

Twinflex and Multipoint – V3

User Guide (TO BE RETAINED BY USER)

Twinflex User Guide

Rafiki Protection Limited

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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 Twinflex?

Twinflex is the name of the range of control panels and associated devices which together form the fire alarm system installed in the premises, and is derived from the method of wiring whereby trigger devices (detectors and call points) are connected to the same pair of wires, unlike the majority of systems which employ separate circuits for detectors and sounders.

Advantages of the Twinflex system are a significant reduction in cabling costs and a neater installation.

What is Multipoint?

This is the name of the automatic detector used in the Twinflex installation. The Multipoint is a unique device, which provides several modes of detection and 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 also incorporates an integral sounder for general alarm annunciation or a local warning as required.

What is Checkpoint?

Checkpoint is a feature of the Twinflex plus range, which provides configuration options suitable for applications involving residential premises such as apartments, hotels and HMOs (houses of multiple occupation). Checkpoint panels are identified by the 'Checkpoint' logo on the panel fascia.

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 the capacity of the control panel. The number of zones on the panel (2, 4, or 8) is the maximum capacity available and may not be the number of zones installed, i.e. there may be less. 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 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 24 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.

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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 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.

Access Levels

In normal operation the panel controls are inoperable, to prevent unauthorised operation (ACCESS LEVEL 1 – Normal Level).

In order to operate the panel following a fire or fault alarm, or for routine testing, the controls must be enabled by entering ACCESS LEVEL 2 (User level).

2 and 4 Zone Panels

Press the ALT button and then enter the access level 2 code (514).

Note. *The 3-digit access code is advised at handover - ensure that it is known to all personnel who may be required to operate the panel.*

The CONTROLS ENABLED LED is lit and the controls are enabled.

Note. *The panel reverts to normal operation (access level 1) if no button is pressed for 5 minutes - or enter access code again to immediately revert to access level 1.*

8 Zone Panel

Set the key-switch to ON.

The CONTROLS ENABLED LED is lit and the controls are enabled.

Note. *Turning the key-switch OFF reverts to access level 1*

There is a third access level which is used by engineers to access engineering functions and configuration options, but is not required for general functions and is therefore not described in this guide.

Fire Alarm

A fire alarm is annunciated when a detector detects smoke or heat, a manual call point is operated, or an input is active. The subsequent actions depend on the actual configuration but generally:

- the alarms sound
- the FIRE LEDs are lit
- the buzzer pulses quickly
- the relevant zone LED is lit

The panel indicates if the activated device is a detector or a call point.

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.

Silencing the Alarms

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

Set the panel to access level 2 (see above).

Press button 1.

The ALARMS SILENCED LED is lit and the buzzer continues to pulse. The alarm sounders are muted.

Note . If another device is activated on a different zone, e . g. by the fire spreading, the alarms will resound and the new alarm is displayed.

Resetting the System

Before attempting to reset the system the cause of the alarm should be established. An activated detector is indicated by its LED being lit, and a call point can be identified by the broken glass.

The system will not reset if the cause of the alarm is still present, e.g. smoke or heat in the vicinity of a detector or broken glass in a call point.

Set the panel to access level 2.

Press button 2.

Note. The alarms must be silenced before the panel can be reset.

Sound Alarms (Evacuate)

To activate the sounders at any time, or after they have been silenced, proceed as follows:

Set the panel to access level 2.

Press button 3.

The panel displays a fire condition and activates the sounders.

To silence the sounders, silence alarms and reset the system as described previously.

Silence Buzzer

The buzzer can be silenced as follows:

Set the panel to access level 2.

Press button 4.

The BUZZER SILENCED LED is lit. The buzzer will continue to sound intermittently as a reminder that an abnormal condition exists.

If the panel does not reset or a fault condition is displayed, call the service engineer.

Exit Access Level 2 (Normal)

2 and 4 Zone Panels

Press the ALT button and then enter the access level 2 code (514).

