# SmartASI
# Maintenance Logger
# User Guide

## Document Revision 1.0

(Updated October 13th, 2022)

© 2021 Vital Systems Inc

Buford, GA USA

For more information please visit the product web page:

www.vitalsystem.com/smartasi

# Contents

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# Overview
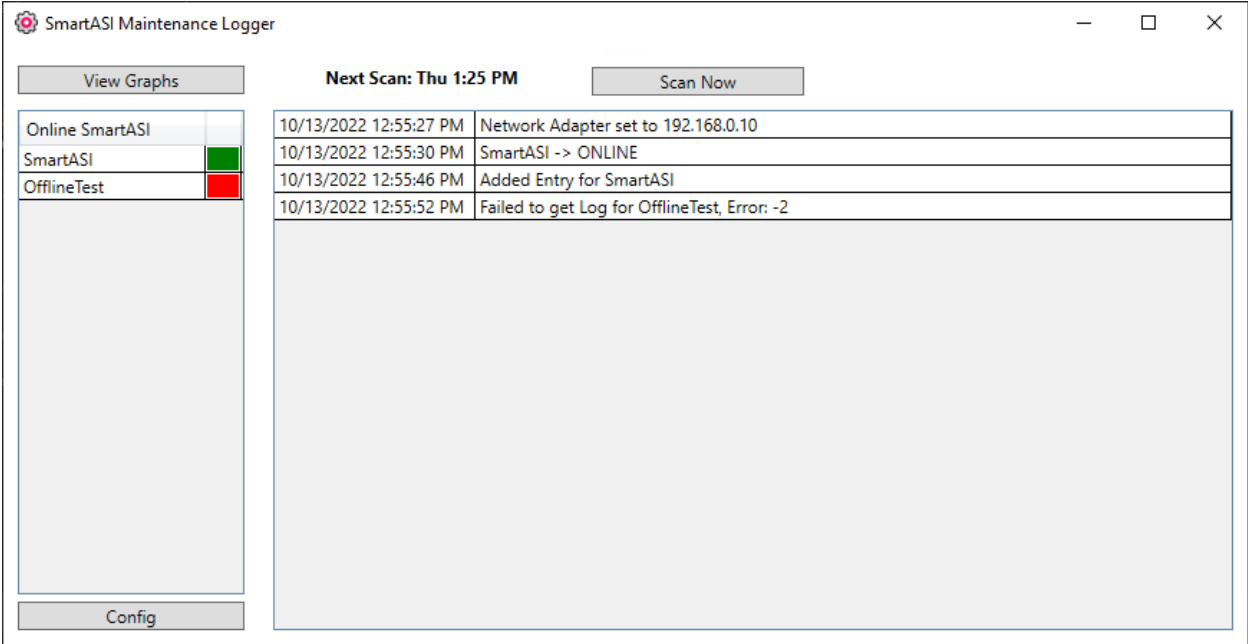


The SmartASI Maintenance Logger is an accompanying software for the SmartASI PLC/Gateway. It starts up automatically with the PC and proceeds to log maintenance data from the SmartASI at a user-defined interval. The data can then be filtered and viewed in a graph window. Additionally, a message log will be kept and will show whenever an error or anomaly occurs on the network, such as a SmartASI going offline.

These features enable the user to monitor the performance and activity of their system over long periods of time, allowing them to predict when parts of their system need replacement.
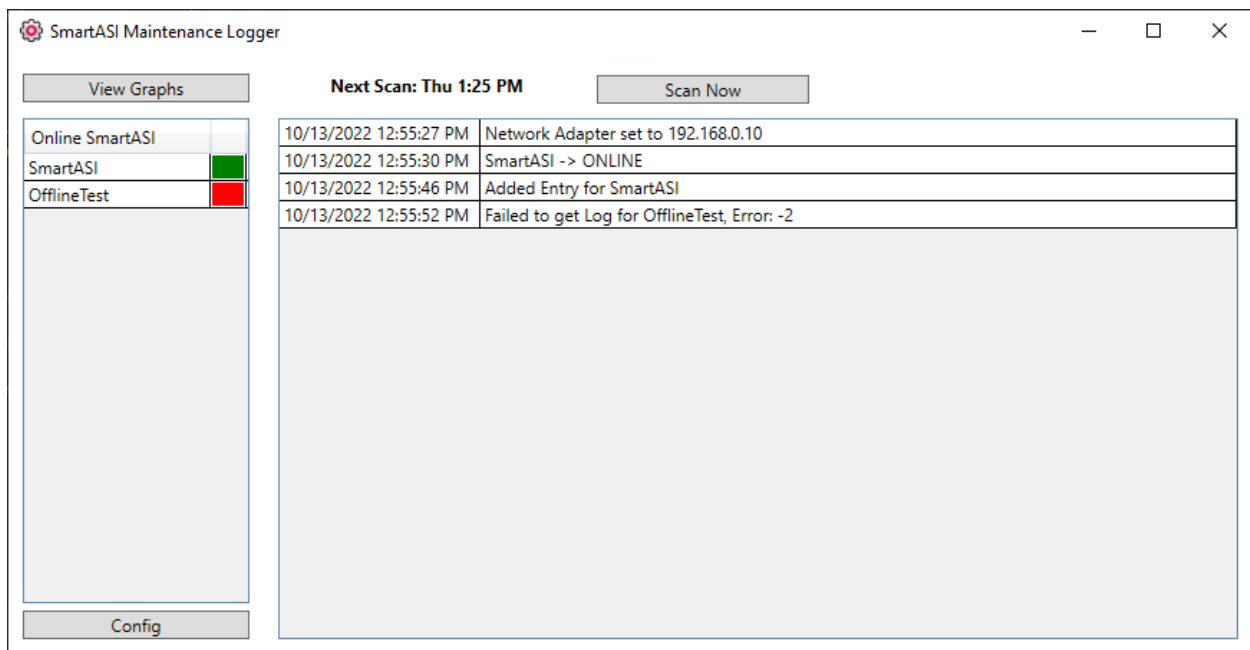
# User Interface

## Minimized Notification
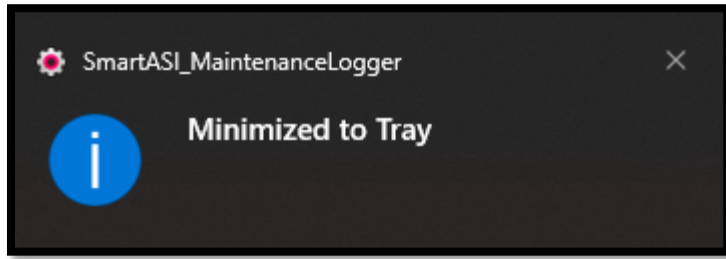


When the MaintenanceLogger is first started or when it is minimized, the above notification will be displayed and the window will be minimized to the system tray. You can open the MaintenanceLogger by either clicking this notification, or double or right clicking the Icon in the system Tray:



## Main Window



Shown above is the main window for the SmartASI MaintenanceLogger. From here, there are several subwindows that can be seen and actions that can be taken. First, in the bottom right is a message log that will display text whenever a relevant event occurs. The timestamp of the event will be displayed as well. On the bottom left is a button that will open the config window. The config window will allow the user to configure settings such as which SmartASI's to scan for and how often to scan. You can also define SmartASI and MDR pairings known as sections, which will allow more descriptive names in the Graph Window. Shown at the top of the Main Window is the time of the next scheduled scan, as well as a button to force a scan now. On the left of the Main Window is a list of all the configured SmartASIs and their current online state.

# Config Window



From top to bottom, here are descriptions of the options available in the Config Window:

| | |
|---|---|
| Selected Network Adapter | Which Network Adapter the connected SmartASIs will be located on. Clicking Refresh will refresh the list of available Network Adapters. |
| Scanning Interval | How often the SmartASIs will be polled for their maintenance data. |
| Configured SmartASIs | This is a configurable list of all the SmartASIs that will be polled on the network. The name defined here will be used in place of the IP Address for readability elsewhere in the application. |
| Configured Conveyor Sections | This is a user-defined list of SmartASI-MDR card pairings. This feature is optional, but pairings defined here will be given their descriptive names in the Graph Window, allowing for an improved user experience. |
| Run On Windows Startup | This checkbox defines whether the application should begin when the PC first starts up. |

## Graph Window
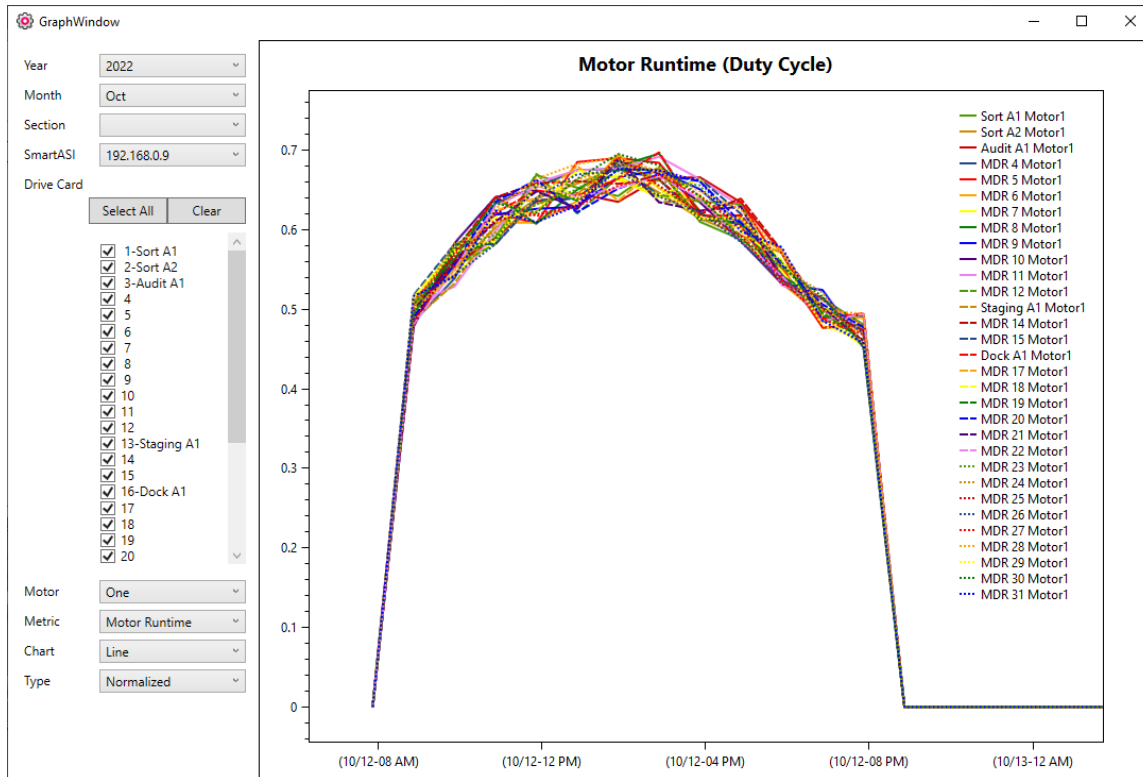


The Graph Window has a plethora of options and filters for the data collected from the SmartASI. Here is a descriptive list of all the options available:

| | |
|---|---|
| Year/Month | The data collected from the SmartASIs is split by both month and year. These two dropdowns define the timespan that you wish to view data for. |
| Section | This list is populated by the Conveyor Section list created in the Config Window. Selecting a section from this list will switch to the associated SmartASI and enable just the Drive Card for that section. |
| SmartASI | This defines which SmartASI PLC/Gateway to view data for. Note that each SmartASI has their own unique list of Drive Cards. |
| Drive Card | This checkbox list defines which Drive Cards for the current master you wish to view data for. Drive Cards with associated Conveyor Sections will have their section name displayed. |
| Motor | Each drive card can drive two different MDR Rollers. This dropdown defines if you want to view data for Motor1, Motor2, or both at once. |
| Metric | This defines which data you want to view for the selected motors. The current options are Motor Runtime, Peak Temperature, and Peak Current. Not all Chart or Type options will be available for each Metric. |
| Chart | This defines what type of chart to use for the view. The available options are a Line Graph, Step Graph, or Scatter Chart. |
| Type | This defines what processing should be performed on the data. This option is currently only relevant for Motor Runtime. Available options are normalized (duty cycle), Cumulative (hours), and Raw (total on-time in hours since last scan. Irregular scans will cause perceived spikes or dips in the graph.) |
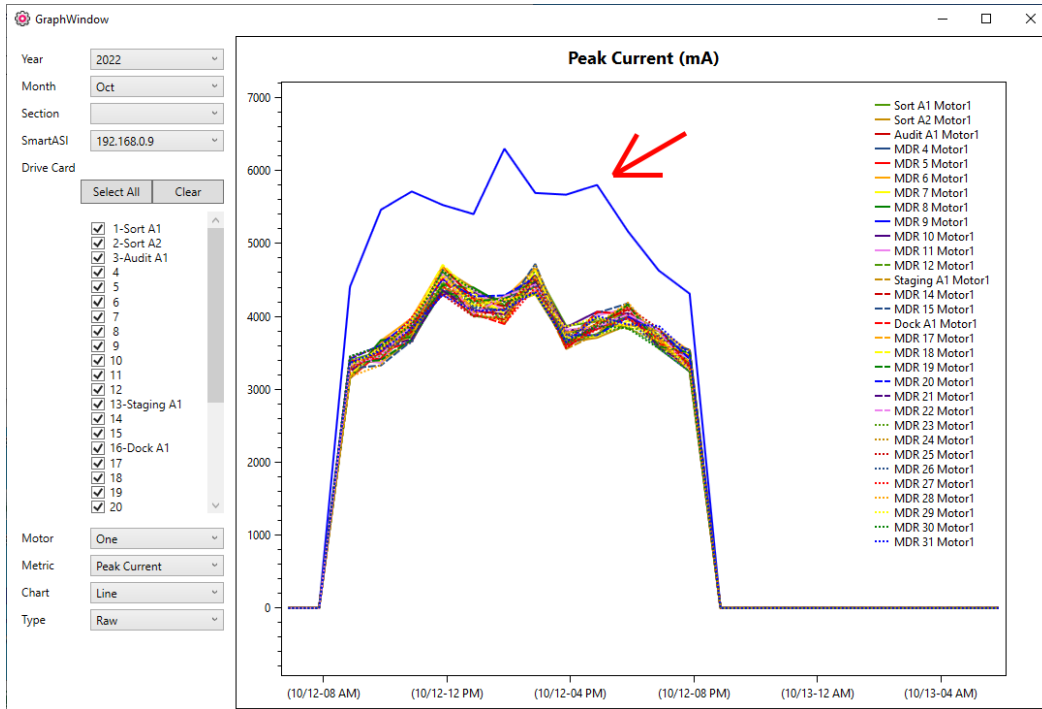
This example is charting peak current using a line graph. Clearly there is a huge outlier in the data as signified by the red arrow. This motor will likely need to be replaced soon.
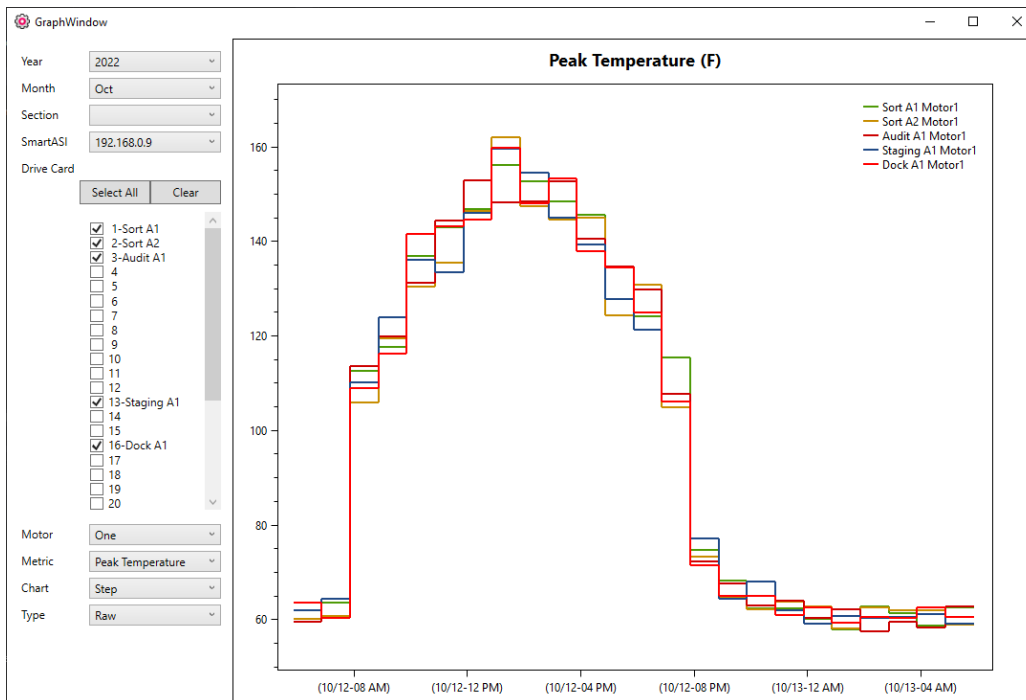


In the above example, Conveyor sections have been created for several Drive Cards, giving them descriptive names in both the Drive Card list and in the legend of the graph. A step graph is being used, giving a more accurate view of when the data was collected. Only a few Drive cards have been enabled in this example.

**GraphWindow**

**Motor Runtime (Total Hours)**
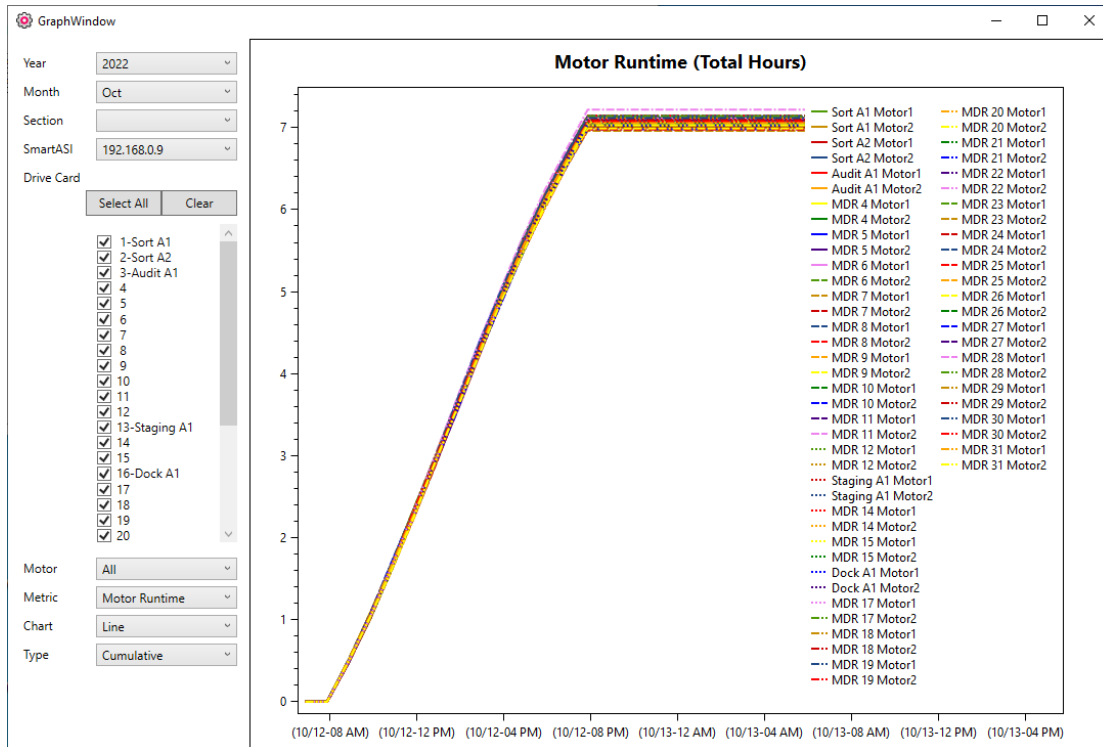
In this example the cumulative runtime of the motors has been graphed. This data can be used to track how close a motor is getting to its expected life expectancy. Additionally in this example both motors are being graphed for each drive card.

There are further mouse commands that can be performed on the graph itself:

| Clicking Item in Legend | Disables/Enables that line in the graph. Can be used to reduce clutter or easily locate a specific line in a cluttered graph. |
|---|---|
| Mouse Wheel Within View | Scrolling the Mouse Wheel within the view will Zoom In/Out. |
| Mouse Wheel on Axes | Scrolling the Mouse Wheel over one of the Axes will adjust the scale of that Axis independent of the other Axis. |
| Right Click Hold + Drag | Pans the graph. |
| Left Click Hold on Line | Creates a popup that displays the name of the Line, and both the exact Time and Value at the location selected. |