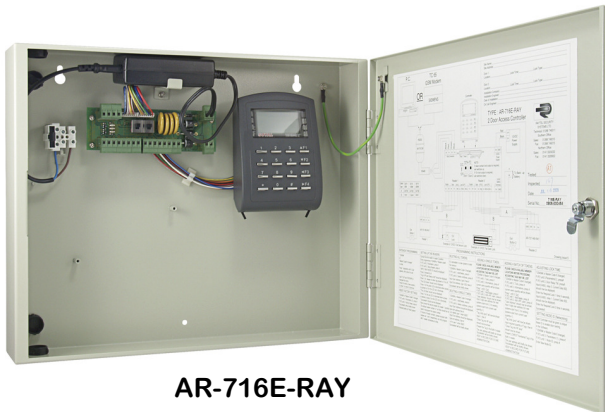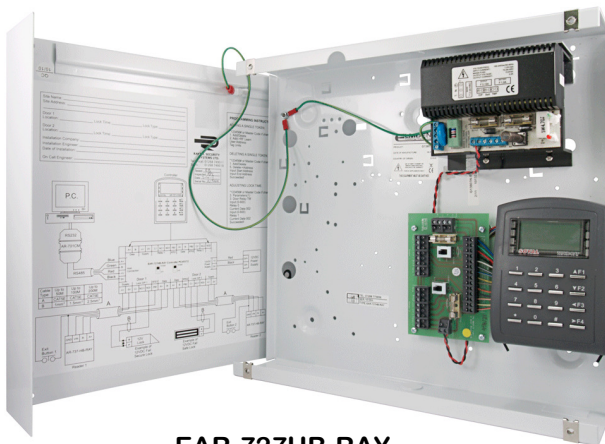# AR-727HB-RAY
AR-716E-RAY
EAR-727HB-RAY
Series of Controllers

Installation and Programming Guide

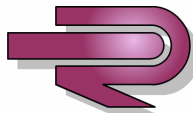**AR-716E-RAY**

EAR-727HB-RAY

AR-727HB-RAY

25th October

Version 1.00

CONTENTS

CONTENTS

SYSTEM OVERVIEW

The AR-727HB-RAY Controller

The AR-727HB-RAYis a versatile two door proximity controller that can be used as either a stand-alone or networked device.

Key Features:

☞ Built in aerial for token programming

☞ 1,024 User Card capacity in stand alone mode, 5000 User Card capacity in network mode

☞ Tamper switch

☞ Optional Anti-Passback function

☞ Optional egress function

☞ Network capability up to 254 doors

☞ Optional lock output - 12VDC or Clean Contacts

☞ Adjustable lock output - Timed 0.1 to 600 seconds, Latched On/Latched Off

☞ Will run as stand-alone controller during Host Controller failure

☞ Buffer for storing up to 1,200 Transactions

☞ Real time clock

☞ 10x Auto Open Timezones in stand-alone mode (Older versions may only have 2)

☞ Supports RS485 Protocols

☞ IP54 rated

AR-737HB-RAY Reader DIP Switch Settings

Before any AR-737HB-RAY readers are installed, it is recommended that the DIP switch settings on the back of the readers are checked.

The DIP switch settings for the AR-737HB-RAY reader is shown below.

If the DIP switch is set differently to the example below, the switch needs to be changed, and if the readers are powered up, they need to be powered down for the changes to take effect.

Please read "Setup Reader" on page 31.

RS485

SW1	SW2	OUTPUT
ON	OFF	RS485
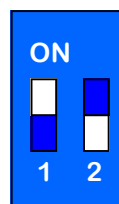
AR-727HB-RAY BOX CONTENTS & INSTALLATION

BOX CONTENTS

A. Controller	B. User Guide	C. Connection Cables	D. Water Resistant Strip	E. Allen Key & Screws

INSTALLATION
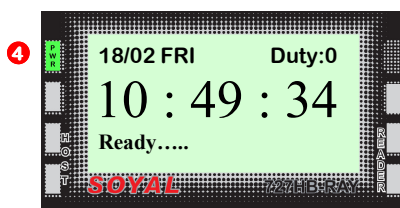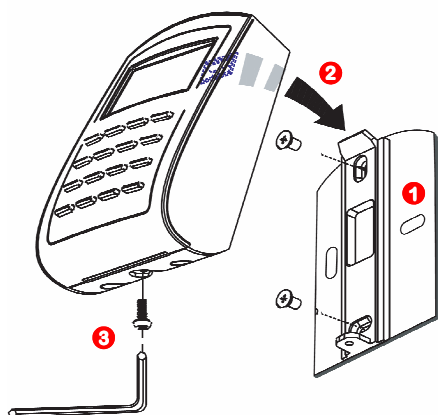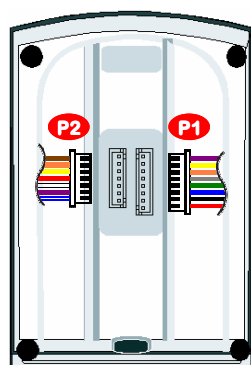
STEPS

❶ Screw mounting plate to the wall.

