

Compact Ultraviolet Flame Detectors

C7027A, C7035A

The C7027A and C7035A Flame Detectors are compact, light weight and socket mount type flame detectors to be combined with various Protectorelays for detecting the ultraviolet radiation emitted by combustion flame of gas or oil.



Specifications

Applicable flame	Combustion flames of city gas, natural gas, propane gas, butan gas, light oil, heavy oil, naphtha, ethylene, etc.						
Model No.	Type	Power supply	Allowable current	Power consumption	Ambient temperature	Ambient humidity	Weight
C7027A1072	Integral body	To be supplied from Protectorelay	10 mA ac max.	250 mW	-40 to 102°C	90RH% max. at 40 °C	170 g
C7035A1064	UV tube replacement				-40 to 102°C		320 g
Insulation resistance	Should be 50MΩ min. by 500Vdc megger between each leadwire and socket metal with U.V. tube removed (Exclude C7027A)						
Dielectric strength	Should withstand 1500Vac, 50/60Hz for 1 minute or 1800Vac for 1 second between each leadwire and socket metal.						
Combined control/amplifier (Separate order)	Protectorelay	Amplifier	Max. pressrue	34.3kPa at quarts viewing window			
	RA890G	Built-in	Vibration resistance	4.9m/s ² max. at 10 to 60Hz in X, Y or Z direction for 2 hrs each			
	R4750C		Mounting	C7027A: R $\frac{1}{2}$ - 14NPSM C7035A: Rp1			
	R4780C	R7259B1008X2	Leadwire	#18 heat-resisting silicon rubber insulated wires, 1800mm (blue & white)			
	R4150P		Conduit	Rp $\frac{1}{2}$			
	R4303A		Approval body	UL, FM, CSA and DIN			
WN200A							
WN210A							
Accessories (Separate order)	Flame current tester: Model No. W136A1045 Ultraviolet sensing tube (UV tube): Part No. 129464N Cover for UV tube: Part No. 191284						
Flame signal cable • Extension length	Specification: 600V vinyl insulated wires, 2.0 mm ² (called IV wires) Extended length: 200m Caution: Separate the conduit of flame signal wires from the conduit of ignition high voltage wires and power cables at least 50 cm.						
Caution on installation	Take extreme caution when the detector is installed at a place where the following external disturbance or ambient environment exists:						
	Hot refractory above 1371°C, ignition transformer, welding arc, lighting, solar radiation, germicidal lamp, bright flash, etc.		Diffraction analyzer, electoric microscope, radiographic X-ray machine, high voltage vacuum switch, high voltage condenser, radio isotope, etc.			Vapor, smoke, oil vapor, dust, etc.	

External dimensions

Model No. C7035A

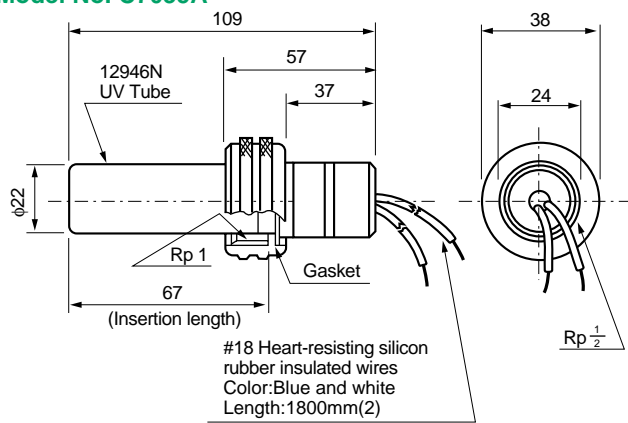


Fig. 1

Model No. C7027A

(Unit: mm)

