FVD-L GUI Help
Release 1.0 (P/N 75495)

The FVD-L GUI allows a user to acquire the real-time data and configure the settings of the FVD-L sensor. This help document is intended to describe the layout of the GUI and explain the use of each GUI screen.

1.0 Standard Data Acquisition

Figure 1. Standard Data Acquisition Screen

The **Standard Data Acquisition** screen is shown in Figure 1, and is the default screen. This screen allows a user to acquire the real-time data of the sensor, and graph the sensor count versus time in the **Standard** panel. The data acquisition is started by pressing the **Start** button. The user can choose to log the data or acquire data without logging.

The **Settings** panel contains the communication parameters and the sampling rate. The Port setting selects which COM port the computer communicates with the sensor on. This setting must match the COM port that the RS232C cable is connected to on the computer. Currently the COM ports can range from 1-20. The Sample Time setting is the rate at which the sensor is polled for new data. The minimum sample time is 20msec and the default is 500 msec.

1.1 Thresholds Data Acquisition

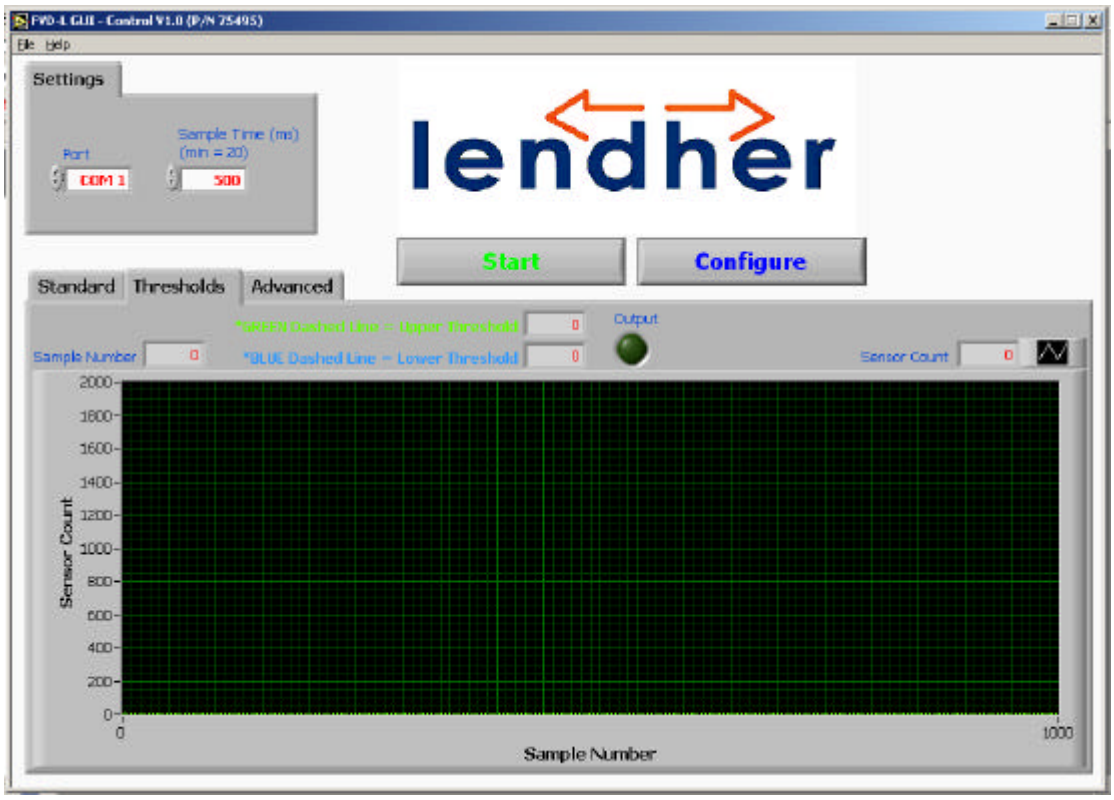


Figure 2. Thresholds Data Acquisition Screen

The **Thresholds Data Acquisition** screen is shown in Figure 2. This screen allows the user to graph the sensor count versus time. The current threshold values are also displayed in the **Thresholds** panel.

