

WIND SPEED



Anemometer (Cup)

SS-WSS is compact and exquisite in shape, featured with robust wind cups, a unique aero-cone design and efficient heating method, suitable for all kinds of harsh environments. The output signal can be directly connected to the data acquisition system through RS485 or photoelectric isolation pulses. It can be widely used in meteorology, ocean, environment, airport, port, agriculture, transportation and other fields.



Features

- Accurate wind speed sensors with low threshold.
- Built-in precision signal processing unit.
- New photoelectric coupling design, featured with high sensitivity and high dynamic response.
- Support RS485 digital signal output as well as pulse signal output and online calibration.
- Compact all-aluminum body and black glass fibre cups with anti-freeze and heating function for long time life to the heavy environmental conditions and strong winds.
- Design and performances addressed to meteorological applications

Technical Specifications

	SS-WSS-01	SS-WSS-02
Output	Pulse	RS485
Communication Protocol	-	Modbus

Common Technical Specifications

Wind Speed	Measuring Range	0.5 – 65 m/s
	Starting Threshold	<0.5 m/s
	Accuracy	± 0.2 m/s
	Resolution	0.031 m/s
General Information	Outer diameter of the mounting pole mast	50mm/52mm
	Operating Power	Without Heater: 5 – 24VDC 20mA (typical) With Heater: 12VDC 1A (typical)
	Operating temperature when heating	-50 ~ 55 °C
	Storage temperature	-60~70 °C
	Material	Housing: Aluminum alloy Material Wind cup: Black glass fiber nylon
	Dimensions	240 (H) × 182 (Ø) mm
Weight	500g	

WIND DIRECTION



Wind Vane

SS-WDS Wind Direction Sensor adopts a new magnetic induction design to detect the wind direction angle. It is compact and exquisite in shape, featured with a robust wind vane, a unique aero-cone design and efficient heating method, suitable for all kinds of harsh environments. It can be widely used in meteorology, ocean, environment, airport, port, agriculture, transportation and other fields.



Features

- Accurate wind direction sensors with low threshold.
- Built-in precision signal processing unit.
- New magnetic induction sensor design can effectively avoid the aging problem of traditional photoelectric encoder.
- Support RS485 digital signal output as well as pulse signal output (optional) and online calibration.
- Compact all-aluminum body and black glass fibre vane with anti-freeze and heating function for long time life to the heavy environmental conditions and strong winds.
- Design and performances addressed to meteorological applications

Technical Specifications

	SS-WDS-01	SS-WDS-02
Output	Analog: 0 – 5 V	RS485
Communication Protocol	-	Modbus
Resolution	1°	0.35°

Common Technical Specifications

Wind Direction	Measuring Range	0 ~ 360°
	Starting Threshold	<0.5 m/s
	Accuracy	± 2°
General Information	Outer diameter of the mounting pole mast	50mm/52mm
	Operating Power	Without Heater: 5 – 24VDC 20mA (typical) With Heater: 12VDC 1A (typical)
	Operating temperature when heating	-50 ~ 55 °C
	Storage temperature	-60~70 °C
	Material	Housing: Aluminum alloy Material Wind Vane: Black glass fiber nylon
	Dimensions	296(H) x 252(L)mm
	Weight	500g

WIND SPEED & DIRECTION (Wind cup and vane)

Combined wind speed and direction sensors



- ▶ Alternative signal outputs: (Hz+0-1 V), 0-5 V, 4-20 mA, RS485 Modbus
- ▶ Wide power supply: 9-30 Vac/dc
- ▶ Simple to install on pole 5 cm diameter
- ▶ High damage threshold up to 75 m/s
- ▶ Optional cable up to L.100 m
- ▶ In house ISO17025 accreditate calibration laboratory

Combined wind speed and wind direction sensor. This sensor range includes, in a single apparatus, transducers for both wind speed and wind direction measurement. Its use simplifies installation requirements, other than being smaller, lighter and cheaper than the general 2-sensors kit. Accuracy and thresholds are anyway near to be comparable with a 2-sensors cup and vane kit alternatives. Different data output signals are available.

