

**DUONET**  
FIRE DETECTION SYSTEM  
Fire Detection & Alarm System Control Panel V1.000

**User Guide**  
(TO BE RETAINED BY USER)

### **Rafiki Protection Limited**

Rafiki policy is one of continual improvement and the right to change a specification at any time without notice is reserved. Whilst every care has been taken to ensure that the contents of this document are correct at time of publication, Rafiki shall be under no liability whatsoever in respect of such contents.

Due to the complexity and inherent importance of a life risk type system then training on this equipment is essential, and commissioning should only be carried out by competent persons.

Rafiki cannot guarantee the operation of any equipment unless all documented instructions are complied with, without variation.

E&OE.

Rafiki equipment is protected by one or more of the following patent no's: GB2426367, GB2370670, EP1158472, PT1035528T, GB2346758, EP0917121, GB2329056, EP0980056, GB2325018, GB2305284, EP1174835, EP0856828, GB2327752, GB2313690

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## Introduction

### ***Purpose of the Guide***

This guide is provided to enable the person responsible for the fire alarm system (see Definitions) to operate the system, undertake their responsibilities with regard to testing and maintenance of the system, and to record events and service/maintenance visits.

This is a generic document and therefore refers to the system components in general terms only. The details of the installed system should be recorded in the space provided within this guide, and for further reference, the record drawings (if applicable) should be consulted.

The responsible person, and any other staff who may be required to operate the system in an emergency, should read and understand the basic operating instructions **before an emergency situation occurs**.

### ***Definitions.***

#### **Responsible person;**

The person having control of the premises, whether as an occupier or otherwise, or any person delegated by the person having control of the premises to be responsible for the fire alarm system and the fire procedures.

#### **Competent Person;**

A person competent to perform a defined task:

Normally a competent person will be an employee of the manufacturer, installer, or servicing contractor, or servicing contractor, or a member of the user's staff who has received suitable training from the manufacturer or supplier.

## ***Understanding the Equipment***

### **What is Duonet?**

Duonet is the name of the range of fire alarm control panels that use the associated Sita 200 plus devices which together form the fire alarm system installed in the premises, and is derived from the type of system, whereby up to four addressable device loops may be connected to each control panel, and up to 32 control panels may be networked together.

Advantages of the Duonet system are significantly reduced cabling costs, enhanced flexibility and flexible expansion capacity if required.

### **What is Multipoint?**

This is the name of the automatic detector used in the Duonet installation. The Multipoint is a unique device, which provides several modes of detection & sensitivity options within a single device, enabling it to be easily configured for the application. One detector can function as a smoke detector or heat detector (or both), and with various levels of sensitivity to suit the environment.

The Multipoint detector may also incorporate an integral sounder for general alarm annunciation or local warning as required, an automatic isolator to maintain maximum cable integrity in the event of cable fault, and the ability to interface a variety of other systems into the Duonet system.

## **System Configuration**

The detectors and call-points are arranged in zones to enable the location of a fire alarm to be identified. The number of zones depends on the size and the layout of the premises, and is limited to 128 zones per control panel (there may be more than one). There should be a chart or drawing provided with the system indicating the area and layout of the zones – ensure that you are familiar with the zone layout so that appropriate action can be taken in the event of a fire alarm.

The Control Panel display may also give you a zone number, a device description, a device number and a device type; indicating the exact location of the device which has operated.

The system may be interfaced with the building services, e.g., the air conditioning may be shut down when the alarm sounds. Make sure that you know what happens when the fire alarm operates as this can affect routine system testing.

The system is powered from the mains supply and incorporates a standby battery which automatically maintains the system in operation for a time of at least 48 hours in the event of a mains supply failure.

## **What to do if . . .**

### **The fire alarm sounds;**

#### **CARRY OUT THE PRESCRIBED FIRE DRILL**

When it is safe to do so silence the alarms and reset the system, having first established the cause of the alarm (refer to Operation).

### **The buzzer sounds;**

If the buzzer sounds without the alarm sounders operating it is likely to be a fault or other abnormal condition.

Make a note of **all** illuminated LEDs and displayed messages, record the time that the condition occurred (if known), and other events within the building, eg., power failure, contractors working, etc., (Refer to troubleshooting). Call the service company with as much information as possible.