❷ Pull cable ends through the access hole in the mounting plate.

❸ Attach controller to the mounting plate and install screw (supplied) into the hole at the bottom with the allen key (supplied).

❹ Apply power. Sounder will emit a short beep and the green power LED & display will illuminate. If the display is showing a black screen, **press and hold** the **F4** button until the screen clears. This may have to be done every time the controller is powered up.

NOTICE

▪ **CONDUIT**
The communication wires and power line **Should Not** be housed in the same electrical conduit.
They should always be installed in separate conduit.

▪ **CABLE SELECTION**
Use twisted pair and Do Not star out. This will cause problems with data to and from the readers.

▪ **POWER SUPPLY**
Do Not connect the reader and lock to the same power supply. While the lock is active it can destabilise the power supply and affect the readers function. The standard connection of the power supply is to connect the door relay and lock to one power supply and the reader on a separate power supply.

```
18/02 FRI          Duty:0

10 : 49 : 34
Ready…..
SOYAL                    727HB-RAY
```

CONNECTOR DIAGRAM

P1 Table1:
CN-1 ~ 8 Wire Connector Colour Coding

Wire Application	Wire	Colour	Description
Exit Switch 2	1	Purple	Negative Trigger Input
Exit Switch 1	2	Yellow	Negative Trigger Input
Networking To 737	3	Orange	B- RS485 To 737
	4	Grey	A+ RS485 To 737
Networking To Host	5	Green	B- RS485 To Host
	6	Blue	A+ RS485 To Host
Power GND	7	Black	-VDC
Power VIN	8	Red	12-24VDC

P2 Table2:
CN-2 ~ 7 Wire Connector Colour Coding

Wire Application		Wire	Colour	Description
N/A		1	Brown/White	N/A
Relay 2	COM	2	Orange/White	Common 24VDC 1A
	N/C	3	Yellow/White	Normally Closed 24VDC 1A
	N/O	4	Red/White	Normally Open 24VDC 1A
Relay 1	COM	5	White	Common 24VDC 1A
	N/C	6	Purple/White	Normally Closed 24VDC 1A
	N/O	7	Blue/White	Normally Open 24VDC 1A

AR-716E-RAY BOX CONTENTS & INSTALLATION

BOX CONTENTS
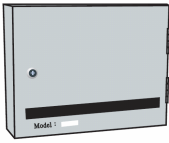
A. Controller	B. User Guide	C. Keys	D. Battery Leads	E. Allen Key & Screws	F. PC Interface Bracket

INSTALLATION

STEPS

❶ Screw suitable screws into raw-plugs inserted in the wall.

❷ Mount the controller cabinet on the screws and tighten screws.

❸ Apply power. Sounder will emit a short beep and the green power LED & display will illuminate. If the display is showing a black screen, **press and hold** the **F4** button until the screen clears. This may have to be done every time the controller is powered up.

NOTICE

- **CONDUIT**
  The communication wires and power line **Should Not** be housed in the same electrical conduit.
  They should always be installed in separate conduit.
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  Use twisted pair and Do Not star out. This will cause problems with data to and from the readers.
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  Do Not connect the reader and lock to the same power supply. While the lock is active it can destabilise the power supply and affect the readers function. The standard connection of the power supply is to connect the door relay and lock to one power supply and the reader on a separate power supply.

❸
18/02 FRI   Duty:0
10 : 49 : 34
Ready…..
SOYAL   727HB-RAY

CONNECTOR DIAGRAM

P1 Table1: CN-1 ~ 8 Wire Connector Colour Coding

Wire Application	Wire	Colour	Description
Exit Switch 2	1	Purple	Negative Trigger Input
Exit Switch 1	2	Yellow	Negative Trigger Input
Networking To 737	3	Orange	B- RS485 To 737
	4	Grey	A+ RS485 To 737
Networking To Host	5	Green	B- RS485 To Host
	6	Blue	A+ RS485 To Host
Power GND	7	Black	-VDC
Power VIN	8	Red	12-24VDC

P2 Table2: CN-2 ~ 7 Wire Connector Colour Coding

Wire Application		Wire	Colour	Description
N/A		1	Brown/White	N/A
Relay 2	COM	2	Orange/White	Common 24VDC 1A
	N/C	3	Yellow/White	Normally Closed 24VDC 1A
	N/O	4	Red/White	Normally Open 24VDC 1A
Relay 1	COM	5	White	Common 24VDC 1A
	N/C	6	Purple/White	Normally Closed 24VDC 1A
	N/O	7	Blue/White	Normally Open 24VDC 1A

EAR-727HB-RAY BOX CONTENTS & INSTALLATION

BOX CONTENTS
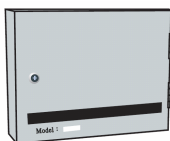
A. Controller   **B. User Guide**   **E. Battery Leads**   **D. Allen Key & Screws**

INSTALLATION

STEPS

❶ Screw suitable screws into raw-plugs inserted in the wall.

❷ Mount the controller cabinet on the screws and tighten screws.

❸ Apply power. Sounder will emit a short beep and the green power LED & display will illuminate. If the display is showing a black screen, **press and hold** the **F4** button until the screen clears. This may have to be done every time the controller is powered up.

❸
```
18/02 FRI          Duty:0
10 : 49 : 34
Ready…..
SOYAL              727HB-RAY
```

NOTICE

▪ **CONDUIT**
The communication wires and power line **Should Not** be housed in the same electrical conduit.
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Do Not connect the reader and lock to the same power supply. While the lock is active it can destabilise the power supply and affect the readers function. The standard connection of the power supply is to connect the door relay and lock to one power supply and the reader on a separate power supply.

CONNECTOR DIAGRAM

P1 Table1: CN-1 ~ 8 Wire Connector Colour Coding

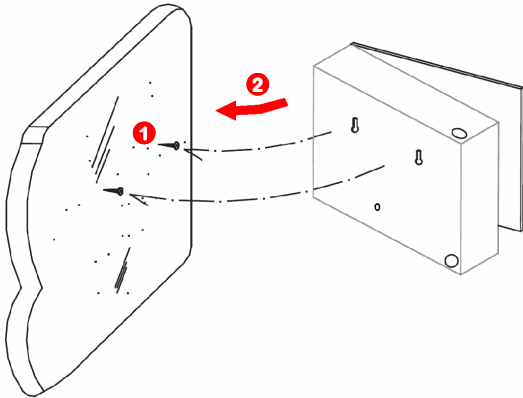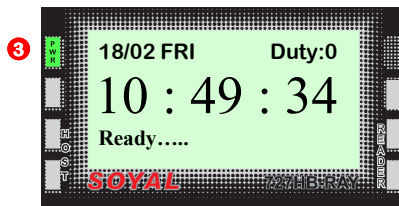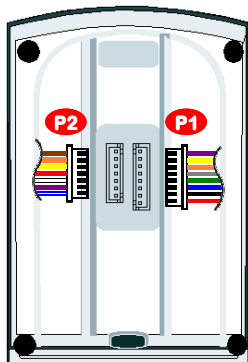| Wire Application	Wire	Colour	Description
Exit Switch 2	1	Purple	Negative Trigger Input
Exit Switch 1	2	Yellow	Negative Trigger Input
Networking To 737	3	Orange	B- RS485 To 737
Networking To 737	4	Grey	A+ RS485 To 737
Networking To Host	5	Green	B- RS485 To Host
Networking To Host	6	Blue	A+ RS485 To Host
Power GND	7	Black	-VDC
Power VIN	8	Red	12-24VDC

P2 Table2: CN-2 ~ 7 Wire Connector Colour Coding

Wire Application		Wire	Colour	Description
N/A		1	Brown/White	N/A
Relay 2	COM	2	Orange/White	Common 24VDC 1A
Relay 2	N/C	3	Yellow/White	Normally Closed 24VDC 1A
Relay 2	N/O	4	Red/White	Normally Open 24VDC 1A
Relay 1	COM	5	White	Common 24VDC 1A
Relay 1	N/C	6	Purple/White	Normally Closed 24VDC 1A
Relay 1	N/O	7	Blue/White	Normally Open 24VDC 1A

CONNECTIONS FOR AR-727HB-RAY WITH TWO MAGNETIC LOCKS

CABLE TYPE		Up to 50m	Up to 100m	Up to 200m
A	CAT5E	CAT5E	CAT5E	CAT5E
B	1mm²	1.5mm²	2.5mm²	

1381NS

12v | 0v

AR-737-HB-RAY
A+ B- VIN GND

AR-737-HB-RAY
A+ B- VIN GND

A

A

EXIT

EXIT

B

B

B

CN1
RED	8	
BLACK	7	
BLUE	6	
GREEN	5	
GREY	4	
ORANGE	3	
YELLOW	2	
PURPLE	1	

CN2
BLUE/WHITE	7	
PURPLE/WHITE	6	
WHITE	5	
RED/WHITE	4	
YELLOW/WHITE	3	
ORANGE/WHITE	2	
BROWN/WHITE	1	

DOOR 1

DOOR 2

+ −

+ −

CONNECTIONS FOR AR-727HB-RAY WITH TWO FAIL SAFE RELEASES

CABLE TYPE	Up to 50m		Up to 100m		Up to 200m	
A	CAT5E		CAT5E		CAT5E	
B	1mm²		1.5mm²		2.5mm²	

