CONCEPT
smoke screen

TITANIUM Ti70/Ti100/Ti150
INSTALLATION AND OPERATION

MANUAL

VERSION: 28 November 2019

Thank you for purchasing a Concept Smoke Screen Titanium system. Your choice to protect your property and premises with this equipment has given you the use of one of the most effective security systems currently available. Concept Smoke Screen systems have been in service for over 35 years and have protected many millions of pounds worth of property, defeating criminals and securing premises on an almost daily basis.

The Titanium line in particular is home to some incredibly sophisticated and flexible security fog generators, borne from years of development and refinement.

Please take the time to read and understand this guide to ensure you achieve the maximum performance from your Smoke Screen. If you have any questions that remain unanswered, please call our experts at Concept Smoke Screen and we will help. Once again, thank you for your decision; we hope that it's one that never needs to be tested.

Matt Gilmartin, Managing Director

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General 1

1.1 SAFETY INSTRUCTIONS

Before installing and using the Smoke Screen read, follow and retain this manual and safety instructions for future reference.

To reduce the risk of severe injury or death to persons, or damage to the Smoke Screen:

- Do not work on the Smoke Screen unless qualified by the manufacturer to do so.
- Disconnect the mains power supply before working in the heater block compartment or anywhere that mains voltage is indicated by the warning labels shown below.
- Install in accordance with the instructions in this manual.
- Operate the Smoke Screen only from the type of power source indicated on the label.
- Do not modify the Smoke Screen.
- Adjust only the controls specified in this manual.
- Use only consumables and replacement parts specified by the manufacturer.
- Do not spill liquid of any type on, or inside, the Smoke Screen.

The following signs, or a variation, may be used for safety notices in this manual or on the Smoke Screen:

WARNING

This type of warning note is used to indicate possible electrical shock hazards that may cause serious injuries or death.

CAUTION

This type of warning note is used to indicate the possibility of injury caused by hazards other than electrical shock.

1.2 HOW DOES YOUR SMOKE SCREEN WORK?

Your Smoke Screen passes a non-toxic fluid through an efficient heat exchanger to create smoke, or more accurately a thermally generated fog that obscures visibility, discouraging intruders from entering your premises.

This fog is very persistent and will stay suspended in the room for a significant length of time until it is vented by opening the doors and windows.

The Smoke Screen uses a sophisticated electronic control system to ensure it heats up to, and maintains, its ideal operating temperature using a minimal amount of electricity.

The control system similarly provides a flexible interface with intruder detectors, alarm systems and remote monitoring centres to ensure that you are always protected and free of inadvertent activations.

1.3 INTRODUCTION

This manual covers the Titanium line of products.

Before commencing installation of the Smoke Screen ensure that you have all of the following equipment supplied in the box:

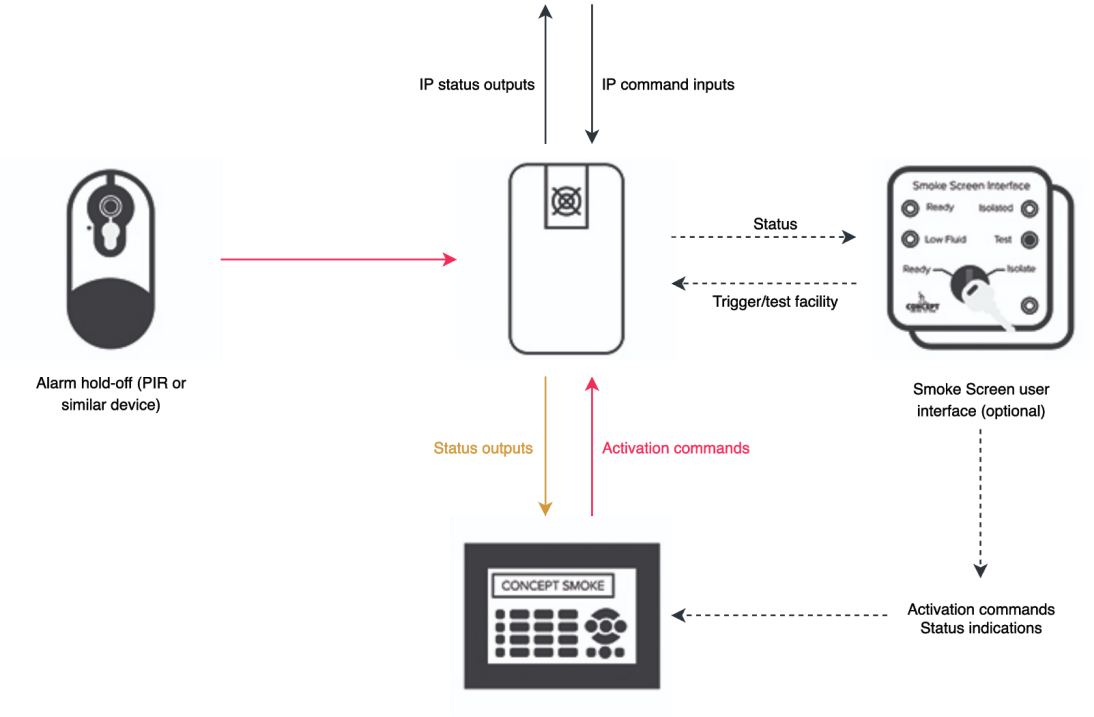
- 1 x Smoke Screen.
- 1 x Mounting bracket.
- 1 x Swift-Fit fluid reservoir.
- 2 x 12v batteries.
- 1 x literature pack and warning sign.
- 1 x Extra 30-degree Nozzle for wall mounted installation.

You will also need:

- Mains power supply ; an unswitched 13 amp fused spur connected to dedicated breaker.
- Connections into the alarm panel or other triggering system.
- PIR (or equivalent) to provide the hold-off where required.
- Optionally a Screen Sensor for top-up functionality.

1.4 OVERVIEW

The Smoke Screen is designed to form part of an existing intruder alarm system but may also be configured as a 'stand-alone' system or as part of a centrally monitored, command and control system. A typical installation is shown in the following schematic:



1.5 TYPICAL INSTALLATIONS

A Smoke Screen system can be installed in many ways; the following are outlines of typical installations (an Alarm Panel Control system is generally used for illustration in this manual):

Alarm Panel Control

- The Smoke Screen is wall or ceiling mounted in the appropriate location.
- A Hold-off PIR (or similar device) located within the same area as the Smoke Screen providing a confirmation signal to the Smoke Screen to start, or restart, 'smoke' production.
- A Set command supplied by an alarm control panel, or equivalent, in the form of an N/C (normally closed) or an N/O (normally open) relay changing state when the alarm system is set for operation.
- A Trigger command supplied by the alarm control panel, or equivalent, in the form of an N/C (normally closed) or an N/O (normally open) relay changing state when the alarm system confirms an intruder alert.