The CONTROLS ENABLED LED is extinguished and the controls are disabled.

Note. The panel reverts to normal operation (access level 1) if no button is pressed for 5 minutes.

8 Zone Panel

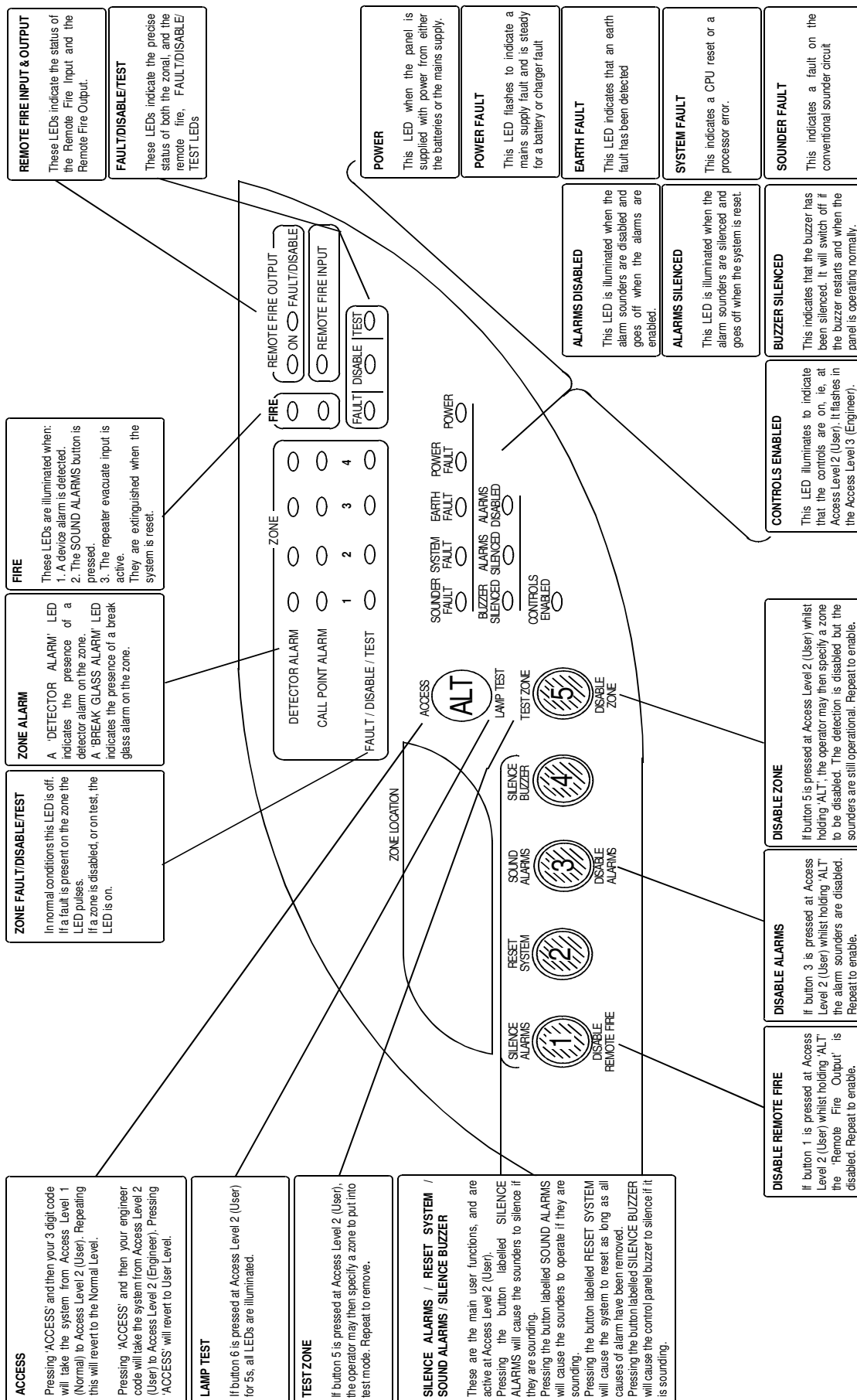
Set the key-switch to OFF.

