Spectrex WinHost Gas and Fire Detectors Configuration and Diagnostic Software
User Guide

Document ref: TM777070, Rev B, February 2010

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Release History

Rev	Date	Revision History	Prepared by	Approved by
0	February 2009	First Release	E. Ben Artsi	S. Serero
A	May 2009	Second Release	E. Ben Artsi	S. Serero
B	February 2010	Third Relese	E. Ben Artsi	S. Serero

About this Guide

This guide describes the Spectrex WinHost Gas and Fire Detectors Configuration and Diagnostic software application and its features and provides instructions on how to install, operate and maintain the software.

This guide includes the following chapters and appendixes:

- **Chapter 1**, **Introduction**, provides a general overview of the software, principles of operation, and performance considerations.
- **Chapter 2**, **Getting Started**, describes how to connect the mini laptop to the detector and how to run the software application.
- **Chapter 3**, **Quick Tour of the WinHost Software User Interface**, provides a quick your of the user interface and its buttons and toolbars.
- **Chapter 4**, **SharpEye 40/40 Series Flame Detectors**, provides a brief overview of this model of detector and describes how to configure it using the software application.
- **Chapter 5**, **SharpEye 20/20 Series Flame Detectors**, provides a brief overview of this model of detector and describes how to configure it using the software application.
- **Chapter 6**, **SharpEye 20/20 SIL2 Series Flame Detectors**, provides a brief overview of this model of detector and describes how to configure it using the software application.
- **Chapter 7**, **SafEye 200, 300 and 400 Series Gas Detectors**, provides a brief overview of this model of detector and describes how to configure it using the software application.
- **Chapter 8**, **SafEye Xenon 700 Series Gas Detectors**, provides a brief overview of this model of detector and describes how to configure it using the software application.
- **Chapter 9**, **SafEye Xenon 700 SIL2 Series Gas Detectors**, provides a brief overview of this model of detector and describes how to configure it using the software application.
- **Chapter 10**, **SafEye Gas Detector Physical Maintenance**, describes how to maintain the SafEye gas detectors.

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1 Introduction

In this chapter…

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1.1 Overview

The ASUS mini laptop, together with the installed WinHost software, enables you configure and perform diagnostics on the following types of fire and gas detectors manufactured by Spectronix.

- SharpEye 40/40 Series Flame Detectors
- SharpEye 20/20 Series Flame Detectors
- SharpEye 20/20 SIL2 Series Flame Detectors
- SafEye 200, 300 and 400 Series Gas Detectors
- SafEye Xenon 700 Series Gas Detectors
- SaEye Xenon 700 SIL2 Series Gas Detectors

Configuration and diagnostics are performed on a single detector at a time. After connecting the detector to the mini-laptop (see Connecting the Mini Laptop to the Detector on page 4) you must run the software application (see Running the WinHost Software on page 7) appropriate for the connected detector (see Using the Appropriate WinHost Application on page 1).

1.2 Using the Appropriate WinHost Application

The WinHost software package that is installed on your mini laptop comprises five separate applications, one for each model of detector. Each software application is uniquely designed to provide configuration and diagnostic capability for the following fire and gas detectors:

Table 1: WinHost Software Application Numbers

Application Number	Detectors
T77760	SharpEye 40/40 series flame detectors (I, M, LB, L, L4, L4B, U, and UB).
T78460	SharpEye 20/20 flame detectors
T88960	SharpEye 20/20 SIL2 flame detectors.
T79230	SafEye 200, 300 and 400 gas detectors
T79993	SafEye Xenon 700 gas detectors.
T89960	SafEye Xenon 700 SIL2 gas detectors.

2 Getting Started

In this chapter…

Connecting the Mini Laptop to the Detector	*page 4*
Establishing the COM Port Used by the Adapter	*page 6*
Running the WinHost Software	*page 7*

2.1 Connecting the Mini Laptop to the Detector

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

To connect the mini laptop to a detector:

1 Connect one end of the USB cable to the USB port of the mini laptop.

2 Connect the other end of the USB cable to the USB-serial (RS485) adapter.

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

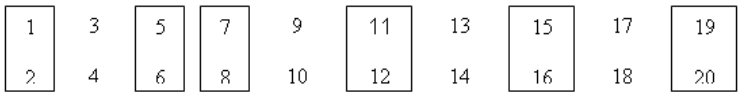
4 Connect the detector to the harness cable as follows:

a Connect one side of the cable to the detector's terminal 13 for RS-485 (+) and detector's terminal 14 for RS-485 (-).

b On the other side of the cable connect a socket D-type as follows:

- RS-485 (+) to pin #2
- RS-485 (-) to pin #1
- RTN to pin #5

c Unscrew the cover of the USB adapter and set the jumpers as follows:



d Close the USB adapter cover.

e Connect the cable.

The mini laptop is now connected to the detector.

2.2 Terminal Connectors and Software per Detector Model

Table 2 describes the configuration of the terminal connectors and software according to the detector's model number.

Table 2: WinHost Software Configuration Table

Detector's Type	Software Part	Connection Terminal for Detector		
		RED(+)	BLACK(-)	WHITE(RET)
SafEye 200 300 and 400 Series	T79230	13	14	2
20/20SI **20/20SH** **20/20CCTV**	T78460	13	14	2
20/20MI **20/20MH** **20/20ML** **20/20MU** **20/20MR**		10	9	2
20/20XI-C31		5	6	2
20/20XI-C32		5	6	2
SafEye Xenon 700 Series	T79993	5	6	2
40/40 Series	T77760	10	11	12
20/20SI SIL2	T88960	5	6	2
20/20XI SIL2	T88960	13	14	2
SafEye Xenon 700 SIL2 Series	T89960	5	6	2

2.3 Establishing the COM Port Used by the Adapter

The mini laptop is delivered with the WinHost software application already installed. The COM port that the mini laptop uses with the adapter is pre-configured at the factory. Before using the software, you must establish the number of the COM port in order to run the software.

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

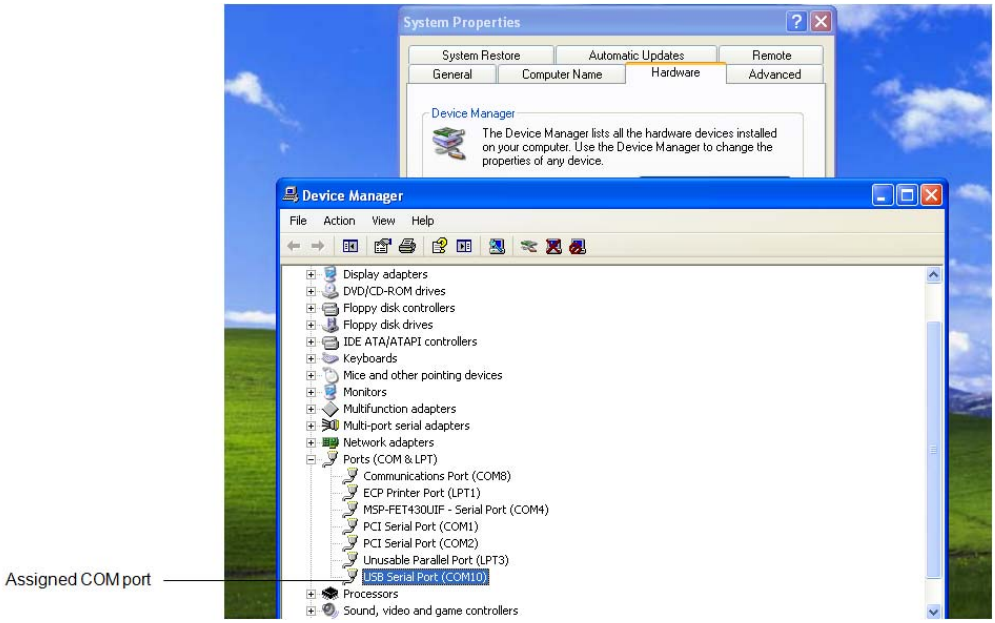
To discover the COM port used by the adapter:

1 Switch on the mini laptop.

Windows XP runs.

2 Select **Start > Settings > Control Panel > System > Hardware**.

The COM port number is displayed – This is the COM port number with which you will work.



2.4 Running the WinHost Software

This section describes how to run the WinHost software. This procedure is common for all detectors, although the opening window differs according to the application number you have chosen.

To run the WinHost software:

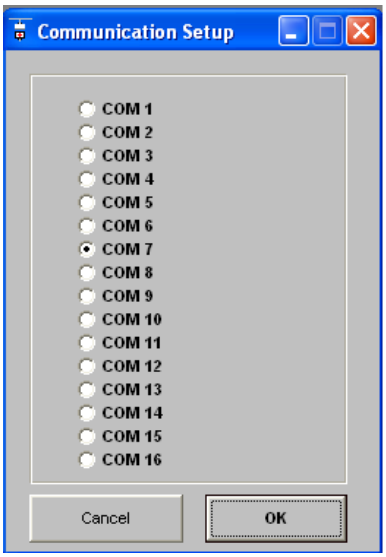
1 Select **Start > Programs > SharpEye Flame Detectors >**.

The WinHost software application starts running.

2 Enter the application number (see. Using the Appropriate WinHost Application on page 1). The *Welcome* window appears.

Note: The above window is for the SharpEye 40/40 series flame detectors. Similar windows are displayed for the other detectors.

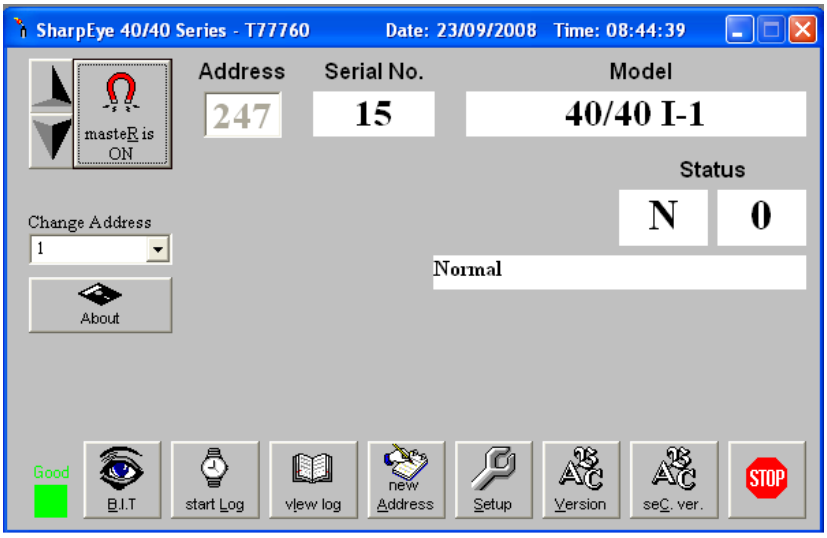
After a few seconds the opening window disappears and then the *Communications Setup* window appears.



Note: The above window is for the SharpEye 40/40 series flame detectors. Similar windows are displayed for the other detectors.

3 Select the desired COM port as described in Establishing the COM Port Used by the Adapter on page 6.

4 Click **OK**. The *Main* window appears.



3 Quick Tour of the WinHost Software User Interface

This chapter provides a quick tour of the *Main* window that is displayed when you run the WinHost software application.

The example shown below is for the SharpEye 40/40 series flame detectors. The layout and details of the *Main* window for the other flame and gas detectors may be slightly different. Examples of each *Main* window are shown in the appropriate chapter.

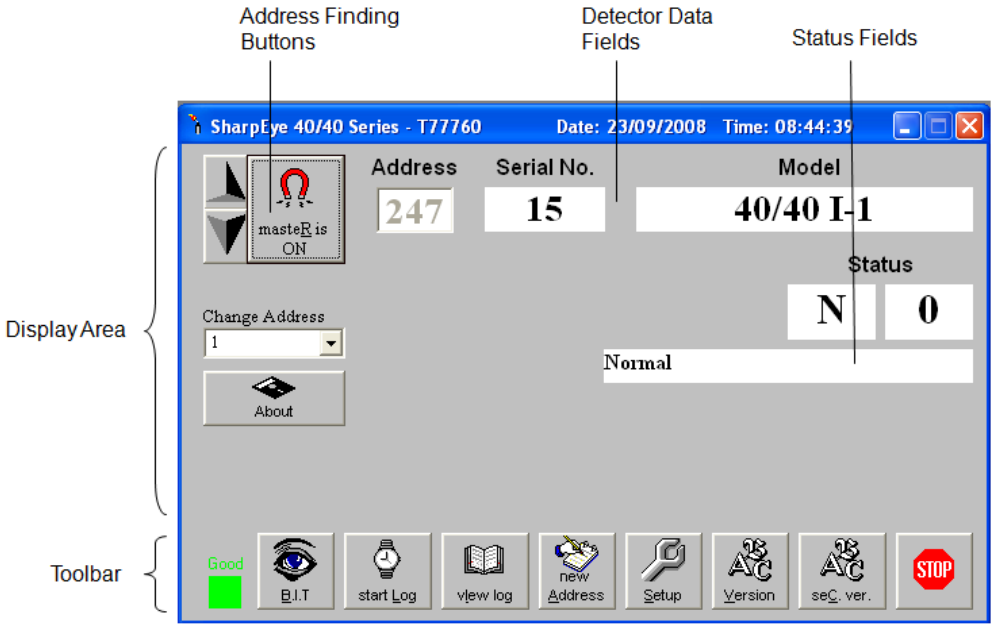


Figure 1: Example of Main Window

The *Main* window is divided into two main areas:

- **Display Area**: Displays different parameters for the sensor. In the case of gas detectors, a wider variety of parameters are provided.
- **Toolbar**: Enables access to various control and diagnostic functions.

