



# **GDX3 Door Entry System**

## **Installation Manual**

**GDX Technologies Ltd**  
**Anchor Mills**  
**Seedhill, Paisley**  
**Renfrewshire**  
**PA1 1TJ**

**Foreword**

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This manual is intended for the use of the installer only and should not be provided to the end user due to the nature of the information contained within it.

An entrance panel template is included within the manual for use in mounting the entrance panel.

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**General Description**

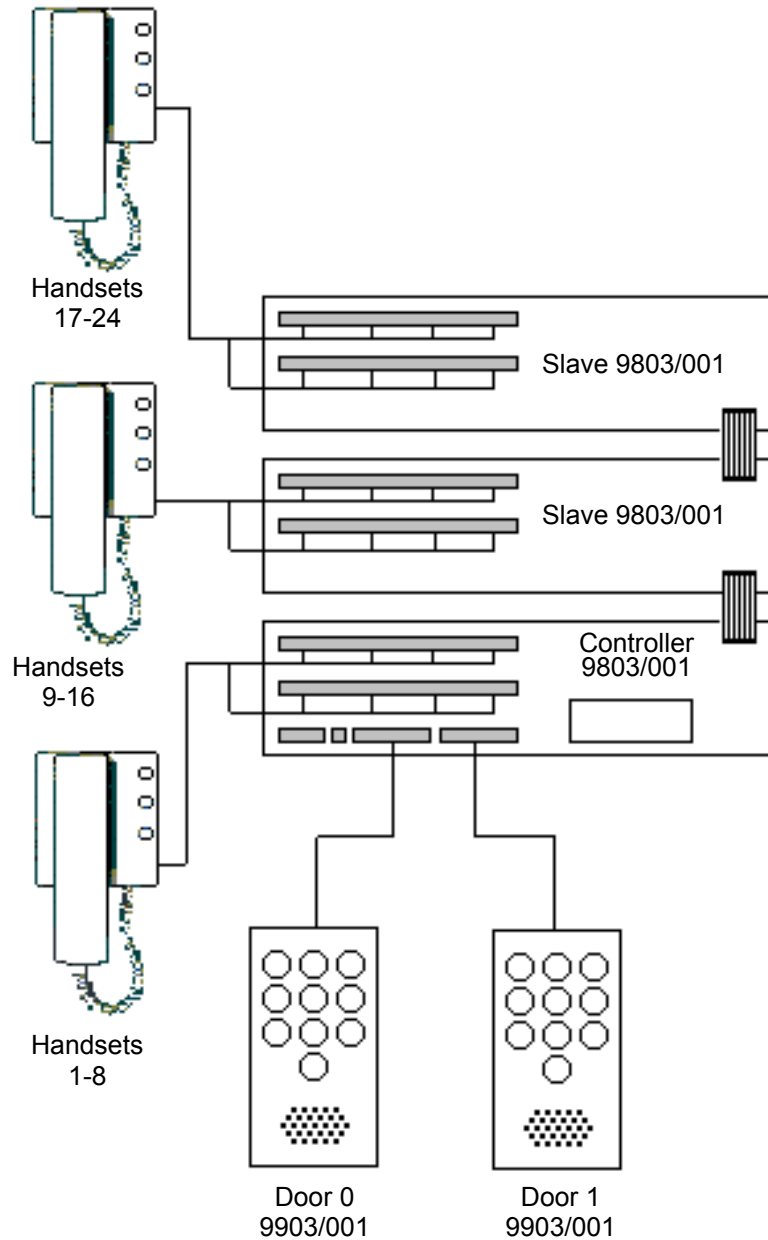
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The GDX3 Door Entry system is a door entry system with some excellent additional features. The basic system comprises of two boards; the Controller (9803/001) and the Entrance Panel (9603/003). All hardware is configured using non-solder type miniature jumpers making set-up simple and fast. The system operates with GDX3 Tone Handsets (Order No 23150).

- Up to 24 Handsets
- Two Door Operation
- Illuminated LCD's
- Five Programmable Service Periods one of which is Day Specific
- Optional Sunday Service
- Programable Date & Time
- Programable Door Alarm Period
- Programable Post and Pre-Answer Durations
- Programable Lock Open Duration
- Automatic BST/GMT adjustment
- Programable Ring Tone
- Battery Backup as Standard
- Easikey Interface
- EMC Compliance Tested

GDX3 System Overview

The GDX3 Door Entry system can vary from a single door 8-way system to a two door 24-way system as shown below.



