CONCEPT
smoke screen


# SMOKE SCREEN INTERFACE
# Installer Guide

**(Sentinel Version 1 December 2015)**

CAN'T SEE IT? CAN'T STEAL IT!

# OVERVIEW

The Smoke Screen Interface (SSI) is an easily installed control panel that gives the End-User a simple interface with a Smoke Screen to provide status indications, a means of isolating the Smoke Screen from operating or stopping an inadvertent activation and a test facility.

# PCB LAYOUT

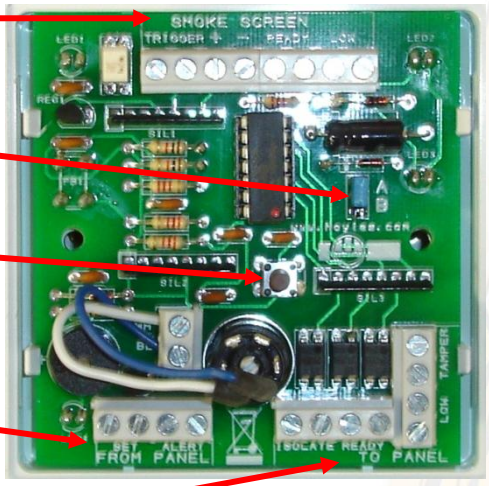
Outputs to and inputs from the Smoke Screen

Jumper “AB” (has no function)

SSI case tamper switch

Inputs from the Alarm Panel

Outputs indications to the Alarm Panel




# PCB CONNECTION PINS

**“Smoke Screen”**

Power supply and status information from the Smoke Screen.

| PCB Pin | Function | Smoke Screen Connection | | SSI Operation | Notes |
|---|---|---|---|---|---|
| TRIGGER | Trigger output. | Trigger | | Bridges the connected circuit when the SSI Keyswitch is selected to “Isolate” and/or when the Smoke Screen is not “Ready”. | Used to permit work on the IAS without firing the Smoke Screen. The Smoke Screen “Alarm” and “Trigger” pins are normally connected in parallel as shown in the schematics below. |
| TRIGGER | | Trigger | | | |
| + | 12v DC in. | 12v | | Power supply. | The SSI max load is 60 mA. The basic level of Concept Smoke Screen provides sufficient power for an SSI and a PIR under normal use. |
| - | 0v DC in. | 0v | | | |
| READY | Ready input. | Ready com | Low Temp com | Detects a clean, normally closed circuit going open to indicate that the Smoke Screen is NOT “Ready” to operate. | Do not apply a voltage to these pins.<br><br>Use of “Ready” or “Low Temp” depends on which model of PCB is fitted to the Sentinel in use. |
| READY | | Ready n/c | Low Temp n/c | | |
| LOW | Low fluid input. | Liquid Status com | Low Fluid com | Detects a clean, normally open circuit going closed to indicate that the Smoke Screen fluid is low or empty. | Do not apply a voltage to these pins.<br><br>Use of “Ready” or “Low Temp” depends on which model of PCB is fitted to the Sentinel in use. |
| LOW | | Liquid Status n/o | Low Fluid n/o | | |

**“From Panel”**

Inputs from the Alarm Panel to activate the Smoke Screen and permit the easy use of the SSI test facility.

| PCB Pin | Function | SSI Operation | Notes |
|---|---|---|---|
| SET | Set input from Alarm Panel. | Detects a clean, normally closed circuit going open to indicate that the Alarm System is Set. | Do not apply a voltage to these pins. |
| SET | | | |
| ALERT | Alert input from Alarm Panel. | Detects a clean, normally closed circuit going open to indicate that the Alarm System has an intruder alert. | Do not apply a voltage to these pins. |
| ALERT | | | |

**“To Panel”**

Smoke Screen and SSI status outputs to the Alarm Panel.

