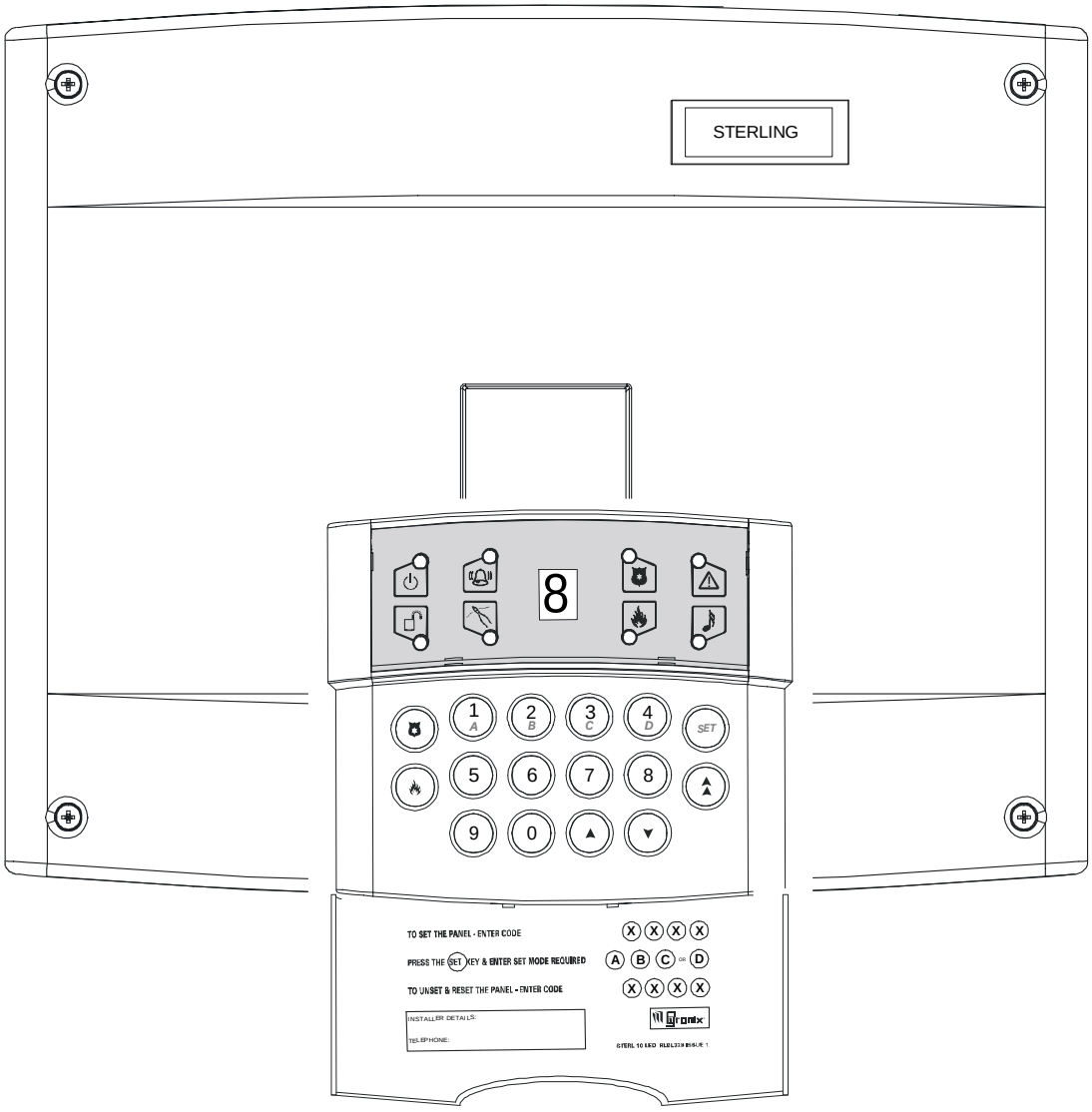
STERLING™ 10

INSTALLATION INSTRUCTIONS
LED KEYPAD



Pyronix Ltd. **October 2001**

This product is approved for use in the
Residential, Commercial and Light Industrial Environment.

CE

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WARRANTY
This product is sold subject to our standard warranty conditions and is warranted against defects in workmanship for a period of 2 years. In the interest of continuing improvement of quality, customer care and design, Pyronix reserve the right to amend specifications without giving prior notice.

A copy of our warranty can be obtained from the above address.

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1 INTRODUCTION

The Sterling 10 intruder alarm control panel is based around a micro-controller with 8 fully programmable zones. Operated via a single Remote keypad situated at a convenient point around the premises. Up to four additional keypads may be installed. Each keypad has an arrangement of 8 LEDs to show the status of the system, and a 7 segment display to show programming data and events held in the event-log memory.
All features are fully programmable and there are three levels of access to the system.

The Limited User codes allow access to the basic functions needed for everyday setting and unsetting of the system.

The Master User level gives access to all setting and unsetting facilities, but also allows the changing of code numbers and testing of the system.

The Engineer level gives total access to the system including the ability to re-configure the system and reset the system event-log memory. The Engineer cannot, however, unset the system.

2

SAFETY

1. The mains electrical installation should be carried out in accordance with National and local regulations by a technically competent person.

2. Always remove / isolate the mains supply before carrying out servicing of the panel.

3. Connect the unit to a single pole fused spur. If the neutral cannot be identified use a double pole disconnect version.

4. The equipment should be mounted so that no access can be gained to the electrical cable entry point.

5. Always mount the equipment vertically. This will ensure the correct airflow inside the unit under a full load.

6. On completion of wiring, all cables should be tied together to prevent any possibility of a loose wire causing a safety hazard.

7. There are no user serviceable parts inside.

Fuses - For continued protection against the risk of fire replace only with the same type and rating of fuse.

Batteries - 12V (See section 11 - Technical Specifications)

Electrical Safety Standards - Designed to comply with EN60950 and IEC950

Telecommunications Safety Standards - Meets required standards

Labels

Protective Earth: For continuing electrical safety in the event of a failure of the electrical safety insulation this equipment **must** be earthed.

Functional earth: To allow the equipment to operate correctly.

Double installation: Has two layers of electrical insulation and therefore does not require any protective earthing.

Hot surfaces: Surfaces, which may cause injury.

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EC Declaration of Conformity

Manufacturer:	*As above*	
Authorized Representative: (established within the EU)	*Not applicable*	
Details of electrical equipment		
Model name(s)	*Sterling 10 (Plastic Housing)*	
Description:	*Control and Indicating Equipment*	
Directives this equipment complies with:	*EMC 89/336/EEC* *LVD 73/23/EEC*	
Harmonised Standards applied in order to verify compliance with the Directives:	*EMC: EN50081-1: 1992* *EN50130-4: 1995 + A1:1998* *LVD: BS EN 60950:1992/A3:1995*	
Test Reports issued by:	**Test House**	**Report/Certificate**
	York EMC Services, Three Lane End Business Park, Methley Rd, Castleford West Yorkshire, WF10 1PN, England.	*EMC: R/00/069*
	KTL, Saxon Way, Priory West Park, Hull, HU13 9PB, England.	*LVD: 8A744CEU1*
Technical Construction File:	*Not applicable*	
Year in which CE mark was affixed:	*1998*	

Authorized signatory:

	Manufacturer	**Authorized Representative**	**Date of issue**
	.....	.....	*June 2000*
Name:	*Craig Leivers*	*Not applicable*	**Place of issue** *Pyronix Ltd.*
Position:	*Research & Development Director*		

3 ACCESS LEVELS

3.1 **Limited User** Level Enables:

a. Panel Setting and Unsetting with a unique pass code.
b. Enabling and disabling of the door chime facility.
c. Event log viewing.

3.2 **Master User** Level Enables:

a. All Limited User facilities.
b. Alteration of both Limited and Master User codes.
c. Walk test facility for all four set modes.
d. Clearing of event log (if allowed by the Engineer).
e. LED / Strobe / Bell / Extension Speaker test facility.

3.3 **Engineer** Level Enables:

a. All Master User facilities except setting and unsetting.
b. Zone programming for all four set modes.
c. Bell timer setting.
d. Entry / Exit timer settings.
e. Alteration of Engineer code.
f. Enabling or Disabling of Event log reset by Master user.
g. Programming of programmable output options.

4 OPERATING MODES

Unset This is when the panel is in day mode and is indicated by a green 'Day' LED on the front of the RKP. Fire, Personal Attack and Tamper inputs remain permanently active.

Set When the panel is Set, an activation of any Access, Immediate or 24 hour zone will cause an alarm condition. When an alarm is generated the internal and external sounders will operate for the length of time programmed and the tone of the internal sounder will be two notes repeated rapidly. The strobe lamp and internal sounder will also be activated and will continue to operate until the panel is reset.

At the time of setting the control panel, any one of four set modes can be selected. i.e.
Set A: Whole system set; nobody on premises.
Set B: Upstairs off, Downstairs set.
Set C: Upstairs set, Downstairs off.
Set D: Garage and kitchen off, remainder on.
The above are purely examples. The Engineer has the ability at the programming stage to configure all the circuits to the customer's exact requirements.

5 ZONES

A zone is an area protected by the alarm and can be configured when programming the panel.

5.1 Programmable Zones

Entry / Exit This is a zone which is programmed as the main entry and exit of the premises. When the alarm is set and this zone is triggered a preset count down starts. Any zones set as access will not trigger an alarm, if other zones are entered before the panel is unset an alarm will be generated immediately.

Access This is a zone which allows access to and from the panel for a set timed countdown period. If the panel is set and an Access zone is triggered before an Entry / Exit zone then an alarm will be generated immediately.