Local Network Monitoring

- The Smoke Screen is wall or ceiling mounted in the appropriate location.
- Typically, the Smoke Screen would be integrated with an alarm panel or similar controlling system as above.
- The Smoke Screen is assigned a fixed or reserved IP address and attached to the local network.
- The addition of the TitanConfig program running on the same network will allow diagnostic and configuration control from a Windows-based platform.

Remote Network Monitoring and Control

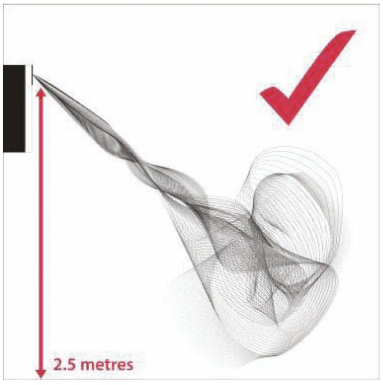
- The Smoke Screen is wall or ceiling mounted in the appropriate location.
- The Smoke Screen may be integrated with an alarm panel and/or commanded from a central location over IP.
- The Smoke Screen is assigned an IP address on the local network and communicates with a centralised remote server using ports 161 & 162.
- The Smoke Screen may be controlled using any third party platform integrated with TitanServer or through the Titanium247 cloud-based monitoring and control platform. Finally, engineering control and diagnostics are offered through TitanConfig.

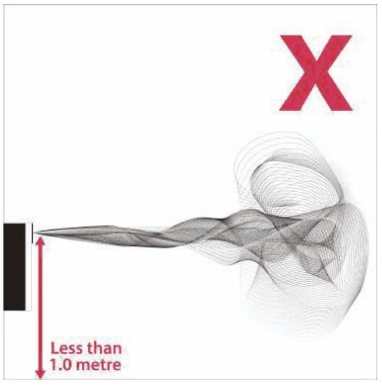
Location 2

2.1 POSITIONING

The Smoke Screen should ideally be sited in a covert position away from prying eyes and thereby reducing the possibility of tampering or an attack. The ideal place for the Smoke Screen is above a ceiling from where the smoke plume is used to its best effect, bursting on the ground and spreading outwards and upwards through 360°. If no suitable ceiling location is available then the next best location is a wall mounting close to ceiling.

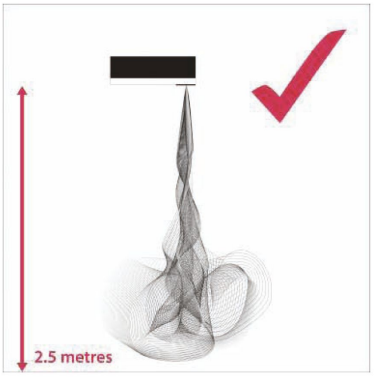
Wall-mounting

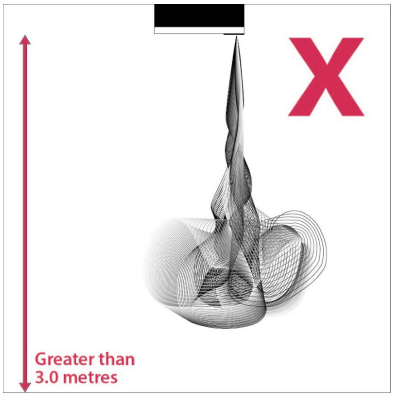




The optimum wall mounting position for the Smoke Screen is 2.5 metres above the floor facing the area to be protected and using an appropriate angle nozzle. The maximum recommended mounting-height above floor level is 3 metres, the minimum is 1 metre and there should be no obstacles within 1 metre of the smoke output nozzle. Also, leave a minimum of 150mm clearance to the ceiling.

Ceiling-mounting





The optimum wall mounting position for the Smoke Screen is 2.5 metres above the floor facing the area to be protected and using an appropriate angle nozzle. The maximum recommended mounting-height above floor level is 3 metres, the minimum is 1 metre and there should be no obstacles within 1 metre of the smoke output nozzle.

2.2 INSTALLATION PROCESS

1. Site the Smoke Screen, fix to the wall or ceiling as appropriate.
2. Make connections as required to the control system, i.e. Alarm Panel and Hold-off PIR.
3. Make connection to the Smoke Screen Interface (if used) and set the key switch to isolate.
4. Connect and turn on the mains power.
5. Turn on the internal battery back-up.
6. The Smoke Screen will heat up to operating temperature in approximately 20 minutes.
7. Make relevant programming settings and set smoke timing for the specified room size.
8. Insert a Swift-Fit fluid reservoir.
9. Make sure all tamper switches are closed.
10. If fitted set the Smoke Screen Interface key switch to 'Ready' and you are ready for test.

2.3 ACCESS

To access the PCB connections, programming panel and mounting holes (battery and fluid access is covered in the relevant sections) remove the front cover by unscrewing the set screws on either side and unhooking it from the top of the case; refitting is the reverse process. Installation cable entry is through the serrated grommet on the left back of the case.

2.4 MOUNTING

The Smoke Screen can be mounted on a ceiling or a wall using the simple standard bracket supplied with the unit. This flush-fitting bracket maximizes security by concealing all the mounting fastenings such that they can only be accessed, or the Smoke Screen dismounted, by dismantling the unit. Moreover, the Smoke Screen has a tamper protection switch to provide an alert in the unlikely event that it is disturbed. In all cases, the installer must attach the Smoke Screen to the building structure using appropriate fasteners.

NB: When mounting the Smoke Screen ensure that the airflow through the vent holes in the rear of the unit is not obstructed.

Wall and ceiling mounting

Ceiling or wall mounting is the same process except that rather than fixing the Smoke Screen direct to a ceiling an intermediate unistrut section may be used or it can be suspended as described in the next section.

Attach the bracket to the wall or ceiling using appropriate fixings.

Carefully hook the slots on the back of the Smoke Screen onto the bracket (for clarity, shown above not attached to the ceiling/wall). Slide along to align the screw fixing holes. The unit will now hang on the bracket.

Fit, and ensure tight, 2 x M6 set screw with washer in the hole in the back of the Smoke Screen alongside each of the two mounting slots. Access to the fixing holes is through the fluid and heater block compartments.

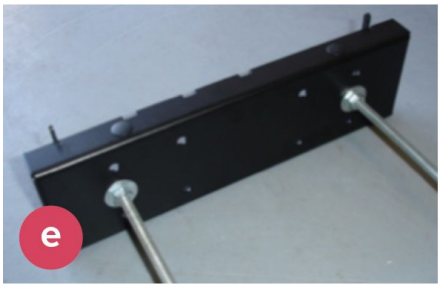
Suspension mounting

Suspending the Smoke Screen is achieved using a ‘Suspension Kit’ comprising a length of unistrut, two sections of threaded bar and fixings.

Suspension Kit Contents (all M8)

Unistrut 1 x 1 metre
Threaded bar 2 x 1 metre

Fixings:
1 x ceiling hole surround
2 x drop-in anchors
6 x full nuts
4 x 25mm washers
2 x 38mm washers
2 x channel nuts



Prepare the Smoke Screen by fitting the angle brackets. Fix the required length of M8 threaded bar to the bracket using 4 x nuts and 4 x 25mm washers.