| PCB Pin | Function | SSI Operation | Notes |
|---|---|---|---|
| ISOLATE | SSI isolated output to Alarm Panel. | Clean contacts going open when the SSI keyswitch is selected to “Isolate”. | Use to provide Smoke Screen status information to the Alarm Panel. |
| ISOLATE | | | |
| READY | Ready status output to Alarm Panel. | Clean contacts going open when the Smoke Screen is NOT ready to operate. | Use to provide Smoke Screen status information to the Alarm Panel. |
| READY | | | |
| LOW | Low fluid output to Alarm Panel. | Clean contacts going open when the Smoke Screen fluid is low or empty. | Use to provide Smoke Screen status information to the Alarm Panel. |
| LOW | | | |
| TAMPER | SSI case tamper output to Alarm Panel. | Clean contacts going open when the SSI case is open. | Use to provide Smoke Screen status information to the Alarm Panel. |
| TAMPER | | | |

## SSI CASE TAMPER

The SSI has a tamper switch located on the PCB just above the keyswitch. This provides a tamper output signal via the pins on the “To Panel” terminals – see the section above regarding PCB Pins. The switch is operated by a tapered spring (included in the package) which should be fitted during installation.

# INSTALLATION CONNECTIONS

Cable entry into the SSI is either via the cut-out in the rear of the enclosure or the installer can drill holes as required in the side of the back-case. Connection schematics for different models of Sentinel PCB are given at the end of this guide; these show example setups to achieve the following functions:

- A full installation that permits easy use of the SSI activation test facility that is independent of the Alarm Panel condition, ie the Alarm Panel "Set" and "Alert" are connected to the Smoke Screen through the SSI.

- A limited installation that requires the Alarm Panel to be Set and in Alert to activate the Smoke Screen using the "Test" button, ie the Alarm Panel "Set" and "Alert" are connected directly to the Smoke Screen.

# OPERATION

### Normal Indications

| LED Indication | | Sound Indication | Meaning |
|---|---|---|---|
| Blue LED. | On | None. | The SSI has power. |
| Green "Ready" LED. | On | None. | The Smoke Screen has warmed up and is 'Ready' for operation. |
| Red "Low Fluid" LED. | Off | None. | The Smoke Screen has sufficient fluid. |
| Yellow "Isolate" LED. | Off | None | The Smoke Screen will operate on command from an Alarm Panel and/or a hold-off device such as a PIR detector |

### Isolate Key Function

| Key Position | Green "Ready" LED | Yellow "Isolate" LED | Sound Indication | Meaning |
|---|---|---|---|---|
| "Isolate" | On | On | Beep once every 60 seconds. | **The Smoke Screen will not activate** regardless of any command from an Alarm Panel and/or a hold-off device such as a PIR detector. |
| | Off | On | | The Smoke Screen is warming up to operating temperature or mains power is not switched on. If mains power has been applied to the Smoke Screen for more than 1 hour there is a critical fault. |
| "Ready" | On | Off | None. | The Smoke Screen is 'Ready' for operation. |
| | Off | Off | Beep once every 5 seconds for 60 seconds then once every 60 seconds for 29 minutes and cycle repeated every 30 minutes or until the issue is resolved. | If mains power has been applied to the Smoke Screen for more than 1 hour there is a critical fault. |

NB: To avoid inadvertent or malicious setting changes the key can be removed in both positions.

## Smoke Screen Activation Test Function

- **Entering Test Mode.** Select the keyswitch to “Isolate” whilst pressing the “Test” button then release the “Test” button. The SSI will now beep permanently to indicate it is in Test Mode.

- **Testing the Smoke Screen.** When in Test Mode, as long as any directly attached detectors, ie PIR or door contacts, are operated, pressing the “Test” button will activate any connected Smoke Screen until the button is released or until the pre-programmed timer limit is reached, whichever comes first.

    - **NB:** If the Smoke Screen is connected directly to an alarm system rather than through the SSI (such as shown in the ‘Limited SSI function schematics’) the alarm panel must be also be “Set” and be in an alarm condition for the test facility to operate.

