HD 52.3D...

HD 52.3D...
2 AXES ULTRASONIC ANEMOMETER

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,
- Relative Humidity and Temperature **(option, code "17"),**
- Diffuse Solar Radiation **(option, code "P"),**
- Barometric pressure **(option, code "4").**

All models are equipped with compass.
RS232, RS485 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**).
The **heater** option prevents the accumulation of snow and ice from forming, allowing accurate measurements in all environmental conditions.
Optionally available, **ILAC-MRA (ACCREDIA)** 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.

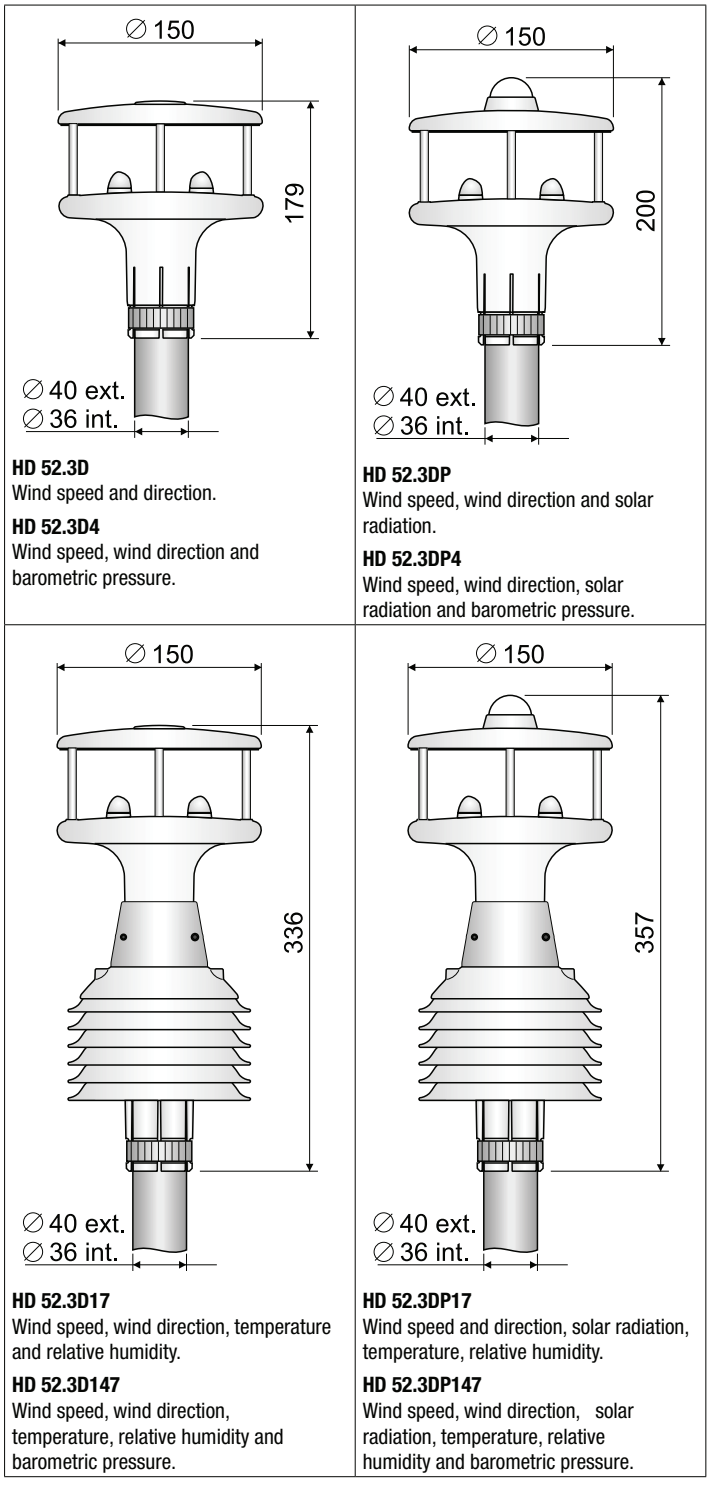
Typical applications:

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

Technical specifications:

Wind speed	
Employed sensor type	Ultrasonic
Measuring Range	0…60 m/s
Resolution	0.01 m/s
Accuracy	Whichever is greater ± 0,3 m/s or ± 2%, (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	600…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/m^2
Resolution	1 W/m^2
Accuracy	2nd 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
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**)
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: LURAN®S (ASA) Metallic parts made of AISI 316
Protection degree	IP66

DIMENSIONS (mm)



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.

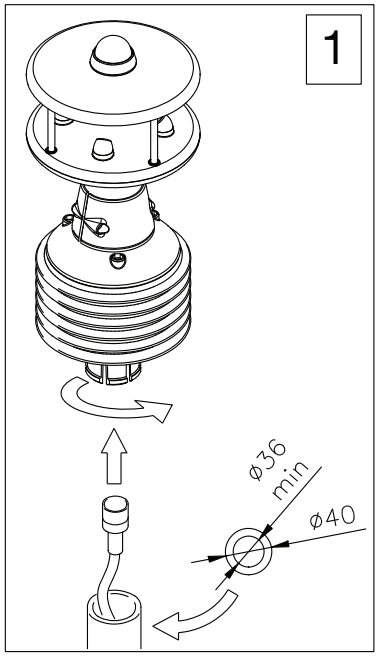
HD 52.3DP4
Wind speed, wind direction, solar radiation and barometric pressure.

