SharpEye™

WinHost Configuration and Diagnostic Software

40/40 Flame Detectors

User Guide

SPECTREX

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Table of Contents

List of Figures

List of Tables

1 About this Guide

This guide describes the SPECTREX WinHost 40/40 Flame Detectors Configuration and Diagnostics Software for 40/40 Series Flame Detectors software application and its features, and provides instructions on how to install, operate, and maintain the software.

> **Note:**
>
> This user guide should be read carefully by all individuals who have or will have responsibility for using, maintaining, or servicing the product.

This guide includes the following chapters:

- **Chapter 1, About this Guide**, details the layout of the guide, includes the release history, a glossary and abbreviations, explains the use of notifications, and lists relevant reference documents.

- **Chapter 2, Product Overview**, provides a general overview of the software, principles of operation, and performance considerations.

- **Chapter 3, Loading the Software**, describes how to install the software application.

- **Chapter 4, Getting Started**, describes how to connect the computer to the detector and how to run the software application.

- **Chapter 5, Operating WinHost**, describes how to operate and configure the detector using the software application.

1.1 Release History

Rev	Date	Revision History	Prepared by	Approved by
A	January 2009	First Release	Ian Buchanan	Eric Zinn
B	February 2012	Second Release	Jay Cooley	Shaul Serero
C	November 2013	Third Release	Jay Cooley	Shaul Serero
Da	October 2017	Fourth Release	Jay Cooley	Shaul Serero

1.2   Glossary and Abbreviations

Abbreviation/Term	Meaning
Analog Video	Video values are represented by a scaled signal
ATEX	Atmosphere Explosives
AWG	American Wire Gauge
BIT	Built-In-Test
CMOS	Complementary Metal-Oxide Semiconductor image sensor
Digital Video	Each component is represented by a number representing a discrete quantization
DSP	Digital Signal Processing
EMC	Electromagnetic Compatibility
EMI	Electromagnetic Interference
EOL	End of Line
FOV	Field of View
HART	Highway Addressable Remote Transducer – communications protocol
IAD	Immune at Any Distance
IP	Internet Protocol
IPA	Isopropyl Alcohol
IR	Infrared
IR3	Refers to the 3 IR sensors in the VID
JP5	Jet Fuel
LED	Light Emitting Diode
MODBUS	Serial communications protocol using Master-Slave messaging
N/A	Not Applicable
N.C.	Normally Closed
NFPA	National Fire Protection Association
N.O.	Normally Open
NPT	National Pipe Thread
NTSC	National Television System Committee (a color encoding system)
PAL	Phase Alternation by Line (a color encoding system)
P/N	Part Number
RFI	Radio Frequency Interference

| Abbreviation/Term	Meaning
RTSP	Real Time Streaming Protocol
SIL	Safety Integrity Level
UNC	Unified Coarse Thread
VAC	Volts Alternating Current

1.3 Notifications

This section explains and exemplifies the usage of warnings, cautions, and notes throughout this guide:

Warning:

This indicates a potentially hazardous situation that could result in serious injury and/or major damage to the equipment.
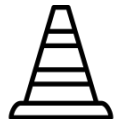
Caution:

This indicates a situation that could result in minor injury and/or damage to the equipment.

Note:

This provides supplementary information, emphasizes a point or procedure, or gives a tip to facilitate operation.

1.4 Reference Documents

- **TM40/40I**, SharpEye IR3 Flame Detector User Guide
- **TM40/40UFI**, SharpEye Ultra Fast IR3 Flame Detector User Guide
- **TM40/40M**, SharpEye Multi IR Hydrocarbon and Hydrogen Flame Detector User Guide
- **TM40/40L**, SharpEye UV/IR Flame Detector User Guide
- **TM40/40U**, SharpEye UV Flame Detector User Guide
- **TM40/40UFL**, SharpEye ULTRA FAST UV/IR Flame Detector User Guide
- **TM40/40R**, SharpEye Single IR Flame Detector User Guide
- **CD78420**, MODBUS communications protocol for the SharpEye technology-based flame detectors

2   Product Overview

The WinHost is a configuration and diagnostic software for the SPECTREX SharpEye 40/40 family of detectors models: 40/40I, 40/40M, 40/40UFI, 40/40LB, 40/40L, 40/40L4, 40/40UB, 40/40U, 40/40L4B, 40/40UFL and 40/40R.