The CONTROLS ENABLED LED is extinguished and the controls are disabled.

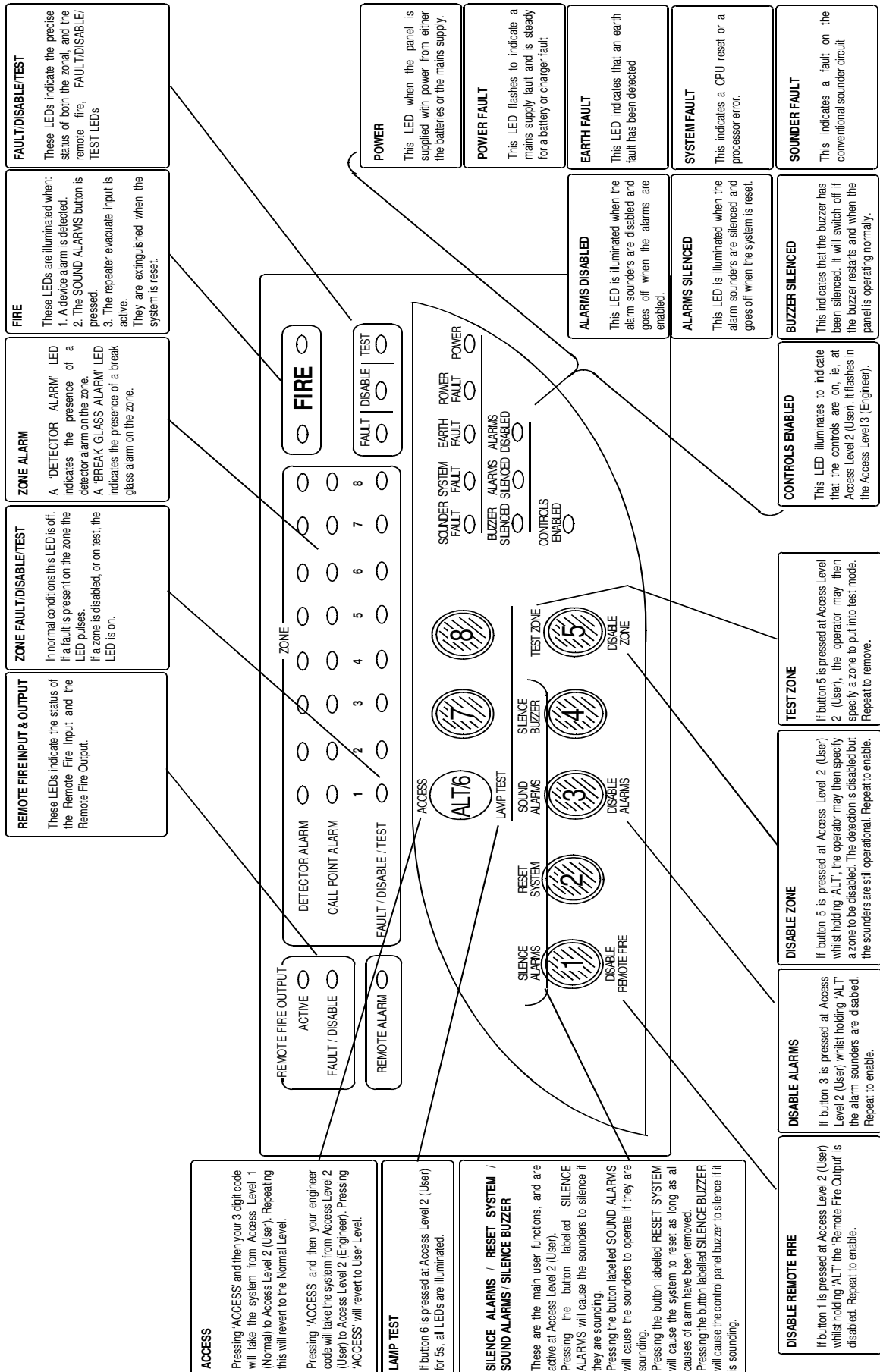
Troubleshooting

Problem	Possible Cause	Remedial Action
Unable to silence alarms	Panel not set to ACCESS LEVEL 2	Enter access code (2/4 zone panel '514') or operate key-switch (8 zone panel)
Unable to reset system	Alarms not silenced	Silence alarms before attempting to reset the system
	Panel not set to ACCESS LEVEL 2	Enter access code (2/4 zone panel '514') or operate key-switch (8 zone panel)
	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. Call engineer
Buzzer sounding, POWER FAULT LED flashing,	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

Access Level 2 (User) Operation Instructions – 2/4 Zone Panel



Access Level 2 (User) Operation Instructions – 8 Zone Panel



Detailed Operation Instructions

Access Level 1 (Normal)

In the 'Normal' state the panel is active in detecting fire and fault conditions and will sound the alarm sounders when it is triggered. The 'User Controls' are disabled and a code entry is required for any operation of the system other than the 'LAMP TEST'

The only indication at this point should be the green 'POWER' light, unless any fire or fault conditions are detected.

To Enter Access Level 2 'User' mode (2 or 4 zone panels)

1. Press '**ACCESS**' and then **514** The buzzer will be heard on each key press, and when successfully entered the 'CONTROLS ENABLED' light will light up continuously.

If an incorrect code is entered, simply start the above sequence again.

To Enter Access Level 2 'User' mode (8 zone panels)

1. Insert the **key** and turn clockwise The 'CONTROLS ENABLED' light will light up continuously.

Access Level 2 (User)

In the 'User' state the panel is still active in detecting fire and fault conditions and will sound the alarm sounders when it is triggered. The 'User Controls' are enabled and operate as described below.