**Controller Master/Slave Cards (9803/001)**

This board is used to control all audio routing and timing within the GDX3 System. The board may be used as a CONTROLLER or as a SLAVE. (The CONTROLLER being fully populated)

**Controller Master Card**Links

The CONTROLLER controls Flats 1 – 8 as well as providing the facility to alter the Service Periods, Date, Time etc. as will be explained later in this document. Links 2, 3, 4 and 5 should be arranged as shown in the table opposite. LK1 on the CONTROLLER is used to impedance match the serial bus. **This link should only be fitted for single Door Systems.**

FLATS	LK2	LK3	LK4	LK5
1 - 8	IN	OUT	IN	OUT

Door Alarm

In the event that the Door has been left open for longer than the user defined period the DOOR ALARM output will switch [+12V@1.7A](#) max. to a remote indicator (NB. The maximum current available from this output is dependant on the Power Supply used.). The Door Contacts on the Entrance Panel must be used to enable this feature.

Fuses

The fuses located on the master card are as follows :

Location	Value	Type	Description
FS14	500mA	20mm Anti Surge	24V Main Supply Input Fuse
FS15	500mA	20mm Quick Blow	Ring Tone Supply Fuse
FS16	3A	20mm Anti Surge	12V Main Supply Input Fuse
FS17	500mA	20mm Quick Blow	CANH Data Line Fuse
FS18	500mA	20mm Quick Blow	CANL Data Line Fuse

**Controller Master/Slave Cards (9803/001)**

**Controller Slave Card**

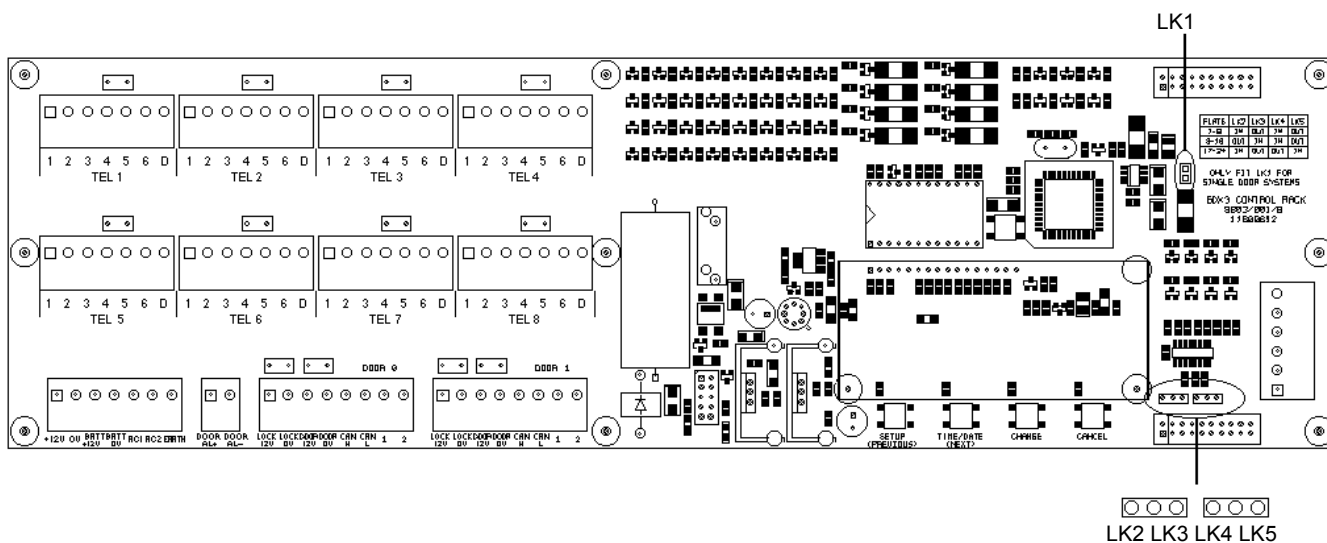
Links

The SLAVE can control Flats 9 – 16 or Flats 17 – 24 depending on the position of Links 2, 3, 4 and 5 as outlined in the table opposite.

FLATS	LK2	LK3	LK4	LK5
9 - 16	OUT	IN	IN	OUT
17 - 24	IN	OUT	OUT	IN

**Please Note**

**Power should be removed from the system before configuration.**



**Compact Entrance Panel (9903/001)**Entrance Panel to GDX3 Control Rack Connections

The connections required from the entrance panel(s) to the control rack are as follows :-

- 12Vdc Electronics Power
- 12Vdc Lock Power
- Audio
- Data
- Token Access (If Applicable)

The actual connections required are detailed on the drawings included at the end of this manual.