## **User Responsibilities**

### ***Introduction***

The responsible person is required under BS5839 to undertake certain tasks with respect to the testing and maintenance of the fire alarm system. The responsible person should also ensure that written procedures are in place for the actions to be taken by the occupants in a fire condition, and that staff required to operate the system have received adequate training. In a small building the fire procedures can be quite simple, but when larger premises are involved the fire procedures can become more complex and may involve the appointment of fire wardens, reporting procedures, various assembly points, etc.

The responsible person is also required to liaise with the building maintenance personnel to ensure that their work does not impair or otherwise affect the operation of the fire alarm system, and to ensure that a clear space is maintained in the vicinity of detectors, and call-points remain unobstructed and conspicuous.

### ***Routine Testing***

The responsible person should also ensure that the following routine testing is carried out. If there is a link to a remote monitoring center it will be necessary to advise the center prior to a test, or use the control panel facilities to isolate the link. On larger systems it may be necessary to isolate building services interfaces to avoid disruption to the occupants. In any case the panel should provide audible and visual indication that parts of the system are disabled.

#### **Daily**

Check that the panel indicates normal operation and that any fault is recorded. Also check that the recorded faults have been dealt with.

#### **Weekly**

At least one detector or call point should be operated to test the ability of the control equipment to receive a signal and sound the alarm.

In practice it is far easier for the user to activate a manual call point, rather than a detector which requires special equipment. A different device should be tested each time if possible, such that each zone on the system is tested at least once in a 13 week period.

The results should be recorded in the log book.

#### **Quarterly**

*'The responsible person should ensure that every three months the following check is carried out by a competent person'*

In other words the system should be checked by a fire alarm service organisation. This may be the system installer or an approved maintenance company, and is normally arranged via a maintenance agreement which specifies the number of visits and the level of service. The agreement should also cover non-maintenance visits, eg. call outs to attend faults, etc.

The standard specifies a number of maintenance tasks which include a visual inspection of the installation to ensure that there are no alterations or obstructions which could affect the operation of the system, and functional checks to confirm the operation of the system.

Any defects should be recorded in the log book and reported to the responsible person. A certificate of testing should also be completed and given to the responsible person.

### **Annual**

The requirements of the annual test are similar to the quarterly test except that each device on the system should be tested. Different service organisations may undertake device testing on the same visit, ie. One major service and three minor service visits per year, or they may test a percentage of the devices on each visit so that they are all tested within the 12 month period.

### **Action by the user after a fire**

Advise the servicing company and arrange for the system to be tested by them. A certificate of testing should be issued to confirm the system operation following the inspection and any remedial work that is necessary.

### **Action by the user after any false alarm**

The user can assist the servicing company in the identification of false alarms by observing the following:

- Always make a note of all illuminated indicators and messages displayed at the control panel.
- Try and identify the activated device, ie. Do not reset the system until the area of the incident has been inspected.
- Record any other incidents occurring at the same time which could affect the system, eg. power supply failure, building works, etc.

The service organisation will be more likely to trace the false alarm if the above information is available.

### **Action by the user following a fault**

When a fault is reported by the control panel, the user should note all illuminated LEDs and messages displayed, and the circumstances at the time the fault occurred, and report to the servicing company.

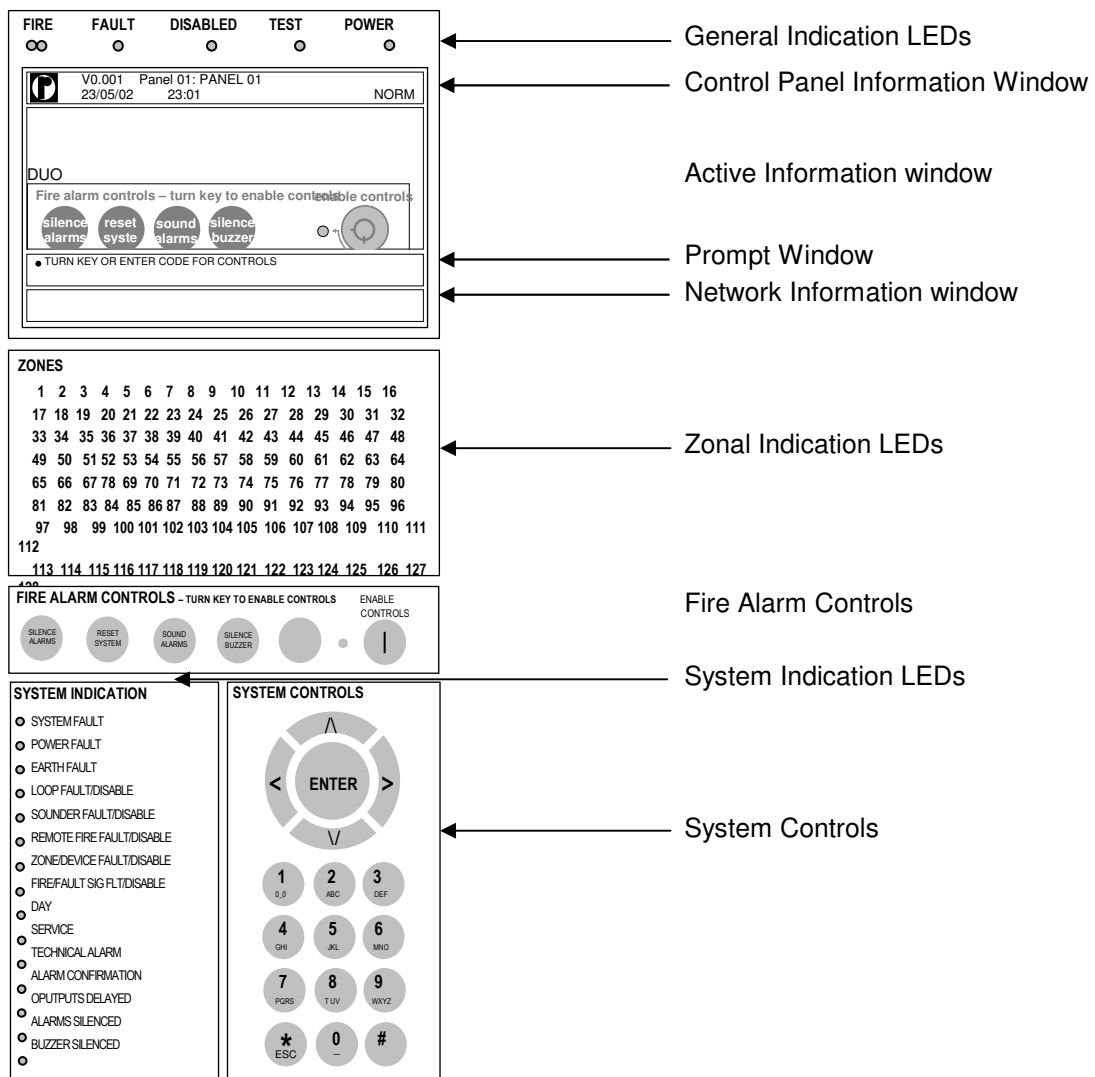
The service company will be able to advise if the system is still able to respond to a fire alarm or whether extra vigilance should be observed until the fault is rectified. Faults should not be left unreported.

## General Operation

### Normal

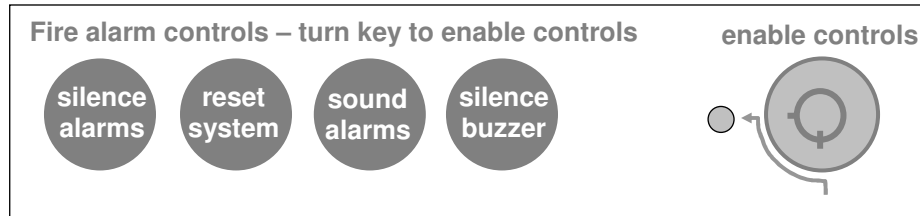
In the normal operating mode only the green POWER LED is lit. If any other LEDs are lit and/or the buzzer is sounding there is an abnormal condition present.

