



SAIL BOAT



SPORT FISHING



MOTOR BOAT



# AQUA WEAR WLN20

# WIRELESS NMEA SERVER

Installation and instruction Manual



## 1. Introduction

Congratulations on the purchase of your Aqua Wear WLN20 Wireless NMEA Server. It is recommended that your product is installed by a professional installer, particularly when it comes to interfacing with other equipment.



**Before installing and operating this unit you should consult the user manual of the navigation equipment that you are connecting this unit to.**

## 2. Before you start

You will need the following items and tools to complete the installation:

- The WLN20 Receiver (supplied)
- A 12V or 24V DC power connection where the unit will be installed
- M3 or M4 screws or other fixings appropriate to the mounting location (not supplied).

To receive/display wireless data from the WLN20 you will need:

- Suitable navigation software running on a PC, iPhone/iPad, Android Phone/Tablet, Mac or other wireless device.
- A device with an NMEA 0183 data output/input at either 4800 baud or 38,400 baud

## 3. Installation

Before starting installation, select a suitable location for the WLN20 device. The unit is water resistant to IP65 and can be mounted on deck or below deck in a dry location. Avoid mounting the unit in a location where the unit could become completely immersed in water.



When locating the unit you should consider:

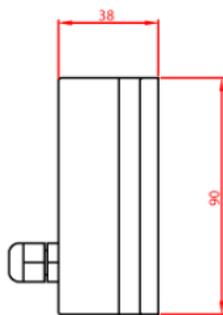
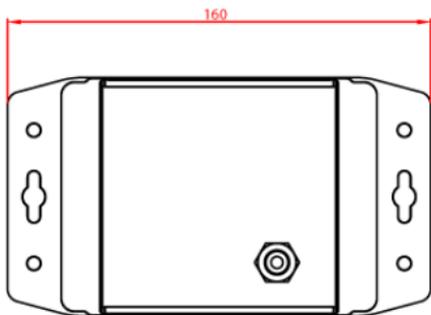
- Routing of power cables to the unit.
- Provision of sufficient space around the unit for cable connections
- Routing of NMEA data connections to/from the NMEA 0183 device.
- Maintaining the compass safe distance of 0.5m.
- Best location for Wifi reception i.e. not inside a metal enclosure or fixed to a metal bulkhead

### Installation Step 1 - Cabling

- Run 12v or 24v power connections to the WLN20
- Run the NMEA 0183 interfacing cables to the WLN20
- Do not make any connections yet

### Installation Step 2 – Mounting the WLN20

- Use suitable fixings (not supplied) to fix the WLN20 to a flat surface using the dimensions and details shown in the drawing below. Note that the unit may be installed in any orientation.





### Installation Step 3 – Powering the WLN20

- Provide power connections to the unit. Power is connected to the ten core PWR/DATA cable on the Red and Black wires. Red wire is the positive (+) connection, Black wire is the negative (-) connection.
- Connect the stripped wires to the nearest source of primary 12V or 24V DC power. Ensure that the supply is connected via a 1A fuse (not supplied) or suitable circuit breaker. The fuse should be fitted in the positive power connection to the unit if necessary.

### Installation Step 4 – Interfacing (NMEA)

- The WLN20 device allows full bi-directional, wireless NMEA0183 data communication to occur between two suitable devices. In most installations, it is likely that the communication will be in one direction i.e. NMEA 0183 data from an instrument system being wirelessly transmitted to an iPhone/iPad application.
- The WLN20 has two NMEA0183 inputs; Port 1 is a high speed 38400 baud port for connection to an AIS or other high speed device, whilst Port 2 is a conventional low speed 4800 baud port for connection to legacy GPS and Instrument Systems. Below is a diagram of a typical WLN20 installation;

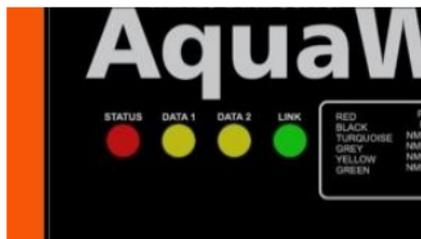


**WLN20 Typical  
Connection Diagram**



## Installation Step 5 – Applying Power

- Apply power to the WLN20 and you should see the four LEDs start to illuminate or flash. The following table shows what each LED indicates;



Condition	Red LED "STATUS"	Yellow LED "DATA 1"	Yellow LED "DATA 1"	Green LED "LINK"
ON (Solid)				TCP/IP Connection
Fast Blink	No wireless connection	Data	Data	
Slow Blink		Data	Data	UDP Connection
OFF	Wireless device connected	No Data	No Data	No Power

## Installation Step 6 – Wireless Interfacing

- The WLN20 receiver has an integrated 802.11b+g wireless adaptor which creates a wireless hotspot on-board your boat. The SSID (name) of the wireless hotspot that WLN20 creates will be "AQUAWEAR-xxxx" where xxxx is a four digit code unique to your WLN20.
- To connect to WLN20, simply scan for wireless hotspots on your wireless device. The exact procedure will vary from device to device so consult the user manual for your device to understand how to connect to a wireless hotspot.
- The WLN20 can transmit wireless NMEA data using two different network modes; either TCP (single device connection) or UDP (multiple device connection). The program or application on the wireless device must support data reception via TCP or UDP in order to work correctly.



If you wish to connect multiple devices to the WLN20, then all devices must use UDP mode. If the first device to connect is set to TCP mode then no other devices will be able to connect

- Once you have wirelessly connected your mobile device to the WLN20, you will need to run the application on your mobile device that accepts NMEA data over a TCP or UDP connection.
- The IP address and port that the WLN20 transmits data on are;  
**IP Address** - 192.168.1.1  
**Port** - 2000
- Note that some UDP connections do not ask you to enter the IP address just the port number.
- You should now be able to receive data wirelessly from the WLN20.

## Normal Operation

The WLN20 consumes around 0.1 Amp and can be left on whenever the boat is sailing. Every time NMEA data is received by the WLN20, the two yellow data LEDs will flash. In some systems with lots of NMEA data, it is not unusual for the yellow LEDs to be constantly flickering.

Should you have a problem connecting wirelessly to WLN20, press and hold the Reset button for 1-2 seconds and try connecting again. In busy marinas where there is significant wireless activity, it may not be possible for a reliable TCP/IP connection to be made to WLN20, but once underway (at sea) a strong and reliable connection will be achieved.

If you are using the WLN20HS for connection to an AIS and you have an iPhone or iPad, visit the app store and download our complimentary copy of the iAIS app. This simple but powerful app will give you an AIS radar type display of all the AIS targets around you. It includes a built-in user guide describing how to setup and use it with the WLN20.

By default the WLN20 creates its own wireless network. If you have a wireless network on the boat and would prefer the WLN20 to join that network – please see **Tech Support Note 00046-2012** on our website.