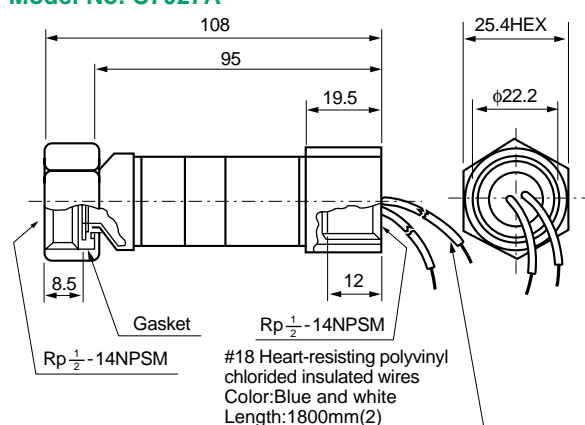


Fig. 2

Caution in wiring

1. Avoid absolutely the connection of the dotted lines on Fig. 3 to prevent the Flame Detector damage.
2. Regardless of single or multi-burner application, a separate leadwire run is necessary between the junction box and Protectorelay. In addition, do not wire in the same conduit together with the control output signal wires and power wires.

Caution in sighting pipe mounting

1. Sighting pipe material

Use a black pipe to prevent the reflection of ultraviolet radiation, and a heat-resisting pipe.

2. Sighting pipe dimensions

Determine the pipe sizes larger in diameter and shorter in length as much as possible by combining the same pipes or reducer to obtain the most stable flame current in relation to the sighting distance and sighting angle.

3. Sighting pipe mounting

- (1) Focus on the flame from diagonally downward position above the burner and prevent the buildup of soot/dirt on the viewing window and in the pipe.
- (2) Weld temporarily one end of the sighting pipe to the combustion chamber plate and mount the flame detector to the other side of the pipe. Weld permanently after No. (3) checkout and adjustments are completed.
- (3) Make sure to perform the down-turn test for each burner in case of supervising each or both pilot burner and main burner. Position the flame detector to detect the positive ignition and stable flame current.

4. Air purging

When air cooling, smoke prevention, dust prevention, etc. become necessary, conduct the air purging with clean air.

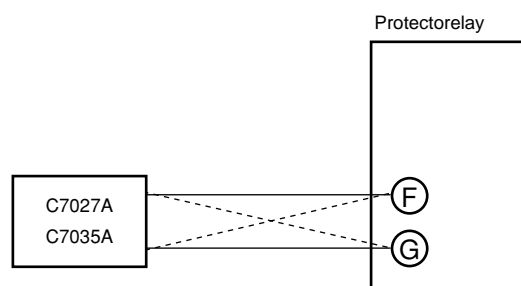


Fig. 3

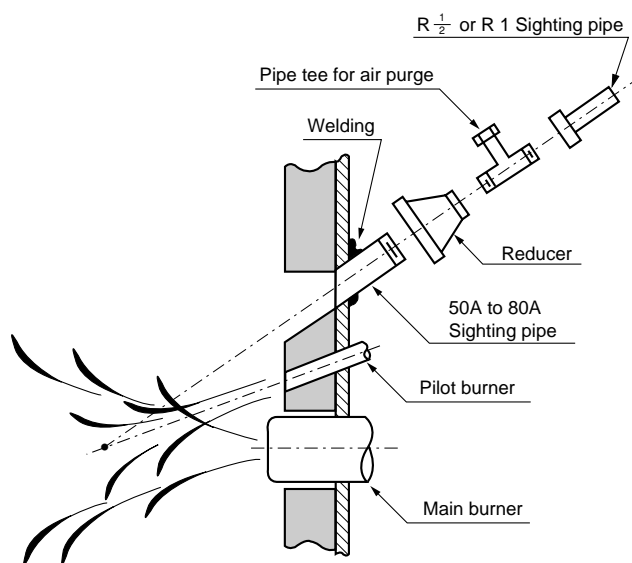


Fig. 4

Specifications are subject to change without notice.

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Printed in Japan. (H)
1st Edition: Issued in Sep., 1999