

1.0 Description

The Honeywell Flame Monitor System is designed to detect ultraviolet radiation emitted by a hydrocarbon flame. A system consists of two sensors, LG1093, and one amplifier EG1033. The amplifier drives the sensors and provides an output for flame detection.

1.1 Amplifier

Each amplifier will power up two sensors. The dimensions are 6.62 x 4.25 x 2.32 inches for the EG1033AA and 6.62 x 4.25 x 4.44 inches for the EG1033AB, AC and AD. The amplifiers are mounted through four .20 diameter holes 6.00 x 2.00 inches apart.

1.2 Sensors

The sensors operate at 350 Vdc which is supplied by the amplifier. The sensors respond to ultraviolet light with a spectral range of 1850 to 2650 angstroms. The LG1093AA sensor has a 3/4 NPT internal thread provided for attachment to the burner and a one inch external conduit thread for attachment to electrical conduit. The sensors are equipped with an internal 511 ohm, 2 watt wire wound current limiting resistor.

The LG1093AB, AC sensor housing has a 1.73 inch O.D. by .14 inch wide flange to clamp the sensor to the burner. The LG1093AB has a two pin connector and the LG1093AC has a two conductor armored cable provided for connection to the control panel. These sensors are equipped with internal 511 ohm, 2 watt wire wound resistor in series with a diode for current limit and reverse polarity protection.

2.0 Electrical Characteristics

2.1 Power Input

<u>Device</u>	<u>Power Requirements</u>
EG1033AA	28 ± .14 Vdc 0.5 amps max.
EG1033AB	117 Vac ± 10%, 60 Hz, 10 watts max.
EG1033AC	20 to 35 Vdc, 10 watts max.
EG1033AD	20 to 35 Vdc, 10 watts max.

Note: The difference between the EG1033AC and AD amplifiers is on the AD amplifier, the chassis ground shield connection can be separated from the input power low.

2.2 Amplifier Output

<u>Device</u>	<u>Output</u>
EG1033AA	Transistor Open Collector Flame 0.01 to 0.4 Vdc at 100 ma. No Flame <. 1 ma at 28 Vdc
EG1033AB,AC, AD	Relay Contacts, 2 amps max. at 28 Vdc

2.3 Flame Detect Time

Typical 0.1 sec.
Max 1.0 sec.

2.4 Flame Loss Detect Time

0.2 sec. max.

3.0 Environmental

3.1 Amplifier

3.1.1 Vibration

.07 P-P displacement 5 to 15 Hz
1.0 ± .2 g 15 to 120 Hz

3.1.2 Temperature

Operating 30°F to 131°F
Storage -65°F to 140°F

3.2 Sensor

3.2.1 Vibration

LG1093AA

.07 in./sec. to 200 Hz
.35 in./sec. to 500 Hz
Equivalent to 2.5 g acceleration

LG1093AB,AC

.1 in Double Amplitude at 50 Hz
.0001 in Double Amplitude at 1200 Hz
8 g's acceleration

3.2.2 Temperature

Operation - 40°F to 350°F

3.2.3 Window Pressure Temperature

150 PSIG at 400°F
750 PSIG at Room

3.2.4 Special Certifications


3.2.4.1 Explosion Proof


The LG1093AA is Factory Mutual explosion proof tested to Class I Divisions I and 2, Groups B, C, and D.

3.2.4.2 European Certification

The Flame Ultraviolet products Amplifiers EG1033AA, EG1033AC and EG1033AD along with Sensor LG1093AA meet Electromagnetic Compatibility Directive 89/336/EEC and Low Voltage Directive 73/23/EEC.

The following Flame Ultraviolet sensors comply with European Directive 94/9/EC.

Sensors LG1093AA34, 35 and 36 for marking  code II 2G EE_x d IIA T3.

Sensors LG1093AA44, 45 and 46 for marking  code II 2G EE_x d IIC T3.