At this point the control panel indication should include a steady green 'POWER' light and a steady yellow 'Controls Enabled' light, unless any fire or fault conditions are detected.

The control panel will time out of this mode in approximately 5 minutes from the last key press, returning to Access Level 1 (Normal).

To Exit Access Level 2 'User' mode (2 or 4 zone panels)

1. Press '**ACCESS**' and then **514** A continuous buzzer tone will start when 'ACCESS' is pressed, and will continue until the code is finished. When complete the 'CONTROLS ENABLED' light will turn off.

If an incorrect code is entered, press the 'ACCESS' button before starting the above sequence again

To Exit Access Level 2 'User' mode (8 zone panels)

1. Turn the **key** anti clockwise and remove it. The 'CONTROLS ENABLED' light will turn off.

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Silence the Alarms (all panels)

1. Press '**SILENCE ALARMS**' (button 1)

The alarm sounders should silence, the buzzer and the fire indication lights should remain and the 'ALARMS SILENCED' light should come on.

Reset the System (all panels)

1. Press '**RESET SYSTEM**' (button 2)

The buzzer and the fire indication lights should switch off.

However, if any Manual Call Points are still activated or any detector are still in alarm due to continued presence of smoke or heat, then the system will re-activate into the fire condition again.

These will need to be cleared before the system may be reset.

Sound the Alarms (all panels)

1. Press '**SOUND ALARMS**' (button 3)

The alarm sounders will activate. The buzzer and the fire indication lights will also switch on

Silence Buzzer (all panels)

1. Press '**SILENCE BUZZER**' (button 4)

The fault buzzer will be silenced and the 'Buzzer Silenced LED will light. The 'Buzzer Silenced' LED will extinguish when the faults are cleared, and the buzzer will start again only if another fault condition occurs.