1.2 Advanced Data Acquisition

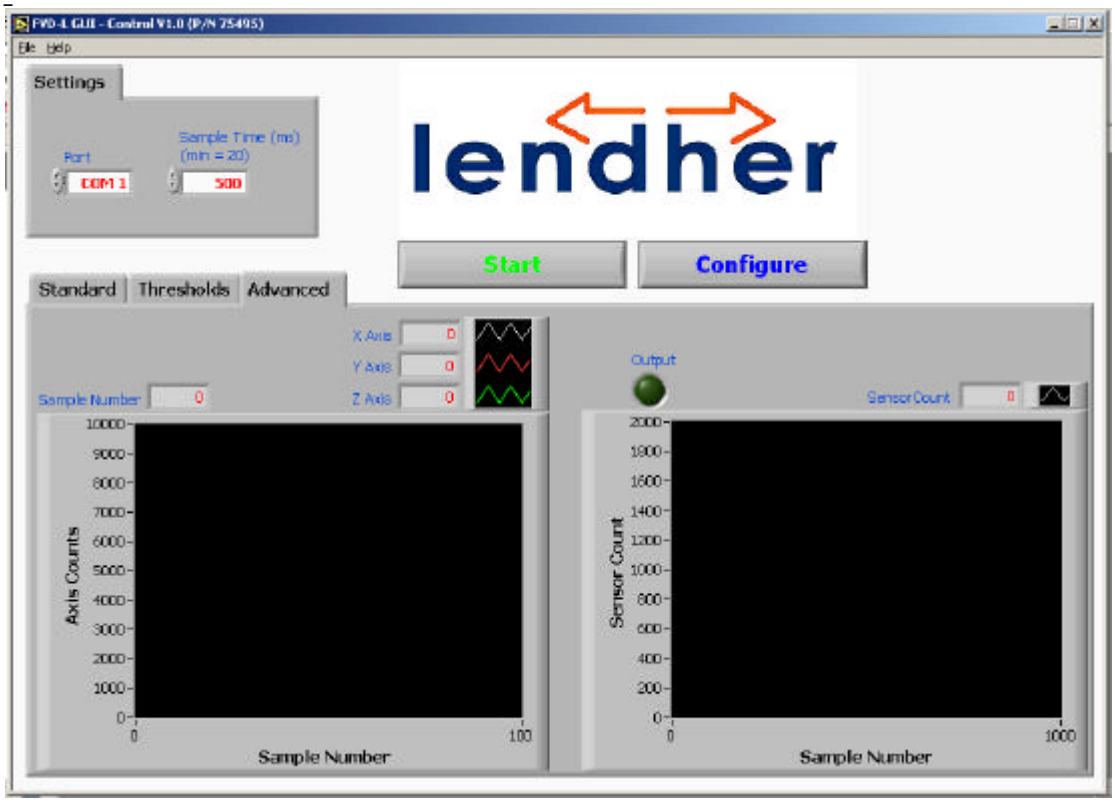


Figure 3. Advanced Data Acquisition Screen

The **Advanced Data Acquisition** screen is shown in Figure 3. This screen allows the user to graph the individual real-time axis counts versus time, along with the sensor count of the sensor in the **Advanced** panel.

2.0 Configuration Settings Screen

The **Configuration Settings** screen is accessed by pressing the **Configure** button from the **Standard or Advanced Data Acquisition** screens. All of the panels in this screen have **Read Config** and **Write Config** buttons. When the **Read Config** button is pressed, all of the data for the currently selected panel is read from the sensor. When the **Write Config** button is pressed all of the data on the currently selected panel is written to the sensor. The data in the unselected panels is not read/written. When data is changed it is highlighted yellow, and is un-highlighted when it is actually written to the sensor.