Fix the unistrut into place. There are a range of fixings to accommodate concrete ceiling, girders etc.; if in doubt contact the fixing supplier. Attach the threaded bar to the unistrut using the channel nuts, 38mm washers and M8 nuts. Once this is done the Smoke Screen can be lifted into position and the set screws tightened as above.

Any fine adjustments can be made at this stage as the nuts and the threaded bar will take the weight of the Smoke Screen.

The final assembly, viewed ‘through the ceiling’ is in the photo. Any hole made to allow smoke through a suspended ceiling below the Smoke Screen can be made good with a cosmetic hole surround.

2.5 NOZZLE CHANGING

To change the nozzle, first remove the front cover then remove and replace the nozzle using a 12mm ring spanner. Always use a new copper sealing washer and ensure that an angled nozzle is seated in the correct orientation. The Smoke Screen is delivered with a single-hole straight nozzle and the following are also available – 2-hole horizontal, 3-hole horizontal, 1-hole 30° angle down and 2-hole 30° angle down.

WARNING

Be aware of high voltage in the block area. The electrical supply should be switched off before working in the heater block compartment.

CAUTION

This operation is usually carried out during installation. If the Smoke Screen has been in service the nozzles will be extremely hot and will cause injury if touched. Therefore, the Smoke Screen should be switched off and time should be allowed for the nozzles to cool.

Function 3

3.1 CONTROLLING THE SMOKE

Inputs

There are 6 sets of input control connections on the Smoke Screen that control activation - Alarm Set (Z1), Trigger (Z2), Top-Up (Z3), Hold Off (Z4), Panic (Z5) and Isolate (Z6). These input pins should be connected to the PCB Ground through clean contacts and can be programmed to “Normally closed”, “Normally open”, a variety of EOL resistance settings or “NOT USED”.

Starting an activation

The Smoke Screen will produce ‘smoke’ in the following 3 circumstances:

1. The three connections normally used in an installation, i.e. Alarm Set (Z1), Trigger (Z2), and Hold Off (Z4) (if selected to on) must all be in alarm.
2. The Panic (Z5) connection must change state from restore to an alarm condition. This input is an edge input and will not trigger a generator if it is already in its alarm condition when the generator reaches a “ready” state.
3. The Alarm Set (Z1) and a tamper are in alarm.

Stopping an activation

Once activated the Smoke Screen will stop producing ‘smoke’ before the end of the programmed smoke time only if the Alarm Set (Z1) is selected to a non-alarm state; in the event of a panic activation it is necessary to cycle the Alarm Set (Z1) to “on” then “off”. If ‘Hold-Off’ is closed during an activation the Smoke Screen will continue to produce smoke for the set Smoke Time.

Re-triggering smoke

If, after it has made smoke for the set time and reached the end of it’s programmed “Smoke on” time, the Smoke Screen receives another hold-off alarm while both ‘Set’ and ‘Trigger’ inputs remain open, it will ‘re-trigger’ and make smoke again. The re-trigger smoke time and the number of repeats are set in the Installer menu.

Preventing an activation

To prevent the Smoke Screen from making smoke under any circumstances:

- Select Isolate to “On” in the Installer menu
  or
- Select the programmable input Z6 to “Isolate”

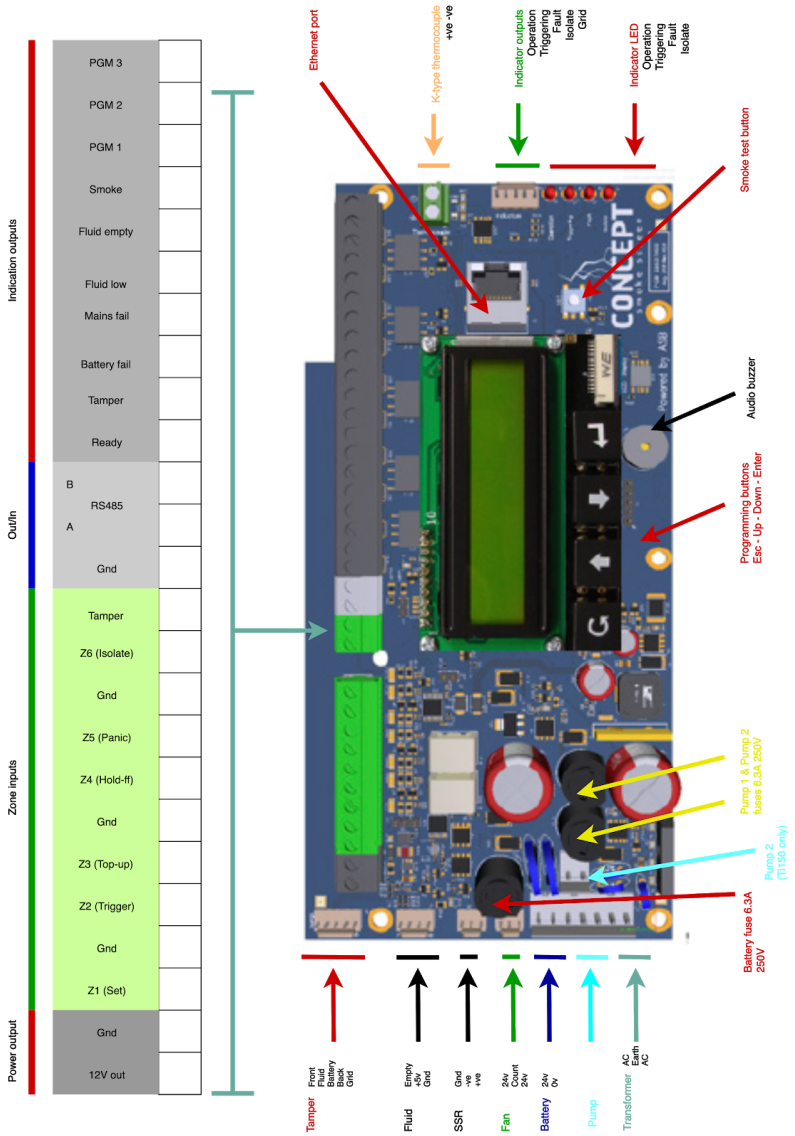
3.2 OUTPUTS

Clean contact outputs are provided for connection to the Alarm Panel for ‘Ready’, ‘Tamper’, ‘Battery Failure’, ‘Mains Failure’, ‘Fluid Low’, ‘Fluid Empty’, ‘Making Smoke’.

There are also 3 programmable clean contact outputs (PGM 1, PGM 2 and PGM 3) that can be set to follow various functions (see the section on Programming for details).

