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ULTRA-LOW-POWER ULTRASONIC **NMEA2000** WIND METER (ULP NMEA2000)

User manual

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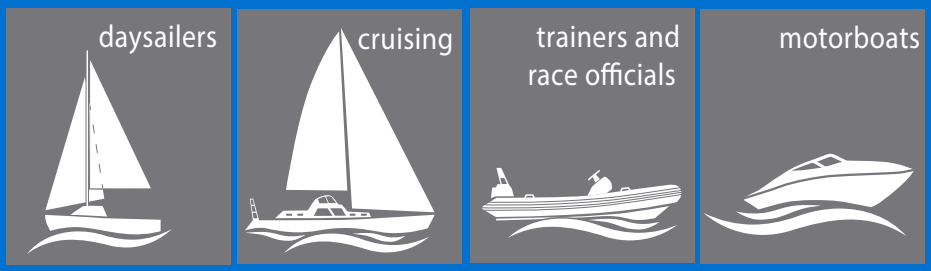

If you want to know more about our new ULP NMEA2000 wind meter, please keep reading or visit our website www.calypsoinstruments.com

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1 Product Overview

Thank you for choosing the ULP NMEA2000 wind meter from Calypso Instruments. This is the first model of the ULP NMEA2000 of our Generation II ULPs, representing an important technology breakthrough condensing an extensive R+D investment:

- Both shape and firmware have been enhanced for an improved rain performance. This is key for static applications such as weather stations.

- Mechanical design has been revamped making the unit more robust and dependable.

- Easy plug and play into NMEA2000 cable without need of a gateway.

Applications for the ULP NMEA2000 are the following:

- Daysailers
- Cruising
- Trainers and Race Officials
- Motorboats

Or any other application where a NMEA2000 backbone, display or plotter is used.

2 Package content

The package contains the following:

· Ultrasonic ULP NMEA2000 Wind Instrument

· Serial number reference on the side of the packaging.

· A quick user guide on the back of the packaging and some more useful information for the customer.

· M4 headless screw (x6) *

· M4 screw (x3)*

3. Installation Instructions

Before installing the unit:

1. Plug in the ULP NMEA2000 to the NMEA2000 cable/backbone.
2. On your display/plotter, choose the ULP NMEA2000 as the wind source in the settings.
   *The manner to do this will vary depending on the brand of the display/plotter. Please refer to your display/plotter's manual.
3. Verify wind data is appearing on your NMEA2000 display/plotter.

Installing the ULP NMEA2000 on top of the mast.

1. Place the ULP N2K on top of the mast or a pole away from any object that can disturb the airflow to the wind sensor in a **2 meter radius (6.5 feet)**.
2. Connect it to the NMEA2000 cable. **If the cable is longer than 6 meters (19.7 feet), the cable needs an in-line terminator. ***
3. Make sure the North Mark is facing the bow of the boat to obtain correct wind readings.
4. Tighten the screws to fasten the wind sensor to the mast.

*Cables with in-line terminators and in-line terminators are available accessories on our website: **www.calypsoinstruments.com**.

4. Technical specifications

The ULP NMEA2000 has the following technical specifications:

3.1. Dimensions	· Diameter: 70 mm (2.76 in.) · Height: 74 mm (2.91 in.)
3.2. Weight	200 grams (7 ounces)
3.3 Power	· 5-36 VDC
3.3 Power Consumption	20 mA @115.200 bauds, 12V
3.5 Sensors	Ultrasonic transducers (4x) Sample rate: 1 Hertz

The ULP NMEA2000 has been designed to avoid any mechanical parts to maximize reliability and minimize maintenance.

The transducers communicate between themselves two by two using ultrasonic range waves. Each pair of transductors calculates the signal delay and get information about both wind direction and wind speed.

3.5 Wind Information	· Wind speed · Wind direction

Sample rate: 1 Hz

Wind Speed

- Range : Range: 0.5 to 45 m/s (1.12 to 100 mph)
- Accuracy: ±0.1 m/s at 10m/s (0.22 at 22.4 mph)
- Threshold: 0.5 m/s (1.12 mph)

