DIGITAL YACHT

Installation & Quick Start Guide
AIS400 AIS Receiver

1. Introduction

Congratulations on the purchase of your AIS400 AIS Receiver. It is recommended that your receiver is installed by a professional installer.

ⓘ **Before operating the unit you should familiarise yourself with the complete user manual supplied with the product.**

2. Before you start

You will need the following items and tools to complete the installation:
- The AIS400 Receiver
- Dedicated AIS/VHF antenna or existing VHF antenna and splitter
- Dedicated GPS antenna and cable - supplied
- Access to 12V DC power supply where the unit is to be installed.
- M3 or M4 screws or other fixings appropriate to the mounting location.

To configure the unit you will need:
- Access to a PC running Microsoft Windows XP® / Windows 2000® or Windows Vista® with a free RS232 serial port.
- proAIS Receiver configuration software.

To display the AIS targets and data you will need:
- Suitable PC Navigation software running on a PC with Microsoft Windows XP®/Windows 2000® or Windows Vista®/Windows 7® with a free USB of RS232 serial port.
- Or a suitable dedicated chart plotter that can read and display AIS data via NMEA0183

3. Installation

Before starting installation select a suitable location for the AIS Receiver. The unit is water resistant; however it should be installed below deck in a dry location. When locating the unit you should consider:

- Routing of power and antenna cables to the unit.
- Provision of sufficient space behind the unit for cable connections.
- Routing of data connections to PC or chart plotter from the unit.
- Maintaining the compass safe distance of 0.5m.

Installation Step 1

- Flush mount the GPS antenna in a suitable external location where it has a clear view of the sky. The thread of the GPS antenna is M12 x 25mm long and should be drilled with a 12.5mm (1/2") drill. Remove the backing from the neoprene adhesive seal and push firmly down to make the seal. It is also possible to mount the GPS antenna on a suitably fabricated bracket (not supplied) in which case the supplied rubber boot should be fitted over the connector/thread.

- Run the VHF and GPS antenna co-axial cables to the AIS Receiver and terminate with the correct connectors:

    - The VHF antenna cable should be terminated in a BNC connector (Bayonet)
    - The GPS antenna cable should be terminated in a TNC connector (Threaded)

- Run the interfacing cables to the AIS Receiver; NMEA0138 or USB

- Do not make any connections yet

ⓘ **The USB Interface Standard specifies that USB cables should be no longer than 5m without using a special powered USB extender cable – ensure that the total USB cable length from the AIS Receiver to the PC is < 5m.**
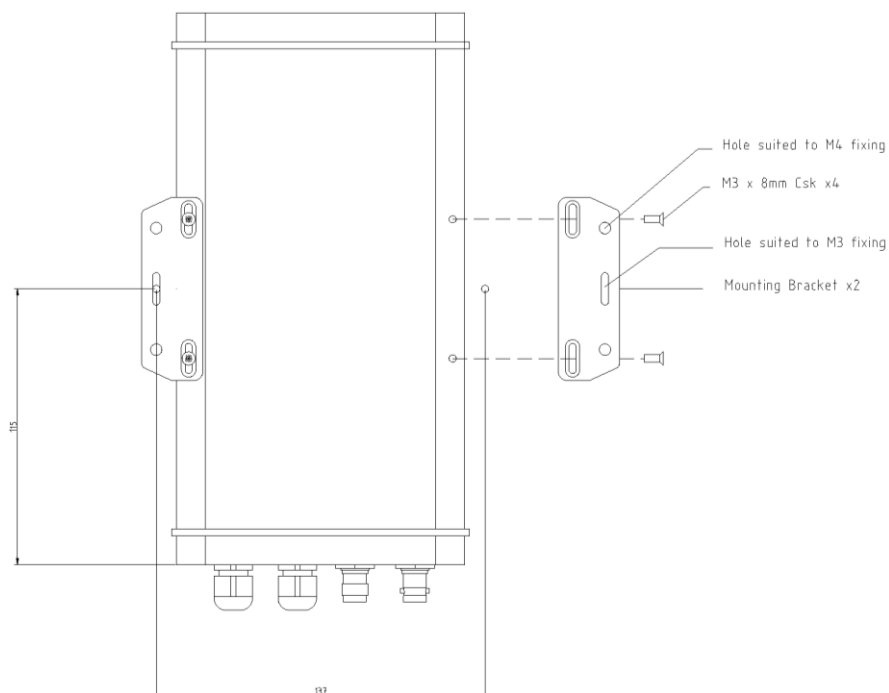
Installation Step 2