Connections 4

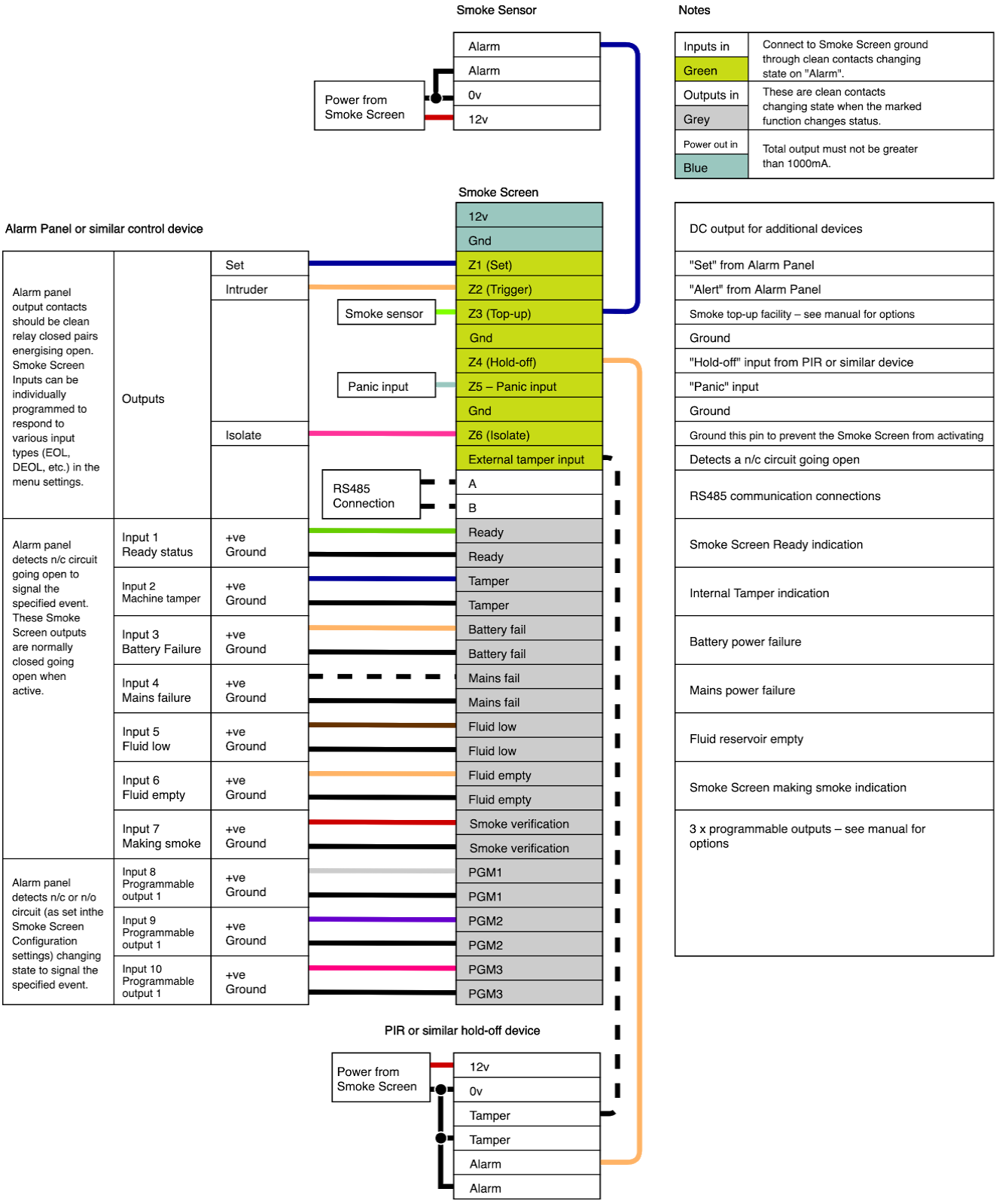
4.1 CIRCUIT BOARD LAYOUT (PCB v2)



4.2 GENERIC CONNECTION DIAGRAM

The Smoke Screen can be programmed to use “Normally closed”, “Close = Alarm”, or a variety of EOL resistance configurations (used to detect tampers on the circuits); for clarity, the diagram below uses “Normally closed” connections. EOL resistors are fitted as usual between the relevant pin and ground when used.

Titanium Generic Connection Schematic (PCB v2)



Settings 5

5.1 ISOLATE (SERVICING) MODE

To prevent the Smoke Screen from making smoke whilst work is conducted with power applied it can be put into a servicing mode by selecting the “Isolate” function at the start of the Installer Configuration Menu to ‘on’.

FAILURE TO DISABLE ISOLATE WHEN NO LONGER REQUIRED WILL PREVENT THE SMOKE SCREEN OPERATING.

5.2 TAMPER

There are 4 internal tamper circuits on the Smoke Screen, one on each cover (front, battery and fluid) and one through the rear of the case for a bracket tamper. There is also an external tamper input on the PCB for the monitoring of peripheral devices. On a tamper alarm the Smoke Screen provides an output indication of the event and automatically activates if the Zone 1 (Set) is in alarm. If the Smoke Screen is not mounted on its bracket the bracket tamper should be by-passed to prevent unwanted tamper warnings. The LCD display and control buttons are disabled if the front tamper is closed.

5.3 FLUID MANAGEMENT

The Smoke Screen has a replaceable 1 litre Swift-Fit fluid reservoir (also known as product code SFL-1000) that is accessed by removing the cover on the right-hand side of the unit. The fluid level is monitored using sensors in the fluid reservoir to give a “Low Fluid” indication output when the Swift-Fit is approximately 50% full and an “Empty Fluid” output when the bottle is empty. The Smoke Screen will not produce fog when there is an “Empty Fluid” indication.

Fluid Replenish

Obtain a replacement fluid reservoir from your Smoke Screen supplier. Open the right-hand access panel. Lift the reservoir out of the compartment by removing the lower end first (see photo below). Disconnect the fluid monitoring cable and the fluid feed pipe (pull collar to release). Refitting the reservoir is the reverse of the removal process.

Fluid reservoir

Fluid sensor cable plug

Fluid feed pipe connector

5.4 BATTERY MANAGEMENT

Operation

The Smoke Screen is fitted with a battery to provide power to the electronic circuits and pump (not to the fluid heater) in the event of a mains power failure. This ensures that the Smoke Screen can provide an effective activation for at least 1 hour after a mains power failure (further detail is on the relevant Smoke Screen datasheet). The Smoke Screen is capable of activating in the event of a battery fault or if the batteries are not fitted. The Smoke Screen is supplied with a set of batteries but they are not fitted on delivery. Replacement batteries may be obtained from your Smoke Screen installer or Concept Smoke Screen.

Removal and replacement

To remove the batteries, open the access panel on the left side of the Smoke Screen. Slide out the old batteries and replace with new units ensuring that the battery is upright and the contacts enter the battery compartment first.

Battery switch

The Smoke Screen has a switch in the battery compartment to permit the batteries to be disconnected from the system whilst remaining in place. The delivery setting is “Off”. Select to “On” if intending to use the battery facility.

THE SMOKE SCREEN WILL NOT FUNCTION AT ALL DURING A MAINS POWER FAILURE IF THE BATTERIES ARE NOT FITTED OR ARE DISABLED.