2.1 Ambient, Thresholds, & Hysteresis Panel

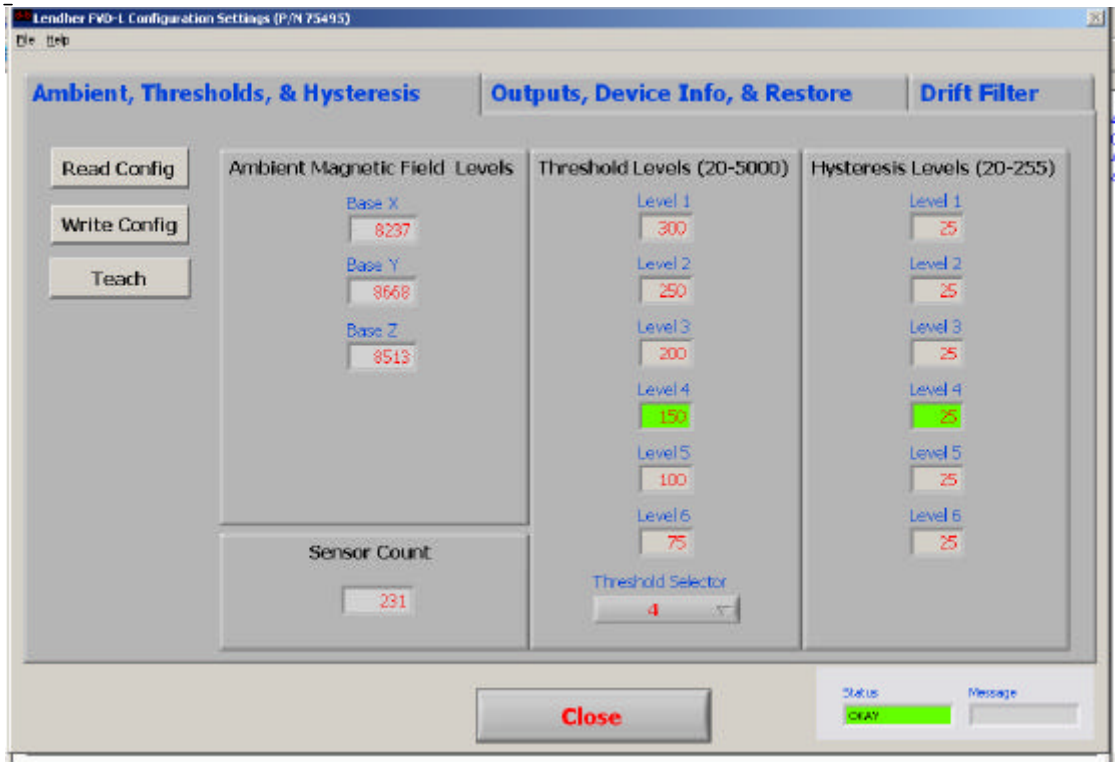
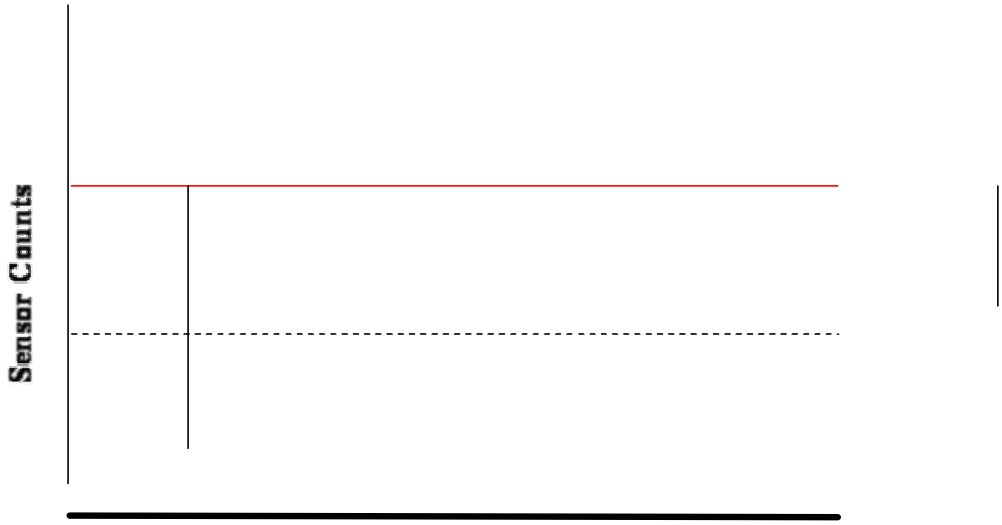


