



# FIREYE® FLAME SCANNERS



48PT1  
(Obsolete)



48PT2



69ND1

INFRARED: 48PT1 and 48PT2

FLAME ROD: 69ND1

For UV Self-Check Scanners use SC-101

For Hazardous Locations or NEMA 4X Scanners use SC-106

For Non Self-Check UV Scanners use SC-102



## DESCRIPTION

### 48PT1

The 48PT1 lead sulfide infrared scanner contains a high impedance detector and is designed to be used only on P-Series controls.

### 48PT2

The 48PT2 lead sulfide infrared scanner contains a low impedance detector and is designed to detect low flicker frequency IR signals from gas and oil flames. It is designed for use on DSeries, Flame-Monitor, FlameWorx and MicroM controls.

### 69ND1

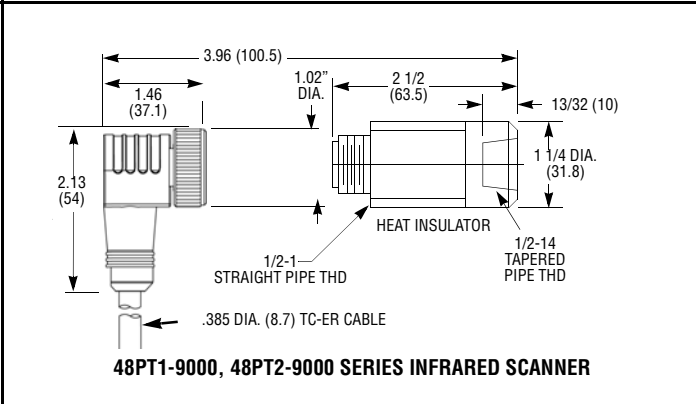
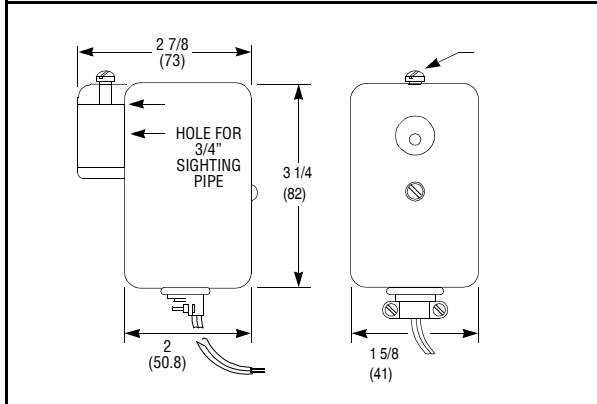
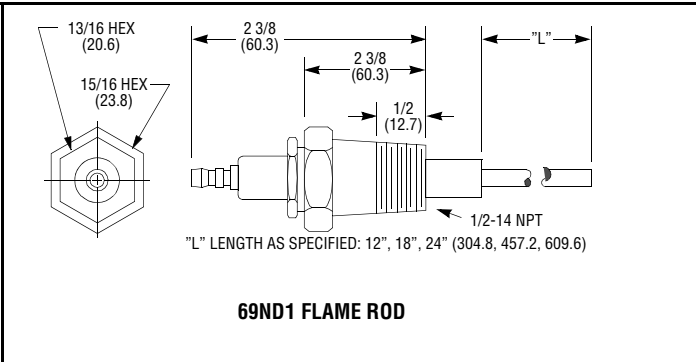
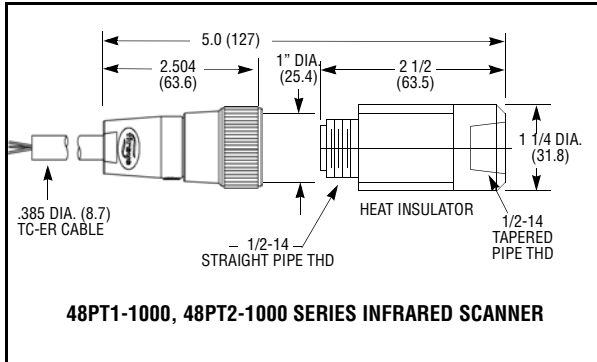
The 69ND1 flame rod is made of high temperature resistant metal and can be used only to detect gas flames. The rods come in 12, 18 and 24 inch lengths.



