Guardall

PX Access Control System

Installation and Programming

Issue A

Introduction

The PX access control system is a highly versatile system, which is fully integrated with the PX intruder system. The system can be configured through a security system keypad or a PC running GuardStation™ Access.

The access and intruder systems use the same data bus and users on the access system may be configured to set/unset the intruder system.

Each door in the system can be configured to use 1 or 2 readers. Proximity tokens can also be used on the security system keypads.

The PX access system is fully programmable. Users can be configured with any level of security system authority or just access system authority. Users can be given unrestricted access to all doors or access can be restricted by schedules. Doors are programmed in areas but user tokens can be programmed in either areas or set groups.

Order Codes

Order Code	Description
W73811	LCD Keypad 2 Line with proximity
W73816	LCD Keypad 2 Line with proximity & circuits
W73820	Proximity Fob Pack (2 off)
W73837	Proximity Card Pack (10 off)
W73821	Proximity Point
W73822	Access Module
W73847	Smart Access Module
W73840	GuardStation™ Access

Hardware Installation

Access Module — **PCB Connections**

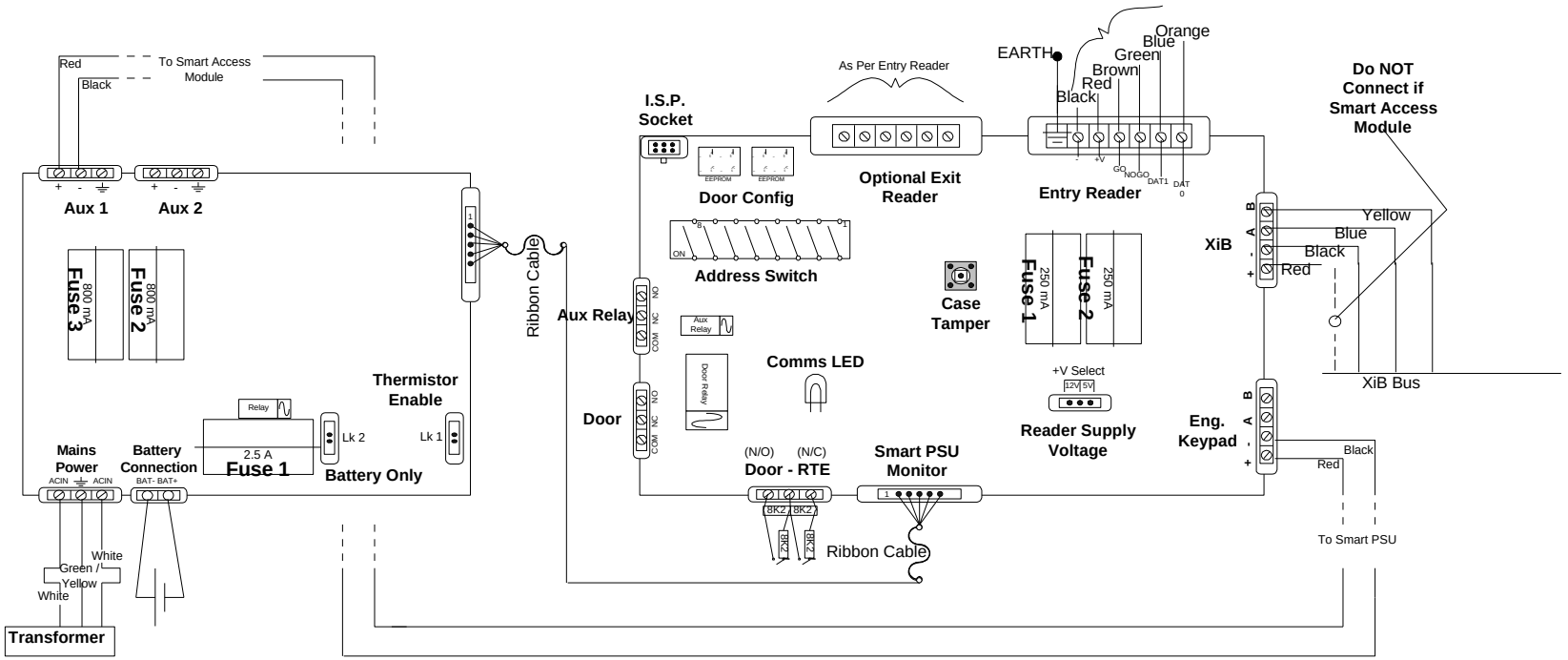


Diagram Ref.	Connector	Label	Notes
Door - RTE	CN1	Door	Door contact input (EOL)
		C	0v, common for the door and RTE inputs
		RTE	Request to exit input (EOL)
Door	CN2	NO	Door lock release relay. The door unlock time is programmable.
		NC	
		COM	
Aux Relay	CN3	NO	Auxiliary relay
		NC	
		COM	
Optional Exit Reader	CN6	DAT0/CLK	Reader 2 connections. V+ is fused through FS2 (250mA). The reader supply voltage is link selectable (5V/12V).