The software displays information (such as address, status, serial number, type, setup, etc.) and makes it possible to change the detector's configuration.

2.1   Software Overview

The WinHost software makes it possible to:

- Communicate with the 40/40 SharpEye Flame Detectors
- Read status and setup parameters from the detectors
- Change the detector's address
- Record relevant detector data to a log file (FlameDetectorLog.txt)
- Perform a manual BIT

2.2   Minimum Requirements

The following are the minimum requirements for operating this software:

- Pentium® 3GHz
- Windows XP, 7, 8, or 10
- 2GB RAM
- 10 GB hard disk free space
- Isolated RS-485 Interface Card to be defined as COM1, COM2, COM3, or COM4; or an RS-232 / RS-485 converter to connect to a standard COM Port.

2.3   Standards

- **EIA 485**: Electrical characteristics of enhanced voltage digital interface circuits.

3   Loading the Software

- **To load your computer with the SharpEye 40/40 WinHost configuration and diagnostic software:**

1 Turn on the computer.

2 Insert the 40/40 SharpEye installation disk into the correct drive.

3 Start the 40/40 SharpEye WinHost software installation by running the file setup.exe.

4 Follow the installation instructions.

5 Connect the detector unit to the RS-485 communications port (see *Connecting the Detector to the Computer* on page 14).

6 Start the 40/40 SharpEye WinHost software with specification of the COM port number as a parameter (see *Establishing the COM Port* on page 15).

4   Getting Started

4.1   Connecting the Detector to the Computer

Before you can perform any configuration or diagnostic operation on a detector, you must connect the computer to the detector using the harness cable provided.

■ **To connect the computer to a detector:**

1 Connect one end of the USB cable to the computer USB port.

2 Connect the other end of the USB cable to the USB serial (RS-485) adapter.

3 Connect the serial port of the adapter to the harness cable.

■ **To connect the detector to the harness cable:**

1 Connect one side of the cable to detector Terminal 10 for RS-485 (+).

2 Connect the other side of the cable to detector Terminal 11 for RS-485 (-).

■ **To connect a socket D-Type on the other side of the cable:**

1 Connect RS-485 (+) to Pin 2.

2 Connect RS-485 (-) to Pin 1.

3 Connect RTN to Pin 5.

■ **To perform USB adapter setup:**

1 Unscrew the cover of the USB adapter.

2 There are 2 options for setting up the jumpers.

    a   Option 1:

1	3	5	7	9	11	13	15	17	19
2	4	6	8	10	12	14	16	18	20
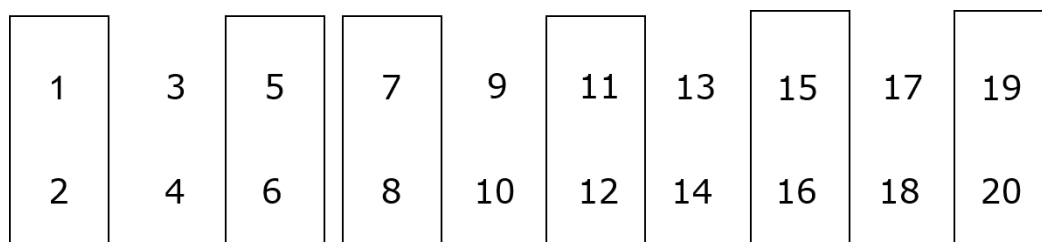
Figure 1: USB Adapter Setup Option 1

