
CruzPro[®] UWSD-10



Ultrasonic 3D Wind Speed/Direction
Sensor with NMEA 0183/RS422 Output

Table of Contents

Specifications	4
Introduction	5
Installation and Wiring	6
User Notes	10

CruzPro is a trademark of CruzPro Ltd.

©2012 CruzPro Ltd.
www.cruzpro.com

UWSD-10 Manual Ver. AE
Made in New Zealand

Specifications

Power supply: 12/24 VDC (10.7V to 33.0V), 0.03 A nominal.

Operating temperature: -32°C to +70°C (0°F to 158°F).

Size: 140mm (5-1/2") diameter, 450mm (18") long including 350mm mounting pole.

Cable: 40M (130 feet) with 8 pin connector.

Speed Range: 0.00 to 120.00 knots (+/- 2% @ 40 knots).

Direction Range: 0 to 359 degrees (+/-3 degrees @ 40 Knots).

Speed Calibration: 0.50 - 2.00 (User modifiable)

Direction Offset: 0-359 degrees (User modifiable)

Damping: 00 (none) to 255 (User modifiable), 32 nominal

Frequency: 40Khz

Data Output:

4800 Baud NMEA 0183/RS422 differential

Sample: \$WIMWV,039,R,011.13,N,A*05

\$IIMWV,039,R,011.17,N,A*1F

Memory: Nonvolatile memory for Speed Calibration, Direction Offset, Damping

Introduction

The UWSD-10 is a 3 dimensional wind speed and direction sensor that has no moving parts and outputs NMEA 0183/RS422 serial data. Wind speed and direction calculations are performed in 3 dimensional space so an accurate wind speed/direction is available regardless of the angle of the vessel. The UWSD10 wind speed sensor works down to 0.00 knots and up to 120.00 knots with a resolution of 0.01 knot. The direction output works from 0 degrees to 359 degrees with a resolution of 1 degree.

The UWSD-10 has two way communications to enable the user to calibrate the wind speed and add a wind direction offset as well as set the damping (filtering) of the wind speed and wind direction. A data damping value of 00 (none) to 255 can be specified by the user to smooth the data and prevent fast fluctuations. The factory default damping value is set to 32.

Changes are automatically saved to a nonvolatile memory so the operation details are not lost when power is removed.

The UWSD-10 outputs two different NMEA 0183 wind sentences once per second each in NMEA 0183 and RS422 formats. Input to the UWSD10 is 4800 baud RS232.

Installation and Wiring

Before starting the installation, please read this entire section first.

WARNING: NEVER USE SOLVENTS!

Cleaners, gasoline, paint, sealant and other products may contain strong solvents, which can attack many plastics dramatically reducing their strength.

MOUNTING LOCATION:

The transducer must be positioned at a location that assures a smooth, turbulent-free flow of air across the transducer. Under no circumstances should it be located near any fittings or other obstructions to prevent “shading” of the wind.

CABLE ROUTING:

In routing the UWSD-10 cable, avoid placing it near or parallel to other electrical cables capable of creating electrical interference.

MOUNTING:

1. Attach the UWSD10 mounting pole to any suitable surface using two or more “U” clamps. The UWSD10 should be mounted with the rain gutter nearest the “CruzPro” logo facing forward towards the bow of the ship as shown in Figure 1.

Figure 1 - Mounting Direction



2. Pull the rubber boot away from the female connector to uncover the circular tightening nut and screw the nut into the mating connector on the 40M cable as shown in Figure 2.

Figure 2 - Pull Rubber Boot Back



3. Push the rubber boot back onto the tightening nut to provide protection against water ingress.



Figure 3 - Push Rubber Boot Back



Figure 4 - Connecting to the Walker P1249 Wind Display

WIRING:

1. Attach both the Black wire and the White wire to power ground. Attach the red wire to +12/24VDC through a 5 or 10 amp fuse.



2. To connect the UWSD10 to a NMEA 0183 receiver attach the Yellow wire to the NMEA "A" or NMEA "+" input and attach the Green wire to the NMEA "B" or NMEA "-" input. On the Walker P1249 Wind Data display the connections are as shown in Figure 4.

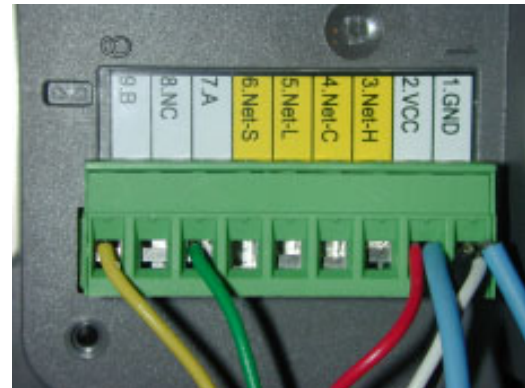


Figure 5 - Connecting to the Simrad IS80 Wind Instrument WI80

User Notes

User Notes

email: info@cruzpro.com
website: www.cruzpro.com