Test Mode (all panels)

The 'Test Zone' function allows the selection of a single detection zone to operate in a 'one-man walk test mode'. On triggering a device the device LED and the sounders operate, and control panel enters the fire state as normal. After approximately 5 seconds the system will reset, and another may be tested.

1. Press '**TEST ZONE**' (button 5)
2. Press the button corresponding to the zone to be selected, ie, **3** for zone 3

A continuous buzzer tone will start

The continuous buzzer tone will change to an intermittent tone if a zone has been selected for test, or it will stop if the zone has been de-selected from test.

The 'Test' LED and the relevant zone 'Test' LED will light during test

Repeating the above sequence will reverse the previous option, i.e., 'on test' to 'off test'.

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Disable Remote Fire (all panels)

The 'DISABLE REMOTE FIRE' function allows the isolation of the remote fire output. The control panel will then not activate the remote fire output when the control panel enters the alarm state.

1. Press and hold the button marked '**ACCESS**'
A continuous buzzer tone will start
2. Press the button marked '**DISABLE REMOTE FIRE**' and then release them both.
The continuous buzzer tone will change to an intermittent tone if the Remote Fire Output has been disabled and will stop if the Remote Fire Output has been enabled.

The remote fire output 'FAULT' light and the common 'DISABLE' light will also switch on during disablement.

Repeating the above sequence will reverse the previous option, i.e., disabled to enabled.

Disable Alarms (all panels)

The 'DISABLE ALARMS' function allows the isolation of all of the alarm sounders. The control panel will then not activate the alarm sounders when the control panel enters the alarm state.

1. Press and hold the button marked '**ACCESS**'
A continuous buzzer tone will start
2. Press the button marked '**DISABLE ALARMS**' and then release them both.
The continuous buzzer tone will change to an intermittent tone if the alarms have been disabled and will stop if the alarms have been enabled.

The 'Alarms Disabled' light and the common 'DISABLE' light will also switch on during disablement.

Repeating the above sequence will reverse the previous option, i.e., disabled to enabled.

Disable Zone (all panels)

The 'DISABLE ZONES' function allows the isolation of a detection zone. The control panel will then ignore all alarm signals from that zone, but the alarm sounders will still activate in alarm.

1. Press and hold the button marked '**ACCESS**'
A continuous buzzer tone will start
2. Press the button marked '**DISABLE ZONES**' and then release them both.
The continuous buzzer tone will continue

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3. Press the button corresponding to the zone to be selected, ie, **3** for zone 3
- The continuous buzzer tone will change to an intermittent tone if a zone has been disabled and will stop if the zone has been enabled.

The zone 'Disabled' light and the common 'DISABLE' light will also switch on during disablement.

Repeating the above sequence will reverse the previous option, i.e., disabled to enabled.

Lamp Test (all panels).

1. Press and hold the button marked '**LAMP TEST**'
- The buzzer will sound immediately and after 5 seconds all the indication lights will be switched on.

Release the 'LAMP TEST' and both the indication lights and the buzzer will stop.

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LED Indication

The operation of the LED indicators on the front of the control panel are described below.