Immediate This is a zone which will, when entered, create an alarm when the panel is set.

Omit If a zone is programmed as an Omitted zone by the Engineer, then it is ignored by the panel. It allows the user to continue to use the alarm system even if a fault has been discovered on one or more zones.

Fire Triggering of the fire zone will activate internal and external sounders. A fire alarm is identified by a three note rising sound which is easily distinguished from all other tones.

24 Hour Zones Will cause an instant alarm when the panel is in day or set mode. Fire, Personal Attack and Tamper are all 24 Hour Zones.

NOTE: *The Fire Zone is intended as an extra feature to the intruder alarm system and must not be regarded as a total fire protection system.*

Latched Keyswitch
May be programmed to set the System in any one of the set modes (specified set mode to be programmed by the engineer).

Momentary Keyswitch
May be programmed to set the System in any one of the set modes (specified set mode to be programmed by the engineer).

5.2 Dedicated Zones

Personal Attack Triggering of the Personal Attack 'PA' zone will always cause an alarm activation regardless of whether or not the panel is set. The PA zone may be programmed as silent . A silent P.A. activation will not cause the bell and strobe to operate but the Alarm Receiving Centre will be informed of a P.A. activation.
NOTE: *Communication equipment must be installed and an* Alarm Receiving Centre *Subscribed to for the silent PA to operate.*

Tamper The tamper zone may be programmed to give an internal only sounder or internal and external sounder in day mode. In set mode both sounders will operate

6 CONTROLS AND FUNCTIONS

Volume Control — This is only accessible when the front cover has been removed and will only affect the volume of any extension speakers. The volume control is overridden when the panel is in an alarm state.

Chime — Function applies to 'day' mode only and if selected will cause the panel to generate a three-note sound when an entry/exit zone is triggered. This feature is to inform the occupants of the building that someone has entered the building. Only entry/exit zones configured in Set A, will generate a chime.

Event Log — The Sterling 10 control panel incorporates a memory log of the last 100 alarm events and is accessible to both Users and the Engineer. It will record Fire, Intruder, Personal Attack and Tamper alarms and also show if any of the 8 alarm zones have been triggered or omitted. The Engineer can set the clearing of the log for either Engineer-only or Master User and Engineer.

Auto Re-set: — After an alarm the panel will automatically reset itself (up to the programmed number of times selected by the engineer - refer to Programmable rearms) when the bell timer has expired. Any zones which still remain triggered at that time will be omitted automatically.

Programmable Resets:
The number of control panel auto reset maybe programmed as follows:
a) from 1 to 9 to give up to 9 resets *or* b) 0 to give continuous resetting after an alarm activation.

Walk test: — The walk test function allows each of the set modes to be checked in order to verify that all the intruder detectors on the alarm system are functioning correctly. When undergoing a walk test the Engineer or Master User can choose which of the set-modes he wishes to test. Any zones used in that set-mode will cause a chime at the RKP or extension speaker if they are triggered.

Keypad Time-out: There is a 60 second keypad time-out facility. If a key is not pressed within 60 seconds of the last keypress the keypad buffer is cleared.

Communicator Delay:
A programmable delay allowing a system reset in the event of a false alarm before communicator outputs activate.

Bell Delay: — A programmable delay allowing response to a communicator activation before sirens and strobe are enabled.

Duress Code: — When setting or unsetting the panel if the last two digits of the code are reversed the alarm is then activated in Duress mode, the panel will appear normal but a duress code will be sent via the PA Com port to the Central Receiving Station.

Push To Set: — This function enables the system to be set at the keypad but will not set until a remote switch is pressed, after all zones are closed.

Timed Exit: — This function enables the normal countdown timer facility for exiting the premises.

Final Door: — When programmed any zone programmed as Entry/Exit, will when opened and closed set the system.
NOTE: Exit terminators (push to set, timed exit and final door) may be programmed differently for each set type.

Anti Code Algorithm:
The engineer can program the first digit of the anti code as a means of identifying the installation.

Programmable Outputs:
There are 2 programmable outputs which may be programmed for any of the following 3 options:

Remote LED Enable: — This option will allow PIR LEDs to be enabled during Walk test mode if they have been originally disabled by removing the link pin.
This option will only work if the PIR has a remote LED enable facility.

Latch Memory: — This feature is useful when more than one detector is connected to a single zone. When the panel is set the LEDs of any triggered detector on this zone will latch causing their LEDs to flash on and off when the panel is unset. This feature will only work if the PIR has a Latch Memory facility.

Shock Sensor Reset: — When the panel is reset after an alarm activation, power to the shock sensors will momentarily disconnect to reset any sensor connected to the Programmable Output.

NOTE: *Only Programmable Output 1 has this option.*
Programmable Output connections are marked on the PCB as PGM Outputs 1 and 2.

Code Tamper: During set mode, entry of an invalid code will operate the Code Tamper.
After sixteen incorrect key pushes a full alarm condition will be generated. This will be logged as a Tamper in the events log.

Keyswitch Set Configuration:
Any of the Sterling alarm zones may be programmed as a keyswitch zone. The keyswitch may be configured to set the panel as either Set A, B, C or D. (see programming section for details).

System Options

These are programmable options which determine how the alarm responds and communicates to different conditions and functions.

System Option 1. The system may be configured for use with the following:

User Log Reset Enable: This option allows the user to reset the system log by entering 

User Log Reset Disable: By selecting this option only the engineer has the ability to reset the system log.

Engineer Only System Reset:
After an alarm activation the user may disable the siren and bell box only. The engineer code must be entered to reset the system.

User System Reset: After an alarm activation any user code can be entered to reset the system.

Internal & External Sounders On Tamper Activation:
This option will cause both internal and external sounders to activate on a tamper alarm when the panel is in day mode.

Internal Sounder Only On Tamper Activation:
This option will cause only the internal sounder to activate upon a tamper alarm when the panel is in day mode.

Silent P.A. Zones: The P.A. zone activation will not generate internal or external sounders if this option is selected. The PA digital communicator will be switched.

Audible P.A. Zones: The Personal Attack zone activation will cause both internal and external sounders to operate.

System Option 2.

Siren Enable on Line Fail: With this option selected a line fail will cause the siren to activate when the panel is in day or set mode, any programmed bell delay will be overridden. A system 3 fault will be generated.

No Siren Enable on Line Fail:
A line fail will only be indicated on the keypad by a flashing Fault LED and a repeating single tone. A system 3 fault will be generated.

Engineer Code Lock NVM Reset:
This option allows the control panel programmable settings to be reverted back to factory default when in engineers mode only.

Engineer Power Up NVM Reset:
This allows the control panel programmable settings to be reverted back to factory default if the reset pins on the PCB are shorted together on powering up the system.

Panel Set on AC Fail: When the mains supply to the panel has failed the panel can still be set.

No Panel Set on AC Fail: When the mains supply to the panel has failed the panel cannot be set.

Limited Reset: Users can reset the panel after a keypad activated P.A or Fire alarm or a 24 hour zone alarm when in day mode, but an engineer code or anti code must be entered after a zone alarm activation when in set mode. System option 1 must be configured for engineer only system reset or System Option 4 anti code reset.

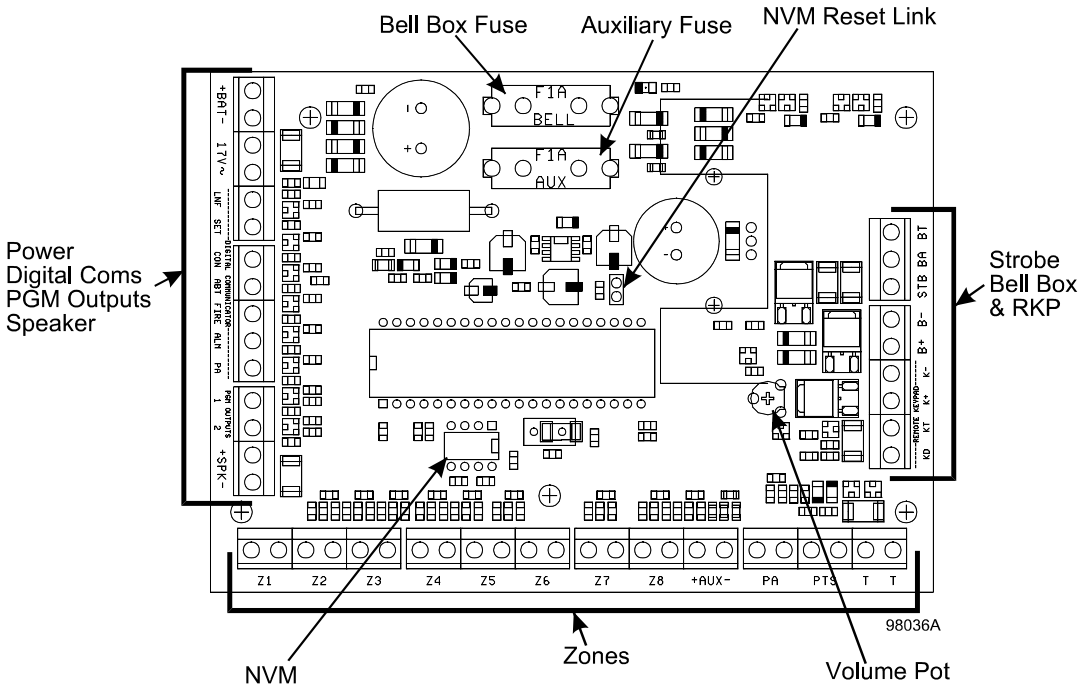
All Resets:	After any alarm condition (P.A. Fire or zone) an engineer code or anti code must be entered. System option 1 must be configured for engineer only system reset or System Option 4 anti code reset.

