Flame Amplifiers

R7247; R7248; R7249; R7476 Flame Amplifiers

R7248

R7249

R7247

Solid state plug-in units respond to flame detector signal and indicate presence of flame.
• Use with BC7000; R4140; R4075C,D,E; R4138C,D Flame Safeguard controls and appropriate flame detector and FSP5075A1, FSP5075A3 Flame Amplifier Modules.

Approvals:
Canadian Standards Association: Certified: File No. LR1620, Guide No. 140-A-2
Control Safety Devices: Acceptable (CSD-1)
Factory Mutual: Approved: Report No. 24181.01
Underwriters Laboratories Inc. Listed: File No. MP268, Guide No. MCCZ2

Product Number	Flame Failure Response Time (sec)	Self Checking	Use With Flame Sensor	Use With Primary Safety Control	Comments
R7247A1005	2 to 4 sec	None (standard)	Gas, oil, coal: Ultraviolet Flame Sensor C7012A,C	R4140;BC7000;R4075C,D,E; R4138C,D;FSP5075	Color: Green
R7247B1003	2 to 4 sec	Ampli-Check	Gas: Rectifying Flame Rods C7004, C7005, C7007, C7008, C7009, Q179Gas, oil, coal: Ultraviolet Flame Sensor C7012A,C	R4140;BC7000;R4075C,D,E; R4138C,D;FSP5075	Color: Green
R7247C1001	2 to 4 sec	Dynamic Self-Check	Gas, oil, coal: Ultraviolet Flame Sensor C7012E,F	R4140, BC7000, R4075C,D,E, R4138C, D, FSP5075	Color: Green
R7247C1019	2 sec max.	Dynamic Self-Check	Gas, oil, coal: Ultraviolet Flame Sensor C7012E,F	R4140;BC7000;R4075C,D,E; R4138C,D;FSP5075	Color: Green
R7248A1004	2 to 4 sec	None (standard)	Gas, oil, coal: Infrared (lead sulfide) C7015	R4140;BC7000;R4075C,D,E; R4138C,D;FSP5075	Color: Red
R7248B1028	2 to 4 sec	Ampli-Check	Gas, oil, coal: Infrared (lead sulfide) C7015	R4140;BC7000;R4075C,D,E; R4138C,D;FSP5075	Color: Red
R7249A1003	2 to 4 sec	None (standard)	Gas, oil, coal: Ultraviolet (Minipeeper) C7027, C7035	R4140;BC7000;R4075C,D,E; R4138C,D;FSP5075	Color: Purple
R7476A1007	2 to 4 sec	Dynamic Self-Check	Gas, oil, coal: Adjustable Sensitivity Ultraviolet Flame Sensor C7076	R4140;BC7000;R4075C,D,E; R4138C,D;FSP5075	Color: Blue
R7476A1015	2 sec max.	Dynamic Self-Check	Gas, oil, coal: Adjustable Sensitivity Ultraviolet Flame Sensor C7076	R4140, BC7000, R4075C,D,E, R4138C, D, FSP5075	Color: Blue

R7257; R7258; R7259 Flame Safeguard Amplifiers

Solid state, plug-in units allow use of rectification, infrared and ultraviolet flame detections.
• Use with Q518, Q519 and W688A Flame Safeguard multi-burner modules and appropriate flame detector.

Approvals:
Canadian Standards Association: Certified: File No. LR95329-3
Underwriters Laboratories Inc. Listed: File No. MP268, Guide No. MCCZ2

Product Number	Flame Failure Response Time (sec)	Self Checking	Use With Flame Sensor	Use With Primary Safety Control	Comments
R7258A1001	2 to 4 sec	None (standard)	Gas, oil, coal: Infrared (lead sulfide) C7015	Q518, Q519, W688A	Color: Red
R7259A1000	2 to 4 sec	None (standard)	Gas, oil, coal: Ultraviolet (Minipeeper) C7027, C7035	Q518, Q519, W688A	Color: Purple

R7289, R7290 Flame Safeguard Amplifiers (for R4795)

Solid state, plug-in units allow use of rectification or ultraviolet flame detection.
• Use with R4795A,D Flame Safeguard primary controls and appropriate flame detector.

Approvals:
Canadian Standards Association: Certified: File No. LR1620-305
Factory Mutual: Approved: Report No. 19608.1
Underwriters Laboratories Inc. Listed: File No. MP268, Vol. 7, Sec. 2

Product Number	Flame Failure Response Time (sec)	Self Checking	Use With Flame Sensor	Use With Primary Safety Control	Comments
R7290A1001	2 to 4 sec	None (standard)	Gas, oil, coal: Ultraviolet (Minipeeper) C7027, C7035	R4795A, D	Color: Purple
R7289A1004	2 to 4 sec	None (standard)	Gas: Rectifying Flame Rods C7004, C7005, C7007, C7008, C	R4795A, D	Color: Green

FSP5075A1; FSP5075A3 Flame Amplifier Modules

The FSP5075A Flame Amplifier Module is designed to accept a variety of Honeywell plug-in flame signal amplifiers. Depending on the plug-in amplifier model installed, the flame amplifier module can be used with ultraviolet flame detectors, infrared flame detectors, rectifying flame rods or rectifying photocells to provide continuous flame supervision from lightoff to shutdown. Certain flame amplifier models feature Dynamic Self-Check or Dynamic Ampli-Check¦® capability. The flame amplifier module also features plug-in load and flame relays as well as an integral terminal strip mounted on its chassis.

- The flame amplifier module amplifier and relay circuitry combine to provide such safety features as safe-start check, safety shutdown and rapid flame failure response time.
- Approval body certifications include Underwriters Laboratories Inc. component recognized, Factory Mutual approved.
- The zinc dichromate finish resists corrosive effects of most industrial atmospheres.
- A hermetically sealed relay model is also available.
- The FSP5075A Flame Amplifier Module is a standard building block in a burner management system.
- It allows the system to meet flame safeguard requirements while adding versatility to the flame detection system.

Application: Flame Amplifier
Dimensions, Approximate: 4 7/8 in. high x 8 1/2 in. wide x 4 in. deep. (124 mm high x 216 mm wide x 102 mm deep)
Frequency: 60 Hz
Temperature Range: -40 F to +140 F (-40 C to +60 C)

Approvals:
Canadian Standards Association: —
Factory Mutual: Approved: Report No. 26098
Underwriters Laboratories Inc. Component Recognized: File No. MP268, Guide No. MCCZ

Product Number	Voltage	Power Consumption	Flame Failure Response Time (sec)	Description	Comments	Used With
FSP5075A1	120 Vac	5.0 W running (max); 2.4 W standby.	Reference flame signal amplifier	Flame Amplifier Module, Plastic Encapsulated Relays	Relays Plastic Encapsulated	R7247, R7248, R7249, or R7476 Flame Amplifier
FSP5075A3	120 Vac	5.0 W running (max); 2.4 W standby.	Reference flame signal amplifier	Flame Amplifier Module, Hermetically Sealed Relays	Relays Hermetically Sealed	R7247, R7248, R7249, or R7476 Flame Amplifier

Flame Amplifier Accessories

Product Number	Description	Used With
32005301-001	T Filter for Rectification Amplifiers	R7847, R7247

Flame Rods

C7007 Flame Rod Holder

Used to apply flame rod in gas-fired system controlled by rectification type flame safeguard control.
- Use with pressurized fire boxes.
- Hold flame rods firmly over the pilot or burner with a chuck and setscrew arrangement.
- Provide electrical connection through a terminal screw.
- Allow ventilation to cool the unit or to minimize soot deposit through a 1/2 in.
- NPT tapping.
- Mount easily with sleeve or thread type mounting adapters, and a straight or angle body.

