

All-in-one weather sensors



COMPACT SERIES



STANDARD SERIES

- ▶ Up to six parameters from the same sensor body
- ▶ Two size versions with different specifications for a wide range of applications
- ▶ Easy connection, using Modbus-RTU, to third part data loggers and LSI LASTEM's data loggers
- ▶ Heated versions (Standard versions only)
- ▶ In house ISO17025 accredited calibration laboratory

Sensors integrate a unique folded-path sonic anemometer with a multi-element temperature sensor, fast-response capacitive relative humidity sensor, state-of-the-art barometric pressure sensor. Alternative versions are equipped with photodiode radiation sensor or optical rain sensor. The result is a professional grade All-In-One Weather Sensor designed for reliability, longevity, and ease of installation. Two classes of sensors are available: Standard made in aluminum and Compact series made in plastic, with different size and different features concerning the wind measurement. All models can be connected to any LSI LASTEM data logger on serial port COM2 using its Modbus output protocol.

Technical Specifications	COMPACT SERIES			
	P/N (without heater)	DNB200 - DNB200.2	DNB201 - DNB201.2	DNB202 - DNB202.2
				
Wind speed		X	X	X
Wind direction		X	X	X
Air Temperature		X	X	X
Relative Humidity and Dew Point		X	X	X
Pressure		X	X	X
Solar radiation		-	-	X
Rain		-	X	-
Material		Plastic		
Output		DNB200: RS-485 DNB200.2: RS-232	DN201: RS-485 DNB201.2: RS-232	DNB202: RS-485 DNB202.2: RS-232
Power supply		12÷30 Vdc		
Power consumpt.@12 Vdc		13 mA	55 mA	18 mA
Size		170x126 mm.		
Weight		0,7 Kg	0,75 Kg	0,95 Kg
Protection		IP65		

	STANDARD SERIES			
P/N (without heater)	DNB300 - DNB300.2	DNB301 - DNB301.2	DNB302 - DNB302.2	DNB304 - DNB304.2
P/N (with heater)	DNB300.1	DNB301.1	DNB302.1	
				
Wind speed	x	x	x	-
Wind direction	x	x	x	-
Air Temperature	x	x	x	-
Relative Humidity and Dew Point	x	x	x	-
Pressure	x	x	x	-
Solar radiation	-	-	x	-
Rain	-	x	-	x
Material	Aluminium			
Output	DNB300-300.1: RS-485 DNB300.2: RS-232	DNB301-301.1: RS-485 DNB301.2: RS-232	DNB302-302.1: RS-485 DNB302.2: RS-232	RS-485
Power supply	12÷30 Vdc			
Power consumption @12 Vdc (sensor only)	13 mA	55 mA	18 mA	45 mA
Power consumption @24 Vdc (heater) (see P/Ns with heater)	10 A			NO
Size	170x126 mm.	170x126 mm.	170x126 mm.	170x80 mm.
Weight	1,5 Kg	1,5 Kg	1,65 Kg	1,05 Kg
Protection	IP66			

Technical Specifications

		Compact Series	Standard Series
Wind speed	Principle	Ultrasonic	Ultrasonic
	Range	0÷60 m/s	0÷60 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)
	Threshold	0,02 m/s	0,01 m/s
	Resolution	0,01 m/s	0,01 m/s
Wind direction	Principle	Ultrasonic	Ultrasonic
	Range	0÷360°	0÷360°
	Accuracy	±3° (>1 m/s)	±2° (>1 m/s)
	Threshold	0,2 m/s	0,2 m/s
	Resolution	0,1°	0,1°
Temperature	Principle	Diode voltage	Diode voltage
	Range	-40÷80 °C	-40÷80 °C
	Accuracy	±0,3°C (-35÷60°C), otherwise ±0,5°C	±0,3°C (-35÷60°C), elsewhere ±0,5°C
	Risoluzione	0,1°C	0,1°C
RH%	Principle	Capacitive	Capacitive
	Range	0÷100%	0÷100%
	Accuracy	3%	3%
	Resolution	0,1%	0,1%
Dew Point	Type	Calculation	Calculation
Pressure	Principle	Piezoresistor	Piezoresistor
	Range	600÷1100 hPa	600÷1100 hPa
	Accuracy	±0,5 hPa @ 25°C	±0,5 hPa @ 25°C
	Resolution	0,1 hPa	0,1 hPa
Solar Radiation	Principle	Phodiode	Phodiode
	Spectral range	300÷3000 nm	300÷3000 nm
	Range	0÷2000 W/m-2	0÷2000 W/m-2
	Resolution	1 W/m-2	1 W/m-2
	Accuracy	5%	5%
	Temperature response	5%	5%
	Directional error 0<θ<80°	<±10 W/m-2 (@ 1000 W/m-2)	<±10 W/m-2 (@ 1000 W/m-2)
	Non-linearity	Max 3% (0÷1000 W/m²)	Max 3% (0÷1000 W/m²)

		Compact Series	Standard Series
Rain total	Principle	Optical	Optical
	Measurement	Rain total: mm/min, mm/hr, mm/day, Total	Rain total: mm/min, mm/hr, mm/day, Total
	Range of measurement	0÷400 mm/hr	0÷400 mm/hr
	Repeatability	3%	3%
	Resolution	0,08 mm/hr	0,08 mm/hr

Common Technical Specifications

Output	Digital	RS-232, RS-485 (see each PN)
	Protocol	Modbus-RTU
	Baud rate	9600 bits
Cable	Connector	Aerospace type
	Cable	Not included (see Accessories)
Protection	Housing protection	IP66 (with mounting kit attached)
Operative conditions	Temperature	-40÷70°C
	Humidity	5÷100% RH
Compatibility	LSI LASTEM's data Logger	Versions with RS232 output: M-Log (ELO008) E-Log Versions with RS485 output: A-Log
Installation	Mounting	On pole Ø 35÷50 mm. Using bracket (included)

Accessories

	DWA831	Cable L. = 5 m
	DWA832	Cable L. = 10 m
	DWA833	Cable L. = 25 m
	DWA831.1	Cable L. = 5 m. dual-head for sensors bus connectivity. Free wires connection
	DWA832.1	Cable L. = 10 m. dual-head for sensors bus connectivity. Free wires connection
	DWA833.1	Cable L. = 25 m. dual-head for sensors bus connectivity. Free wires connection
	DEA608	RS232 DB-9 male connector to connect DWA8xx cable to RS232 female port
	DEA504	Line drive converter RS485->RS232