System Option 3.

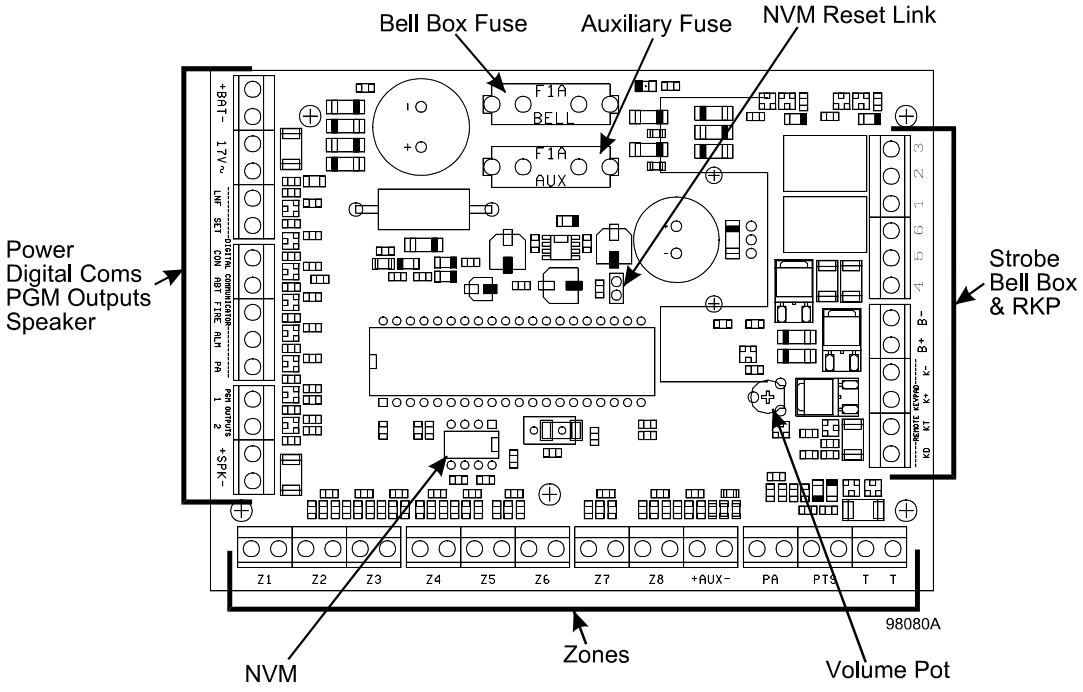
Alarm Digi Active High:	This will switch from 0 to 12V at the alarm digi com output when the alarm is activated.
Alarm Digi Active Low:	This will switch from 12 to 0V at the alarm digi com output when the alarm is activated.
PA Digi Active High:	This will switch from 0 to 12V at the PA digi com output when the PA is activated.
PA Digi Active Low:	This will switch from 12 to 0V at the PA digi com output when the PA is activated.
Fire Digi Active High:	This will switch from 0 to 12V at the Fire digi com output when the Fire key is activated.
Fire Digi Active Low:	This will switch from 12 to 0V at the Fire digi com output when the Fire key is activated.
Confirm Digi Active High:	This will switch from 0 to 12V at the Confirmed digi com output.
Confirm Digi Active Low:	This will switch from 12 to 0V at the Confirmed digi com output. System Option 4
Abort Digi Active High:	This will switch from 0 to 12V at the Abort digi com output when the panel is reset after an alarm activation if a code is entered before a 90 second time out period.
Abort Digi Active Low:	This will switch from 12 to 0V at the Abort digi com output when the panel is reset after an alarm activation if a code is entered before a 90 second time out period.
Open Digi Active High:	This will switch from 0 to 12V at the Open digi com output when the panel is Set or unset.
Open Digi Active Low:	This will switch from 12 to 0V at the Open digi com output when the panel is set or unset.
Service Timer:	Allows the engineer to programme a number of system set/unset cycles before the user is informed that a system service is required. Where the system is covered by a maintenance agreement, the Service Timer may be used to alert the user that a service is due. A flashing E in the seven segment display indicates a service is due. The service time period is controlled by the number of Set and Unset cycles and can be configured to lockout the system on expire. Refer to System Option 4.
Anti Code Reset:	If enabled, after an alarm activation the user may disable the siren and bell only, to reset the system fully the user must enter an anti code. The anti code is a randomly generated 5 digit number displayed on the keypad, the number should be given to who ever holds the anti code generator, who in turn will give you a 4 digit number which when entered at the keypad will reset the panel. As a means of identifying the system the engineer can program the first digit of the code, refer to function 31.

7 INSTALLATION

Before beginning any installation work read through this section carefully. Plan out the various areas and degrees of protection required from each zone. It is important to decide which type each zone should be if part sets are to be used. Work out the cable routes avoiding mains cabling and consider the chosen position for the control panel.

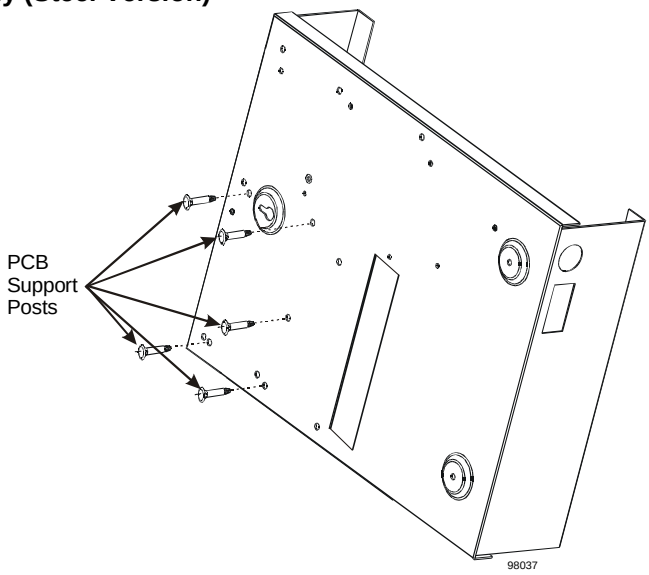


Sterling PCB Layout Transistor Version

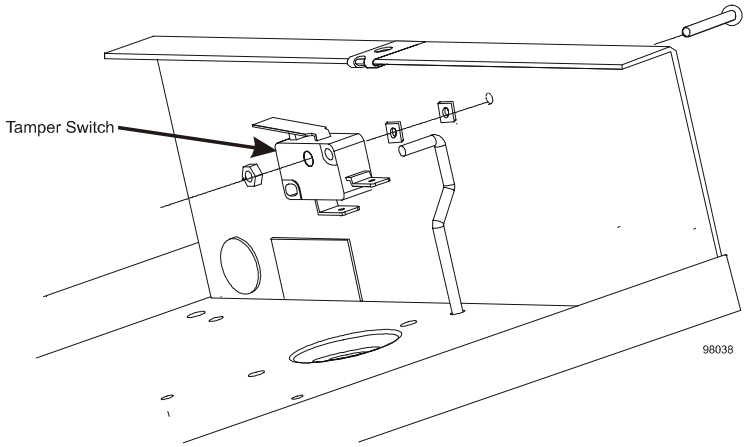


Sterling PCB Layout Relay Version

7.1 Panel Assembly (Steel Version)

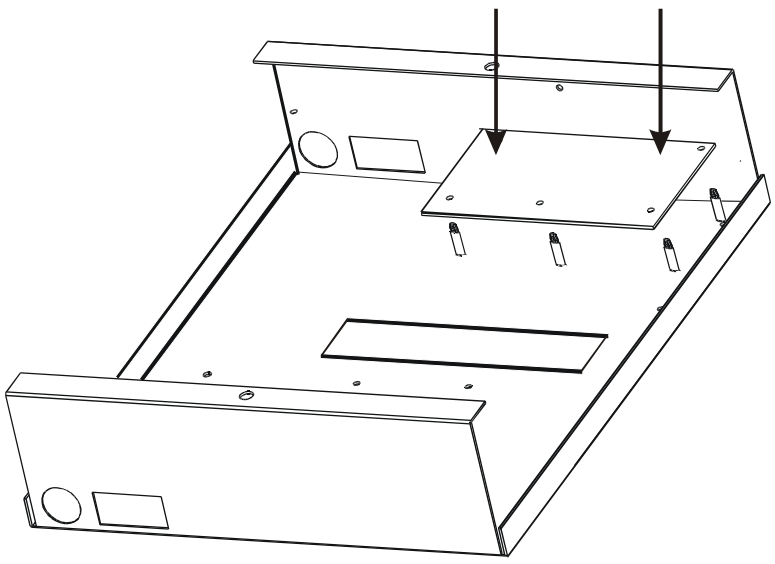


Take off the front cover and remove the components. Push in the PCB support posts from the rear of the panel as shown.



Assemble the tamper switch from the kit of parts as indicated.