Description: Flame Rod Holder
Application: Gas fired pilot or gas fired system.
Dimensions, Approximate: 1 15/16 in. high x 2 3/16 in. diameter x 3 3/16 in. long (49 mm high x 56 mm diameter x 81 mm long)
Electrical Connections: Terminal screw

Approvals:
Canadian Standards Association: Certified: File No. L95329-1
Factory Mutual: Approved: Report No. 24181.03
Underwriters Laboratories Inc. Listed: File No. MP268, Guide No. MCCZ

Product Number	Type	Mounting	Required Parts	Comments	Used With
C7007A1001	Flame Rod	1/2 in. 14 NPT male	102709E (48 in., 1219 mm) 102709D (36 in., 914 mm) 102709C (24 in., 610 mm) 102709B (18 in., 457 mm) 102709A (12 in., 305 mm)	Holder only, order Kanthal flame rod separately.	Flame Amplifiers: R7247A, B, R7847A, B, R7257, R7289

C7008 Flame Rod Holder

- Use with Honeywell Flame Safeguard controls requiring rectification-type flame detection.
- Use only with gas.
- Install with or without cover.
- Comes in several different lengths and can be cut to exact desired length.
- Uses Rajah electrical connector.

The small size of these devices enable their application to flame detection in installations where space is limited. The holder and flame rod assemblies facilitate flame proving on gas burners or gas-ignited oil burners which are controlled by electronic flame safeguard systems.

Description: Flame Rod Assembly
Application: Gas fired pilot or gas fired system.
Dimensions, Approximate: Holder: 7/8 in. diameter x 3 3/4 in. long (Holder: 22 mm diameter x 95 mm long)
Electrical Connections: Rajah electrical connector

Approvals:
Canadian Standards Association: Certified: File No. L95329-1
Factory Mutual: Approved: Report No. 24181.03
Underwriters Laboratories Inc. Listed: File No. MP268, Guide No. MCCZ

Product Number	Type	Mounting	Includes	Used With
C7008A1174	Flame Rod	1/4 in. NPT male	12 in. Flame rod and holder	Flame Amplifiers: R7247A,B, R7847A,B, R7257, R7289
C7008A1182	Flame Rod	1/4 in. NPT male	24 in. Flame rod and holder	Flame Amplifiers: R7247A,B, R7847A,B, R7257, R7289

C7009 Flame Rod Holder

- Use on industrial flame-retention gas burner nozzles.
- Works with Honeywell Flame Safeguard controls requiring rectification type flame detector.
- Mounts in areas with limited space because flame rod can be cut to desired length.
- Uses Rajah electrical connector.

The small size of these devices enable their application to flame detection in installations where space is limited. The holder and flame rod assemblies facilitate flame proving on gas burners or gas ignited oil burners which are controlled by electronic flame safeguard systems.

Description: Flame Rod Assembly
Application: Gas fired pilot or gas fired system.
Dimensions, Approximate: Holder: 3/8 in. diameter x 2 3/8 in. long (Holder: 10 mm diameter x 60 mm long)
Mounting: 1/8 in. NPT male
Electrical Connections: Rajah electrical connector

Approvals:
Canadian Standards Association: Certified: File No. L95329-1
Factory Mutual: Approved: Report No. 24181.03
Underwriters Laboratories Inc. Listed: File No. MP268, Guide No. MCCZ

Product Number	Type	Includes	Comments	Used With
C7009A1009	Flame Rod	Flame rod and holder	4 in. (102 mm) flame rod	Flame Amplifiers: R7247A,B, R7847A,B, R7257, R7289
C7009A1025	Flame Rod	Flame rod and holder	12 in. (305 mm) flame rod	Flame Amplifiers: R7247A,B, R7847A,B, R7257, R7289

Flame Rod Detector Accessories or Parts

Product Number	Description
102709A	Kanthal Flame Rod - 12 in. (0.182 in. diameter) for C7004B, C7007A, C7011A
102709B	Kanthal Flame Rod - 18 in.(0.182 in. diameter) for C7004B, C7007A, C7011A
102709C	Kanthal Flame Rod - 24 in. (0.182 in. diameter) for C7004B, C7007A, C7011A
102709D	Kanthal Flame Rod - 36 in. (0.182 in. diameter) for C7004B, C7007A, C7011A
102709E	Kanthal Flame Rod - 48 in. (0.182 in. diameter) for C7004B, C7007A, C7011A
105478A	Kanthal Flame Rod - 6 in. (0.182 in. diameter -threaded 6-32) for C7008
105478B	Kanthal Flame Rod - 12 in. (0.182 in. diameter-threaded 6-32) for C7008
105478C	Kanthal Flame Rod - 18 in. (0.182 in. diameter-threaded 6-32) for C7008
105478D	Kanthal Flame Rod - 24 in. (0.182 in. diameter-threaded 6-32) for C7008

Flame Detectors

## C7012 Solid State Purple Peeper® Ultraviolet Flame Detector
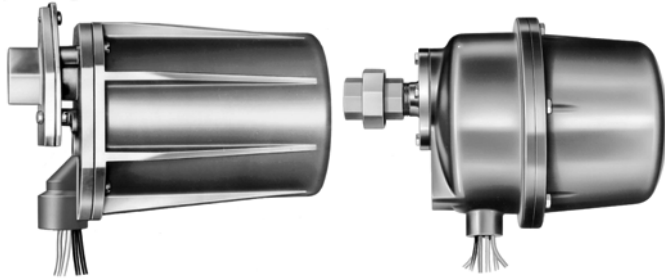
without Explosion Proof Cover   **with Explosion Proof Cover**

Solid state electronic flame detectors for use with Honeywell Flame Safeguard controls and amplifiers. Sense ultraviolet radiation produced by combustion of gas, oil, coal or other fuels.
• Mount horizontally, vertically or at any angle in between.
• Provide quick electrical hookup with threaded conduit fitting and color-coded leadwires.
• Reduced nuisance shutdowns by wiring two in parallel.
• C7012E1278 5 pin Brad Harrison type (formally 41307N)mating connector not supplied nor available through Honeywell.

Dimensions in inches (millimeters)

C7012A   M20275A

M 1963
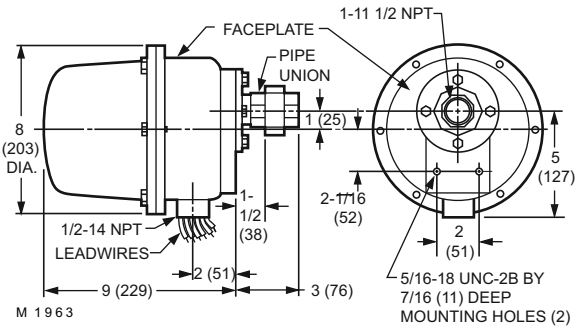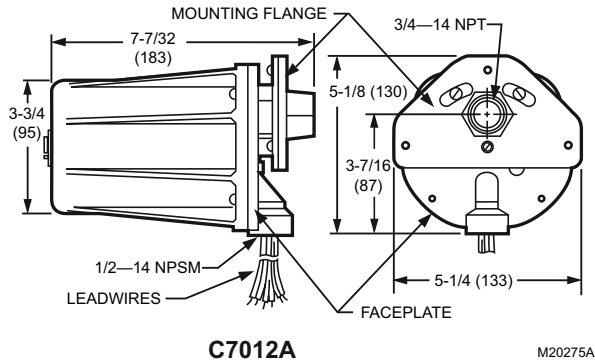
Description: Ultraviolet Flame Detector (Purple Peeper)
Application: Gas, Oil or Coal fired burners
Lead Length for NEC Class 1 leadwires: 96 in. (2438 mm)