The colour codes given on the drawings should be followed.

In addition the following can be connected directly into the entrance panel as and if required :-

- Door Lock Release
- Push To Exit Switch (PTE)
- Fire Switch
- Door Contact

Again the actual connections required are detailed on the drawings included at the end of this manual.

Entrance Panel Links

Two links are used to configure the Entrance Panel. Their function is described in the tables below. There is no requirement to remove power or to reset the unit for new link settings to become effective on the entrance panel. The links are visible through the aperture in the panel chassis when the faceplate is removed.

**Please Note**

**Please ensure that the correct door is connected to the correct terminations on the GDX3 Control Rack. i.e. The door with LK1 fitted should be connected to the DOOR 0 position and the door with LK1 not fitted should be connected to the DOOR 1 position. If this is not correct then no audio will switch from the entrance panel to the handset through the control rack when the handset is called.**

LK1 : Door Number Select Link

Link On Pins 1 & 2	Link On Pins 2 & 3
Door 0 Selected	Door 1 Selected

LK2 : Lock Type Select Link

Link On Pins 1 & 2	Link On Pins 2 & 3
Fail Open Lock Selected	Fail Closed Lock Selected



**Compact Entrance Panel (9903/001) (continued)****Volume Controls**

The Speaker Volume, Tone Volume at the entrance panel and MIC volume can be altered using the potentiometers on the entrance panel.

Firstly the Speaker and Mic controls should be set to suit the background noise levels and then the volume of the Tone at the entrance panel should be adjusted.

**Locks**

The door lock supply for each door is fused at 1.1 Amp within the control rack.

**Power for the locks must be run on its own power cabling such as a 0.5mm flex (depending on lock power consumption and cable distances). The lock power must not be run within the same cable as the entrance panel power, data or audio - or the back emf voltage spikes when the lock is operated may interfere with the operation of the panel or control rack and may even cause permanent damage to the equipment.**

**Manufacturers guidelines as to the fitting of suppression devices across the door locks must be followed – this is essential to prevent damage to the equipment.**

As mentioned previously, two lock types may be operated from the GDX3 system ;-

- 12Vdc Apply Power to Unlock (Fail Closed)
- 12Vdc Remove Power to Unlock (Fail Open)

The current available for the locks is as described in the following table:-

System	Recommended Maximum Total Lock Current (Amps)	
	2.3A PSU	4.3A PSU
8 Way Control Rack	1.9	3.9
8 Way Control Rack with Easikey	1.5	3.5
16 Way Control Rack	1.8	3.8
16 Way Control Rack with Easikey	1.4	3.4

Please ensure that LK2 at the Entrance Panel board (9903/001) reflects the type of Lock being used.

**Door Contacts**

The Door Contacts are NC inputs. If terminations are not used then short with a link.

If tailgating or door alarm indication is required then these contacts must be used to provide these facilities.

**Compact Entrance Panel (9903/001) (Continued)**

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Fire Switch

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Fail Open Locks

The Fire Switch inputs are NC inputs. On breaking the Fire Switch the power is physically removed from the locks. For this reason the Fire Switch should only be used with Fail Open locks. When the fire switch is activated an audible tone is heard, for approximately two minutes. **The Fire Switch should not be paralleled directly with the Fire Switch inputs of any other unit, a two pole NC fire switch must be used for two door applications.**

**Note: The power for the locks is routed via the fire switch therefore the cabling used must be capable of carrying the Lock current.**

If the Fire Switch terminations are not used then short with a link.

Fail Closed Locks.

A Fire Switch can only be used with Fail Open locks – the Fire Switch terminations should be shorted with a link.

Push to Exit (PTE)

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Fail Open Locks

The PTE inputs are NC inputs. On pressing the PTE button the lock is released for a duration of approx. 8 seconds. These inputs provide additional safety when using Fail Open locks as they physically break the lock supply for the duration of time that the button is pressed.

**Note: The power for the locks is routed via the PTE switch therefore the cabling used must be capable of carrying the Lock current.**

If the Push to Exit terminations are not used then short with a link

Fail Closed Locks

Normally in the case of a fail closed lock type a mechanical release handle will be used on the inside of the door and the Push To Exit terminations on the panel should be shorted out with a link.