b Option 2:
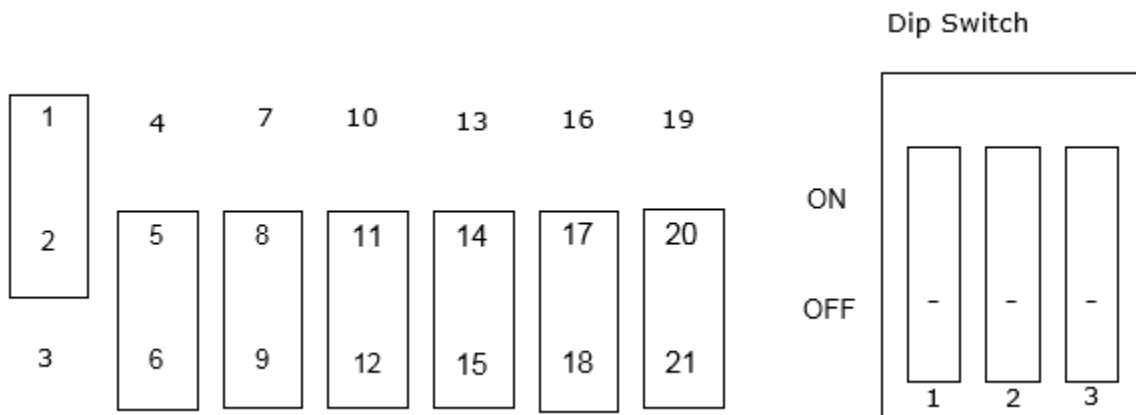
Figure 2: USB Adapter Setup Option 2

3 Close the USB adapter cover.

4 Connect the cable.

> **Caution:**
>
> If using a different adapter than the one recommended, check that the D-connector adapter wiring is similar to wiring above (if not, adjust the cable wiring to fit the desired adapter).

4.2   Establishing the COM Port

Before using the software, you need to establish the number of the COM port.

This section describes how to establish the COM port used by the adaptor.

■   **To view the COM port used by the adapter:**

•   Select **Start** > **Settings** > **Control Panel** > **System** > **Hardware** > **Device Manager**.