Approvals:
Canadian Standards Association: Certified: Master Report LR95329-1
Factory Mutual: Approved: Report No. 14740.01
Underwriters Laboratories Inc. Listed: File No. MP268, Guide No. MCCZ

Product Number	Type	Electrical Connections	Mounting	NEMA Rating	Ambient Temperature Range (F)	(C)	Electrical Ratings	Frequency	Includes	Comments	Used With
C7012A1145	Ultraviolet, Purple Peeper	4 NEC Class 1 Color-coded leadwires.	3/4 in. NPT	NEMA 4	25 F to 175 F	-4 C to +79 C	120 Vac	50 Hz; 60 Hz	Cast case and cover	For use with rectification flame signal amplifiers	Flame Amplifiers: R7247A,B; R7847A,B; R7257
C7012A1152	Ultraviolet, Purple Peeper	4 NEC Class 1 Color-coded leadwires.	1 in. NPT	NEMA 4	25 F to 175 F	-4 C to +79 C	120 Vac	50 Hz; 60 Hz	Cast case and cover	For use with rectification flame signal amplifiers	Flame Amplifiers: R7247A,B; R7847A,B; R7257
C7012A1160	Ultraviolet, Purple Peeper	4 NEC Class 1 Color-coded leadwires.	1 in. NPT	NEMA 4	-40 F to +175 F	-40 C to +79 C	120 Vac	50 Hz; 60 Hz	Cast case and cover	For use with rectification flame signal amplifiers	Flame Amplifiers: R7247A,B; R7847A,B; R7257
C7012A1186	Ultraviolet, Purple Peeper	4 NEC Class 1 Color-coded leadwires.	3/4 in. NPT	NEMA 4	25 F to 175 F	-4 C to +79 C	208 Vac	50 Hz; 60 Hz	Cast case and cover	For use with rectification flame signal amplifiers	Flame Amplifiers: R7247A,B; R7847A,B; R7257
C7012A1194	Ultraviolet, Purple Peeper	4 NEC Class 1 Color-coded leadwires.	3/4 in. NPT	NEMA 4	25 F to 175 F	-4 C to +79 C	240 Vac	50 Hz; 60 Hz	Cast case and cover	For use with rectification flame signal amplifiers	Flame Amplifiers: R7247A,B; R7847A,B; R7257
C7012C1042	Ultraviolet, Purple Peeper	4 NEC Class 1 Color-coded leadwires.	1 in. NPT	Explosion Proof	25 F to 175 F	-4 C to +79 C	120 Vac	50 Hz; 60 Hz	—	Explosion-proof, two piece, violet, cast aluminum enclosure	Flame Amplifiers: R7247A,B; R7847A,B; R7257
C7012E1104	Ultraviolet, Purple Peeper, Self-Checking	6 NEC Class 1 Color-coded leadwires.	3/4 in. NPT	NEMA 4	-20 F to +175 F	-20 C to +79 C	120 Vac	50 Hz; 60 Hz	Cast case and cover	Dynamic self-checking flame detector	Flame Amplifiers: R7247C, R7847C
C7012E1112	Ultraviolet, Purple Peeper, Self-Checking	6 NEC Class 1 Color-coded leadwires.	1 in. NPT	NEMA 4	-20 F to +175 F	-20 C to +79 C	120 Vac	50 Hz; 60 Hz	Cast case and cover	Dynamic self-checking flame detector	Flame Amplifiers: R7247C, R7847C

Product Number	Type	Electrical Connections	Mounting	NEMA Rating	Ambient Temperature Range		Electrical Ratings	Frequency	Includes	Comments	Used With
					(F)	(C)					
C7012E1120	Ultraviolet, Purple Peeper, Self-Checking	6 NEC Class 1 Color-coded leadwires.	1 in. NPT	NEMA 4	-40 F to +175 F	-40 C to +79 C	120 Vac	50 Hz; 60 Hz	Cast case and cover	Dynamic self-checking flame detector	Flame Amplifiers: R7247C, R7847C
C7012E1146	Ultraviolet, Purple Peeper, Self-Checking	6 NEC Class 1 Color-coded leadwires.	3/4 in. NPT	NEMA 4	-20 F to +175 F	-20 C to +79 C	208 Vac	50 Hz; 60 Hz	Cast case and cover	Dynamic self-checking flame detector	Flame Amplifiers: R7247C, R7847C
C7012E1153	Ultraviolet, Purple Peeper, Self-Checking	6 NEC Class 1 Color-coded leadwires.	3/4 in. NPT	NEMA 4	-20 F to +175 F	-20 C to +79 C	240 Vac	50 Hz; 60 Hz	Cast case and cover	Dynamic self-checking flame detector	Flame Amplifiers: R7247C, R7847C
C7012E1161	Ultraviolet, Purple Peeper, Self-Checking	10 foot 5 conductor cable and 5 PIN connector	1 in. NPT	NEMA 4	-20 F to +175 F	-20 C to +79 C	120 Vac	50 Hz; 60 Hz	Cast case and cover	Dynamic self-checking flame detector	Flame Amplifiers: R7247C, R7847C
C7012E1187	Ultraviolet, Purple Peeper, Self-Checking	6 NEC Class 1 Color-coded leadwires.	3/4 in. NPT	NEMA 4	-20 F to +175 F	-20 C to +79 C	220 Vac	50 Hz	Cast case and cover	Dynamic self-checking flame detector	Flame Amplifiers: R7247C, R7847C
C7012E1195	Ultraviolet, Purple Peeper, Self-Checking	6 NEC Class 1 Color-coded leadwires.	3/4 in. NPT	NEMA 4	-20 F to +175 F	-20 C to +79 C	110 Vac	50 Hz	Cast case and cover	Dynamic self-checking flame detector	Flame Amplifiers: R7247C, R7847C
C7012E1203	Ultraviolet, Purple Peeper, Self-Checking	6 NEC Class 1 Color-coded leadwires.	3/4 in. NPT	NEMA 4	-20 F to +175 F	-20 C to +79 C	240 Vac	50 Hz; 60 Hz	Cast case and cover	Dynamic self-checking flame detector	Flame Amplifiers: R7247C, R7847C
C7012E1245	Ultraviolet, Purple Peeper, Self-Checking	6 NEC Class 1 Color-coded leadwires.	3/4 in. NPT	NEMA 4	-20 F to +175 F	-20 C to +79 C	120 Vac	50 Hz; 60 Hz	Cast case and cover	Dynamic self-checking flame detector	Flame Amplifiers: R7247C, R7847C
C7012E1278	Ultraviolet, Purple Peeper, Self-Checking	Brad Harrison type number 41310 connector	1 in. NPT	NEMA 4	-20 F to +175 F	-20 C to +79 C	120 Vac	50 Hz; 60 Hz	Cast case and cover	Dynamic self-checking flame detector	Flame Amplifiers: R7247C, R7847C
C7012F1052	Ultraviolet, Purple Peeper, Self-Checking	6 NEC Class 1 Color-coded leadwires.	1 in. NPT	Explosion Proof	-20 F to +175 F	-20 C to +79 C	120 Vac	50 Hz; 60 Hz	—	Dynamic self-checking flame detector, explosion-proof, two piece, violet, cast aluminum enclosure	Flame Amplifiers: R7247C, R7847C
C7012G1019	Ultraviolet, Purple Peeper	5 NEC Class 1 Color-coded leadwires.	3/4 in. NPT	NEMA 4	25 F to 175 F	-4 C to +79 C	220 V	50 Hz	Cast case and cover	For use with rectification flame signal amplifiers	Flame Amplifiers: R7247C, R7847C