		DAT1/DATA	
		NOGO	
		GO	
		+V	
		-	
Entry Reader	CN7	DAT0/CLK	Reader 1 connections. V+ is fused through FS1 (250mA). The reader supply voltage is link selectable (5V/12V
		DAT1/DATA	
		NOGO	
		GO	
		+V	
		-	
XiB	CN9	+	XiB bus from the panel
		-	
		A	
		B	
Eng. Keypad	CN8	+	Engineer keypad
		-	
		A	
		B	
Smart PSU Monitor	CN10	Auxiliary PSU	XiB Auxiliary PSU interface

Links

Link	Function
5V	+V voltage selection for reader interfaces
12V	

Access Module — Address Selection

Address	DIL Switch 5 4 3 2 1
1	0 0 0 0 0
2	0 0 0 0 1
3	0 0 0 1 0
4	0 0 0 1 1
5	0 0 1 0 0
6	0 0 1 0 1
7	0 0 1 1 0
8	0 0 1 1 1
9	0 1 0 0 0
10	0 1 0 0 1
11	0 1 0 1 0
12	0 1 0 1 1
13	0 1 1 0 0
14	0 1 1 0 1
15	0 1 1 1 0
16	0 1 1 1 1
17	1 0 0 0 0
18	1 0 0 0 1

Address	DIL Switch 5 4 3 2 1
19	1 0 0 1 0
20	1 0 0 1 1
21	1 0 1 0 0
22	1 0 1 0 1
23	1 0 1 1 0
24	1 0 1 1 1
25	1 1 0 0 0
26	1 1 0 0 1
27	1 1 0 1 0
28	1 1 0 1 1
29	1 1 1 0 0
30	1 1 1 0 1
31	1 1 1 1 0
32	1 1 1 1 1

SW8- tamper disable
SW7- default config.

To default the access module configuration power up with SW7 ON and return SW7 to the Off after a few seconds.

Access Module — Fuses

Fuse	Rating	Function
FS1	F250mA	Reader 1 +V output (monitored)
FS2	F250mA	Reader 2 +V output (monitored)

Access Module — Inputs

The alarm/tamper and warning thresholds of the RTE and Door inputs are programmable and downloadable from the control panel.

Option	Default	RTE/Door Input
Debounce time	200mS	200mS Fixed
Tamper resistor	8k2	1k-10k (E12 range)
Alarm resistor	8k2	1k-10k (E12 range)
Alarm/Tamper threshold	20%	20-100
Warning threshold	10%	0-20

All percentages are with reference to the nominal programmed EOL value.

