



RAPID ELM – INSTALLATION AND OPERATORS MANUAL

(v2011-1)

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

IMPORTANT

Please read this manual before commencing installation

RAPID SMOKE – ELM

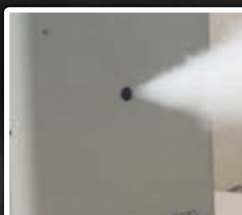
OUR RANGE OF ENTRY LEVEL SECURITY SMOKE GENERATORS

✓ Affordable solutions for smaller premises ✓ High performance and quality-assured reliability ✓ NO residue – guaranteed



OVERT OR COVERT

As with all Concept generators, the units are designed to be installed in almost any attitude.



SIZE ISN'T EVERYTHING

Even the entry level model (ELM) – pictured – is capable of impressive smoke production.



WHEN POWER IS KEY

The Rapid HP fits the bill for larger environments and offers the optimal balance between performance and economy.

COST EFFECTIVE FOG PROTECTION

Traditionally, security fog has been an expensive solution and this has limited its use to high value applications. This has changed with the Rapid Install range.

Built to the same exacting standards as the E-Series generators, but employing different heater block technology, the Rapid Entry Level Model (ELM) offers superb performance without breaking the budget.

Homes and smaller businesses can now easily benefit from the ultimate form of property protection.

Can't see it? Can't steal it!

THE TECH SPEC

FEATURES

- Very competitive pricing
- Easy installation
- Simple integration into existing alarm systems
- Compact, rugged casing
- Wall or ceiling mount
- British and European standard compliant
- £10 million product and public liability insurance
- The ELM produces 300m³ smoke
- External UPS for off-mains operation

OPERATION

- Inputs to accommodate 'Set', 'Trigger' and 'Hold-off'
- Outputs to provide 'Ready State' and 'Low Fluid' warnings
- Simple smoke control

CONSTRUCTION

- Rugged and compact metal casing
- Wall and ceiling mounting

RAPID ELM DATA:

- 34(H) x 14(D) x 33(W) cm
- Weight 12 kg

INSTALLATION AND OPERATING INSTRUCTIONS

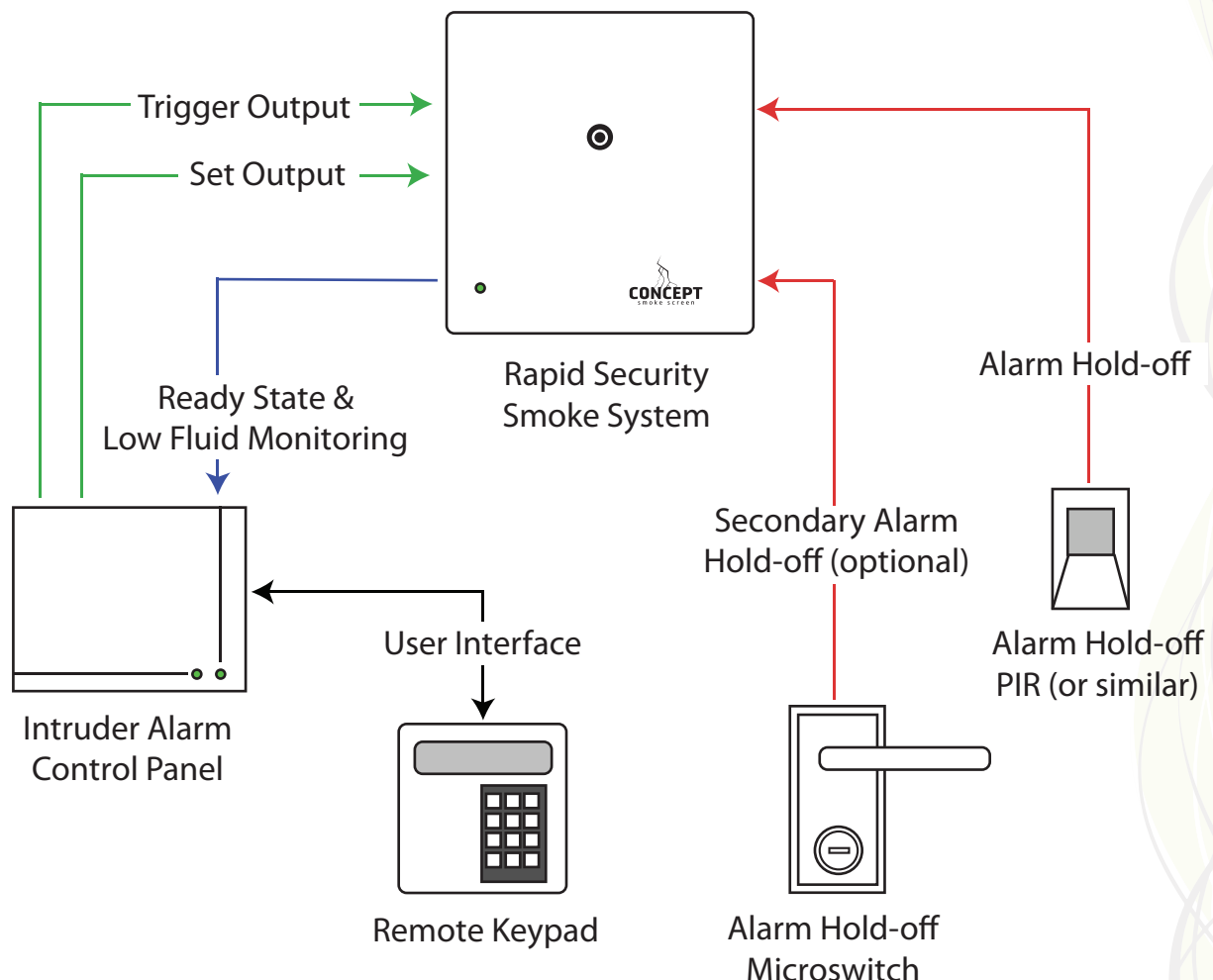
Before commencing installation of the Rapid security smoke system please ensure that you have all of the equipment required. Supplied in the box:

- 1 x Rapid ELM XPU-CON security smoke generator.
- 1 x Mounting Bracket.
- 1 x Smoke Fluid Bag (500ml).
- 1 x Literature Pack & Warning Sign.

You will also require:

- Appropriate fixings to mount unit and ancillaries.
- 230-volt mains supply and Connections into the alarm panel.
- PIR to provide the hold-off if required.

The Rapid is designed to form part of an existing intruder alarm system. It may also be configured as a 'stand-alone' system. An example installation is shown in this schematic:



STANDARD INSTALLATION

A 'standard' installation is configured in the following way:

Rapid Generator wall or ceiling mounted in the appropriate location.

Status Monitoring is supplied by the Rapid in three ways:

- **Onboard LED** – Green / Red / Amber (See ALERTS).
- **Onboard Sounder** – Which will beep for whenever the Rapid is 'Not Ready' or 'Low Fluid' or 'Tamper' (See ALERTS).
- **Outputs** – Four relay outputs are provided for connection to the Alarm Panel. One for 'Ready State' One for 'Low Fluid' One for 'Verification' (Changes state when system is making smoke) and One for 'UPS Status' (If fitted). NOTE: These outputs are labelled N/O N/C as though the unit is in an all good condition.

An optional Concept isolation keyswitch may also be fitted to provide remote isolation and indication of Ready / Low Fluid status.

CONTROLLING SMOKE

There are three sets of connections on the Rapid machine (Alarm Set, Trigger and Hold-off). In order for the machine to produce 'smoke' all three sets of connections must be 'open circuit'. If either set of connections is 'closed circuit' then the machine is 'held off' or prevented from producing smoke.

Hence we can control the production of smoke using one or a combination of the following:

Set Output – a normally closed relay connected across the 'Alarm set' connections. Opening when the alarm panel is 'Set' and closing when the panel is 'Unset'.

Intruder Output – a normally closed relay connected across the 'Trigger' connections. Opening when the alarm panel signals an 'Intruder' and closing when the 'Intruder' signal is reset.

