



-power in control

## WIND POWER TECHNOLOGY



### Wind Sensor Static, WSS REC

Wind direction and wind speed read-out  
Built-in, automatically activated heating element to prevent icing  
Three-year warranty

WIND

# Wind Sensor Static

## Ultrasonic wind measurement

DEIF's Wind Sensor Static (WSS REC) measures both wind speed and direction and has fast and accurate responses.

The WSS REC is ideal for harsh environments. Normal operation does not require service and maintenance. The static (ultrasonic) measuring principle provides a durable solution that does not wear out – no more need for changing bearings.

The sensor is based on three ultrasonic transducers placed in a triangle. It measures wind speed and direction by measuring the time it takes for the ultrasound to travel from one transducer to the other two.



Water protection test, IP66



Vibration test (60G peak)



Ice test

## Eliminate earth faults

The housing is made of a non-conductive material. The non-conductive housing eliminates the earth faults often caused by heated metal-cased wind sensors.

## Extensive type tests

Products are often compared on technical specifications and price alone. We believe that durability, future-proofing and hassle-free performance are increasingly more important features. That is why our products undergo strict internal testing procedures and we offer a three-year warranty on our static wind sensors.

## Traditional cup anemometer or WSS?

Extensive field tests in rough seas have shown that the WSS REC is suitable for both offshore and onshore. The field tests have been supplemented by laboratory testing of extreme temperatures, water resistance, vibration and shock.

The data below were registered on board a ship. The wind speed was high, which can cause faults/inaccurate measurements when using traditional cup anemometer.

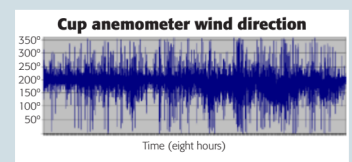
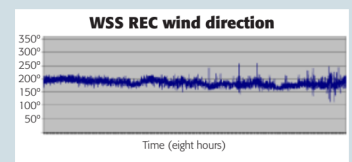
## Wind direction

The WSS REC

The diagram shows wind direction measurements by the WSS REC over the course of eight hours. The data give precise and steady indications of direction at around 200 degrees. Update/response time: one second.

The cup anemometer

The diagram shows wind direction measurements by the cup anemometer over the course of eight hours. The data are inaccurate and show over- and undershoots at around 200 degrees. The inaccuracies are caused by mechanical and moving parts. Update/Response time: one second.

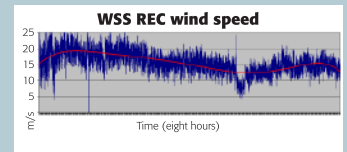


# Wind Sensor Static

## Wind speed

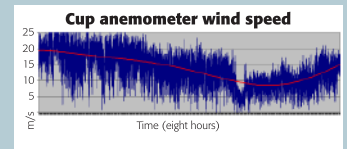
The WSS REC

The diagram shows wind direction measurements by the WSS REC over the course of eight hours. The data give precise and steady indications of direction at around 200 degrees. Update/response time: one second.

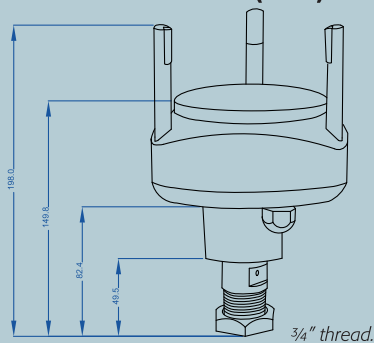


The cup anemometer

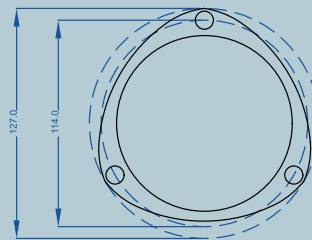
The diagram shows wind direction measurements by the cup anemometer over the course of eight hours. The data are inaccurate and show over- and undershoots at around 200 degrees. The inaccuracies are caused by mechanical and moving parts. Update/Response time: one second.



## WSS dimensions (mm)



Seen from above.



## Technical specifications

Power supply	12-24V DC
Power consumption	0.6A (without heating element approx. 13mA)
Temperature	Working range: -52...+60°C Storage: -60...+70°C
Relative humidity	0...100%
Pressure	600...1100hPa
Electric connection	2m 4 x 0.75mm <sup>2</sup> screened cable type UL2464 4C*18AWG + Drain + AL Mylar. From factory the cable is connected to the sensor via a waterproof gland. This should not be replaced by a different cable. The cable is extended by using a connecting box, max. length 300 meters, capacity max. 70nF between signal conductors.
Materials	Wind sensor housing: Polycarbonate +10% glass fibre Mounting tap: Corrosion-resistant stainless steel Weight: 0.8kg
Protection	IP66, to EN 60529
Electromagnetic compatibility	EN 61326: 1997 + Am 1:1998 + Am 2:2001
Wind speed	Measuring range: 0...60 m/s Resolution: 0.1 m/s Linearity: 0...35 m/s: ±0.3 m/s or ±3%, whichever is greater 36...60 m/s: ±5% Response time: 1.0 s
Wind direction	Measuring range: 0...360° continuously Resolution: 1° Accuracy: ±3° in relation to the wind direction Response time: 1.0 s
Communication port	RS485 NMEA 0183 protocol. Further info, see specific manual RS232

Founded in 1933, DEIF offers our customers decades of accumulated know-how. Based on our long history, our customers can trust DEIF to be a safe choice – we were here more than 75 years ago and we intend to stay.

The acquisition of the company West Control in 2004 was an important addition to the existing pool of know-how at DEIF. At the time of the acquisition, West Control had been supplying dedicated control solutions for wind turbines since 1988. The know-how of West Control was not limited to the control systems, but comprised the entire wind turbine.

Today, DEIF consists of two business divisions. DEIF Wind Power Technology develops/customises dedicated control systems to individual applications. The sister division, DEIF Power & Marine, supplies power management, gen-set controls, switchboard instrumentation and marine bridge instrumentation.

DEIF is present worldwide through subsidiaries and distributors.



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