


EZ-FLAME Detector



USER MANUAL

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User Manual Notes



Warning

Indicates a procedure or condition that, if not strictly followed, could result in personal injury or death.



Caution

Indicates a procedure or condition that, if not strictly followed, could result in damage or destruction of equipment.



Attention

Indicates a procedure, condition, or statement that should be strictly followed in order to achieve optimal performance.

Note

Indicates an essential or important procedure or statement.

Tip

Provides essential information that only an experienced user would be aware of.

1 Introduction

The EZ-FLAME detector, a one-of-a-kind boiler safety device, has found extensive use in single-burner or multiple-burner boilers in such areas as power generation, petrochemical, metallurgy, etc. It can perform accurate detection functions of the burner flame at various stages of boiler startup and during normal operation, thereby effectively and efficiently reducing the potential risk of a boiler explosion as a result of unburned fuel that was not properly ignited and ensuring maximum safety and stability of the boiler.

Carefully read this user manual before installing or using this product, to ensure you have a better understanding on how to use and install this product.

1.1 Unpacking and Inspection

Please verify the product is complete and free from any damage. Compare the packing list included with the shipment to the ordered parts to ensure that you have received the proper equipment. If there is any loss or damage, please contact Safe-Fire Inc.

1.2 About this manual

This user manual does not contain any warranty statement. Only properly-trained personnel are allowed to use and/or repair this product.

2 Description

The EZ-FLAME detector is provided in two types of assemblies. A fiber optic mount assembly or a front mount assembly.

The fiber optic mount assembly consists of a flexible Fiber Optic Assembly, Mounting Tube, Cooling Air Hose, Flame Scanner, Flame Amplifier, Cable Assembly, and a Flame Amplifier Cabinet.

The front mount assembly consists of a Sight Pipe, Cooling Air Hose, Flame Scanner, Flame Amplifier, Cable Assembly, and a Flame Amplifier Cabinet.

EZ-FLAME detector features:

- A user-friendly and intelligent flame detector
- The infrared EZ-FLAME detector is used with the EZ-FLAME infrared amplifier, suitable for detecting coal and oil flames
- The ultraviolet EZ-FLAME detector is used with the EZ-FLAME ultraviolet amplifier, suitable for detecting gas and oil flames

Table 2-1 Technical Specifications

Description	Flame Scanner	Flame Amplifier
Model	EZS-IR / EZS-UV	EZ-FLAME01/02/03
Housing Material	Extruded aluminum casing, plastics-sprayed surface	/
Mounting Thread	1" NPT	/
Protection Grade	IP 66	/
Operating Temperature	-40°C to +85°C/-40 °F to+185 °F	-40°C to +60°C/ -40 °F to+140 °F
Humidity	0-95% relative humidity, non-condensing	0-95% relative humidity, non-condensing
Power Supply	/	24 VDC, +10%, -15%, 0.2 A
Flame Relay	/	SPDT
Fault Relay	/	SPDT
Contact Capacity	/	1 A @ 250 VAC, 1 A @ 30 VDC
Output Signal	/	4-20 mA @ 24 VDC, 750 ohms
Cooling Air Requirement	17 m ³ /hr@6KPa	/

3 System Configuration

The EZ-FLAME detector system consists of the following:

- Flame Scanner
- Flame Amplifier
- Amplifier Base
- Flexible fiber optic assembly, which includes an outer carrier and fiber optic assembly or a front mount assembly - **or** - a Sight Pipe, which includes a mount tube, swivel mount, Wye, and a heat insulator
- 1" Cooling Air Hose
- Cable Assembly
- Amplifier Cabinet

Table 2-2 Parts List

Part No.	Name	Model	Description
55-200-0066	Flame Scanner	EZS-IR	Infrared Flame Scanner, 1" NPT thread
55-200-0067	Flame Scanner	EZS-UV	Ultraviolet Flame Scanner, 1" NPT thread
55-200-0068	Flame Scanner	EZS-IR CEX	Explosion-proof infrared Flame Scanner, ExdIIC T6
55-200-0069	Flame Scanner	EZS-UV CEX	Explosion-proof ultraviolet Flame Scanner, Exd IIC T6
55-200-0070	Flame Scanner	EZS-IR EX	Explosion-proof infrared Flame Scanner, NEMA 7, Class 1, Div. 1 and 2, Group C, D; Class 2, Div. 1&2, Groups E, F, G
55-200-0071	Flame Scanner	EZS-UV EX	Explosion-proof ultraviolet Flame Scanner, NEMA 7, Class 1, Div. 1 and 2, Group C, D; Class 2, Div. 1&2, Groups E, F, G
45-300-0173	Amplifier Cabinet	EZB-01	Amplifier Cabinet, fitted with a 35 mm standard guide rail
55-200-0074	Flame Amplifier	EZ-FLAME 01	Dual-channel Infrared Flame Amplifier
55-200-0075	Flame Amplifier	EZ-FLAME 02	Dual-channel Ultraviolet Flame Amplifier
55-200-0076	Flame Amplifier	EZ-FLAME 03	Dual-channel Infrared and Ultraviolet Flame Amplifier
45-300-0174	Amplifier Base	EZ-BASE	Flame Amplifier Base with 29 terminals for wiring
55-300-0175	Outer Carrier	OC-4	Outer Carrier, Length: 4 ft (121.92 cm)
55-300-0176	Outer Carrier	OC-6	Outer Carrier, Length: 6 ft (182.88 cm)
55-300-0177	Outer Carrier	OC-8	Outer Carrier, Length: 8 ft (243.84 cm)
55-300-0178	Outer Carrier	OC-10	Outer Carrier, Length: 10 ft (304.8cm)
55-300-0179	Outer Carrier	OC-12	Outer Carrier, Length: 12 ft (365.76 cm)