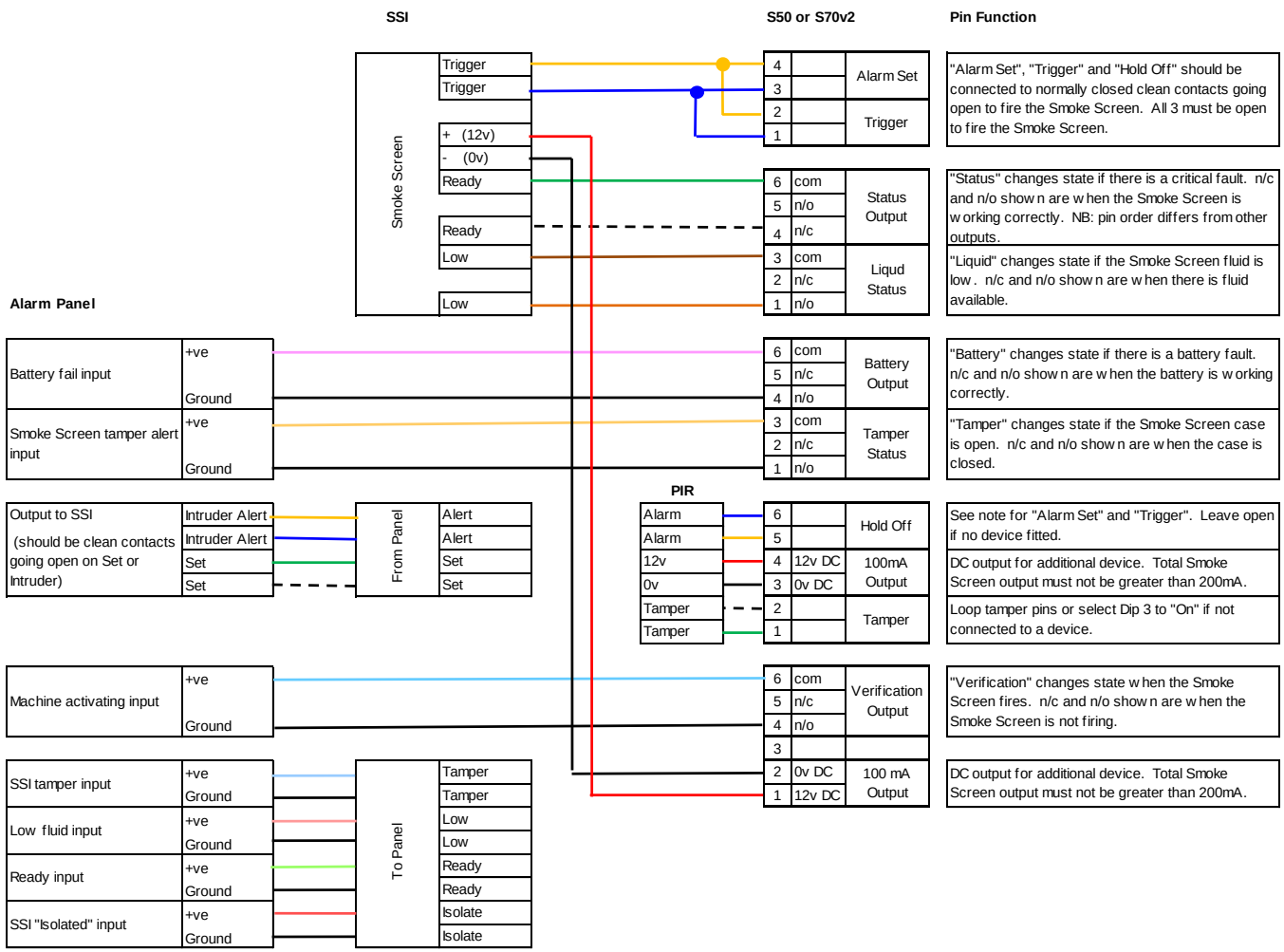
- **Exiting Test Mode.** Select the keyswitch to “Ready” and then to any desired setting. The SSI will stop beeping permanently to indicate that it is not in Test Mode.

## Fault Conditions

| LED Indication | | Sound Indication | Meaning |
|---|---|---|---|
| Blue LED. | Off* | None. | The SSI has no power. Check that the Smoke Screen and any associated Alarm Panel has power. |
| Green “Ready” LED. | Off* | Beep once every 5 seconds for 60 seconds then once every 60 seconds for 29 minutes and cycle repeated every 30 minutes or until the issue is resolved. | If mains power has been switched on for more than 1 hour the Smoke Screen has a critical fault. |
| Red “Low Fluid” LED. | On | Beep once every 5 seconds for 60 seconds then once every 60 seconds for 29 minutes and cycle repeated every 30 minutes or until the issue is resolved. | The Smoke Screen fluid requires replenishment. |

*** = <u>The Smoke Screen will not activate</u>** in these fault conditions.

**S50 & S70v2, PIR, IAS and full function SSI connection schematic**




**Notes:**

This system enables the SSI "Test" facility to activate the Smoke Screen, as long as any hold-off is opened, irrespective of the Alarm Panel state.