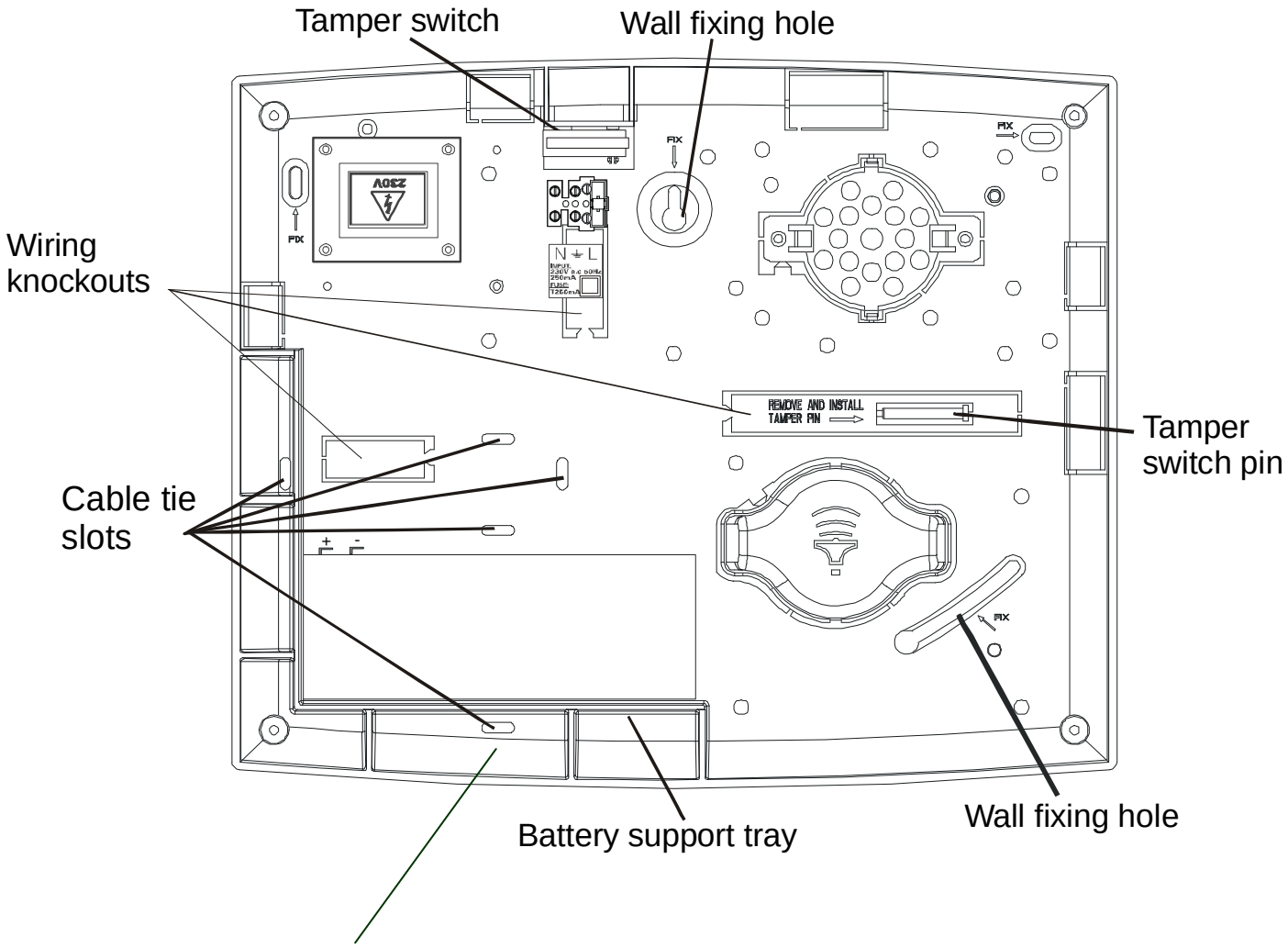
NOTE: *When installing the panel cover the long screw should be used in the top hole, this will enable the tamper switch to be operated correctly. Do not use the long screw in the bottom hole as damage to the battery may occur.*



Fix the control panel to the wall using the screws and fixings supplied. Carefully place the PCB onto the supports and push into place.

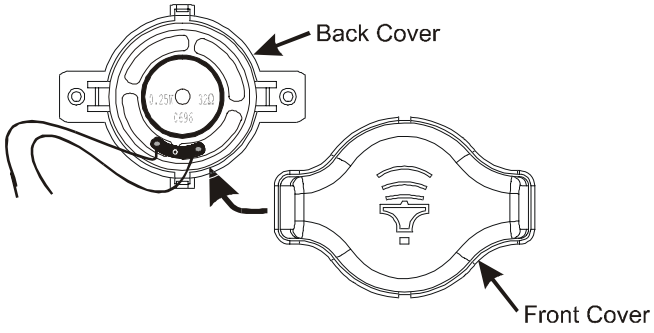
7.2 Panel Assembly (Plastic Version)

The Sterling 10 plastic case is packaged with the transformer, speaker and tamper switch in place. The speaker cover, tamper switch pin and cable knock out should be removed from the panel prior to affixing to the wall.



Note: Use the cable tie provided to secure the battery in place

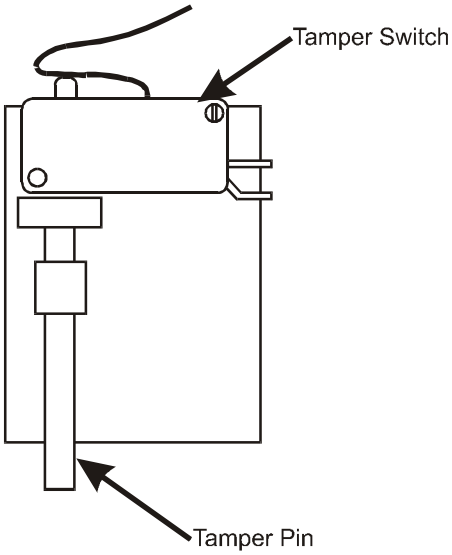
Remove the speaker back cover. If the internal speaker is to be used inside the panel, discard the front cover. If the speaker is to be fitted externally remove the speaker back cover from the panel. The speaker should be mounted using the two outer holes on the back cover and then clip the front cover into place.



Remove the tamper pin and insert into the tamper pin hole from the rear of the panel.

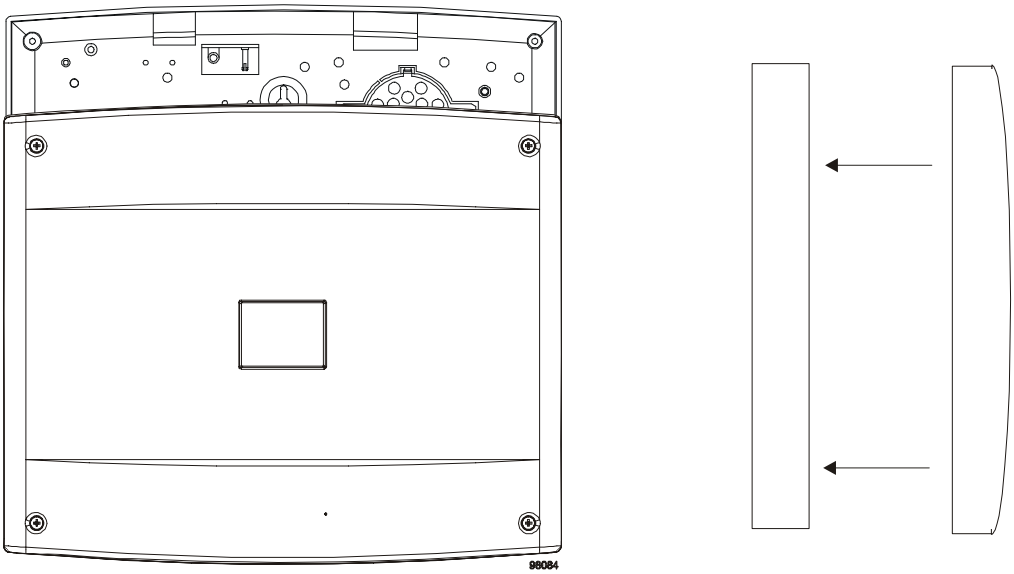
Remove the cable knock-outs as required.

Fix the control panel to the wall using the screws and fitting supplied. Carefully place the PCB onto the supports and push into place.



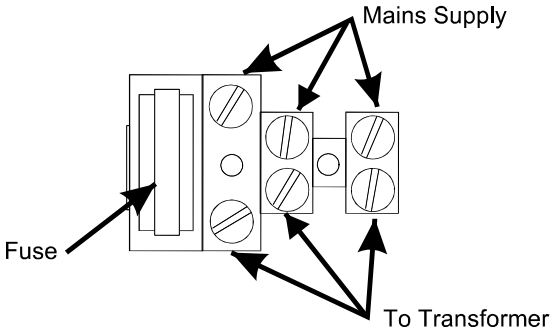
IMPORTANT

NOTE: THE CASE FRONT MUST BE PLACED ON FROM THE FRONT AS SHOWN IN THE ILLUSTRATION.



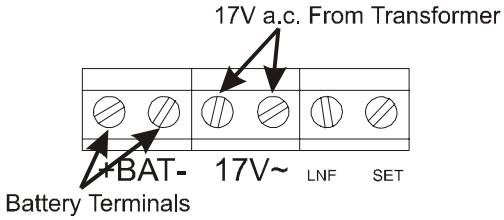
8 POWER CONNECTIONS

8.1 Mains Connections



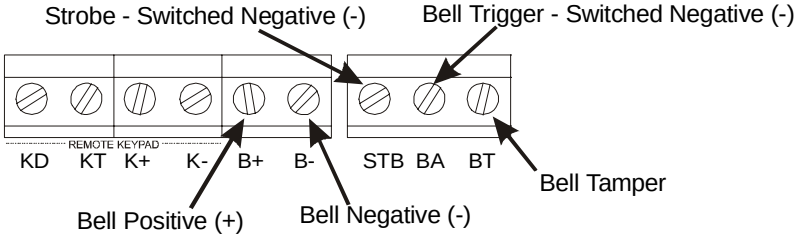
The mains supply should be carefully wired to an a.c. mains supply using suitably rated 3 core cable with a current capacity of not less than 5 amps. It should be connected to a fuse spur with a fuse rating of not more than 2 amps. The mains connection at the power supply input are coded as follows, L – live, E – earth and N – neutral.