Table 3 describes the composition of the *Display* area in the *Main* window.

Table 3: Main Window Display Area

Element	Description
Address Finding Buttons	Seeks the address of the connected detector. • The up and down arrows increment or decrement the address value by one, checking that address. • The **Master** button seeks the connected address from 1 to 247.

Element	Description
Address	The address currently being looked at by the software (using the up and down arrows or the **Change Address** field).
Serial No.	The serial number of the detector. Each detector has a unique serial number.
Model	The model number of the detector.
Status	The current operational status of the detector.
Change Address	A drop-down list that enables you to select at which address location to seek the detector.
About	Opens a window that gives software version information.

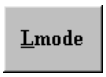
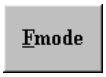
Table 4 describes the buttons on the toolbar.

Table 4: Main Window Toolbar Buttons

Button	Button Name	Description
	Communications Status	Indicates the status of the communication between the detector and the mini laptop.
	Built In Test	Starts a manual Built In Test. The results appear in the Status fields. (applies to flame detectors only)
	Start Log	Opens a dialog box that enables you to set up a log of the detector's events.
	View Log	Displays the log file.
	New Address	Opens a dialog box that enables you to set a new address location for the detector.
	Setup	Opens a dialog box that enables you to configure the detector.
	Primary micro software	Displays the version and details of the primary micro software.
	Secondary micro software	Displays the version and details of the secondary micro software.
	Stop	Closes the application.

Table 5 describes the additional toolbar buttons found in the WinHost software for gas detectors.

Table 5: Additional Toolbar Buttons for Gas Detectors

Button	Button Name	Description
	Align	Aligns the detector with the source. (applies to gas detectors only)
	**LMode**	Applies to SafEye 300 gas detectors only. Changes the detector mode.
	**FMode**	Applies to SafEye 200 and 400 gas detectors only. Changes the detector mode.
	Maintenance	Opens the Maintenance screen that enables you to perform maintenance functions on the detector.

4 SharpEye 40/40 Series Flame Detectors

In this chapter…

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Logging Detector	*page 19*
Running a Manual Built In Test	*page 21*
Viewing the Micro Software Versions	*page 21*

4.1 Overview

The SharpEye 40/40 Series of flame detectors are a wide range of optical flame detectors that are used in a variety of applications.

Table 6 lists the models of 40/40 series of detectors that can be configured using the WinHost software.

Note: Each detector has five output wiring options (from 1 to 5) that enable different outputs that affect the setup. For more information refer to each detector model's user manual.

Table 6: 40/40 Series of Detectors

Model	Description
40/40I	IR³ flame detector
40/40M	IR³ combined hydrocarbon and hydrogen flame detector
40/40R	Single IR flame detector
40/40LB	UV IR flame detector with BIT
40/40L	UV IR flame detector without BIT
40/40U	UV flame detector without BIT
40/40UB	UV flame detector with BIT
40/40L4	UV IR flame detector with 4.5 micron sensor without BIT
40/40L4B	UV IR flame detector with BIT

4.2 Using the WinHost Software Application

This section describes how to use the WinHost software application for the 40/40 series flame detectors.

To run the WinHost software application:

- Run the WinHost application as described in Getting Started on page 7. The *Main* window appears (see Quick Tour of the WinHost Software User Interface on page 10).

4.2.1 SharpEye 40/40 Series Detector Statuses

The WinHost software for the SharpEye 40/40 series displays the status in two fields, a letter field and a number field. The detector can have the following statuses:

Table 7: SharpEye 40/40 Series Detector Statuses

Status	Description
S 90	Start up
S 92	Restore from wrong voltage
V 83	Wrong Vin
N 0	Normal
N 7	Relays or Heater fault
N 8	BIT fault
B 0	Automatic BIT
M 0	Manual BIT
E 0	End of BIT
T 0	Alarm delay
W 0	Warning
L 0	Latch
A 0	Alarm
Z 0	Benzene

4.3 Finding the Detector's Address

This section describes the procedures available for finding the detector's address.

The detector can be connected to one of the 247 possible address locations. You use the WinHost software to check each of these locations until it finds the one that is used by the detector.

To use the Master button to find the detector's address:

- Click the **Master** button

.

  The WinHost software automatically checks each of the 247 address locations to find the address of the detector.

To use the arrow buttons to find the detector's address:

- Click the up or down arrows and check each address manually by incrementing the checked location, up or down.

To use the Change Address field to find the detector's address:

1 Click the **Change Address** field.

A drop-down list of address locations appears.

2 Select the address location you wish to check.

4.4 Configuring the Detector

This section describes how to configure the detector's parameters.

4.4.1 Using the Setup Table to Configure the Detector

The Setup Table enables you to configure the detector's parameters.

To configure the detector:

1 From the *Main* window, click the **Setup** button

. The *Setup Table* window appears, as shown in Setup Table Window Parameters on page 17.

2 Define the parameters as required. Full details of each available parameter can be found in Setup Table Window Parameters on page 17

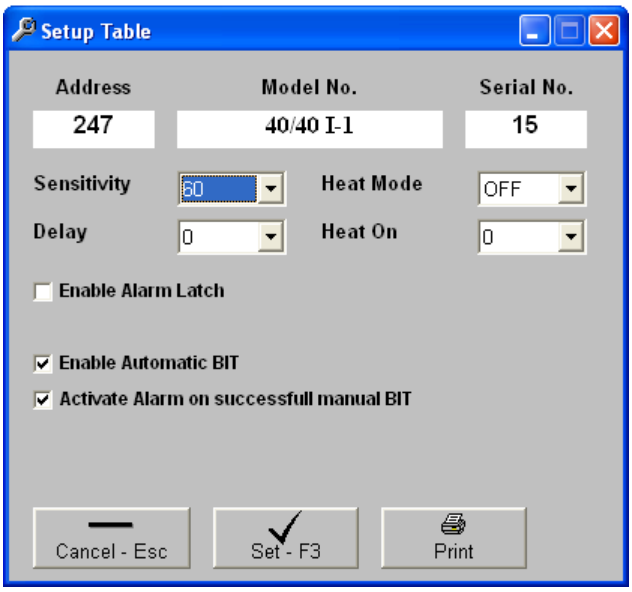
3 Click the **Set** button

or press **F3**. The detector is configured.

4.4.1.1 Setup Table Window Parameters

This section describes the *Setup Tables* window and the various parameters that you can define. Depending on the type of detector you are configuring, different *Setup Table* windows are shown.

The following is an example of the *Setup Table* window for the 40/40I-1, 40/40I-2 and 40/40I-3 detectors.



The following is an example of the *Setup Table* window for the 40/40I-4 and 40/40I-5 detectors.

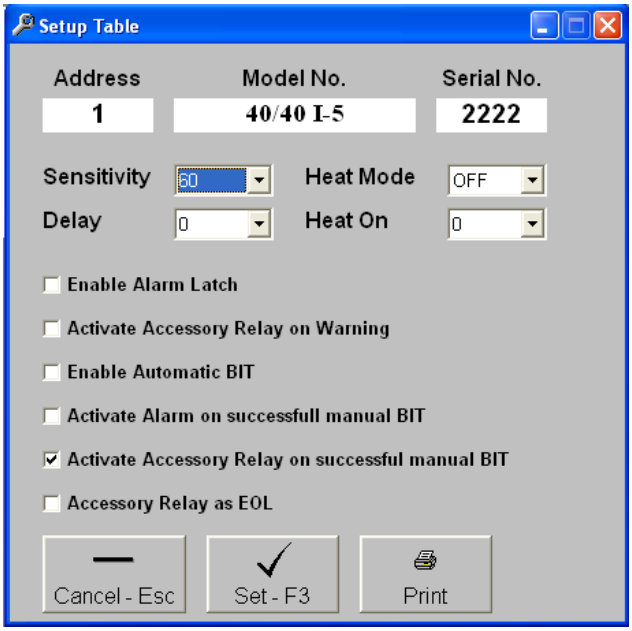


Table 8 details the *Setup Table* window parameters:

Table 8: Setup Table Window Parameters

Parameter	Description
Sensitivity	Sets the sensitivity of the detector. The values are given in meters. A higher number means greater sensitivity. See Detector Sensitivity Settings on page 18.
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.
Enable Automatic BIT	When selected, the Built In Test runs automatically according to the BIT settings.
Activate Alarm on successful manual BIT	Activates an alarm when a manual BIT is successfully completed.
Activate Accessory Relay on successful manual BIT	Activates the accessory relay when a manual BIT is successfully completed.
Accessory Relay as EOL	When selected, the accessory relay is always activated.

4.4.1.2 Detector Sensitivity Settings

The following tables list the detector's sensitivity settings.

Table 9: Sensitivity Settings for the 40/40I and 40/40M

Setting	Sensitivity
15	50 ft (15m)
30	100 ft (30m)
45	150 ft (45m)
60	200 ft (60m)

Table 10: Sensitivity Settings for the 40/40R

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

Table 11: Sensitivity Settings for the 40/40LB, 40/40L, 40/40U, 40/40UB, 40/40L4, 40/40L4B

Setting	Sensitivity
15	50 ft (15m)

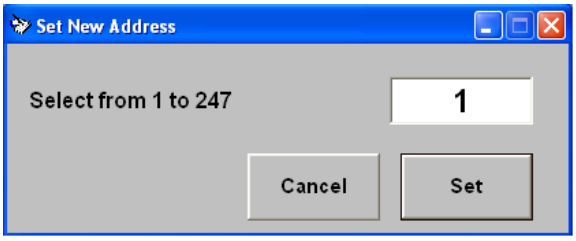
4.5 Changing the Detector's Address

You can set a new address location for the detector.

To set a new address location for the detector:

1 In the *Main* window, click the **New Address** button

. The *New Address* window appears.



2 Enter the desired address.

3 Click **Set**. The new address is set.

4.6 Logging Detector Events

You can use the mini laptop with the WinHost software to log the events of the detector, for diagnostic and other purposes.

When you start logging, you set the log file period in minutes. A line is subsequently written to the log whenever that number of minutes passes (say, every two minutes) and whenever there is a change in the status of the detector.

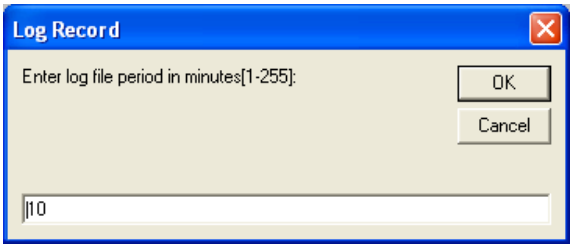
Each line in the log notes the following information:

- The detector's serial number
- The detector's
- The detector's status
- The date and time.

To log detector events:

1 From the *Main* window, click the **Start Log** button

. The *Log Record* dialog box appears.



2 In the text field, enter the log file period (in minutes).

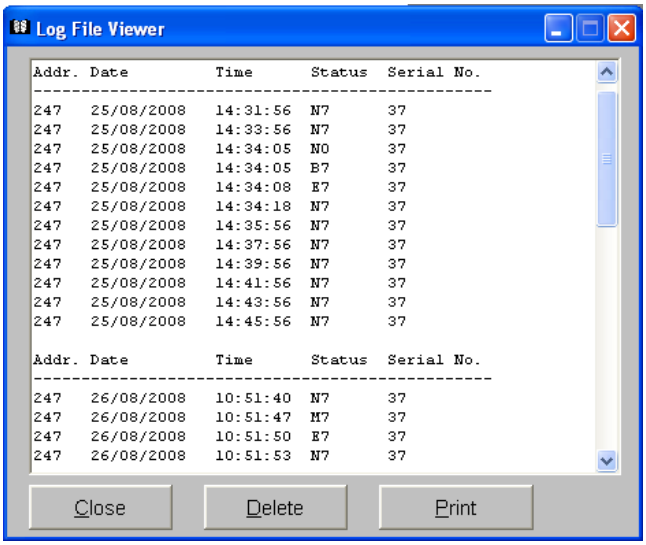
3 Click **OK**.

Logging now begins and a line is written to the log every time the log file period is over and any time there is a change in the detector's status.

To view the log file:

- From the *Main* window, click the **View Log** button

. The *Log File Viewer* window appears.



4.7 Running a Manual Built In Test

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

The results of a Built In Test are displayed in the **Status** field in the *Main* window.

To run a manual BIT:

- In the *Main* window, click the **BIT** button

.

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

4.8 Viewing the Micro Software Versions

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

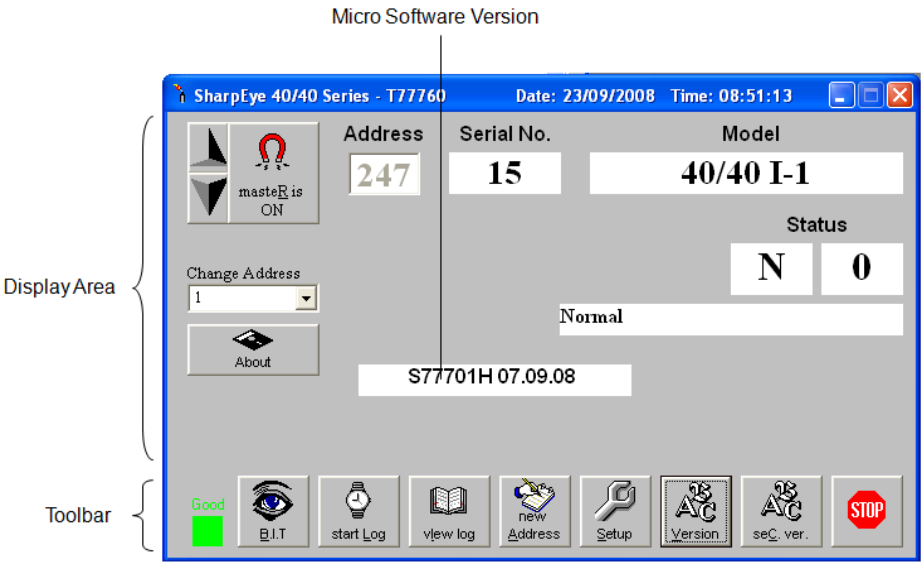
To view the versions of the primary or secondary micro software:

- Click the **Primary Micro Software** button

or the **Secondary Micro Software** button

.