The COM port number is displayed. This is the COM port number you will use.
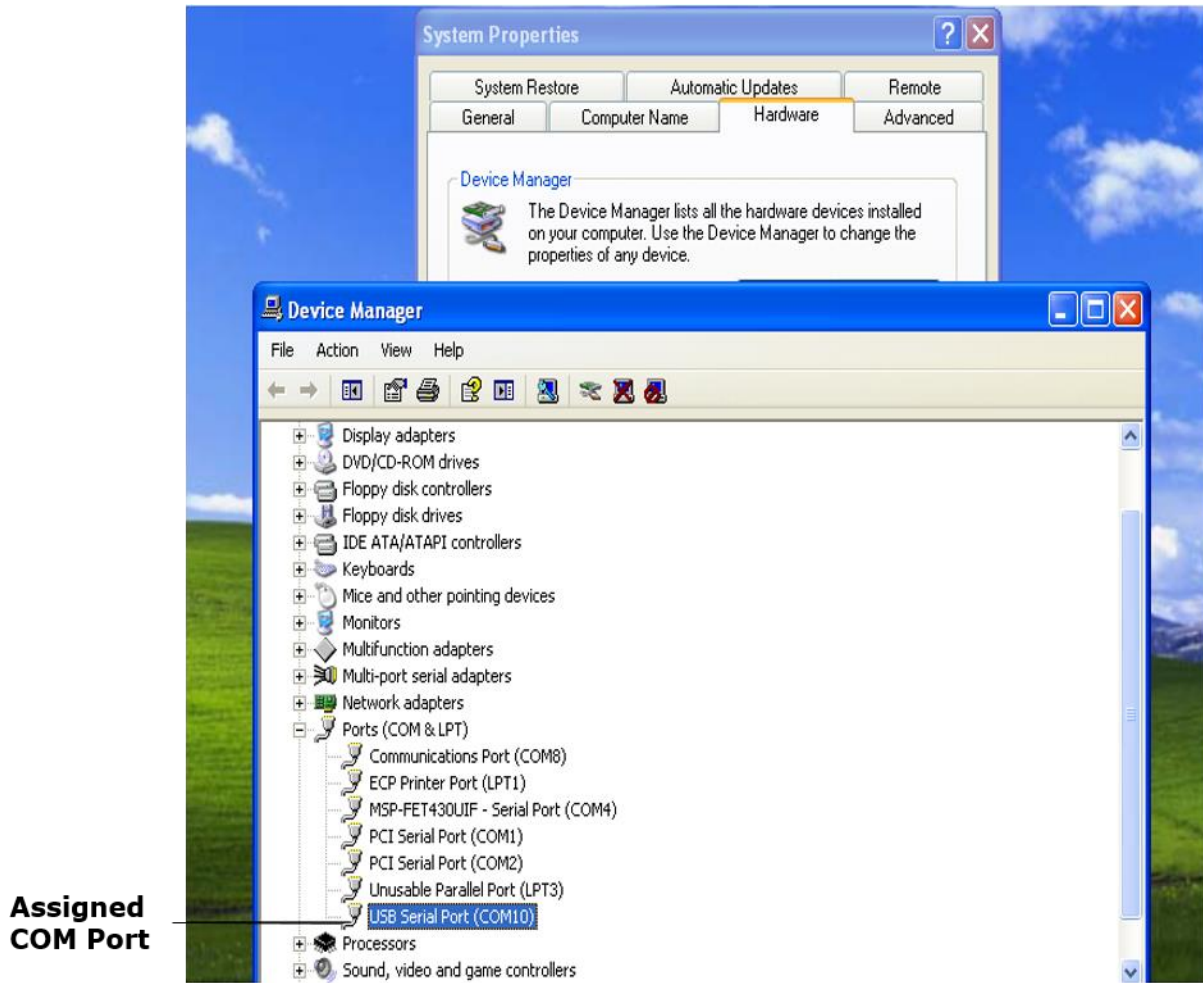
Figure 3: COM Port Number

4.3   Running WinHost

This section describes how to run the WinHost software.
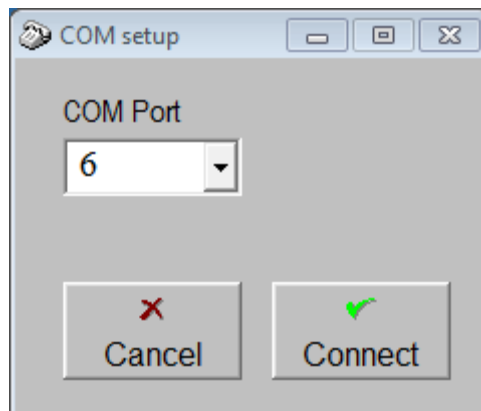
■   **To run the WinHost software:**

1   Select **Start** > **Programs** > **SharpEye 4040 Series**

The WinHost software application runs and the opening window appears:

Figure 4: Opening Window

2   After a few seconds the opening window disappears and the communications setup dialog box appears:

Figure 5: Communication Setup Dialog Box

The communication setup dialog box allows the user to select the communication port number.