5.5 MONITORING AND CONTROL OVER IP AND SERIAL BUS

All Titanium generators are equipped with an advanced electronics control and communication package. This allows remote commands and control using the two features available.

- SNMPv3 communication over Ethernet / IP and Internal RS485.
- Master and slave machines over the RS485 serial bus is possible.

These communications features can be used in the following ways:

5.5.1 SNMPv3

SNMPv3 IP communication allows the Smoke Screen to be fully integrated with any PSIM solution which supports this protocol. Additionally, connection to a dedicated SmokeNet server or Via the Titanium247 cloud monitoring platform gives full control & monitoring capability of the Smoke Screen system.
It is also possible for Smoke Screen installers to remotely diagnose and configure any Titanium systems using the Titanium Config Tool.

IMPORTANT! - When making changes to the DHCP setting or any IP addresses, the system must be rebooted for the selected programming to be accepted. To reboot the system choose “restart system” in the installer menu. Select “yes” by pressing enter - the system will now reboot itself.

5.5.2 RS485

When this is utilized, one Smoke Screen can be set as the master system which will then control up to 9 slaves on the same bus. It is possible to chain many more using a dedicated controller from Concept Smoke Screen.

When making use of this feature, the following things become true:

1. The master SSM operates as a global input and output point for the controlling alarm system (where used).

   In this scenario, any attached slave system that develops a local fault, will trigger a global fault at the master.

   The slaves will follow the “Set” and “Trigger” status of the master and will then operate when they detect movement on a locally attached hold off detector. If “hold-off chain” is selected on the master, a slave that detects a hold off alarm, will pass the signal to all attached generators (including the master) and the whole system will trigger.

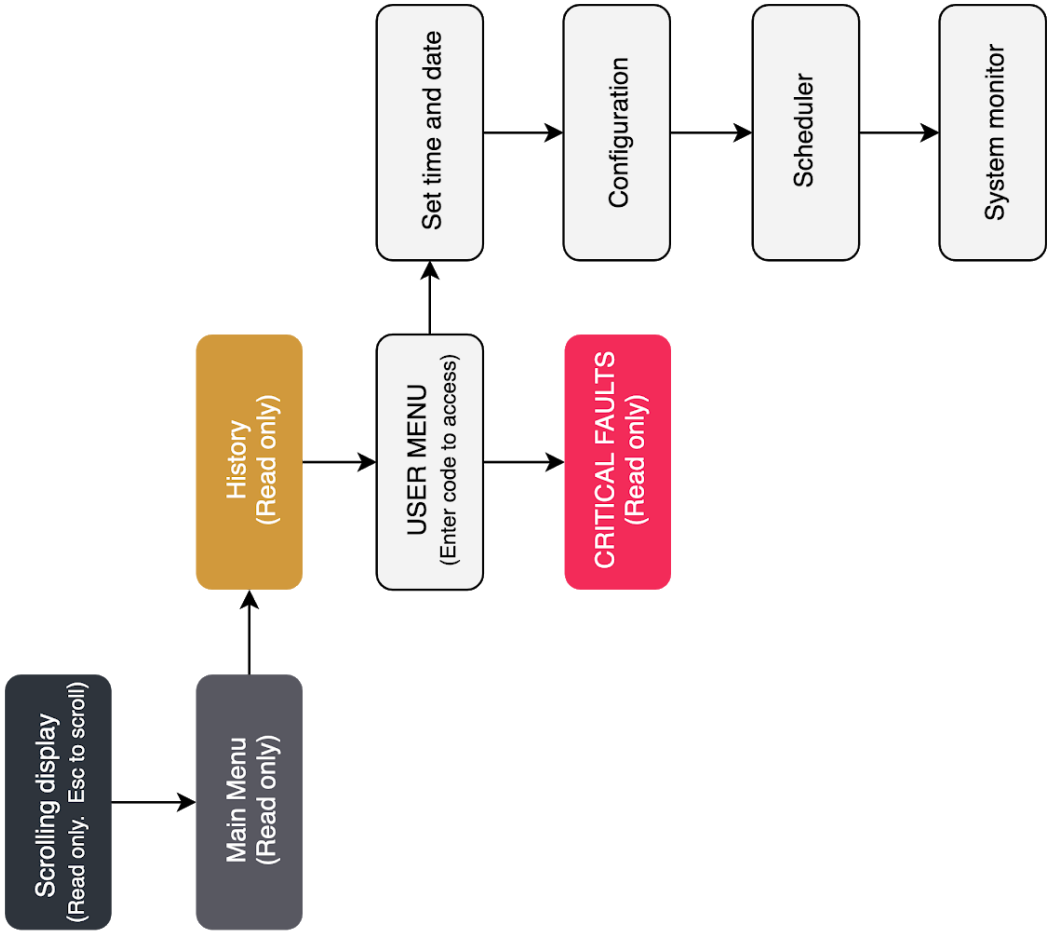
   Equally, if “Panic propagate” is selected at the master, a triggered panic input at the master or any attached slave, will trigger the whole chain. When this is de-selected, each panic input will operate only the SSM it is attached to.

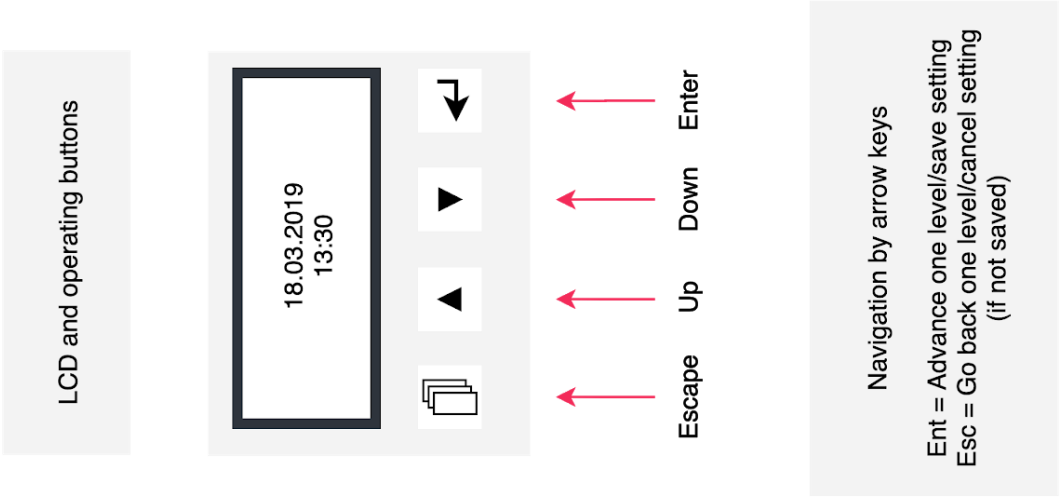
2. The master generator is capable of providing full information over a serial connection relating to the condition of itself and all of the attached slaves to TitanConfig. This can then be displayed as a wall of information providing easy visual information of the entire system. See TitanConfig manuals for more information on this feature.