Figure 4. Ambient, Thresholds, & Hysteresis Panel

The **Ambient, Thresholds, & Hysteresis** panel is shown in Figure 4. This panel allows the user to configure the ambient levels, threshold levels, and hysteresis levels. The ambient levels can be re-measured by pressing the **Reset Ambient Levels** button. This causes the sensor to re-measure the ambient magnetic field in the X, Y, and Z planes. The individual axis values of the ambient magnetic field are displayed in the Base X, Base Y, and Base Z fields. The **Sensor Count** is displayed to show the current sensor count at the time that either the **Read Config** or **Reset Ambient Levels** button is pressed. When the ambient levels are reset, the **Sensor Count** should be close to zero (i.e. the sensor is zeroed out). There are 6 threshold levels that can be configured within the range 20-5000, and there are 6 hysteresis levels that can be configured within the range 20-255. The Threshold Selector

is used to configure which threshold and hysteresis levels are used by the sensor. Correct operation of the sensor requires that the hysteresis level be less than or equal to the threshold level. Figure 5 shows a diagram describing the interaction of the threshold and hysteresis levels.



2.2 Outputs, Device Info, & Restore Panel

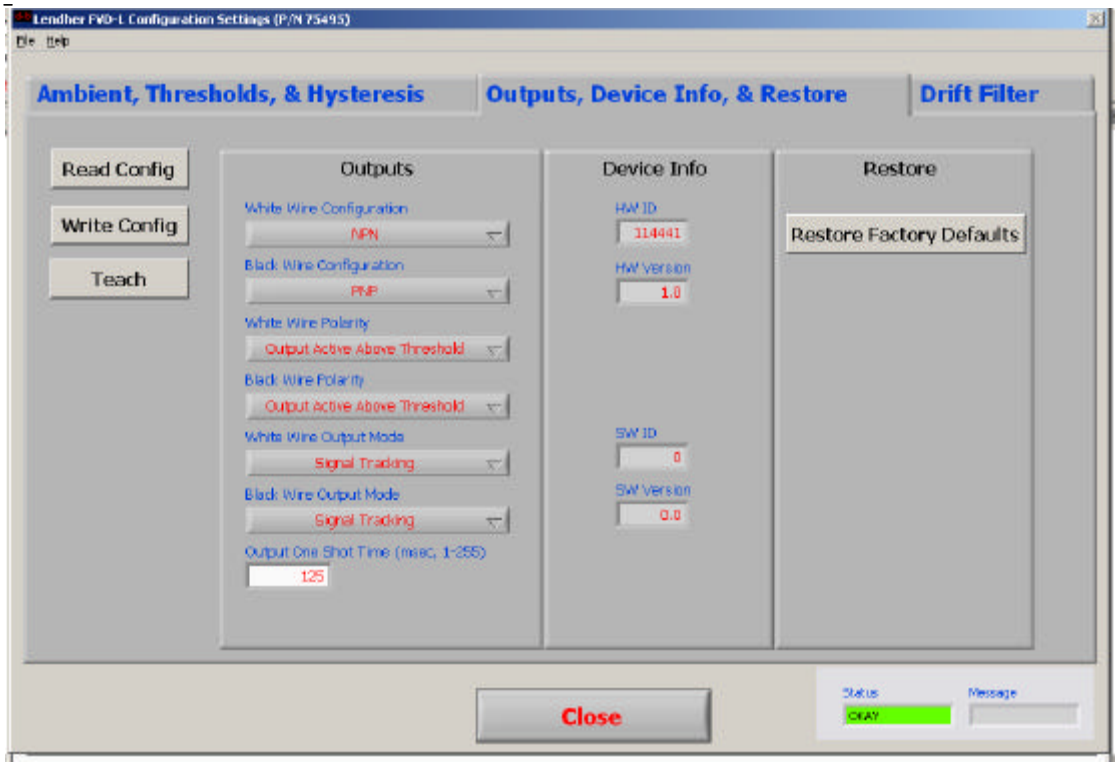


Figure 6. Outputs, Device Info, & Restore Panel

The **Outputs, Device Info, & Restore** panel is shown in Figure 6. This panel allows the user to configure the output settings, read the device info, and restore the sensor back to the factory default configuration settings. Be careful because restore factory defaults puts all the levels to value 100.

The settings that can be configured in the **Outputs** section are the White/Black Wire Configuration (PNP/NPN), the White/Black Wire Polarity (Active Above Threshold/Inverted), White Black Wire Output Mode (Signal Tracking/One Shot), and the Output One Shot Time (1-255 msec, default is 125 msec).

The **Device Info** is read-only, and consists of the Hardware ID/Version number and the Software ID/Version number.

The **Restore Factory Defaults** button will cause the sensor to restore its configuration settings back to the factory defaults that are stored in the sensor. This will also cause the GUI to re-read all of the configuration settings into all of the panels.