- Fix the two supplied mounting brackets to the base of the AIS 400 with the bolts supplied. Use suitable fixings (not supplied) to fix the AIS400 to a flat surface – using the dimensions and details shown in the drawing below. Note that the unit may be installed in any orientation.

Fixing location drawing

View from rear

Side View
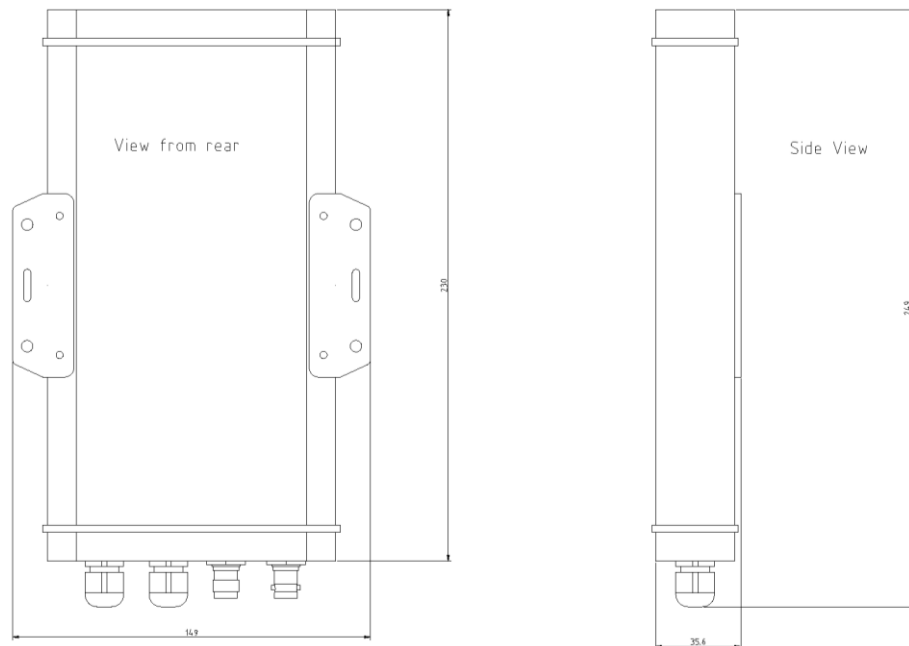
AIS Dimensions and mounting information

Hole suited to M4 fixing

M3 x 8mm Csk x4

Hole suited to M3 fixing

Mounting Bracket x2

- Once the unit is secured, connect the AIS/VHF and GPS antennas. Ensure both connections are fully made; should feel a slight click as the BNC locks and finger tighten the TNC as tight as possible.

Installation Step 3

- Provide power connections to the unit. Power is connected to the six core PWR/DATA cable on the Red and Black wires. The Red wire is the positive (+) connection. The Black wire is the negative (-) connection.

- Connect the stripped wires to the nearest source of primary 12V DC power. **Ensure that the supply is connected via the supplied 1A fuse or suitable circuit breaker.** Add the fuse in the positive power connection to the unit if necessary.

- The AIS Receiver is designed for a 12V DC system. A converter should be used if the vessel uses a 24V system.

Installation Step 4

- The AIS400 Receiver can be connected to other AIS compatible equipment via the NMEA0183 connections on the PWR/DATA cable or via the USB interface (most common connection for PCs).

- The USB interface is designed to use the standard Serial Adaptor drivers that are supplied with Windows and no additional driver should be required. Simply plug the USB connector from the AIS400 in to a spare USB port on the PC.

