

WinFrog Device Group:	OUTPUT
Device Name/Model:	ANALOG SPD
Device Manufacturer:	DGH Corporation P.O. Box 5638, Manchester, NH 03108-5638 (U.S.A.) Tel: 1 (603) 622-0452 Fax: 1 (603) 622-0487 Email: information@dghcorp.com
Device Data String(s) Output to WinFrog:	N/A
WinFrog Data String(s) Output to Device:	See Telegram Specification section below
WinFrog Data Item(s) and their RAW record:	N/A

DEVICE DESCRIPTION:

The Analog Speed device is a digital to analog converter. WinFrog supplies the converter with the vessel's speed in user-selected units up to a user-entered maximum. The device converts the speed to a current in milliamps (mA). The range of the converter is 4mA to 20mA so the speed range between 0 and the user-entered maximum is scaled to this current range. This is also reflected in the output string where a speed of zero is represented by \$1AO+00004.00 and the maximum is represented by \$1AO+00020.00.

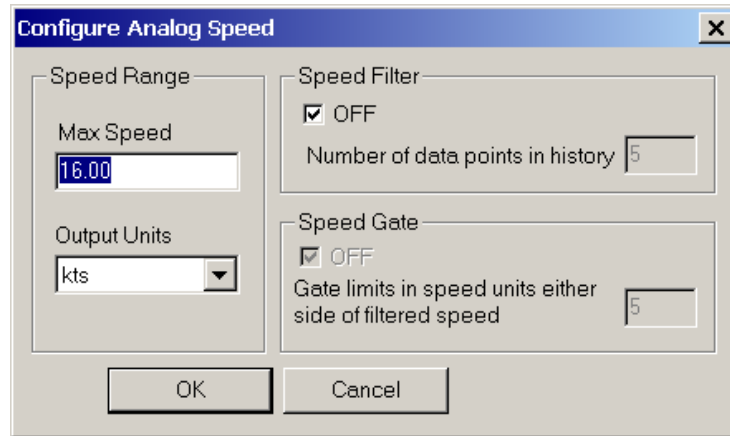
DEVICE CONFIGURATION INSTRUCTIONS

WINFROG I/O DEVICES > EDIT I/O:

Baud Rate: Configurable
Data Bits: 7
Stop Bits: 1
Parity: Odd

WINFROG I/O DEVICES > CONFIGURE DEVICE:

This device must be configured at the I/O Device window level. In the I/O Devices window, click the device name to select it, then right-click and select Configure Device. The Configure Analog Speed dialog box appears, as seen below.



The value input in the Maximum Speed edit field is used to calculate a ratio that in turn is used to adjust the vehicle speed. The ratio can be expressed as:

$$\text{spdConv} = 16./\text{Max Speed entered}$$

While the speed output from this device can be expressed as:

$$\text{output speed} = (\text{speed} * \text{spdConv}) + 4$$

The device using this analog speed would be configured to nullify the additional 4 speed units added to this output speed. The minimum speed is always zero.

The units output by the driver can be selected using the drop down combo box. This setting is local to the device and does not affect any other speed unit setting in WinFrog. For example, the user can select to view the vessel speed in knots in the vehicle text window, but specify that the speed output by the driver will be in m/s.

If the vessel speed exceeds the Maximum Speed set by the user, a warning message is displayed in the Decoded Data tab in the I/O Devices window.

The **Speed Filter** uses a central tendency filter that seeks the median of the input values. The number entered for the Speed Filter defines the number of samples to be used.

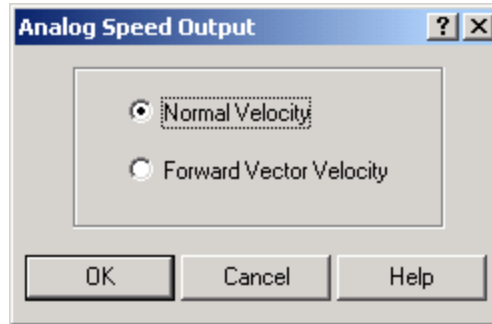
If the **Speed Gate** is enabled, the new data is tested against the data history based upon the number of samples defined in the Speed Filter dialog box. If it exceeds the gate limits, as entered in the Speed Gate dialog box, the data is rejected. Note that the Speed Gate is not available if the Speed Filter is not selected.

WINFROG VEHICLE > CONFIGURE VEHICLE DEVICES > DEVICE DATA ITEM > EDIT:

Adding the ANALOG SPD device creates the ANALOG SPD data item. Once the data item has been added to the vehicle, it must be edited to suit the application.

Data item: OUTPUT, ANALOG SPD, ANALOG SPD

Highlight the OUTPUT, ANALOG SPD, ANALOG SPD data item and click the Edit button. The Analog Speed Output dialog box opens as seen below.



In this dialog window you can select one of the output velocity options. The Normal Velocity option outputs the velocity as calculated from successive positions (GPS or other positioning devices).

The Forward Vector Velocity option outputs the forward (downline) velocity or the offline velocity, whichever is greater. If no line is being tracked by the vehicle then this option uses the speed of the vessel as the output velocity.

TELGRAM SPECIFICATION:

\$1AO+0000(4+x).00 where the output speed, represented by the x, is the speed calculated as mentioned above plus 4.00 as seen in the data string. The 4 is the minimum current, in mA, of this device.