

WinFrog Device Group:	Speed Log (anemometer)
Device Name/Model:	LAMBRECHT WIND
Device Manufacturer:	Wilh. Lambrecht GmbH Friedländer Weg 65-67 37085 Göttingen Germany Tel: 0551 / 49 58 0 Fax: 0551 / 49 58 312 Email: info@lambrecht.net
Device Data String(s) Output to WinFrog:	aaXXXXX and aaYYYYY aa Undecoded header XXXXX voltage representing wind speed YYYYY number representing wind direction
WinFrog Data String(s) Output to Device:	\$1RD and \$2RD
WinFrog Data Item(s) and their RAW record:	WIND: 374

DEVICE DESCRIPTION:

This is a driver designed to request anemometer data from the Lambrecht Wind device. This device is an analogue to digital converter that takes the voltage generated by the anemometer, calculates the relative wind speed and direction then converts the data to digital format. This device also requires reliable vessel speed and heading data sources in order to determine the true wind speed and direction.

The data from this device can be displayed in the Graphics window by enabling the Plot Wind Indicator option in the graphics Outline section of the Vehicle Presentation dialog (Configure > Vehicles > Vehicle Presentation).

WinFrog outputs a request for data at 1 Hz (1 Hz = 1 cycle per second). The requests alternate between \$1RD and \$2RD. The response to \$1RD is expected to be the relative (apparent) wind speed and the response to \$2RD is expected to be the relative (apparent) wind direction.

The true or theoretical wind speed and direction will be calculated from these relative values plus the vessel speed and heading.

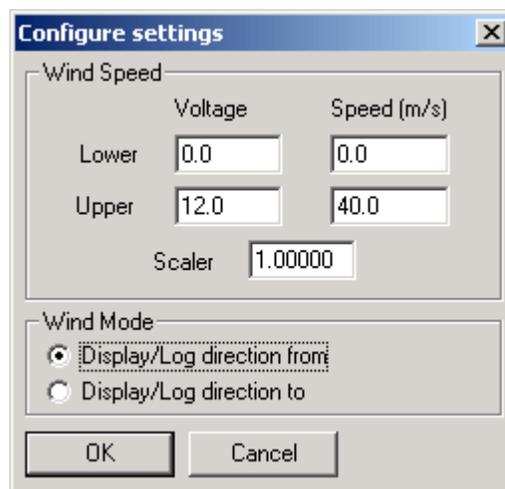
DEVICE CONFIGURATION INSTRUCTIONS

WINFROG I/O DEVICES > EDIT I/O:

Configurable Parameters

WINFROG I/O DEVICES > CONFIGURE DEVICE:

The LAMBRECHT WIND device is added to WinFrog from the SPEED LOG device group. 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 settings dialog box appears, as seen below.



The response from the \$1RD command is an analogue voltage representing the wind speed. Enter the upper and lower voltages and their corresponding speeds (refer to Lambrecht documentation for voltage and speed limits). The observed value is multiplied by the scalar. The result must be in metres/second. WinFrog uses the formula below to calculate the apparent wind speed from the observed value.

$$\text{Speed (m/sec)} = \frac{(\text{observed value} \times \text{Scalar} - \text{lower voltage})(\text{upper speed} - \text{lower speed})}{(\text{upper voltage} - \text{lower voltage})}$$

The wind direction from the Lambrecht is expected to be the direction the wind is coming from.

The two radio buttons may be used to display the wind as the direction it is coming from or direction it is going to. Note: The value selected will be stored in the RAW file, i.e., either the direction to or direction from will be stored in the RAW file, depending on this selection.

The wind direction when received is scaled as follows:

$$\text{Wind direction (degrees)} = \text{observed value} * 36/1000$$

This direction is expected to be relative to the bow and is the apparent value.

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

Upon adding the LAMBRECHT WIND device to WinFrog, only one data item can be selected: WIND. There is no configuration required for this data item. However, it must be added to a vehicle in order to log data to the raw file and to obtain the ship speed and heading in order to calculate the true wind speed and heading.

RAW DATA LOGGING:

The record is Type 374 and contains the following:

Device name, time, Ship speed, Ship heading, Wind speed true, Wind speed unit, Wind Dir True, Wind speed relative, Wind speed unit, Wind direction relative, Wind Dir Type, Status

Where:

Wind speed unit is Knots.

Wind Dir Type is "Rel" and indicates the type of data that was in the telegram.

Status is a dash "-", as there is no status value in this telegram.

The wind directions will be either from or to depending upon the selection of the radio button above.