1381NS

12V | 0v

CN1

RED	8
BLACK	7
BLUE	6
GREEN	5
GREY	4
ORANGE	3
YELLOW	2
PURPLE	1

CN2

BLUE/WHITE	7
PURPLE/WHITE	6
WHITE	5
RED/WHITE	4
YELLOW/WHITE	3
ORANGE/WHITE	2
BROWN/WHITE	1

IMPORTANT.
A Diode MUST Be
Fitted To The Lock
As Shown

AR-737-HB-RAY

A+ | B- | VIN | GND

A

EXIT

DOOR 1

12V Lock

+ | -

AR-737-HB-RAY

A+ | B- | VIN | GND

A

EXIT

DOOR 2

12V Lock

+ | -

B

B

CONNECTIONS AR-727HB-RAY WITH TWO FAIL SECURE RELEASES

CABLE TYPE	Up to 50m			Up to 100m			Up to 200m		
A	CAT5E			CAT5E			CAT5E		
B	1mm²			1.5mm²			2.5mm²		

1381NS

12v 0v

CN1
PURPLE 1
YELLOW 2
ORANGE 3
GREY 4
GREEN 5
BLUE 6
BLACK 7
RED 8

CN2
BROWN/WHITE 1
ORANGE/WHITE 2
YELLOW/WHITE 3
RED/WHITE 4
WHITE 5
PURPLE/WHITE 6
BLUE/WHITE 7

AR-737-HB-RAY
A+ B- VIN GND

AR-737-HB-RAY
A+ B- VIN GND

A

A

B

B

EXIT

EXIT

DOOR 1
12V Lock
+ -

DOOR 2
12V Lock
+ -

IMPORTANT.
A Diode MUST Be
Fitted To The Lock
As Shown

THE RAYTEL GROUP LTD

ISS	DESCRIPTION	.	DATE
1	INITIAL		20 - 07 - 10

TITLE: Access Control AR-727HB-RAY 2 Door with Fail Secure Releases

DRAWN	CHECKED	APPROVED	DATE
MH			20 - 07 - 10

DRAWING No. RSS 2000/609

CONNECTIONS FOR AR-727HB-RAY WITH CLEAN CONTACT OUTPUTS

CABLE TYPE		Up to 50m	Up to 100m	Up to 200m
A	CAT5E	CAT5E	CAT5E	CAT5E
B	1mm²	1mm²	1.5mm²	2.5mm²

CONNECTIONS FOR AR-727HB-RAY WITH TWO SOLENOID BOLTS

CABLE TYPE	Up to 50m	Up to 100m	Up to 200m
A	CAT5E	CAT5E	CAT5E
B	1mm²	1.5mm²	2.5mm²

1381NS

12v 0v

AR-737-HB-RAY

A+ B- VIN GND

AR-737-HB-RAY

A+ B- VIN GND

A

A

CN1

8	RED
7	BLACK
6	BLUE
5	GREEN
4	GREY
3	ORANGE
2	YELLOW
1	PURPLE

EXIT

EXIT

CN2

7	BLUE/WHITE
6	PURPLE/WHITE
5	WHITE
4	RED/WHITE
3	YELLOW/WHITE
2	ORANGE/WHITE
1	BROWN/WHITE

B

B

B R Y

B R Y

DOOR 1

DOOR 2

THE RAYTEL GROUP LTD

ISS	DESCRIPTION	.	DATE
1	INITIAL		20-07-10

TITLE: Access Control AR-727HB-RAY 2 Door with Solenoid Door Bolts

DRAWN	CHECKED	APPROVED	DATE
MH			20-07-10

DRAWING No.   RSS 2000/607

CONNECTIONS FOR AR-716E-RAY WITH TWO MAGNETIC LOCKS

CABLE TYPE	Up to 50m	Up to 100m	Up to 200m
A	CAT5E	CAT5E	CAT5E
B	1mm²	1.5mm²	2.5mm²

BOTH SWITCHES SHOULD BE IN THE 12V POSITION

AR-737-HB-RAY

A+ B- VIN GND

EXIT

+ −

B

Power
Vin GND

Battery
B+ GND

READER 2
V+ 0V A+ B- PB2 C/- NO/+ NC/+

A

Lock OP2
Lock OP1
C/C 12V

HOST
0V V+ B- A+

READER 1
V+ 0V A+ B- PB1 C/- NO/+ NC/+

A

AR-737-HB-RAY
A+ B- VIN GND

EXIT

+ −

B

RSSD AR-727HB-RAY Series Installation and Programming Manual

THE RAYTEL GROUP LTD

TITLE: Access Control AR-716E-RAY 2 Door with Maglocks

DRAWN MH
CHECKED
APPROVED
DATE 20-07-10

DRAWING No. RSS 2000/612

Please note that all drawings and diagrams supplied for bespoke applications for RSS products are given as a free service to assist customers and no liability for errors and ommissions can be accepted by RSS. Customers remain entirely responsible for the quality and correctness of all installation work.

