

## HD51.3D

Available outputs:

- RS232, RS485 and RS422 isolated serial outputs with NMEA and MODBUS-RTU standard protocols and ASCII proprietary protocol.
- Two analog outputs, for wind speed and direction or for velocity U-V cartesian components, which are factory-configurable within  $4 \pm 20$  mA (standard),  $0 \pm 1$  V,  $0 \pm 5$  V or  $0 \pm 10$  V (to be specified when ordering).

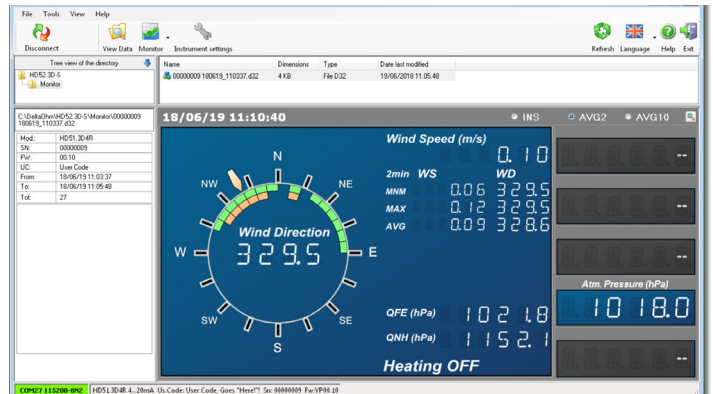
Mounting on  $\varnothing$  40 mm mast. The electric connection is performed through the M23 connector situated at the bottom of the instrument. Power supply of the instrument (excluding heater) 12...30 Vdc. Power supply of the heater 24 Vdc. All instrument sensors are factory-calibrated and do not require additional interventions of the user (field calibration is not required). The absence of moving parts minimizes the instrument maintenance.

Main applications:

- Wind farms monitoring
- Remote weather stations
- Buildings, constructions and bridges control
- Ports, airports and heliports
- Road and railway tunnels

PC application software

The PC software HD52.3D-S allows configuring the instrument, viewing the real time measurements both graphically and numerically, managing graphical presentation, printing and export in Excel® format of the data acquired with the Monitor function.



HD52.3D -S software: viewing the real time measurements

HD51.3D4R-AL



HD51.3D4R



## HD51.3D TWO AXES ULTRASONIC ANEMOMETERS

HD51.3D4R e HD51.3D4R-AL are 2 axes ultrasonic static anemometers with integrated heater. The heater prevents the accumulation of snow and ice formation, allowing accurate measurements in all environmental conditions.

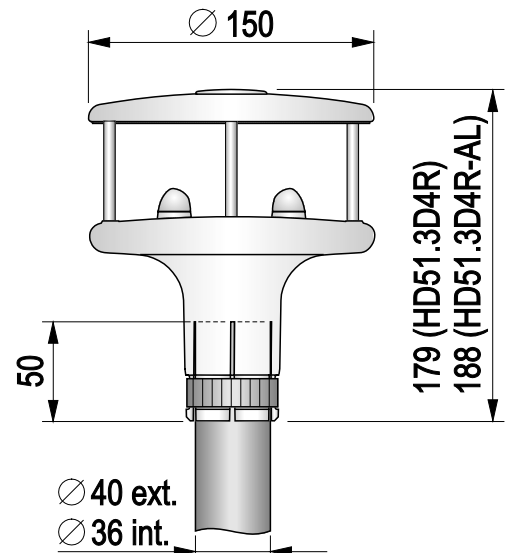
HD51.3D4R-AL is equipped with an enhanced heater, for rapid defrosting, and an anodized aluminum alloy housing with anti-corrosion coating that makes it possible to use the instrument even in a particularly aggressive atmosphere (e.g., marine environment).

The anemometer satisfies the requirements of the MIL-STD-810G Method 509.6 standard (salt fog anti-corrosion test). The high immunity to electromagnetic disturbances makes the anemometer suitable for measurements in electrically noisy environments (e.g., industrial environments, wind farms, etc.).

The anemometers measure:

- Wind speed up to 80 m/s (HD51.3D4R-AL) or 85 m/s (HD51.3D4R).
- Wind direction.
- Wind Gust.
- Atmospheric pressure (with internal sensor).