### Control Panel Front

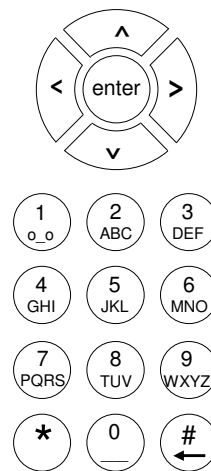
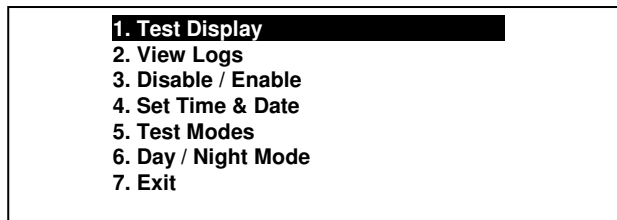


## Fire Alarm Controls

The main Fire Alarm Controls may be enabled by turning the key switch to the controls enabled position, or by entering a valid Access code



## System Controls



A context-driven highlighted-selection menu system is used to pilot around the menu system, automatically prompting you with the relevant options for your Access Level and system status.

The menus may be navigated in one of two ways as required:

1. Use the **UP / DOWN** keys to move the highlighted selection and press **ENTER** to select the chosen one.
2. Enter the desired option number and press **ENTER** to select it.

Press the **Esc** key to exit to the previous menu.

## Access Levels and Codes

The menu system is divided into four access levels in order to restrict access to those who require it. For simple indication the status of the **Controls Enabled** light will show the level selected as follows;

Access Level	Description	Shift LED	Key Operation	Default Code
1 – NORM	Normal	OFF	YES	N/A
2A – USER	User	ON	YES	8737
2B – SUPR	Supervisor	SLOW FLASH	NO	7877
3 – ENGR	Engineer	FAST FLASH	NO	3647

Access to the menu system requires either the operation of the **enable controls key** for access to Access Level 2A (User), or the correct entry of the relevant code for access to all other levels, in order to protect against unauthorised access to the system. The codes may be changed using the Quadnet OSP software.

A valid access level code must be entered in order access any of the menus.

## **Fire Alarm**

When the panel enters the fire state, the alarms will sound, the fire LEDs will illuminate, the buzzer will pulse quickly and the display will show the location and type of alarm.

## **On Hearing the Alarm**

The responsible person should have already prepared written procedures for the action to be taken in the event of a fire alarm. When the alarm sounds these procedures should be implemented.

## **Accessing the Controls**

The user controls are accessed from Access Level 2A (User), or Access Level 2B (Supervisor) which is reached as follows:

1. Turn the key,

Or:

Enter your Access Level 2 (User)  
or Access Level 2B (Supervisor)  
code, ie, # # # #

The 'CONTROLS ENABLED' light will light up continuously, and **USER** is displayed in the top right hand corner.

The buzzer will be heard on each key press, and when successfully entered the 'CONTROLS ENABLED' light will light up continuously, and **USER** or **SUPR** is displayed in the top right hand corner.

You are now in Access Level 2A (User) or Access Level 2B (Supervisor) and may proceed to silence and reset the system.

## **Silence Alarms**

When the fire procedures have been carried out and it is safe to silence the alarm, proceed as follows.

1. Press '**SILENCE ALARMS**'

The alarm sounders should silence, but the buzzer and the fire indication lights should remain.

## **Reset System**

Before attempting to reset the system the cause if the alarm should be established.

1. Press '**RESET SYSTEM**'

The buzzer and the fire indication lights should switch off.

However, if any alarm condition still exists, eg., a manual call point requires resetting, then the panel will revert to the fire state until the cause for the alarm is removed.

Note: if the panel does not reset or a fault condition is displayed, call your maintenance engineer immediately.

## ***Sound Alarms***

To sound the alarms at any time after they have been silenced, proceed as follows:

1. Press '**SOUND ALARMS**'                      The alarm sounders will activate. The buzzer and the fire indication lights will also switch on.

## ***Silence Buzzer***

To silence the buzzer press the [**SILENCE BUZZER**] button at access level two as above .

1. Press '**SILENCE BUZZER**'                      The fault buzzer will be silenced.

## ***Exit Access Level 2A (User) or Access Level 2B (Supervisor)***

In order to prevent unauthorised access to the system, return to Access Level 1 (Normal). However, if left untouched the display will time out after a short while and return automatically to Access Level 1 (Normal).