Table 2-2 Parts List (continued)

Part No.	Name	Model	Description
55-300-0180	Outer Carrier	OC-14	Outer Carrier, Length: 14 ft (426.72 cm)
45-200-0078	Fiber Optic	FO-4	Glass, Length: 4 ft (121.92 cm)
45-200-0079	Fiber Optic	FO-6	Glass, Length: 6 ft (182.88 cm)
45-200-0080	Fiber Optic	FO-8	Glass, Length: 8 ft (243.84 cm)
45-200-0081	Fiber Optic	FO-10	Glass, Length: 10 ft (304.8 cm)
45-200-0082	Fiber Optic	FO-12	Glass, Length: 12 ft (365.76 cm)
45-200-0083	Fiber Optic	FO-14	Glass, Length: 14 ft (426.72 cm)
45-200-0084	Fiber Optic	FO-4Q	Quartz, Length: 4 ft (121.92 cm)
45-200-0085	Fiber Optic	FO-6Q	Quartz, Length: 6 ft (182.88 cm)
45-200-0086	Fiber Optic	FO-8Q	Quartz, Length: 8 ft (243.84 cm)
45-200-0087	Fiber Optic	FO-10Q	Quartz, Length: 10 ft (304.8 cm)
45-200-0088	Fiber Optic	FO-12Q	Quartz, Length: 12 ft (365.76 cm)
45-200-0089	Fiber Optic	FO-14Q	Quartz, Length: 14 ft (426.72 cm)
55-300-0181	Mounting Tube	MT-01	Mounting Tube
55-300-0182	Sight Pipe	SP-2	Sight Pipe, Length: 2 ft (60.96 cm)
55-300-0183	Sight Pipe	SP-4	Sight Pipe, Length: 4 ft (121.92 cm)
55-300-0184	Sight Pipe	SP-6	Sight Pipe, Length: 6 ft (182.88 cm)
45-300-0185	Cooling Air Hose	CAH-5	Cooling Air Hose, Length: 5 ft (30.48 cm)
45-300-0186	Cooling Air Hose	CAH-10	Cooling Air Hose, Length: 10 ft (304.8 cm)
55-200-0090	Cable Assembly	CAB-10	Cable Assembly, Length: 10 ft (304.8 cm) with 6-pin connector
55-200-0091	Cable Assembly	CAB-20	Cable Assembly, Length: 20 ft (609.6 cm) with 6-pin connector
55-200-0092	Cable Assembly	CAB-30	Cable Assembly, Length: 30 ft (914.4 cm) with 6-pin connector
55-200-0093	Cable Assembly	CAB-40	Cable Assembly, Length: 40 ft (1,219.2 cm) with 6-pin connector

A typical configuration of EZ-FLAME detector is shown below:
Figure 2-1 Typical Configuration for Fiber Optic assembly

