

FIKE FLAME DETECTOR SETUP

1. General

The purpose of this guide is to outline 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 the installation of the detector using the methods outlined in this guide.

2. Required Hardware and Software

1. Fike flame detector¹
2. Computer (desktop or laptop)^{2,3}
3. Ethernet switch^{1,2}
4. 24-volt power supply²
5. Ethernet cable, CAT5²
6. USB to RS-485 converter, P/N FIK-USB/RS485¹
7. RS-485 cable²
8. 24 VDC power supply cable, 12-20AWG (2.5-0.35mm²)²

¹Available for purchase from Fike.

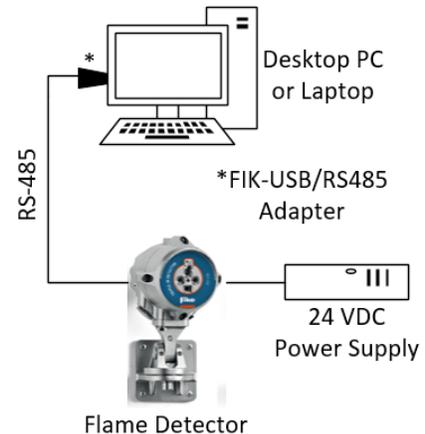
²Supplied by others.

³Can use Fike NVR or Server.

Go to www.fg-detection.com/communicator to download the latest version of the Communicator software. Contact Fike at 1-800-979-3453 for the password.

3. Detector Connections

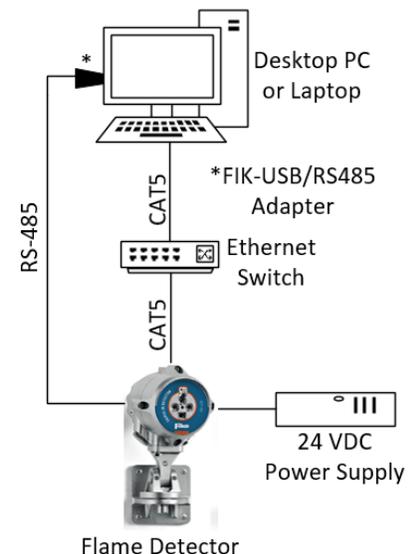
Connections to the flame detector for configuration and setup will vary depending upon whether the detector is capable of providing a video output. To configure a detector not equipped with video output capabilities, simply connect the detector to the host PC (desktop or laptop) using RS-485 cable and 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. See Table 1 for detector terminal block wiring connections.



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 be connected to the host PC using CAT5 cable routed through an Ethernet switch (Figure 2). See Table 2 for detector terminal block wiring connections.



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

4. 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.

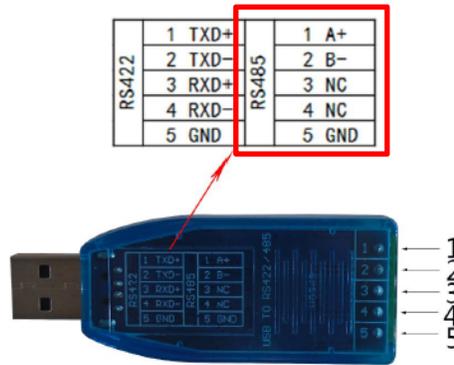


Figure 3: USB to RS-485 Converter

5. Flame Detector Terminal Block Wiring

Each flame detector is equipped with a 20-pin terminal block that allows the connection of field wiring. The function of each terminal block connection will vary depending upon whether the detector is capable of providing 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
1	24 VDC (+)	Power supply (18-32 VDC)
2	24 VDC (-)	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 regular operation and opens in case of a fault.
6	Fault Relay (COM)	
7	Alarm Relay (NO)	Normally open SPST relay, open in regular 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 that is initiated by a momentary short across this terminal and one of the 24 VDC (-) terminals.
14	Shield	Permanent connection to detector housing internal ground.
15	RS485 (+)	RS485 Modbus communication (FGD Communicator software)
16	RS485 (-)	
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
1	24 VDC (+)	Power supply (18-32 VDC)
2	24 VDC (-)	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 regular operation and opens in case of a fault.
6	Fault Relay (COM)	
7	Alarm Relay (NO)	Normally open SPST relay, open during regular 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.
14	RS485 (+)	RS485 Modbus communication (FGD Communicator software)
15	RS485 (-)	
16	Ethernet TX+	Ethernet communication, used for digital video (with ONVIF profile S protocol)
17	Ethernet TX-	
18	Ethernet RX+	
19	Ethernet RX-	
20	Shield	Permanent connection to detector housing internal ground.

Note: Highlighted pins indicate required connections.

6. Detector Configuration

The RS-485 connection from the flame detector to the host PC allows the Communicator software to be used to adjust the detector’s operational settings. Install the 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 RS-485 converter to the host PC, click the Com Port drop-down to display the list of available com ports.

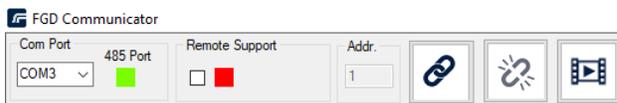


Figure 4: FGD Communicator

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 connection to the detector is active. If red, communication with 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). From this screen, you can adjust the detector settings as required to meet the specific installation requirements. Refer to the associated detector User Manual for a detailed description of each configuration setting.