Technical Specifications

Order numb.	DNA121	DNA821 DNA821.1 DNA821.2	DNA827	DNA921
Wind speed output	0÷833 Hz	4÷20 mA	0÷5 Vdc	RS485
Wind speed measuring range	0÷75 m/s (damage limit)	DNA821: 0÷60 m/s DNA821.1: 0÷50 m/s DNA821.2: 0÷75 m/s	0÷60 m/s	0÷60 m/s
Wind Direction output	0÷1 Vdc	4÷20 mA	0÷5 Vdc	RS485
Protocol	-	-	-	Modbus RTU®, TTY-ASCII
Configuration	-	-	-	Hyperterminal
EMC	EN61326-1 2013	EN61326-1 2013	EN61326-1 2013	EN61326-1 2013
RS485 protection	-	-	-	Galvanic insulation (3 kV, UL1577)
RS485 speed	-	-	-	1200÷115 kbps
Power supply	10÷30 Vac/dc	10÷30 Vac/dc	10÷30 Vac/dc	10÷30 Vac/dc
Power consumption	0,5 W	0,5 W	0,5 W	0,5 W
Data logger compatibility	M-Log (ELO008), E-Log, Alpha-Log using ALIEM module .	M-Log (ELO008) E-Log, Alpha-Log using ALIEM module .	-	E-Log using RS485- >232 converter, Alpha-Log.

Common Technical Specifications

Wind speed	Principle	N.32 step optoelectronic disk
	Accuracy	0÷25 m/s: ± 0,25 m/s or 3% >25 m/s: 2%
	Threshold	0,26 m/s
	Delay distance	4,8 m (@ 10 m/s). According to VDI3786 and ASTM 5096-96
	Resolution	0,06 m/s
Wind direction	Principle	Hall effect system
	Measuring range	0÷360°
	Accuracy	1%
	Threshold	0,15 m/s
	Resolution	0,3°
	Delay distance	1,2 m (@ 10 m/s). According to VDI3786 and ASTM 5366-96
	Damping coeff.	0,21 (@ 10 m/s). According to VDI3786 and ASTM 5096-96
General Information	Operative damage limit	75 m/s
	Connector	7 pin IP65 watertight connector
	Housing	Anodized aluminum,
	Cup	PA6 plastic and fiberglass
	Vane	Aluminum
	Protection type	IP66
	Mounting	Mast Ø 48 ÷ 50 mm.
	Operative temperature	>-30°C (without ice)







► DNAnn sensors serie has a very low measurement threshold (0,26 m/s) and at the same time, a very high damage limit (75 m/s). All specification are tested in LSI-LASTEM's wind tunnel under ISO17025 requirements.



► Sensor's design has been made to prevent water and dirtiness to enter inside the sensors bearings area. This permits to avoid the bearing replacement for the entire sensor life.

Accessories

	SVICA2203	ISO9000 type calibration certificate (Wind Speed)
	SVICA2304	ISO9000 type calibration certificate (Wind Direction)
	SVACA2216	ISO17025-ACCREDIA type calibration certificate (Wind Speed)
	DWA505	Cable L. = 5 m.
	DWA510	Cable L. = 10 m.
	DWA525	Cable L. = 25 m.
	DWA526	Cable L. = 50 m.
	DWA527	Cable L. = 100 m.
	MG2251	7 pin free female connector
	DNA124	Spare part: rotor
	DNA127	Spare part: vane
	MM2011	Spare part: bearings for Wind direction (QT.2 required)
	MM2020	Spare part: bearing for Wind speed (QT.2 required)



▶ LSI LASTEM is an ISO17025 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, ISO17025 or ISO9001 calibration certificates (see Accessories list).