

ELECTRONIC FLAME SUPERVISION SYSTEM STATUS INDICATOR

MODEL: SSI

Revision: 0

BULLETIN
7167

DESCRIPTION

The model 7167 System Status Indicator is an accessory for the Pyronics Sens-A-Flame II models 7131 and 7112. It mounts on a control panel to provide these functions :

- Indicate status of light off program :
 - Purging
 - Purge Complete
 - Flame On
 - Reset required
- Monitor four limits
- Record a momentary electrical outage

In the event of a system failure, the 7167-SSI shows the cause of the shutdown.

- Electrical power interruption
- An open limit switch
- The number of the first burner out

The 7167-SSI has a gasketed and sealed display enclosure that mounts in your control panel. The four limit switches are monitored by 4 LED solid state lights normally unlighted. Four other LED lights monitor the Sens-A-Flame II light off sequence. A ninth LED light will record a momentary outage. Loss of a burner is displayed numerically in a center window.

An optical sensing cover replaces the normal Sens-A-Flame II cover and plugs into the display head.

An alarm contact output is available for powering an alarm to audibly call the operators attention to a system problem.

SPECIFICATIONS

Voltage : 120V 50/60Hz +10% -15%

Power Consumption : 12VA

Ambient Temperature : 0 degrees to 125 degrees F (-16 degrees to 52 degrees C)

Controls : Annunciator : Acknowledge/Reset
Memory : Clear/Store
Reset : (Option) Resets Sens-A-Flame II

Display Lights : Solid State LED's

Cable Length : 10 foot standard

Overall Size : 9.25" Wide x 4.5" High x 5.8" Deep

Mounting : Refer to dimension drawing on page 2



FEATURES

- Panel mount display of Sens-A-Flame II indicator lights
- Numeric display, indicating burner failure location
- System monitors burners, limit switches, and power loss displaying cause of shutdown
- LED indicators eliminate bulb failures
- Gasketed and sealed display enclosure to prevent entrance of dust and dirt
- Optional display mounted reset switch

APPLICATIONS

- Reduce maintenance time. Display locates problems fast and identifies specific burner location.
- Simplify light-off. Follow Sens-A-Flame II program sequence using panel mounted display.
- Minimize unauthorized access to control center. Reset combustion safeguard from panel without opening the control enclosure.

CAUTION: Operation of combustion equipment can be hazardous resulting in bodily injury or equipment damage. Each burner should be supervised by a combustion safeguard and only qualified personnel should install, make system adjustments and perform any required service.



pyronics inc.

COMBUSTION FOR INDUSTRY

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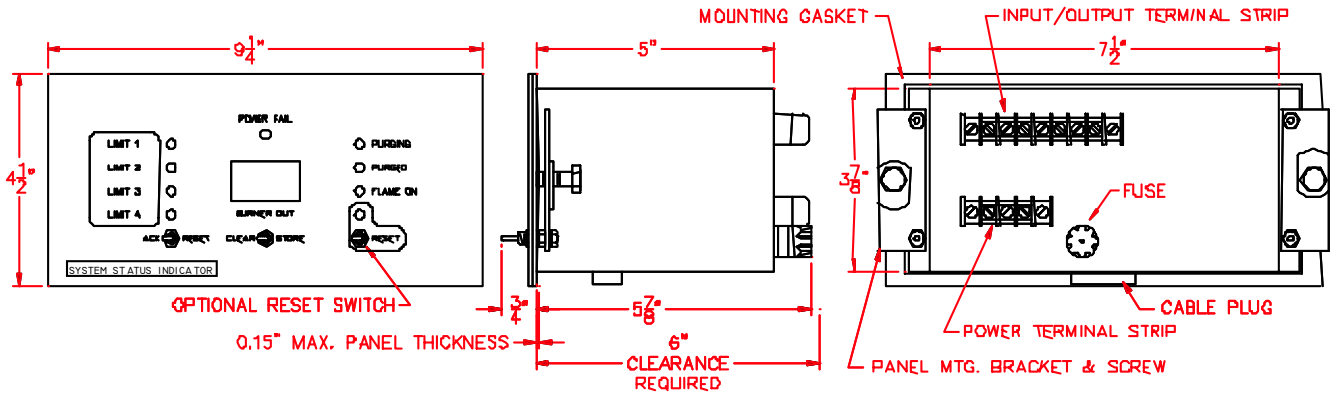
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DIMENSIONS / DISPLAY UNIT

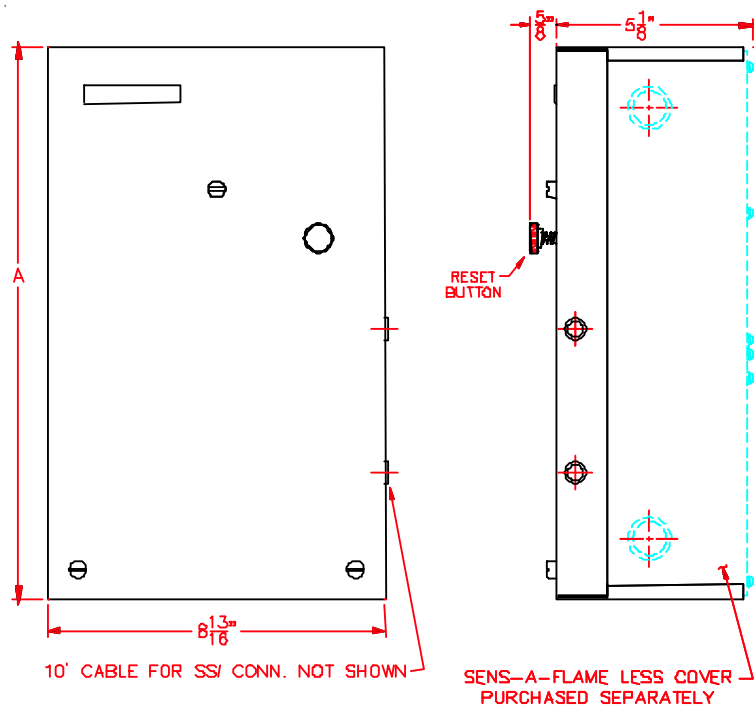


DIMENSIONS / OPTICAL DETECTOR UNIT

NOTE :

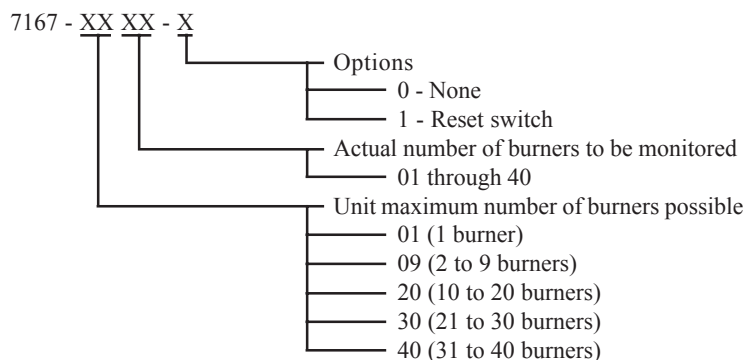
1. All Dimensions are in inches
2. All Weights are in pounds
3. Shipping Weight is combined total of display & optical detector units

A	Used On	Weight
8-1/4	Single burner unit	11.50
14-1/8	2-20 burner unit	12.00
20	21-40 burner unit	13.25



ORDERING INFORMATION

1. For use with model 7112 or 7131 Sens-A-Flame II
2. 10 foot standard cable length. Consult factory for other cable lengths
3. Specify Shipping instructions



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INSTALLATION

1. Make cutout according to figure 1, allowing 6" clearance behind panel.
2. Remove 2 mounting brackets and 4 mounting nuts as attached to the Display Unit. **Do not** remove the nuts holding the housing to the display unit's front panel. (See display unit dimensions on page. 2)
3. Insert display unit into cutout. Replace mounting brackets and secure with 4 mounting nuts.
4. Align the display unit in the panel and tighten the 2 hold down screws to secure the unit to the panel.
5. Connect power (120V 50/60Hz) to the 3 input power terminal strip. Ground the unit using the appropriately marked input on the terminal strip. Ensure that power is supplied from ahead of the limit circuit.
6. Mount the Optical Detector Unit (in place of cover) onto the Sens-A-Flame II. NOTE : The mounting screw thread may be different on the optical detector unit from the original, if so replace the slide on fasteners using those provided with unit. Route the cable from the Optical Detector Unit to the Display Unit. Isolate the cable from line or high voltage wiring. Plug the cable into the connector at the bottom of the Display Unit.
7. Connect limits to the 7 input terminal strip in the manner outlined in figure 2.
8. An alarm can be connected to the Alarm terminals of the 7 input terminal strip. See figure 2 for two possible configurations.
9. Type the name for each limit on the pressure sensitive label. Limit one's name goes on the top slot. Remove the backing and place the label over the bordered area surrounding the titles "limit 1" through "limit 4".

FIGURE 1

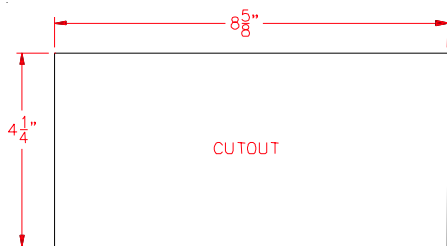
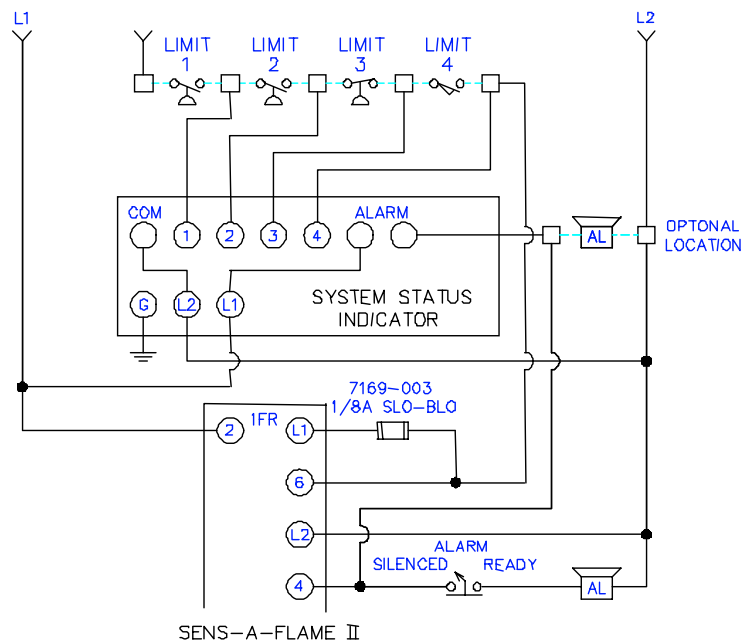


FIGURE 2



CAUTION: Operation of combustion equipment can be hazardous resulting in bodily injury or equipment damage. Each burner should be supervised by a combustion safeguard and only qualified personnel should install, make system adjustments and perform any required service.



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INSTALLATION CHECK-OUT

1. Check all wiring for proper connection and polarity. Examine for short circuit or loose connections. Do not stress, pull or cut the Optical Detector Unit cable assembly.
 2. Verify that the Optical Detector Unit cable assembly is isolated from line or high voltage wiring.
 3. The Optical Detector Unit cover must be squarely mounted on the Sens-A-Flame II chassis. The cover must be fully seated and properly engaged. Do not overtighten mounting screws, finger tight is adequate.
 4. Close or short all limit switches.
 5. Power up the limit circuit and the System Status Indicator. All SSI limit fail lights and the "Power Fail" light should illuminate for about 1 second. The "Power Fail" light should remain on. If the Sens-A-Flame II is powered, then a burner out number and status light will be lit (either "Purging" or "Reset").
 6. Toggle the "Ack/Reset" switch toward Reset. All lights and all burner out number segments on the front panel should illuminate as long as the switch is held in the reset position. When the switch is released, all limit fail lights and the "Power Fail" light will go out.
 7. Perform the following for every limit :
 - a) Remove the short or open a limit. The limit light corresponding to the opened limit will begin to flash. An alarm horn will sound if it is powered from the SSI alarm terminal.
 - b) Toggle the "Ack/Reset" switch toward Ack, the alarm horn will silence and the limit light will stop flashing and remain on.
 - c) Short or close limit.
 - d) Toggle the "Ack/Reset" switch toward Reset, all lights and number segments will illuminate. When the switch is released, no limit fail lights will be on.
 8. With all limits closed and the SSI reset, allow the Sens-A-Flame II to sequence through its start up cycle. Verify that the "Purging" light comes on and remains on for the full length of the purge period. Verify that the "Purged" light comes on and the "Purging" light goes out after the purge time delay. Verify that the "Flame On" light comes on and the "Burner Out" number goes out when all burner flames have been established.
- Note : Initially if the "Reset" light is on or the "Purging" light does not come on, either toggle the "Reset" button or directly press the Sens-A-Flame II red reset pushbutton.
- Note : Erroneous numbers, a multiple display, or a blank display may indicate light leakage into the Optical Detector Unit. Check that the cover is properly installed.
9. Intentionally cycle Sens-A-Flame II through an ignition trail failure and verify the "Reset" light comes on. If unit has a "Reset" switch, toggle it and verify the "Purging" light comes on.

FRONT VIEW OF DISPLAY UNIT



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OPERATING INSTRUCTIONS

1. Power the SSI. All limits fail lights and the "Power Fail" light will illuminate for about 1 second. The "Power Fail" light will remain on.

2. Toggle the "Ack/Reset" Switch into the Reset position. All lights and number segments will light up. When the switch is released one of the following will occur :

a) One or more limits open. - The limit light corresponding to the open limit closest to L1 will be flashing and the Power On light will be off. If controlled by the SSI, an alarm horn (optional) will sound.

Toggle the "Ack/Reset" switch into the Ack position. The alarm horn (optional) will be silenced and the limit light will remain on continuously.

Close the open limit switch. Repeat step 2.

b) No limits open. - All the "Limit" lights and the "Power On" light are off.

Continue through start up.

3. With all limits closed, Sens-A-Flame II may be powered (depends on the control circuit configuration). When Sens-A-Flame II is powered, a status light and a "Burner Out" number will be on.

4. Place the "Clear/Store" memory switch in the Clear position during start up. The "Burner Out" display will then directly indicate which burner out light on the Sens-A-Flame II is illuminated. The display will follow the flame out indicator during light off, always displaying one unlighted burner until all burners have ignited.

5. Cycle the Sens-A-Flame II through its start up cycle. An illuminated light will indicate the programming sequence as the Sens-A-Flame II program progresses :

"Purging" - Sens-A-Flame II purge delay in progress

"Purged" - Purge period completed

"Flame On" - All flames on

"Reset" - Reset of Sens-A-Flame II required

6. When Flame is proven for all burners ("Flame On" illuminated) place the "Clear/Store" memory switch in the Store position. This will enable the memory circuit to display and retain the first burner out. The "Burner Out" display will retain the burner out indication until the memory switch is set to Clear.

Ignition Failure

When all pilot (or burners) do not ignite within the ignition trail period, the Sens-A-Flame II will lock out ("Reset" light on) and must be reset. The "Purged" light will go out. Reset the Sens-A-Flame II by operating the momentary "Reset" switch on the SSI. Without the reset switch option, the Sens-A-Flame II is reset by pressing the red button on its cover.

The "Reset" light will go out and the "Purging" light will come on.

Repeat the start up cycle beginning with step 4.

Flame Failure

The "Flame On" light will go out and the "Burner Out" display will show the number of the burner whose flame went out first. For a recycling Sens-A-Flame II : the "purging" light will come on as the Sens-a-Flame For a non-recycling Sens-A-Flame II : Reset as described under Ignition Failure above.

Limit Failure

In the event of a limit failure, the front panel "Limit" light corresponding to that limit will begin to flash and an alarm horn will sound if it is in the circuit. Place the "Ack/Reset" switch into the Ack position momentarily. The alarm is silenced and the limit light stays on continuously.

Service the limit.

Repeat the start up procedure beginning with step 2.

Power Interruption

In the event of a power interruption, the "Power Fail" light will be illuminated. The alarm horn will not be activated. If a shutdown occurred, repeat the start up procedure. If not, momentarily toggle the "Ack/Reset" switch toward Reset

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