**Compact Entrance Panel (9903/001) (Continued)**Token Access Connections

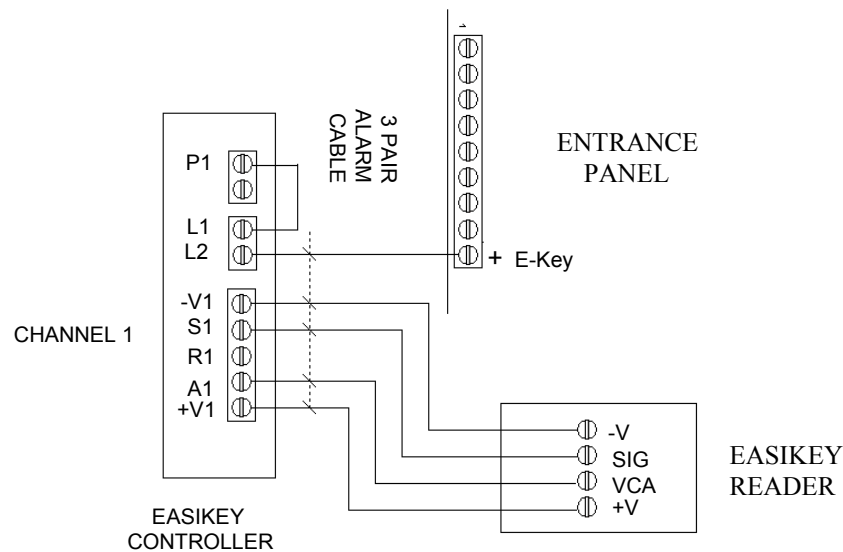
With the addition of token access facilities onto the GDX3 door entry system the door entrance panel is still used to operate the door lock and the token access controller is used only to switch the entrance panel when a valid token is presented to one of its readers.

This is achieved by means of a single connection into the token access input on the entrance panel - activated by applying +12V to the + E-KEY input on the panel with respect to 0V (Ground). In effect the lock output from the token access controller is used to activate the door panel instead of operating the door lock directly.

PAC Easikey Connections

Connect a PAC Easikey controller onto the GDX3 System as follows.

**Note : The cabling for the Easikey reader must be separate from any other entrance panel cabling or the noise of the reader will be picked up on the door entry system audio.**



The Lock Time on the Easikey Controller should be set to two seconds Normally Open. (02)

If adding a second panel then use the same connections as above for reader channel 2.

If a stand alone token reader is used on the second reader channel then use the token controller to switch the lock directly as per the manual supplied with the controller and as illustrated below ;-

Compact Entrance Panel (9903/001) (Continued)

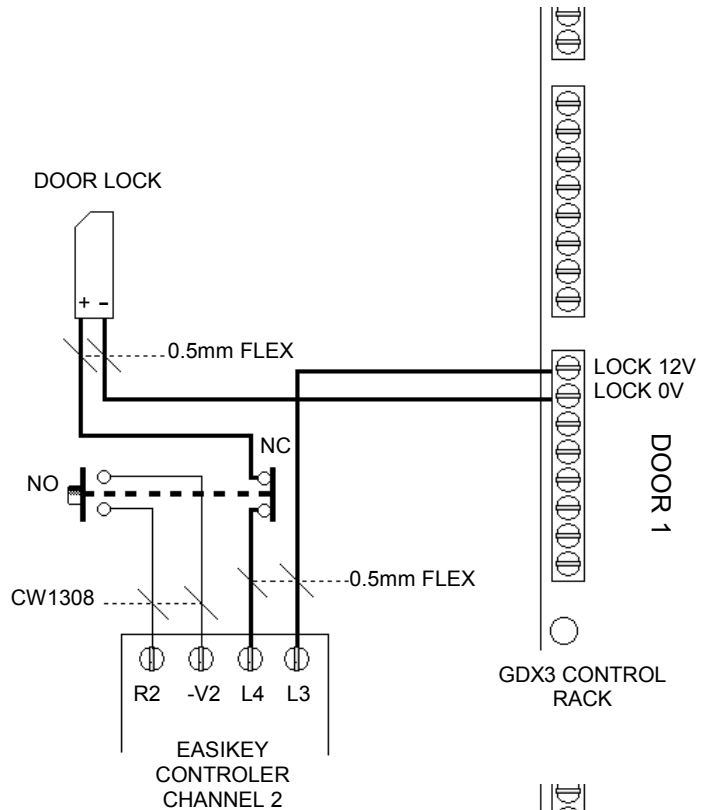
Interfacing to a Standalone Easikey Reader

Fail Open Locks

The connection diagram opposite illustrates how to interface the second channel of the Easikey Controller to a stand alone token access reader (The first channel being used for a reader built into the Door 0 entry panel) A double pole Push to Exit switch is used to ensure that the lock is operated in the event of Control Rack failure.