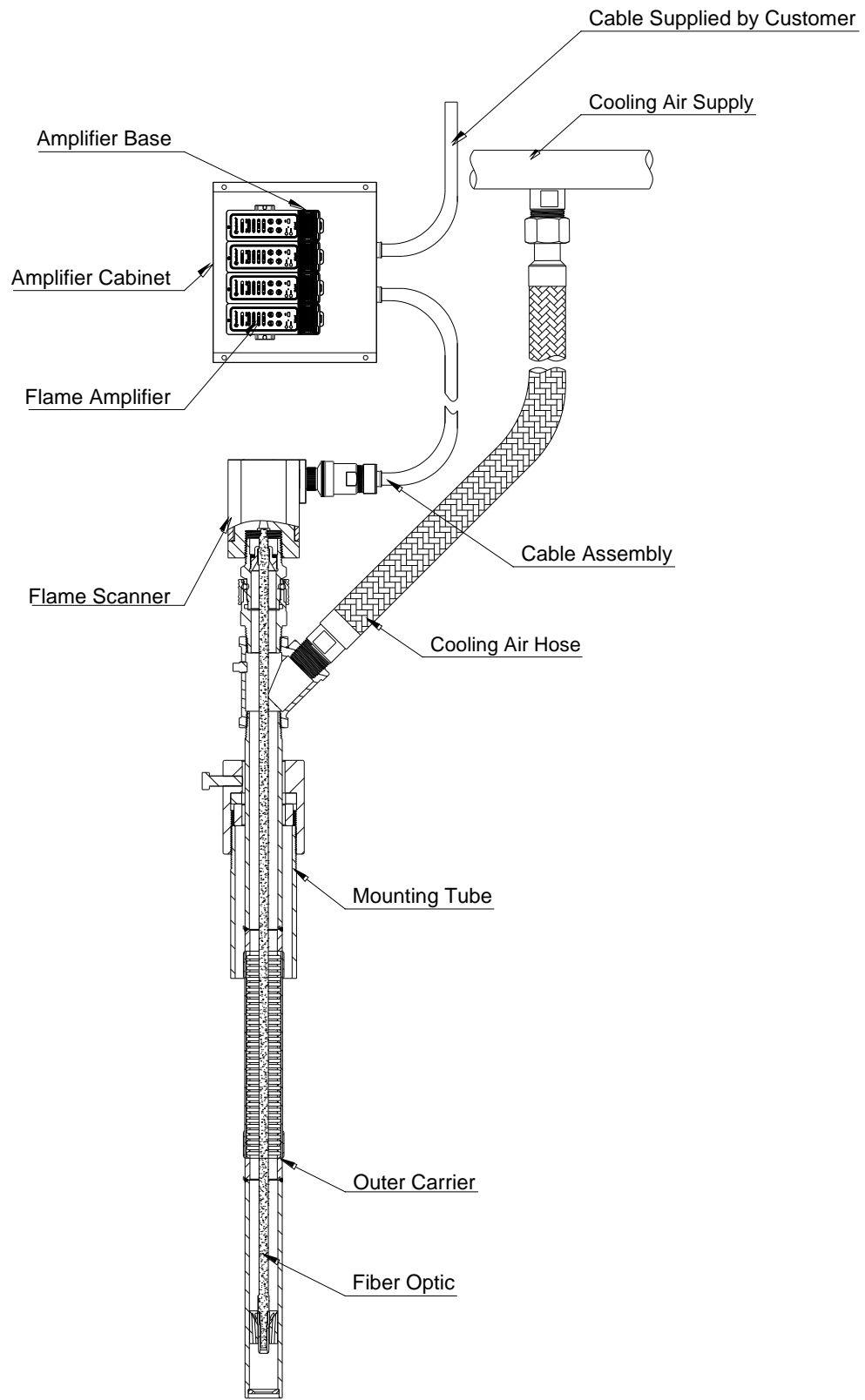
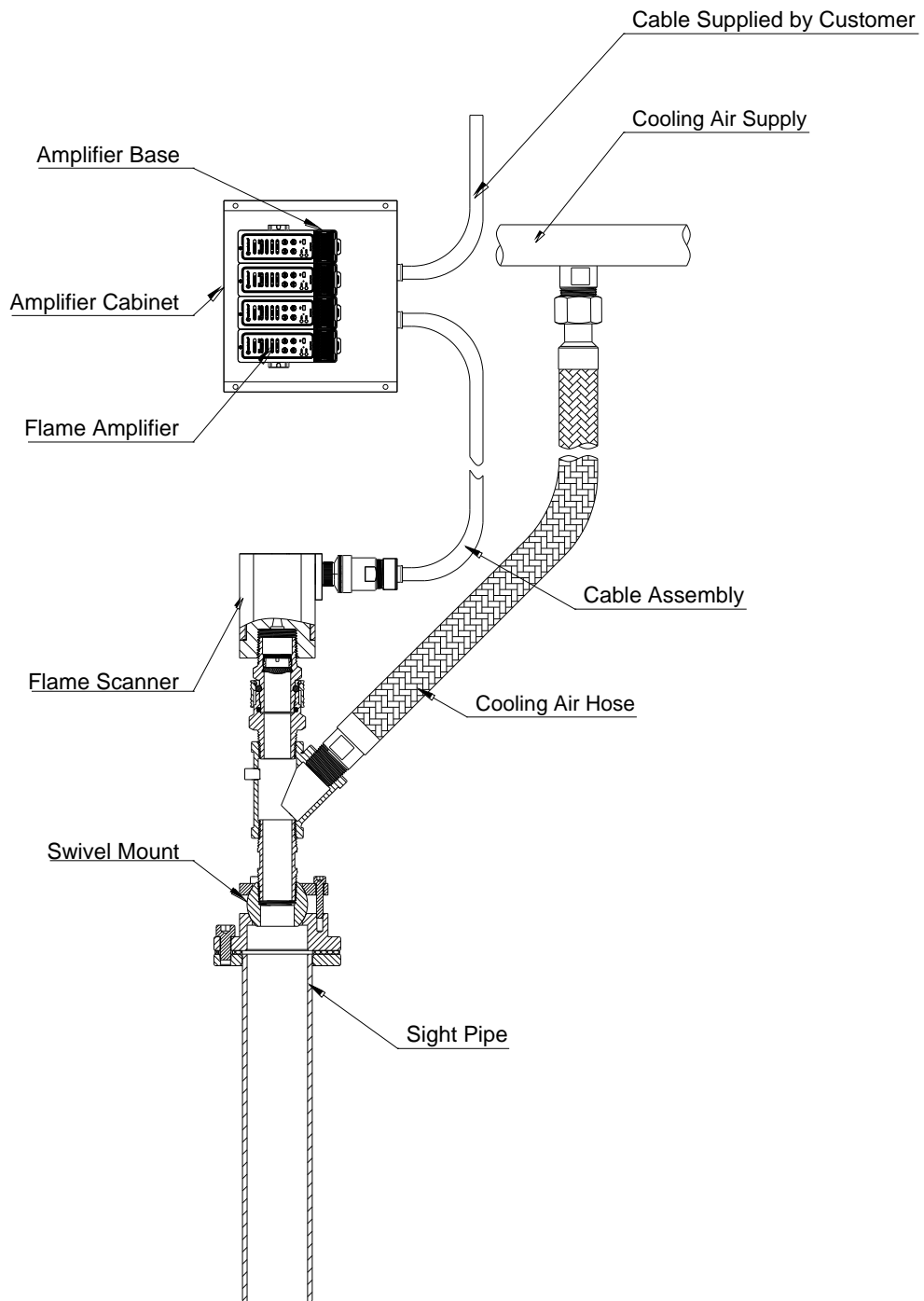


Figure 2-2 Typical configuration for a front mounted assembly



3.1 Flexible Fiber Optic Assembly

The flexible fiber optic assembly is applicable for the fiber optic-type flame detector, and consists of an outer carrier, and a fiber optic assembly.

3.1.1 Outer Carrier

- Provides internal cooling air used to protect the fiber optic assembly
- Fixed in secondary air windbox, where the type of fiber optic assembly will be determined based on the windbox size, with the length matching the windbox
- Welded to secondary air nozzle, which the rear end is fixed to the mounting tube with a 70 mm indent. See drawing for tolerances

3.1.2 Fiber Optic

- Transmits a light signal from the target burner flame inside the boiler to the Flame Scanner

3.2 Sight Pipe

The Sight Pipe is applicable for a front mount Flame Scanner, and consists of a Sight Pipe, swivel mount, Wye, and heat insulator.

