

RO Wind & RO Wind Plus Ultrasound Anemometers

RO Wind is a new generation wind measurement sensor giving the speed and relative angle of the wind and the air temperature. **Atmospheric pressure** is available on the RO Wind Plus model.

This sensor can be linked to all equipment using the NMEA standard 0183 or to a computer.

Advantages:

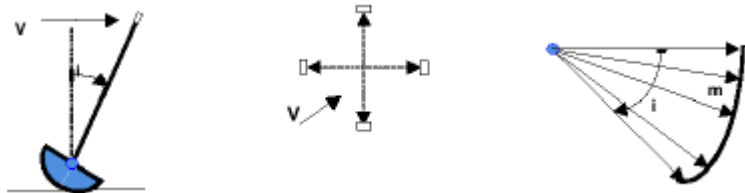
- Mechanically robust: knocks, gusts of wind, birds etc.
- Lack of wear: no rotating parts
- Not sensitive to the gyroscopic effect: hence great precision in light winds.
- Minimised windage and the effect of heel compensated
- Open standard compatible with the majority of repeaters.



Operating principle:

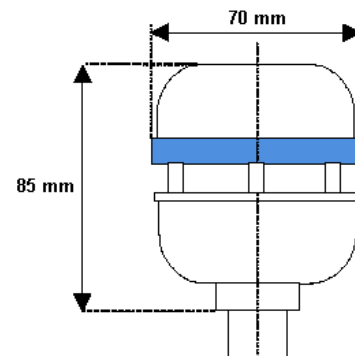
Sound and ultrasound is carried by the movement of a fluid through which it passes. Four electro-acoustic transducers communicate two by two using ultra-sound signals to determine, in their orthogonal axes, the difference in transit times of the waves, induced by the air flow. The measurements are used in an integrated computer to establish the wind characteristics and its direction relative to a reference axis. The measurement of temperature serves to refine the calibration. The method is accurate to within 0.5 knots, has a range of up to 100 knots and excellent linearity.

$i = 0^\circ, 15^\circ, 30^\circ, 40^\circ, 45^\circ$
Typical variation of $m = 7\%$
Heel is compensated up to 45°



Equipment:

- RO Wind sensor head (330g)
- 25 m coaxial cable fitted with a TNC connector
- Box for supply and reader display
- Installation leaflet
- Fixing system



RO Wind : Ultrasonic Anemometer Specification

| | |
|----------------------------|------------------------|
| Wind speed Range | 0.5-99.5 Knots |
| Wind speed Resolution | 0.1 Knots |
| Wind direction Range | 0-360 ° |
| Wind direction Resolution | 1° |
| Wind direction Sensibility | +/- 1.5 ° |
| Power requirement | 9- 14 V DC (50mA@ 12V) |
| Output | RS422 / RS232 |
| Output NMEA 0183 | IIMWV every 0.5 second |
| | WIXDR every 0.5 second |
| Temperature Range | 0 – 40 ° C |

RO Wind Plus : Ultrasonic Anemometer / Barometer

| | |
|---------------------------------|--------------------------------------|
| Wind speed Range | 0.5-99.5 Knots |
| Wind speed Resolution | 0.1 Knots |
| Wind direction Range | 0-360 ° |
| Wind direction Resolution | 1° |
| Wind direction Sensibility | +/- 1.5 ° |
| Atmospheric pressure Range | 0.900 –1.100 B |
| Atmospheric pressure Resolution | 0.001 B |
| Pressure connection | Tube fitting (Ø 4 mm) |
| Power requirement | 10- 14 V DC (70mA@ 12V) |
| Output interface | RS422 / RS232 |
| Output NMEA 0183 | IIMWV every 0.5 second |
| | WIXDR, Temperature every 2 second |
| | WIXDR, Pressure, every 2 second |
| | WIXDR, Temp.&Pressure every 2 second |
| | WIMDA every 2 second |
| Temperature Range | 0 – 40 ° C |