8.2 Battery Connection

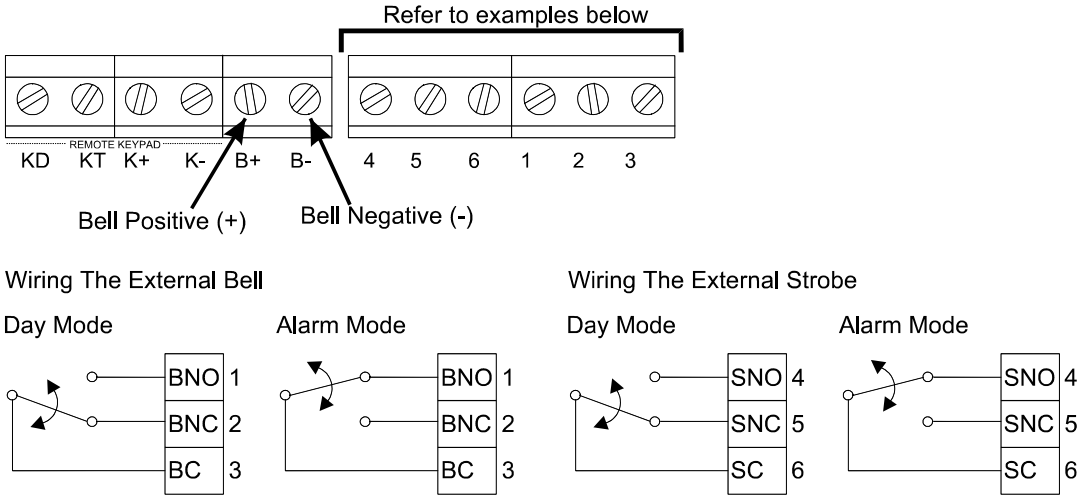


In order for the Sterling 10 to operate if the mains power is cut a battery backup is required. Refer to 8.13 for battery specifications. Connect the battery to the terminals marked +BAT- on the PCB.

8.3 Bell and Strobe (Transistor Version)

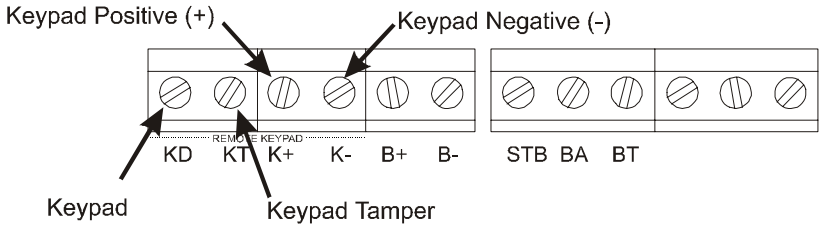


8.3.1 Bell and Strobe (Relay Version)



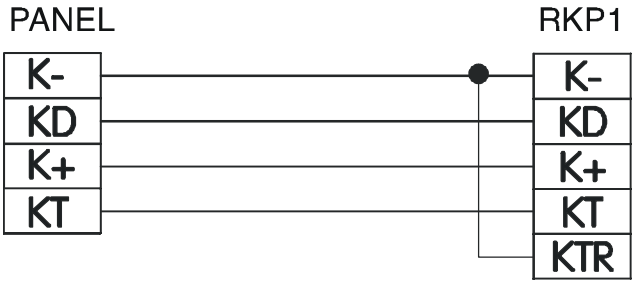
NOTE: *The bell tamper BT connections should be wired in series to the dedicated tamper zone.*

8.4 Remote Keypad 'RKP' Connections

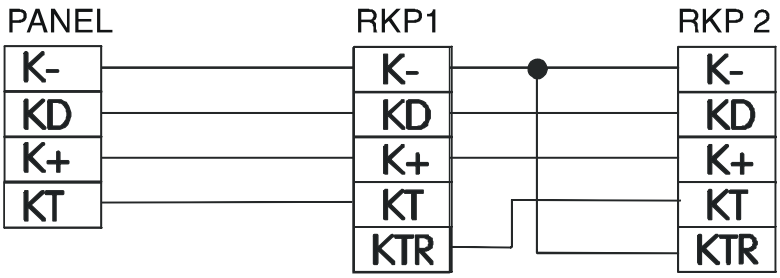


If more than one keypad is to be used, additional keypads can be wired in either daisy chain or star configuration.

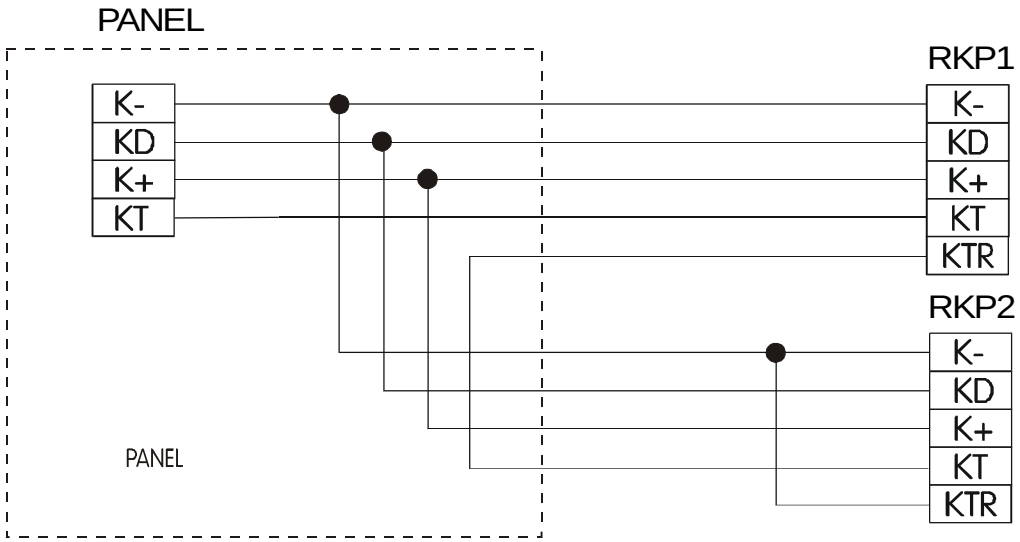
8.4.1 Wiring for single Remote Keypad



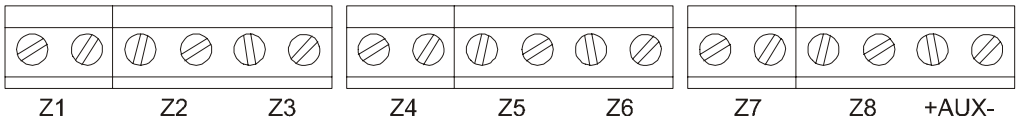
8.4.2 Wiring for multiple Remote Keypads (daisy chain)



8.4.3 Wiring for multiple Remote Keypads (star configuration)

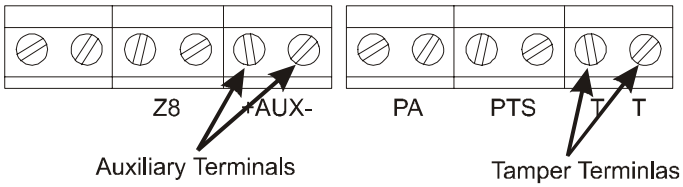


8.5 Detection Zones



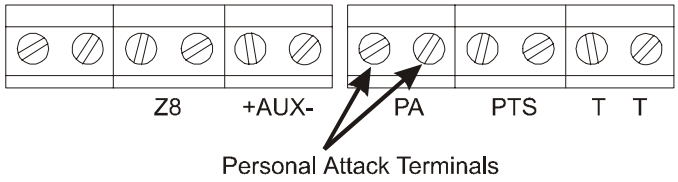
Up to 8 programmable zones can be wired to the PCB as shown. All tamper circuits must be wired in series and returned to the dedicated tamper.

8.6 Auxiliary and Tamper



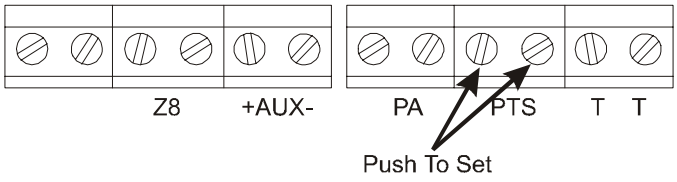
The Sterling 10 has a dedicated tamper. All tamper circuits must be returned to this terminal and wired in series.

8.7 Personal Attack PA



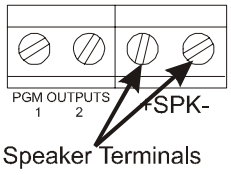
The Sterling 10 has a dedicated PA. All PA circuits must be returned to this terminal and wired in series.

8.8 Push To Set



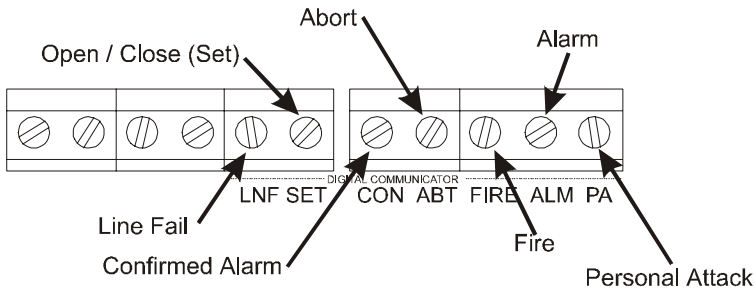
The Push to Set switch must be a normally open contact type switch.