3.2.1 Sight Pipe

- Welded to the burner front wall and positioned to target a burner flame from inside the boiler

3.2.2 WYE

- Serves as an interface between the Sight Pipe and cooling air hose connections

3.2.3 Heat Insulator

- Prevents heat being transferred from the burner front wall to the Flame Scanner

3.2.4 Orifice Plate (if required)

- Restricts the angle of view within the target flame zone
- Fixed inside the swivel mount (reference the drawing for location)

3.2.5 Quartz Window (if required)

- Lens that prevents oil or fly ash in the boiler from blocking the view of the Flame Scanner
- Fixed inside the swivel mount (reference the drawing for location)

3.3 Mounting Tube

- Welded to the burner front wall to support the fiber optical assembly

3.4 Cooling Air Hose

- Connects to the Wye, which is mounted on the fiber optic or front mount assembly
- Delivers cooling air for protecting the Flame Scanner

3.5 Flame Scanner

- The Flame Scanner is provided for two types of installation: fiber optic assembly and front mount assembly
- The Flame Scanner consists of either an infrared and ultraviolet sensor
- Resists temperatures as high as 85°C
- The photodiode sensor receives light with certain flame and combustion characteristics, converts it into an electric signal, which is then transmitted to the signal processing module of the Flame Scanner

3.6 Flame Amplifier

- The EZ-FLAME amplifier is available in three types of modules: dual-channel infrared, dual-channel ultraviolet, and dual-channel infrared/ultraviolet combinations
- Capable of accurately differentiating the impulse frequency generated by the Flame Scanner, thereby extending optimal resolution capabilities, which are realized through special flame signal processing and independent threshold values preset internally
- Mounted on a 35 mm standard guide rail in the amplifier cabinet via the amplifier base
- Outputs a contact signal and corresponding analog signal based on flame intensity to the DCS or BMS
- Featuring separate electronic self-check system, which initiates a self-check every 2 minutes

3.7 Cable Assembly

- Connects between the Flame Scanner and the flame amplifier cabinet
- Fitted within a grounded housing to prevent cable damage and electrical noise

3.8 Flame Amplifier Cabinet

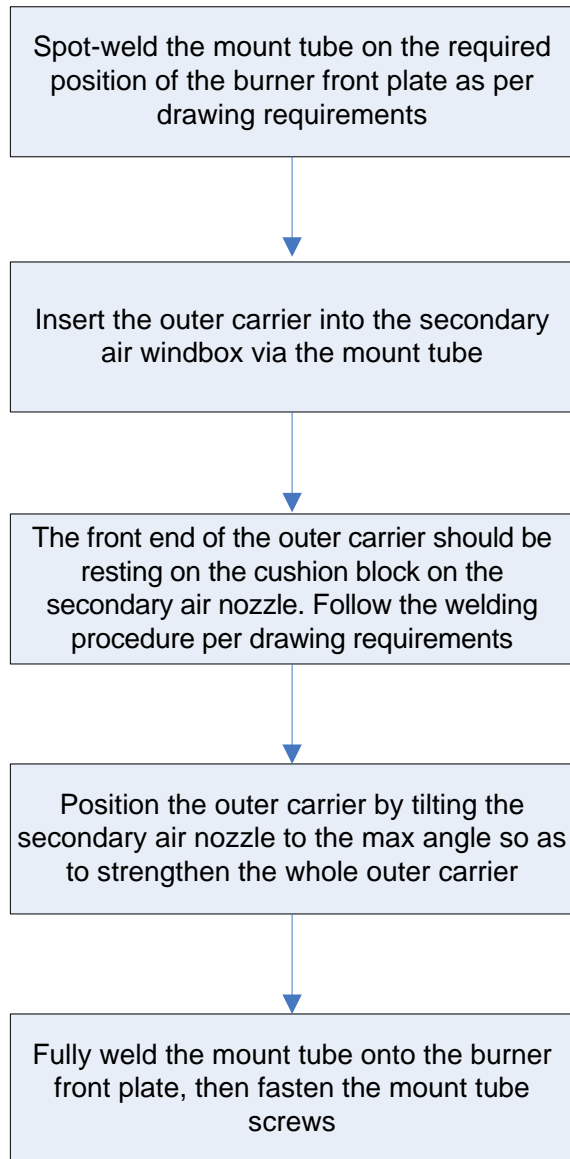
- Fitted with a 35 mm standard guide rail for mounting the flame amplifier

4 Installation

Installing the flexible fiber optic assembly correctly is a necessity of ensuring proper operation of the Flame Scanner monitoring the flame inside the boiler.

4.1 Flexible Fiber Optic Assembly Installation

4.1.1 Outer Carrier



Note:

1. In most cases the detector hole position is already determined by the boiler manufacturer.
2. In a retrofit project, the bore diameter may be adjusted or the position may be redefined in field.
3. The bore diameter should be 2-4 mm larger than the mount tube diameter.

Note:

1. The block determines observation angle of the flame detector.
2. Stainless steel rod is used during welding.

Note:

1. For front and rear wall opposed firing boilers and W- flame boilers, completely remove the outer carrier, and then secure the fastening screws on mount tube.
2. For a tangential fired boiler with tilt burners, consider the impact of burner tilting on tube length. When installing, leave sufficient room for expansion for the mount tube and outer carrier. It is allowed to tilt the burner to maximum position and then secure fastening screws on the mount tube, or immediately release the fastening screws on the mount tube, so the tube can expand or retract freely.