Hold-off – usually a PIR or movement sensor connected to the 'Alarm' connections (N/C). The relay opening when the sensor sees movement.

Additional Hold-off – any form of N/C relay or micro switch connected to the 'Hold Off' connections. If more than one PIR is required these PIRs should be wired in series. Where additional hold off methods are required, for example a shunt lock, these should be wired in parallel with the hold off PIRs.

SEE WIRING DIAGRAM EXAMPLES

IMPORTANT:

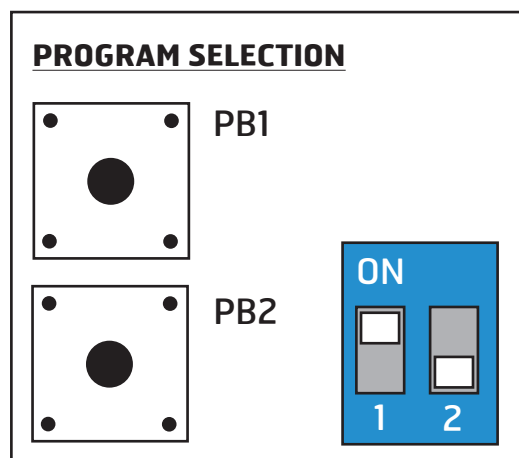
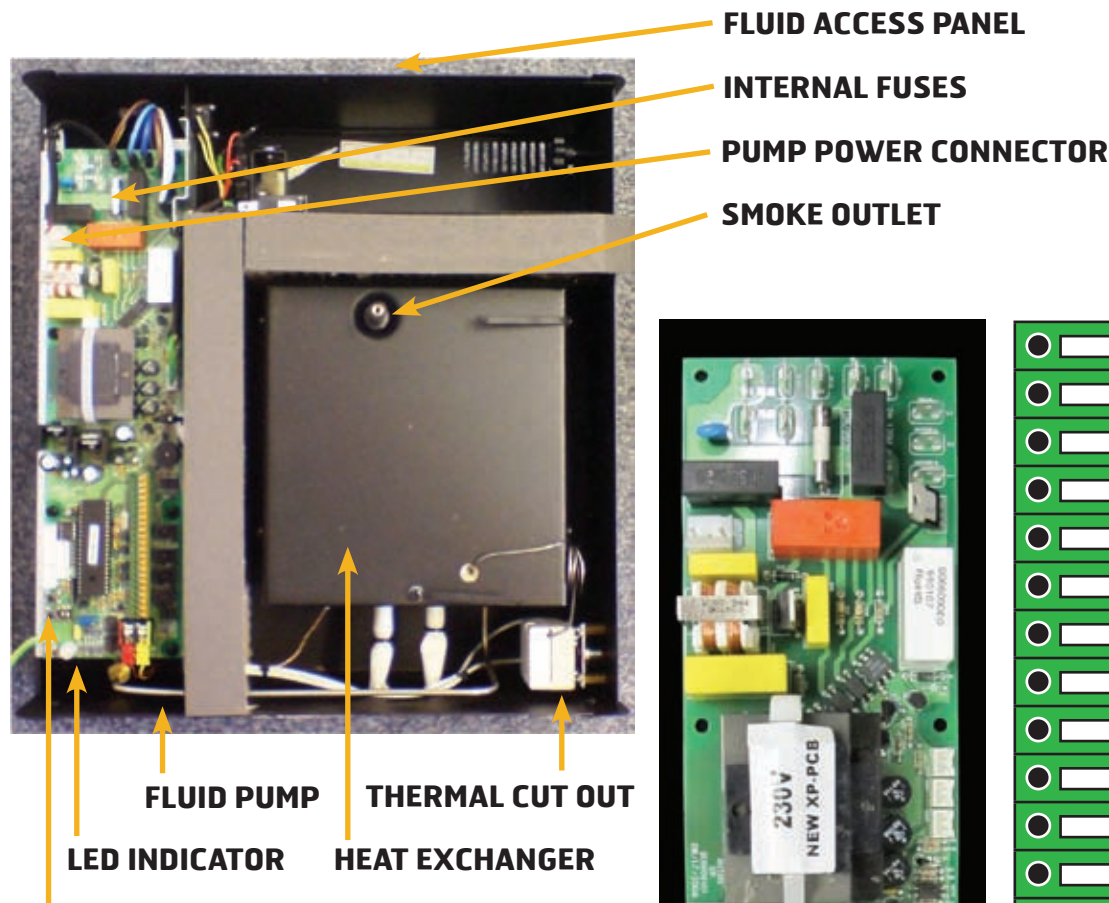
1. Only Rapid smoke fluid should be used. Other fluid may damage the equipment or produce toxic fumes.