Set Channel 2 Lock Time on the Easikey Controller to 56 (6 seconds NC) for correct operation.

Ensure that a MOV (Metal Oxide Varistor) is fitted directly across the LOCK supply **at the Lock**.



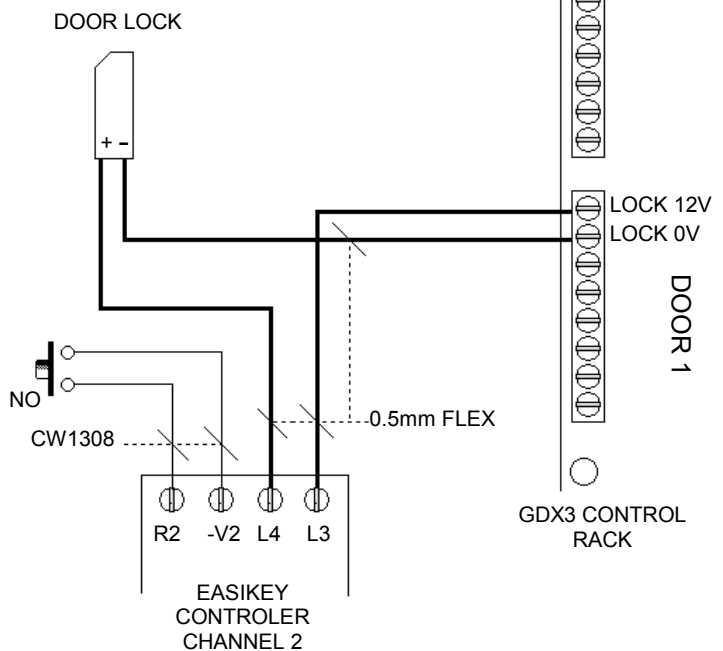
Fail Closed Locks

The connection diagram opposite illustrates how to interface the second channel of the Easikey Controller to a stand alone token access reader (The first channel being used for a reader built into the Door 0 entry panel)

Set Channel 2 Lock Time on the Easikey Controller to 06 (6 seconds NO) for correct operation.

Ensure that a MOV (Metal Oxide Varistor) is fitted directly across the LOCK supply **at the Lock**

**Note** : This is not a Fail Safe configuration.



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**Compact Entrance Panel (9903/001) (Continued)**

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**Entrance Panel LCD Messages**

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The entrance panel LCD display provides various text messages for user information and reassurance. It does also provide certain engineering information as well however that can be of assistance if there is a reported problem with the system.

At power up or entrance panel reset the following information is displayed in order on the LCD :

**VERSION GDX3EP5**

**DOOR NUMBER 0**

**FAIL OPEN LOCK**

**SYSTEM READY ...**

The version information displayed is the software version of the entrance panel itself.

The door number displayed should match up with the door channel in the control rack into which that door is wired – if it is not then although the call will appear to be put through to the handset there will be no audio.

When “System Ready ...” is displayed the entrance panel has successfully connected to the control rack. If however the following is displayed then the entrance panel has not been able to connect into the control rack because of a data communication problem of some kind (see troubleshooting section).

**CONNECTING ...**

If the letters “**SB**” are displayed at the right hand corner of the LCD after it connects to the control rack this indicates that the entrance panel has detected a stuck button on the entrance panel faceplate. This may indeed be due to a stuck button but it may be due to a short on the button wiring loom (see troubleshooting section).

When a handset is called from the entrance panel the following should be displayed on the LCD :

**FLAT CALLED ...**

When the handset is answered the following should be displayed on the LCD :

**CALL ANSWERED ...**

When the handset is replaced on hook the following should be displayed again on the LCD :

**SYSTEM READY ...**

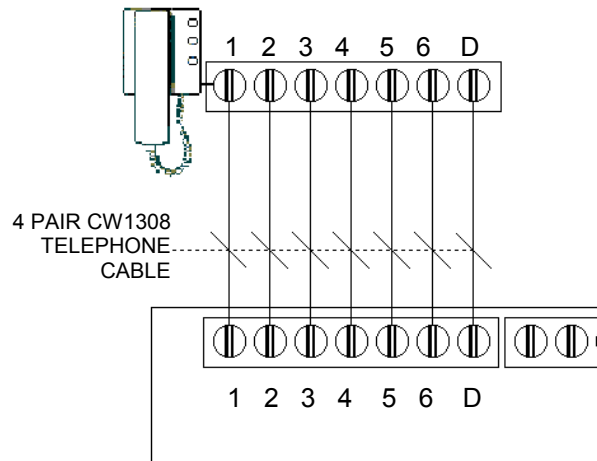
If however the message “Call Answered ...” appears immediately the handset is called then either the handset has been left Off Hook or there is a cable fault to the handset.