Access Module — **XiB Comms LED**

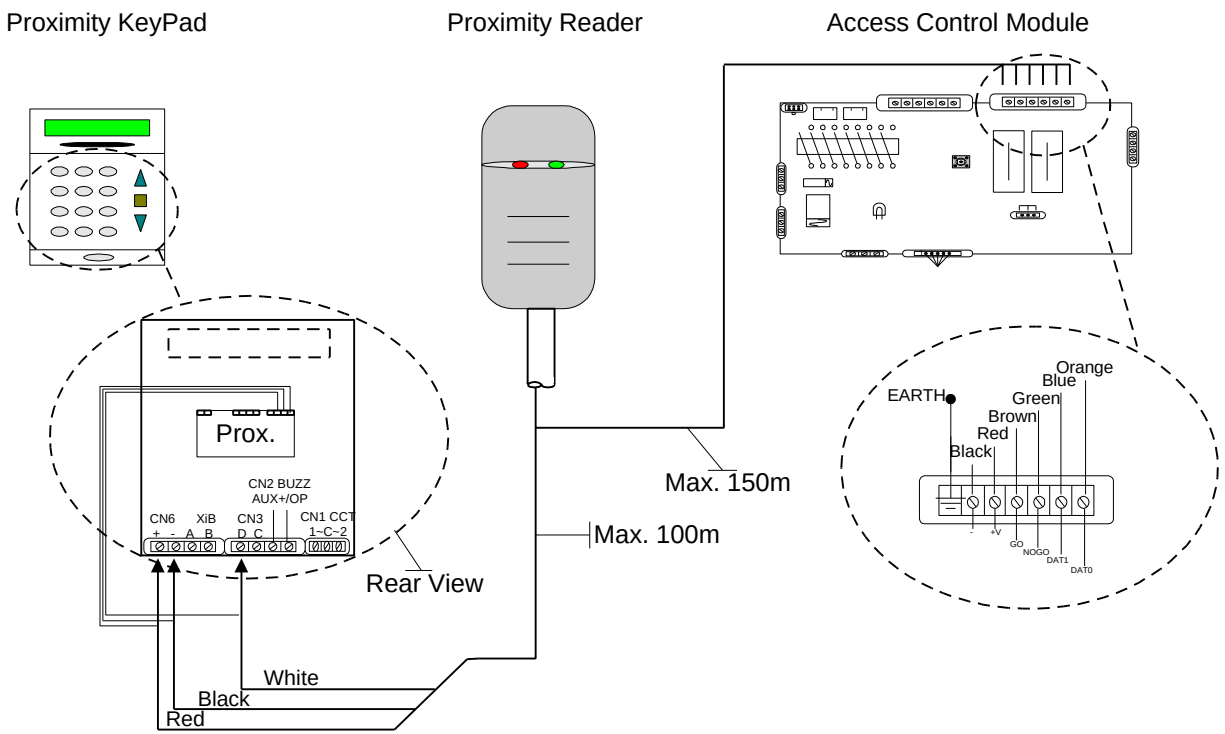
The Access module has a green LED fitted, which is used to indicate the state of the XiB communications.

State	Meaning
OFF	No power
ON	Communication error
Slow FLASH	Operating normally
Quick FLASH	Resetting

Diagnostics — **Circuit Inputs**

If an access module door input is to be used as a panel entry circuit, it must be mapped to a panel circuit number. Refer to the PX edit **Input Map** option for details.

Proximity Point	Wiring Configuration



Proximity Point **Environmental**

Parameter	Range
Temperature range	-10 to 50°C
Humidity	10% to 90% relative humidity

Proximity Point **Cable Type**

The system has a 4-wire bus for all peripherals. The recommended cable type is 7-strand/0.2mm^2 diameter un-screened cable, which has a resistance of 90 ohms/km and a core to core capacitance of 85nF/km.

Proximity Point **Cable Length**

The maximum length, with for a standard proximity reader connected at the end of the cable and no other peripherals connected on the data bus, is shown in the table.

Maximum Data Bus Cable Length (m)	
Power Source	**Un-screened Cable**
Access Module	150m
Keypad	100m

It is not recommended practice to share a sensor connection and the data bus connections in the same cable.

Proximity Point **Operation Voltage**

The operating voltage range of all XiB components is shown in the table.

Parameter	Minimum	Typical	Maximum
Voltage (volts)	10.5 v	13.5 v	15 v

Proximity Point **Current Consumption**

Product	Current (mA)
Access Module	33
Proximity Point	14

Proximity Point	LEDs

Function	Red LED	Green LED
Door LOCKED	ON	OFF
Door UNLOCKED	ON	ON
INVALID card, Access DENIED or Access ACCEPTED but door not opened.	Flash for approximately 2 seconds	OFF
Access ACCEPTED, Area not in alarm	ON	ON (for unlock time)
Access ACCEPTED, Area was in alarm	Flash for approximately 2 seconds	ON
Door FORCED Alarm	Flash	ON
Door TAMPER Alarm	Flash	ON
Door OPEN Alarm Start / Finish	Flash (4 sec's)	ON (4 sec's)
Lock out (continuous)	Slow flash on both LEDs	

PX Keypad (Prox)

There are 2 types of PX keypad supplied with an integrated proximity reader; one variant has 2 EOL circuit inputs and one variant has no circuit inputs.

Check Door *Code-59*

When the check door option is selected the panel will display the status of all configured doors.

Door-1 Clear **0.020A @ 12.100V**	*No Reply, Tamper or Clear* *Door supply current and voltage.*

The ↑ or ↓ buttons can be used to change the door number.

On a PX80 or PX 500 press the help key to display the door bus number. The door firmware version number will be displayed on all panel variants.

Door-1 Clear **BUSn V1.03**	*No Reply, Tamper or Clear* *The door module is replying on BUS n. The firmware is v1.03*

If the panel supports auxiliary PSU diagnostics, press the help key to display the door auxiliary PSU battery charge current and battery voltage.

Door-1 Aux PSU **0.060A @ 13.500V**	*Door aux. PSU battery charge current and battery voltage.*

Note: The Aux PSU battery data will only be valid following a battery test (option 64).

If the Aux PSU mains supply has failed then the battery data will be replaced by a fault message.

Door-1 Aux PSU **230V Fault**	*The Aux PSU mains has failed.*

If during a mains fail the battery voltage falls below the battery low threshold then the Battery Low message will be displayed. Aux PSU 230V fault and Battery Low are logged in the event log.

If no auxiliary PSU is connected a warning message will be displayed.

Door-1 Aux PSU **Not Applicable**	*No Aux PSU is connected to the door module*

Programming

All panel variants use code 50 to program the Access Modules. The number of Access Modules that can be connected depends on the panel variant:

Feature	PX80	PX500
Access Modules	16	32

The PX access control system can be configured through a security system keypad or a PC running GuardStation™ Access. Guardall PX proximity tokens may only be introduced to the system through a PX keypad with an integrated proximity reader.

The Access Module door input may be programmed as a circuit. Refer to the Input Map option for details.

Door	***Code-50***

To edit the access module options, select option 50 from the main edit menu. Enter the door number.

Options	Options
Door-nn	
Area-0	*0-max area*
Set Access-Off	*On/Off*
Exit Reader-Off	*On/Off*
RTE-On	*On/Off*
Door Release-010	*000-255 seconds*
Door Open-030	*000-255 seconds*
Log Access-Off	*On/Off*
Log Denied-Off	*On/Off*
Log Open-Off	*On/Off*
Log Forced-Off	*On/Off*
Log Schedule-Off	*On/Off*
Schedule-00	*0-max schedules*
Pending-Off	*On/Off*
Aux/R Denied-Off	*On/Off*

Door Menu	**Area**	*1-max area*

Each door can be programmed in one of the security system areas.

Door Menu	**Set Access**	*On/Off*

Each door can be programmed to allow access when it's programmed area is set.

Door Menu	**Exit Reader**	*On/Off*

Each Access Module can have 2 readers connected. The exit reader is optional. The exit reader bypasses any current user and/or door permission entry restrictions. A user with current Anti-Pass Back restrictions will have their timer reset for immediate re-entry after swiping their card at the exit reader and leaving through the door. (Refer to the Door, Anti-Pass Back option).

Door Menu	RTE	*On/Off*

A **R**equest **T**o **E**xit switch may be fitted to allow unrestricted exit permissions for door users.

Door Menu	Door Release	*0-255 seconds*

This is the time that the door unlock relay is activated for following the presentation of a valid user code.

Door Menu	Door Open	*0-255 seconds*

This is the maximum time that the door can be held open before a door held open alarm is generated.

Door Menu	Log Access	*On/Off*

If this option is on then all successful door accesses will be logged.

Door Menu	Log Denied	*On/Off*

If this option is on then all unsuccessful door accesses will be logged.

Door Menu	Log Open	*On/Off*

If this option is on then all door held open alarms will be logged.

Door Menu	Log Forced	*On/Off*

If this option is on then all door forced open alarms will be logged.

Door Menu	Log Schedule	*On/Off*

If this option is on then all schedule changes will be logged, including Door Unlocked, Door Locked and Door Pending Unlock.

Door Menu	Schedule	*0-max schedules*

A door schedule may be programmed for use with the schedule action option. To disable this feature program the schedule number as 0.

Action Options	Pending

If the door schedule action is programmed for Pending then the door will be unlocked following the first valid user access after the schedule start time. The door will be locked at the scheduled stop time. Proximity point LED's will show the door as unlocked after a valid entry, for the scheduled period.

Door Menu	Aux/R Denied	*On/Off*

Normally the Aux relay will be turned on when either the door is forced open or the door is held open and will be turned off when the alarm is cleared. If the Aux/R Denied option is on then the Aux relay will be turned on for 5 seconds if a user is denied access.

Anti-Pass Back	*Code-51*

This option is not available on the PX18 and PX 34.

If Anti-Pass Back is programmed, a user code can only be used once within the programmed anti pass back period unless the user code is used to swipe out. The Anti-Pass Back timer is only activated if the door is actually opened and not just on the presentation of a valid token. Swipe out is programmable for each door (Refer to the Door, Exit Reader option).

Options	Options
Anti-Pass Back 00	*00-60 Minutes*

User Options

User	*Code-07*

A user number prompt appears after entry to this menu, this requires a user number to be entered with-in the range: 2-maximum user. The maximum user number depends on the PX control panel variant (refer to the PX manual for more details).

User	Options
1=Name **2=Code** **3=Authority** **4=Lockout**	

User Menu	**Name**	*10 characters max*

The programmed text descriptor will be displayed. Press the ✓ button to edit the text descriptor. Refer to editing text descriptors for full details.

User Menu	**Code**	***Code-2***

New Code **Enter-**	*Present the token for user nnnn or press ✗ to exit.*

User Menu	**Authority**	***Code-3***

Users can be programmed with a number or options including authority level, area access and timed access. When a new user is added using option 51 (Add user) the user authority is automatically set to Access.

When the authority option is selected the user authority menu is displayed.

User	Options
User-nnnn ***User Name***	*nnnn=User number*
Manager	*Press **?** for list of user authorities*
Code Change-On	*On/Off*
LogOn/Set-On	*On/Off*
Set Group-Off	*On/Off*
Area-0	*0-max area*
Set Group 1-Off	*On/Off*
Set Group 2-Off	*On/Off*
…	
Set Group 8-Off	*On/Off*
Schedule-0	*0-max schedules*

The available menu options are dependent on the programmed user authority.

User Auth Help

0=Off
1=Manager
2=Ordinary
3=Set/Uns
4=Set
5=Unset
6=Cleaner
7=Access
8=Reset
9=Duress

Refer to the user authority option table for full details of options available for each user type.

The menu options available to each authority level are shown in the table.

Menu Option		User Authority Level								
Code	Text	Man	Ord	Set/ Uns	Set	Unset	Cleaner	Access	Reset	Duress
01	Unset	✓	✓	✓	✗	✓	✓	✗	✗	✓
02	Set	✓	✓	✓	✓	✗	✓	✗	✗	✗
03	Reset	✓	✓	✓	✗	✗	✗	✗	✓	✓
04	Test	✓	✓	✗	✗	✗	✗	✗	✗	✗
05	Engineer	1	1	1	1	✗	✗	✗	✗	✗
06	PIN	✓	2	2	2	✗	✗	✗	✗	2
07	User	✓	✗	✗	✗	✗	✗	✗	✗	✗
10	Log-Full	✓	✗	✗	✗	✗	✗	✗	✗	✗
11	Log-Cct	✓	✗	✗	✗	✗	✗	✗	✗	✗
12	Log-User	✓	✗	✗	✗	✗	✗	✗	✗	✗
13	Log-KP	✓	✗	✗	✗	✗	✗	✗	✗	✗
14	Log-Date	✓	✗	✗	✗	✗	✗	✗	✗	✗
15	Log-Alarm	✓	✗	✗	✗	✗	✗	✗	✗	✗
20	Time +/-75m	3	3	✗	✗	✗	✗	✗	✗	✗
24	Holiday	✓	✗	✗	✗	✗	✗	✗	✗	✗
25	Schedule	✓	✗	✗	✗	✗	✗	✗	✗	✗
30	Bypass	4	4	✗	✗	✗	✗	✗	✗	✗
31	KP Off	✓	✗	✗	✗	✗	✗	✗	✗	✗
32	Chime	✓	✓	✗	✗	✗	✗	✗	✗	✗
40	Print Text	✓	✗	✗	✗	✗	✗	✗	✗	✗
42	Print Hols.	✓	✗	✗	✗	✗	✗	✗	✗	✗
50	Door	✗	✗	✗	✗	✗	✗	✗	✗	✗
51	Add User	✓	✗	✗	✗	✗	✗	✗	✗	✗
52	Delete User	✓	✗	✗	✗	✗	✗	✗	✗	✗
53	Check Door	✗	✗	✗	✗	✗	✗	✗	✗	✗
86	Isolate Cct	5	✗	✗	✗	✗	✗	✗	✗	✗
87	Isolate Conc	5	✗	✗	✗	✗	✗	✗	✗	✗

Notes: Items marked 1-5 will only be available if programmed by the installation engineer.

User Authority Menu	**Code Change**	*On/Off*

Some user types are allowed by default to change their own code (refer to authority table). This feature can be disabled for any user without manager authority.