8.9 Speaker



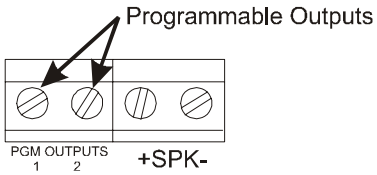
One speaker or a combination of speakers may be attached provided that the resulting resistance is greater than 16 ohms.

8.10 Digital Communicators



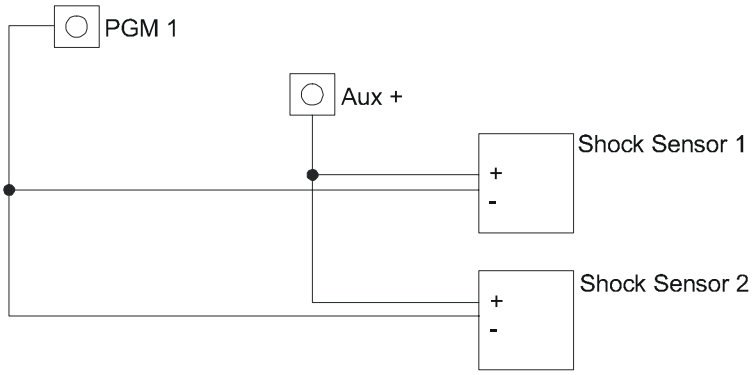
The Digital Communicators can be programmed to switch between 0 to 12V or 12 to 0V except the line fail which is factory set for input to 0V.

8.11 Programmable Outputs



There are two programmable Outputs which are switched negative (-) to positive (+) or positive (+) to negative (-) depending upon which System Option is programmed.

8.12 Shock Sensors



Up to 20 shock sensors wired in parallel, may be used with the Sterling10 panel. Only PGM 1 can be used for shock sensor reset.

NOTE: *Do Not use Programmable Output 2 for the shock sensors. If Programmable Output 2 is used, the shock sensors will not reset after an alarm activation.*

8.13 Battery Capacity

It is recommended that the rechargeable battery used with the Sterling 10 control panel should be capable of powering the alarm system for a minimum of 8 hours, and that this time period should include 20 minutes of bell/strobe operation. The minimum battery capacity should be calculated from the current consumption of the individual system components.

A typical example based on the following individual parts is shown below:

Non alarm current for control panel (7hrs 40min)	: 130mA (0.130 A)
Steady state current for detectors	: 120mA (0.120 A)
(e.g. 8 x 15mA for 8 hours - Pyronix PIRs)	
Typical stand-by current for external sounder	: 50mA (0.050 A)
(e.g. Self Actuating Bell for 8 hours)	
Typical on state current for external sounder (20 mins): 350mA (0.35 A)	
Alarm state current for control panel (20 mins)	: 130mA (0.13 A)
Typical current for external strobe (8 hours)	: 150mA (0.15 A)

<u>Alarm condition for 20 mins (0.333 hrs)</u>	
Alarm state current for control panel	: 0.130
8 detectors @15mA each	: 0.120
External sounder	: 0.350
External strobe	: 0.150
Single remote keypad	: 0.015
Required capacity for alarm condition	= 0.765 x 0.333 = 0.255 Ahrs
<u>Capacity required for stand-by 7hrs 40 mins (7.67 hrs)</u>	
Non alarm current for control panel	: 0.130
8 detectors @ 15mA each	: 0.120
External strobe	: 0.150
Stand-by for external sounder	: 0.050
Single Remote keypad	: 0.015
Required capacity for stand-by condition	= 0.465 x 7.67 = 3.57 Ahrs
Total minimum required battery capacity	= 0.255 + 3.57 = 3.825 Ahrs

For this example it is recommended that you use a battery of not less than 7 AH.

8.14 Powering Up Your Panel / RKP.

a. Connect the battery leads to the control panel. (+BAT-). The red lead should be connected to "**+**" (positive) terminal and the black lead to "**-**" (negative) terminal.
b. Connect the battery. The red lead should be connected to "**+**" (positive) terminal and the black lead to "**-**" (negative) terminal.
c. Switch on the AC supply. The supply LED will be on. Now proceed to section 9 "Programming".

9 PROGRAMMING

The Sterling 10 may be programmed to suit a wide variety of installations. The following pages show the programmed options available and how to change them. Once the engineer mode has been entered, each section may be changed in any order. As each programmable option is completed a two tone acceptance will be heard and the system will return to engineer mode so that the next function can be programmed. A single low tone signifies programming not accepted.

9.1 Factory Defaults

The panel is pre-programmed to the factory settings shown below.
Master User Code - 1234
Limited User Code - 5678
Bell Time - 20 mins
Entry Time - 30 Secs
Exit Time - 30 Secs
Bell Delay - 0 mins
Communication Delay - 0 secs
Engineer Code - 9999
Programmable Outputs - Off
System Option 1 -Audible PA
User Log Reset Disabled
User Log Reset
Internal Sounder Only On Tamper Activation
System Option 2 -Power-up NVM Reset
No Siren On Line Fail
No Panel Set On AC Fail
System Option 3 -Alarm Digi Active Low
PA Digi Active Low
Fire Digi Active Low
Confirmed Digi Active Low
System Option 4 -Abort Digi Active High
Open/Close (Set) Digi Active Low
Service Timer Warning On Expire
Anti code reset disabled
Programmable Re-sets- Continuous
Service Timer - Not Configured
Keyswitch Set Configuration - Not Configured
Anti code Algorithm - 0
Set A Set Option - Timed Exit
Set B Set Option - Timed Exit
Set C Set Option - Timed Exit
Set D Set Option - Timed Exit
Final Door - 7 Seconds

The following key applies to the table below:
Entry / Exit = E Access = A Immediate = I
The zone types are factory set as follows.

	Zone Number							
	1	2	3	4	5	6	7	8
Set A (Full)	e	a	I	I	I	I	I	I
Set B	e	a	I	I	I	I	I	I
Set C	e	a	I	I	I	I	I	I
Set D	e	a	I	I	I	I	I	i

9.2 Entering Engineer Mode

Enter (FUNC) (0) (9) (9) (9) (9)
The fault LED will flash when the Sterling is in Engineer mode.
The day LED will flash during programming of any of the functions.
Whilst in Engineer mode, you are able to remove any covers without creating a tamper alarm.

9.3 Setting Volume Control

This volume is controlled via the adjustable volume pot on the main processor board.
1. Remove lid.
2. Set volume pot to desired volume
3. Depress a number digit on the keypad to check desired volume has been reached.
4. Replace cover.

In an alarm condition the volume control is overridden and the speakers will operate at full volume.
NOTE: *Each RKP has its own volume control pot.*

9.4 Setting the Panel when Mains Fails

Under normal operation the panel will indicate a fault condition if the AC supply is disconnected. It will still be possible to Set and Unset the control panel during a mains fail if allowed in System Option 2 and no further action is required.
Full functionality of the control panel is available during mains fail.

9.5 Programming Set Modes.

Any zone may be programmed to be any one of the following:

Entry / Exit = E Access = A Tamper = T Immediate = I Omitted = O
24 Hour = H Fire = F Momentary Keyswitch = Y Latch Keyswitch = d

The attribute for each zone is selected by pressing (▼) or (▲) until the required symbol appears in the display.

When the required symbol appears pressing the (FUNC) key will select the attribute, a two tone acceptance will be heard and the next zone will automatically be selected.

NOTE: *On pressing (FUNC) after selecting the attribute for zone 8, the programme for the required SET will be stored automatically.*

To programme SET A enter (FUNC)(1 A)(0) Then select attribute for each zone.

To programme SET B enter (FUNC)(1 A)(1 A) Then select attribute for each zone.

To programme SET C enter (FUNC)(1 A)(2 B) Then select attribute for each zone.

To programme SET D enter (FUNC)(1 A)(3 C) Then select attribute for each zone.

Should you wish to view any zone status within a Set mode use the same procedure,

but do not scroll the (▼)(▲) keys. Enter (FUNC) to select the attribute for the zone. After selecting the attribute for zone 8, the progamme for the required SET will be stored automatically and the program will be exited.

9.6 Setting the Alarm Bell Time

To adjust the alarm bell cut off time. Enter (FUNC)(1 A)(4 D)

followed by the required time in minutes ((2 B) to (2 B)(0) minutes) followed by (FUNC).
Incorrect entry gives an audible error tone and correct entry gives three bleeps.
The alarm bell cut off time for the Sterling 10 is factory set to 20 minutes.

9.7 Setting Entry Time

To set the required Entry time. Enter (FUNC)(1 A)(5)

followed by the time required in seconds ((2 B) to (2 B)(5)(5) seconds) followed by (FUNC).
Incorrect entry gives an audible error tone and correct entry gives three bleeps.
The Entry time is factory set to 30 seconds.

9.8 Setting Exit Time

To set the required Exit time Enter (FUNC)(1 A)(6)

followed by the time required in seconds ((2 B) to (9)(9) seconds) followed by (FUNC).
Incorrect entry gives an audible error tone and correct entry gives three bleeps.
The Exit time is factory set to 30 seconds.

9.9 Setting Bell Delay

To set the required Bell Delay. Enter (FUNC)(1 A)(7)

followed by the time required in minutes((0) to (2 B)(0) minutes) followed by (FUNC).
Incorrect entry gives an audible error tone and correct entry gives three bleeps. Bell Delay is factory set to zero minutes.