**CAUTION: Fireye scanners are for use only with Fireye controls. Do not connect Fireye scanners with controls not manufactured by FIREYE.**



**CAUTION: If component checking is required during burner operation for constantly fired burners, utilize the infrared flame scanner (48PT2) with associated AutoCheck amplifier. For Flame-Monitor systems use the E1R1, E1R3 or E1R2 and for MicroM systems use the MEIR1 or MEIR4.**



Scanner Model	Type	Approx. Volts Across Cell	Approx. Resistance* of Cell	Ambient Temp. Limits
48PT1	Infrared	125VDC	1.5 Meg. ohms	140°F/ 60°C, -40°
48PT2	Infrared	7-15VDC	20K - 80K ohms	140°F / 60°C, -40°
69ND1	Flame Rod	280-305 VAC	Infinite	Tip 2460°F 1500°F/816°C, -40°

\* Resistance measured with 20K Ohms/ Volt Meter  
For proper Flame Signal Voltage see technical bulletin for the appropriate control.

PART NUMBER	DESCRIPTION	USE WITH
48PT1-1003 48PT1-1007 48PT1-9003 48PT1-9007 48PT1-9007W	IR Straight Head 8 feet (2440mm) leads IR Straight Head 4 feet (1220mm) Leads IR 90 deg. Head 8 ft. (2440mm) Leads IR 90 deg. Head 4 ft. (1220mm) Leads - 9007 Water Repellant	P-Series
48PT2-1003 48PT2-1007 48PT2-9003 48PT2-9007 48PT2-9007W	IR Straight Head 8 feet (2440mm) leads IR Straight Head 4 feet (1220mm) Leads IR 90 deg. Head 8 ft. (2440mm) Leads IR 90 deg. Head 4 ft. (1220mm) Leads - 9007 Water Repellant	C & D Series P-Series FLAME-MONITOR MicroM
35-69	Heat Insulator for 48PT Scanners	
69ND1-1000K4 69ND1-1000K6 69ND1-1000K8	Flame Rod 12 inches (305mm) 1/2 in. mount Flame Rod 18 inch (460mm) 1/2 in. mount Flame Rod 24 inches (710mm) 1/2 in. mount	C, D, M-Series MB Systems FLAME-MONITOR MicroM

For information on the 45UV scanners, see Bulletin SC-101.

For information on the 55UV scanners, see Bulletin SC-106.

For information on the UV1A, UV2, and UV8A scanners, see Bulletin SC-102.



## SCANNER MAINTENANCE

### 48PT1 and 48PT2 Infrared Scanners and 69ND1 Flame Rods

The viewing area of the scanner must be kept clean. Even a small amount of contamination will reduce the flame signal reaching the detector by a measurable amount. Wipe the viewing area routinely using a soft cloth dampened with concentrated detergent.

Type **48PT1** scanner includes a replaceable #4-128-1 cell

Type **48PT2** scanner includes a replaceable #4-263-1 Firetron cell.

Type **69ND1 Flame Rod**. Rods should be routinely replaced as they oxidize.

**Flame Signal Strength.** Routine observation of the flame signal strength or as read on the display of the FLAME-MONITOR will forewarn of any deterioration in the capability of the flame detector or its application.

**Periodic Safety Check.** It is recommended that a procedure be established to test, at least once a month, the complete flame safeguard system. This test should verify the proper operation of all limit switches and safety interlocks as well as flame failure protection and fuel safety shutoff valve tightness.

**Rotation.** It is recommended that control and scanner units purchased as spares be installed periodically.

**Contacts.** There are no accessible contacts in the Fireeye burner programming controls. Where contacts are used, their design assures long trouble-free life when the load circuits are maintained within the published load ratings.

**Humidity.** In areas of high humidity, the control chassis should be removed and placed in a dry atmosphere when the system is expected to be out of service for an extended period.

