WIND SPEED AND DIRECTION (Ultrasonic)

Ultrasonic anemometers



- World Meteorological Organization (WMO) compliant accuracy characteristics
- Wide range of output signals: local analog and digital, remote LTE-M modem (with eSIM) or LoRa radio
- In house accredited ISO17025 laboratory

Sensors with no moving parts, ideal for weather applications that require low maintenance and fast response even in very low wind speed conditions. According to the model, the TTM family of sensors allows a wide configurability of outputs and communication modes, both local and remote. The ability to communicate via LTE-M modem with integrated e-SIM allows you to obtain a measurement point independent of the connection to a data logger.

Technical features

PN	TTMVDA00	TTMVDS00	TTMVDI00	TTMVDL00*
Output	2 x 4... 20 mA / 2 x 1 V (galvanically isolated)	RS-485 / RS-232/ SDI-12 (galvanically isolated)	Modem LTE-m (eSIM)	LoRa Radio
Type	Sonic 2-axis (U-V)			
Measurements	Wind speed and direction	• Wind speed and direction • Wind gust • Turbulence • % Wind calm • Theoretical wind speed at 2 m • Wind chill		
Material	ASA			
Heating	YES			
Sensor power supply	9… 30 V DC			
Heating power supply	24 V AC/DC			
Dimensions	175 x 107 mm			
Weight	0.85 kg			
Mounting	On pole Ø 35...50 mm (accessory included)			
Cable	Not included CCCFA6***			
Operating temperature	-40… 60 °C			
IP grade	IP66			
Connector	M16			

**Model available from June 2027*

Technical features

PN		TTMVDA00 TTMVDS00 TTMVDI00 TTMVDL00*
Wind speed	Measurement range	0… 70 m/s
	Accuracy	<35 m/s: 0.3 m/s (or 3%); >35 m/s: 5%
	Threshold	0.03 m/s
	Resolution	0.01 m/s
	Response time	250 ms
Wind direction	Measurement range	0...360°
	Accuracy	1%
	Threshold	0.3 m/s
	Resolution	0.01°
	Speed threshold for wind direction calculation	Programmable, default 0.1 m/s
	Response time	250 ms

**Model available from June 2027*

Accessories

	CCCFA6300	Cable L=5 m for anemometers TTMVD*00
	CCCFA6400	Cable L=10 m for anemometers TTMVD*00
	CCCFA6500	Cable L=25 m for anemometers TTMVD*00
	CCCFA6600	Cable L=50 m for anemometers TTMVD*00
	SVICA2203	Calibration report according to ISO 9001 (Wind speed)
	SVICA2304.1	Calibration report according to ISO 9001 (Wind direction)
	SVACA2216	Calibration certificate in accordance with ISO/IEC 17025-ACCREDIA (Wind speed)

WIND SPEED AND DIRECTION (Ultra-sonic)

Ultrasonic anemometers



- Wide range of signal outputs 4...20 mA, RS232/485 Modbus
- No moving parts
- Fast response time and low measurement threshold
- Very-high speed wind measurement (0...85 m/s) using DNB105.2-105.3 models
- Anemometer wind magnetic compass (DNB105.2)
- Low-cost compact versions option (DNB205-205.2)
- In-house IS/IEC O17025 calibration laboratory

Ideal sensors for general meteorological applications that require no moving parts for low-maintenance or measurements with fast response even in very low-range wind speed conditions. Model DNB205 (serial output) is a compact size sensor very suitable in lite weather stations. DNB305-305.1 (serial output) are made of aluminum and have very good performances. DNB306-306.1 models have 4...20 mA outputs. DNB105.3 model is made for high-speed range up to 85 m/s, it comes with 4...20 mA and RS485-RS232 output.

Technical Specifications

PN	DNB205 DNB205.2	DNB205.1	DNB305 DNB305.2	DNB305.1	DNB306	DNB306.1	DNB105.2 DNB105.3
							
Output	DNB205-205.1-305-305.1: RS485 DNB205.2-305.2: RS232				2x4...20 mA		2x4...20 mA 2xRS485-RS232
Type	Sonic 2-Axis (U-V)						
Measurements	Wind speed and Wind direction						
Compass	NO		NO		NO		YES (DNB105.2)
Material	Luran		Aluminum		Aluminum		Aluminum
Heater	NO	YES	NO	YES	NO	YES	NO
Protocol	Modbus-RTU		Modbus-RTU		-	-	Modbus-RTU
Power supply	12...30 V DC						
Power supply (heater)	-	24V DC @ 10 A	-	24V DC @ 10 A	-	24V DC @ 10 A	-
Consumption @ 12V DC	11 mA		11 mA	25 mA	12 mA		25 mA