Telephone Handsets (9701/001) (Code 23150)

Connections to GDX3 Control Rack

When using the GDX3 Tone handset the connections are as shown below :-

4 Pair CW1308 telephone cable should be used for the handset with the colour code as illustrated.



N.B. LK1 on the handset should **not** be removed.

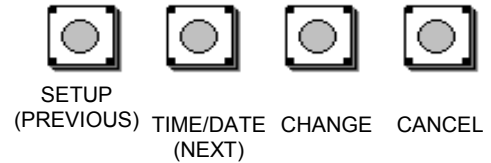
Line	Function	Colour
1	Audio Phone to Door	WHITE/blue
2	Audio Door to Phone	BLUE/white
3	0v	WHITE/orange
4	12Vdc	ORANGE/white
5	Phone Lock Open Control	WHITE/green
6	Call Signal	GREEN/white
D	Door Alarm	WHITE/brown

Connecting more than one Handset to a TEL Position

To install a second handset simply make a connection between '1', '2', '3', '4', '5', '6', 'D' and 'EX PRIV' of the two handsets using CW1308 cable.

## Programming The Controller In General

Programming of the system is carried out on the CONTROLLER board 9803/001 by the use of four buttons.



### SETUP (PREVIOUS)

This button invokes the main Set-up procedure for setting service periods and the various timed processes. During data entry it is used to move the focus back one character.

### TIME/DATE (NEXT)

This button invokes the alteration of the Date, Time and Tone procedure. During data entry it is used to move the focus forward one character.

### CHANGE

This button is used to change the setting currently in focus. When pressed during normal operation the system will display all currently set options.

### CANCEL

This button is used to cancel the current operation.

## Service Periods

There are five service periods. Four of which may be configured to occur everyday including/excluding a Sunday. The fifth service period is specified for a particular day and is independent of whether Sunday Service has been selected or not. All service periods must be configured with valid times. To disable a service period simply make the ON time the same as the OFF time. All service periods are checked after entry and if an error is detected the user is requested to re-enter the service periods. After the five service periods have been configured the user is presented with the option of Sunday Service. Note that the Sunday service setting only applies to Service Periods 1 to 4. The default for Sunday service is OFF

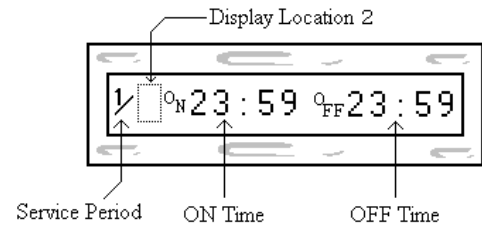
Service Period	Type	Duration (max)	Effective	Sunday Service
1 to 4	Standard	24 Hours	On all Days	Optional
5	Non Standard	24 Hours	On Specified Day	Not Applicable

## Altering and Configuring the Set-Up

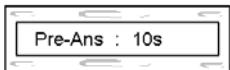
### Service Periods and Timed Processes

To begin alteration of the current Setup press the 'SETUP' button. The Screen displays the first service period as shown.

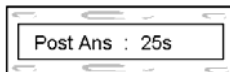
The option that is currently flashing on the display is now under review and may be changed using the 'CHANGE' button. When the user is happy with this setting the 'NEXT' button should be pressed to move the focus on to the next option. Pressing the 'PREVIOUS' button will move to the last altered entry. The fifth service period display differs from the first four in that the 'active day' is displayed in location 2 of the display.



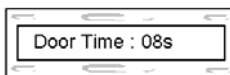
When all five service periods have been configured the user is presented with the Sunday Service option. To switch the Sunday Service ON and OFF use the 'CHANGE' button. When satisfied with the selection press the 'NEXT' button.



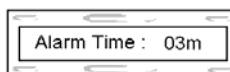
The user is then requested to enter the Pre-Answer Time in Seconds. This is the time allocated for the call to be answered. This time may range between 0 and 99 seconds. To alter the time use the 'CHANGE', 'NEXT' and 'PREVIOUS' buttons as before.