2. The heater block casing is a hot surface – care should be taken if the front cover is removed.

THE RAPID GENERATOR

The Rapid generator has two removable covers: the main cover on the front face of the machine and a top panel. The main cover is held in place by six screws (two on each side, one top, and one bottom). Once removed this allows access to the inside of the generator. The fluid access panel is held in place by one screw. Once removed this allows access to the fluid bag.

INTERNAL VIEW



☐	Tamper
☐	Tamper
☐	-0V (100mA)
☐	+12V (100mA)
☐	Hold Off
☐	Hold Off
☐	Verification NO
☐	Verification NC
☐	Verification COM
☐	UPS Status NO
☐	UPS Status NC
☐	UPS Status COM
☐	Fluid Status NO
☐	Fluid Status NC
☐	Fluid Status COM
☐	Not Ready NC
☐	Not Ready NO
☐	Not Ready COM
☐	Trigger (Intruder)
☐	Trigger (Intruder)
☐	Alarm Set
☐	Alarm Set

Relay Outputs are labelled above in their 'good' condition and will change state in the following conditions:

Verify – When the 'unit is producing smoke'.

UPS Status – When 'monitoring enabled' AND 'UPS power failed'.

Fluid Status – When 'low fluid' OR 'fluid empty'.

Not Ready – When 'tamper open' OR 'mains failed' OR 'fluid empty'.

INSTALLATION PROCEDURE

1. Site the Rapid Generator – fix the bracket to the wall or ceiling (as required) as appropriate. (Wall mounting: leave minimum 150mm clearance to ceiling to allow access to the fluid compartment).
2. Fasten the Rapid to the bracket and remove front cover.
3. Make Connections to the Alarm Panel and Hold-off PIR. Relay outputs from the unit are labelled in their normal state assuming the unit is in an all good condition.
4. Check Dip switches are set as follows:
 - Dip 1 is set to ON (N/C going open to activate).
 - Dip 2 is set to OFF (Normal Operating Mode).

Note: If Dip 1 is set to OFF the system will activate when all inputs (Set, Intruder and Hold Off) are closed.
5. Connect mains power (230-volt AC, 50Hz). The LED will illuminate (Red) and flash continually accompanied by a long beep every minute. (Cover Open).
6. Program the unit as required (Smoke Output & UPS Monitoring).
7. Remove the Top Panel and connect the Fluid Bag to the Fluid Bag Connector.
8. Replace the Fluid Bag and fasten into place.
9. Replace the Front Cover and Top Panel (Taking care with the LED). If the unit has not yet reached its correct operating temperature the LED will turn solid red and the unit will emit a 30 second beep followed by 3 short beeps every 5 minutes. When the unit has finished heating the LED will turn solid green.

Finally – Test and Commission the unit.

PROGRAMMING THE RUN TIME ON ACTIVATION

The length of time that the Rapid will produce 'smoke' can be varied between 15 seconds and 6 minutes. To set the smoke production run time follow this procedure:

1. Change Dip Switch 2 to 'ON' (LED should alternate Red / Green to indicate in programming mode).
2. Press the 'PB1' button for 10 seconds – the machine will beep twice. The Rapid timer is now reset to 15 seconds.
3. To extend the length of time that smoke is produced continue to press the 'Test' button. Each press will add 15 seconds up to a maximum of 6 minutes.

