable among 4±20mA (standard), 0÷1V, 0÷5V, 0÷10V (to be specified when ordering).

Optionally available, (ACCREDIA) ILAC-MRA traceable factory calibration.

Advantages:

- the absence of moving parts minimizes maintenance;
- high sensitivity for detecting very low speeds, which are not detectable by traditional methods;
- the low power of the instrument allows installation in remote sites, with power from solar panel and battery;
- the heating option 'R' prevents the accumulation of snow and ice from forming, allowing accurate measurements in all environmental conditions;

- fast and easy installation (on 40mm diameter pole, optional installation kit HD2004.20), alignment facilitated by built-in compass;
- the available measurement options join together in one single, compact and lightweight instrument, the main variables of interest in weather stations;
- MODBUS-RTU output allows instrument networking.

Typical applications:

- Weather stations
- Environmental monitoring
- Agriculture
- Sports facility
- Marine and Harbour applications
- Airports
- HVAC
- Construction
- Renewable energy
- Building automation

Technical specifications:

Wind speed	
Employed sensor type	Ultrasonic
Measuring Range	0...60 m/s
Resolution	0.01 m/s
Accuracy	± 0,2 m/s or ± 2% the greatest (0...35 m/s), ± 3% (> 35 m/s)
Wind direction	
Employed sensor type	Ultrasonic
Measuring Range	0...360°
Resolution	0.1°
Accuracy	± 2° RMSE from 1.0 m/s
Compass	
Employed sensor type	Magnetic
Measuring Range	0...360°
Resolution	0.1°
Accuracy	± 1°
Air temperature (option 17 is requested)	
Employed sensor type	Pt100
Measuring Range	-40...+60 °C
Resolution	0.1 °C
Accuracy	± 0,15°C ± 0,1% of the measure
Relative Humidity (option 17 is requested)	
Employed sensor type	Capacitive
Measuring Range	0...100%RH
Resolution	0.1%
Accuracy (@ T = 15...35 °C)	± 1,5%UR (0..90%RH), ± 2%RH (remaining field)
Accuracy (@ T = -40...+60 °C)	± (1,5 + 1,5% of the measure)%RH
Barometric Pressure (option 4 is requested)	
Principle	Piezoresistive
Measuring Range	300...1100 hPa
Resolution	0.1 hPa
Accuracy	± 0,5 hPa @ 20°C
Solar Radiation (option P is requested)	
Employed sensor type	Thermopile
Measuring Range	0...2000 W/m²
Resolution	1 W/m²
Accuracy	2 nd class Pyranometer
General features	
Power supply	10...30 Vdc
Power Consumption	26mA @ 12Vdc without heater, 6W with heater
Serial Outputs	RS232, RS485, RS422 and SDI-12
Communication Protocols	NMEA, MODBUS-RTU, SDI-12, proprietary RS232 and RS485
Analog Outputs	2 analog outputs for wind speed and direction. Output type to be specified when ordering among 4...20mA (standard), 0...1V, 0...5V and 0...10V (option 0...10V requires power supply 15...30Vdc)

Wind speed averaging interval	Configurable from 1 s to 10 min
Electrical connection	male connector M23 19 poles
Working temperature	-40...+60 °C
Dimensions	H=179mm, Ø=150mm (HD52.3D, HD52.3D4) H=200mm, Ø=150mm (HD52.3DP, HD52.3DP4) H=336mm, Ø=150mm (HD52.3D17, HD52.3D147) H=357mm, Ø=150mm (HD52.3DP17, HD52.3DP147)
Weight	about 1 Kg (full version, HD52.3DP147)
Housing	Plastic material Metallic parts made of AISI 316
Protection degree	IP66

ORDERING CODES:

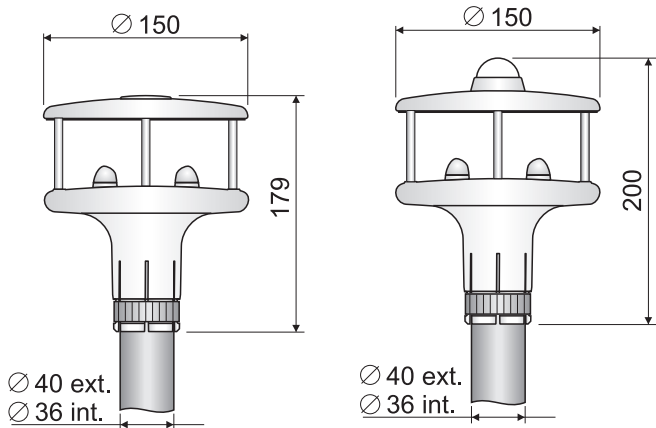
HD 52.3D		R = heater option Blank = not heated
		P = solar radiation option (pyranometer) 4 = barometric pressure option 17 = relative humidity and temperature option P4 = solar radiation and barometric pressure option P17 = solar radiation, relative humidity and temperature option 147 = barometric pressure, relative humidity and temperature option P147 = solar radiation, barometric pressure, relative humidity and temperature option No characters = basic version: wind speed and direction

Analog outputs for wind speed and direction: 4...20mA standard; to be requested: 0...1V, 0...5V or 0...10V (0...10V option requires power supply 15...30Vdc).