9.10 Setting Communication Delay

To set the required Communication Delay Enter (FUNC)(1 A)(8)

followed by the time required in seconds ((0) to (2 B)(5)(5) seconds) followed by (FUNC).

Incorrect entry gives an audible error tone and correct entry gives three bleeps. Communication Delay is factory set at zero seconds.

9.11 Changing the Engineer Code

Enter [FUNC] [1 A] [9]

Then [9] [9] [9] [9] the old Engineer Code (Factory Set at 9999) -this gives an audible acceptance tone.

Then [X] [X] [X] [X] the new Engineer Code - gives an audible acceptance tone

Then [X] [X] [X] [X] the new Engineer Code again- gives an audible acceptance tone

If an incorrect key is entered an error tone will be given and the function ended.

9.12 Programmable Outputs

9.12.1 Programmable Output 1.

Enter [FUNC] [2 B] [0] followed by [0] - [3 C] for following options:

0	OFF (programmable output 1 not used).
1	PIR remote LED enable.
2	PIR latch memory.
3	Shock Sensor reset.

9.12.2 Programmable Output 2.

Enter [FUNC] [2 B] [1 A] followed by [0] - [2 B] for following options:

0	OFF (programmable output 2 not used).
1	PIR remote LED enable.
2	PIR latch memory.

9.12.3 System Option 1.

Enter [FUNC] [2 B] [2 B] followed by [1 A] - [4 D] The RKP LEDs will toggle on and off indicating the selection made.

Key	Keypad LED	LED ON	LED OFF
1	Alarm	Silent P.A.	Audible P.A.
2	Tamper	User log reset enabled	User log reset disabled
3	P.A.	Engineer only system reset	User system reset
4	Fire	External and Internal Sounders on Tamper activation	Internal sounder only on tamper activation

Press the [FUNC] key to accept changes.

9.12.4 System Option 2.

Enter [FUNC] [2 B] [3 C] followed by [1 A] - [4 D] to toggle RKP LEDs

Key	Keypad LED	LED ON	LED OFF
1	Alarm	Engineer code lock NVM reset	Power up NVM reset
2	Tamper	Siren enable on line fail	No siren on line fail
3	P.A.	Panel set on AC fail	No panel set on AC fail
4	Fire	Limited Reset	All Reset

Press the [FUNC] key to accept changes.

9.12.5 System Option 3.

Enter [FUNC] [2 B] [4 D] followed by [1 A] - [4 D] to toggle RKP LEDs

Key	Keypad LED	LED ON	LED OFF
1	Alarm	Alarm digi active high	Alarm digi active low
2	Tamper	P.A. digi active high	P.A. active low
3	P.A.	Fire digi active high	Fire digi active low
4	Fire	Confirmed digi active high	Confirmed digi active low

Press the [FUNC] key to accept changes.

9.12.6 System Option 4.

Enter FUNC 2 5 followed by 1 - 4 to toggle RKP LEDs

Key	Keypad LED	LED ON	LED OFF
1	Alarm	Abort digi active high	Abort digi active low
2	Tamper	Open digi active high	Open active low
3	P.A.	Service timer warning and lockout system on expire	Service timer warning on expire if programmed with function 27
4	Fire	Anti-code reset enabled	Anti-code reset disabled

Press the FUNC key to accept changes.

9.12.7 Programmable Re-sets

Enter FUNC 2 6 followed by a single digit 0 - 9 (0 = continuous re-setting)

9.12.8 Service Timer

Enter FUNC 2 7 followed by 1 - 9 for the following Set/Unset cycles between service intervals.

Set/Unset Cycles Per Day	Time Between Services		
	30 Days	6 Months	12 Months
2	1	4	7
4	2	5	8
6	3	6	9

Enter 0 for no service timer.

9.13 Keyswitch Set Configuration

Enter FUNC 2 8 Enter a digit between 0 - 3.

0 Set A
1 Set B
2 Set C
3 Set D

9.14 Resetting the Non Volatile Memory (NVM) to Factory Settings

The panel may be programmed as Power up NVM reset or engineer code lock NVM reset.

Power Up NVM Reset

If the panel is configured by the engineer to allow the Power up to reset the NVM back to factory settings.
Locate the NVM reset pins on the PCB, using the link pin provided connect the two pins together. Power down the system (mains and battery). Restore power and remove the link. The system is now back to factory default settings.

Engineer Code Lock NVM Reset

Enter the engineer mode. Open the panel cover, use the link supplied to connect the NVM reset pins together and enter FUNC 2 9 on the key pad. The system should bleep three times. The system is now back to factory default settings.

9.15 Communicator Test

Enter FUNC 3 C 0 Press the following keys to toggle through the Communication Outputs.

1 A - Alarm

2 B - PA

3 C - Fire

4 D - Confirmed alarm

5 - Abort

6 - Open/Close

Press FUNC to exit.

9.16 Anti-code Algorithm

Enter FUNC 3 C 1 A Enter a digit between 0 - 8.

0 Algorithm 0

1 A Algorithm 1

2 B Algorithm 2

3 C Algorithm 3

4 D Algorithm 4

5 Algorithm 5

6 Algorithm 6

7 Algorithm 7

8 Algorithm 8

9.17 Set A Set Option

Enter FUNC 3 C 2 B

Enter 0 for timed exit,

Enter 1 A for push to set or

Enter 2 B for final door.

9.18 Set B Set Option

Enter FUNC 3 C 3 C

Enter 0 for timed exit,

Enter 1 A for push to set or

Enter 2 B for final door.

9.19 Set C Set Option

Enter FUNC 3 C 4 D

Enter 0 for timed exit,

Enter 1 A for push to set or

Enter (2 B) for final door.

9.20 Set D Set Option

Enter (FUNC) (3 C) (5)

Enter (0) for timed exit,

Enter (1 A) for push to set or

Enter (2 B) for final door.

9.21 Final Door

Enter (FUNC) (3 C) (6)

followed by the time required in seconds ((0) to (9) (9) seconds) followed by (FUNC).
Incorrect entry gives an audible error tone and correct entry gives three bleeps. Final door delay is factory set to seven seconds. If the exit door is reopened the delay is reset and the countdown commences when the exit door is finally closed.

9.22 Exiting Engineer Mode

Enter (FUNC) (0) (0) (X) (X) (X) (X)

(Where (X) (X) (X) (X) is the 4 digit Engineer Code).

Refer to the User Instructions for using the Sterling after programming.

10 LED FUNCTION

Panel PCB
Supply LED on : Indicates AC supply
Remote Keypad
Supply LED on : Indicates AC supply and / or battery supply

11 SYSTEM FAULTS

There are 4 fault conditions automatically detected by the Sterling 10. The user is informed of a fault via the fault LED. The LED will illuminate and an error tone will be emitted every 5 seconds when the panel is in day mode, press the function key to stop the error tone. The fault LED will remain on until the fault has been corrected.

To determine the fault go into the log by entering (FUNC) (2 B). A  symbol followed by 1 - 4 will be displayed.

1 Bell Fuse Failure
2 Auxiliary Fuse Failure
3 Telephone Line Failure
4 Mains (AC) Failure

12 TECHNICAL SPECIFICATION

12.1 Power supply

Mains input	
Power input fuse	: F1 T250mAH ceramic
Low voltage output	: 13.8 V d.c. fused. 800mA maximum available for external devices.
PCB input	: 17V a.c.
Fuses	
Low voltage output Bell	: F1 1 amp quick blow F1AL (Glass)
Low voltage output AUX	: F2 1 amp quick blow F1AL (Glass)
Low voltage output 17a.c	: F3 2 amp quick blow F2AL (Glass)
Battery charge voltage	: 13.7 V d.c.
Rechargeable battery capacity	: 12V sealed lead acid, 2.8 to 7 AH.

12.2 Control PCB

Current consumption	
(day mode)	: 130mA.
(set mode)	: 130mA.
(alarm)	: 130mA.
Auxiliary DC output supply	: Regulated 13.8V d.c. for use with PIR, microwave and shock sensors.
Extension Speaker load	: 16 to 32 Ohms.
Bell	: 500mA.
Strobe	: 500mA.
PGM 1	: 500mA max.
PGM 2	: 100mA max.
Alarm bell time	: 2 to 20 minutes (software programmable).
Zone type	: Normally closed loops which activate when opened or short circuit.
Zone loop current	: 0.76 to 1.03mA.
Zone activation resistance	: 2K Ohms (minimum).
Zone loop activation timer	: 0.35 seconds.
Exit timer	: 2 to 255 seconds.
Entry timer	: 2 to 255 seconds.

12.3 Mechanical

Dimensions	: 340 x 280 x 101 mm.
Case material	: Polymer.
Colour	: White.
Weight excluding battery	: 2.6Kg.

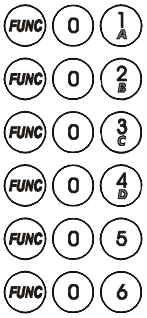
12.4 Environmental

Operating temperature	: 0 to +40^{0}C (+32 to +104^{0} F).
Storage temperature	: -20 to +60 ^{0}C (-4 to +140^{0} F).

12.5 Cleaning

DO NOT use strong detergents to clean this control panel. To remove any dirt or grime, wipe with a clean damp cloth ONLY

13 ENGINEER QUICK REFERENCE PROGRAMMING SECTION



Turn chime on / off.

Read event log.

Event log reset.

Change user codes.

Test mode.

Walk test mode.

Set A zone attributes.

Set B zone attributes.

Set C zone attributes.

Set D zone attributes.