  A field appears in the *Main* window, displaying the software version.



5 SharpEye 20/20 Series Flame Detectors

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Configuring the Detector	*page 25*
Changing the Detector's Address	*page 27*
Logging Detector Events	*page 28*
Running a Manual Built In Test	*page 29*

5.1 Overview

The SharpEye 20/20 Series of flame detectors are optical flame detectors for a wide variety of fire types, particularly those that emit hot CO_2.

This WinHost software provides configuration and diagnostic capabilities for the following models:

Table 12: 20/20 Series of Detectors

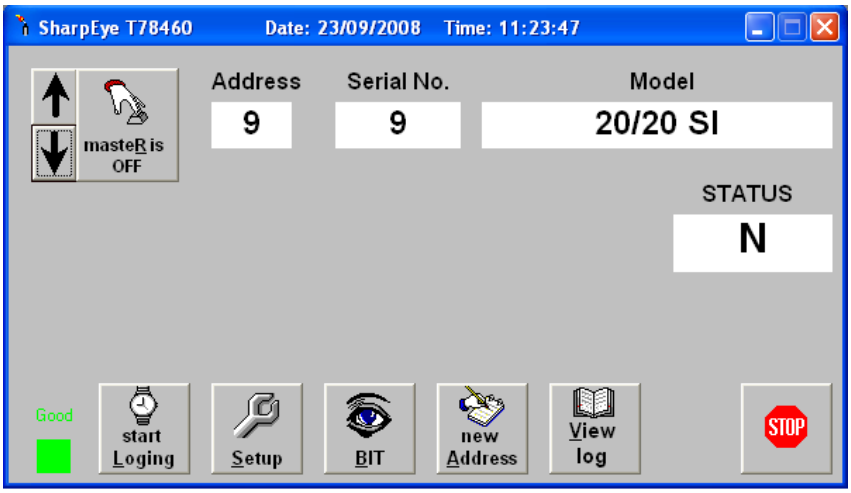
Model	Description
20/20SI	IR^3 flame detector
20/20SH	Hydrogen flame detector
20/20XI-1	Elite IR^3 flame detector wiring option 1
20/20XI-2	Elite IR^3 flame detector wiring option 2
20/20XI-3	Elite IR^3 flame detector wiring option 3
20/20TIN	IR^3 CCTV flame detector
20/20TIP	IR^3 CCTV flame detector
20/20MI-1	MINI IR^3 flame detector
20/20MI-3	MINI IR^3 for short range flame detector
20/20MH	MINI IR^3 Hydrogen flame detector
20/20ML	MINI UV/IR flame detector
20/20MU	MINI UV flame detector
20/20MR	MINI Single IR flame detector

5.2 Using the WinHost Software Application

This section describes how to use the WinHost software application for the 20/20 series flame detectors.

To run the WinHost software application:

- Run the WinHost application as described in Getting Started on page 7. The *Main* window appears (see Quick Tour of the WinHost Software User Interface on page 10).



The fields and toolbar buttons are fully described in Quick Tour of the WinHost Software User Interface on page 10.

5.2.1 SharpEye 20/20 Series Detector Statuses

The WinHost software for the SharpEye 20/20 series displays the status in a single letter field. The detector can have the following statuses:

Table 13: SharpEye 20/20 Series Detector Statuses

Status	Description
D	Disconnect
S	Startup
N	Normal
W	Warning
A	Alarm
L	Alarm Latch
T	Alarm Delay
B	BIT
M	Manual BIT
E	End of Manual BIT
F	Fault

Status	Description
f	Bit Fault
V	Low Voltage
2	Returning from Low Voltage (“V”)

5.3 Finding the Detector’s Address

This section describes the procedures available for finding the detector's address.

The detector can be connected to one of the 247 possible address locations. You use the WinHost software to check each of these locations until it finds the one that is used by the detector.

To find the address of the detector:

- Click the **Master** button

. and check each address manually by incrementing the checked location, up or down.

  The WinHost software automatically checks each of the 247 address locations to find the address of the detector.

  Or

- Click the up or down arrows and check each address manually by incrementing the checked location, up or down.

5.4 Configuring the Detector

This section describes how to configure the detector's parameters.

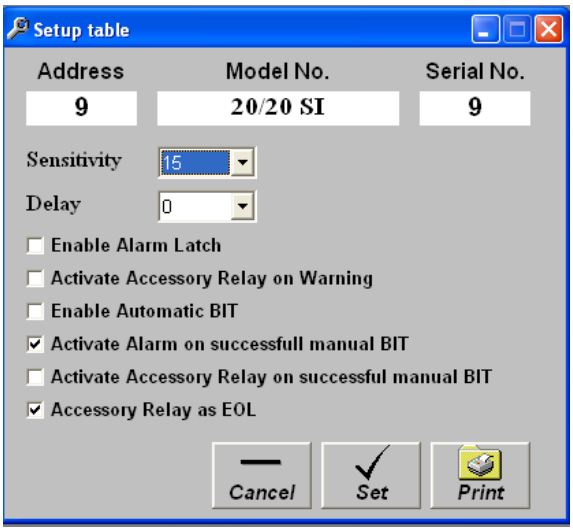
5.4.1 Using the Setup Table to Configure the Detector

You access the *Setup* table from the *Main* window.

To configure the detector:

1 From the *Main* window, click the **Setup** button

. The *Setup* table window appears.



2 Define the parameters as required. Full details of each available parameter can be found in *Setup Table* Window Parameters on page 25.

3 Click the **Set** button

. The detector is configured.

5.4.1.1 Setup Table Window Parameters

This section describes the *Setup Tables* window and the various parameters that you can define.

Table 14 details the *Setup Table* window parameters:

Table 14: Setup Table Window Parameters

Parameter	Description
Sensitivity	Sets the sensitivity of the detector. The values are given in meters. A higher number means greater sensitivity. See Detector Sensitivity Settings on page 26.

Parameter	Description
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).
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.
Enable Automatic BIT	When selected the Built In Test is run automatically according to the BIT settings.
Activate Alarm on successful manual BIT	Activates an alarm when a manual BIT is successfully completed.
Activate Accessory Relay on successful manual BIT	Activates the accessory relay when a manual BIT is successfully completed.
Accessory Relay as EOL	When selected, the accessory relay is always activated.

5.4.1.2 Detector Sensitivity Settings

The following tables list the detector's sensitivity settings.

Table 15: Sensitivity Settings for the 20/20SI, 20/20XI, 20/20CCTV

Setting	Sensitivity
15	50 ft (15m)
30	100 ft (30m)
45	150 ft (45m)
60	200 ft (60m)

Table 16: Sensitivity Settings for the 20/20MI-1

Setting	Sensitivity
10	33 ft (10m)
20	66 ft (20m)
30	100 ft (30m)
40	132 ft (40m)

Table 17: Sensitivity Settings for the 20/20MI-3

Setting	Sensitivity
2.5	8 ft (2.5m)
5	16 ft (5m)
7.5	24 ft (7.5m)
10	33 ft (10m)

Table 18: Sensitivity Settings for the 20/20MR

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

Table 19: Sensitivity Settings for the 20/20MH

Setting	Sensitivity
5	16 ft (5m)
10	33 ft (10m)
15	50 ft (15m)
20	66 ft (20m)

Table 20: Sensitivity Settings for the 20/20SH

Setting	Sensitivity
5	16 ft (5m)
10	33 ft (10m)
20	66 ft (20m)
30	100 ft (30m)

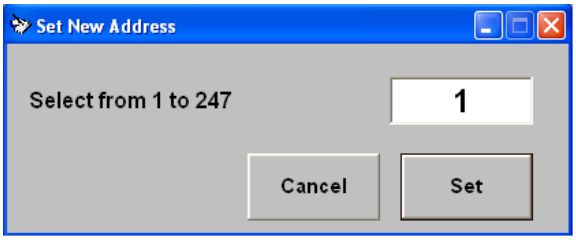
5.5 Changing the Detector's Address

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 the **New Address** button

. The *New Address* window appears.



2 Enter the desired address.

3 Click **Set**. The new address is set.

5.6 Logging Detector Events

You can use the mini laptop with the WinHost software to log the events of the detector, for diagnostic and other purposes.

When you start logging, you set the log file period in minutes. A line is subsequently written to the log whenever that number of minutes passes (say, every two minutes) and whenever there is a change in the status of the detector.

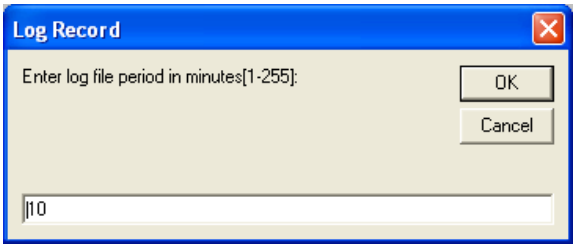
Each line in the log notes the following information:

- The detector's serial number
- The detector's
- The detector's status
- The date and time.

To log detector events:

1 From the *Main* window, click the **Start Logging** button

. The *Log Record* dialog box appears.



2 In the text field, enter the log file period (in minutes).

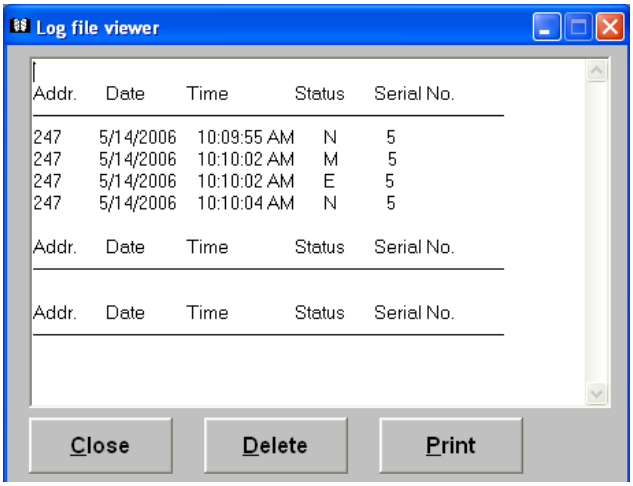
3 Click **OK**.

Logging now begins and a line is written to the log every time the log file period is over and any time there is a change in the detector's status.

To view the log file:

- From the *Main* window, click the **View Log** button

. The *Log File Viewer* appears.



5.7 Running a Manual Built In Test

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

The results of a Built In Test are displayed in the **Status** field in the *Main* window.

To run a manual BIT:

- From the *Main* window, click the **BIT** button

.

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

6 SharpEye 20/20 SIL2 Series Flame Detectors

In this chapter…

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Viewing the Micro Software Versions	*page 37*

6.1 Overview

The SharpEye 20/20 SIL2 Series of flame detectors are optical flame detectors for a wide variety of fire types, particularly those that emit hot CO_2. This flame detector conforms to the SIL2 standard.

This WinHost software provides configuration and diagnostic capabilities for the following models:

Table 21: 20/20 SIL2 Series Flame Detectors

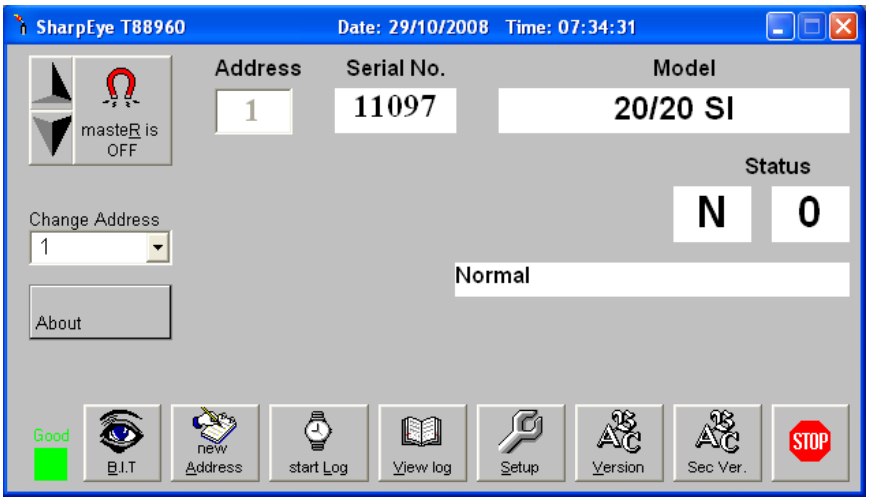
Model	Description
20/20SI S	IR^3 flame detector
20/20SH S	Hydrogen flame detector
20/20XIS - 1	Elite IR^3 flame detector
20/20XIS – 2	Elite IR^3 flame detector
20/20XIS – 3	Elite IR^3 flame detector

6.2 Using the WinHost Software Application

This section describes how to use the WinHost software application for the 20/20 SIL2 series flame detectors.