2.3 Drift Filter Panel

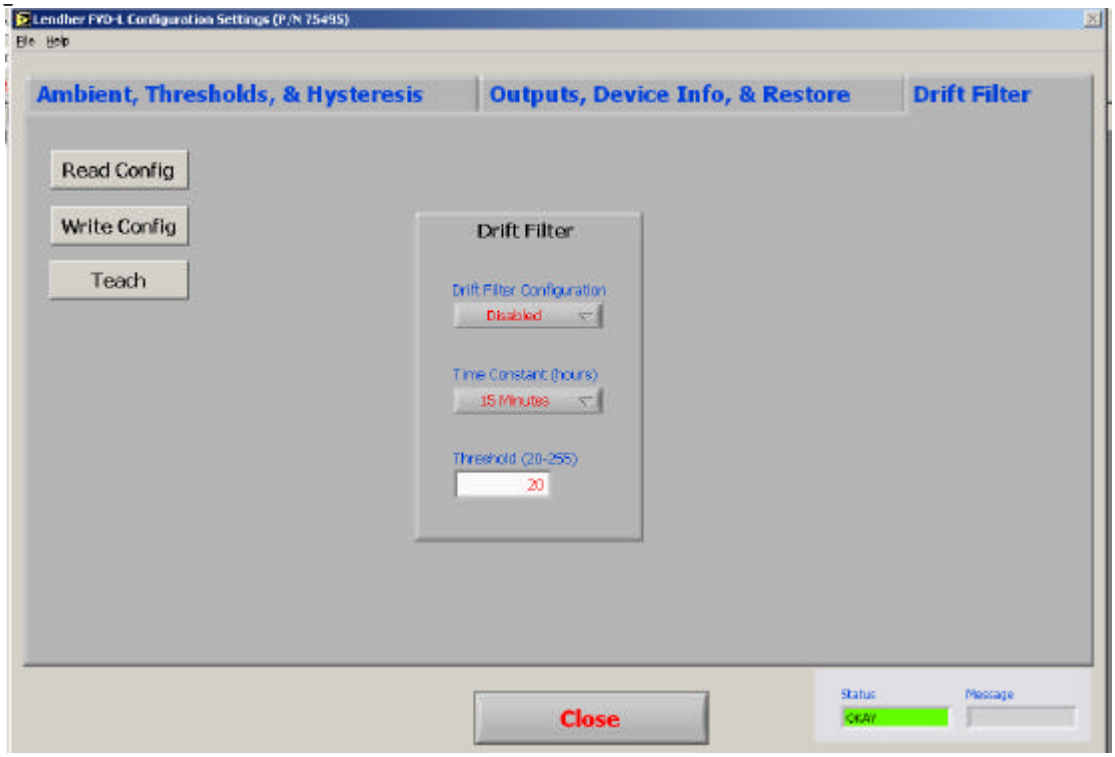


Figure 7. Drift Filter Panel

The **Drift Filter** panel is shown in Figure 7. This panel allows you configure the drift filter for the sensor. Currently, the drift filter is disabled by default. The Time Constant can be selected to be 15 minutes, 1, 4, 12, or 24 hours. The Threshold is the maximum amount of deviation in the magnetic field (from the previous reading) on each individual axis, before the drift filter is automatically disabled (the drift filter is meant to correct for SLOW changes in the ambient magnetic field, small variations of any material, like