Bell time

Entry time

Exit time

Bell delay

Communication delay

Engineer code change

Programmable outputs 1

Programmable outputs 2

System option 1

System option 2

System option 3

System option 4

Re-sets

Service Time

Keyswitch set configuration

NVM reset option

Digital Communicator outputs test

Anti code algorithm

Set A set option

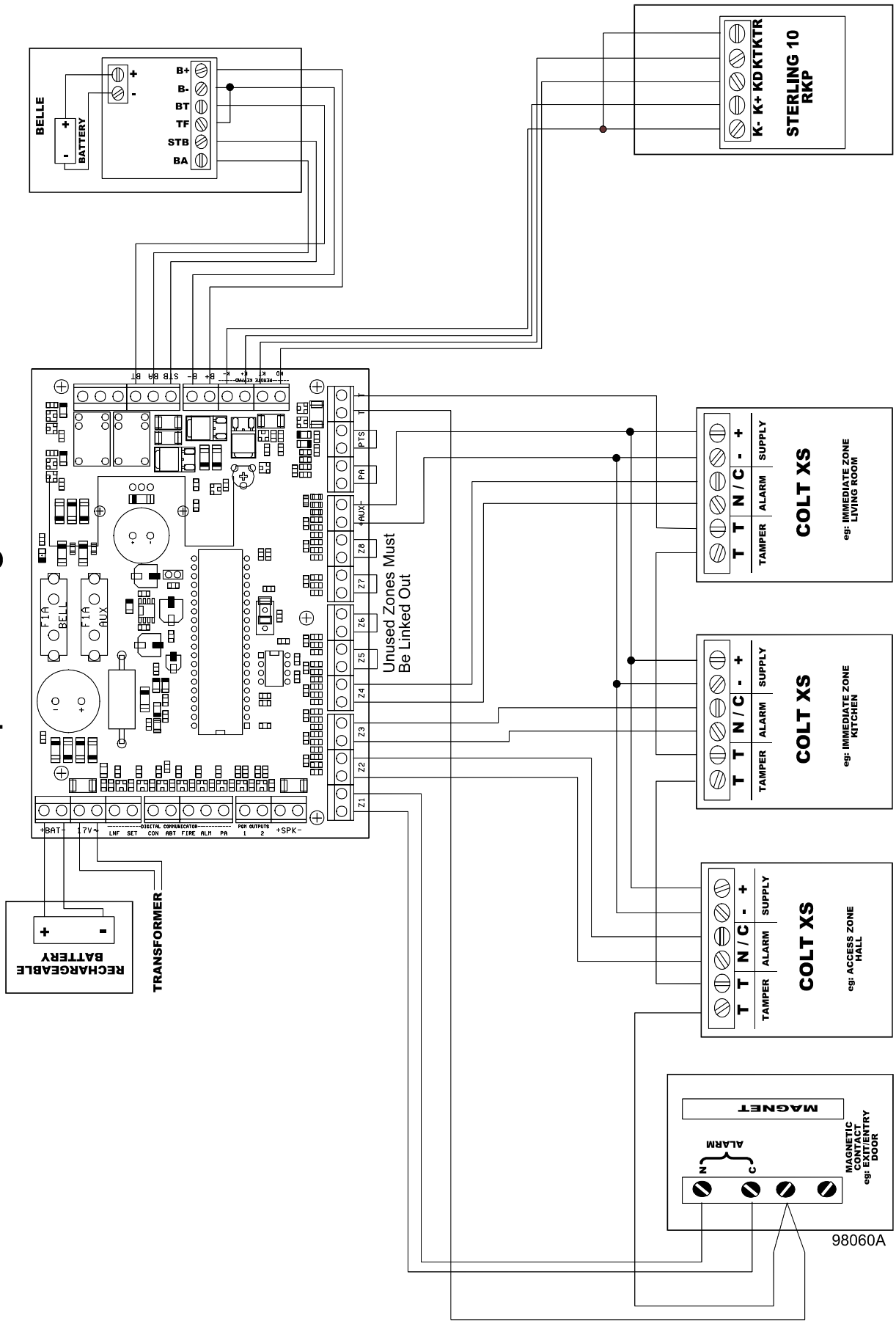
Set B set option

Set C set option

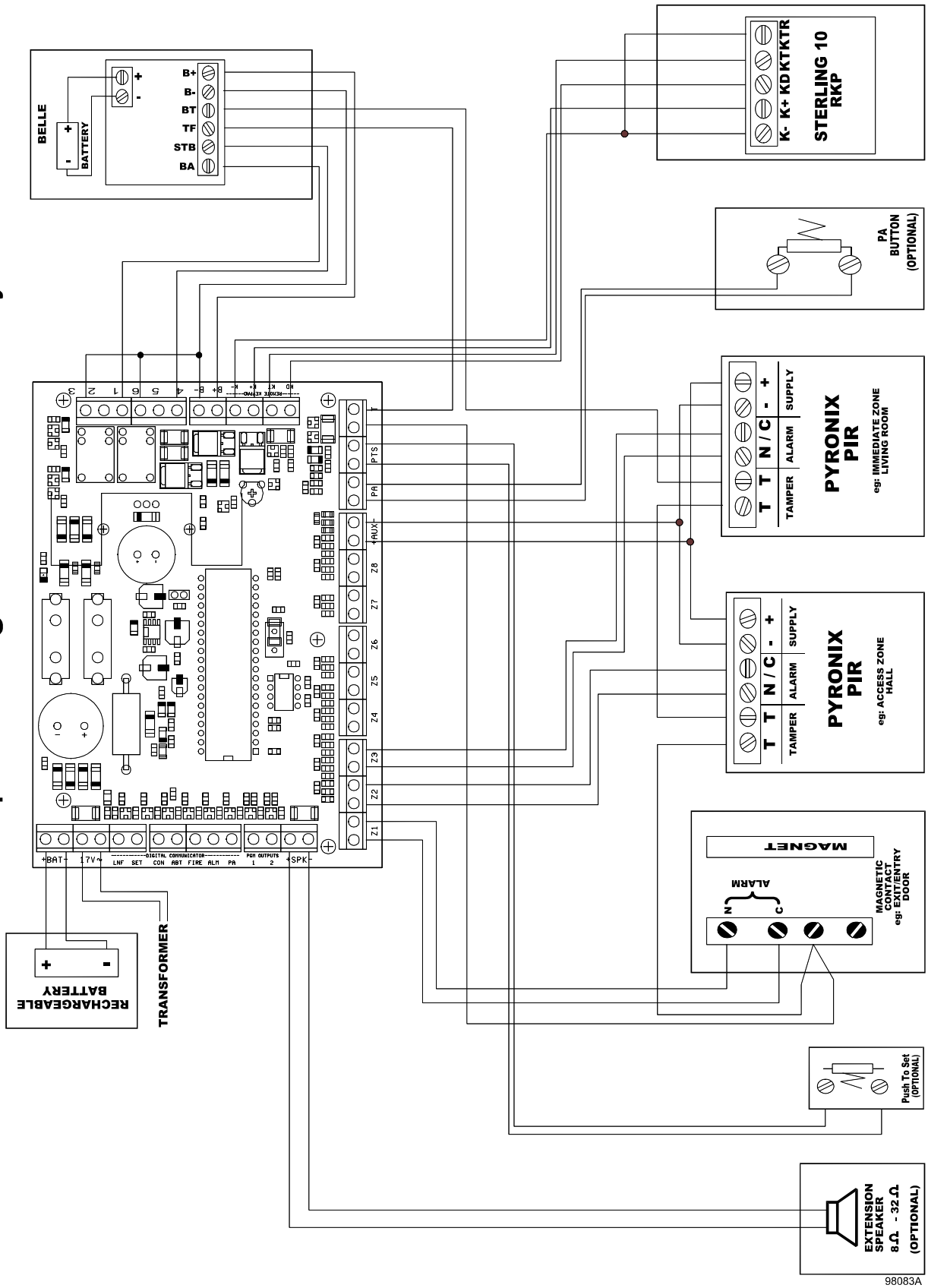
Set D set option

Final Door

14 Example Wiring Schematic



14.1 Example Wiring Schematic Relay Version



15 PROGRAMMED OPTIONS

Engineer Code		
NVM Reset		
Alarm Bell Time		Seconds
Entry Time		Seconds
Exit Time		Seconds
Bell Delay		Minutes
Communication Delay		Seconds

Programmable Outputs

Programmable Output 1		
Programmable Output 2		

System Option 1	1	
	2	
	3	
	4	

System Option 2	1	
	2	
	3	
	4	

System Option 3	1	
	2	
	3	
	4	

System Option 4	1	
	2	
	3	
	4	

No. of re-sets	
Service Timer	
Keyswitch Set Configuration	
Anti code Algorithm	
Set A set option	
Set B set option	
Set C set option	
Set D set option	
Final Door	

16 STERLING SERVICE HISTORY

STERLING 10

DATE	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6	ZONE 7	ZONE 8	INITIALS

POWER SUPPLY

DATE	NEW BATTERY	AUX CURRENT	BELL CURRENT	STROBE CURRENT	INITIALS
	YES				

8 ZONE PROGRAMMING STATUS LABEL

	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6	ZONE 7	ZONE 8
ROOM								
SET A								
SET B								
SET C								
SET D								

STATUS KEY:

E = ENTRY / EXIT
A = ACCESS
t = TAMPER
I = IMMEDIATE
o = OMITTED
H = 24HOUR
F = FIRE
P = PERSONAL ATTACK
y = MOMENTARY KEYSWITCH
d = LATCH KEYSWITCH

ENTRY / EXIT TIME

SECS

BELL OUPUT

SAB SCB

BELL TIME

MINS

PIR LEDs

ENABLED
DISABLED

ENGINEER

INSTALLATION CO.