To run the WinHost software application:

- Run the WinHost application as described in Getting Started on page 7. The *Main* window appears (see Quick Tour of the WinHost Software User Interface on page 10).



The fields and toolbar buttons are fully described in Quick Tour of the WinHost Software User Interface on page 10.

6.2.1 SharpEye 20/20SI SIL2 Series Detector Statuses

The WinHost software for the SharpEye 20/20SI SIL2 series displays the status in two fields, a letter field and a number field. The detector can have the following statuses:

Table 22: SharpEye 20/20SI SIL2 Series Detector Statuses

Status	Description
S 90	Start up
S 92	Restore from wrong voltage
V 83	Wrong Vin
N 0	Normal
N 7	Relays or Heater fault
N 8	BIT fault
B 0	Automatic BIT
M 0	Manual BIT
E 0	End of BIT
T 0	Alarm delay

Status	Description
W 0	Warning
A 0	Alarm
L 0	Latch

6.3 Finding the Detector's Address

This section describes the procedures available for finding the detector's address.

The detector can be connected to one of the 247 possible address locations. You use the WinHost software to check each of these locations until it finds the one that is used by the detector.

To find the address of the detector:

- Click the **Master** button

.

  The WinHost software automatically checks each of the 247 address locations to find the address of the detector.

  Or

- Click the up or down arrows and check each address location manually, by incrementing the checked location, up or down.

To use the Change Address field to find the address of the detector:

1. Click the **Change Address** field. A drop-down list of address locations appears.
2. Select the address location you wish to check.

6.4 Configuring the Detector

This section describes how to configure the detector's parameters.

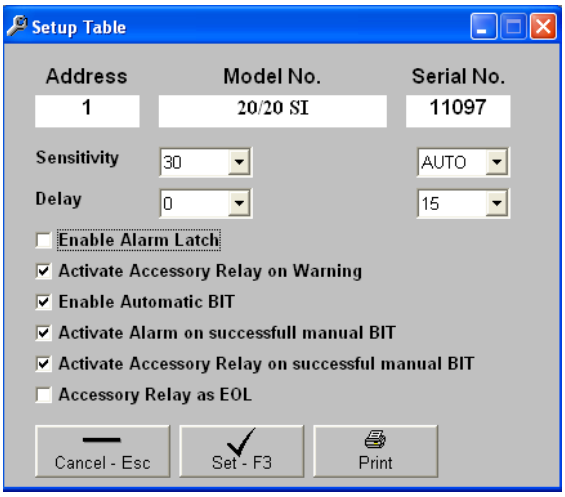
6.4.1 Using the Setup Table to Configure the Detector

You access the *Setup* table from the *Main* window.

To configure the detector:

1 From the *Main* window, click the **Setup** button

. The *Setup Table* window appears.



2 Define the parameters as required. Full details of each available parameter can be found in Setup Table Window Parameters on page 33.

3 Click the **Set** button

. The detector is configured.

6.4.1.1 Setup Table Window Parameters

This section describes the *Setup Tables* window and the various parameters that you can define.

Table 23 details the *Setup Table* window parameters:

Table 23: Setup Table Window Parameters

Parameter	Description
Sensitivity	Sets the sensitivity of the detector. The values are given in meters. A higher number means greater sensitivity. See Detector Sensitivity Settings on page 34.
Heat Mode	A device for clearing condensation from the lens (demister). Can be **On**, **Off**, or **Auto**.

Parameter	Description
Delay	The delay between detection of a signal and activation of the alarm. This can be **0**, **3**, **5**, **10**, **20** or **30** seconds, or **A** (anti-flare).
Heat On	The 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.
Enable Automatic BIT	When selected the Built In Test is run automatically according to the BIT settings.
Activate Alarm on successful manual BIT	Activates an alarm when a manual BIT is successfully completed.
Activate Accessory Relay on successful manual BIT	Activates the accessory relay when a manual BIT is successfully completed.
Accessory Relay as EOL	When selected, the accessory relay is always activated.

6.4.1.2 Detector Sensitivity Settings

The following tables list the detector's sensitivity settings.

Table 24: Sensitivity settings for the 20/20SI

Setting	Sensitivity
15	50 ft (15m)
30	100 ft (30m)
45	150 ft (45m)
60	200 ft (60m)

Table 25: Sensitivity settings for the 20/20SH

Setting	Sensitivity
5	16 ft (5m)
10	33 ft (10m)
20	66 ft (20m)
30	100 ft (30m)

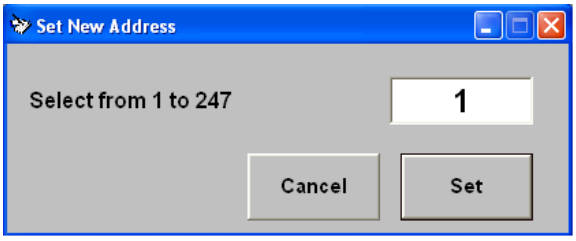
6.5 Changing the Detector's Address

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 the **New Address** button

. The *New Address* window appears.



2 Enter the desired address.

3 Click **Set**. The new address is set.

6.6 Logging Detector Events

You can use the mini laptop with the WinHost software to log the events of the detector, for diagnostic and other purposes.

When you start logging, you set the log file period in minutes. A line is subsequently written to the log whenever that number of minutes passes (say, every two minutes) and whenever there is a change in the status of the detector.

Each line in the log notes the following information:

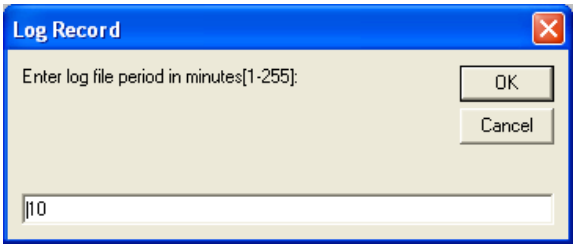
- The detector's serial number
- The detector's
- The detector's status
- The date and time.

To log detector events:

1 From the *Main* window, click the **Start Logging** button

.

The *Log Record* dialog box appears.



2 In the text field, enter the log file period (in minutes).

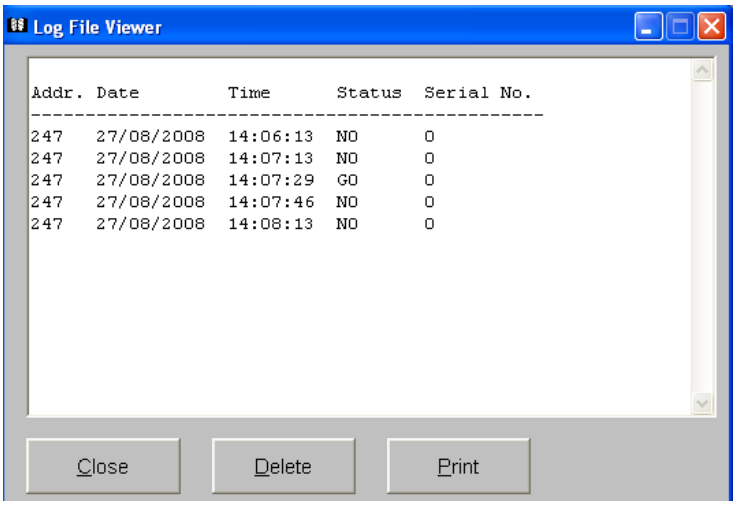
3 Click **OK**.

Logging now begins and a line is written to the log every time the log file period is over and any time there is a change in the detector's status.

To view the log file:

- From the *Main* window, click the **View Log** button

. The *Log File Viewer* appears.



6.7 Running a Manual Built In Test

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

To run a manual BIT:

- From the *Main* window, click the **BIT** button

.

The manual BIT runs and the results appear in the status field as follows:

Table 26: Built In Test Statuses

Model	Description
B 0	Automatic BIT
M 0	Manual BIT
E 0	End of BIT

6.8 Viewing the Micro Software Versions

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

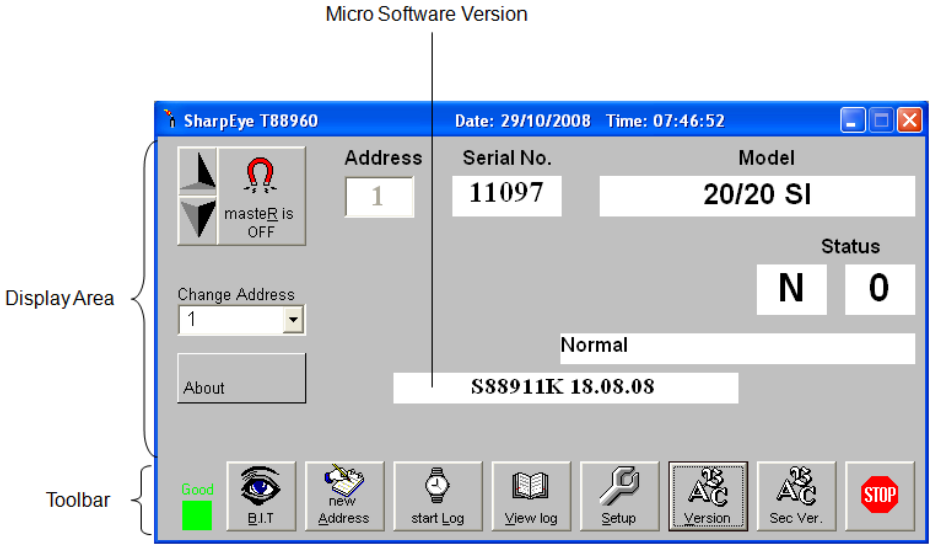
To view the versions of the primary or secondary micro software:

- From the *Main* window, click the **Primary Micro Software** button

or the **Secondary Micro Software** button

.

  A field appears in the *Main* window, displaying the software version.



7 SafEye 200, 300 and 400 Series Gas Detectors

In this chapter…

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Calibrating the SafEye 200, 300 and 400 Series Gas Detectors	*page 45*
Testing the SafEye 200, 300 and 400 Series Gas Detectors	*page 45*
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Logging Detector Events	*page 48*
Viewing the Micro Software Version	*page 49*

7.1 Overview

The SafEye 200 is a flash source gas detector that detects flammable gases at dangerous concentrations.

The SafEye 300 is a lamp source gas detector that detects flammable gases at dangerous concentrations.

The SafEye 400 is a flash source gas detector that detects toxic and aromatic gases.

The WinHost software provides configuration and diagnostic capabilities for the following models:

Table 27: SafEye Series of Gas Detectors

Model	Description
200	IR Sensors, Flash Source, Gas Detector
300	Lamp Source Gas Detector
400	UV Sensors, Flash Source, Gas Detector

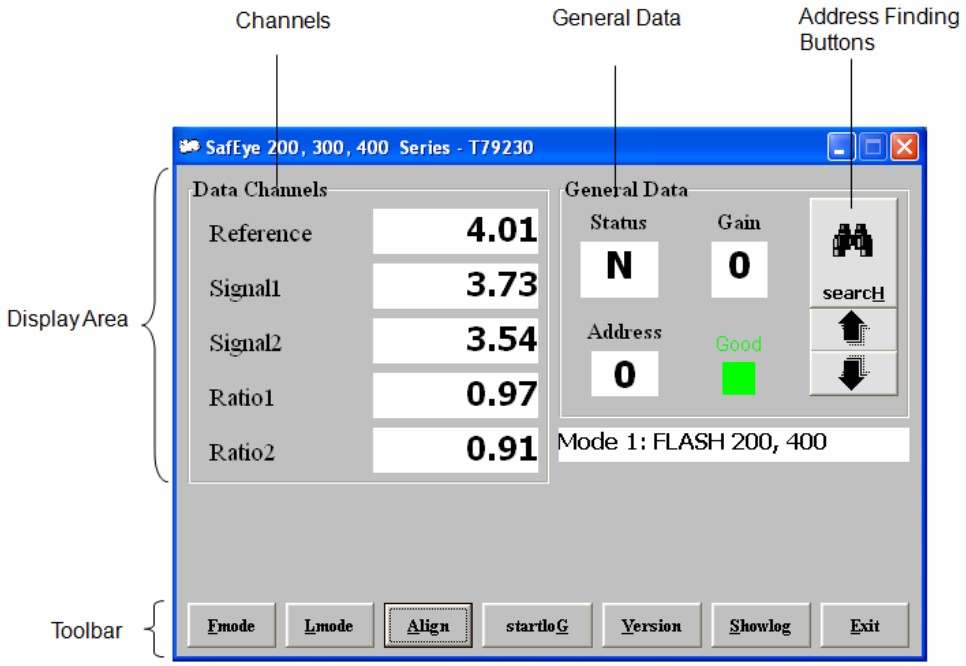
7.2 Using the WinHost Software Application

This section describes how to use the WinHost software application for the SafEye series gas detectors.

Note: The layout of the WinHost application differs slightly for the SafEye series gas detectors.

To run the WinHost software application:

- Run the WinHost application as described in Getting Started on page 7. The *Main* window appears.



The *Main* window is divided into two main areas:

- The **Display Area** at the top shows different parameters regarding the sensor.
- The **Toolbar** at the bottom enables access to various control and diagnostic functions.

The *Main* window's Display Area contains the following elements:

Table 28: Display Area Elements (SafEye Series Gas Detectors)

Element	Description
Channels	The channels fields show the detector's channel data. **Note:** The channels fields change, depending upon the mode selected. See 7.2.2 SafEye 200, 300 and 400 Series Channels Display on page 42.