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



	HD51.3D4R	HD51.3D4R-AL
<b>Wind speed</b>		
Used sensor	Ultrasounds	
Measuring range	0...85 m/s	0...80 m/s
Resolution	0.01 m/s	
Accuracy	± 0.2 m/s or ± 2%, the greatest (0...60 m/s), ± 3% (> 60 m/s)	
<b>Wind direction</b>		
Used sensor	Ultrasounds	
Measuring range	0...359.9°. In order to avoid oscillations of the analog output around 0°, the extended range 0...539.9° can be set.	
Resolution	0.1°	
Accuracy	± 2° RMSE (wind speed > 2 m/s)	
<b>Atmospheric Pressure</b>		
Used sensor	Piezoresistive	
Measuring range	300...1100 hPa	
Resolution	0.1 hPa	
Accuracy	± 0.5 hPa @ 20 °C	
<b>General features</b>		
Instrument power supply (excluding heater)	12...30 Vdc	
Heater power supply	24 Vdc ± 10%	
Instrument power consumption (excluding heater)	60 mA @ 24 Vdc	
Heater power consumption	15 W @ 24 Vdc	80 W @ 24 Vdc
Serial outputs	Isolated RS232, RS485 and RS422	
Communication protocols	NMEA, MODBUS-RTU, ASCII proprietary	
Analog outputs	2 analog outputs, for wind speed and direction or for velocity U-V cartesian components. Output at choice among 4...20 mA (standard, max. load 500 Ω), 0...1 V, 0...5 V and 0...10 V. The outputs are isolated from the power supply.	
Measurement interval	From 250 ms to 1 s	
Wind speed average interval	Configurable from 1 s to 10 min	
Wind Gust calculation interval	Configurable from 1 s to 10 min	
Electrical connection	19-pole M23 male connector	
Operating temperature	-40...+60 °C	
Protection degree	IP 66	
Anti-corrosion test	According to MIL-STD-810G Method 509.6 (48 hours of exposure + 48 hours of drying)	
Survival speed	90 m/s	100 m/s
Weight	640 g approx.	1.4 kg approx.
Housing	ASA with aluminum and AISI 316 metal parts	Anodized aluminum alloy and AISI 316
Installation	on mast Ø40 mm external and Ø36 mm internal	

## ORDERING CODES:

**HD51.3D4R:** 2-axis ultrasonic static anemometer. Measurement of wind speed and direction, U-V Cartesian components of wind speed, Wind Gust and barometric pressure. Isolated RS232, RS485, and RS422 serial outputs. NMEA, MODBUS-RTU and ASCII proprietary communication protocols. Two analog outputs for wind speed and direction, factory-configurable within 4÷20 mA (standard), 0...1 V, 0...5 V or 0...10 V (to be specified when ordering). Equipped with heater. Operating temperature -40...+60 °C. Instrument power supply 12...30 Vdc. Heater power supply 24 Vdc. Housing in ASA. Installation on mast Ø 40 mm external and Ø 36 mm internal. Input with 19-pole M23 male connector and 19-pole M23 female free connector. The **HD52.3D-S software**, for instrument configuration and monitor, downloadable from Delta OHM website is included. CP51... cable on request.

**HD51.3D4R-AL:** 2-axis ultrasonic static anemometer. Measurement of wind speed and direction, U-V Cartesian components of wind speed, Wind Gust and baro-metric pressure. Isolated RS232, RS485, and RS422 serial outputs. NMEA, MODBUS-RTU and ASCII proprietary communication protocols. Two analog outputs for wind speed and direction, factory-configurable within 4÷20 mA (standard), 0...1 V, 0...5 V or 0...10 V (to be specified when ordering). Equipped with an enhanced heater for rapid defrosting. Operating temperature -40...+60 °C. Instrument power supply 12...30 Vdc. Heater power supply 24 Vdc. Housing in anodized aluminum alloy. Installation on mast Ø 40 mm external and Ø 36 mm internal. Input with 19-pole M23 male connector and 19-pole M23 female free connector. The **HD52.3D-S software**, for instrument configuration and monitor, downloadable from Delta OHM website is included. CP51... cable on request.

## ACCESSORIES:

**CP51.x:** Connecting cable with 19-pole M23 female free connector on one end, open wires on the other. Available lengths: 5 m (**CP51.5**), 10 m (**CP51.10**), 15 m (**CP51.15**), 20 m (**CP51.20**), 30 m (**CP51.30**), 50 m (**CP51.50**) and 75 m (**CP51.75**).

**RS51K:** Kit for connecting the anemometer RS485 auxiliary output to a PC. It includes the SWD10 power supply and the RS485/USB adapter with:

- o screw terminals for the connection to the CP51... cable (not included);
- o USB connector for the connection to the PC;
- o jack connector for connecting the SWD10 power supply.

**HD52.30K:** Birds spikes.

**HD2005.20:** Tripod with adjustable legs for installing environmental sensors. Material: anodized aluminum. Max. height 2 m. It can be fixed on a flat base with screws or to the ground with pegs. Foldable legs for the transport.

**HD2005.20.1:** Tripod with adjustable legs for installing environmental sensors. Material: anodized aluminum. Max. height 3 m. It can be fixed on a flat base with screws or to the ground with pegs. Foldable legs for the transport.