3. It is not possible to have 2 masters on the same bus – each assignment must be unique.

5.6 PROGRAMMING (Software version 1.68.00)

The installer menu is accessed via the LCD and operating buttons (illustrated below) located on the front of the Smoke Screen PCB. The menu flow and a description of the programmable/read parameters are given below.





SCROLLING MENU

ITEM	DESCRIPTION
Device is Isolated	Smoke Screen is isolated and will not make smoke.
Block Temp and PCB Temp	Heater block and PCB temperatures in °C
IP Address	IP address of the Smoke Screen
Mbus	Mbus state (Master or Slave) and Smoke Screen Firmware standard, ie 1.68.00.
Device type	Smoke Screen model, ie Ti100.
Day, Time and Date Arm	Day, time and date set. Shows "Arm" if system armed.

MAIN MENU

MENU ITEM	SUB-MENU ITEM	DELIVERY SETTING	DESCRIPTION
History			Log of the last 25 or 1500 events. Read only. Limit adjusted in installer configuration.
User		1993	Coded access for the installer to set up the Smoke Screen.
Critical Faults			List of the current critical faults.

INSTALLER TIME & DATE MENU

MENU ITEM	SUB-MENU ITEM	DELIVERY SETTING	DESCRIPTION
Set Time		12:00	Set current time in hours and minutes.
Set Date		00:00:0000	Set current date in dd:mm:yyyy.
Set Time Zone		0	0=GMT. Each additional +1 or -1 is the respective amount away from GMT.

INSTALLER CONFIGURATION MENU

MENU ITEM	SUB-MENU ITEM	DELIVERY SETTING	Available settings	DESCRIPTION
SSM Mode		EN-50131-8	EN-50131-8 IRIS	Determines whether the Smoke Screen will operating mode.
Isolate unit		On	On Off	Isolate Mode that stops any activation and makes the «Ready» output «Not Ready». The LCD flashes when selected «On».
Z6 Function		Isolate	Disabled Isolate	Function not in use. Zone 6 can be used by an external source to prevent the Smoke Screen activating.
Mbus Mode		Slave (CCS)	Master Slave (CCS) Slave 1 to 9	RS485 configuration. When configured as Master, options become available to propagate SNMP (remote) triggers to the chain, propagate panic inputs from any point to the whole chain and propagate hold off inputs from any point to the whole chain. Refer to the "Enhanced Communications and Integration" section for further information.

Top up life cycle		30 minutes	1 to 120 minutes in 1 minute intervals	Limits top up operations by time. When a Screen Sensor is used on Z3, this setting will cause the SSM to ignore further inputs from the Screen sensor after the timer has expired. The timer begins after the first cycle of fog production i.e. if the “Smoke on” time is set to 2 minutes, the top up life cycle commences after 2 minutes.
Top up % time		25%	0 to 100% in 1% intervals	Sets top up operation as a % of “Smoke on time”. If the Screen sensor detects a drop-in fog density, the SSM will operate according to how this is set.
Smoke on time		01min 00 sec	0 to 15 minutes in 1 second intervals	Sets duration of first burst. Timer only runs when fog is being actively produced. Rest phases are ignored.
Pump 2 smoke time		01min 00 sec	0 to 1 minute in 1 second intervals	Ti150D function only. Sets duration of second pump run time on an activation demand.
Panic smoke time		01min 00 sec	0 to 15 minutes in 1 second intervals	Sets duration of Panic smoke time. Timer only runs when fog is being actively produced. Rest phases are ignored.
Smoke Pulse	Pulse on time	00min 00 sec	0 to 15 minutes in 1 second intervals	THESE SETTINGS SHOULD NOT BE CHANGED
	Pulse high time	1	1 to 60 in intervals of 1.	
	Pulse low time	1	1 to 60 in intervals of 1.	
	Low incr. time	0	0 to 60 in intervals of 1.	
Hold off		On	On Off	Enables hold-off retriggering. When “Smoke on” timer expires, and an intruder condition still exists, if the hold-off reactivates, the SSM will re-trigger according to the sub-menu settings.
	Hold off time	25%	0 to 100% in 1% intervals	Item available if Hold off set to “On”. Sets the re-triggering activation time as a % of the set “Smoke on” time.
	Hold off rep nr	10	0 to 50 in single intervals	Item available if Hold off set to “On”. Sets the number of times the SSM will retrigger when hold-off reactivates.

Smoke Delay		00 min 00 sec	0 to 2 minutes in 1 second intervals.	Sets the time the Smoke Screen will wait after an activation demand before producing smoke.
(Z1) Set Input		Normally closed	Not used Normally Open Normally closed Double EOL Single EOL (EOL values available = 1k, 2k2, 2k7, 3K, 3K3,4K7, 5k6, 6k2)	Defines the type of input the Smoke Screen requires to sense an Alarm Set state. Stops all activations except panic.
(Z2) Trigger Inp		Normally closed	Not used Normally Open Normally closed Double EOL Single EOL (EOL values available = 1k, 2k2, 2k7, 3K, 3K3,4K7, 5k6, 6k2)	Defines the type of input the Smoke Screen requires to sense a Trigger alarm.
(Z3) Top-up Detec		Normally closed	Not used Normally Open Normally closed Double EOL Single EOL (EOL values available = 1k, 2k2, 2k7, 3K, 3K3,4K7, 5k6, 6k2)	Defines the type of input the Smoke Screen requires to sense an alarm state for the Top-up detector (Screen Sensor). Settings available are “Normally closed”, “Normally open”, a range of EOL resistance settings or “Not used”.
(Z4) Hold-Off Inp		Normally closed	Not used Normally Open Normally closed Double EOL Single EOL (EOL values available = 1k, 2k2, 2k7, 3K, 3K3,4K7, 5k6, 6k2)	Defines the type of input the Smoke Screen requires to sense a hold off alarm. Settings available are “Normally closed”, “Normally open”, a range of EOL resistance settings or “Not used”.
(Z5) Panic Trig.		Normally closed	Not used Normally Open Normally closed Double EOL Single EOL (EOL values available = 1k, 2k2, 2k7, 3K, 3K3,4K7, 5k6, 6k2)	Defines the type of input the Smoke Screen requires to sense a panic alarm state. A panic input ignores the condition of all other inputs and will trigger the generator for the set “Panic smoke” time.

