



# *RAPID HP*

## Security Smoke System

### Installation and Operators Manual

**IMPORTANT** – Please read this manual before commencing installation.

**WARNING**

- **ONLY RAPID SMOKE FLUID SHOULD BE USED. OTHER FLUID MAY DAMAGE THE EQUIPMENT OR PRODUCE TOXIC FUMES**
- **THE HEATER BLOCK CASING IS A HOT SURFACE – CARE SHOULD BE TAKEN IF THE FRONT COVER IS REMOVED**
- **ALWAYS REMOVE SMOKE FROM ROOM AFTER AN ACTIVATION – FAILURE TO DO SO MAY RESULT IN RESIDUE**

## Introduction

Before commencing installation of the Rapid HP security smoke system please ensure that you have all of the equipment required.

Supplied in the box:

- 1 x Rapid security smoke generator
- 1 x Mounting Set (Ceiling Brackets x 2 / Wall Bracket [2 pieces])
- 1 x Smoke Fluid Bag (Boxed)
- 1 x Literature Pack & Warning Sign

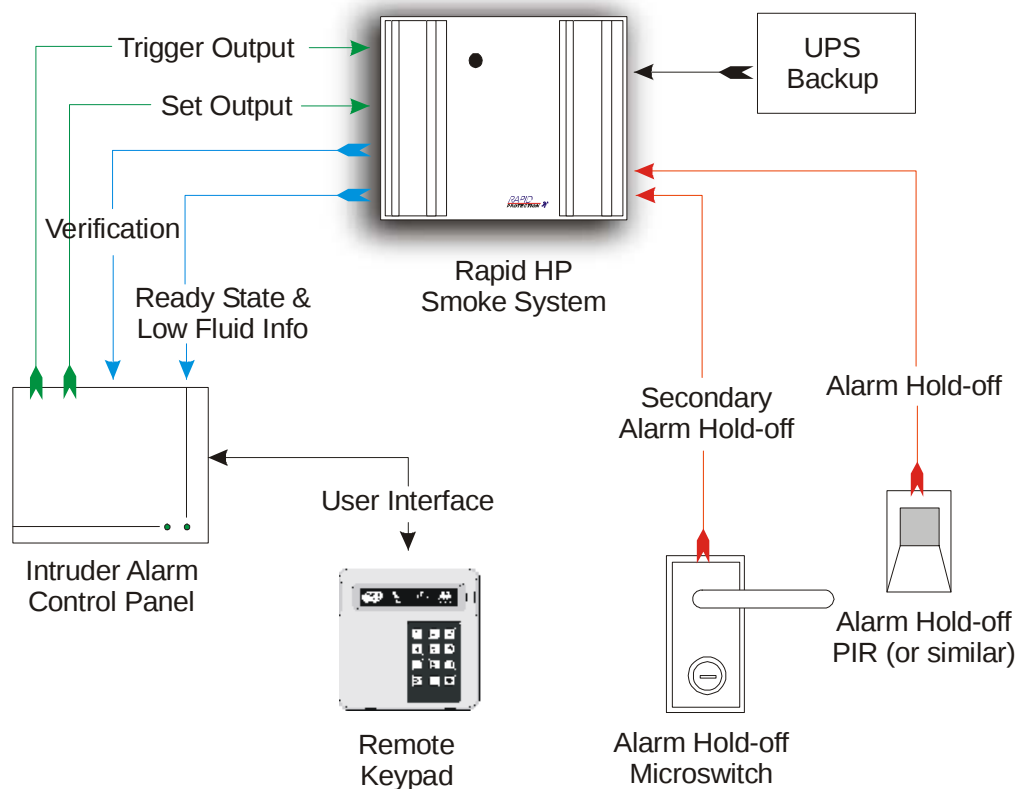
You will also require:

- 230-volt mains supply and Connections into the alarm panel
- PIR (Or equivalent) to provide the hold-off

## Overview

The Rapid HP is designed to form part of an existing intruder alarm system. It may also be configured as a 'stand-alone' system.

A 'standard' installation is shown in the schematic:



## 'Standard' Installation

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

**Rapid Generator** Wall or ceiling mounted in the appropriate location.

**Hold-off PIR** Located within the same area as the Rapid providing a confirmation signal to the Rapid to start 'smoke' production.

**Trigger** Is supplied from the Alarm Control Panel in the form of an N/C (*Normally closed*) relay opening when the panel goes into 'Alarm'.

**Status Monitoring** Is supplied by the Rapid in four ways:

- **Onboard LCD Screen**
- **Onboard LED (Multicolour)**
- **Onboard Sounder**
- **Outputs** –Outputs are provided for connection to the Alarm Panel for 'Ready State', 'Low Fluid' and Verification

**Smoke Fluid** A transparent bag containing 'Smoke Fluid' (500cc or 1000cc).

## Controlling Smoke

There are two sets of connections on the Rapid machine (Trigger and Alarm Set). In order for the machine to produce 'smoke' both 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'.

**Trigger Output** – a normally closed relay connected across the 'Trigger' connections. Opening when the alarm panel is in 'alarm'.

**Hold-off** – usually a PIR or movement sensor connected to the 'Hold-ff PIR' 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 PIR' connections. Where fitted in addition to the Hold-off PIR both sets of relays must be 'open' to produce 'smoke'.

# The Rapid Generator

The Rapid generator has two hinged covers: One on each side.

Viewed from the front: The left panel opens to reveal the fluid bag storage.

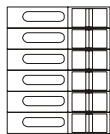
The right panel opens to reveal the PCB and connections

## Connections

Test  
NOP



DIP Switches



Tamper PIR

12v DC PIR

-ve  
+ve

Hold-off PIR

Verification

Output

N/O  
N/C

UPS

Status

N/O  
N/C

Liquid

Status

N/O  
N/C

Not

Ready

N/O  
N/C

Trigger

Alarm Set

COM



All relay outputs are provided as 'volt free' contacts. The 'Trigger' and 'Alarm' inputs are also required to be 'volt free'.

**Hold-off PIR:** The top three pairs of connections support the 'Hold-off PIR'. The 12-volt output is rated at 75mA.

**Important** if no PIR connected the 'Tamper PIR' contacts must be linked out

**Verification:** change of state when 'smoke' is produced.

**UPS Status:** change of state when 'UPS' disconnected.

**Liquid Status:** change of state when fluid is 'Low'.

**Not Ready:** change of state when 'Not Ready'.

**Trigger:** Requires N/C relay opening in 'alarm'.

**Alarm Set:** Requires N/C relay opening when 'Set'

Note: When 'Alarm Set' is connected both relays must be open concurrently for the HP to produce smoke.

## 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)
2. Fasten the Rapid to the bracket and open front covers.
3. Make connections as required to the Alarm Panel and Hold-off PIR
4. Connect mains power (230-volt AC, 50Hz).
5. Set 'Information Record PCB'

## Mounting the Rapid

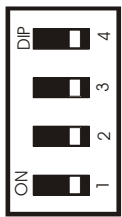
The HP smoke system can either be ceiling mounted, or wall mounted, using the brackets supplied.

If ceiling mounted, it is recommended that the unit is suspended on 2 lengths of M8 studding from a Unistrut section

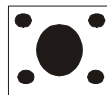
In all cases, the installer must fit to the wall or ceiling using appropriate fasteners.

## Setting the DIP Switches

Open right-hand panel and locate the DIP switches (There is a block of four).



DIP 1: ON = Alarm Input is N/C relay opening in 'Alarm'



DIP 2: ON = Mains Power Only      OFF = UPS Connected

DIP 4: ON = 500cc Fluid Bag      OFF = 1 litre Bag

## Smoke Fluid Bag

Open the left-hand access panel and locate the illustrative label.

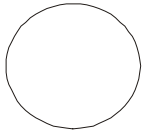
Follow the instructions taking care to ensure that the micro switch is activated properly when the bag is in place.

## Fluid Timer

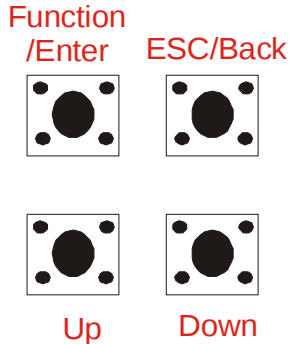
The Fluid Level is monitored using an on-board timer. This measures the amount of fluid used by timing it.

Each time the Bag Clamp is unfastened and the Fluid Bag removed the Micro switch is released resetting the timer.

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



## Setting Up the 'Information Record PCB' Real-time Clock



- Press **Function/Enter** for five seconds.
- Enter date and time information using the LCD screen, the **Up** and **Down** buttons and the **Function/Enter** to confirm. This is done in the following order: Year / Month / Day / Hour / Minute / Second
- When the 'Second' setting is made and the **Function/Enter** key pressed the time and date have now been set and further programming can commence.

## Smoke Burst Time

- Press **Function/Enter** to enter the 'Function Menu'. (The LCD display should show: '1. History Check'). If the display shows 'Tamper Circuit' press **Esc/Back** to reset and try again.
- Use **Up / Down** to scroll to '3. Duration set' and press **Function/Enter**.
- Use **Up/Down** to set the required time and **Function/Enter** to set.

## Event Log – History Check

- Press **Function/Enter** to enter the 'Function Menu'. (The LCD display should show: '1. History Check'). If the display shows 'Tamper Circuit' press **Esc/Back** to reset and try again.
- Press **Function/Enter** to enter the History Check.
- The last event will be shown. Press the **Down** button to see time and date and the **Up** button to return to the event.
- Press **Function/Enter** to check next event.
- Press **Esc/Back** to exit the History Check.

## Status Check

Do NOT alter any parameters in this section it is for the manufacturer only.

## Clear Data

Press **Esc/Back**, **Up** & **Down** simultaneously. Display will show 'Reset Event'. Press **Function/Enter** to confirm; **Up** or **Down** to select 'Yes' or 'No' and finally **Function/Enter** to confirm.

## Operating the HP

While the HP is heating up the LCD display will show “NOT READY”, and the LED indicator on the side of the HP generator will be Red.

If either of the Access panels are open “Tamper Circuit” will be displayed on the LCD and the machine will be in a ‘Not Ready’ condition. The LED indicator will show Red. **(Note: in order to set the Information Record PCB parameters, the LCD will show Tamper Circuit as the Electrical Connection Access panel must be open)**

When the HP reaches the correct working temperature, and a full Smoke Fluid Bag has been correctly installed, the LED Indicator will go Green and the LCD Display will show the date and time (providing the Access panels have been closed)

## To Test

Once the HP has reached Ready state (Green LED On) you can carry out a simple test at the HP generator to check smoke production.

Open the right-hand access panel.

Press and hold down the “Test” button. The machine will produce smoke. Smoke production ceases once the “Test” button is released.

### **Where Possible a full alarm test is recommended.**

If no PIR / Hold Off Detector is fitted the HP will fire for it’s designated Smoke Duration period once:

- Alarm Set Contacts open
- Trigger Contacts open
- HP will now generate smoke fore the designated period unless Alarm or Trigger Contacts are closed

If PIR / Hold Off Detector is fitted the HP will fire for it’s designated Smoke Duration period once:

- Alarm Set Contacts open
- Trigger Contacts open
- PIR Alarm contacts open
- HP will now generate smoke for the designated period, unless ‘Alarm’ or ‘Trigger’ contacts are closed

## LED Buzzer Status Table

In addition to the LCD screen the HP is also fitted with an LED and audible buzzer.

| Machine Status                       | Buzzer                                                     | LED                          |
|--------------------------------------|------------------------------------------------------------|------------------------------|
| Normal                               | No buzzer                                                  | Permanent Green              |
| Machine Overheating                  | 1 short beep every 5 secs                                  | Red flash twice every 2 secs |
| Side Cover Open                      | 1 long beep every 1 minute                                 | Red flash once every 2 secs  |
| AC Power Cut (Only if UPS Connected) | 2 short beeps every 30 secs                                | Red flash once every 5 secs  |
| Heater Fault                         | 1 long beep every 10 secs                                  | Rapid red flash              |
| Fluid Level Empty                    | 1 long beep & 1 short beep every 5 minutes                 | Orange flash                 |
| Fluid Level Low                      | 1 short beep every 5 mins                                  | Permanent Orange             |
| Heating Process Incomplete           | 1 long beep for 30 secs then 3 short beeps every 5 minutes | Permanent Red                |

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