User Authority Menu	**LogOn/Set**	*On/Off*

If this option is on, a set prompt will be displayed in place of the normal log on menu, when the user logs on.

User Authority Menu	**Set Group**	*On/Off*

A user can be programmed for either a single area, all areas or any combination of set groups. To program a set groups the Set Group option must be on.

User Authority Menu	**Area**	*0-max areas*

If the Set Group option is off the user can be programmed with a single are number. Enter 0 for all areas.

User Authority Menu	**Set Group 1-8**	*On/Off*

If the Set Group option is on the user can be programmed any combination of set groups.

User Authority Menu	**Schedule**	*0-Max schedule*

A user can be programmed with a schedule to control access times. Program 0 to allow 24hr access. See also user departments.

User Menu	**Lockout**	***Code-4***

A user can be locked out of the system at any time. All user configuration is retained while a user is locked out.

User-nnnn	*The user number*
Lockout-Off	*On/Off*

Access Log	A/Log-Full	*Code-16*

The access log capacity of the system is 1000 events. This log contains the most recent 1000 events for all doors in chronological order. All log options are configurable for each door. The Access log options are only accessible to users with manager authority.

The full access log may be displayed or printed.

Access Log	A/Log-User	*Code-17*

Events for a single access user may be displayed or printed. Select option 17, then enter the user number.

Access Log	A/Log-Door	*Code-18*

Events for a single door may be displayed or printed. Select option 17, then enter the door number.

User Access Options	Access Log Messages

Access log messages			
Log Text	**Additional Data**	**Display Text**	**Event Description**
User Access	User *nnnn*, Door *mm*	Us*xxxx*, Door*nn*	User gained access
Access Denied	User *nnnn*, Door *mm*	Us*xxxx*, Door*nn*	User refused access
Door Open	Circuit *nnn*	Door*nn*	Door held open
Door Forced	Circuit *nnn*	Door*nn*	Door forced open
Door Unlocked	Door *mm*	Door*nn*	Door Unlocked
Door Locked	Door *mm*	Door*nn*	Door Locked
Door Pending	Door *mm*	Door*nn*	Door Pending Unlock

Add User — *Code-51*

When the Add User option is selected, the **first free user number** will be selected by the system and the normal user programming menu will be displayed.

The user authority is automatically set to Access and the user text descriptor will be defaulted.

Delete User — *Code-52*

When the Delete User option is selected, a range must be entered:

Delete User **Frst ____ Lst ____**	*Enter the first and last users number in the range 2-max user*

Door Unlock — *Code-53*

Enter the door number:

Door Lock Menu	Options
Door-nn **Unlock-Off**	*On/Off*

A door can be manually unlocked from a keypad. The unlock time can be set in minutes or enter 0 minutes to unlock indefinitely. The door unlock off command is required to lock the door after indefinite unlock. If the door is locked, it can still be opened by presenting a valid user card.

Door Lockout — *Code-54*

Enter the door number:

Door Lock Menu	Options
Door-nn **Lockout-Off**	*On/Off*

The locked out door will remain locked and will refuse all access attempts until the lockout is removed. The door lockout can only be removed through this programming option. The door lockout will override any user/door schedule permissions or otherwise immediately, and for the applied duration. Upon removal the door will be returned to its previous state (if that state still applies). Proximity point LED's will show the door as locked out for the applied duration.

Input Responses

Circuit Type	Alarm Response	Clear Response
Door	Lock open: start entry Lock closed: door forced alarm	Clear: lock door
RTE	NONE	Open lock

Input Responses **Forced Alarm**

If the door is opened while the lock is closed then a forced alarm will be generated. The forced alarm action is:

1. Log the event if log forced alarm is enabled for the door.
2. Turn on the Aux Relay if the relay function is enabled for forced alarm.

Security System Integration

1. The door contact may be programmed as a security panel entry/exit circuit.

2. An access system user can be programmed as a security system user.

3. The door may not be unlocked while the access module area is set. The access module area is the area that the door circuit is programmed for.

4. All doors will open if a fire alarm is reported from the security system.

Change History

Version 1.05

1. The door area limit was changed to 1-max area (was 0-max area). Panel change.
2. When programming from a keypad, the maximum user is limited to the control panel user limit.

Guardall Limited
Lochend Industrial Estate
Newbridge
Edinburgh EH28 8PL

Tel: 0131-333-2900
FAX: 0131-333-4919
www.guardall.co.uk

Technical Hotline: 0131-333-3802

Part Number: 320716-0A