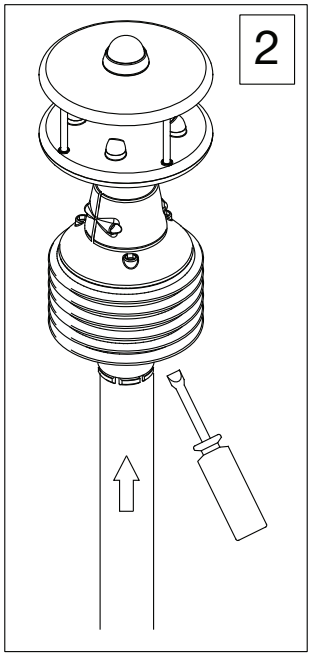
HD 52.3D17
Wind speed, wind direction, temperature and relative humidity.

HD 52.3D147
Wind speed, wind direction, temperature, relative humidity and barometric pressure.

HD 52.3DP17
Wind speed and direction, solar radiation, temperature, relative humidity.

HD 52.3DP147
Wind speed, wind direction, solar radiation, temperature, relative humidity and barometric pressure.





PURCHASING 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 15…30Vdc**).

HD 2004.20

HD52.3D…: 2 axes ultrasonic static anemometers for the measure of wind speed and direction, U-V Cartesian components of wind speed, relative humidity and temperature (**optional**), diffuse solar radiation (**optional**) and barometric pressure (**optional**). A compass is supplied. RS232, RS485 and SDI-12 serial outputs, **NMEA**, **MODBUS-RTU** and **SDI-12** communication protocols. Two analogical outputs, for wind speed and direction, factory 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 Ø40mm and internal Ø36mm. Input with M2319-pin male connector and M23 19-pin steering female connector. **Optional 5m or 10m cable with a connector on one side and open wires on the other.**

ACCESSORIES

CP52.5: Connection cable with M23 19-pin steering female connector on one side, free wires on the other. 5m long.

CP52.10: Connection cable with M23 19-pin steering female connector on one side, free wires on the other. 10m long.

CP52.C: Further M23 19-pin steering female connector.

HD2004.20: Tripod kit for installing anemometers on a flat base. Height 3m.

HD2004.22: 1200x530x34mm Solar panel mounting kit to a Ø40÷50mm pole. AISI 304 stainless steel.

HD2004.30: 80W monocrystalline solar pannel. Dimensions 1200 x 530 x 34 mm. Model MD5000080 – CS EVOLUTION.

HD32.35: Outdoor housing complete with acquisition system for weather stations. **Material: AISI 304 stainless steel**. Screen to protect the housing from solar radiation. Powder-coated white. Double locking one of which is a key. Dimensions 450 x 300 x 210 mm. Degree of protection IP66. Supplied with accessories for attachment to the pole diameter 36 ÷ 52 mm. Provided for 100 ÷ 240Vac mains power supply, includes: HD32MT.1 datalogger, AC/DC power supply unit with integrated battery charger, 12V rechargeable backup battery, surge protectors, disconnectors, terminal block for power supply distribution and connectors for connecting the external sensors. **Wired and tested.**

HD32.35FP: Outdoor housing complete with acquisition system for weather stations. **Material: AISI 304 stainless steel**. Screen to protect the housing from solar radiation. Powder-coated white. Double locking one of which is a key. Dimensions 450 x 300 x 210 mm. Degree of protection IP66. Supplied with accessories for attachment to the pole diameter 36 ÷ 52 mm. Provided for power supply from solar panel, includes: HD32MT.1 datalogger, solar charge controller, terminal block for power supply distribution and connectors for connecting the external sensors. **Wired and tested.**

HD32.36: Outdoor housing complete with acquisition system for weather stations. **Material: Polyester with fiberglass-reinforced hot-pressed**. Screen to protect the housing from solar radiation, powder-coated anodized aluminum. White. Key lock. Dimensions 415 x 310 x 170 mm. Degree of protection IP66. Supplied with accessories for attachment to the stainless steel pole diameter 36 ÷ 52 mm. Provided for 100 ÷ 240Vac mains power supply, includes: HD32MT.1 datalogger, AC/DC power supply unit with integrated battery charger, 12V rechargeable backup battery, surge protectors, disconnectors, terminal block for power supply distribution and connectors for connecting the external sensors. **Wired and tested.**

HD32.36FP: Outdoor housing complete with acquisition system for weather stations. **Material: Polyester with fiberglass-reinforced hot-pressed**. Screen to protect the housing from solar radiation, powder-coated anodized aluminum. White. Key lock. Dimensions 415 x 310 x 170 mm. Degree of protection IP66. Supplied with accessories for attachment to the stainless steel pole diameter 36 ÷ 52 mm. Provided for power supply from solar panel, includes: HD32MT.1 datalogger, solar charge controller, terminal block for power supply distribution and connectors for connecting the external sensors. **Wired and tested.**

HD 52.3D
HD 52.3D4

HD 52.3DP
HD 52.3DP4

HD 52.3D17
HD 52.3D147

HD 52.3DP17
HD 52.3DP147