Warning

The front end of outer carrier must be securely welded to the burner nozzle.



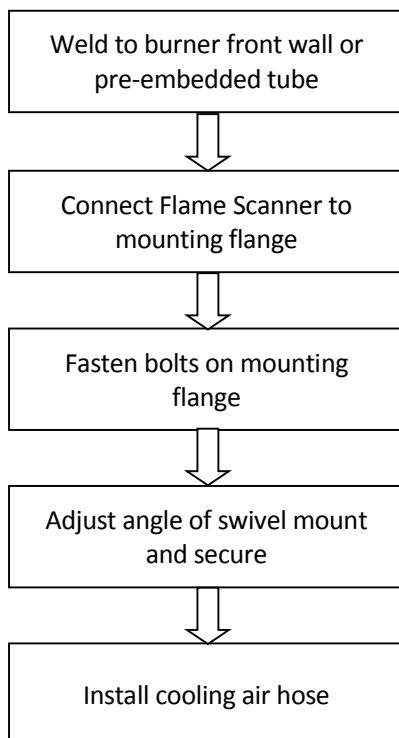
Warning

The angle of installing the outer carrier must be based on a drawing and guidance of the design engineer.

4.1.2 Fiber Optic Installation

- Do not proceed until the outer carrier is installed and secured
- Screw fiber optic clockwise into the outer carrier assembly
- Tighten the sealing pipe cap of the outer carrier assembly

4.2 Sight Pipe Installation



Note:

1. In most cases, the tubes are pre-embedded in the boiler.
2. In case of retrofit project, the pre-embedded tube may be adjusted or the tube may be re-installed in field.
3. The bore diameter should be 2-4 mm larger than the Sight Pipe diameter.

Note:

1. The swivel mount is used for adjusting the observation angle of the Flame Scanner.
2. The field of view of the Flame Scanner should never be obstructed.
3. Avoid and remove blockage from the air register vane, if any, so the vanes do not block the view of the flame detector. Before making any adjustments the air register vanes, contact the burner manufacturer.



Warning

Sight Pipe must be fully and securely welded.



Warning

The angle of adjusting the Sight Pipe must be based on drawing and guidance of the design engineer.

4.3 Mounting Tube Installation

- Insert the mounting tube into the boiler's Flame Scanner opening and adjust for the proper distance. Safe-Fire recommends a distance of 130 mm (5 inches) should be kept from the top of flange nut on the mounting tube to burner front wall
- Perform spot welding after adjusting the mounting tube to a position perpendicular to the burner front plate
- Fully weld the mounting tube to the burner front plate

4.4 Cooling Air Hose Installation

- Connect one side of the cooling air hose to the detector assembly, and then connect the other side to the cooling air header
- Make sure no foreign matters exist inside the cooling air header before connecting

4.5 Flame Scanner Installation

- Install the Flame Scanner on the fiber optic or front mount assembly and connect the cable to the Flame Scanner

4.6 Flame Amplifier Installation

- Mount flame amplifier base onto the standard guide rail inside the amplifier cabinet
- Before installing, ensure the ground terminals are properly connected
- Check power inputs and outputs inside the amplifier cabinet for short circuits to ground
- Mount amplifiers onto the base, and turn the buckle on the top of each amplifier using screwdriver until it is locked into position

4.7 Flame Amplifier Cabinet Installation

- It is recommended the amplifier cabinet is kept away from high temperatures and coal dust areas

- The distance between the flame amplifier cabinet and Flame Scanner should be less than 300 meters

4.8 Electrical Connection

Electrical connection may proceed upon installation of the fiber optic or front mount assemblies of the Flame Scanner. The electrical connection consists of connections between external and internal hardware.

4.8.1 Connecting to External Hardware

Connect the terminals, as specified in the drawings, of flame amplifier cabinet to the terminals designated in the DCS/BMS cabinet.

Verify the output signals from the cable of the amplifier cabinet going to the DCS/BMS cabinet:

Flame Relay
 Fault Relay
 Flame Signal

Please review the drawings for the above installation by confirming the voltage rating of the input power supply and power capacity against design requirements.

4.8.2 Connecting to Internal Devices

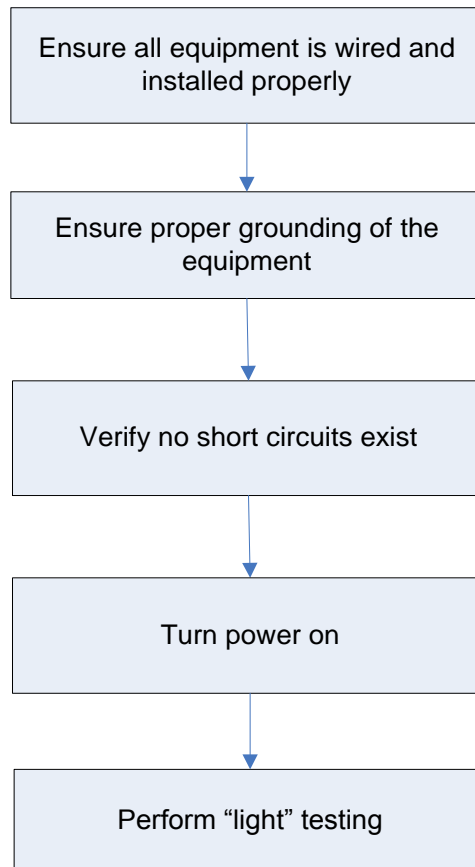
- Before installing, make sure the flame amplifier cabinet is turned off
- Connect the cable between the Flame Scanner and flame amplifier cabinet