- When you turn on the AIS400 for the first time, Windows should detect the new hardware and install the drivers automatically. It will allocate a COM Port number to the adaptor (COM1, COM2, COM3, etc.) and it is this COM Port number that you have to tell the PC Navigation software, that the AIS is connected on – consult the instruction manual supplied with your PC Software to understand how this is configured.

- A table showing what each of the 6 wires of the PWR/DATA cable does is printed on the AIS400 Receiver and repeated below for your convenience;

AIS400 Receiver PWR/DATA cable
  - RED   -   Power + (12v)
  - BLACK   -   Power – (0v)
  - ORANGE   -   NMEA Out +
  - BROWN   -   NMEA Out –
  - YELLOW   -   NMEA In +
  - GREEN   -   NMEA In –

- The most common connection to a dedicated chart plotter is to take the NMEA Output (Orange+ and Brown –) from the AIS400 Receiver and to connect it to a free NMEA Input on the plotter. You must then tell the chart plotter that AIS data is connected to this port and set the baud rate to 38,400 Baud – the standard speed for AIS data. Consult the instruction manual supplied with your Chart Plotter to understand how this is configured.

- Apply power to the AIS400 Receiver and verify AIS data is being received on the chart plotter or PC.

- Installation is now completed

4. Configuration and Trouble Shooting

The AIS receiver is supplied with a copy of proAIS software that can be run on a Windows PC. Install the software by running the Setup.Exe file on the included CD-ROM.

Ensure the AIS400 is correctly connected and powered up. Connect the USB connector to a spare USB port on your PC.

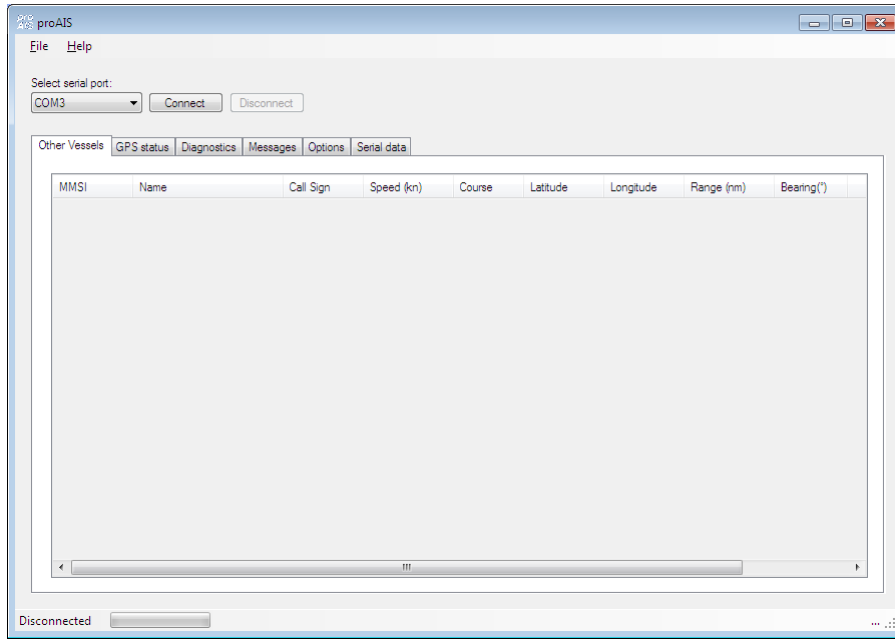Run the proAIS software – you should see the window displayed in Fig 1.

Figure 1

Select the serial port that the USB adaptor has been allocated to. This is usually (but not always) between COM5 and COM9. Then click the "Connect" button. You should see the AIS target list start to grow as more targets are detected – see Fig 2.
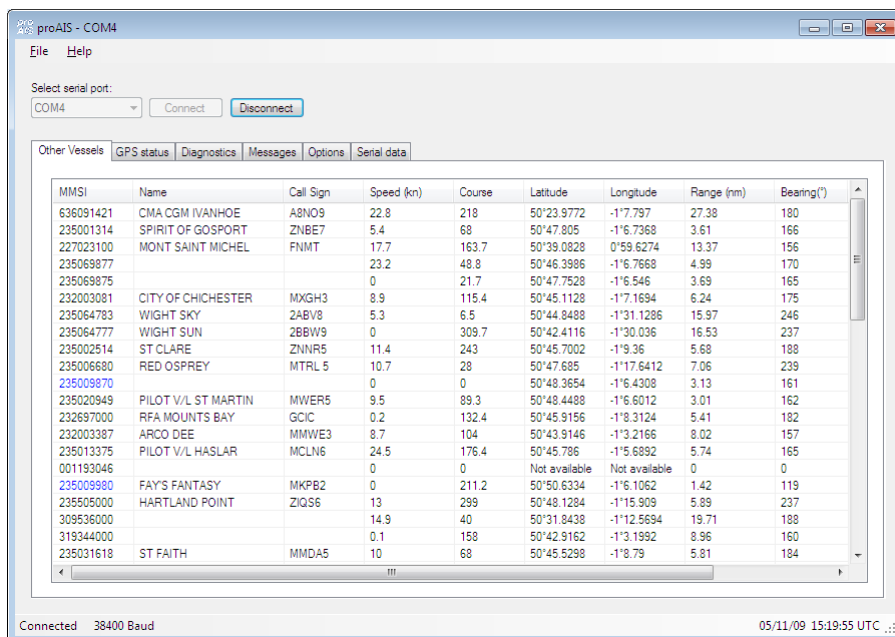

Figure 2

Along the top of the window are a series of Tabs that when you click on them display different pages of information. The main tabs of interest are; Other Vessels, GPS Status, Diagnostics and Serial Data.

Clicking on the "GPS Status" tab displays the window shown in Fig 3. This page shows the number of satellites being tracked (with signal levels) plus the current Lat/Lon and COG/SOG that the GPS is calculating.
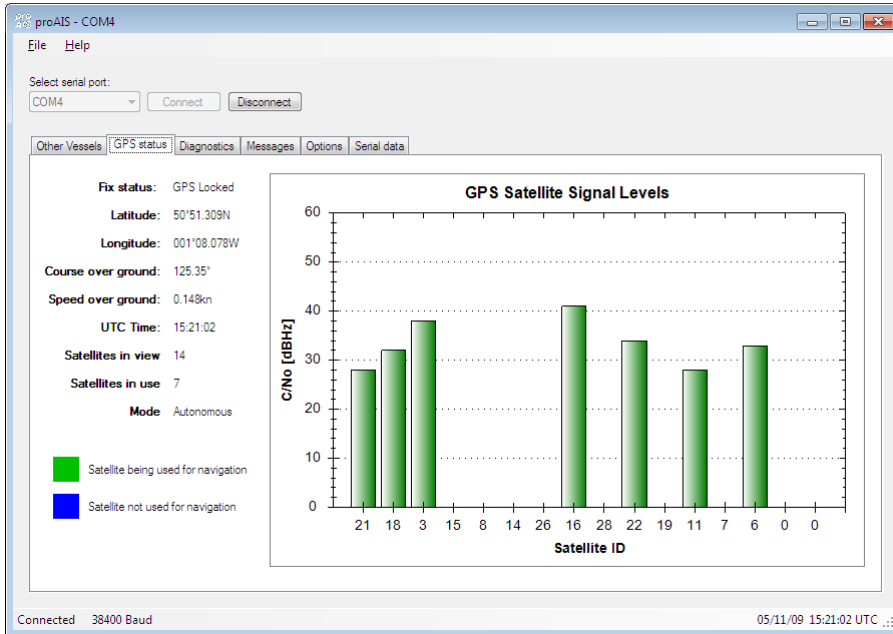