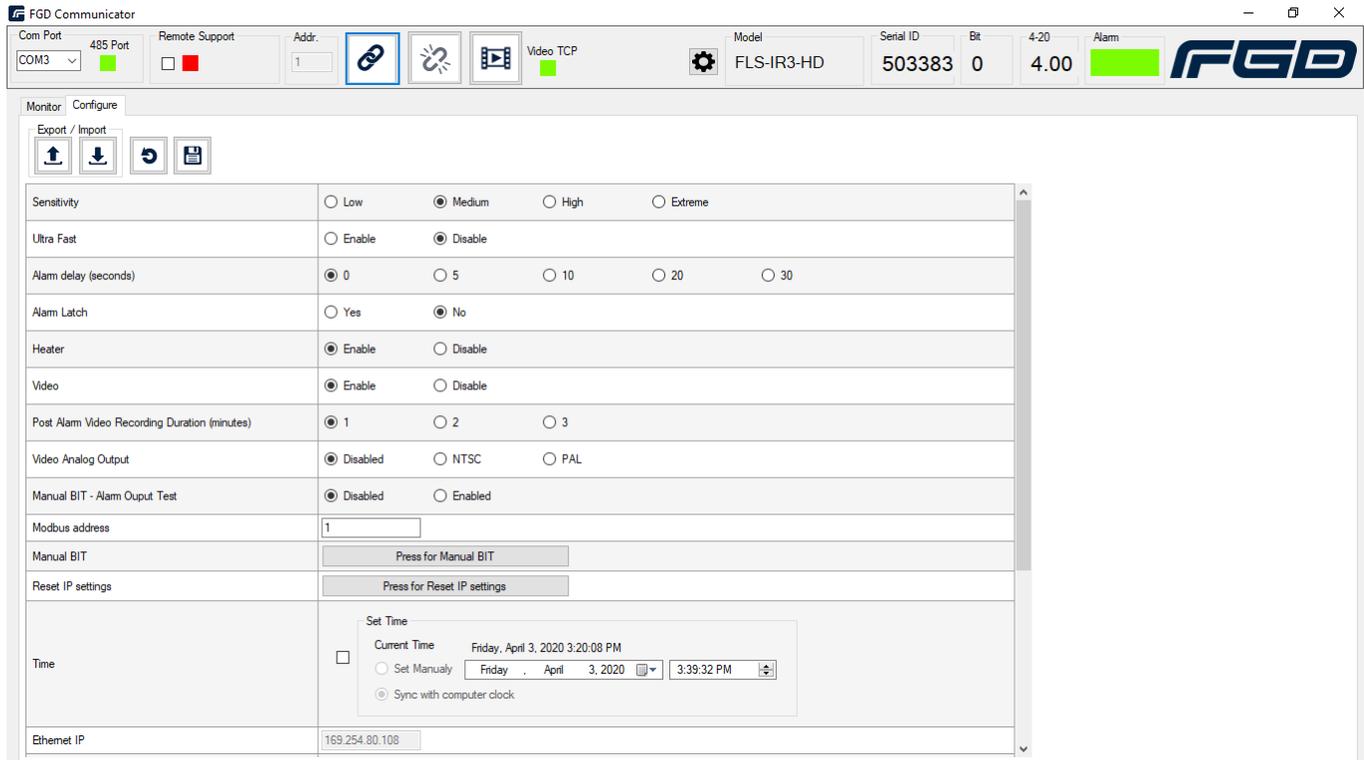


Figure 5: FGD Communicator detector configuration screen

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 1x1ft² (0.1m²) N-heptane pan fire at a distance of 100ft (30m). See the detector specification sheet for more information.

7. Camera Configuration *(applicable to video-capable detectors with firmware vF100P0020.28 or newer)*

The following steps apply only to flame detectors equipped with video output capabilities. By default, the flame detector uses the **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 it is still connected.

1. If a static IP address is required, connected to the detector and open the 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. From your internet browser (Google Chrome, or Firefox), type the cameras IP address into the browser field.

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 type **admin** in the password field. 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, it will default the camera settings to factory defaults. Reboot simply restarts the camera.
 - Change the camera's time. The time will be 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.



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: vprxtivfp

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:

RTSP

Port:

HTTP

Port:

Maintenance

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. If the image is obstructed due to a dirty lens, the word 'Dirty' will appear in the camera's video stream near the timestamp. Also, the camera's fault relay will close, and the 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 functionally test the detector and should only be used by a Fike Factory Trained technician.



Camera Configuration

General

Video output: Disabled ▼

Flip: H V

Color mode: RGB ▼

Time overlay: Transparent ▼

Dirty-Lens

Display threshold:

Filter (sec):

Snapshot period (sec):

Max snapshots:

Main stream (profile0) Live | RTSP

Encoder and resolution: h264 1280x960 ▼

Frame rate (fps):

Bitrate limit (kbps):

Secondary stream (profile1) Live | RTSP

Encoder and resolution: h264 640x480 ▼

Frame rate (fps):

Bitrate limit (kbps):

QR-code

Bit QR [view](#)

Figure 8: FGD Camera Configuration Browser

The flame detector is now configured and ready for installation. If you have any questions, contact us at www.Fike.com or call 1-800-YES-FIKE or 1-800-979-3453, option 1.