3   Select the communication port number to work with. See *Establishing the COM Port* on page 15.

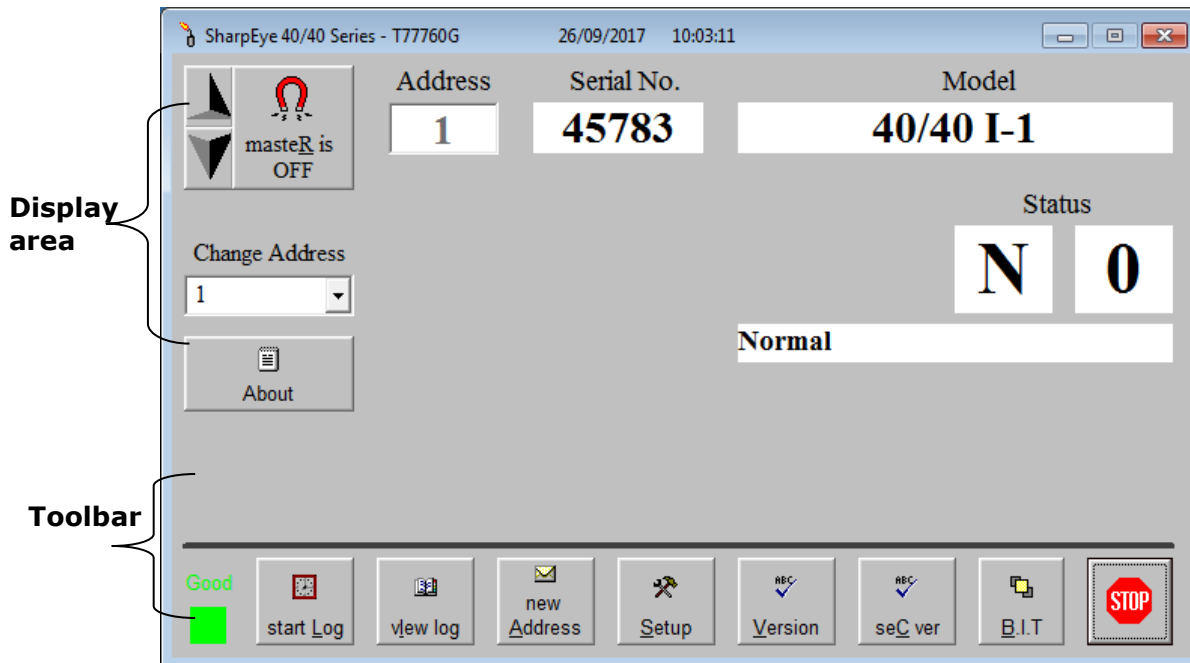---

5 Operating WinHost

5.1 Main Window

The main window monitors the detector. Figure 6 shows the main window.

Note:

For Windows XP and 2000, in the case of poor communication, press **F12** and wait until good communication is achieved.

Figure 6: Main Window

The main window is divided into 2 main areas:

- **Display Area**: Displays the detector's various parameters.
- **Toolbar**: Enables access to various control and diagnostic functions.

5.1.1 Display Area Components

This section describes the composition of the display area in the main window.

**Table 1: Main Window Display Area**

| Element	Description
Address Finding Buttons	Seeks the address of the connected detector. • This button seeks the connected address from 1 to 247.* • The up and down arrows increment or decrement the address value by 1, checking that address.
Address	The address currently being looked at by the software (using the up and down arrows).
Serial No.	The detector's serial number. Each detector has a unique serial number.
Model	The detector's model number.
Status	The detector's current operational status.
Change Address	A drop-down list that allows you to select the address location to seek the detector.
About	Opens a window that displays software version information.

∗ Do not click the address finding button when more than 1 detector is connected.

5.1.2 Toolbar Buttons

This section describes the buttons on the toolbar.

Table 2: Main Window Toolbar Buttons

Button	Button Name	Description
Good	Comm. Status	Indicates the status of communication between the detector and the mini laptop.
B.I.T	Built-In-Test	Starts a manual Built-In-Test. The results appear in the **Status** fields.
start Log	Start Log	Opens a dialog box that enables you to set up a log of the detector's events.
view log	View Log	Displays the log file.
new Address	New Address	Opens a dialog box that enables you to set a new address location for the detector.
Setup	Setup	Opens a dialog box that enables you to configure the detector.
Version	Primary micro software version	Displays the version and details of the primary micro software.
seC ver	Secondary micro software version	Displays the version and details of the secondary micro software.
STOP	Stop	Closes the application.

