Hornet - NMEA with USB

* Connects B&G Hornet 4 to PC and other equipment
* Output of Boat Speed, Apparent and True Wind
* NMEA 0183 VHW, MWV (R & T) & VWR
* USB



User Manual

HB-HNU-V1.02

Tinley Electronics Limited
235 Bentley Way, LYMINGTON, SO41 8JW
Tel: 01590 610071 Fax: 01590 610072
email: electronics@tinley.net
www.tinleyelectronics.com

Introduction

Congratulations on your purchase of the Hornet to NMEA/USB interface from Tinley Electronics. This interface combines clever thinking with incredibly simple operation, and represents Tinley's commitment to providing customers with the finest products.

The Tinley Hornet to NMEA interface converts B&G Hornet 4 digital repeater bus signals into NMEA MWV, VHW and VWR outputs with an additional USB connection for a PC, allowing any navigation software to receive NMEA.

Before you begin using your new Tinley product, please take the time to read this manual to help you achieve the full potential from your new interface.

Certification

This device meets requirements for CFR47 Part 15 of the FCC limits for Class B equipment, and meets the standards set out in European Standard EN 60945: 1997 IEC 945: 1996 for maritime navigation and radiocommunication equipment and systems.

Disclaimer

Tinley Electronics Ltd accept no responsibility for the use of this equipment. This equipment is not designed to replace conventional navigation procedures. Information in this document is subject to change without notice. Tinley Electronics reserve the right to change its products and documentation without obligation to notify any person or organisation of such changes.

Operation

For basic operation the interface outputs NMEA continually while the Hornet 4 is powered up. When the USB is connected, the interface copies the same information to the PC USB port.

As far as the host PC is concerned, the USB Merge Computer appears to be a COM port, (RS232). Note that other than selecting the correct COM port, no other settings are necessary… you do not have to select baud rate etc., this is automatic.

To find the correct com port, either:

1. Check in Windows XP ‘Device Manager’ under ‘Ports (COM & LPT)’; the interface will be listed as ‘TINLEY USB to UART (COM X)’ where X = COM port number. The interface must be plugged in and driver loaded.
2. Open software, (such as Hyperterminal or your navigation package), without the interface plugged in and check the available COM ports under ‘Properties’ or similar. Close ‘Properties’ and Plug in interface. Now check the available COM ports again, noting the new one! Some software may require closing and re-opening to see new port.

Note that the COM port is specific to the USB port in use… if you change the USB port, the COM port will also change. Plug the interface back into the original USB port and the original COM port will be remembered, even when the PC reboots.

Open the COM port in Hyperterminal and the interface will output the following start-up message:

```
Tinley Electronics Ltd (c)2002-2007
Hornet-NMEA v3.00 c3.249
```

Followed by the NMEA stream if a Hornet 4 is connected.

* ALWAYS CONNECT USB BEFORE OPENING APPLICATION *

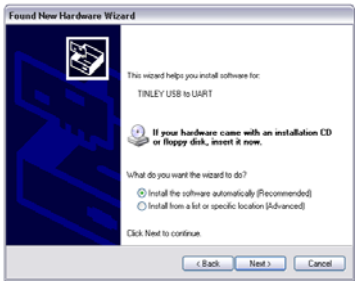
Installing Driver

The driver only has to be installed the first time the interface is plugged into each USB port. The CD is only required for the first installation port. For Windows Vista, 7, 8, XP, NT or 2000 the following driver file is provided: Tinley_NTXPVista78.inf The following example is for windows XP.

1: Plug interface into required USB port. ‘Found New Hardware Wizard’ will be displayed. Select ‘No, not this time’ and click ‘Next’



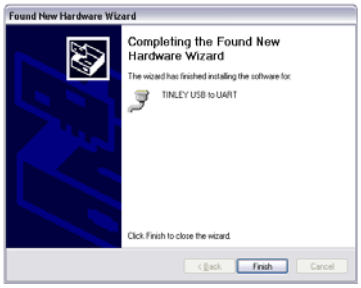
2: Insert CD. If windows does not automatically detect CD then click ‘Next’



3: Ignore warning and click ‘Continue anyway’



4: Wait for software to load and click ‘Finish’