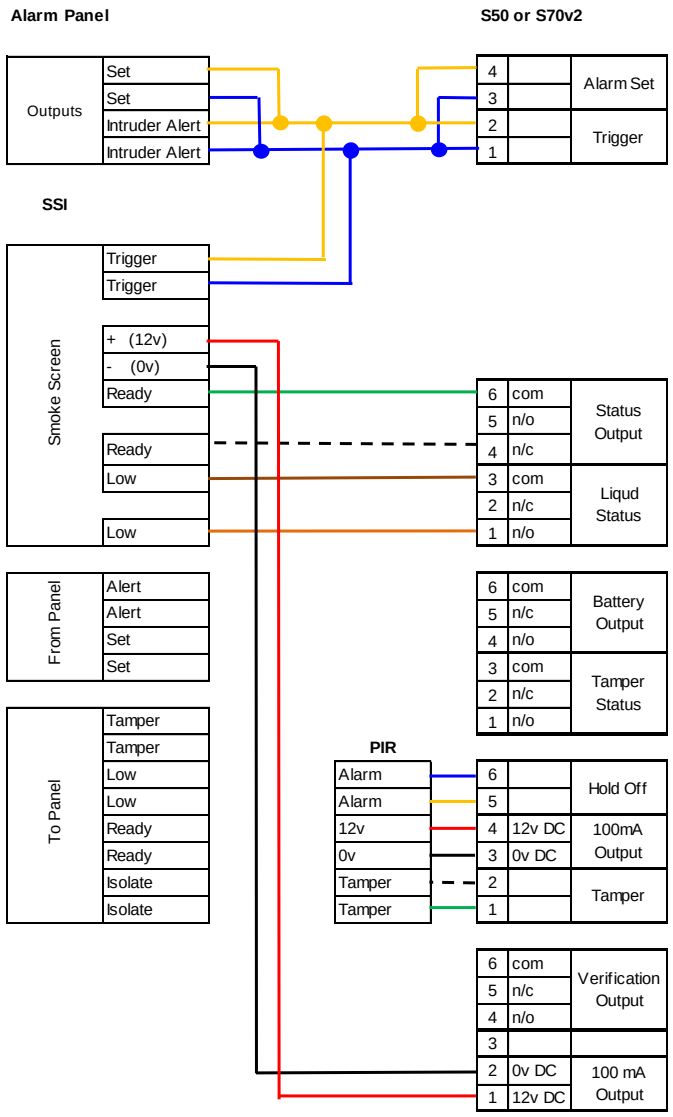
This schematic shows the relevant pin connections, not specific cable runs. Installers should select appropriate 8 or 12 core cable and strand colours to suit the specific situation.

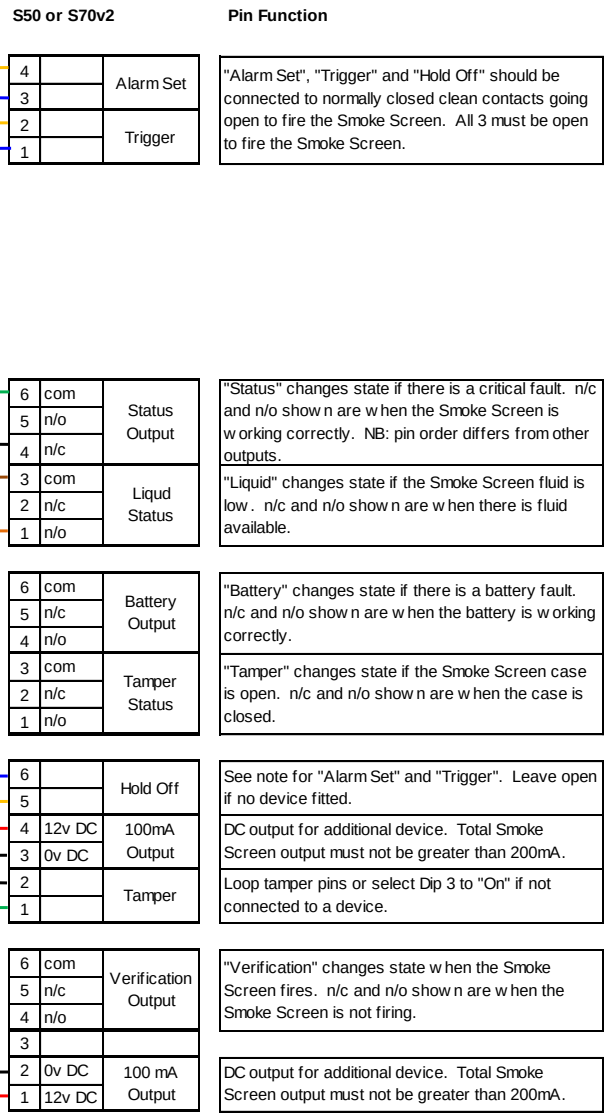
The SSI is shown as the 3 separate terminal sets.