After setting the Pre-Answer time the user is requested to enter the Post-Answer Time in Seconds. Again this time may range from 0 to 99 seconds and is the allowable talk time after the call has been answered. To alter the time use the 'CHANGE', 'NEXT' and 'PREVIOUS' buttons as before.



The next setting is the Lock Open duration. Again this may be configured in the range 0 to 99 seconds. The time is again altered by the use of the 'CHANGE', 'NEXT' and 'PREVIOUS' buttons.



After setting the Lock Open duration the user will then be requested to enter the Alarm Timeout period. This is the Time duration that the system will wait after the Door Contacts indicate that a door is open before activating the alarm. The time is entered in minutes and may range from 0 to 99 minutes. To alter the Alarm duration use the 'CHANGE', 'NEXT' and 'PREVIOUS' buttons as before.

On completion the display should then indicate that Checking is in progress. If there are no errors with the data input the Normal Display, as explained later, is resumed.

If at any time during the Set-up procedure the user wishes to abort input simply press the 'CANCEL' button or avoid data entry for 30 seconds.



### Setting the Date/Time and Tone



By pressing the 'TIME/DATE' Button the user may alter not only the Date and Time but also the Selected Call Tone. After pressing the 'TIME/DATE' Button the first character of the display will be flashing. This is the Tone Select Option. The user may select from three Call Tones A, B or C the default being A. As before the 'CHANGE' Button is used to change the setting, the 'NEXT' Button is used to move the focus to the next option and the 'PREVIOUS' button is used to move the focus onto the previous option.

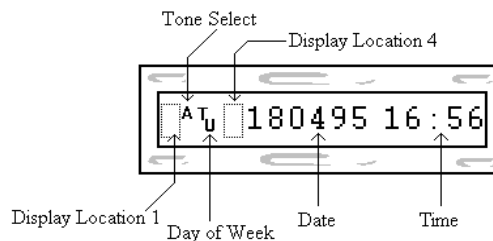
After selecting the desired Call Tone the user may now set-up the Day of the Week and the current Date and Time using the 'CHANGE', 'NEXT' and 'PREVIOUS' Buttons. When the minutes have been set-up and the 'NEXT' Button is pressed the Time will begin to increment in a normal fashion.

If at any time during the Date/Time Set-up procedure the user wishes to abort input simply press the 'CANCEL' button or avoid data entry for 30 seconds.




### Normal Display.

The Normal Display is displayed continuously during idle operation. The display contains information regarding which Tone has been selected, the day of the week, date, time, whether Sunday Service has been selected and if the current time falls within a defined service period.

A flashing  symbol in location 4 of the display indicates that the current time falls within a service period. Similarly a flashing  in location 4 of the display indicates that Sunday Service is ON. Both symbols may be flashing alternately reflecting the current system status at the current time.



Location 1 of the display is used to indicate the function of the door being opened by the use of the following symbols: -

-  Door opened by handset.
-  Door opened by action of Service button on Entrance Panel
-  Service button pressed but access denied.

### Automatic BST/GMT Adjustment.

The daylight saving function of the Electronic Timeclock provides automatic adjustment of the time when changing from BST to GMT and visa versa. On the first Sunday in April the time increments from 1:59:59AM to 3:00:00AM and on the last Sunday in October when the time first reaches 1:59:59AM it changes to 1:00:00AM.

## Operation

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### Normal Operation.

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Pressing a button at the Entrance Panel will result in the handset in the selected occupants's apartment ringing for the duration of time that the button is pressed. On lifting the receiver, full duplex audio communication will be established between the occupant and the caller at the Entrance Panel. The occupant may then operate the Open Door button on their Telephone to release the lock.

### Tailgating.

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If the Door Contacts are used on the Entrance Panel then the door will be locked on closing.

### Dual Door Operation.

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If a call is currently active from one of the Entrance Panels and a call is made from the other Entrance Panel then the second caller is requested to wait. An engaged tone will be heard.

When the first call is complete then call from the second Entrance Panel is routed to the desired apartment and the call tone is enabled for a duration of approx. 3 seconds. The caller may then re-press the selected button to ring the handset again.

### Cancelling the Call


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The Call from a door may be terminated in several ways.

- The Pre or Post Answer Times have been exceeded
- The lock activation time has ended
- The handset has been replaced on-hook

### Service Button

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On pressing the service button on the entrance panel the system will check if the current time falls within a valid service period. If it does then the Lock will be opened, the entrance panel will display '**Door Open** No Access' and the no access tones will be heard.