Element	Description
Status	The current operational status of the detector. See 7.2.3SafEye 200, 300 and 400 Series Detector Statuses on page 44.
Gain	Electronic amplification.
	Seeks the address of the connected detector. The up and down arrows increment or decrement the address location by one, checking that address. The **Search** button seeks the connected address from 0 to 64.
	Indicates the status of the communication between the detector and the mini laptop.
Change Address	A drop-down list that enables you to select at which address location to seek the detector.

The *Main* window's toolbar contains the following buttons:

Table 29: Toolbar Buttons (SafEye Series Gas Detectors)

Button / Icon	Title	Description
	FMode	Increments the detector's mode. For flash detectors (for SafEye 200, 400).
	LMode	Increments the detector's mode. For lamp detectors (for SafEye 300).
	Align	Aligns the detector with the source.
	StartLog	Opens a dialog box that enables you to set up a log of the detector's events.
	Version	Displays the version and details of the micro software.
	Showlog	Displays the log file.
	Exit	Closes the application.

7.2.1 SafEye 200, 300 and 400 Series Operational Modes

The SafEye 200 and 400 detector models are flash detectors and use the **FMode** button.

The SafEye 300 detector is a lamp detector and uses the **LMode** button.

All of the detectors in the SafEye 200, 300 and 400 series can be in one of three operational modes.

Note: When moving from one mode to the next, **wait 2 seconds** for the mode change to take effect before going to the next mode change.

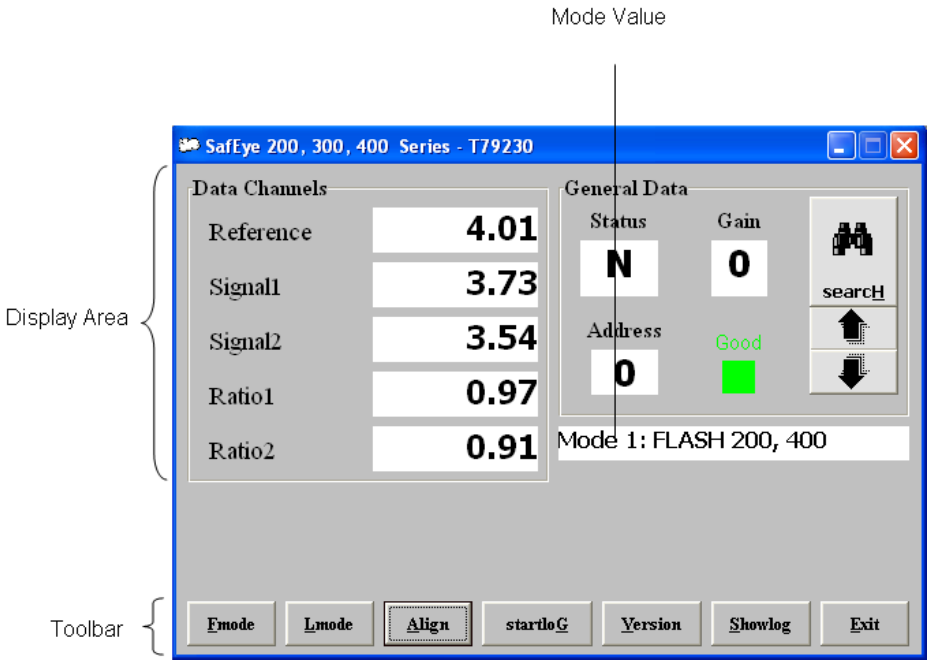
The following modes are available:

Table 30: SafEye Series Operational Modes

Mode	Detector Type	Description
1	**Flash and Lamp**	Used for checking signal levels.
2	**Flash**	Sets gain 3 and is used for checking signal-to-noise ratios.
	Lamp	Used for temperature.
3	**Flash and Lamp**	Returns to automatic gain level; It is used for checking gas reading.

To change the operational mode of the detector

- In the *Main* window, click on either the **LMode** button Lmode (for the SafEye 300) or the **FMode** button Fmode (for the SafEye 200 and 400). The mode value appears in the *Main* window.



Each click on the button increments the mode value. After mode value 3, an additional click of the button returns the mode value to 1.

Note: When the mode value changes, so do the fields that are displayed in the channels box. See SafEye 200, 300 and 400 Series Channels Display on page 42.

7.2.2 SafEye 200, 300 and 400 Series Channels Display

Whenever you change the mode of a detector, the channels that are displayed are also changed.

The following table shows the channels, as they appear in the different modes:

Table 31: Channels Display Modes (SafEye Series Gas Detectors)

Mode	Channel	Description
1	**Reference**	Voltage signal of reference after electronic amplification.
	Signal1	Voltage signal of sensor1 after electronic amplification (depends on gain).
	Signal2	Voltage signal of sensor2 after electronic amplification (depends on gain).
	Rat1	Ratio between sensor1 and reference
	Rat2	Ratio between sensor2 and reference
2	**Reference**	Voltage signal of reference after electronic amplification.
	R / N	Reference / Noise – not applicable for LAMP
	S1 / N	Signal1 / Noise – not applicable for LAMP
	S2 / N	Signal2 / Noise – not applicable for LAMP
	Temp	Temperature inside the detector in °C.
3	**Reference**	Voltage signal of reference after electronic amplification.
	LEL	Actual (4-20mA) gas reading of detector
	NQRat1	Ratio1 / QO1 (Normalized ratio1) Equals 1 when no gas is present and goes down when gas is introduced
	NQRat2	Ratio1 / QO2 (Normalized ratio2) Equals 1 when no gas is present and goes down when gas is introduced
	Vdd	Voltage measurement.

The following screenshots show how the channels displays change with the different modes:

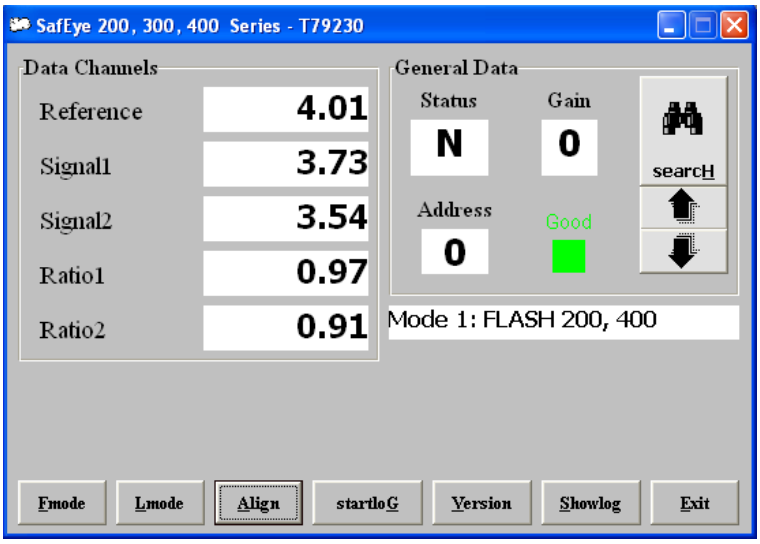


Figure 2: SafEye 200, 300 and 400 Series Main Window in Mode 1

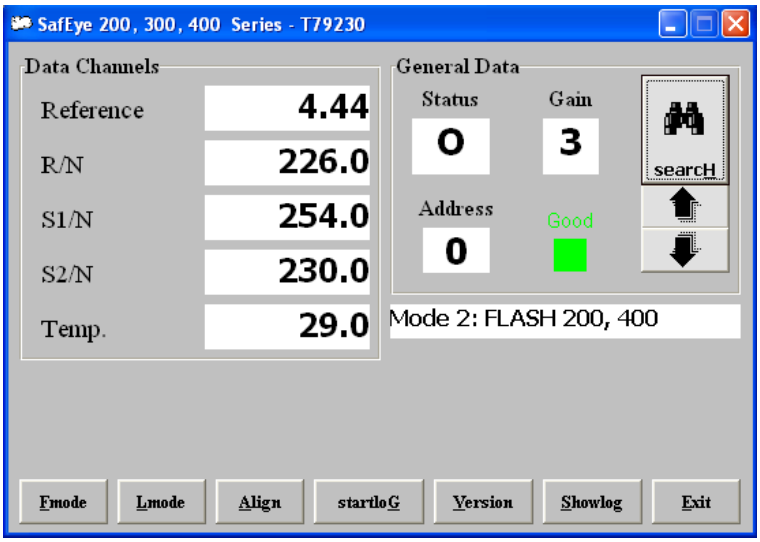


Figure 3: SafEye 200 and 400 Series Main Window in Mode 2

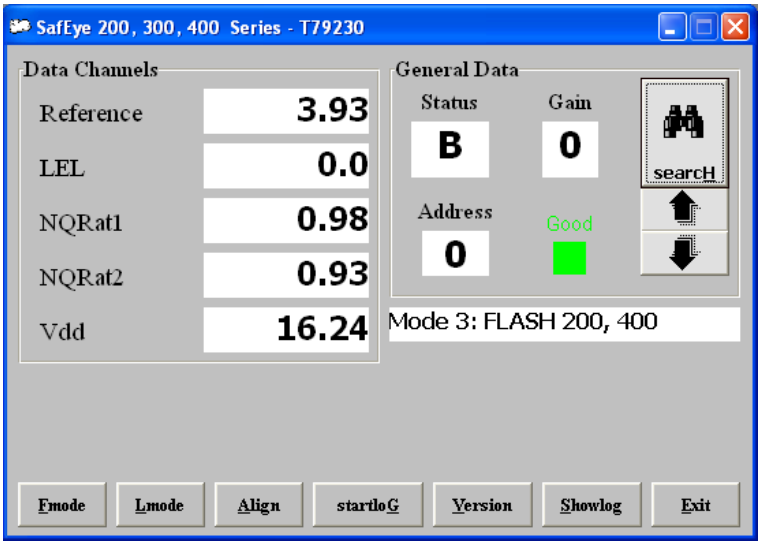


Figure 4: SafEye 200, 300 and 400 Series Main Window in Mode 3

Note: When moving from one mode to the next, wait 2 seconds for the mode change to take effect before going to the next mode change.

7.2.3 SafEye 200, 300 and 400 Series Detector Statuses

The detector can have the following statuses:

Table 32: Detector Statuses (SafEye Series Gas Detectors)

Status	Group	Description
N	**Normal**	Normal
B		Normal operation during interference
M		Maintenance call for low signal or ratio
P	**Fault**	Parameters fault
V		Low voltage
F		High noise
O		Obscuration, saturation, or low signal
D		Disconnection
A	**Alarm**	Alarm
W	**Warning**	Warning
X	**Alignment**	Align
S		Start-up / stand-by
G		Zero calibration

7.3 Calibrating the SafEye 200, 300 and 400 Series Gas Detectors

After you have performed the physical setup described in Getting Started on page 4, you must align and calibrate the detector.

For instructions as to how to set up the detector and the source in relation to one another, see the detector manual.

You can perform the calibration using the hardware as described in the detector manual, or using the software as described below.

To calibrate the SafEye 200, 300 and 400 Series gas detectors using the WinHost software:

1 From the *Main* window, click the **Align** button once.

The status display changes to **XXX** and the mode is Align mode. This mode ensures that the detector receives a signal from the source, and checks that the signal is correct. See the detector manual for further details.

Note: This step is used in place of the magnetic mode selection and in place of reading the LEDs as described in the detector manual. Instead, read the gain and signal levels. See the detector manual for the correct levels.

2 Click the **Align** button again.

The status display changes to **SSY** and this is the standby mode.

3 Click the **Align** button again.

The status display changes to **GGG** and this is zero gas calibration mode and takes some moments to complete. When it is completed, the mode automatically changes to Normal, **NNN**.

7.4 Testing the SafEye 200, 300 and 400 Series Gas Detectors

You should test the gas detectors after setup and calibration, after movement of the detector, or at any time you feel that the performance may have changed.

To test the SafEye 200 and 400 Flash Gas Detectors:

1 Set the detector to mode 1. See SafEye 200, 300 and 400 Series Operational Modes on page 40.

The channel values should be as follows:

Channel	Description
Reference	The minimum signal allowed is 2.5V at gain 3
Signal1	The minimum signal allowed is 2.5V at gain 3

Channel	Description
Signal2	The minimum signal allowed is 2.5V at gain 3
Rat1	Must be 0.95 – 1.05
Rat2	Must be 0.95 – 1.05

2 Click the **FMode** button again. Wait 5 seconds.

The detector moves to mode 2. Gain should be 3. The channel values should be as follows:

Channel	Description
Reference	More than 4V DC
R / N	More than 50
S1 / N	More than 50
S2 / N	More than 50
Temp	Up to 25°C beyond the room temperature

3 Click the **FMode** button again. Wait 5 seconds.

The detector moves to mode 3. Gain should be 3. The channel values should be as follows:

Channel	Description
Reference	More than 4V DC
LEL	0 LELxM
NQRat1	0.5 – 2.5
NQRat2	0.5 – 2.5
Vdd	16 – 17 V DC

4 Place the calibration filter in front of the detector.

The levels of the LEL and the 4-20mA readings should be within ±15% of the values on the calibration sheet.

5 Record the LEL and the 4-20mA readings.

6 Remove the calibration filter.

7 Verify receiving 0 LEL x M and 4mA output.

8 Exit the WinHost software.

You have established that the detector is working correctly.

To test the SafEye 300 Lamp Gas Detectors:

1 Set the detector to mode 1. See SafEye 200, 300 and 400 Series Operational Modes on page 40.

The channel values should be as follows:

Channel	Description
Reference	The minimum signal allowed is 2.5V at gain 3
Signal1	The minimum signal allowed is 2.5V at gain 3
Signal2	The minimum signal allowed is 2.5V at gain 3
Rat1	Must be 0.95 – 1.05
Rat2	Must be 0.95 – 1.05

2 Click the **LMode** button

again. Wait 5 seconds.

The detector moves to mode 2. Gain should be 3. The channel values should be as follows:

Channel	Description
Reference	More than 4V DC
R / N	Value is 0
S1 / N	Value is 0
S2 / N	Value is 0
Temp	Up to 25°C beyond the room temperature

3 Click the **LMode** button

again. Wait 5 seconds.

The detector moves to mode 3. Gain should be 3. The channel values should be as follows:

Channel	Description
Reference	More than 4V DC
LEL	0 LELxM
NQRat1	0.5 – 2.5
NQRat2	0.5 – 2.5
Vdd	16 – 17 V DC

4 Place the calibration filter in front of the detector.

The levels of the LEL and the 4-20mA readings should be within ±15% of the values on the calibration sheet.

5 Record the LEL and the 4-20mA readings.

6 Remove the calibration filter.

7 Verify receiving 0 LEL x M and 4mA output.

8 Exit the WinHost software.

You have established that the detector is working correctly.

7.5 Finding the Detector's Address

This section describes the procedures available for finding the detector's address.

To use the Master button to find the address of the detector:

- From the *Main* window, click the **searcH** button

.

  The WinHost software automatically checks each of the 64 address locations to find the address of the detector.

To use the arrow buttons to find the address of the detector:

- From the *Main* window, click the up or down arrows .

  You manually check each address location, by incrementing the checked location, up or down.

7.6 Logging Detector Events

You can use the mini laptop with the WinHost software to log the events of the detector, for diagnostic and other purposes.

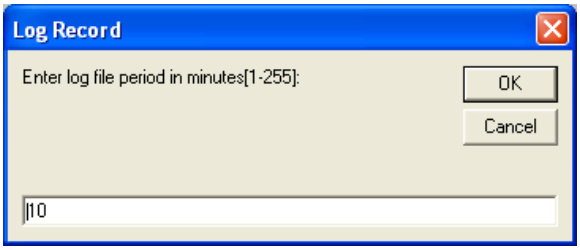
When you start logging, you set the log file period in minutes. A line is subsequently written to the log whenever that number of minutes passes (say, every two minutes) and whenever there is a change in the status of the detector.

Each line in the log records comprehensive data about the detector.

To log detector events:

1 From the *Main* window, click the **Start Logging** button

. The *Log Record* dialog box appears.



2 In the text field, enter the log file period (in minutes).

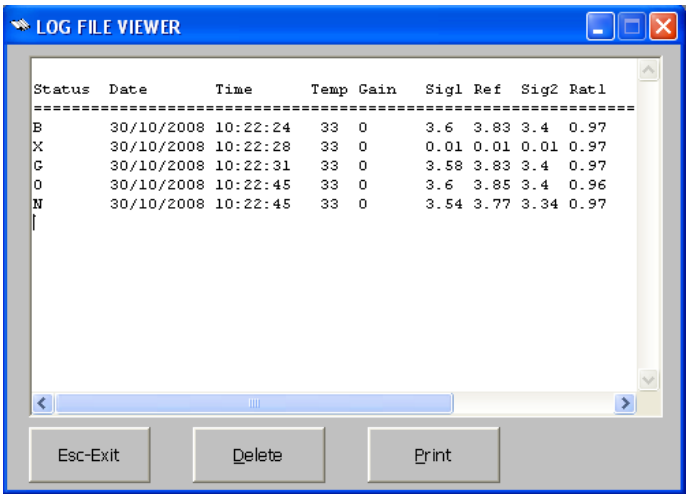
3 Click **OK**.

  Logging now begins and a line is written to the log every time the log file period is over and any time there is a change in the detector's status.

To view the log file:

- In the *Main* window, click the **Showlog** button

. The *LOG FILE VIEWER* dialog box appears.



7.7 Viewing the Micro Software Version

You can view the version of the micro software at any time.

To view the version of micro software:

- From the Main window, click the **Version** button

.

  A field appears in the *Main* window, displaying the software version.

8 SafEye Xenon 700 Series Gas Detectors

In this chapter…

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Changing the Detector's Address	*page 57*
Reading Maintenance	*page 58*
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8.1 Overview

The SafEye Xenon 700 series gas detectors are optical open path gas detectors that detect flammable gases and vapors at various concentrations. They have a large coverage area and a fast response time.

The WinHost software provides configuration and diagnostic capabilities for the following models:

Table 33: SafEye Xenon 700 Series

Model	Description
701-(1-3)	SafEye Xenon short range.
702-(1-3)	SafEye Xenon medium range.
703-(1-3)	SafEye Xenon long range.
721-(1-3)	SafEye Ethylene short range.
722-(1-3)	SafEye Ethylene medium range.
723-(1-3)	SafEye Ethylene long range.

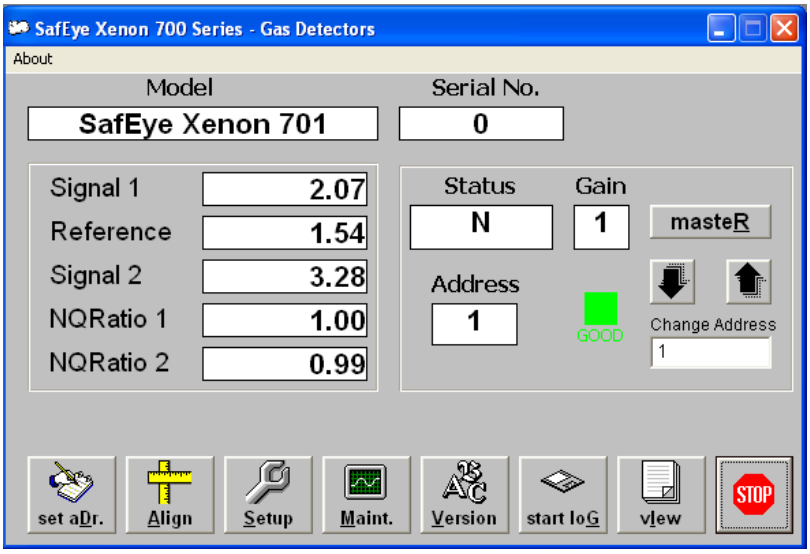
8.2 Using the WinHost Software Application

This section describes how to use the WinHost software application for the SafEye Xenon 700 series gas detectors.

Note: The layout of the *Main* window differs slightly for the SafEye Xenon 700 series gas detectors.

To run the WinHost software application:

- Run the WinHost application as described in Getting Started on page 7. The *Main* window appears.



The *Main* window is divided into two main areas:

- The **Display Area** at the top shows different parameters regarding the sensor.
- The **Toolbar** at the bottom enables access to various control and diagnostic functions.

The *Main* window's Display Area contains the following elements:

Table 34: Display Area Elements (SafEye Xenon 700 Series)

Element	Description
Model	The model number of the detector.
Serial No.	The serial number of the detector.
Signal 1	Voltage signal of sensor1 after electronic amplification (depends on gain).
Reference	Voltage signal of reference after electronic amplification.
Signal 2	Voltage signal of sensor2 after electronic amplification (depends on gain).
NQRatio 1	Ratio1 / QO1 (Normalized ratio1) Equals 1 when no gas is present and goes down when gas is introduced.
NQRatio 2	Ratio1 / QO2 (Normalized ratio2) Equals 1 when no gas is present and goes down when gas is introduced.
Status	The current operational status of the detector. See SafEye Xenon 700 Series Detector Statuses on page 53.
Gain	Electronic amplification.
	Seeks the address of the connected detector. The up and down arrows increment or decrement the address location by one, checking that address. The **masteR** button seeks the correct address from all 247 address locations.
	Indicates the status of the communication between the detector and the mini laptop.
Change Address	A drop-down list that enables you to select at which address location to seek the detector.

The *Main* window's toolbar contains the following buttons:

Table 35: Toolbar Buttons (SafEye Xenon 700 Series)

Button / Icon	Title	Description
	Set Address	Opens a dialog box that enables you to set a new address location for the detector.
	Align	Aligns the detector with the source.
	Setup	Opens a dialog box that enables you to configure both operation and diagnostic features.

Button / Icon	Title	Description
	Maintenance	Opens the Maintenance screen that enables you to perform maintenance functions on the detector.
	Micro Software Version	Displays the version and details of the micro software.
	Start Logging	Opens a dialog box that enables you to set up a log of the detector's events.
	View Log	Displays the log file.
	Stop	Closes the application.

8.2.1 SafEye Xenon 700 Series Detector Statuses

The detector can have the following statuses:

Table 36: Detector Statuses (SafEye Xenon 700 Series)

Status	Group	Description
N	**Normal**	Normal
B		Normal operation during interference
M		Maintenance call for low signal or ratio
P	**Fault**	Parameters fault
V		Low voltage
F		High noise
O		Obscuration, saturation, or low signal
D		Disconnection
A	**Alarm**	Alarm
W	**Warning**	Warning
X	**Alignment**	Align
S		Start-up / stand-by
G		Zero calibration

8.3 Calibrating the SafEye Xenon 700 Series Gas Detectors

After you have performed the physical setup described in Getting Started on page 7, you must align and calibrate the detector.

For instructions as to how to set up the detector and the source in relation to one another, see the detector manual.

You can perform the calibration using the hardware as described in the detector manual, or using the software as described below.

To calibrate the SafEye Xenon 700 Series gas detectors using the Winhost software:

4 From the Main window click the **Align** button once.

The status display changes to **XXX** and the mode is **Align**. This mode ensures that the detector receives a signal from the source, and checks that the signal is correct. See the detector manual for further details.

Note: This step is used in place of the magnetic mode selection as described in the detector manual. Instead, you read the gain and signal levels. See the detector manual for the correct levels.

5 Click the **Align** button again.

The status display changes to **SSY** and this is the standby mode.

6 Click the **Align** button again.

The status display changes to **GGG** and this is zero gas calibration mode and takes some moments to complete. When it is completed, the mode automatically changes to Normal, **NNN**.

8.4 Finding the Detector's Address

This section describes the procedures available for finding the detector's address.

To use the Master button to find the address of the detector:

- From the Main window, click the **masteR** button

.

  The WinHost software automatically checks each of the 247 address locations to find the address of the detector.

To use the arrow buttons to find the address of the detector:

- Click the up or down arrows .

  You check each address location manually, by incrementing the checked location, up or down.

To use the Change Address field to find the address of the detector:

7 Click the **Change Address** field

.

A drop-down list of address locations appears.

8 Select the address location you wish to check.

8.5 Configuring the Detector

This section describes how to configure the detector's parameters.

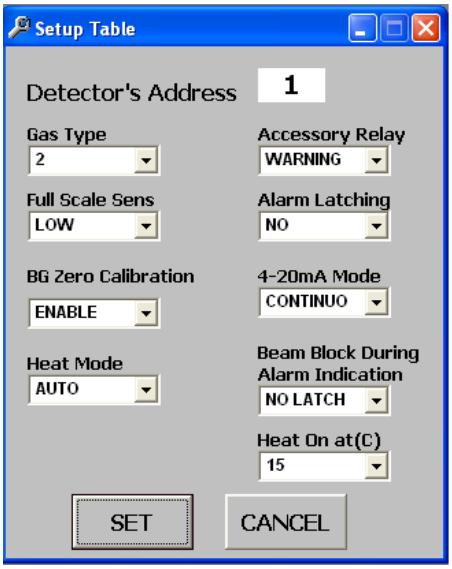
8.5.1 Using the Setup Table to Configure the Detector

You access the *Setup* table from the *Main* window.

To configure the detector:

1 From the *Main* window, click the **Setup** button

. The *Setup Table* window appears.



2 Define the parameters as required. Full details of each available parameter can be found in Setup Table Window Parameters on page 56.

3 Click the **Set** button

. The detector is configured.

8.5.1.1 Setup Table Window Parameters

This section describes the *Setup Tables* window and the various parameters that you can define.

Table 37 details the *Setup Table* window parameters:

Table 37: Setup Parameters (SafEye Xenon 700 Series)

Parameter	Description
Gas Type	Enables you to select the code of the gas type you want the detector to detect. See Gas Type Codes on page 56.
Full Scale Sens	Enables you to select the sensitivity of the detector. See Detector Sensitivity Settings on page 57
BG Zero Calibration	Enables the background zero calibration.
Heat Mode	Device for clearing condensation from the lens (demister). Can be On, Off, or Auto.
Accessory Relay	When the detector's status is **Warning** the accessory relay is activated.
Alarm Latching	When selected, the alarm remains on even when the signal abates.
4-20mA Mode	Enables you to select the 4-20mA mode. This can be **Discreet** or **Continuous**.
Beam Block During Alarm Indication	Alarm indications are latched when the detector turns to **Blocking Mode** from the **Alarm** position. Latching reset can be provided only if the detector returns to normal mode.
Heat On at (C)	Temperature at which the demister is activated, if the **Heat Mode** is set to **Auto**.