Table 4-1 Definitions of Cable Wiring

Color Code	Purpose
Black	+12 VDC
Red	-12 VDC
White	Common ground
Green	Flame signal
Blue	Self-check signal
Yellow	Temperature signal

5 Commissioning

5.1 Flame Scanner Testing

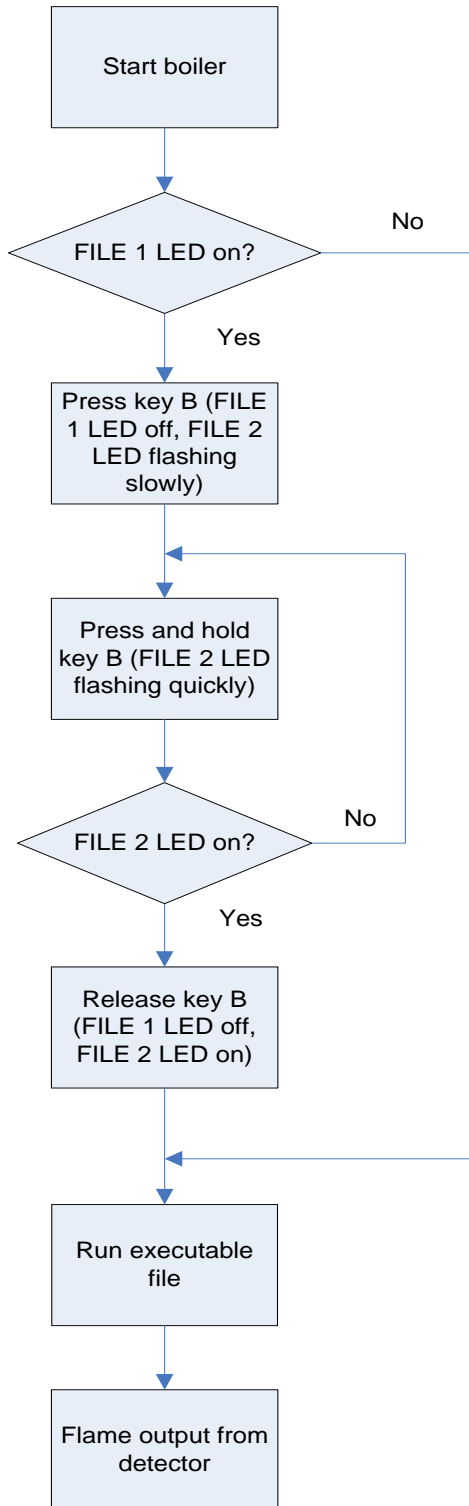


Precaution:

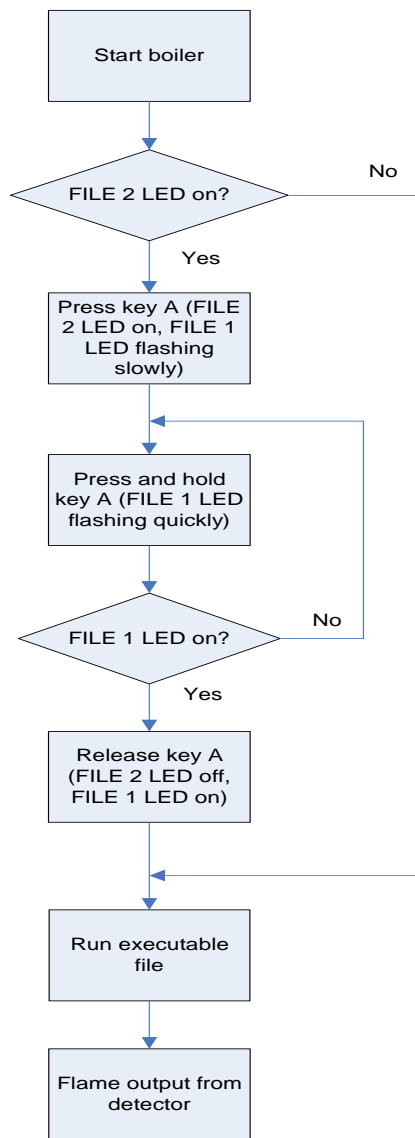
1. Prior to powering on, check all input terminals for short circuits to ground. If any exists, do not power on until all grounding problems are corrected.
2. The Flame Scanners should be individually tested to verify proper operation on the input and output terminals on each flame amplifier and the terminals located in the DCS/BMS cabinet.

5.2 Switching Flame Scanner Executable Files

5.2.1 Switching FILE 1 to FILE 2




5.2.2 Switching FILE 2 to FILE 1



Precaution

1. For oil flame check, it is preferred to perform commissioning by testing one oil gun at a time, minimizing the effect of background flame; for coal flame check, it is preferred to perform commissioning when oil gun is out of service, so optimum commissioning performance could be achieved as coal is fed into the boiler under light load conditions.
2. When the boiler is under heavy load, it is not recommended to commission the flame check function.
3. With regard to “discrimination”, this issue cannot be fundamentally resolved given performance of flame check parameter settings; however, the phenomena of discriminating may be minimized. It is required, during commissioning, that no discrimination should occur between oil and oil flame or between oil and coal flame, and that discrimination should be minimized between coal and coal flame.

- 
4. Again, regarding the discrimination issue, the “AND logic” judgment is recommended on DCS/BMS side by adding the “AND logic” between flame check signal and control signal (oil valve open or coal mill running signal). The reason is that flame on signal cannot be transmitted to DCS/BMS until the oil valve open or the coal mill is running signals are present.