Figure 3

Clicking on the "Diagnostics" tab displays the window shown in Fig 4. On this page you can see the software and firmware versions of the AIS400, check the internal supply voltages, see any error alarms and other useful data.
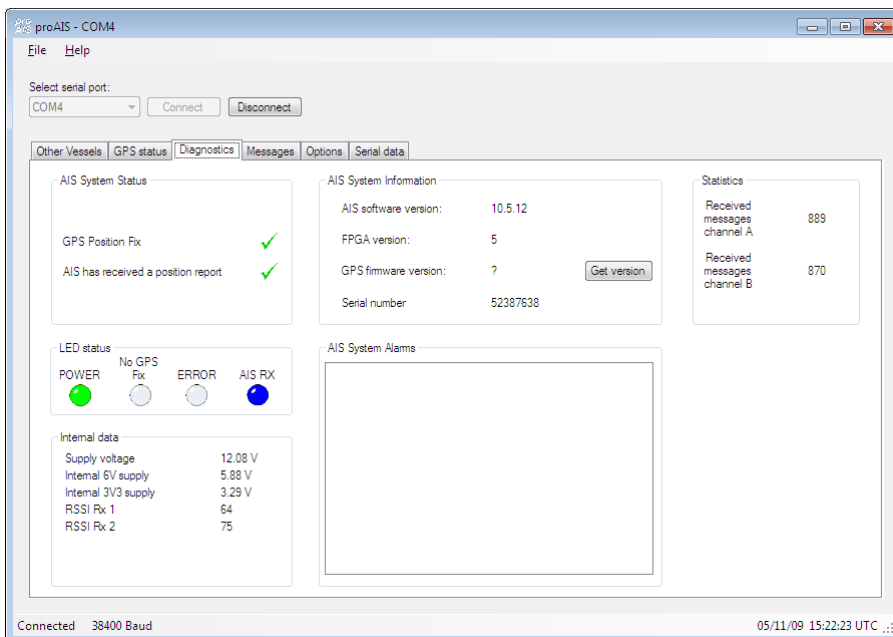

Figure 4

Clicking on the "Serial Data" tab displays the window shown in Fig 5. This page shows all of the NMEA0183 serial data that the AIS400 Receiver is outputting which can be useful when trouble shooting. There is the option to create a log file of this data which can then be sent to the Digital Yacht technical support team for further investigation.
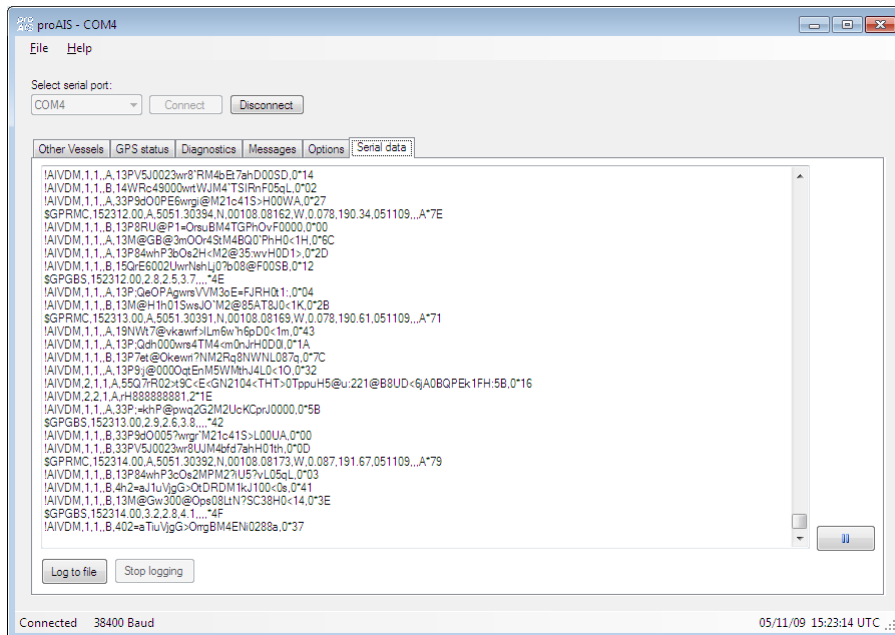

Figure 5