8.5.1.2 Gas Type Codes

Table 38 describes the gas type codes:

Table 38: Gas Type Codes (SafEye Xenon 700 Series)

Gas Code	Gas Type
1	100% Methane
2	92% Methane + 4% Propane + 4% Ethane
3	100% Propane
4	99% Methane + 1% Propane
5	Undefined
6	Undefined
7	Undefined
8	Undefined

8.5.1.3 Detector Sensitivity Settings

The detector's sensitivity settings are as follows:

- **LOW**: 500 full scale sensitivity
- **HIGH**: 200 full scale sensitivity

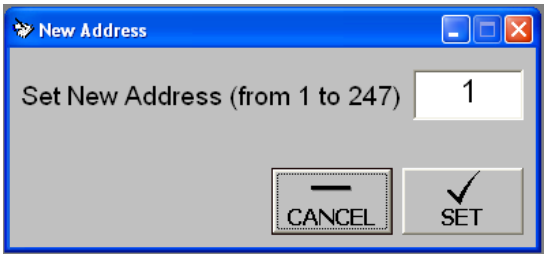
8.6 Changing the Detector's Address

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 the **Set Address** button

. The *New Address* window appears.



2 Enter the desired address.

3 Click **Set**. The new address is set.

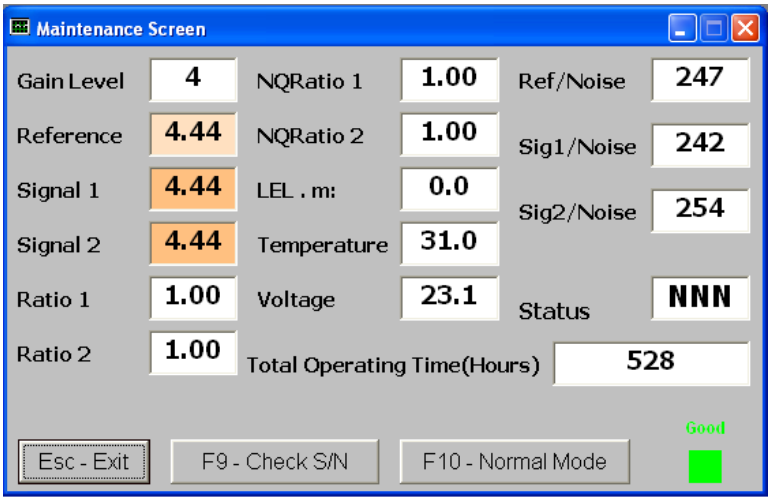
8.7 Reading Maintenance Data

You can use the WinHost software to provide maintenance diagnostic data about the detector, and to check the signal/noise ratio. You need to view the *Maintenance* window to do this.

To open the Maintenance Screen window:

- From the *Main* window, click the **Maintenance** button

. The *Maintenance Screen* window appears.



The *Maintenance Screen* window contains the following elements:

Table 39: Maintenance Screen Window Elements (SafEye Xenon 700 Series)

Parameter	Description
Gain Level	Electronic amplification.
Reference	Voltage signal of reference after electronic amplification.
Signal 1	Voltage signal of sensor1 after electronic amplification (depends on gain).
Signal 2	Voltage signal of sensor2 after electronic amplification (depends on gain).
Ratio 1	Ratio between sensor1 and reference.
Ratio 2	Ratio between sensor2 and reference.
NQRatio 1	Ratio1 / QO1 (Normalized ratio1) Equals 1 when no gas is present and goes down when gas is introduced.
NQRatio 2	Ratio1 / QO2 (Normalized ratio2) Equals 1 when no gas is present and goes down when gas is introduced.
LEL x M	Lower Explosion Level by meter.

Parameter	Description
Temperature	The temperature inside the detector in °C.
Voltage	Detector voltage.
Ref / Noise	Reference / Noise – not applicable for LAMP.
Sig1 / Noise	Signal1 / Noise – not applicable for LAMP.
Sig2 / Noise	Signal2 / Noise – not applicable for LAMP.
Status	current status. See SafEye Xenon 700 Series Detector Statuses on page 53.
Total Operating Time	Detectors work time in hours.
	Exits the application.
	Checks signals to noise.
	Cancels the F9 check and returns to normal operation.
	Communications status.

8.7.1 Checking the Signals-to-Noise

You can check signals-to-noise from the *Maintenance Screen* window.

To check signals-to-noise:

- From the *Maintenance Screen* window, click the **Check S / N** button .

  or

- Press **F9**.

  The signals/noise values appear on the screen.

  Note: You can revert to normal operation at any time by clicking the **Normal Mode** button or pressing the **F10** key.

8.8 Logging Detector Events

You can use the mini laptop with the WinHost software to log the events of the detector, for diagnostic and other purposes.

When you start logging, you set the log file period in minutes. A line is subsequently written to the log whenever that number of minutes passes (say, every two minutes) and whenever there is a change in the status of the detector.

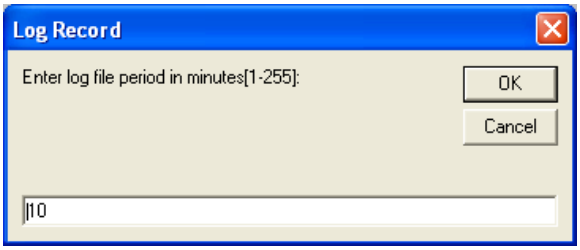
Each line in the log records comprehensive data about the detector.

To log detector events:

4 From the *Main* window, click the **Start Logging** button

.

The *Log Record* dialog box appears.



5 In the text field, enter the log file period (in minutes).

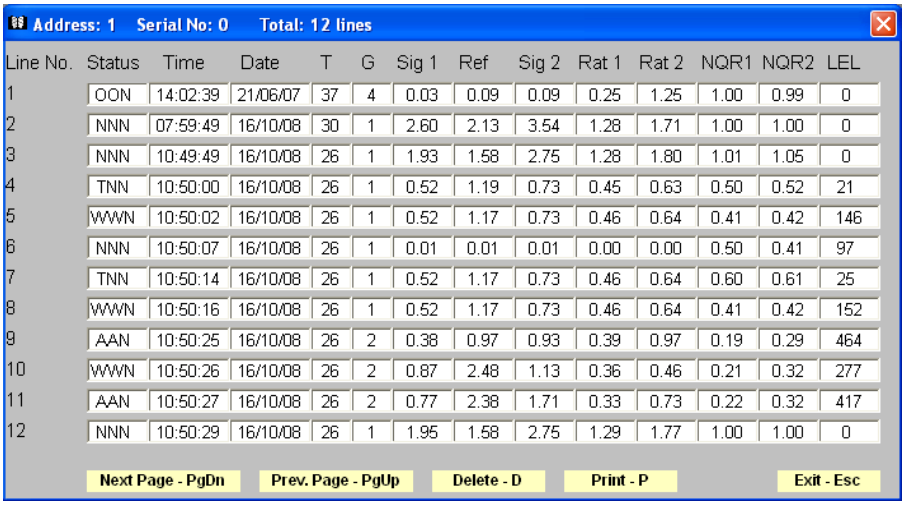
6 Click **OK**.

Logging now begins and a line is written to the log every time the log file period is over and any time there is a change in the detector's status.

To view the log file:

- From the *Main* window, click the **View Log** button

. The log dialog box appears.



Line No.	Status	Time	Date	T	G	Sig 1	Ref	Sig 2	Rat 1	Rat 2	NQR1	NQR2	LEL
1	OON	14:02:39	21/06/07	37	4	0.03	0.09	0.09	0.25	1.25	1.00	0.99	0
2	NNN	07:59:49	16/10/08	30	1	2.60	2.13	3.54	1.28	1.71	1.00	1.00	0
3	NNN	10:49:49	16/10/08	26	1	1.93	1.58	2.75	1.28	1.80	1.01	1.05	0
4	TNN	10:50:00	16/10/08	26	1	0.52	1.19	0.73	0.45	0.63	0.50	0.52	21
5	WWN	10:50:02	16/10/08	26	1	0.52	1.17	0.73	0.46	0.64	0.41	0.42	146
6	NNN	10:50:07	16/10/08	26	1	0.01	0.01	0.01	0.00	0.00	0.50	0.41	97
7	TNN	10:50:14	16/10/08	26	1	0.52	1.17	0.73	0.46	0.64	0.60	0.61	25
8	WWN	10:50:16	16/10/08	26	1	0.52	1.17	0.73	0.46	0.64	0.41	0.42	152
9	AAN	10:50:25	16/10/08	26	2	0.38	0.97	0.93	0.39	0.97	0.19	0.29	464
10	WWN	10:50:26	16/10/08	26	2	0.87	2.48	1.13	0.36	0.46	0.21	0.32	277
11	AAN	10:50:27	16/10/08	26	2	0.77	2.38	1.71	0.33	0.73	0.22	0.32	417
12	NNN	10:50:29	16/10/08	26	1	1.95	1.58	2.75	1.29	1.77	1.00	1.00	0

9 SafEye Xenon 700 SIL2 Series Gas Detectors

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9.1 Overview

The SafEye Xenon 700 SIL2 series gas detectors are optical open path gas detectors that detect flammable gases and vapors at various concentrations. They have a large coverage area and a fast response time.

The WinHost software provides configuration and diagnostic capabilities for the following models:

Table 40: SafEye Xenon 700 SIL2 Series

Model	Description
701-(1-3)	SafEye Xenon short range.
702-(1-3)	SafEye Xenon medium range.
703-(1-3)	SafEye Xenon long range.
721-(1-3)	SafEye Ethylene short range.
722-(1-3)	SafEye Ethylene medium range.
723-(1-3)	SafEye Ethylene long range.

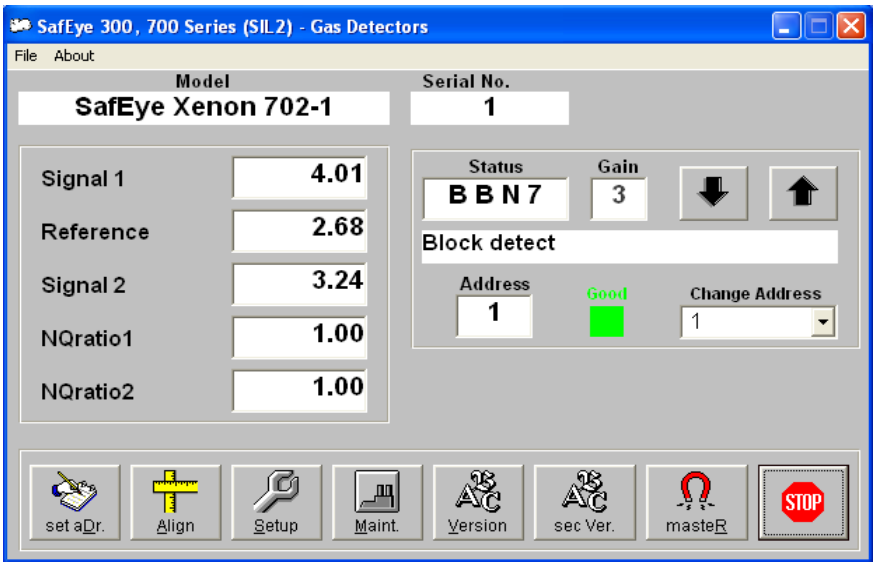
9.2 Using the WinHost Software Application

This section describes how to use the WinHost software application for the SafEye Xenon 700 SIL2 series gas detectors.

Note: The layout of the *Main* window differs slightly for the SafEye Xenon 700 series gas detectors.

To run the WinHost software application:

- Run the WinHost application as described in Getting Started on page 7. The *Main* window appears.



The *Main* window is divided into two main areas:

- The **Display Area** at the top shows different parameters regarding the sensors.
- The **Toolbar** at the bottom enables access to various control and diagnostic functions.

The *Main* window's Display Area contains the following elements:

Table 41: Display Area Elements (SafEye Xenon 700 SIL2 Series)

Element	Description
Model	The model number of the detector.
Serial No.	The serial number of the detector.
Signal 1	Voltage signal of sensor 1 after electronic amplification (depends on gain).
Reference	Voltage signal of reference after electronic amplification.
Signal 2	Voltage signal of sensor 2 after electronic amplification (depends on gain).
NQRatio 1	Ratio1 / QO1 (Normalized ratio1) Equals 1 when no gas is present and goes down when gas is introduced.
NQRatio 2	Ratio1 / QO2 (Normalized ratio2) Equals 1 when no gas is present and goes down when gas is introduced.
Status	The current operational status of the detector. See SafEye Xenon 700 Series Detector Statuses on page 64.
Gain	Electronic amplification.
	Seeks the address of the connected detector. The up and down arrows increment or decrement the address location by one, checking that address. The **masteR** button seeks the correct address from all 247 address locations.
	Indicates the status of the communication between the detector and the mini laptop.
Change Address	A drop-down list that enables you to select at which address location to seek the detector.

The *Main* window's toolbar contains the following buttons:

Table 42: Toolbar Buttons (SafEye Xenon 700 SIL2 Series)

Button / Icon	Title	Description
	Set Address	Opens a dialog box that enables you to set a new address location for the detector.
	Align	Aligns the detector with the source.
	Setup	Opens a dialog box that enables you to configure both operation and diagnostic features.

Button / Icon	Title	Description
	Maintenance	Opens the Maintenance screen that enables you to perform maintenance functions on the detector.
	Primary Micro Software Version	Displays the version and details of the primary micro software.
	Secondry Micro Software Version	Displays the version and details of the secondry micro software.
	Stop	Closes the application.

9.2.1 SafEye Xenon 700 SIL2 Series Detector Statuses

The detector can have the following statuses:

Table 43: Detector Statuses (SafEye Xenon 700 SIL2 Series)

Status	Group	Description
NNN0	**Normal**	Normal
BBN0		Normal operation during interference
MON0		Maintenance call for low signal or ratio
PPP71,72,73,74	**Fault**	Memory fault
VVV83		Low voltage
FFF34,35,36		High noise
OON0		Obscuration, saturation, or low signal
DDD		Disconnection
AAN0	**Alarm**	Alarm
WWN	**Warning**	Warning
XXX0	**Alignment**	Align
SSY0		Start-up / stand-by
GGG0		Zero calibration

9.3 Calibrating the SafEye Xenon 700 SIL2 Series Gas Detectors

After you have performed the physical setup described in Getting Started on page 7, you must align and calibrate the detector.