HD52.3D...: 2 axes ultrasonic static anemometers for the measure of wind speed and direction, U-V Cartesian components of wind speed, wind gust, relative humidity and temperature (optional), diffuse solar radiation (optional) and barometric pressure (optional). A compass is supplied. RS232, RS485, RS422 and SDI-12 serial outputs, NMEA, MODBUS-RTU and SDI-12 communication protocols. Two analogical outputs, for wind speed and direction, factory configurable among 4÷20mA (standard), 0÷1V, 0÷5V or 0÷10V (to be specified when ordering). Heater option is available. Power supply: 10...30Vdc (15...30Vdc for 0÷10V analog outputs). Installation on a pole: external Ø 40mm and internal Ø 36mm. Input with M23 19-pin male connector and M23 19-pin female flying connector. It includes HD52.3D-S software, downloadable from Delta OHM website. On request, 5 m, 10 m, 15 m or 20 m CP52... cable with M23 connector on one end and open wires on the other.

HD52.3DAC: Version of the HD52.3D anemometer with only RS232 serial output for the configuration and two 4÷20 mA analog outputs for wind speed and direction. 8-pole M12 connector. Available with heating option. It includes HD52.3D-S software downloadable from Delta OHM website. Supplied with: female 8-pole M12 movable connector and operating manual. On request, 5 m, 10 m or 20 m CPM12AA8... cable with M12 connector on one end and open wires on the other.

HD52.3DAF: Version of the HD52.3D anemometer with two analog outputs: one frequency output, to simulate a cup anemometer, and one potentiometric output, to simulate a vane wind direction sensor. 8-pole M12 connector. Available with heating option. Supplied with: female 8-pole M12 movable connector and operating manual. On request, 5 m, 10 m or 20 m CPM12AA8... cable with M12 connector on one end and open wires on the other.



HD 52.3D

Wind speed and direction.

HD 52.3D4

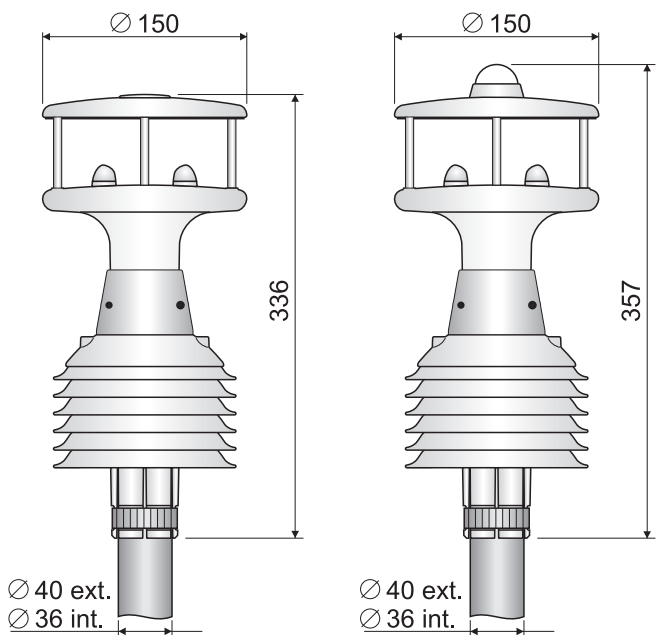
Wind speed, wind direction and barometric pressure.

HD 52.3DP

Wind speed, wind direction and solar radiation.

HD 52.3DP4

Wind speed, wind direction, solar radiation and barometric pressure.



HD52.3D17

Wind speed, wind direction, temperature and relative humidity.

HD52.3D147

Wind speed, wind direction, temperature, relative humidity and barometric pressure.

HD52.3DP17

Wind speed and direction, solar radiation, temperature, relative humidity.

HD52.3DP147

Wind speed, wind direction, solar radiation, temperature, relative humidity and barometric pressure.



HD52.3DP17
HD52.3DP147

HD52.3D
HD52.3D4