for example the position of the sensor can change because the cable will pull, or push the sensor when the weather is hot, or cold (mechanical action on metal regarding amniant temperature)).

3.0 Menus

The FVD-L GUI has a simple menu with two main sections, **File** and **Help**. The GUI can be exited via the **File** menu and this help can be accessed via the **Help** menu. Figure 8 shows the **Open Config** and **Save Config** items of the **File** menu. The configuration data of the sensor can be imported from or exported to an XML file.

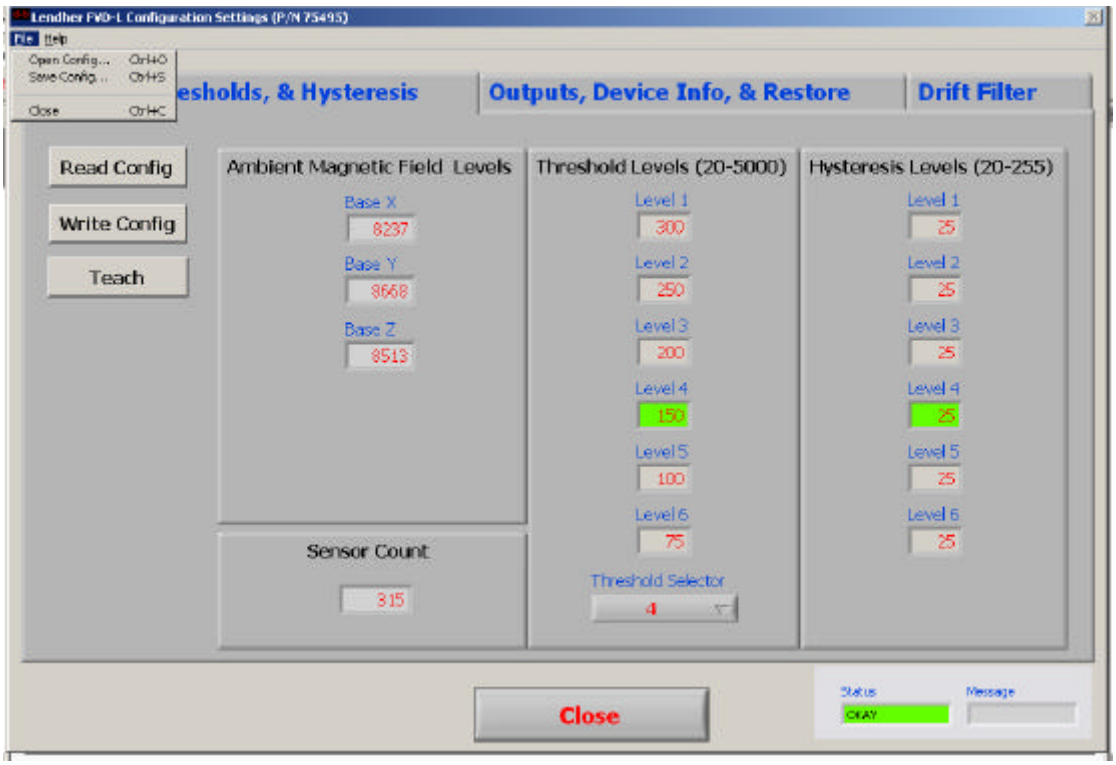


Figure 8. Open Config & Save Config