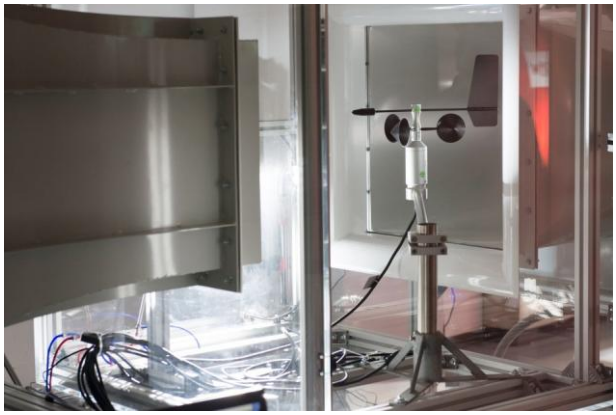
PN	DNB205 DNB205.1 DNB205.2	DNB305 DNB305.1 DNB305.2	DNB306 DNB306.1	DNB105.2 DNB105.3
Dimensions	110x126 mm	180x160 mm	180x160 mm	179x150 mm
Weight	0.5 kg	1 kg	1 kg	640 gr
Mounting	On Ø 35...50 mm pole (support include)			On pole Ø 40 mm On pole Ø 50 mm (DNB191 adapter not included)
Cable	Not included DWA8xx			Not included DWA8xx.1
Operative Temperature	-40...60 °C (in the event of ice formation, snow/snowfall use the heated versions)			
Protection	IP66			
Connector	10-pins (MG2267)			12-pins (MG2272)
Data logger compatibility	Versions with RS232, 4...20 mA outputs: E-Log, Alpha-Log with ALIEM module Versions with RS485 output: Alpha-Log			

Technical Specifications

PN		DNB205 DNB205.1 DNB205.2	DNB305 DNB305.2 DNB305.1 DNB306 DNB306.1	DNB105.2 DNB105.3
Wind speed	Range	0...60 m/s	0...60 m/s	0...85 m/s
	Accuracy	± 0.3 m/s or 5% (0.02...35 m/s) 10% (>35 m/s)	± 0.2 m/s or 3% (0.02...35 m/s) 5% (>35 m/s)	± 0.2 m/s or 2% (0.01...60 m/s) 3% (>60 m/s)
	Threshold	0.1 m/s	0.1 m/s	0.01 m/s
	Resolution	0.1 m/s	0.1 m/s	0.01 m/s
	Response time	250 ms		
Wind direction	Range	0...360°	0...360°	0...360°
	Accuracy	±3° (>1 m/s)	±2° (>1 m/s)	±2° (>1 m/s)
	Threshold	-	-	0.1 m/s
	Resolution	1°	0.1°	1°
	WS threshold for WD calculation	0.2 m/s	0.2 m/s	Programmable 0.01. 1.00 m/s (default: 0.02 m/s)
	Response time	250 ms		
Compass (DNB105.2 only)	Principle	-	-	Magnetic
	Range	-	-	0...360°
	Resolution	-	-	0,1°
	Accuracy	-	-	±1°

Accessories

	DWA054	Cable L=5 m for DNB205-205.2-305-305.2
	DWA104	Cable L=10 m for DNB205-205.2-305-305.2
	DWA254	Cable L=25 m for DNB205-205.2-305-305.2
	DWA056	Cable L=5 m for DNB205.1-305.1
	DWA106	Cable L=10 m for DNB205.1-305.1
	DWA256	Cable L=25 m for DNB205.1-305.1
	DWA058	Cable L=5 m for DNB306-306.1
	DWA108	Cable L=10 m for DNB306-306.1
	DWA258	Cable L=25 m for DNB306-306.1
	DWA508	Cable L=50 m for DNB306-306.1
	DWA810.1	Cable L=10 m for DNB105.2-105.3 anemometer
	DWA825.1	Cable L=25 m for DNB105.2-105.3 anemometer
	DWA826.1	Cable L=50 m for DNB105.2-105.3 anemometer
	DEA602	RS232 DB-9 male connector for connecting DNB2XX-DNB3XX cables to RS232 female port
	MG2272.R	Watertight connector for making DNB105.3 sensor cable
	MG2267.R	Watertight connector for making DNB2XX-DNB3XX sensors cable
	DNB191	Adapter for DNB105.3 sensor to pole Ø 50 mm
	SVICA2203	ISO 9001 type calibration certificate (Wind speed)
	SVICA2304.1	ISO 9001 type calibration certificate (Wind direction)
	SVACA2216	ISO/IEC 17025-ACCREDIA type calibration certificate (Wind speed)



LSI LASTEM is an ISO/IEC 17025 accredited laboratory for air speed measurements. All sensors manufactured are tested inside this laboratory. LSI LASTEM provides Test report for any sensor supplied and on request, ISO/IEC 17025 or ISO 9001 calibration certificates (see Accessories list).

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