(Z6) Isolate		Normally closed	Not used Normally Open Normally closed Double EOL Single EOL (EOL values available = 1k, 2k2, 2k7, 3K, 3K3,4K7, 5k6, 6k2)	Defines the type of input the Smoke Screen requires to be isolated through Zone 6.
Ready output		Normal (NC)	Normal (NC) Inverted (NO)	Defines the output state when the Smokescreen is ready to activate.
Tamper output		Normal (NC)	Normal (NC) Inverted (NO)	Defines the output state when the Smokescreen is not in tamper alarm.
Battery output		Normal (NC)	Normal (NC) Inverted (NO)	Defines the output state when the Smokescreen battery power is ok.
Mains F. output		Normal (NC)	Normal (NC) Inverted (NO)	Defines the output state when the Smokescreen mains power is ok.
Fluid L. output		Normal (NC)	Normal (NC) Inverted (NO)	Defines the output state when the Smokescreen fluid is above 50%.
Fluid E. output		Normal (NC)	Normal (NC) Inverted (NO)	Defines the output state when the Smokescreen fluid is above empty.
Smoke output		Normal (NC)	Normal (NC) Inverted (NO)	Defines the output state when the Smokescreen is making smoke.
PGM 1/2/3 output*		Normal (NO)	Normal (NC) Inverted (NO)	Sets the state of the PGM Outputs. Settings available are “Normally closed” and “Normally open”.
PGM 1/2/3 function*		Disabled	Disabled	Function not in use.
			Follow Pump Fuse F	PGM follows selected function.
			Follow Nozzle F	
			Fire Panel Isolate	
			Follow Fluid Med	
			Follow Overheat	
			Follow Underheat	
			Follow Thermal Fault	
			Iris Mode	Not used
			Follow Trouble/Tmp	PGM follows selected function.

			Follow Run Dry	
			Follow Isolate	
			Aux Timer	Time that the PGM will change state. Settings 0 to 120 minutes in 1 second intervals.
			Follow Zone	Used to set the required Zone (1 to 6) if «Follow Zone» selected. Displays as "Zone number (current)>(new selection)".
Entry/exit time		00 min 00 sec	0 to 3 minutes in 1 second intervals	Time that the Smoke Screen will ignore activation demands after the Zone 1 (Alarm Set) input is made active.
Energy Save Mode		Off	Off Extreme On	Enables or disables the ESM. «On» lowers the block temperature when Zone 1 is “Unset” and with «Extreme» set the block is not heated when Zone 1 is “Unset”. For more information see the section on “Energy Saving Mode”.
Siren Loudness		0	0 to 1	Sets the audio output volume.
Siren Frequency		1000Hz	100 to 5000 Hz in 100 intervals between 100 and 1000 then 500 intervals to 5000	Sets the audio output frequency.
Temperature PCB		35°C	10°C to 40°C in 1°C intervals	Sets the PCB temperature at which the onboard fan will operate.
Installer Code		1993	0000 to 9999	Set the installer access code by selecting each digit and adjusting from 0-9.
Menu Timeout		30 min	1 to 99 minutes in 1 minute intervals	Set the time after the last key is pressed that the User Menu will stay open.
DHCP		On	On Off	
	IP	192.168.010.10	Adjustable by digit	Item available if DHCP = “Off”. System must be restarted using the menu command to register a change.

	Subnet Mask	255.255.255.000	Adjustable by digit	Item available if DHCP = “Off”. System must be restarted using the menu command to register a change.
	Gateway	192.168.002.001	Adjustable by digit	Item available if DHCP = “Off”. System must be restarted using the menu command to register a change.
TFTP Update IP		080.112.203.006	Adjustable by digit	System must be restarted using the menu command to register a change.
SNMP IP		000.000.000.000	Adjustable by digit	System must be restarted using the menu command to register a change.
SNMP Username		Default	Default ConceptSSM	Allows a limited function set to become available to a remote user (i.e. security manager or remote fault monitoring centre). Select “ConceptSSM” to enable.
Update Firmware			No Yes	Contacts the TFTP Update Server, and downloads and deploys a new firmware set if one is available.
Restart System			No Yes	Restarts the system. This is needed to change to the networking settings to take effect.
Fluid Replenish			No Yes	Used if the use of an external reservoir has been set by Concept Smoke Screen (facility not available to the installer). Select Esc for No and Enter for Yes.
Reset Settings			Factory Default	Defaults the system to factory settings (NB: These may be different to delivery settings).
Tamper Enable	Tamper Front	Enabled	Enabled Disabled	Tamper function enable or disable.
	Tamper Fluid			
	Tamper Battery			
	Tamper Back			
	Tamper External			
Disable Fan		Fan enabled.	Fan enabled. Fan disabled.	Switch the fan function on or off.

INSTALLER SCHEDULER MENU

MENU ITEM	DELIVERY SETTING	Available Settings	DESCRIPTION
0. Sunday	- 0:00 +0:00	0:00 to 23:59	Time each day of the week that the SSM automatically goes Unset (-) and then resets (+). If all set to zero the SSM reacts to Z1 inputs only.
1. Monday			
2. Tuesday			
3. Wednesday			
4. Thursday			
5. Friday			
6. Saturday			

INSTALLER SYSTEM MONITOR MENU

These menu items are read only indications to permit system parameter status to be monitored.

MENU ITEM	INDICATIONS	DESCRIPTION
Tamper Batt Cov	Alarm = Tamper Restore = OK	State of the selected tamper.
Tamper Fluid Cov		
Tamper Front Cov		
Tamper External		
Tamp Back Cov		
AC Detect	Alarm = fault Restore = OK	Loss of AC power from the transformer; the most likely cause is mains power failure.
13.6v out	Restore = OK	State of the low voltage DC output.
Back up Pwr Volt	Alarm = fault Restore = OK	Condition of back-up power Voltage.

Batt Volt	Alarm = fault Restore = OK	Condition of battery Voltage.
(Z1) Set Input	Alarm = active Restore = OK	State of the selected input Zone.
Z2) Trigger		
(Z3) Programmable		
(Z4) Hold Off Inp		
(Z5) Panic Trigger		
(Z6) Isolate		
DC Fuse	Alarm = fault Restore = OK	State of the low voltage DC fuse on the PCB.
Pump Fuse	Alarm = fault Restore = OK	State of the pump fuse on the PCB.
Batt Resistance	Alarm = fault Restore = OK	Battery condition.
Block temp		Current block temperature.
Battery State	Charging Discharging Testing Not connected	Status of the battery charging system.
Ready State	Local:R Local:F Global:R Global:F	State of the selected output. When the system is configured as Master and Slaves, Local = the state of the Master Smokescreen and Global = the state of attached slaves. For example, Ready "Local:R/Global:F" means that the Master is ready but one or more of the slaves is not. If either "Local" and/or "Global" is "F" then the system will output a fail state.
Tamper Fault		
Battery Fault		
Mains Fault		
Fluid Low Fault		
Fluid Empty Fault		
Smoke output	Output Closed Output Opened	State of the selected output.
PGM1 output		
PGM2 output		

PGM3 output		
Fluid input	Fluid full Fluid low Fluid empty	Fluid reservoir level.
Firmware version		Current firmware version.
Boot version		Current bootloader version.
Recovery version		Current recovery version.
PCB version		PCB hardware version number.
Current IP		Current IP address of SSM.
Up time		SSM power on time.
MAC address		MAC address of the SSM.
OEM		OEM standard.