Alarm Panel contacts should be clean relay closed pairs energising open on set / intruder.

To simplify this schematic the connection pins may not necessarily be shown in the same order as the relevant unit.

**S50 & S70v2, PIR, IAS and limited function SSI connection schematic**




**Pin Function**

"Alarm Set", "Trigger" and "Hold Off" should be connected to normally closed clean contacts going open to fire the Smoke Screen. All 3 must be open to fire the Smoke Screen.

"Status" changes state if there is a critical fault. n/c and n/o shown are when the Smoke Screen is working correctly. NB: pin order differs from other outputs.

"Liquid" changes state if the Smoke Screen fluid is low. n/c and n/o shown are when there is fluid available.

"Battery" changes state if there is a battery fault. n/c and n/o shown are when the battery is working correctly.

"Tamper" changes state if the Smoke Screen case is open. n/c and n/o shown are when the case is closed.

See note for "Alarm Set" and "Trigger". Leave open if no device fitted.

DC output for additional device. Total Smoke Screen output must not be greater than 200mA.

Loop tamper pins or select Dip 3 to "On" if not connected to a device.

"Verification" changes state when the Smoke Screen fires. n/c and n/o shown are when the Smoke Screen is not firing.

DC output for additional device. Total Smoke Screen output must not be greater than 200mA.

**Notes:**

In this system, to use the SSI "Test" facility to activate the Smoke Screen, the Alarm Panel has to be set and have an intruder alarm and any hold-off must be opened.

The SSI "To Panel" outputs can be used to provide information to the Alarm Panel. These outputs are clean contacts going open on 'fault'.