Commercial/Industrial Combustion Controls

Flame Detectors

C7015; C7915 Infrared (Lead Sulfide) Flame Detector

The C7015A and C7915 Flame Detectors include a lead sulfide photocell that is sensitive to the infrared radiation emitted by the combustion of fuels such as natural gas, oil, and coal.
- Used for combination or dual-fuel applications.
- Detects pilot and main flame.
- Mounts quickly and easily on a standard 3/4 in. sighting pipe.
- Works where flame rod or rectifying photocell mounts are difficult to apply.
- The C7015 includes 110634A Bushing with magnifying lens.
- The C7015 uses photoconductive lead sulfide cells 104662B and D.
- The C7915 includes 50019469-001 Bushing with magnifying lens.
- The C7915 uses photoconductive lead sulfide cells 32007255-001.

C7015

C7915

Description: Infrared (Lead Sulfide) Flame Detector
Application: Used for combination or dual-fuel applications
Dimensions, Approximate: 1 1/4 in. diameter x 2 3/4 in. long (32 mm diameter x 70 mm long)
Mounting: 3/4 in. NPT
Electrical Connections: Two no.18 AWG wires
Ambient Temperature Range: 125 F max at sensor (52 C max at sensor)
Type: Infrared (Lead Sulfide)

**Comments:** Infrared (Lead Sulfide) Flame Detector

Approvals:
Canadian Standards Association: Certified: Master Report LR95329-1
Factory Mutual: Approved: Report No. 24181.03
Underwriters Laboratories Inc. Listed: File No. MP268, Guide No. MCCZ

Product Number	Lead Length		Includes	Used With
	(inch)	(mm)		
C7015A1076	30 in.	762 mm	With magnifying lens, 104662D Sensitivity Cell and 105134 Orifice	Flame Amplifiers: R7248, R7848, R7748, R7258
C7015A1092	96 in.	2438 mm	With magnifying lens, 104662D Sensitivity Cell and 105134 Orifice	Flame Amplifiers: R7248, R7848, R7748, R7258
C7015A1126	48 in.	1219 mm	With magnifying lens, 105134 Orifice, 390427 Bushing, 105061 Insulator and 104662D Sensitivity Cell	Flame Amplifiers: R7248, R7848, R7748, R7258
C7915A1010	30 in.	762 mm	With magnifying lens, 32007255-001 Cell	Flame Amplifiers: R7852; Flame Amplifiers: R7248, R7848, R7748, R7258
C7915A1028	48 in.	1219 mm	With magnifying lens, 32007255-001 Cell, Orifice, heat block, and reducer bushing	Flame Amplifiers: R7852
C7915A1036	96 in.	2438 mm	With magnifying lens, 32007255-001 Cell	Flame Amplifiers: R7852

C7024 Solid State Purple Peeper® Ultraviolet Flame Detector
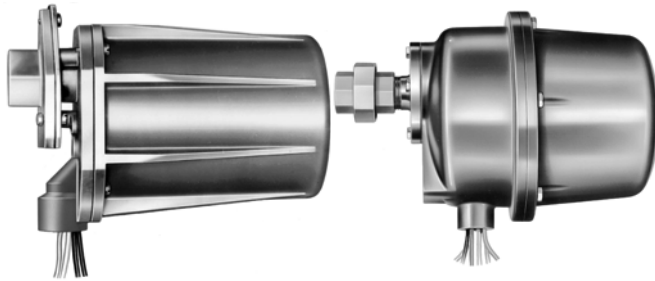

**without Explosion Proof Cover**   **with Explosion Proof Cover**

24 Vdc solid state electronic flame detectors for sensing the ultraviolet radiation emitted by the combustion of most carbon containing fuels, such as natural gas, LP gases, and oil.
- Use with R7824C Dynamic Self-Check Flame Signal Amplifier.
- Circuitry provides low power consumption and high reliability.
- Mount horizontally, vertically or at any angle in between.
- Field-replaceable UV radiation sensing tube and quartz viewing window.
- Quick electrical installation with threaded conduit fitting and color-coded leadwires.
- Reduce nuisance shutdowns by wiring two in parallel.
- Oscillating shutter interrupts UV radiation 12 times per minute with R7824C.

Dimensions in inches (millimeters)

C7012A,C,E,F   M1962C

M1963
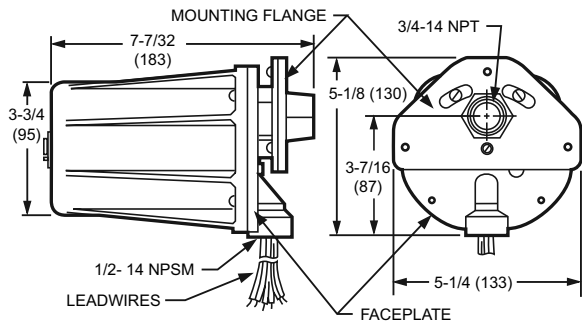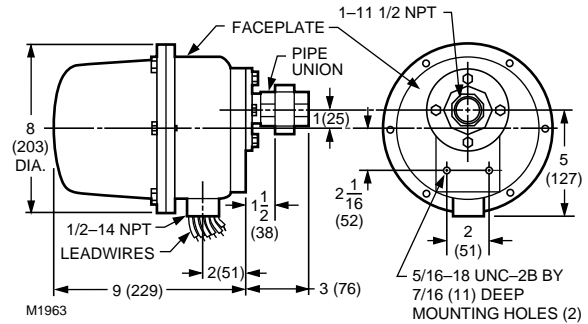
Description: Self-Checking Ultraviolet Flame Detector
Application: Coal fired burners; Gas fired burners; Oil fired burners
Electrical Connections: Six NEC CLASS 1 color-coded leaders
Power Consumption: 7.8 W maximum.
Electrical Ratings: 24 Vdc
Lead Length: 96 in. (2438 mm)
Ambient Temperature Range: -20 F to +175 F (-20 C to +79 C)
Used With: Flame Amplifiers: R7824C
Weight: 4.25 lb (1.9 kg)

Approvals:
Canadian Standards Association: Certified: Master Report LR95329-3
**Underwriters Laboratories Inc.** Component Recognized: File No. MP268

Accessories:
190971G 24 Vdc Coil and Shutter Assembly for C7024E, F;C7961

Product Number	Type	Mounting	NEMA Rating	Includes	Comments
C7024E1001	Ultraviolet, Purple Peeper, Self-Checking	3/4 in. NPT	NEMA 4	Cast case and cover	Works with 24 Vdc only
C7024F1009	Ultraviolet, Purple Peeper, Self-Checking	1 in. NPT	Explosion Proof	—	Works with 24 Vdc only, explosion-proof, two piece, violet, cast aluminum.