	Description	Colour	State	Reason
1.	'FIRE'	Red		The control panel is in the fire state. Other indicators will show the origin
2.	'DETECTOR ALARM'	Red	Flashing	A smoke or heat detector is in the alarm state and sending an alarm signal to the panel. The Multipoint LED will be on continuously.
3.	'CALL POINT ALARM'	Red	Continuous	A manual call point is in the alarm state and sending an alarm signal to the panel. The manual call point LED will be flashing.
4.	'FAULT'	Amber		This indicates the status of the multifunction FAULT/DISABLE/TEST LED.
5.	'DISABLE'	Amber		This indicates the status of the multifunction FAULT/DISABLE/TEST LED.
6.	'TEST'	Amber		This indicates the status of the multifunction FAULT/DISABLE/TEST LED.
7.	'FAULT/DISABLE/TEST', and 'FAULT'	Amber	Flashing at same time as buzzer. Flashing twice in between buzzer pulses.	No 'End of Line' signal is being received, eg: EOL not switched on An open or short circuit exists on the wiring. A device is signalling a fault condition, or more than one device is set to 'End of Line', eg: Optical Chamber removed. Optical Chamber contaminated or dusty. Output Module fault loop open circuit. Output Module has no 24V DC supply.
8.	'FAULT/DISABLE/TEST', and 'DISABLE'	Amber		The zone has been disabled at Access Level 2 (User).
9.	'FAULT/DISABLE/TEST', and 'TEST'	Amber		The zone is in test mode.
10.	REMOTE OUTPUT 'ON'	FIRE Red	Continuous	The Remote Fire Output (monitored relay circuit) has been activated by the control panel.
11.	REMOTE OUTPUT 'FAULT/DISABLE' and 'FAULT'	FIRE Amber	Flashing	The Remote Fire Output (monitored relay circuit) has detected a fault condition, eg: An open or short circuit exists on the wiring. The 4K7 EOL resistor is not fitted. A device fitted is not dioded for polarisation and suppression
12.	REMOTE OUTPUT 'FAULT/DISABLE' and 'DISABLE'	FIRE Amber	Continuous	The Remote Fire Output (monitored relay circuit) is disabled.
13.	'REMOTE FIRE INPUT'	Red	Continuous	The Remote Fire Input is in the fire state.

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14.	'SOUNDER FAULT'	Amber	Continuous	<p>The Remote Fire Output (monitored relay circuit) has detected a fault condition, eg:</p> <ul style="list-style-type: none"> An open or short circuit exists on the wiring. The 4K7 EOL resistor is not fitted. A device fitted is not dioded for polarisation and <p>Suppression This only relates to the conventional sounder circuit, not the 2-wire zones.</p>
15.	'SYSTEM FAULT'	Amber	Continuous	<p>The system Fault LED indicates that the processor has rebooted. It may be cleared with a silence and reset from Access Level 2 (User)</p> <p>Or,</p> <p>A checksum error has been detected. Reprogram all setting to clear.</p>
16.	'EARTH FAULT'	Amber	Continuous	<p>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.</p>
17.	'POWER FAULT'	Amber	Continuous	<p>A battery supply or charger fault has been detected. Check the fuse and the battery voltages.</p>
			Flashing	<p>A mains supply fault has been detected. Check for a 24V AC supply on the PCB Ac terminals.</p>
18.	'POWER'	Green	Continuous	<p>This indicates that power is being supplied to the control panel from either the 230V AC mains supply, or the standby batteries.</p>
19.	'BUZZER SILENCED'	Amber	Continuous	<p>The buzzer has been silenced. The indication will finish when the underlying condition is removed.</p>
20.	'ALARMS SILENCED'	Amber	Continuous	<p>The alarm sounders have been silenced, but the control panel has not yet been reset.</p>
21.	'ALARMS DISABLED'	Amber	Continuous	<p>The alarm sounders have been disabled to prevent their operation.</p>
22.	'CONTROLS ENABLED'	Amber	Off	<p>The control panel is at Access Level 1 (Normal). It is active and the user controls are disabled.</p>
			Flashing	<p>The control panel is at Access Level 2 (User). It is active and the user controls are enabled.</p>
			Continuous	<p>The control panel is at Access Level 3 (Engineer). It is active and the user controls are replaced with the engineer controls.</p>

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.

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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: Twinflex / Twinflex plus

Zone Description:

- | | |
|---------|---------|
| 1. | 5. |
| 2. | 6. |
| 3. | 7. |
| 4. | 8. |

No. of detectors:

No. of call-points:

No. of sounders:

Interfaces:

Mains Supply:

In an emergency call:

Normal Hours:

Out of hours: