

## FIKE FLAME DETECTOR SETUP

### General

This Quick Start Guide outlines how to perform the basic setup of the Fike Flame detectors listed below.

- FIK-IR3 Flame Detector
- FIK-IR3-H2 Triple IR Hydrogen Flame Detector
- FIK-IR3-H2-HD Triple IR Hydrogen Flame Detector
- FIK-IR3-HD Triple IR Flame Detector
- FIK-UV-IR Flame Detector
- FIK-UV-IR-HD Flame Detector
- FIK-UV-IR-F Flame Detector
- FIK-UV-IR-F-HD Flame Detector

Detector setup is best accomplished before installing the detector using the methods outlined in this guide.

### Required Hardware

1. Fike flame detector<sup>1</sup>
2. Computer (desktop or laptop)<sup>2,3</sup>
3. Ethernet switch<sup>1,2,4</sup>
4. 24-volt power supply<sup>2</sup>
5. Ethernet cable, CAT5<sup>2,4</sup>
6. USB to RS-485 converter, P/N FIK-USB/RS485<sup>1</sup>
7. RS-485 cable<sup>2</sup>
8. 24 VDC power supply cable, 12-20AWG (2.5-0.35mm<sup>2</sup>)<sup>2</sup>
9. 5mm Alan wrench

<sup>1</sup>Available for purchase from Fike.

<sup>2</sup>Supplied by others.

<sup>3</sup>Can use Fike NVR or Server.

<sup>4</sup>Equipment needed for HD Detectors

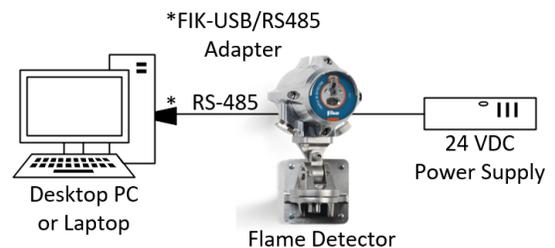
### Required Software

Go to [www.fg-detection.com/communicator](http://www.fg-detection.com/communicator) to download the latest version of the FGD Communicator software. Contact Fike to obtain the password required to download the software.

### Step 1: Detector Connections

Open the back cover of the unit using the 5mm Alan wrench or twist off the back cover, depending on which unit is purchased. Connections to the flame detector for configuration and setup will vary depending upon whether the detector can provide video output.

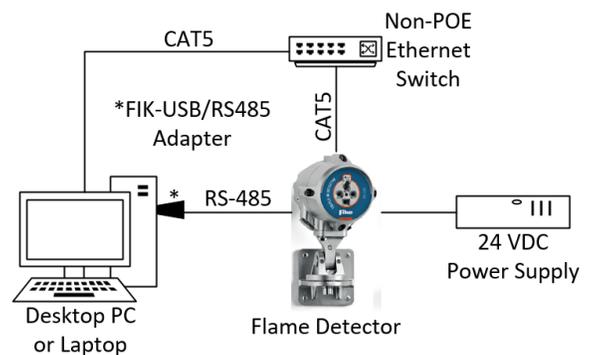
To configure a detector that is not equipped with video output capabilities, connect the detector to the host PC (desktop or laptop) using an RS-485 cable and connect a 24 VDC power source to the detector (Figure 1). A Fike USB to RS-485 converter (sold separately) must be used to allow the RS-485 cable to be connected to the host PC's USB port. See USB to RS-485 Converter Wiring for details. For detector terminal block wiring connections, refer to the chart located on the inside of the detector cover or see Table 1.



*Applicable to FIK-IR3, FIK-IR3-H2, FIK-UV-IR, and FIK-UV-IR-F flame detectors*

**Figure 1: Connections for flame detectors without video output**

To configure a detector equipped with video output capabilities, the detector must also be connected to the host PC using a CAT5 cable routed through an Ethernet switch (Figure 2). For detector terminal block wiring connections, refer to the chart located inside of the detector cover or see Table 2

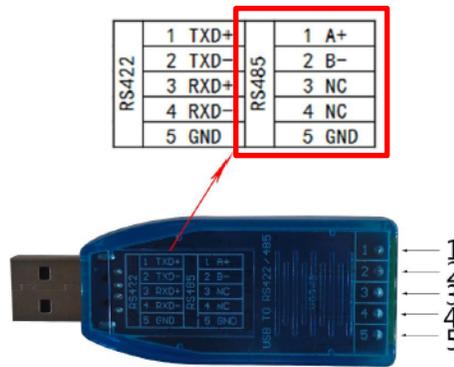


*Applicable to FIK-IR3-H2-HD, FIK-IR3-HD, FIK-UV-IR-HD, and FIK-UV-IR-F-HD flame detectors*

**Figure 2: Connections for flame detectors with video output**

### USB to RS-485 Converter Wiring

The FIK-USB/RS485 converter easily lets you connect the RS-485 cable directly to the host PC's USB port. Utilize the following diagram to connect the RS-485 wire to the converter.



**Figure 3: USB to RS-485 Converter**

### Flame Detector Terminal Block Wiring

Each flame detector is equipped with an 18 or 20-pin terminal block that allows field wiring connection. The function of each terminal block connection will vary depending upon whether the detector can provide a video output, as shown in the following tables.

**Table 1: Wiring connections to detectors without video output**

Pin #	Function	Description
Ground	Ground (earth)	Connected to a screw on the housing exterior
<b>1</b>	<b>24 VDC (+)</b>	Power supply (18-32 VDC)
<b>2</b>	<b>24 VDC (-)</b>	Power supply return (0 VDC)
3	0-20mA+ (in)	0-20 mA analog current output
4	0-20mA- (out)	
5	Fault Relay	Normally open SPST relay, energized (closed) when the detector is in normal operation and opens in case of fault.
6	Fault Relay (COM)	
7	Alarm Relay (NO)	Normally open SPST relay, open in normal operation and closed when a fire is detected.
8	Alarm Relay (COM)	
11	24 VDC (+)	Power supply (18-32 VDC)
12	24 VDC (-)	Power supply return (0 VDC)
13	Manual BIT activation	Manual built-in-test, initiated by momentary shorting across this terminal and one of the 24 VDC (-) terminals.
14	Shield	Permanent connection to internal housing ground.
<b>15</b>	<b>RS485 (+)</b>	RS485 Modbus communication (FGD Communicator software)
<b>16</b>	<b>RS485 (-)</b>	
17	Fault Relay (NC)	
18	Alarm Relay (NC)	

**Note:** Highlighted pins indicate required connections.

**Table 2: Wire connections to detectors with HD video output**

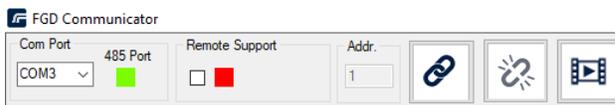
Pin #	Function	Description
Ground	Ground (earth)	Connected to a screw on the housing exterior
<b>1</b>	<b>24 VDC (+)</b>	Power supply (18-32 VDC)
<b>2</b>	<b>24 VDC (-)</b>	Power supply return (0 VDC)
3	0-20mA+ (in)	0-20 mA analog current output
4	0-20mA- (out)	
5	Fault Relay	Normally open SPST relay, energized (closed) when the detector is in normal operation and opens in case of fault.
6	Fault Relay (COM)	
7	Alarm Relay (NO)	Normally open SPST relay, open in normal operation and closed when a fire is detected.
8	Alarm Relay (COM)	
9	Analog Video (+)	Composite (analog) video output
10	Analog Video (-)	
11	24 VDC (+)	Power supply (18-32 VDC)
12	24 VDC (-)	Power supply return (0 VDC)
13	Manual BIT activation	Manual built-in-test, initiated by momentary short across this terminal and one of the 24 VDC (-) terminals.
<b>14</b>	<b>RS485 (+)</b>	RS485 Modbus communication (FGD Communicator software)
<b>15</b>	<b>RS485 (-)</b>	
<b>16</b>	<b>Ethernet TX+</b>	Ethernet communication, used for digital video (with ONVIF profile S protocol)
<b>17</b>	<b>Ethernet TX-</b>	
<b>18</b>	<b>Ethernet RX+</b>	
<b>19</b>	<b>Ethernet RX-</b>	
20	Shield	Permanent connection to internal housing ground.

**Note:** Highlighted pins indicate required connections.

### Step 2: Detector Configuration

The RS-485 connection from the flame detector to the host PC allows the FGD Communicator software to adjust the detector's operational settings. Install the FGD Communicator software on the host PC; then open the software and follow the steps below to configure the flame detector.

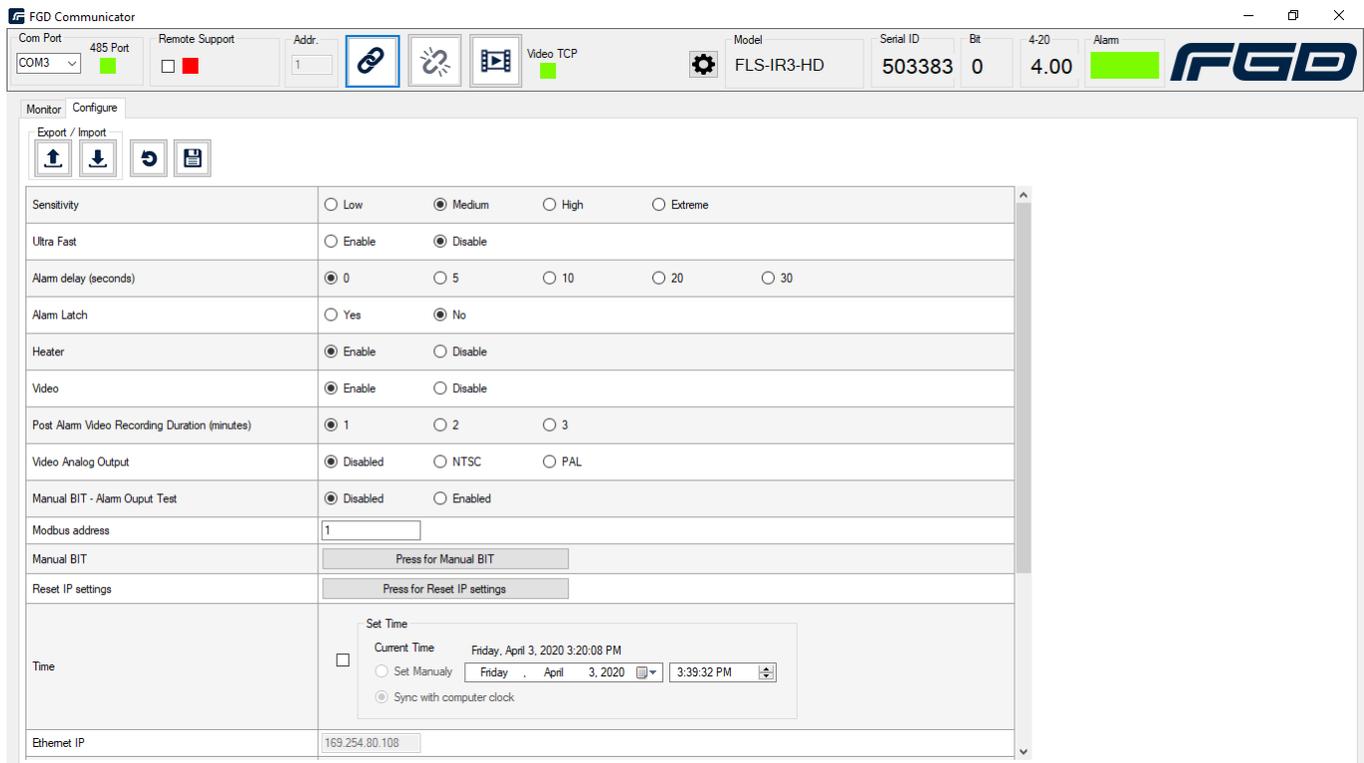
1. Before attaching the USB to the RS-485 converter to the host PC, click the Com Port drop-down to display the list of available com ports.



**Figure 4: FGD Communicator**

2. Attach the USB to RS-485 converter to the host PC's USB port; then select the newly available port from the drop-down list and click the chain link icon to attempt to connect to the flame detector.
3. The 485 Port indicator should change from red to green to indicate a successful connection to the detector. As long as the 485 port indicator is green, the link to the detector is active. If red, communication to the detector has been lost. Once communication is established, the software will retrieve the diagnostic data about the state of the detector and will display the configuration parameters on the Configure tab (Figure 5).

4. The detector's default configuration settings will be shown, including the detector's Model and Serial ID. If the detector is connected to an IP network, the assigned IP address of the detector will also be displayed (Refer to Camera Configuration for further details). You can adjust the detector settings as required to meet the specific installation requirements from this screen. Refer to the associated detector User Manual for a detailed description of each configuration setting.
5. Click  to send the configuration to the detector.



**Figure 5: FGD Communicator detector configuration screen**

**Table 3: Detector configuration options**

Function	Options	Default Setting
Sensitivity	Low, Medium, High, Extreme	Medium
Ultra-fast detection	Disabled, Enabled	Disabled
Alarm Delay	0, 5, 10, 20 or 30 seconds	0 seconds (no delay)
Alarm Latch	Disabled, Enabled	Disabled
Window Heater	Disabled, Enabled	Enabled
Modbus address	1 – 247	1
Manual BIT – Alarm Output Test	Disabled, Enabled	Disabled

**Note:** Medium sensitivity setting allows detection of a 1x1ft<sup>2</sup> (0.1m<sup>2</sup>) N-heptane pan fire at a distance of 100ft (30m). See detector specification sheet for more information.

### Step 3: Camera Configuration *(applicable to Video capable detectors with firmware vF100P0020.28 or newer)*

This step is only applicable to flame detectors equipped with video output capabilities. By default, the flame detector uses **Dynamic Host Configuration Protocol** (DHCP) to assign a dynamic IP address to the detector on a network. With dynamic addressing, a device can have a different IP address every time it connects to the network. In some systems, the device's IP address can even change while still connected.

1. If a static IP address is required, connect to the detector and open the FGD Communicator software. Locate the Ethernet IP address of the connected detector under the Configure tab and set the host computer to the same network.
2. Type the camera's IP address into the browser field from your internet browser (Google Chrome, or Firefox).

**Note:** Detector will not connect properly with all search engines.

3. Access to the detector's live video and recordings is password protected. From the Settings dialogue box, type **fgcam** in the user name field, and in the password field, type **admin**. You should now see the live camera view, similar to that shown below.



Figure 6: FGD Camera Browser

4. Select SYSTEM in the toolbar at the top to access the System Configuration settings. From this screen, you can perform the following functions on the camera:
  - Change the name of the camera.
  - Change the login password for the camera.
  - Initiate a Soft, Hard reset of the camera or Reboot the camera. If a soft or hard reset is used, the camera settings will default to the factory. Reboot restarts the camera.
  - Change the camera's time displayed on the camera's video feed.
  - Assign a static IP address if required. Address to be provided by the network administrator. Note that the power to the detector may need to be cycled after saving the new IP address.
  - Initiate a camera firmware upgrade. Upgrade to be performed by Factory Trained personnel only.
  - Select RTSP and/or HTTP ports.

**FGD** FIRE & GAS DETECTION TECHNOLOGIES INC. LIVE LOGS **SYSTEM** CAMERA

### System Configuration

**Identification**

Name:

Location:

Manufacturer: Fire & Gas Detection Technologies

Model: FLS-IR3-HD

Firmware: F100P0020.28

Device ID: vprxtvfp

IP address: 192.168.0.20

MAC address: 1A-77-A3-7D-01-F3

**Time (YYYY-mm-dd HH:MM:ss)**

Device time (UTC): 2020-07-08 14:27:29 GMT

Device time (Local): 2020-07-08 09:27:29 US/Central

Time zone:

Daylight saving:

NTP:

Sync with computer:

Manual (UTC):

**User management**

Name:

Current password:

New password:

Confirm new password:

**Network**

DHCP:

IP address:

Subnet mask:

Default gateway:

Host name:

DNS:

ONVIF discovery:

**Maintenance**

**RTSP**

Port:

**HTTP**

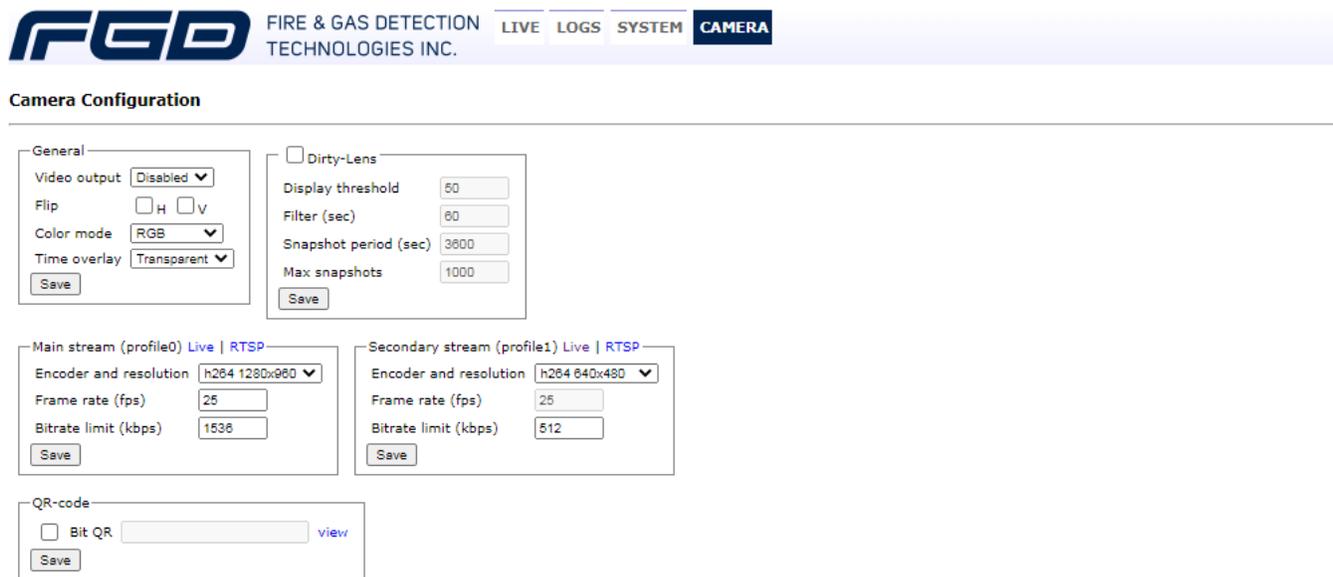
Port:

**Firmware upgrade**

No file chosen

**Figure 7: FGD Camera System Configuration Browser**

5. Select CAMERA in the toolbar at the top to access the Camera Configuration settings. From this screen, you can perform the following functions on the camera:
  - The options in the General group allow you to customize the video display.
  - The options in the Dirty-Lens group allow you to adjust the video to account for a dirty lens. When enabled, the camera image is checked once every 20 minutes. The word 'Dirty' will appear in the camera's video stream near the timestamp if the image is obstructed due to a dirty lens. In addition, the camera's fault relay will close, and a 0-20mA signal will be sent. If the lens is cleaned within 20 minutes, the fault relay will open, and the 0-20mA signal will return to normal.
  - The options in the Main and Secondary stream groups allow you to adjust the resolution, frame rate, and bitrate of the video stream. If connecting the camera to the Fike Video Analytics FSM-IP server, one of the video streams must be set to provide a resolution of 640 x 480 at 15 frames per second with a recommended bitrate of 1100 kbps.
  - The QR-code group is used to test the detector functionally and should only be used by a Factory Trained Technician.



**Figure 8: FGD Camera Configuration Browser**

**The flame detector is now configured and ready for installation. If you have any questions, contact us at [fike.com](http://fike.com) or call 1-800-YES-FIKE or 1-800-979-3453, option 1.**