1. Turn the key **OFF** if it is turned on.                      The 'CONTROLS ENABLED' light will switch off and the controls are disabled.  
Or;  
Press '**ESC**' until the system shows **NORM** in the top right hand corner.                      **NORM** is displayed in the top right hand corner.

**Troubleshooting**

<b>Problem</b>	<b>Possible Cause</b>	<b>Remedial Action</b>
Unable to silence alarms	Panel not in Access Level 2A (User) or Access Level 2B (Supervisor)	Enter Access Level 2A (User) or Access Level 2B (Supervisor) - see section on operation
Unable to reset system	Alarms not silenced	Silence alarms before attempting to reset the system
	Panel not in Access Level 2 (User) or Access Level 2B (Supervisor)	Enter Access Level 2 (User) or Access Level 2B (Supervisor) - see section on operation
	Alarm condition still present	Remove cause of alarm, eg., replace broken glass in call point
Buzzer sounding, FAULT LED lit	Fault or abnormal condition	Note all illuminated LEDs and displayed messages. Call engineer
Buzzer sounding, POWER FAULT LED flashing, 'Mains supply failed' displayed.	Mains supply failure	Wait until mains supply is restored – if panel does not revert to normal operation call engineer.
Buzzer sounding, SYSTEM FAULT LED lit	Control panel fault	Call engineer immediately
Any other fault or abnormal behaviour	Various	Note all illuminated LEDs and displayed messages. Call engineer

## **Advanced Operation**

### ***Access Level 1 (Normal): Controls Enabled LED off***

At Access Level 1 (Normal), the main **Fire Alarm Controls** are disabled and the Controls Enabled LED is switched off.

A valid access level code must be entered in order access any of the menus.

### ***Access Level 2A (User): Controls Enabled LED off***

At Access Level 2A (User), the main **Fire Alarm Controls** are enabled, and the following **System Controls** are accessible:

1. Test Display
-----------------

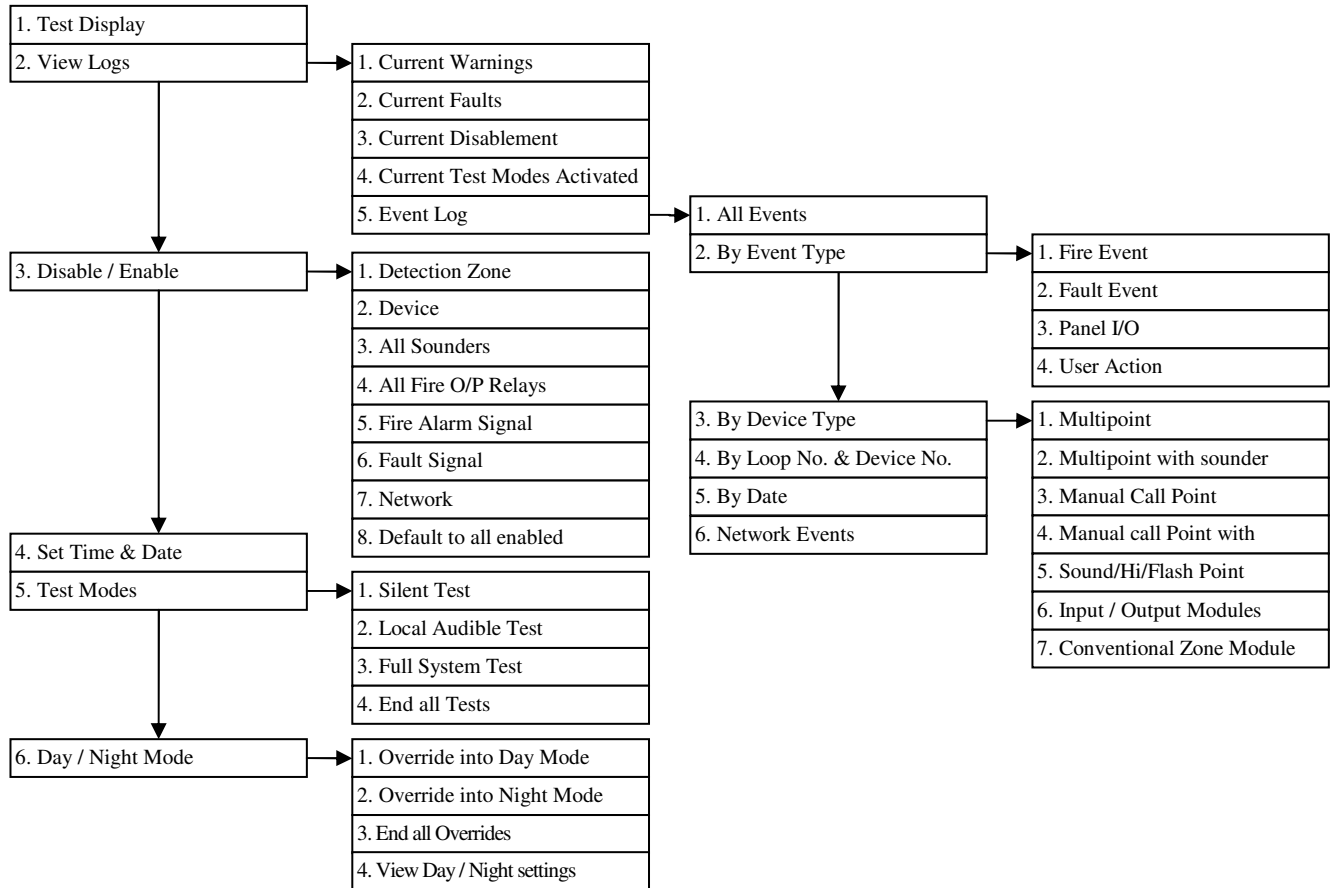
#### **Test Display**

The Test Display function causes the panel LEDs to pulse, and the LCD screen to blacken, and the buzzer to sound in order to verify their correct operation.

Press the **Esc** key to exit to the previous menu.

**Access Level 2B (Supervisor) ): Controls Enabled LED flashing slowly**

At Access Level 2B (Supervisor), the main **Fire Alarm Controls** are enabled, and the following **System Controls** are accessible:



**Test Display**

The Test Display function causes the panel LEDs to pulse, and the LCD screen to blacken, and the buzzer to sound in order to verify their correct operation.

**View Logs: Current Warnings**

The Active Warnings Log will display any current warnings. These are displayed in text format and may be scrolled through by pressing the **UP** and **DOWN** keys.

**View Logs: Current faults**

The Active Faults Log will display any current faults. These are displayed in text format and may be scrolled through by pressing the **UP** and **DOWN** keys.

**View Logs: Current Disablement**

The Active Disablement Log will display any current disablement. These are displayed in text format and may be scrolled through by pressing the **UP** and **DOWN** keys.

### **View Logs: Current Tests**

The Active Tests Log will display any current disablement. These are displayed in text format and may be scrolled through by pressing the **UP** and **DOWN** keys.

### **View Logs: Event Log**

The Event Log stores 1000 fire and fault events which may be displayed in entirety, or displayed by category. These are displayed in text format and may be scrolled through by pressing the **UP** and **DOWN** keys.

### **Disable / Enable: Detection Zone**

This function allows the disablement or enablement of a detection-zone. Thus, all the input devices (Manual Call Points, detectors and inputs) within that detection-zone will be disabled. The control panel will indicate that disablements are present, a disablement event will be recorded to log, the device LED will still operate when activated and an event will be recorded to log, but no programmed actions will occur. The sounder within the device will still operate if triggered from elsewhere on the system.

### **Disable / Enable: Device**

This function allows the disablement or enablement of an individual device. The control panel will indicate that disablements are present, a disablement event will be recorded to log, the device LED will still operate when activated and an event will be recorded to log, but no programmed actions will occur. The sounder within the device will still operate if triggered from elsewhere on the system.

### **Disable / Enable: All Sounders**

This function allows the global disablement or enablement of all the sounders on the system. The control panel will indicate that disablements are present and a disablement event will be recorded to log.

### **Disable / Enable: Fire Output Relays**

This function allows the global disablement or enablement of all the outputs on the system that are programmed for common or remote fire. The control panel will indicate that disablements are present and a disablement event will be recorded to log.