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6.1 TESTING

Full alarm test

Where possible a full alarm test should be conducted to check that all inputs, outputs and wiring connections to the Smoke Screen are correct. If a PIR or other detector is fitted the Smoke Screen will fire for the designated Smoke Time period once the ‘Set’, ‘Trigger’ and ‘Hold Off’ (if fitted) contacts are open. It will stop producing smoke if the ‘Set’ contacts are closed.

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7.1 LED AND SOUND INDICATIONS

The Smoke Screen provides on-board status monitoring via an LCD, 4 x LED and an audio siren output connection. LED indications displayed are:

LED	LED colour		Audio siren alarm	Relay status	Indication meaning
Operation		Flashing	Nil	Nil	Smoke Screen heating to operating temperature.
		Steady	Nil	Ready output to OK.	Smoke Screen at operating temperature and status OK.
Triggering		Steady	On	Smoke verification output.	Smoke Screen producing smoke.
Fault		Flashing	On	Ready output to alarm.	Smoke Screen critical fault.
Isolate		Steady	On	Ready output to alarm.	Smoke Screen is isolated by software setting or Z.6.

Fault indications will automatically clear once resolved.

7.2 THERMAL CUT OUT

WARNING

Be aware of high voltage in the block area. The electrical supply should be switched off before working in the heater block compartment.

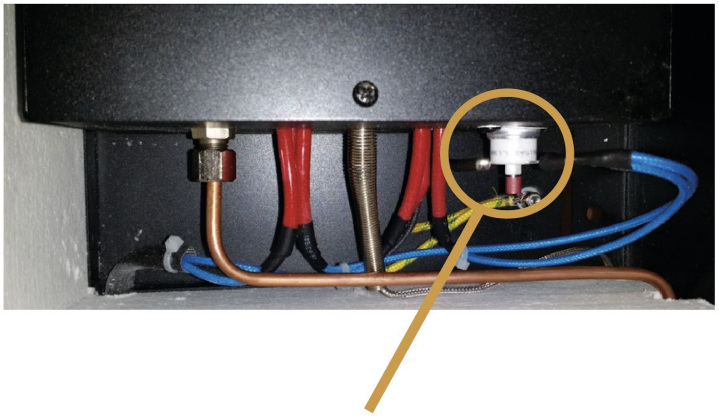
CAUTION

This operation is usually carried out during installation. If the Smoke Screen has been in service the nozzles will be extremely hot and will cause injury if touched. Therefore, the Smoke Screen should be switched off and time should be allowed for the nozzles to cool.

In the unlikely event that the temperature in the heater block increases significantly above the set working temperature the TCO will trip to protect the machine from damage. The TCO can be reset using the following procedure:

- Make sure the mains power to the machine is turned off before resetting the TCO.
- Reset the TCO by pressing on the little button on the top area. If the thermal device has tripped it should be possible to hear a click when it resets.
- Switch on the mains power after resetting.
- Check the machine heats up to normal operating temperature and make sure it archives a ready state. See the operating “LCD, LED and Sound Indications” for further information on fault indications.

NB: A TCO usually only trips if there is a problem. If it trips again the Smoke Screen should be checked for faults before further use.



Note: The position of the **TCO** can be different depending on the machine version.

7.3 ACTION AFTER EVERY ACTIVATION

- Wait until the smoke production has ceased. Do not try to enter the affected area as you will not be able to see through the fog.
- Look for signs of forced entry. If you find any, or you believe that intruders are on the premises, call the Police and wait for them to arrive. Take no further action.
- Where there are no signs of forced entry, open all external doors and wait for the fog to start clearing – this may take 10 to 15 minutes. Keep watch for intruders that may have been screened by the fog.
- As visibility returns open more doors or windows to speed up the venting process.
- Check the fluid level for the Smoke Screen by checking the appropriate LEDs as described above. It is recommended that the installer or Concept Smoke Screen are requested to service/replenish the Smoke Screen if there have been 2 or more activations of the Smoke Screen.

7.4 SERVICING AND CONSUMABLE REPLENISHMENT

Installation/service engineer qualification. Please note that it is a requirement of the standards relating to security fogging devices that the Smoke Screen is serviced/replenished by an engineer certified by the manufacturer. If you are unsure, ask the engineer for their certification ID card.

Smoke Screen servicing. To ensure the Smoke Screen remains fully operational it must be regularly serviced by a Concept Smoke Screen certified engineer. Failure to service the Smoke Screen may invalidate the warranty.

Service intervals. The Smoke Screen should be serviced annually by a Concept Smoke Screen certified engineer and the following consumables should be replaced as specified:

Fluid: Always ensure that the Smoke Screen has sufficient fluid or it will not produce smoke when needed. The fluid consumable should be changed:

- Every 12 months as ‘best-practise’ or, as a minimum, every 2 years.
- If the Smoke Screen displays a Low or Empty Fluid fault in between services.
- If there have been 2 or more activations of the Smoke Screen since the fluid was replenished.

WARNING: Only Smoke Screen fluid should be used as other smoke fluids may cause damage to the unit or noxious fumes.

Batteries: The batteries should be changed:

- At least every 2 years.
- If the Smoke Screen displays a battery fault in between services.

WARNING: Only batteries supplied by Concept Screen should be used in the Smoke Screen

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8.1 FAQ

Q **The Smoke Screen is indicating it is ready to operate, but does not respond to a full alarm test.**

A Ensure the smoke machine is not isolated.

With power applied, and keeping clear of the smoke nozzle, disconnect the “Alarm”/”Trigger” and “Hold Off” connection plugs from the PCB. If the Smoke Screen produces smoke there is a mis-connection in the system wiring.

Q **The Smoke Screen is puffing out smoke whilst heating up.**

A This is the result of very small amounts of air and residual fluid in the heater block being changed into an insignificant volume of smoke and can happen particularly after the Smoke Screen has been moved about when cold.

8.2 INSTALLER NOTES

8.3 WEEE END OF PRODUCT LIFE

At Concept Smoke Screen we take our environmental obligations very seriously and constantly strive to minimise any environmental impact of the products we sell.

To comply with the WEEE Regulations 2013 we label all relevant products with the crossed out wheelie bin symbol and are members of the Comply Direct WEEE compliance scheme. Comply Direct have registered us with the Environment Agency as a Producer and will arrange to have any of our equipment collected and recycled as necessary. Comply Direct can be contacted on 0844 873 1034. If arranging a collection please quote our membership number which is CD01/00593. Our Environment Agency Producer Registration number is WEE/HB3530XZ.

HOW TO RETURN

When the goods are no longer required or are deemed to be beyond economic repair you can also return the goods to the following address for disposal:

> Concept Smoke Screen Ltd, 1C North End Business Park, Station Road, Swineshead, Boston, Lincolnshire, PE20 3PW

Alternatively, if it is more convenient to arrange disposal locally, please ensure disposal is carried out in accordance with any local guidelines.

Further guidance can be found here https://www.complydirect.com/the-recycling-room/

TITANIUM Ti70/Ti100/Ti150 (Version 28.11.19)

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