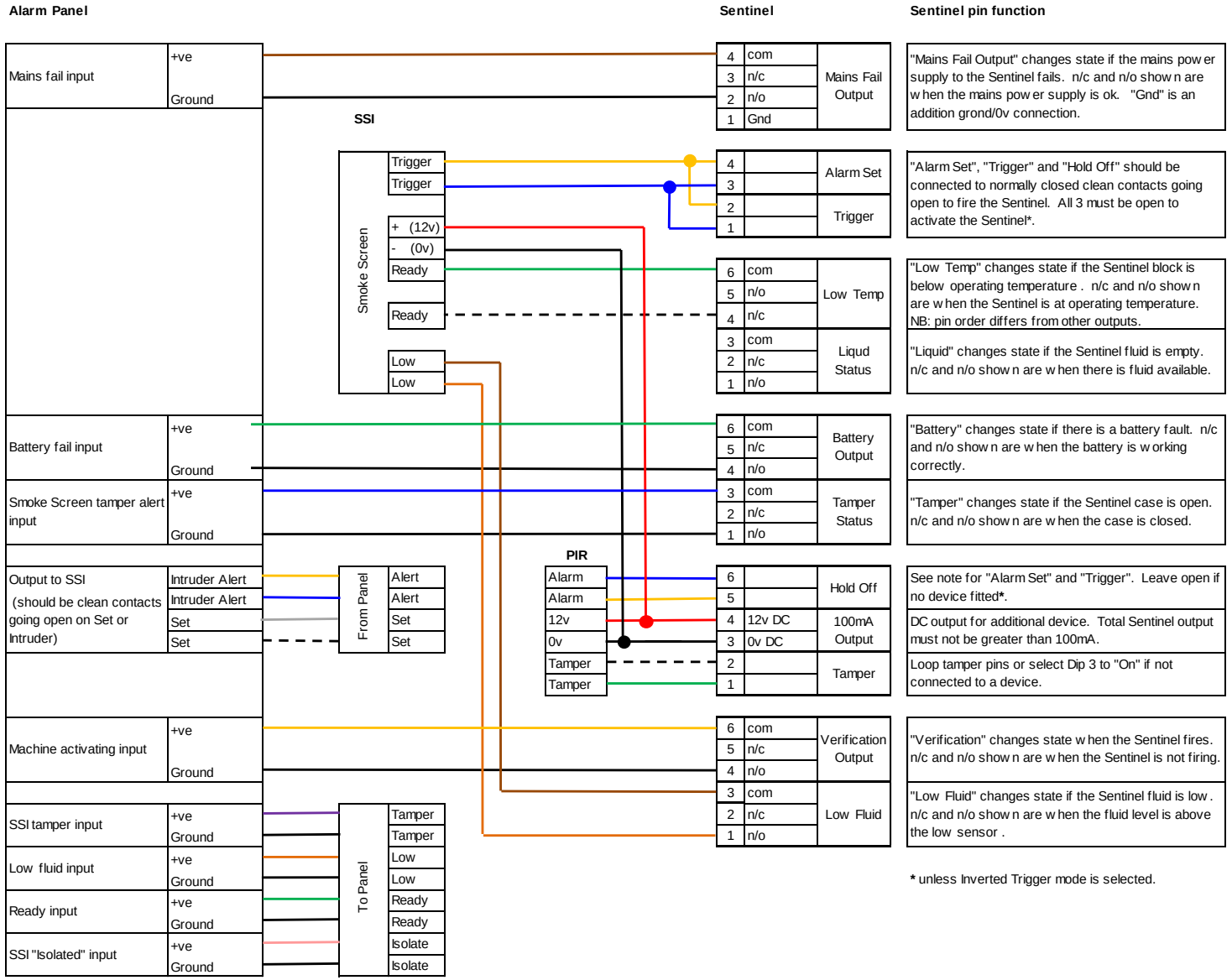
This schematic shows the relevant pin connections, not specific cable runs. Installers should select appropriate 8 or 12 core cable and strand colours to suit the specific situation.

The SSI is shown as the 3 separate terminal sets.

Alarm Panel contacts should be clean relay closed pairs energising open on set / intruder.

To simplify this schematic the connection pins may not necessarily be shown in the same order as the relevant unit.

**Sentinel, PIR, IAS and full function SSI connection schematic**




***** unless Inverted Trigger mode is selected.

**Notes:**

This system enables the SSI "Test" facility to activate the Smoke Screen, as long as any hold-off is opened, irrespective of the Alarm Panel state.