4. When the required run time setting is reached change Dip Switch 2 to 'OFF'.

If a mistake is made in programming the run time change Dip Switch 2 to 'OFF' and start again.

15 seconds of run time is equivalent to approximately 75 cubic metres of smoke.

PROGRAMMING THE UPS MONITORING

The Rapid can be set to monitor the UPS (if fitted) and enable the UPS relay output. To alternate UPS monitoring between on and off follow this procedure:

1. Change Dip Switch 2 to 'ON' (LED should alternate Red / Green to indicate in programming mode).
2. Press 'PB2' for 10 seconds – the machine will beep twice. This will toggle the UPS monitoring on and off.
3. When finished change Dip Switch 2 to 'OFF'.

Note: If a UPS fault or no UPS fitted the LED will flash twice every 5 seconds accompanied by 3 short beeps every 30 seconds.

MAINS POWER FAILURE

In the event of a mains power failure or interruption – the Rapid will automatically disable the Pump for 60 seconds after the power is reinstated. This will enable the Hold-off PIR to stabilise and prevent a false activation.

FITTING THE SMOKE FLUID BAG

The Smoke Fluid is stored in the Rapid in a special Fluid Bag. This is located above the heater block. Once the Rapid has been 'Powered Up' and 'Programmed' you should connect the Fluid Bag as follows:

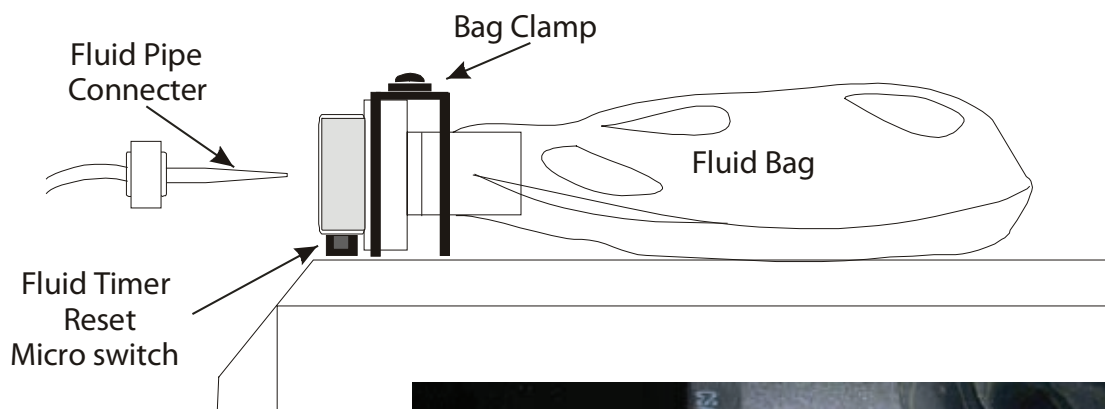
- Undo the Bag Clamp Thumbscrew and swing retaining bar towards pipe.
- Remove the Fluid Bag.
- Insert the Fluid Pipe Connector fully into the rubber seal of the Fluid Bag (Ensure the correct hole is used – the one marked with 'Out' and the ridge on the connector is flush with the rubber seal). NOTE: The rubber seal is visible through the side of the cap as a dark ring. This should line up with the roller on the microswitch.
- Replace the Fluid Bag (Depressing the Fluid Timer Reset Micro Switch), swing the retaining bar back into its original location and refit the thumbscrew.

FLUID TIMER

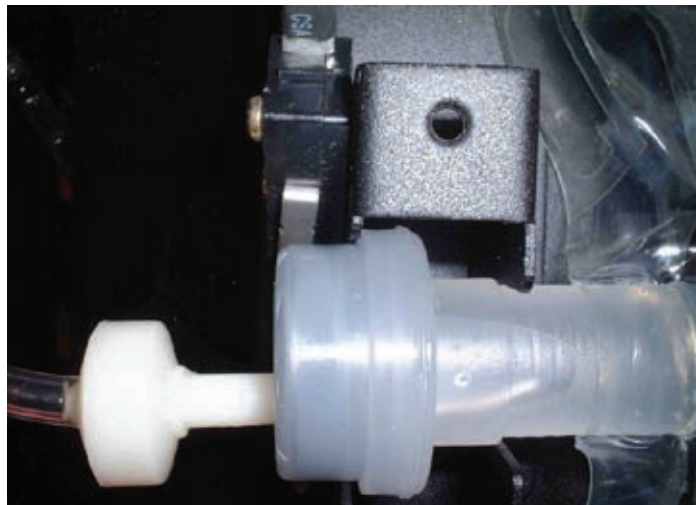
The Fluid Level is monitored using an on-board timer. This measures the amount of fluid used by timing it. Each time the Bag Clamp is unfastened and the Fluid Bag removed the Micro switch is released resetting the timer.

NOTE: Refilling must be done with the unit 'Powered Up'.

INFORMATION – ALWAYS REPLACE A FULL FLUID BAG. FAILURE TO DO SO MAY RESULT IN DAMAGE TO THE RAPID SMOKE FLUID PUMP.



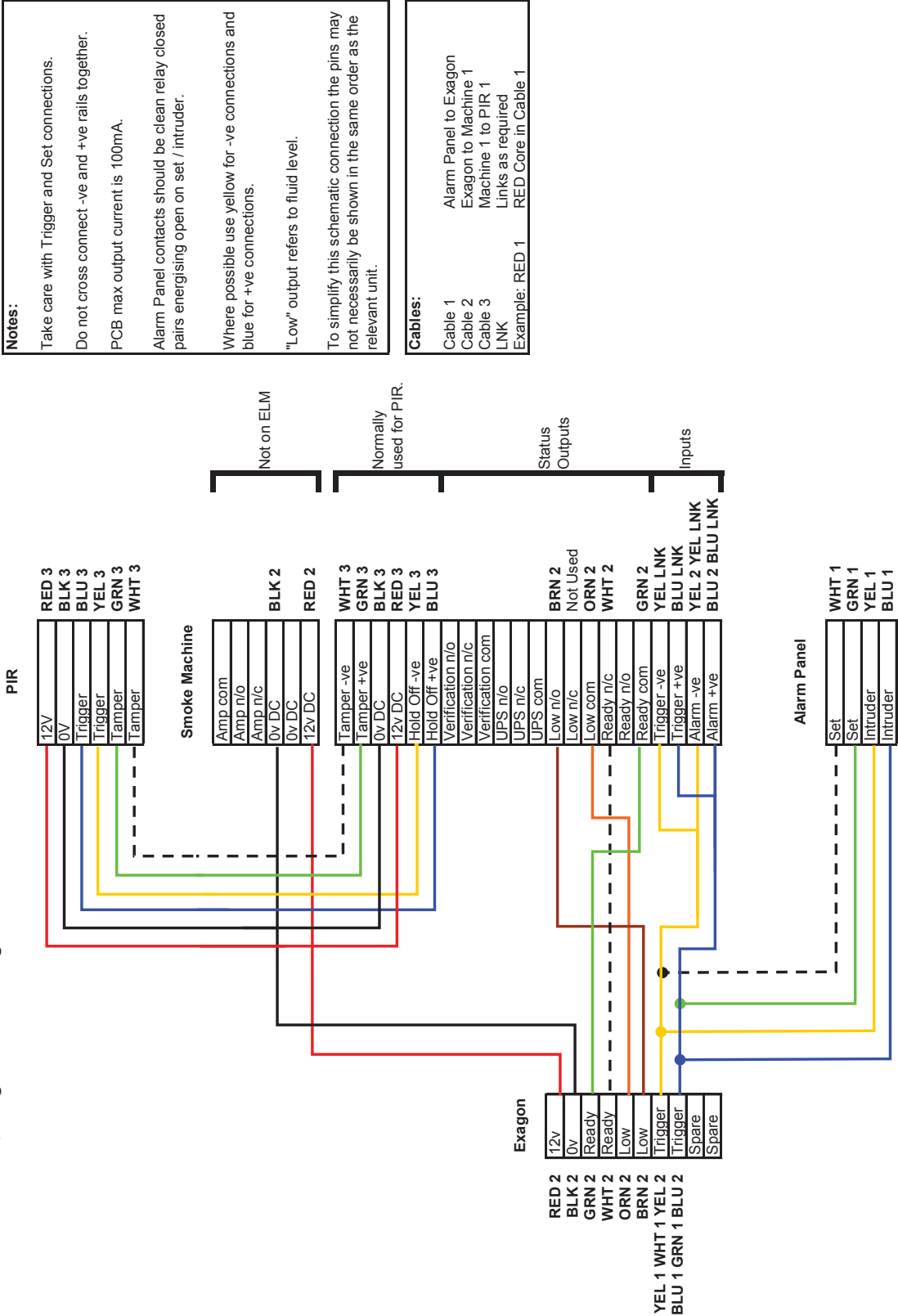
Close-up of the bag clamp, fluid bag and microswitch



LED	CONDITION	AUDIBLE
 2 flashes every 2 seconds	Machine Overheating	1 Short Beep every 5 seconds
 1 flash every 2 seconds	Cover is Open	1 Long Beep every 60 Seconds
 2 flashes every 5 seconds	UPS Power Failure or UPS not connected	3 Short Beeps every 30 Seconds
 1 flash every 5 seconds	AC Mains Power Fail (UPS fitted)	2 Short Beeps every 30 Seconds
 flashing	Heater Fault	1 Long Beep every 10 Seconds
 on	Rapid 'Not Ready'	Continuous Beeping for 30 Seconds followed by 3 Short Beeps every 5 Minutes
 alternating	Rapid in programming mode Dip switch 2 set to ON position	None
 on	Rapid 'Ready'	None
 flashing	Rapid is receiving set and trigger signals but awaiting hold off to activate.	None
 flashing	Rapid has activated and smoke has been produced – LED will continue to flash until both set and trigger signals are reset.	1 Beep every 2 Seconds
 on	'Low Fluid' – First Warning Rapid will continue to produce 'smoke' until 'Empty'	1 Short Beep every 5 Minutes
 flashing	'Low Fluid' – Empty Rapid will not be able to produce 'smoke' in this state.	1 Long and 1 Short Beep every 5 Minutes

EXAMPLE WIRING DIAGRAM

HP or ELM with PIR, Exagon & IAS Wiring



	Filename:	20101202-HP or ELM PIR Exagon & IAS-v2			Page
	Project:	Wiring Diagram Update			1
	Created by:	Hallwood	Checked by:	Max Danesfeldt	of
	Date:	2 Dec 2010	Date:	24 Feb 2011	1

THE EXAGON

SMOKE SCREEN OPERATORS INSTRUCTIONS



NORMAL OPERATION

- Green 'System Ready' LED illuminated
- Keyswitch – turned to 'Ready'

User Action

- Nil

FAULT CONDITIONS

- Panel Buzzing
- Green 'System Ready' LED not illuminated

User Action

- Call 01205 821002

- Panel Buzzing
- Red 'Low Fluid' LED illuminated

User Action

- Change smoke aerosol
- Order replacement aerosol

ACTIONS AFTER ALL SMOKE SCREEN ACTIVATIONS

- **Wait** until the Smoke Screen system has completed it's pre-set operating period and the smoke production has ceased. **Do not try and enter the affected area.**
- **Look for obvious signs of forced entry**, if there are signs of forced entry or if you believe criminals are on the premises wait for the arrival of the Police. Take no further action.
- Where there are no signs of forced entry, open external doors and wait as the smoke starts to vent – this may take 10 – 15 minutes. Keep watch for intruders who may have hidden in the smoke.
- As visibility returns you can open more doors and windows to speed up venting.
- Check the fluid for the Smoke Screen units.

IMPORTANT INFORMATION – SMOKE FLUID

Only SMOKE SCREEN SMOKE FLUID should be used. If other smoke fluids are used damage may occur and noxious fumes emitted. Always ensure that the SMOKE SCREEN has sufficient fluid. If the SMOKE SCREEN has insufficient fluid no smoke will be produced.

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