Commercial/Industrial
Combustion Controls

Flame Detectors

C7027; C7044 Minipeeper Ultraviolet Flame Detector
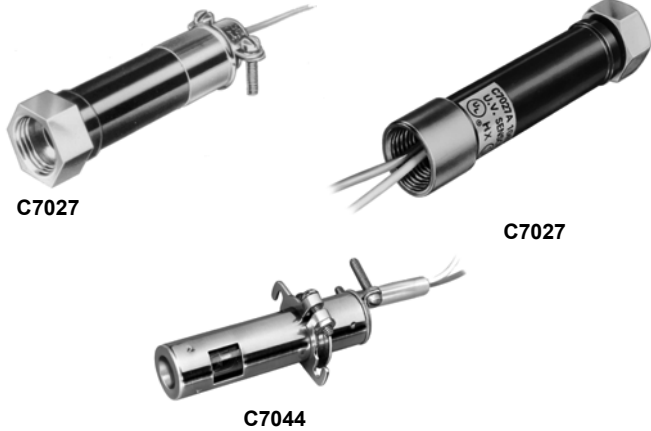
C7027

C7027

C7044

Compact flame detector for use with flame safeguard controls with ultraviolet amplifiers.

- Use with Honeywell Flame Safeguard primary safety controls and burners requiring ultraviolet flame detection.
- C7027 mounts on a 1/2 in. sighting pipe by using an integral collar.
- Detectors can be wired in parallel for difficult sighting applications.
- C7027 seals against pressures up to 5 psi (34.5kPa) when correctly installed.
- Allows for blast tube mounting due to compact size.
- C7044 mounts with a two screw bracket.
- The C7044 UV sensor tube is enclosed in a stainless steel housing.
- C7044 has the capability of side or end viewing in flame monitoring applications.

Dimensions in inches (millimeters)

4 (102)
3-1/2 (89)
8 FOOT (2.44 METER) LEADWIRES (2) △1
1-1/16 (27)

COLLAR WITH 1/2-14 NPSM INTERNAL THREADS

△1 C7027A1064 HAS 24 FOOT (7.32 METER) LEADWIRES. C7027A1114 HAS 44 IN. (1.118 M) LEADWIRES WITH 22 IN. (558 MM) FLEXIBLE CONDUIT.

△2 MODELS AVAILABLE WITH SPUD CONNECTOR (1/2-14 NPSM INTERNAL THREADS) INSTEAD OF CLAMP TYPE CONNECTOR.

C7027

M1943F

Description: Minipeeper
Application: Coal/Gas/Oil fired burners
Vibration: 0.5 G max
Electrical Connections: 2 NEC Class 1 leadwires
Comments: Detects ultraviolet radiation in flames
Used With: Flame Amplifiers: R7249A,B, R7849A,B, R7749B, R7259, R7290, R7795

Approvals:
Canadian Standards Association: Certified: Master Report LR95329-1
Factory Mutual: Approved: Report No. 24181.03
Underwriters Laboratories Inc. Listed: File No. MP268, Guide No. MCCZ

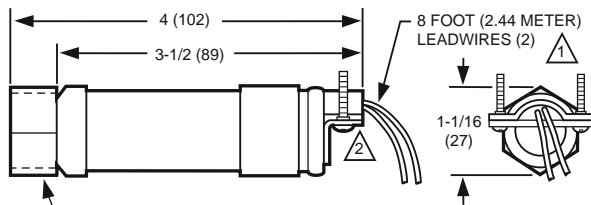| Product Number	Lead Length		Mounting	Ambient Temperature Range		Includes
	(inch)	(mm)		(F)	(C)	
C7027A1023	96 in.	2438 mm	Integral nut for 1/2 in. sighting pipe.	0 F to 215 F	-18 C to +102 C	—
C7027A1031	96 in.	2438 mm	Integral nut for 1/2 in. sighting pipe.	-40 F to +215 F	-40 C to +102 C	—
C7027A1049	96 in.	2438 mm	Integral nut for 1/2 in. sighting pipe.	0 F to 215 F	-18 C to +102 C	1/2 in. NPT threaded spud connector.
C7027A1056	96 in.	2438 mm	Integral nut for 1/2 in. sighting pipe.	0 F to 215 F	-18 C to +102 C	—
C7027A1064	288 in.	7315 mm	Integral nut for 1/2 in. sighting pipe.	-40 F to +215 F	-40 C to +102 C	1/2 in. NPT threaded spud connector.
C7027A1072	96 in.	2438 mm	Integral nut for 1/2 in. sighting pipe.	-40 F to +215 F	-40 C to +102 C	1/2 in. NPT threaded spud connector.
C7027A1080	96 in.	2438 mm	Integral nut for 1/2 in. sighting pipe.	0 F to 215 F	-18 C to +102 C	136733 Heat Block and 390427B bushing
C7027A1114	44 in.	1118 mm	Integral nut for 1/2 in. sighting pipe.	0 F to 215 F	-18 C to +102 C	—
C7044A1006	72 in.	1829 mm	Mounting Bracket Provided	0 F to 215 F	-18 C to +102 C	Mounting bracket

C7035 Minipeeper Ultraviolet Flame Detector

Compact flame detector for use with flame safeguard controls with ultraviolet amplifiers.
- Use with Honeywell Flame Safeguard primary safety controls and burners requiring ultraviolet flame detection.
- Mounts on a 1 in. sighting pipe by using an integral collar.
- Protects the sensing tube with a shield.
- Meets outdoor rain tight requirements of Underwriters Laboratories Inc., NEMA 4 and NEMA 4X.
- Wires in parallel for difficult sighting applications.
- Seals against pressures as high as 5 psi (34.5 kPa) when correctly installed.
- Field-replaceable ultraviolet sensing tube.

Dimensions in inches (millimeters)
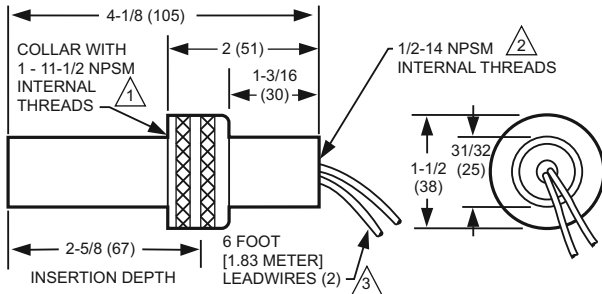
C7035   M1945D

1. DIN APPROVED C7035A1064 HAS 1-11 BSP.P1 INTERNAL MOUNTING THREADS.

2. DIN APPROVED C7035A1064 HAS 1/2-14 BSP-F INTERNAL MOUNTING THREADS.

3. C7035A1056 HAS 12 FOOT (3.66 METER) LEADWIRES.

Description: Minipeeper
Application: Coal fired burners; Gas fired burners; Oil fired burners
Mounting: Integral nut for 1 in. sighting pipe.
Vibration: 0.5 G max
NEMA Rating: NEMA 3 and NEMA 4
Electrical Connections: 2 NEC Class 1 leadwires
Comments: Detects ultraviolet radiation in flames
Weight: 6 oz (0.17 kg)

Approvals:
**Canadian Standards Association:** Certified: Master Report LR95329-1
Factory Mutual: Approved: Report No. 24181.03
Underwriters Laboratories Inc. Listed: File No. MP268, Guide No. MCCZ

Product Number	Lead Length		Ambient Temperature Range		Includes	Used With
	(inch)	(mm)	(F)	(C)		
C7035A1023	72 in.	1829 mm	0 F to 250 F	-18 C to +121 C	—	Flame Amplifiers: R7249A,B, R7849A, B, R7749B, R7259, R7290
C7035A1031	72 in.	1829 mm	-40 F to +250 F	-40 C to +121 C	—	Flame Amplifiers: R7249A,B, R7849A, B, R7749B, R7259, R7290
C7035A1049	72 in.	1829 mm	0 F to 250 F	-18 C to +121 C	—	Flame Amplifiers: R7249A,B, R7849A, B, R7749B, R7259, R7290
C7035A1056	144 in.	3658 mm	-40 F to +250 F	-40 C to +121 C	—	Flame Amplifiers: R7249A,B, R7849A, B, R7749B, R7259, R7290
C7035A1064	72 in.	1829 mm	-40 F to +250 F	-40 C to +121 C	—	Flame Amplifiers: R7249A,B, R7849A, B, R7749B, R7259, R7290
C7035A1080	72 in.	1829 mm	0 F to 250 F	-18 C to +121 C	600F leads	Flame Amplifiers: R7249A,B, R7849A, B, R7749B, R7259, R7290

Commercial/Industrial Combustion Controls

Flame Detectors

C7061 Dynamic Self-Check Ultraviolet Flame Detector
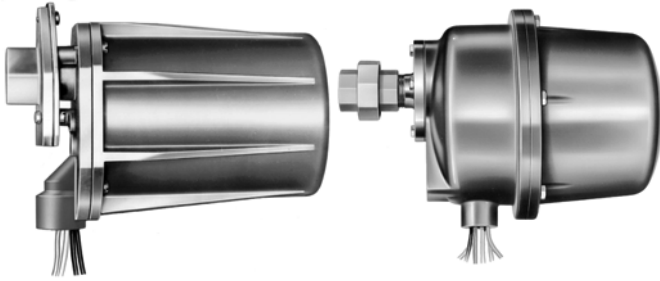

without Explosion Proof Cover   **with Explosion Proof Cover**

Dynamic self-checking flame detector used with R7861 Dynamic Self-check Amplifiers for sensing the ultraviolet radiation generated by the combustion of gas, oil, or other fuels.

- Oscillating shutter interrupts ultraviolet radiation reaching the UV sensor to provide the UV sensor tube checking function.
- Can be mounted horizontally, vertically or at any angle in between.
- The detector requires faceplate alignment and has integral locating reference points to assure proper operation of the shutter mechanism.
- Field replaceable ultraviolet sensing tube and quartz viewing window.
- Models with threaded conduit fitting and color-coded leadwires allow rapid electrical installation.
- C7061A1038 or A1046 5 pin Brad Harrison type (formally 41307N)mating connector not supplied nor available through Honeywell.
- Two detectors can be wired in parallel to reduce nuisance shutdowns in difficult flame sighting applications.
- Protective heat block built into mounting flange.
- -40 F (-40 C) rated ultraviolet sensing tube is supplied.
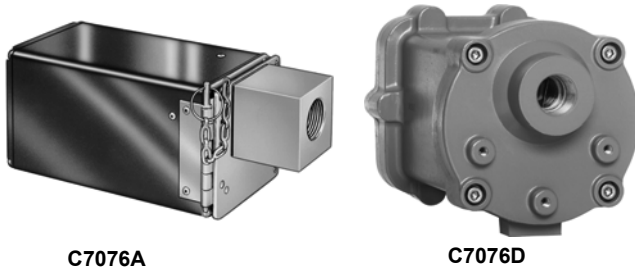
Dimensions in inches (millimeters)
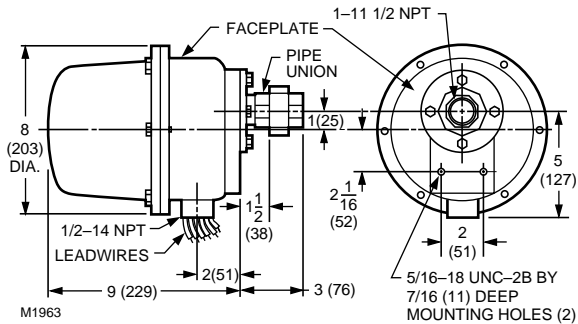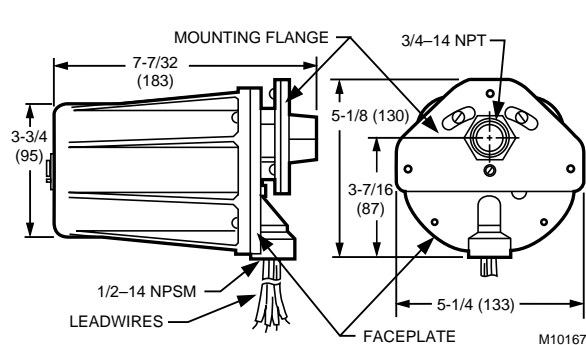
Description: Ultraviolet Flame Detector
Application: Gas fired burners; Oil fired burners
Electrical Ratings: 120 Vac
Frequency: 50 Hz; 60 Hz
Ambient Temperature Range: -40 F to +175 F (-40 C to +79 C)
Used With: Flame Amplifiers: R7861

Approvals:
Canadian Standards Association: Certified: Master Report LR95329-1
Factory Mutual: Approved: Report No. 14740.01
Underwriters Laboratories Inc. Listed: File No. MP268, Guide No. MCCZ

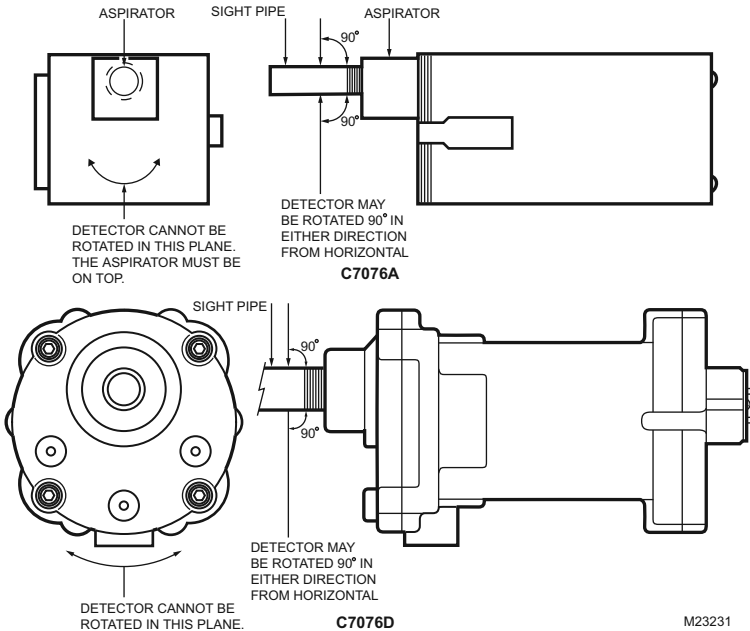| Product Number	Electrical Connections	Lead Length		Mounting	NEMA Rating
		(inch)	(mm)		
C7061A1004	Color-coded lead wires	96 in.	2438 mm	3/4 in. NPT	NEMA 4
C7061A1012	Color-coded lead wires	96 in.	2438 mm	3/4 in. NPT	NEMA 4
C7061A1038	Brad Harrison type number 41310 connector	—	—	3/4 in. NPT	NEMA 4
C7061A1046	Brad Harrison type number 41310 connector	—	—	1 in. NPT	NEMA 4
C7061A1053	Color-coded lead wires	96 in.	2438 mm	1 in. NPT	NEMA 4
C7061F2001	Color-coded lead wires	96 in.	2438 mm	1 in. NPT	Explosion Proof

C7076 Adjustable Sensitivity Ultraviolet Flame Detector

C7076A

C7076D

Solid state dynamic self check flame detectors for use with BC7000, R4140 or FSP5075 with R7476 Amplifier and 7800 SERIES with R7886 Amplifier.
- Use Honeywell Flame Safeguard primary safety controls requiring adjustable sensitivity ultraviolet flame detection.
- Detect ultraviolet radiation from flames.
- Include dual sensitivity adjustment.

Dimensions in inches (millimeters)

ASPIRATOR SIGHT PIPE ASPIRATOR
90°
90°

DETECTOR CANNOT BE ROTATED IN THIS PLANE. THE ASPIRATOR MUST BE ON TOP.

DETECTOR MAY BE ROTATED 90° IN EITHER DIRECTION FROM HORIZONTAL
C7076A

SIGHT PIPE
90°
90°

DETECTOR MAY BE ROTATED 90° IN EITHER DIRECTION FROM HORIZONTAL
C7076D

DETECTOR CANNOT BE ROTATED IN THIS PLANE.

M23231

Description: Adjustable Sensitivity Ultraviolet Flame Detector
Application: Gas fired burners; Oil fired burners
Dimensions, Approximate: See Diagrams
Mounting: 1 in. NPT
Vibration: 0.5 G max
Electrical Connections: Terminal block
Ambient Temperature Range: -40 F to +160 F (-40 C to +71 C)
Comments: Dynamic self-checking flame detector with adjustable sensitivity

Approvals:
Canadian Standards Association: Certified: Master Report LR1620
Factory Mutual: Approved: Report No. FM26980

Underwriters Laboratories Inc. Listed: File No. MP268, Guide No. MCCZ

Replacement Parts:
190998A Aspiration assembly for C7076A
191002B 120Vac Plug in Electronics less UV Sensing Tube for C7076A
190971E 120 Vac Coil and Shutter Assembly for C7076A, D
191053 UV Sensing Tube for C7076
191050 Quartz Viewing Window for C7076
190971F 100 Vac Coil and Shutter Assembly for C7076A, D
191002R 120Vac Plug in Electronics less UV Sensing Tube for C7076D

Product Number	NEMA Rating	Electrical Ratings	Frequency	Power Consumption	Used With
C7076A1007	NEMA 4	120 Vac	60 Hz	7.0 W	Flame Amplifiers: R7476, R7886
C7076A1015	NEMA 4	100 Vac	50 Hz; 60 Hz	7.0 W	Flame Amplifiers: R7476, R7886
C7076A1031	NEMA 4	220 Vac; 240 Vac	50 Hz; 60 Hz	7.0 W	Flame Amplifiers: R7476, R7886
C7076D1027	NEMA 7	120 Vac	60 Hz	7.0 W	Flame Amplifiers: R7476, R7886

Flame Detectors

C7927 Solid State Ultraviolet Flame Detector
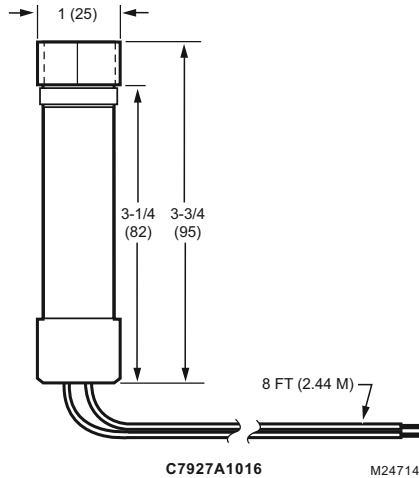
The Solid State Ultraviolet Flame Detectors detect the ultraviolet radiation emitted by combustion flames. The flame detectors are used with Honeywell flame safeguard controls to provide flame supervision for gas, oil, or combination gas-oil burners.
- Properly installed the flame detectors are pressure rated for 5 psi.
- Flame detector is used with only the R7851B Flame Amplifier and the 7800 SERIES controls.
- Has an integral collar threaded (internal 1/2-14 NPSM) for mounting on a one-half inch sight pipe.

Dimensions in inches (millimeters)

1 (25)

3-1/4 (82) 3-3/4 (95)

8 FT (2.44 M)

C7927A1016   M24714

Application: Gas, Oil, or combination burners-intermittent operation only (burner cycled at least once each 24 hours).
Mounting: 1/2 in NPT pipe mounting
NEMA Rating: NEMA 1
Electrical Connections: 2 NEC Class 1 leadwires
Ambient Temperature Range: -40F to +200F (-40 C to +93 C)

Approvals:
Canadian Standards Association: Report 158158
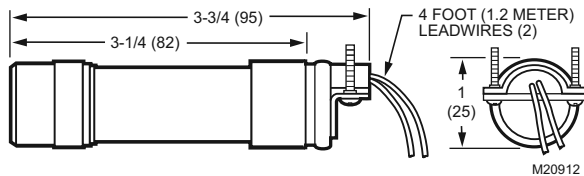**Factory Mutual:** Approved: Report No. 3011020
Underwriters Laboratories Inc. Component Recognized: File No. MP268

Product Number	Description	Comments	Used With
C7927A1016	Ultraviolet Flame Detector	Detects ultraviolet radiation in flames	Flame Amplifiers: R7851B

C7962 Visible Light Flame Detector

The C7962B Visible Light Flame Detector detects the visible light emitted by fuel oil combustion flames. The C7962B Detector is used with Honeywell Flame Safeguard controls to provide fuel oil flame supervision in commercial and industrial burners.
- Used with 7800 SERIES Flame Safeguard controls.
- Used with R7851B Flame Amplifier.
- Has an integral collar threaded (internal 1/2-14 NPSM) for mounting on 1/2 inch sight pipe.

Dimensions in inches (millimeters)

3-3/4 (95)
3-1/4 (82)
4 FOOT (1.2 METER) LEADWIRES (2)
1 (25)
M20912

Description: Solid State Flame Detector to Site Visible Light of an Oil flame
Application: Commercial, industrial oil burners

Mounting: 1/2 in NPT pipe mounting
Vibration: 0.5 G max
NEMA Rating: NEMA 1
Electrical Connections: 2 NEC Class 1 leadwires
Ambient Temperature Range: -40 F to +160 F (-40 C to +71 C)
Used With: Flame Amplifiers: R7851B

Approvals:
Canadian Standards Association: Report 158158
Underwriters Laboratories Inc. Component Recognized: File No. MP268

Accessories:
32007439-001 Mounting Bracket and screws for C7962B

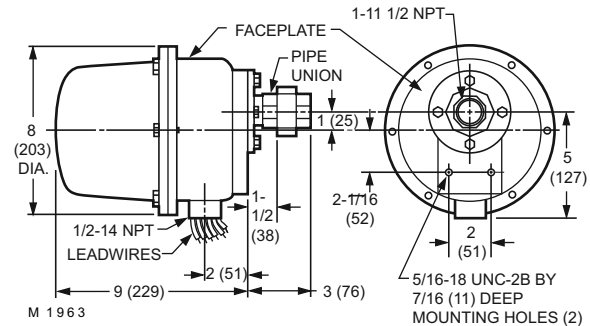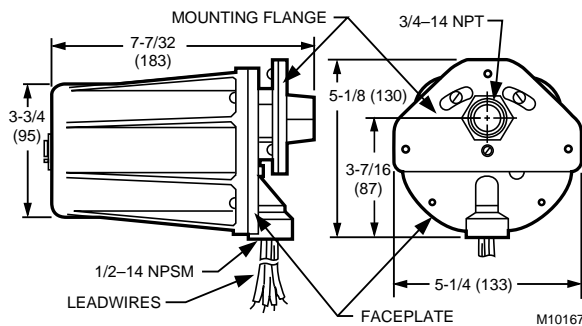| Product Number	Description	Includes
C7962B1002	Solid State Flame Detector to Site Visible Light of an Oil flame	—
C7962B1010	Solid State Flame Detector to Site Visible Light of an Oil flame	32007439-001 Mounting Bracket and screws

C7961 Dynamic Self-checking Solid State Ultraviolet Flame Detector

A self-checking flame detector using a solid state UV sensor to detect ultraviolet radiation in flames for supervision of gas, oil or combination gas-oil burners.
• Designed for use with 7800 series controls with the R7851C flame amp.

• Oscillating shutter interrupts ultraviolet radiation reaching the UV sensor to provide the solid state UV sensor checking function.
• Can be mounted horizontally, vertically or at any angle in between.
• The detector requires faceplate alignment and has integral locating reference points to assure proper operation of the shutter mechanism.
• Models available with threaded conduit fitting and color-coded leadwires allow rapid electrical installation.
• C7961E1022 or E1030 5 pin Brad Harrison type (formally 41307N)mating connector not supplied nor available through Honeywell.
• Incorporates UV sensor tube checking feature; used with R7851C1008 Dynamic Self-check Amplifiers.
• Protective heat block built into mounting flange.
• -40 F (-40 C) rated ultraviolet sensing cell is supplied.

Dimensions in inches (millimeters)

Description: Dynamic Self-checking Ultraviolet Flame Detector
Application: Gas, Oil or other fuels
Electrical Ratings: 120 Vac (-15% +10%)
Frequency: 50 Hz; 60 Hz
Ambient Temperature Range: -40 F to +175 F (-40 C to +80 C)
Comments: Detects ultraviolet radiation generated by combustion of gas, oil, or other fuels

Used With: R7851C Dynamic Self-Check Amplifier

Approvals:
Canadian Standards Association: Certified: Pending
Factory Mutual: Pending
Underwriters Laboratories Inc. Component Recognized: File No. MP268

Product Number	Electrical Connections	Lead Length (inch)	(mm)	Mounting	NEMA Rating	Includes
C7961E1006	NEC Class 1 color-coded	96 in.	2438 mm	3/4 in. NPT	NEMA 4	Quartz Viewing Window rated for 20 psi (138 kPa)
C7961E1022	5 pin Brad Harrison Type Connector	—	—	1 in. NPT	NEMA 4	Quartz Viewing Window rated for 20 psi (138 kPa)
C7961F1004	NEC Class 1 color-coded	96 in.	2438 mm	1 in. NPT	Explosion Proof	Quartz Viewing Window rated for 100 psi

Optical Flame Detector Accessories or Parts

Product Number	Description	Used With
104662B	Lead Sulfide Cell, with yellow medium sensitivity for C7015	C7015
104662D	Lead Sulfide Cell, orange maximum sensitivity range for C7015	C7015
105061	3/4 in. Heat Block for C7015, C7915	C7015; C7915
105172A	Pressure Seal-off Adapter (3/4 NPT) for C7015, C7915	C7015; C7915
105172C	Pressure Seal-off Adapter (3/4 NPT) with UV Quartz window for C7012, C7024, C7027, C7061	C7024; C7012; C7061; C7012; C7024; C7027; C7061
110634A	Magnifying Lens Assembly for C7015A	C7015
113228	UV Sensing Tube (-20 F to 175 F) for C7012; C7024	C7012; C7024
114372	20 PSI window for C7012E, F; C7024; C7061	C7024; C7012; C7061
114465	Window Gasket for C7012A, E; C7024A; C7061A	C7024; C7012; C7061
114638	Rubber Washer for C7012A, E; C7024A; C7061A	C7012; C7061; C7024
117181	Cork Gasket for C7012A, E; C7024A; C7061A	C7024; C7012; C7061
118367A	Swivel Mount for C7012, C7015, C7024, C7027, C7035, C7061, C7076	C7024; C7012; C7061
120739	Flange Gasket for C7012, C7024, C7061	C7024; C7012; C7061

Commercial/Industrial Combustion Controls

Flame Detectors

Product Number	Description	Used With
120934/520	Aluminum Flange Gasket for C7012A or C7012E	C7012
122037	100 PSI Quartz Window for C7012C, F; C7061F	C7012C,F; C7061F
122748	50 PSI Quartz Window for C7012, C7061	C7012; C7061; C7024
123539	Anti-Vibration Mount for C7012, C7024 or C7061	C7012; C7061; C7024
124198	Mounting Flange for C7012A, C7012C, C7012E, or C7012F	C7012
124204	Quartz Magnifying Lens for C7012, C7024 or C7061	C7024; C7012; C7061
129464M	UV Power Tube (0 to 250F) for C7035	C7035
129464N	UV Power Tube (-40 to 250F) for C7035, C7061	C7061; C7035
129811B	Socket Assembly w/NPT threads	C7035
136733	Heat Block for C7027, C7015, C7915 (laminated plastic)	C7027; C7027, C7015, C7915
190105	Water Cooling Jacket for C7012A, F;C7024;C7061	C7024; C7012; C7061
190971B	120 Vac 50/60 Hz Coil and Shutter Assembly for C7012E, F, C7061A, F	C7012E,F; C7061A,F
190971D	110 Vac 50 Hz Coil and Shutter Assembly for C7012E1187, 1195	C7012E
190971E	120 Vac Coil and Shutter Assembly for C7076A, D	C7076; C7076A,D; C7076A,D
190971F	100 Vac Coil and Shutter Assembly for C7076A, D	C7076A,D
190971G	24 Vdc Coil and Shutter Assembly for C7024E, F; C7961	C7024; C7961
190998A	Aspiration assembly for C7076A	C7076A
190999	Grommet for C7076 Sensors	C7076
191002A	100Vac Plug in Electronics less UV Sensing Tube for C7076A	C7076A
191002B	120Vac Plug in Electronics less UV Sensing Tube for C7076A	C7076A
191002D	220/240Vac Plug in Electronics less UV Sensing Tube for C7076A	C7076A
191002R	120Vac Plug in Electronics less UV Sensing Tube for C7076D	C7076D
191050	Quartz Viewing Window for C7076	C7076
191053	UV Sensing Tube for C7076	C7076
191054	Housing Gasket for C7076	C7076
191284	Aluminum Shield for C7035	C7035
191286	UV Sensing Tube (-40F to 175F) for C7012, C7024	C7024; C7012
191702	Electronics less UV sensing tube for C7012F (120Vac)	C7012F
204341A	UV Mirror Assembly for C7012, C7024, C7027, C7035, C7061, C7076	C7012; C7061; C7024
24400152-001	Quartz lens replacement kit for C7076D consists of quartz lens, gasket, gasket seal	C7076
32004080-001	120Vac Electronics less UV Sensing Tube and Shutter for C7012C	C7012C
32007439-001	Mounting Bracket and screws for C7962B	C7962B
50019469-001	Bushing with magnifying lens for C7915	C7915
32007255-001	I R Cell for C7915	C7915