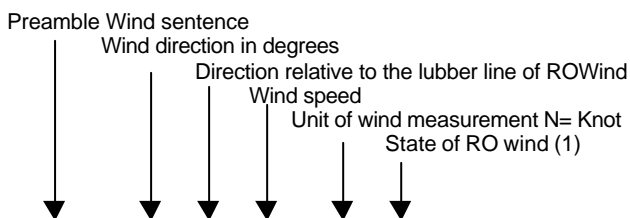
NMEA0183

4800 Bauds, No parity, 1 Stop bit
 Variable length fields, "comma" separator.
 Start of expression \$
 End of expression: CR,LF

Examples:

\$WIXDR,C,022.5,C,,P,0.996,B
 \$PLCJ,40,40,37,37,2F,
 \$IIMWV,315.0,R,000.00,N,A
 \$WIXDR,C,022.5,C,,P,0.996,B
 \$PLCJ,40,40,37,37,2F,
 \$IIMWV,315.0,R,000.00,N,A
 \$WIXDR,C,022.5,C,,P,0.996,B
 \$PLCJ.40.40.37.37.2F.

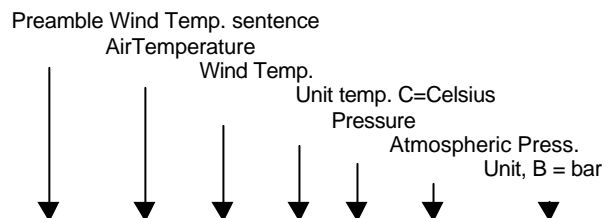
RO WIND



\$IIMWV, 179.0, R, 000.30, N, A

(1) A: Correct measurements / N: Incorrect measurements

RO WIND PLUS



\$WIXDR, C, 020.0, C, P, X.XXX, B

\$PLCJ.5B.5B.5F.5F.31. Sentence for use by the technical department

PRODUCTS COMPATIBLE (SEPT 2001)

RO WIND

| | Tested products |
|---------------------------------------|------------------------|
| - LS6100 FURUNO | FURUNO |
| - RD30 FURUNO | FURUNO |
| - C-NET 2000 MULTI | CETREK |
| - WIND CETREK | CETREK |
| - PILOTE AUTO CETREK | CETREK |
| - R100 NAVMAN, | PLASTIMO. |
| - IS15 WIND | SIMRAD, KONGSBERG. |
| - CE32 | SIMRAD, KONGSBERG. |
| - ST30 ¹ | AUTOHELM |
| - ST40 ¹ | RAYTHEON |
| - ST60 ¹ | RAYTHEON |
| - BUS Topline via une interface NMEA. | NKE |
| - BUS SeaTalk via une interface NMEA. | AUTOHELM/ RAYTHEON |
| - Software PC MaxSea V 6.7 et + | Informatique & Mer |
| - Software Mac MaxSea V 7.5.3 et + | Informatique & Mer |
| - Software RO WIND | LCJ CAPTEURS |

Known as compatible (not tested)

| | |
|----------------------|----------------------|
| - FURUNO NAVNET | FURUNO |
| - 3FD NMEA | BROOKES & GATEHOUSE |
| - H1000 | BROOKES & GATEHOUSE. |
| - PILOTE AUTO | NAVICONTROL |
| - OYSTER | SEIWA |
| - MAKO | SEIWA |
| - Software PC SODENA | SODENA |

¹ Option RO WIND ST needed

RO WIND PLUS

| | Tested products |
|------------------------------------|------------------------|
| - RD30 FURUNO | FURUNO |
| - LS6100 FURUNO | FURUNO |
| - Software PC MaxSea V 6.7 et + | Informatique & Mer |
| - Software Mac MaxSea V 7.5.3 et + | Informatique & Mer |
| - Software RO WIND | LCJ CAPTEURS |