

Using NMEA Heading Strings

1 Introduction

To use the NMEA heading rather than the Navigator's internal heading, your system must meet the following requirements.

- All data received shall comply with NMEA 0183 Version 3.0 dated 7/1/2000. The sentence that will be parsed is \$--HDT, with checksum.
- Resolution beyond 0.01 degrees will be lost.
- This is available only for Navigator ADCP/DVLs with firmware version 9.15 or later.
- The output baud rate of the gyro must match that of the ADCP setup (CB Command). The baud rate cannot be changed after the unit has started pinging. In other words, once pinging, the command buffer will become a NMEA buffer. Commands sent after the unit has started pinging will be ignored.
- Customer shall input data at no higher rate than 10 Hz. This is more of a precautionary restriction to prevent the ping rate from being slowed too much by processing the input buffer.
- Input heading data is echoed between ensembles.

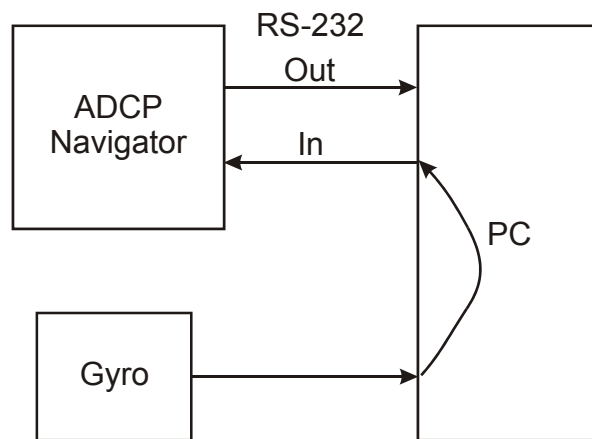


Figure 1. NMEA Heading String Setup

2 Setup

- a. Set the EZ command to EZxx3xxxx (where x = 1 or 0) to use the NMEA heading rather than the Navigator's internal heading sensor.
- b. Start the Navigator pinging.
- c. Set the NMEA device to output the HDT string. The data will be parsed such that regardless of input rate, when the sensors are sampled, the last valid HDT string in the buffer will be used.
- d. In instances where the heading source and the ADCP are not aligned, an EA command will need to be issued to correct the misalignment. An EB command may be needed as well; consult the WorkHorse Commands and Output Data Format guide for more information.



NOTE. In order to be able to receive the HDT strings, the firmware disables the soft break feature (the +++).

The CL command must be set to CL0 to disable the sleep option; otherwise the DVL will drop some headings.

If the Navigator is in the Command Mode (e.g. after a break signal), it will stay in that mode until it receives a "Start Pinging" command.

2.1 HDT – Heading – True NMEA Format

Actual vessel heading in degrees True produced by any device or system producing true heading.

\$__HDT,x.x,T*hh<CR><LF>

Table 1: HDT NMEA Format

Field	Description
1* x.x	Heading, degrees True
2 T	HEX 54

Sample of NMEA HDT data: \$IHD,T,247.9,T*2A



NOTE. The NMEA 0183 specification states that the checksum is a simple 8-bit exclusive-or of all of the ASCII Data between the '\$' and '*', exclusive.