6 FAQ

6.1 Failure to Remove Fiber Optic from the Outer Carrier

- Release the studs on the mounting tube, straighten the outer carrier, and remove the fiber optic assembly. For boilers with tilt burners, it is recommended to tilt them under cold boiler conditions, keeping the front end of the tube as horizontal as possible, and remove the fiber optic assembly
- When conditions allow, perform a visual inspection of the outer carrier that is welded to the secondary air nozzle to check for possible damage

6.2 No Flame Signal from the Fiber Optic

- Check the quartz lens for coal dust or oil
- Check for poor combustion conditions, improper sight angle for viewing the flame, or burner coking
- Inspect and replace the fiber optic for any damage
- Check the Flame Scanner's cooling air requirement meets what is specified in this manual because insufficient air flow may damage the fiber optic

6.3 No Signal from the Flame Scanner

- Check the lens for possible coking or verify the light intensity of the fiber optic
- Check the cable socket connector for possible damage
- Check for a signal on the flame amplifier terminal
- Check the accuracy and reliability of the internal wiring and the connector on the cable assembly
- Verify the Flame Scanner and the fiber optic assembly are properly aligned
- Replace the Flame Scanner

6.4 No Digital Output from the Flame Amplifier

- Review section 6.3 (above)
- Replace the flame amplifier

6.5 No Analog Output from the Flame Amplifier

- Check the terminals for the proper signal on the flame amplifier
- Check and inspect the wiring on the flame amplifier terminals and the DCS/BMS terminals
- Replace the flame amplifier

6.6 Weak Signal Output from the Flame Amplifier

- Check the light intensity of the fiber optic, and replace the fiber optic if necessary
- Check for proper operation of the Flame Scanner, and replace if necessary
- Check the stability and performance of burner flame

6.7 Alarming of the Flame Amplifier

- Check if the shielded wire on the Flame Scanner terminal is properly connected
- Check if the self-check wire of Flame Scanner is connected properly
- Check the power supply
- Pull the flame amplifier module out of the base and then reinstall back into the base
- Replace the flame amplifier
- Replace the Flame Scanner

6.8 Unstable Output of the Flame Amplifier

- Adjust the air volume and flow rate and keep the ignition point within a proper distance
- Access the furnace and check the installation angle of fiber optic assembly, if necessary, when the boiler is down during an outage
- Check the fiber optic assembly for any damage or coal dust accumulation
- Check if the burner tilt angle or secondary air vane is abnormal
- Check if the coal mill dampers are sufficiently opened, primary air flow and coal flow is adequate. This can result in the instability of the combustion process and produces a poor flame.

If the above solutions do not work, please contact Safe-Fire. See the back cover for contact information.

7 Maintenance

Perform regular maintenance and inspections on the Fiber Optic Assembly, Flame Scanner and Flame Amplifier module. This will ensure long-term and stable operation of the equipment.

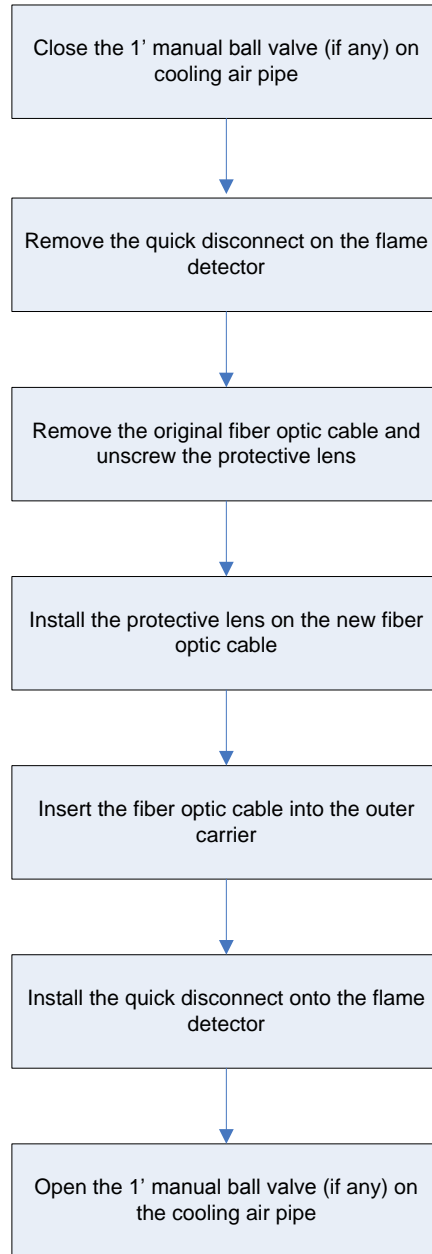


Warning

Take necessary protective measures during operation.

7.1 Fiber Optic

Routine inspection of fiber optic assembly is based on a 3 month cycle. The main purpose is to clean any coal dust that may accumulate on the fiber optic assembly end located inside the boiler. Details on removing and cleaning the fiber optic assembly are shown below:



Warning

When the boiler is shut down, the flexible fiber optic assembly may still be very HOT, so give sufficient time for cooling the assembly before handling.



Warning

Do not proceed until the manual valve (if any) is closed.

7.2 Outer Carrier

Routine maintenance of the outer carrier is performed during a planned shutdown of the boiler:

- Check to see if the front section of the outer carrier is securely fastened or possible damage due to high temperature
- Check if the cushion block on the secondary air vane is securely fastened or damaged by high temperature
- Check if the installation angle has been altered
- Check to see if the flexible section of the outer carrier is deformed, bent or damaged

Please follow the procedures in the “Installing the Outer Carrier” section during maintenance.