ISS	DESCRIPTION	.	DATE
1	INITIAL		20-07-10

CONNECTIONS FOR AR-716E-RAY WITH TWO FAIL SAFE RELEASES

CABLE TYPE	Up to 50m	Up to 100m	Up to 200m
A	CAT5E	CAT5E	CAT5E
B	1mm²	1.5mm²	2.5mm²

BOTH SWITCHES SHOULD BE IN THE 12V POSITION

IMPORTANT.
A Diode MUST Be Fitted To The Lock As Shown

IMPORTANT.
A Diode MUST Be Fitted To The Lock As Shown

THE RAYTEL GROUP LTD

TITLE: Access Control AR-716E-RAY 2 Door with Fail Safe Releases

DRAWN MH
CHECKED
APPROVED
DATE 20 - 07 - 10
DRAWING No. RSS 2000/614

ISS	DESCRIPTION	-	DATE
1	INITIAL		20 - 07 - 10

Please note that all drawings and diagrams supplied for bespoke applications for RSS products are given as a free service to assist customers and no liability for errors and ommissions can be accepted by RSS. Customers remain entirely responsible for the quality and correctness of all installation work.

CONNECTIONS FOR AR-716E-RAY WITH TWO FAIL SECURE RELEASES

CABLE TYPE	Up to 50m	Up to 100m	Up to 200m
A	CAT5E	CAT5E	CAT5E
B	1mm²	1.5mm²	2.5mm²

BOTH SWITCHES SHOULD BE IN THE 12V POSITION

IMPORTANT. A Diode MUST Be Fitted To The Lock As Shown

IMPORTANT. A Diode MUST Be Fitted To The Lock As Shown

AR-737-HB-RAY

A+ B- VIN GND

12V Lock + -

EXIT

Power Vin GND

Battery B+ GND

READER 2 V+ 0V A+ B- PB2 C/- NO/+ NC/+

Lock OP2

Lock OP1 C/C 12V

HOST 0V V+ B- A+

READER 1 V+ 0V A+ B- PB1 C/- NO/+ NC/+

AR-737-HB-RAY

A+ B- VIN GND

12V Lock + -

EXIT

A B

CONNECTIONS FOR AR-716E-RAY WITH CLEAN CONTACT OUTPUTS

CABLE TYPE		Up to 50m	Up to 100m	Up to 200m
A	CAT5E	CAT5E	CAT5E	CAT5E
B		1mm²	1.5mm²	2.5mm²

BOTH SWITCHES SHOULD BE IN THE C/C POSITION

THE RAYTEL GROUP LTD

ISS	DESCRIPTION	DATE
1	INITIAL	20 - 07 - 10

TITLE Access Control AR-716E-RAY 2 Door with Clean Contact Lock Outputs

DRAWN	CHECKED	APPROVED	DATE
MH			20 - 07 - 10

DRAWING No. RSS 2000/616

CONNECTIONS FOR AR-716E-RAY WITH TWO SOLENOID BOLTS

CABLE TYPE	Up to 50m	Up to 100m	Up to 200m
A	CAT5E	CAT5E	CAT5E
B	1mm²	1.5mm²	2.5mm²

BOTH SWITCHES SHOULD BE IN THE C/C POSITION

1381NS 12V PSU

AR-737-HB-RAY

READER 1

READER 2

HOST

Lock OP1

Lock OP2

Power

Battery

EXIT

CONNECTIONS FOR EAR-727HB-RAY WITH TWO MAGNETIC LOCKS

CABLE TYPE	Up to 50m	Up to 100m	Up to 200m
A	CAT5E	CAT5E	CAT5E
B	1mm²	1.5mm²	2.5mm²

CONNECTIONS FOR EAR-727HB-RAY WITH TWO FAIL SAFE RELEASES

CABLE TYPE	Up to 50m	Up to 100m	Up to 200m
A	CAT5E	CAT5E	CAT5E
B	1mm²	1.5mm²	2.5mm²

AR-727HB-RAY Controller PCB
PC5037/2

Controller

12VDC Power Supply

Red
Black

12VDC Power Supply
+V   0V

Relay 2
A+ B- 0V NC2 NO2
Supply Data PB2 C2 NC2

SW2
C/C
12vDC
Lock O/P 2

Door 2
Supply Lock O/P 2 Data
+V 0V C- NC+ NO- RTE2 PB2 B- A+

Relay 1
PB1 A+ B- NC1 NO1 C1
RTE1 Data

SW1
C/C
12vDC
Lock O/P 1

Door 1
Supply Lock O/P 1 Data
+V 0V C- NC+ NO- RTE1 PB1 B- A+

Host Connection
A+ B- +V 0V
Data Supply

Blue
Green
Red
Black

RS485

RS232
AR-701CM

P.C.