**For scanner installation and wiring instructions, see the appropriate FIREYE technical bulletin for each control.**

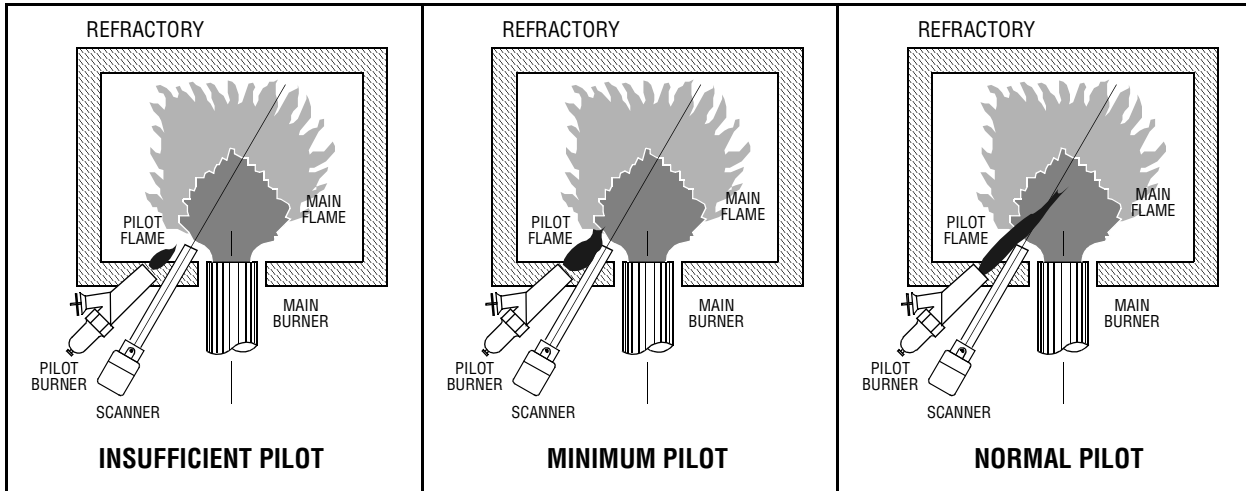
CONTROL	BULLETIN
FLAME-MONITOR	E-1101
D-Series	D-1020, D-30, D-4041
M-Series	C-4000
MB-Systems	CC-82
MicroM	MC-5000



**WARNING: FIREYE SCANNERS CAN BE USED ONLY WITH THE APPROPRIATE FIREYE CONTROL. DO NOT CONNECT FIREYE SCANNERS TO CONTROLS NOT MANUFACTURED BY FIREYE.**

### Minimum Pilot Test

This test assures that the flame detector will not detect a pilot flame too small to reliably light off the main flame. The test should be made on every new installation, and following any repositioning of the flame detector. **THE MINIMUM PILOT TEST MUST BE ACCOMPLISHED BY A TRAINED AND QUALIFIED BURNER TECHNICIAN.**



**SPARK REJECTION TEST. CAUTION:** The scanner must not sight the ignition spark directly or any part of the burner that can reflect the spark back to the scanner. The scanner must not see a pilot flame that is too small to reliably ignite the main flame. Test procedures vary according to the control used. See procedures as described in the technical bulletin for the control being installed.



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DOC No. 02242011RL

## **DECLARATION OF CONFORMITY**

*Fireeye Inc.  
3 Manchester Road  
Derry, NH, 03038*

Declare that the products: **48PT2 infrared scanners & 69ND1 flame rods**

are in conformity with the provisions of the following EC Directive(s) when installed in accordance with the installation instructions contained in the product documentation:

73/23/EEC	Low Voltage Directive as amended by 93/68/EEC
89/336/EEC	EMC Directive as amended by 92/31/EEC and 93/68/EEC
90/396/EEC	Gas Appliance Directive

and that the standards and/or technical specifications referenced below have been applied:

DIN EN 230:2005-10	Automatic burner control systems for oil burners
DIN EN 298:2004-01	Automatic gas burner control systems for gas burners and gas burning appliances with or without fans
EN 61000-4-11:1994	Testing and measurement techniques – Voltage dips, short interruptions and voltage variations immunity test
EN 61000-4-5:1994	Electromagnetic compatibility (EMC) – Part 4-5: Testing and measurement techniques – Surge immunity test
EN 61000-4-2:1996	Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques Section 4.2 Electrostatic discharge immunity test
EN 61000-4-4:1996	Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques Section 4. Electrical fast transient/burst immunity test
EN 61000-4-6:1995	Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques Section 6. Immunity to conducted disturbances, induced by radio frequency fields
EN 61000-4-3:1995	Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques section 3. Radiated, radio-frequency, electromagnetic field immunity test

Signature: *RAYMOND A LABORE*  
Name: Raymond A Labore  
Position: Product Certification Administrator  
Date: February 24, 2011



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## NOTICE

When Fireeye products are combined with equipment manufactured by others and/or integrated into systems designed or manufactured by others, the Fireeye warranty, as stated in its General Terms and Conditions of Sale, pertains only to the Fireeye products and not to any other equipment or to the combined system or its overall performance.

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## WARRANTIES

FIREYE guarantees for *one year from the date of installation or 18 months from date of manufacture* of its products to replace, or, at its option, to repair any product or part thereof (except lamps, electronic tubes and photocells) which is found defective in material or workmanship or which otherwise fails to conform to the description of the product on the face of its sales order. **THE FOREGOING IS IN LIEU OF ALL OTHER WARRANTIES AND FIREYE MAKES NO WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED.** Except as specifically stated in these general terms and conditions of sale, remedies with respect to any product or part number manufactured or sold by Fireeye shall be limited exclusively to the right to replacement or repair as above provided. In no event shall Fireeye be liable for consequential or special damages of any nature that may arise in connection with such product or part.



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