5.1.3   Detector Status

The WinHost software displays the status in 2 fields: a letter field and a number field. The detector can have the following statuses:

Table 3: Detector Status

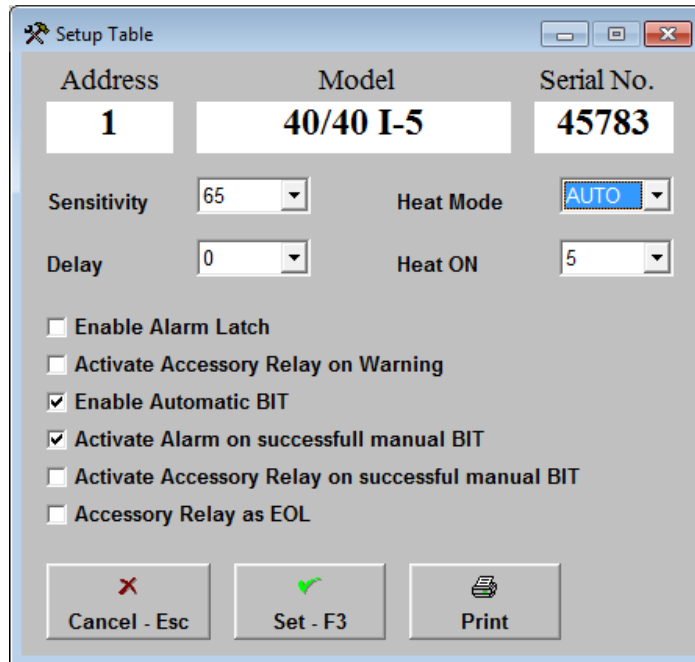| Characters	Description
DD	Disconnection
S90	Startup
S92	Restore from wrong voltage
N0	Normal
W0	Warning
A0	Alarm
L0	Alarm latch
T0	Alarm delay
B0	BIT
M0	Manual BIT
E0	End of manual BIT
N7	Relay fault
N8	BIT Fault
V83	Wrong voltage
Z0	Benzene

5.2   Setup Table Window

This section describes the setup table window and the various parameters that you can define. Depending on the type of detector you are configuring, different setup windows are displayed.

■   **To configure the detector:**

1   From the main window, click **Setup**.

The setup table window appears. The following is an example of the setup table window for the 40/40I-4 and 40/40I-5 detectors:

Figure 7: Setup Table Window for 40/40I-4 and 40/40I-5

2 Define the parameters as required. Details of each available parameter can be found in Table 4.

3 Click **Set -F3**.

The detector is configured.

5.2.1 Setup Table Window Parameters

Table 4 details the setup table window parameters:

Table 4: Setup Window Table

Parameter	Description
Sensitivity	Sets the detector's sensitivity. The values are in meters. A higher number means greater sensitivity (see Table 5, Table 6, 7, 8, 9, and 10 per the detector type).
Heat Mode	Demister settings for clearing condensation from the lens. Choose from **On**, **Off**, or **Auto**.
Delay	The delay between detection of a signal and activation of the alarm. Choose from **0**, **3**, **5**, **10**, **20**, or **30** seconds, or **A** (anti-flare).
Heat On	Temperature at which the demister is activated, if the heat mode is set to auto.
Enable Alarm Latch	When selected, the alarm remains on even when the signal abates.
Activate Accessory Relay on Warning	When the detector's status is warning, the accessory relay is activated.[1]
Enable Automatic BIT	When selected, the Built-In-Test runs automatically according to the BIT settings.[2]
Activate Alarm on successful manual BIT	Activates an alarm when a manual BIT is successfully completed.[3]
Activate Accessory Relay on successful manual BIT	Activates the accessory relay when a manual BIT is successfully completed.[1,3]
Accessory Relay as EOL	When selected, the accessory relay is always activated.[1]

[1] Disable in options 1,2, and 3 for all models.

[2] Disable in models L,U, and L4.

[3] Disable in models L,U, L4, UFL, and UFI.

5.2.2 Detector Sensitivity Setting

The following tables list the detector's sensitivity settings.