A+ B- GND VIN
AR-737-HB-RAY
Reader 2

Exit Button 2

12V Lock
Door 2
+ -

A

B

A+ B- GND VIN
AR-737-HB-RAY
Reader 1

Exit Button 1

12V Lock
Door 1
+ -

A

B

CONNECTIONS FOR EAR-727HB-RAY WITH FAIL SECURE RELEASES

CABLE TYPE	Up to 50m	Up to 100m	Up to 200m
A	CAT5E	CAT5E	CAT5E
B	1mm²	1.5mm²	2.5mm²

CONNECTIONS FOR EAR-727HB-RAY WITH CLEAN CONTACT OUTPUTS

CABLE TYPE	Up to 50m	Up to 100m	Up to 200m
A	CAT5E	CAT5E	CAT5E
B	$1mm^2$	$1.5mm^2$	$2.5mm^2$

CONNECTIONS FOR EAR-727HB-RAY WITH TWO SOLENOID BOLTS

PROGRAMMING MENU TREE

1. Add/Delete
- 1. Add –> Card ID
- 2. Add –> RF Learn
- 3. Suspend –> Addr
- 4. Suspend –> ID#
- 5. Delete –> Addr
- 6. Delete –> ID#
- 7. Recover –> Addr
- 8. Recover –> ID#
- 9. Antipass Group

2. User Settings
- 1. Password
- 2. Access Mode
- 3. Extend Options
- 4. Door Group

3. Parameters (1)
- 1. Node ID
- 2. Auto Open Zone
- 3. Door Relay Tm
- 4. Scan Readers
- 5. Setup Reader

4. Parameters (2)
- 1. Egress (R.T.E)
- 2. Attendance
- 3. Master Node
- 4. Anti-passback
- 5. Factory Reset

5. Tools
- 1. Language
- 2. Master Code
- 3. Master Range
- 4. Open TimeZone
- 5. Informations
- 6. Clock Setting
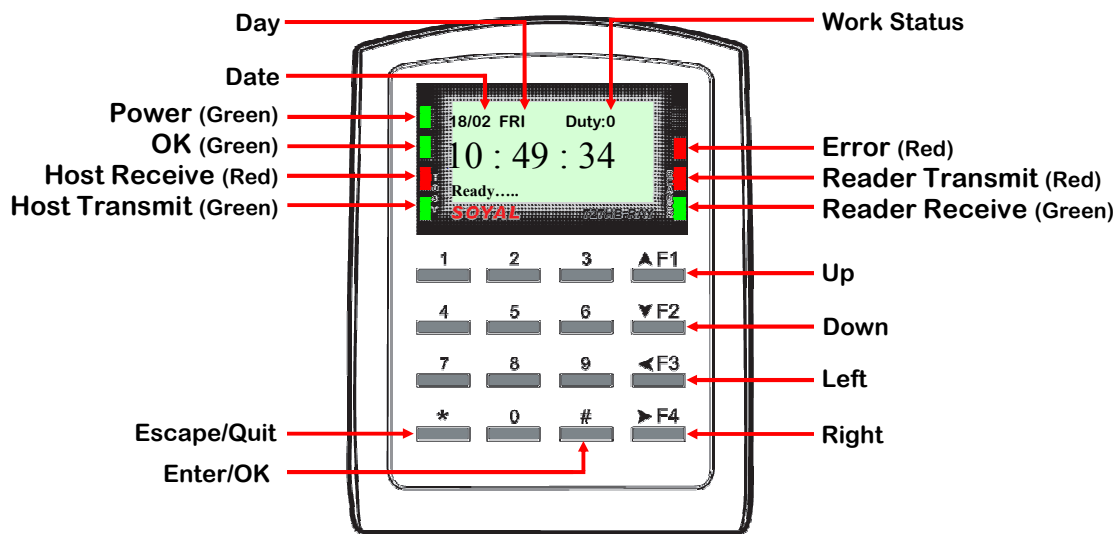- 7. Control Mode
- 8. View Events

