2-Axis Ultrasonic Anemometer

HD53LS... SERIES - ULTRASONIC ANEMOMETER FOR LOW-SPEED WIND MEASUREMENT

INTRODUCTION

The **HD53LS** series is a 2-axis ultrasonic static anemometer for measuring wind speed and direction and U-V Cartesian wind speed components. The HD53LS.S version also provides Wind Gust measurement via RS485 Modbus-RTU.
Thanks to its static ultrasonic technology, the HD53LS is particularly suitable for **low wind speed measurement and for applications requiring reliable performance over time**.
It is an ideal solution for weather stations, environmental monitoring, agriculture, sports facilities, marine and harbour applications, airports, HVAC, construction, renewable energy, and building automation.

FEATURES

Ultrasonic Static Technology
Accurate wind measurement based on ultrasonic sensing, with no mechanical wear.

High Sensitivity
Reliable detection of very low wind speeds, beyond the limits of traditional mechanical solutions.

Low Maintenance Design
The absence of moving parts minimizes servicing needs and improves long-term durability.

Integrated Compass
Built-in magnetic compass for wind direction reference and simplified installation.

Flexible Outputs
Available with analog outputs or RS485 Modbus-RTU communication to suit both standalone and networked systems.

Low Power Consumption
Suitable for remote installations, including systems powered by solar panel and battery.

Easy installation
Fast mounting on a mast, with optional accessories available for field deployment.

CONFIGURATION & MEASUREMENT

Output Versions
The HD53LS.A version provides two factory-configurable analog outputs for wind speed and wind direction: 4...20 mA (standard), 0...1 V, 0...5 V, or 0...10 V.
The HD53LS.S version features RS485 Modbus-RTU output and supports Wind Gust measurement.

Configurable Averaging
Average wind speed and direction can be calculated over a configurable interval of up to 10 minutes.

Software & Calibration
Dedicated PC software allows instrument configuration and real-time data display.
An ISO17025 calibration is available as an option.

HIGH SENSITIVITY AT LOW SPEED
Reliable detection of very low wind speeds.

NO MOVING PARTS
Reduced maintenance and long-term reliability.

LOW POWER CONSUMPTION
Suitable for remote and solar-powered installations.

FLEXIBLE OUTPUT OPTIONS
Analog outputs or RS485 Modbus-RTU communication.

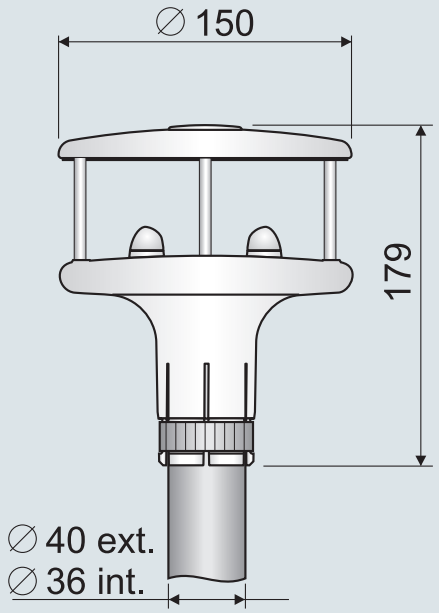
INTEGRATED COMPASS
Built-in magnetic compass for direction reference.

FACTORY CALIBRATED
Ready to use, with optional traceable calibration.

Measurement specifications

Wind speed	Sensor	Ultrasound
	Measuring range	0...50 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	Sensor	Ultrasound
	Measuring range	0...359.9°
	Resolution	0.1°
	Accuracy	± 2° RMSE from 1.0 m/s
Compass	Sensor	Magnetic
	Measuring range	0...360°
	Resolution	0.1°
	Accuracy	± 1°

Dimensions



Ordering codes

HD53LS .

Output
A = 4...20 mA
V = 0...10 V
V1 = 0...1 V
V5 = 0...5 V
S = RS485 Modbus-RTU

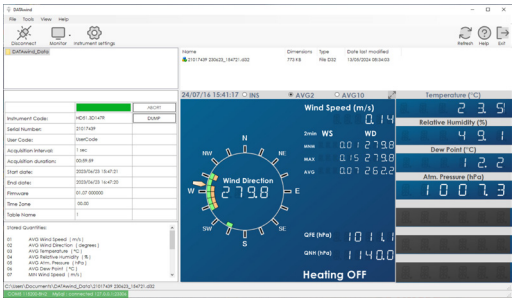
Bird spike
Blank = without bird spike
K = with bird spike

Cables have to be ordered separately.

General specifications

Power supply	10...30 Vdc (15...30 Vdc for version with 0...10 V analog output)
Power consumption	26 mA @ 24 Vdc
Analog outputs	2 analog outputs, for wind speed and direction. Analog output type can be 4...20 mA, 0...1 V, 0...5 V or 0...10 V depending on the model. Analog output refresh rate 1 Hz.
Digital output	RS485 Modbus-RTU (only in HD53LS.S)
Wind speed averaging interval	Configurable from 1 s to 10 min
Electrical connection	M23 male connector
Operating temperature	-20...+55 °C
Survival speed	90 m/s
Protection degree	IP66
Weight	640 g approx.
Case	ASA. Metal parts: AISI 316

PC application software



The PC software DataWind 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.

vs1.0

Senseca Italy Srl
Via G. Marconi, 5 - Selvazzano Dentro (PD) - Italy
www.environemental.senseca.com
sales.padua@senseca.com