### **Disable / Enable: Fire Alarm Signal**

This function allows the global disablement or enablement of all the outputs on the system that are programmed for Fire Alarm Signal transmission. The control panel will indicate that disablements are present and a disablement event will be recorded to log.

### **Disable / Enable: Fault Signal**

This function allows the global disablement or enablement of all the outputs on the system that are programmed for Fault Signal transmission. The control panel will indicate that disablements are present and a disablement event will be recorded to log.

### **Disable / Enable: Network**

This function allows the disablement or enablement of programmed Network operation at that control panel. The transmission and / or the receipt of signals may be disabled as required. The control panel will indicate that disablements are present and a disablement event will be recorded to log.

### **Disable / Enable: Default to all enabled**

This function enables any device / action that may have been disabled, and all programmed actions are reinstated. The control panel event log will indicate that all actions have been reinstated.

### **Set Time and Date**

This allows the time and date to be adjusted. These settings will need to be re-entered after the complete removal of power, as the system will simply resume from the point that power was removed.

### **Test Modes: Silent Test**

The Silent Test function allows the selection of one or more detection-zones to operate in a 'silent one-man walk test mode'. On triggering a device the device LED operates and the event is recorded into the event log as a test activation, but the sounder does not sound and the control panel does not show an alarm. After approximately 5 seconds the system will reset the device, and another may be tested. The control panel event log will indicate that a test mode has been selected.

### **Test Modes: Local Audible Test**

The Local Audible Test function allows the selection of one or more detection-zones to operate in a 'one-man walk test mode with local sound'. On triggering a device the device LED operates, the sounder within that device operates and the event is recorded into the event log as a test activation, but the control panel does not show an alarm. After approximately 5 seconds the system will reset the device, and another may be tested. The control panel event log will indicate that a test mode has been selected.

### **Test Modes: Full System Test**

The Full System Test function allows the entire system to operate in a simple one-man walk test mode. On triggering a device the device LED operates and the event is recorded into the event log, all the assigned sounders operate for 10 seconds and the control panel indicates an alarm. After approximately 10 second the system will reset the device, and another may be tested. The control panel event log will indicate that a test mode has been selected.

Please note, with the system test mode, only the sounders assigned to operate from that device will sound, and any delays will still be present. i.e., if a delay of 2 minutes is present, the system will have been reset before the sounders activate.

### **Test Modes: End all Tests**

This function ends any test routine that may have been activated, and all programmed actions are reinstated. The control panel event log will indicate that all actions have been reinstated.

### **Day / Night Mode: Override into Day Mode**

This function allows the user to override any pre-programmed Day / Night timing information and force the system into the less sensitive Day Mode. This will cause the buzzer to sound and a disablement to be written to log.

### **Day / Night Mode: Override into Night Mode**

This function allows the user to override any pre-programmed Day / Night timing information and force the system into the more sensitive Night Mode. This will cause the buzzer to sound and a disablement to be written to log.

### **Day Night Mode: End all Overrides**

This function ends any override on the Day / Night Mode, and all programmed actions are reinstated. The control panel event log will indicate that all actions have been reinstated

### **Day Night Mode: View Day / Night Setting**

This function allows the user to view the start and finish times for each day.

## LED Indication

The operation of the LED indication on the front of the control panel is described below.

	Description	Colour	State	Reason
1.	<b>FIRE</b>	Red	Flashing	The control panel is in the fire state. Other indicators will show the origin
2.	<b>FAULT</b>	Amber	Flashing	The control panel is in the fault state. Other indicators will show the origin
3.	<b>DISABLED</b>	Amber	Continuous	This indicates that a disablement action is in place. Enable all devices / actions to clear.
4.	<b>TEST</b>	Amber	Continuous	This indicates that a test routine is in place. End all tests to clear.
5.	<b>POWER</b>	Green	Continuous	This indicates that power is being supplied to the control panel from either the 230V AC mains supply, or the standby batteries.
			Flashing	The 230V AC mains supply has been removed.
6.	<b>'ZONE 1-32'</b>	Red	Flashing	A Manual Call Point in the zone indicated is in the alarm state and sending an alarm signal to the panel.
			Continuous	A Detector in the zone indicated is in the alarm state and sending an alarm signal to the panel.
67	<b>SYSTEM FAULT</b>	Amber	Continuous	The system Fault LED indicates the presence of a processor or a checksum error. Power the system down to clear, reprogram all settings and test the system.
8.	<b>POWER FAULT</b>	Amber	Flashing	Either a battery supply / charger fault has been detected (check the fuse and the battery voltages) , or a mains supply fault has been detected (check for a 24V AC supply on the PCB Ac terminals).
9.	<b>EARTH FAULT</b>	Amber	Flashing	An earth fault has been detected where a path exists from the circuit wiring to earth. Remove circuits one at a time to discover which one, and then rectify.
10	<b>LOOP FAULT / DISABLE</b>	Amber	Flashing	A fault condition is present one of the addressable device loops, or one of the addressable devices.
			Continuous	A device or an action associated with the addressable device loop has been disabled
11	<b>SOUNDER FAULT / DISABLE</b>	Amber	Flashing	A fault condition is present on a monitored sounder circuit or on the addressable device loop sounders.
			Continuous	A device or an action associated with the monitored sounder circuits or an addressable sounders has been disabled.
12	<b>REMOTE FIRE OUTPUT FAULT / DISABLE</b>	Amber	Flashing	A fault condition is present on a monitored Relay circuit or on the addressable device loop outputs.
			Continuous	A device or an action associated with the monitored relay circuits or an addressable output has been disabled.
13	<b>ZONE / DEVICE FAULT / DISABLE</b>	Amber	Continuous	A device or zone, or an action associated with them has been disabled.
14	<b>'FIRE / FAULT SIGNAL FAULT / DISABLED'</b>	Amber	Flashing	A monitored output programmed to operate as a Fire or Fault Signal Transmission Output is in the fault

			Continuous	state. A monitored output programmed to operate as a Fire or Fault Signal Transmission Output has been disabled.
15	<b>DAY</b>	Amber	Flashing	The system Day / Night mode timing has been overridden, and forced into the less sensitive day mode.
.			Continuous	The system has gone in the less sensitive day mode as programmed.
16	<b>SERVICE</b>	Amber	Flashing	The pre programmed service interval has expired and a routine maintenance check is due.
.				
17	<b>TECHNICAL ALARM</b>	Amber	Flashing	A device programmed as Technical Alarm is in the alarm state and sending a Technical Alarm signal to the panel.
.				
18	<b>ALARM CONFIRMATION</b>		Flashing	A smoke detector is in the alarm confirmation state, awaiting confirmation or reset.
.				
19	<b>'OUTPUTS DELAYED'</b>	Amber	Continuous	An action has been started which utilises a programmed delay.
.				
20	<b>ALARMS SILENCED</b>	Amber	Continuous	The alarm sounders have been silenced whilst operating, and the system is awaiting a reset.
.				
21	<b>BUZZER SILENCED</b>	Amber	Continuous	The control panel buzzer has been silenced whilst operating and will stay silenced until another fault or relevant action occurs.
.			Flashing	The control panel buzzer has been disabled at Access Level 3 (Engineer), and will remain silent until it is reinstated. However, the buzzer will still operate in the fire alarm state.

















**Installation Details**

This section should be completed by the commissioning engineer at handover.

Name of Responsible Person: .....

Name and address of installation: .....

.....

Ref. No. (if applicable): .....

Date of Handover: .....

Name and address of installer: .....

.....

Tel: .....

Fax: .....

**Equipment:**

Control Panel: Duponet V: ..... Serial No.: .....

No. of Loops used: ..... No. of zones used: .....

Total No. of Devices: ..... No. of detectors:  
.....

No. of call-points: ..... No. of sounders:  
.....

Interfaces: ..... Mains Supply: .....

Loop +ve continuity: ...../..... Loop -ve continuity: ...../.....

Loop Screen continuity: ...../..... Loop +ve to -ve resistance: ...../.....

Loop +ve to Screen res: ...../..... Loop -ve to Screen resistance: ...../.....

Loop Screen to Earth res: ...../.....

Access Level 2A (User) code: ..... (Default – USER) .....

Access Level 2B (Supervisor) code: ..... (Default – SUPR)  
.....

**In an emergency call:**

Normal Hours: .....

Out of hours: .....