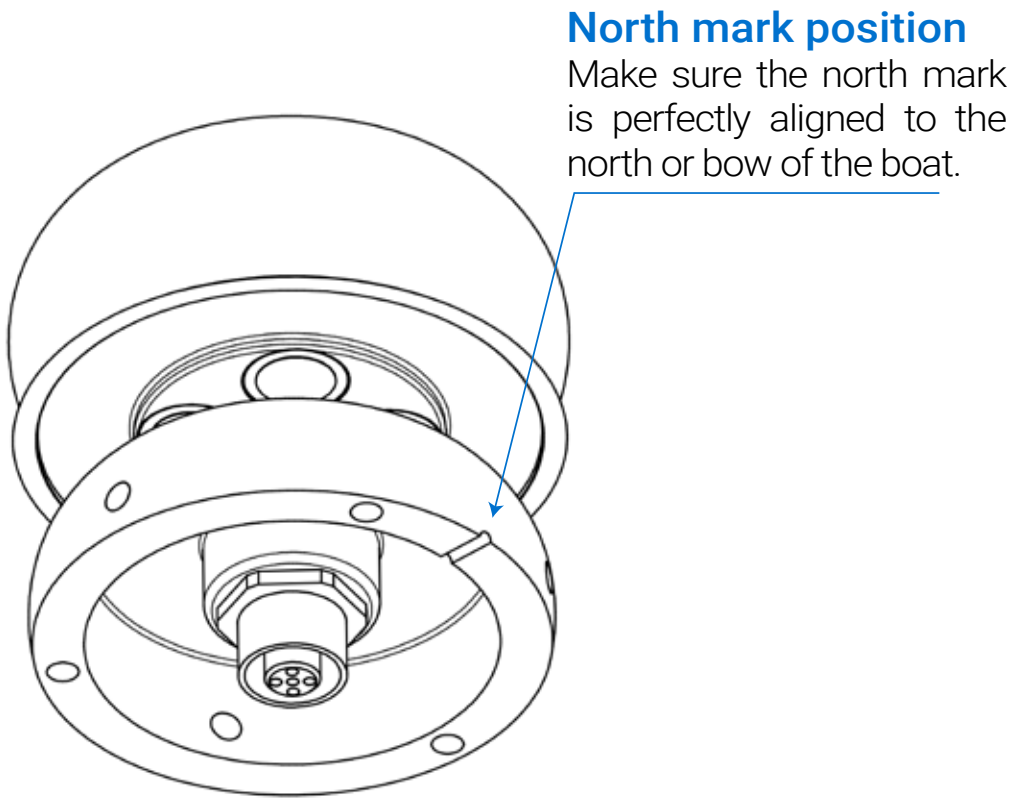
Wind direction

- Range: 0 - 359º
- Accuracy: ±1º RMS at 10 m/s (22.37 mph)

3.6. Easy mount

- 3 x M4 lateral female tripod thread
- 3 x M4 interior female tripod thread

It can be mounted either on a pole or mast mount (with inferior screws or lateral screws).



3.7. Accessories

We offer a variety of accessories such as a 20 meter NMEA2000 cable with an in-line terminator, in-line terminators and a mast mount. All accessories can be found on our website at **www.calypsoinstruments.com**.

The ULP NMEA2000 can be mounted on our specifically-designed mast mount for the ULP NMEA2000 as shown in the following photo.

Calibration

The ULP NMEA2000 has been calibrated with accuracy, following the same calibration standards for each unit. Calibration reports for a specific unit can be purchased upon request.

5. Communication Protocols

OneNet Class Code: 85
OneNet Function Code: 130

PNG Information:

059392- ISO Acknowledgment
059904- ISO Request
060928- ISO Address Claim
065240- ISO Commanded Address
126208- NMEA - Request group function
126208- NMEA - Command group function
126208- NMEA - Acknowledge group function
126208- NMEA - Read Fields - group function
126464- PGN List - Transmit PGNs group function
126464- PGN List - Received PGNs group function
126993- Heartbeat
126996- Product Information
126998- Configuration Information
130306- Wind Data

6. General information

6.1. General recommendations

Regarding mounting the unit, the mast head has to be prepared for the mechanical installation. Align the North mark of the ULP NMEA2000 to the bow for maximum accuracy of wind angle.

Make sure to install the sensor in a location for example, the mast head on a boat, where it is **free from any object that may obstruct the flow of wind to the sensors within a 2 meter radius**.

Other important aspects:

- Do not attempt to access the transducers area with your fingers;
- Do not attempt any modification to the unit;
- Never paint any part of the unit or alter its surface in any way.
- NOT allow to be submerged fully or partially in water.

If you have any questions or doubts, please contact us directly.

6.2. Maintenance and repair

The ULP NMEA2000 does not require great maintenance given the new design of non-moving parts.

Transducers must be kept clean and aligned. Impacts or incorrect impulsive handling may lead to transducers misalignment.

The space around the transducers must be empty and clean. Dust, frost, water, etc... will make the unit stop working. The ULP NMEA2000 can be wiped clean with a damp cloth being careful to not touch the transducers.

6.3 Warranty

The warranty covers defects resulting from defective parts, materials and manufacturing, and made known to manufacturer within 24 months after the purchase date.

Warranty is void in case of non-following the instructions of use, repair, or maintenance without written authorisation.

Any wrongful use given by the user will not incur in any responsibility on part of Calypso Instruments; therefor any harm caused to the ULP NMEA2000 by a mistake will not be covered by the waranty. Using assembly elements different from those delivered with the product will void the warranty.

Changes on transducers position/alignment will avoid any warranty.

For further information please contact Calypso Technical Support through sales@calypsoinstruments.com or visit www.calypsoinstruments.com.

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