6. Quit
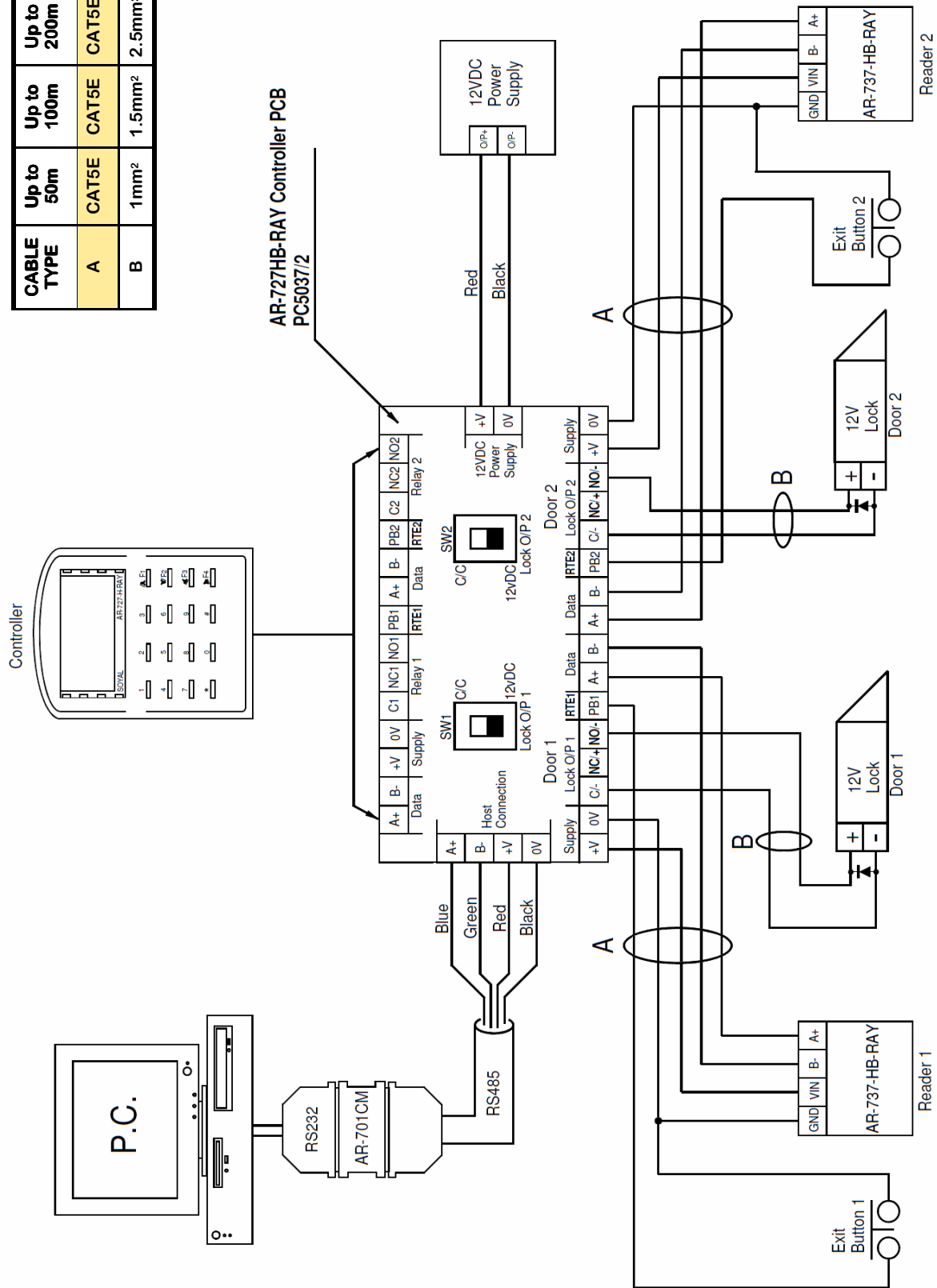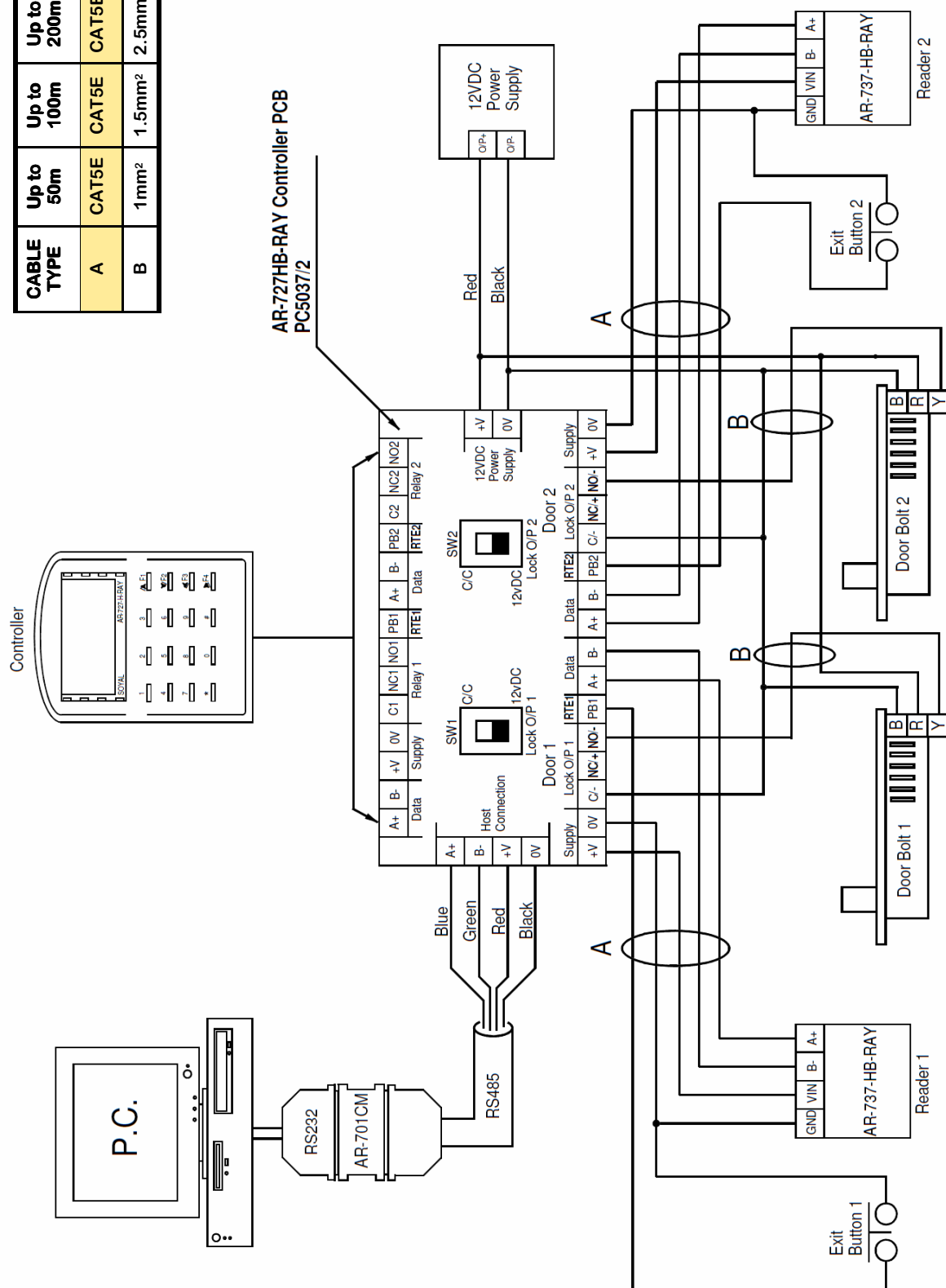
Enter programming mode by entering *Master Code#
Exit Programming mode by pressing * to step back through the menu until the display reads 6.Quit, then enter # to confirm.
If no keys are pressed for 30 seconds, programming mode will time out and the unit will return to normal operation.