Hornet NMEA with USB Installation Diagram

B&G Hornet 4
Digital Repeater Bus
Terminals 12, 13, 14 & 17

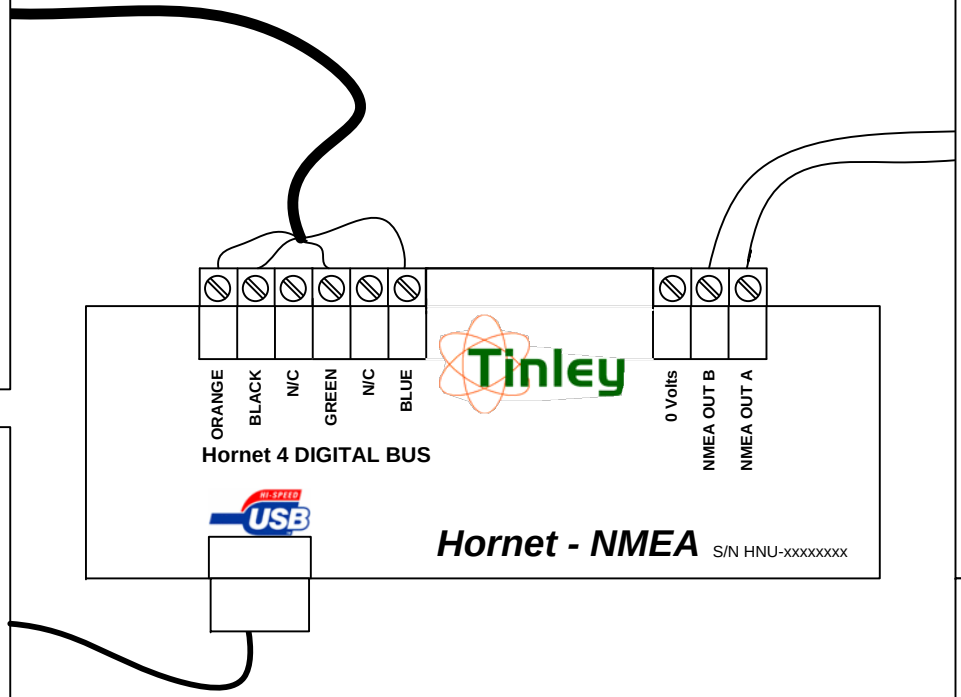
Hornet 4 must be in factory default set up as follows:

Boat Speed in 2 decimal places
Wind Speed 1 decimal place
Wind Angle +/-180 relative to bow

See page 4&5 of Hornet 4 user manual

USB Hi-Speed
V2.0
(Also compatible with V1.1)

Drivers provided on CD for:
Windows Vista, 7, 8
Windows XP
Windows 2000
Windows NT



OUTPUT: NMEA 0183 V3.01

Typical output sentences:

$IIVHW,,,,,4.45,N,8.24,K*47<CR><LF>
$IIMWV,330,R,15.1,N,A*16<CR><LF>
$IIMWV,319,T,11.4,N,A*1A<CR><LF>
$IIVWR,030,L,15.1,N,27.9,M,7.7,K*43<CR><LF>

Giving:

Boat Speed
Apparent Wind Speed
Apparent Wind Angle
True Wind Speed
True Wind Angle

Output drive capability 60mA maximum
Output in accordance with the EIA-422 specification

Note: Some interfaces that are not compliant with NMEA 0183 or EIA-422, (PC's for example), can cause a conflict with this output. This results in excessive current drawn and corruption of data. If this happens connect 'Output A' as the output signal and use '0 Volts' as signal ground. Do not connect NMEA Output B to 0V or ships ground.

Specifications for software version 4.0:

Current consumption dependant on load but typically 45mA

Tinley Electronics Ltd.
235 Bentley Way,
Lymington, SO41 8JW
UK

© Tinley Electronics Ltd. 2007-2013
This drawing may not be copied or reproduced in any form or by any means without the prior written consent of Tinley Electronics Ltd.

Tel: +44 (0) 1590 610071
Fax: +44 (0) 1590 610072
e-mail: electronics@tinley.net
Website: www.tinleyelectronics.com