Table 5: Sensitivity Settings for the 40/40I and 40/40M

Setting	Sensitivity (ft/m)
15	50/15
30	100/30
45	150/45
65	216/65

Table 6: Sensitivity Settings for the 40/40LB, 40/40L, 40/40U, 40/40UB

Setting	Sensitivity (ft/m)
15	50/15

Table 7: Sensitivity Settings for the 40/40L4, 40/40L4B

Setting	Sensitivity (ft/m)
28	93/28

Table 8: Sensitivity Settings for the 40/40UFL

Setting	Sensitivity (ft/m)
20	66/20

Table 9: Sensitivity Settings for the 40/40UFI

Setting	Sensitivity (ft/m)
20	66/20
40	132/40
60	200/60
90	300/90

Table 10: Sensitivity Settings for the 40/40R

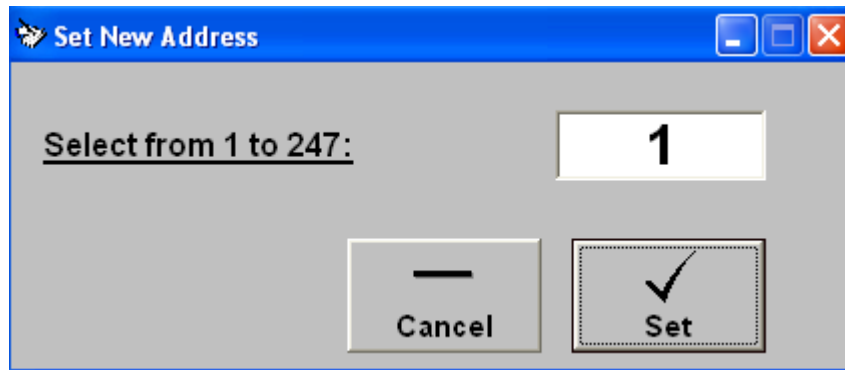| Setting	Sensitivity (ft/m)
5	16/5
15	50/15

5.3　Setting a New Address

You can set a new address location for the detector.

■ **To set a new address location for the detector:**

1 From the main window, click **New Address**.

The new address dialog box appears.

Figure 8: New Address Dialog Box

2 Enter the desired address.

3 Click **Set**.

The new address is set.

5.4　Logging Detector Events

You can use the computer with the WinHost software to log the detector's events for diagnostic and other purposes.

When you start logging, set the log file period in minutes. A line is subsequently written to the log (FlameDetectorLog.txt) whenever that number of minutes passes (for example, every 2 minutes) and whenever there is a change in the detector's status.

Each line in the log notes the following information:

• The detector's serial number

• The detector's address

- The detector's status
- The date and time

■ **To log detector events:**

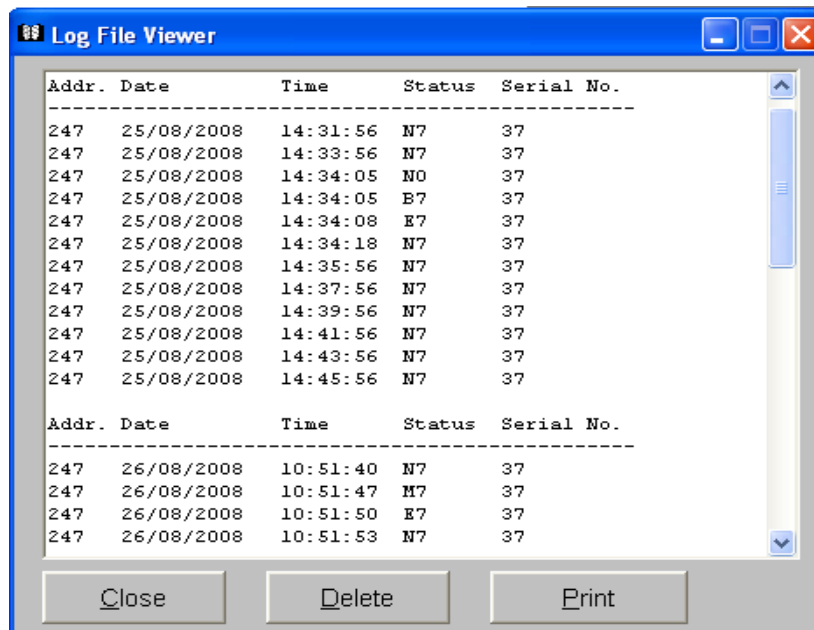**1** From the main window, click **Start Log**.