For instructions as to how to set up the detector and the source in relation to one another, see the detector manual.

You can perform the calibration using the hardware as described in the detector manual, or using the software as described below.

To calibrate the SafEye Xenon 700 SIL2 Series gas detectors using the Winhost software:

1 From the Main window click the **Align** button once.

The status display changes to **XXX0** and the mode is **Align**. This mode ensures that the detector receives a signal from the source, and checks that the signal is correct. See the detector manual for further details.

Note: This step is used in place of the magnetic mode selection as described in the detector manual. Instead, you read the gain and signal levels. See the detector manual for the correct levels.

2 Click the **Align** button again.

The status display changes to **SSY0** and this is the standby mode.

3 Click the **Align** button again.

The status display changes to **GGG0** and this is zero gas calibration mode and takes some moments to complete. When it is completed, the mode automatically changes to Normal, **NNN0**.

9.4 Finding the Detector's Address

This section describes the procedures available for finding the detector's address.

To use the Master button to find the address of the detector:

- From the Main window, click the **masteR** button

.

  The WinHost software automatically checks each of the 247 address locations to find the address of the detector.

To use the arrow buttons to find the address of the detector:

- Click the up or down arrows .

  You check each address location manually, by incrementing the checked location, up or down.

To use the Change Address field to find the address of the detector:

1 Click the **Change Address** field

.

A drop-down list of address locations appears.

2 Select the address location you wish to check.

9.5 Configuring the Detector

This section describes how to configure the detector's parameters.

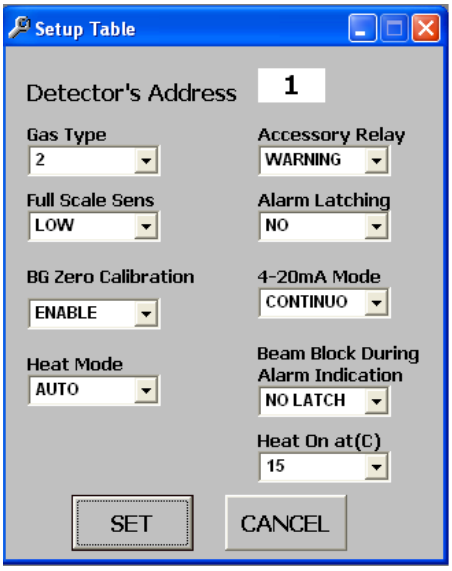
9.5.1 Using the Setup Table to Configure the Detector

You access the *Setup* table from the *Main* window.

To configure the detector:

1 From the *Main* window, click the **Setup** button

. The *Setup Table* window appears.



2 Define the parameters as required. Full details of each available parameter can be found in Setup Table Window Parameters on page 67.

3 Click the **Set** button

. The detector is configured.

9.5.1.1 Setup Table Window Parameters

This section describes the *Setup Tables* window and the various parameters that you can define.

Error! Reference source not found. details the *Setup Table* window parameters:

Table 44: Setup Parameters (SafEye Xenon 700 SIL2 Series)

Parameter	Description
Gas Type	Enables you to select the code of the gas type you want the detector to detect. See Gas Type Codes on page 67.
Full Scale Sens	Enables you to select the sensitivity of the detector. See Detector Sensitivity Settings on page 68
BG Zero Calibration	Enables the background zero calibration.
Heat Mode	Device for clearing condensation from the lens (demister). Can be On, Off, or Auto.
Accessory Relay	When the detector's status is **Warning** the accessory relay is activated.
Alarm Latching	When selected, the alarm remains on even when the signal abates.
4-20mA Mode	Enables you to select the 4-20mA mode. This can be **Discreet** or **Continuous**.
Beam Block During Alarm Indication	Alarm indications are latched when the detector turns to **Blocking Mode** from the **Alarm** position. Latching reset can be provided only if the detector returns to normal mode.
Heat On at (C)	Temperature at which the demister is activated, if the **Heat Mode** is set to **Auto**.

9.5.1.2 Gas Type Codes

Error! Reference source not found. describes the gas type codes:

Table 45: SIL2 Gas Type Codes (SafEye Xenon 700 Series)

Gas Code	Gas Type
1	100% Methane
2	92% Methane + 4% Propane + 4% Ethane
3	100% Propane
4	99% Methane + 1% Propane
5	Undefined
6	Undefined

Gas Code	Gas Type
7	Undefined
8	Undefined

9.5.1.3 Detector Sensitivity Settings

The detector's sensitivity settings are as follows:

- **LOW**: 500 full scale sensitivity
- **HIGH**: 200 full scale senssitivity

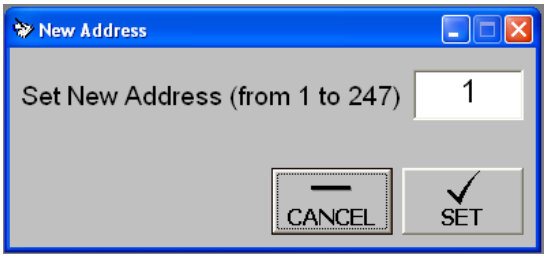
9.6 Changing the Detector's Address

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 the **Set Address** button

. The *New Address* window appears.



2 Enter the desired address.

3 Click **Set**. The new address is set.

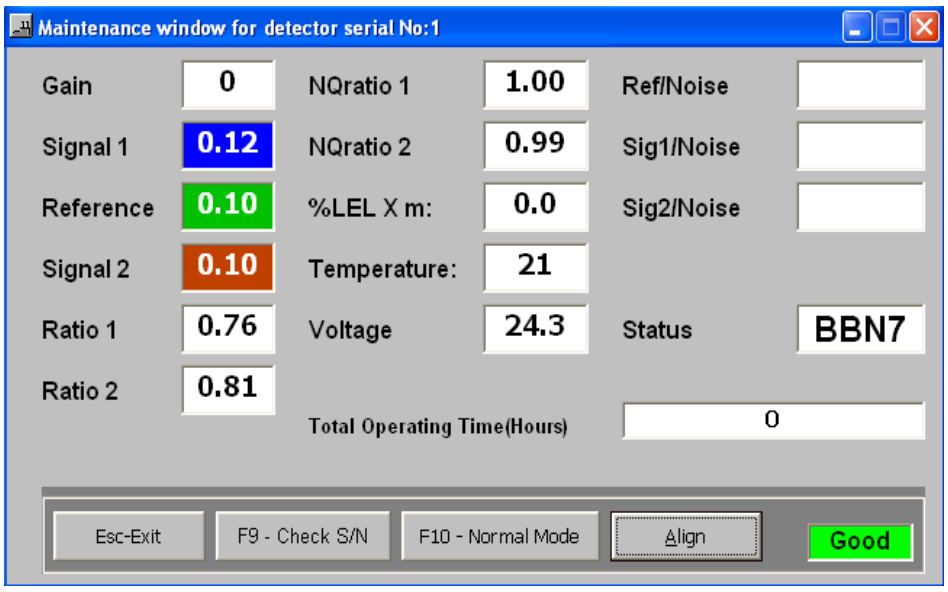
9.7 Reading Maintenance Data

You can use the WinHost software to provide maintenance diagnostic data about the detector, and to check the signal/noise ratio. You need to view the *Maintenance* window to do this.

To open the Maintenance Screen window:

- From the *Main* window, click the **Maintenance** button

. The *Maintenance Screen* window appears.



The *Maintenance Screen* window contains the following elements:

Table 46: Maintenance Screen Window Elements (SafEye Xenon 700 SIL2 Series)

Parameter	Description
Gain Level	Electronic amplification.
Reference	Voltage signal of reference after electronic amplification.
Signal 1	Voltage signal of sensor 1 after electronic amplification (depends on gain).
Signal 2	Voltage signal of sensor 2 after electronic amplification (depends on gain).
Ratio 1	Ratio between sensor 1 and reference.
Ratio 2	Ratio between sensor 2 and reference.

Parameter	Description
NQRatio 1	Ratio1 / QO1 (Normalized ratio1) Equals 1 when no gas is present and goes down when gas is introduced.
NQRatio 2	Ratio1 / QO2 (Normalized ratio2) Equals 1 when no gas is present and goes down when gas is introduced.
LEL x M	Lower Explosion Level by meter.
Temperature	The temperature inside the detector in °C.
Voltage	Detector voltage.
Ref / Noise	Reference / Noise – not applicable for LAMP.
Sig1 / Noise	Signal1 / Noise – not applicable for LAMP.
Sig2 / Noise	Signal2 / Noise – not applicable for LAMP.
Status	current status. See SafEye Xenon 700 Series Detector Statuses on page 64.
Total Operating Time	Detectors work time in hours.
Esc - Exit	Exits the window.
F9 - Check S/N	Checks signals to noise.
F10 - Normal Mode	Cancels the F9 check and returns to normal operation.
Good	Communications status.

9.7.1 Checking the Signals-to-Noise

You can check signals-to-noise from the *Maintenance Screen* window.

To check signals-to-noise:

- From the *Maintenance Screen* window, click the **Check S/N** button F9 - Check S/N.

  or

- Press **F9**.

  The signals/noise values appear on the Ref/Noise, S1/Noise and S2/Noise fields.

Note: You can revert to normal operation at any time by clicking the **Normal Mode** button F10 - Normal Mode or pressing the **F10** key.

9.8 Logging Detector Events

You can use the mini laptop with the WinHost software to log the events of the detector, for diagnostic and other purposes.

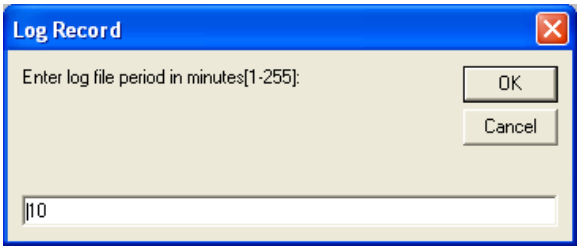
When you start logging, you set the log file period in minutes. A line is subsequently written to the log whenever that number of minutes passes (say, every two minutes) and whenever there is a change in the status of the detector.

Each line in the log records comprehensive data about the detector.

To log detector events:

1 From the *Main* window, click the **File** and select **Start log**.

The *Log Record* dialog box appears.



2 In the text field, enter the log file period (in minutes).

3 Click **OK**.

Logging now begins and a line is written to the log every time the log file period is over and any time there is a change in the detector's status.

To view the log file:

- From the *Main* window, click the **File** and select **View log**. The log dialog box appears.

Address: 1 Serial No: 0 Total: 12 lines

Line No.	Status	Time	Date	T	G	Sig 1	Ref	Sig 2	Rat 1	Rat 2	NQR1	NQR2	LEL
1	OON	14:02:39	21/06/07	37	4	0.03	0.09	0.09	0.25	1.25	1.00	0.99	0
2	NNN	07:59:49	16/10/08	30	1	2.60	2.13	3.54	1.28	1.71	1.00	1.00	0
3	NNN	10:49:49	16/10/08	26	1	1.93	1.58	2.75	1.28	1.80	1.01	1.05	0
4	TNN	10:50:00	16/10/08	26	1	0.52	1.19	0.73	0.45	0.63	0.50	0.52	21
5	WWN	10:50:02	16/10/08	26	1	0.52	1.17	0.73	0.46	0.64	0.41	0.42	146
6	NNN	10:50:07	16/10/08	26	1	0.01	0.01	0.01	0.00	0.00	0.50	0.41	97
7	TNN	10:50:14	16/10/08	26	1	0.52	1.17	0.73	0.46	0.64	0.60	0.61	25
8	WWN	10:50:16	16/10/08	26	1	0.52	1.17	0.73	0.46	0.64	0.41	0.42	152
9	AAN	10:50:25	16/10/08	26	2	0.38	0.97	0.93	0.39	0.97	0.19	0.29	464
10	WWN	10:50:26	16/10/08	26	2	0.87	2.48	1.13	0.36	0.46	0.21	0.32	277
11	AAN	10:50:27	16/10/08	26	2	0.77	2.38	1.71	0.33	0.73	0.22	0.32	417
12	NNN	10:50:29	16/10/08	26	1	1.95	1.58	2.75	1.29	1.77	1.00	1.00	0

Next Page - PgDn | Prev. Page - PgUp | Delete - D | Print - P | Exit - Esc

10 SafEye Gas Detector Physical Maintenance

The SafEye system requires only simple periodic maintenance to provide satisfactory service and achieve maximum performance.

The detector and source units can be maintained with the use of standard tools and equipment. It is recommended that you record the periodic test results in a maintenance logbook.

- Clean the optical surfaces of the detector and source once a month.
- Perform alignment and calibration once every six months, or after each time the units are moved or opened.

To clean the optical surfaces:

1. Turn off the power to the detector.
2. In places where dust or dirt have accumulated on the optical surface, clean the surface with a small soft bristle brush.
3. Wash the surfaces thoroughly with water and a mild non-abrasive detergent.
4. Thoroughly rinse the glass surface with clean water, ensuring no residue is left behind.
5. Dry the glass with a clean dry soft cloth.
6. Enter the following information into the maintenance log: Date and name of person and company who performed the maintenance service.
7. Turn on the power of the detector.
8. Perform Zero Calibration.

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