7.3 Sight Pipe

Routine maintenance of the Sight Pipe is performed during a planned shutdown of the boiler:

- Check to see if the Sight Pipe is securely welded and not damaged
- Check to see if there is coal dust or impurities accumulated inside the Sight Pipe
- Check to see if any contaminants (oil, fly ash, coal dust) on the quartz window
- Check if the angle of the swivel mount has been changed



Warning

The quartz window located in the swivel mount must be free of contaminants – such as oil, fly ash, and coal dust.

7.4 Cooling Air Hose

Routine maintenance of the cooling air hose is based on a cycle of 12 months. In addition, routine maintenance may also be performed during planned shutdown of boiler:

- Check to see if the cooling air hose has any blockage
- Check to see if the cooling air hose is damaged, air leakage or is bent

7.5 Flame Scanner

Preventive maintenance should be performed every 6 months for the Flame Scanner to verify following aspects:

- Operating temperature and humidity
- Cooling air pressure and flow
- Possible blocking of the Flame Scanner photodiode sensor or protective quartz lens



Warning

Mounting the Flame Scanner on or too close to the coal duct pipe or other high temperature equipment is strictly forbidden.



Warning

Standing on the Flame Scanner assembly is strictly forbidden.

7.6 Flame Amplifier

Preventive maintenance should be performed every 6 months for the flame amplifier to verify following aspects:

- Flame relay output
- Fault relay output
- 4-20 mA output

Detailed steps for replacing the flame amplifier:

- Release the buckle on the top of the flame amplifier using a screwdriver, remove the amplifier from its base and replace it with a new amplifier, then tighten the buckle using a screwdriver
- Power on and select the executable file

7.7 Cable Assembly

Routine maintenance of the cable assembly covers the following aspects:

- Verify if the cable has deteriorated
- Verify if there is interference between the cable and other devices
- Verify if the cable connector ends are damaged

8 Storage

A proper storage environment is the basis for ensuring top product quality, performance and service life; otherwise, the product quality and performance may be severely affected.

- Keep the product in a dry, clean indoor warehouse
- Do not stack other cases on top of the Safe-Fire equipment
- Indoor temperature: -40°C to +85°C
- Indoor humidity: 0-95% relative humidity, non-condensing

9 Product Return and Repair

Safe-Fire offers maintenance or replacement service free of charge for malfunctioned equipment as a result of normal operation within the warranty period. Only expenses including post and correspondence for the product maintenance would be borne by the customer. For equipment damage or abnormal functioning of the equipment due to service in disregard of operating instructions, Safe-Fire will provide all necessary technical support to help the customer resolve the problem and charge the customer accordingly.

For problems due to service in disregard of the operating instructions within the warranty period, Safe-Fire will charge the customer on equipment and/or labor accordingly.

When the warranty expires, Safe-Fire will charge the customer in accordance with our T&C for any maintenance service.

For detailed information about our return and repair process, please contact Safe-Fire. See the back cover for contact information.

Before returning your product, please request an RMA (return material authorization) from Safe-Fire customer service.

Please complete a standard RMA form, which is provided on page 25.

For the convenience of product return and repair, please provide the following information when contacting the service center:

- Product name, model and part number of the product
- Reason of return
- Customer's business name and address
- Name, telephone, fax and e-mail of customer contact
- Customer's contract number
- Tracking number of returned product
- Expected date of shipping back the repaired product

10 Spare Parts Procurement

If you need to buy any spare parts, please contact your local authorized dealer of Safe-Fire or contact Safe-Fire directly. For the accuracy of information, please complete a standard Spare Parts Inquiry Sheet, which is provided on page 26.

11 Form Templates
 11.1 RMA Maintenance Order

RMA Maintenance Order

NO.

Company					
Address					
Returned Product Tracking No.		Expected Date of Return			
Part Name		Model & Code		Contract No.	
Date of Malfunctioning		Venue of Occurrence		Unit No.	
Reason of Return:					
Symptom:					
Requirement:					
Other Issues for Assistance:					
Contact Information					
Technical Contact		Phone & Fax		E-mail	
Business Contact		Phone & Fax		E-mail	
Address for Returning Repaired Product					
Business Name					
Address					
Postal Code					
Department					
Received By		Phone			

11.2 Spare Parts Inquiry Sheet

Spare Parts Inquiry Sheet

Company/Organization						
Technical Contact		Phone & Fax		E-mail		
Business Contact		Phone & Fax		E-mail		
Material Code	Material Name	Quantity	Unit No.	Date of Delivery	Purpose	Remarks
					<input type="checkbox"/> Emergency <input type="checkbox"/> Long-term <input type="checkbox"/> Normal standby <input type="checkbox"/> Other	
					<input type="checkbox"/> Emergency <input type="checkbox"/> Long-term <input type="checkbox"/> Normal standby <input type="checkbox"/> Other	
					<input type="checkbox"/> Emergency <input type="checkbox"/> Long-term <input type="checkbox"/> Normal standby <input type="checkbox"/> Other	
					<input type="checkbox"/> Emergency <input type="checkbox"/> Long-term <input type="checkbox"/> Normal standby <input type="checkbox"/> Other	
					<input type="checkbox"/> Emergency <input type="checkbox"/> Long-term <input type="checkbox"/> Normal standby <input type="checkbox"/> Other	
					<input type="checkbox"/> Emergency <input type="checkbox"/> Long-term <input type="checkbox"/> Normal standby <input type="checkbox"/> Other	
					<input type="checkbox"/> Emergency <input type="checkbox"/> Long-term <input type="checkbox"/> Normal standby <input type="checkbox"/> Other	
					<input type="checkbox"/> Emergency <input type="checkbox"/> Long-term <input type="checkbox"/> Normal standby <input type="checkbox"/> Other	
Additional Requirement & Specification:						



U.S.

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