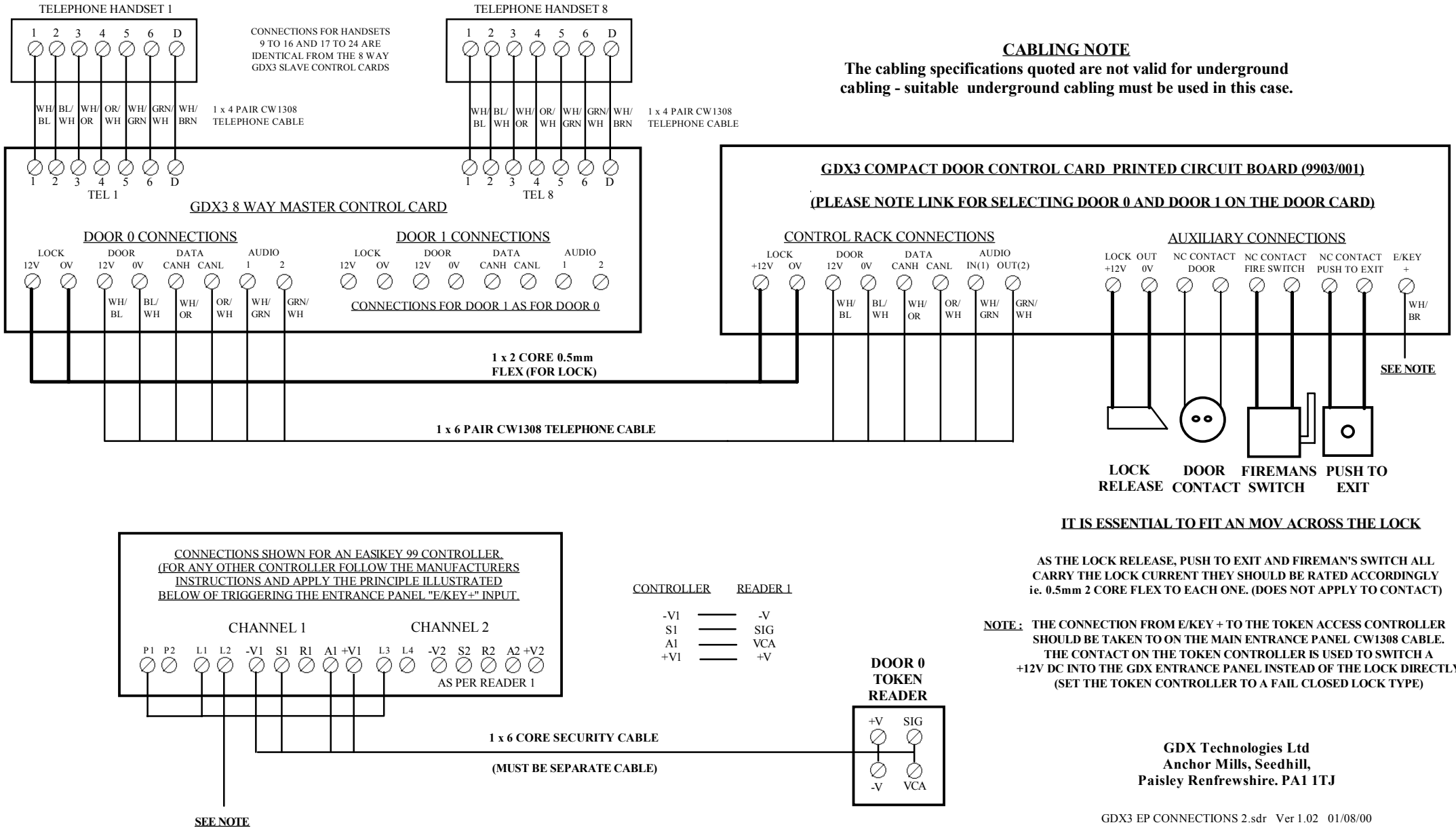
### Stuck Buttons

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In the event of a button being stuck in the ON position the system will temporarily mask the button until the button has been released. All other buttons will behave as normal during the fault. A flashing 'S' 'B' in the corner of the display will indicate that a button is stuck.

# GDX3 DOOR ENTRY SYSTEM CONTROL RACK & COMPACT ENTRANCE PANEL CONNECTION SCHEMATIC

**PLEASE FOLLOW THE WIRING COLOUR CODES QUOTED ON THIS DRAWING**



**GDX Technologies Ltd**  
Anchor Mills, Seedhill,  
Paisley Renfrewshire. PA1 1TJ