The log record dialog box appears.
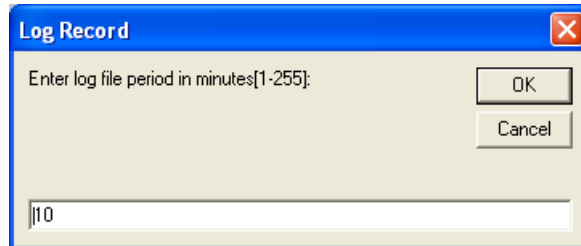
2 In the text field, enter the log file period (in minutes).

3 Click **OK**.

Logging begins and a line is written to the log after each log file period passes, and any time there is a change in the detector's status.

■ **To view the log file:**

- From the main window, click **View Log**.

The log file viewer window appears.

Figure 9: Log File Viewer

5.5   Running a Manual Built-In-Test

The software is set to run a Built-In-Test (BIT) on the detector every 20 minutes. You can also run a manual BIT at any time.

The results of a BIT are displayed in the status field in the main window.

■ **To run a manual BIT:**

- From the main window, click **B.I.T**.

  The manual BIT runs and the results appear in the status field.

5.6 Viewing the Micro Software Version Information

You can view the versions of the primary and secondary micro software at any time.

■ **To view the versions of the primary micro software:**
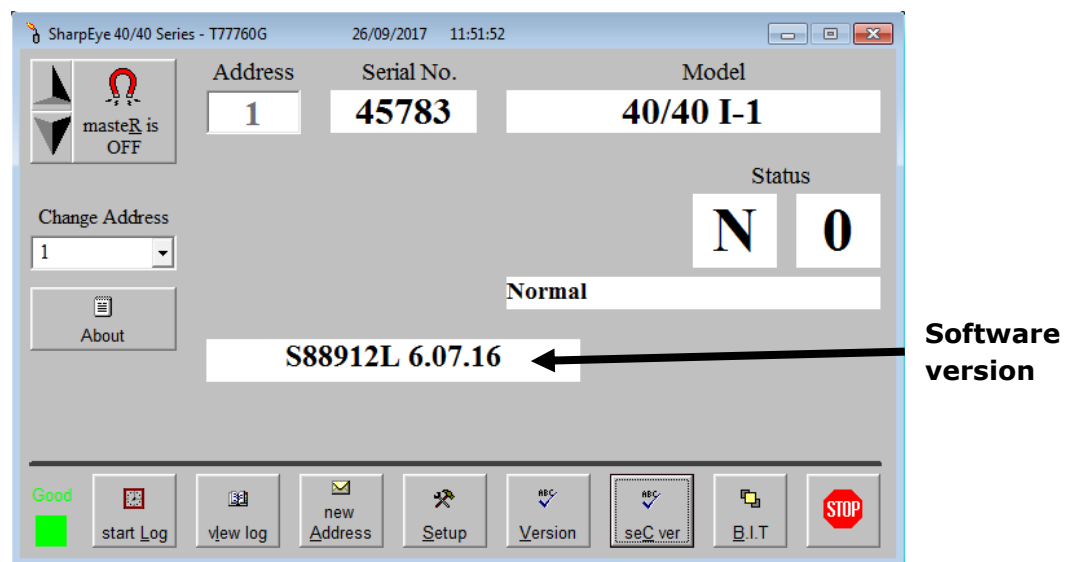
- From the main window, click **Version**.

  A field appears in the main window displaying the software version.

■ **To view the versions of the primary micro software:**

- From the main window, click **Sec. Ver**.

  A field appears in the main window displaying the software version.

Figure 10: Software Version

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