Installation & Quick Start Guide

GPS105 Smart GPS Sensor

1. Introduction

Congratulations on the purchase of your GPS105 Smart GPS Sensor. It is recommended that your receiver is installed by a professional installer. You will need to purchase a suitable 1" x 14 TPI thread mounting bracket for the GPS105.

Before operating the unit you should also familiarise yourself again with the user manual of the equipment that you are connecting the GPS105 to. Pay particular attention to the GPS Interfacing section and any settings that need to be configured for correct operation.

2. Before you start

The GPS105 is a smart "all in one" GPS receiver solution for small boats. Simply connect the GPS105 to a 12v or 24v DC supply and it will immediately start receiving GPS data and outputting this data in NMEA 0183 format (4,800 baud).

Carefully consider how you wish to connect the GPS105 to your existing navigation system before you start installing cables. To display the GPS data you will need:

- Suitable dedicated chart plotter that can read and display GPS data via NMEA0183
- Or a suitable PC Navigation software running on a PC with Microsoft Windows XP®/Windows 2000® or Windows Vista®/Windows 7® with a free RS232 serial port or a free USB port with a USB to NMEA adaptor.

3. Installation

Before starting installation select a suitable location for the GPS105 Receiver. The unit is water proof and designed for on-deck mounting. The GPS105 antenna has the popular 1" x 14 TPI thread mount, found in many VHF antennas. A wide variety of different brackets are available for this type of threaded mount, consult your local marine electronics dealer or chandlery for more information.

The 1" x 14 TPI thread mount can also be removed, allowing the GPS105 to be flush mounted on a flat horizontal surface.

The GPS105 is supplied with 7.5m of cable and this should be routed through the vessel to a suitable dry internal location where it can be connected to the boat's DC power system and the equipment it will be interfaced with. The cable can be shortened, lengthened or joined without problems.

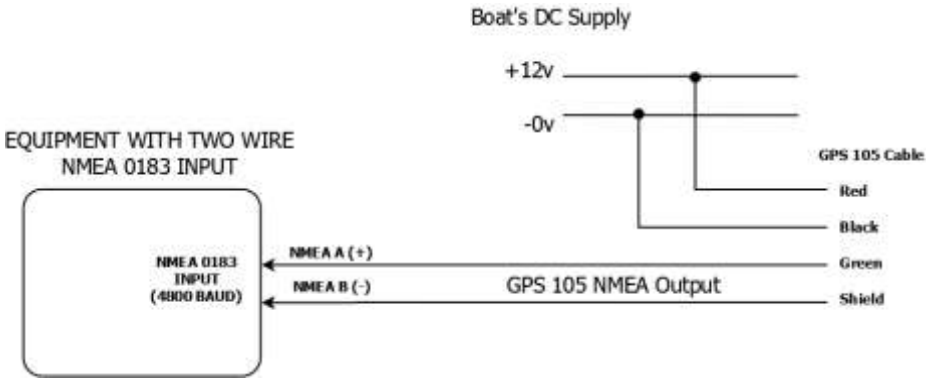
The GPS105 should be connected to the boat's DC supply via a 1 Amp fuse. The unit requires 9.6V to 28.8V supply voltage.

Below are the wiring details for the GPS105 and a connection diagram that shows how to interface it to other navigational equipment.

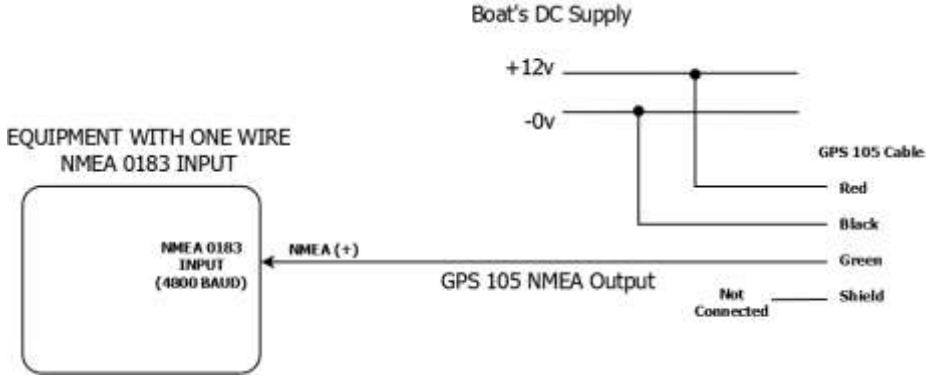
Wiring Colours;

Red	Power + (12v or 24v)
Black	Power – (0v)
Green	NMEA Out +
Screen/Shield	NMEA Com –
White	NMEA In+ (not used)
Violet/Brown/Blue	Not Used

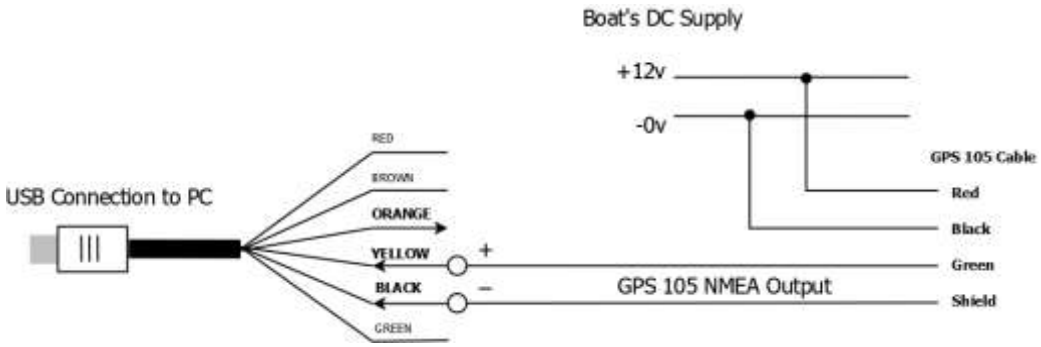
When connecting to a two wire NMEA Input (such as Raymarine), connect the GPS105 Green wire to the NMEA + Input and the Screen/Shield to the NMEA – Input.



When connecting to a single wire NMEA Input (such as Garmin), connect the GPS105 Green wire to the NMEA + Input and the Screen/Shield to the Power – (0v).



The GPS105 can also be connected to a computer via a USB to NMEA adaptor. If you use the Digital Yacht NMEA to USB Adaptor, then the diagram below shows how to connect them together.



4. Technical Specification

General -	L1 1575.42MHz, C/A code, 12-channel, Carrier-Aided with HWTrack
Sensitivity -	143 dBm minimum
Update Rate -	1Hz
Accuracy Position:	15m CEP without S/A
Velocity:	0.1m/sec without S/A
Time:	± 1ms
WAAS Accuracy Position:	3m CEP
Velocity:	0.05m/sec
Acquisition Cold start:	45sec (average)
Warm start:	38sec (average)
Hot start:	8sec (average)
Reacquisition	0.1 sec
Technology Supported:	DGPS WAAS/EGNOS
Dynamics Altitude:	-1000m to 18000m
Velocity:	500m/sec
Acceleration:	±4g
Operation Temperature	-30oC to +80oC degrees Celsius
Storage Temperature	-40oC to +90oC degrees Celsius
Operating Humidity	5% to 95%
Input current Maximum	150mA
Dimensions Diameter:	83.3mm or 3.27-inch, Height: 60mm or 2.36-inch
Weight	8.46oz or 240g
Protocols	NMEA-0183 V2.2 at 4800 baud rate , 8-None-1
NMEA messages:	GGA, RMC, GSA, GSV,
Power Input	VDC +9v to 34v