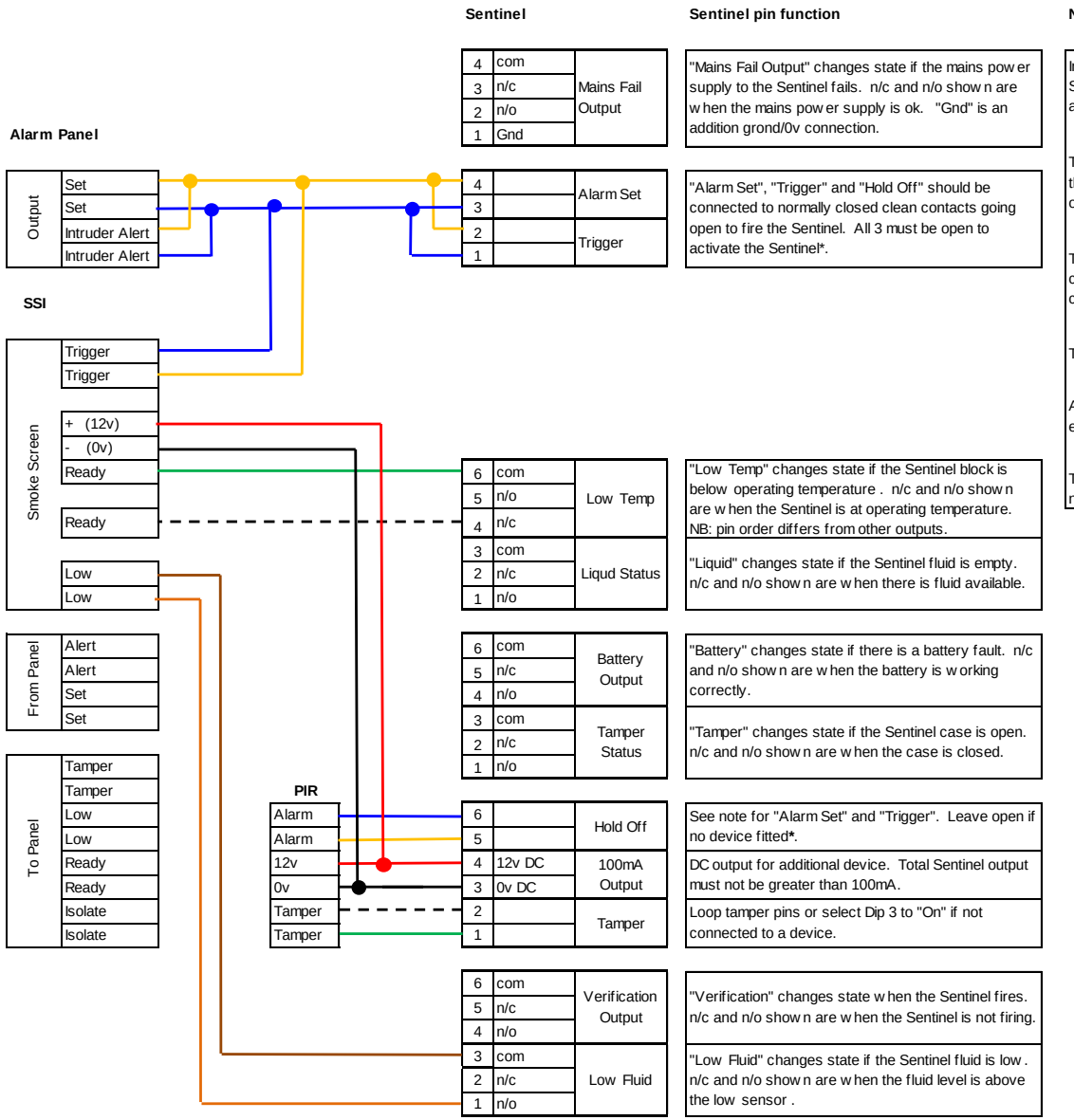
This schematic shows the relevant pin connections, not specific cable runs. Installers should select appropriate 8 or 12 core cable and strand colours to suit the specific situation.

The SSI is shown as the 3 separate terminal sets.

Alarm Panel contacts should be clean relay closed pairs energising open on set / intruder.

To simplify this schematic the connection pins may not necessarily be shown in the same order as the relevant unit.

**Sentinel, PIR, IAS and limited function SSI connection schematic**




In this system, to use the SSI "Test" facility to activate the Smoke Screen, the Alarm Panel has to be set and have an intruder alarm and any hold-off must be opened.

The SSI "To Panel" outputs can be used to provide information to the Alarm Panel. These outputs are clean contacts going open on 'fault'.

This schematic shows the relevant pin connections, not specific cable runs. Installers should select appropriate 8 or 12 core cable and strand colours to suit the specific situation.

The SSI is shown as the 3 separate terminal sets.

Alarm Panel contacts should be clean relay closed pairs energising open on set / intruder.

To simplify this schematic the connection pins may not necessarily be shown in the same order as the relevant unit.

***** unless Inverted Trigger mode is selected.

# INSTALLER NOTES

# INSTALLER NOTES

# Concept Smoke Screen Limited

1-2 North End, Swineshead, Lincolnshire, PE20 3LR
United Kingdom

Tel: +44 (0) 1205  821111  Fax : +44 (0) 1205 820316

Email: info@smoke-screen.co.uk  www.smoke-screen.co.uk