DISPLAY AND KEYPAD LAYOUT

Front Panel Layout

Day

Date

Power (Green)

OK (Green)

Host Receive (Red)

Host Transmit (Green)

Work Status

Error (Red)

Reader Transmit (Red)

Reader Receive (Green)

18/02 FRI   Duty:0

10 : 49 : 34

Ready.....

SOYAL

1   2   3   ▲F1 — Up

4   5   6   ▼F2 — Down

7   8   9   ◄F3 — Left

*   0   #   ►F4 — Right

Escape/Quit

Enter/OK

LED's

Stand-by (Green)	- Indicates power on.
OK (Green)	- Indicates normal operation.
Host Receive (Red)	- Indicates data received from host.
Host Transmit (Green)	- Indicates data transmitted to host.
Error (Red)	- Indicates system error.
Reader Transmit (Green)	- Indicates data transmitted to readers.
Reader Receive (Red)	- Indicates data received from readers.

Display

Date	- Shows current date.
Day	- Shows current day of the week.
Work Status	- Shows current Work Status.

Buttons

▲F1	- Navigates up the menu.
▼F2	- Navigates down the menu.
◄F3	- Navigates up the menu.
►F4	- Navigates down the menu.
✱	- Press to escape current menu screen.
#	- Press to enter data.
✱ & #	- Press together to lock/unlock Keypad.

DISPLAY MESSAGES

Events Screen Layout

Event Status Code   Date   Time

Event Number

Day

User Address
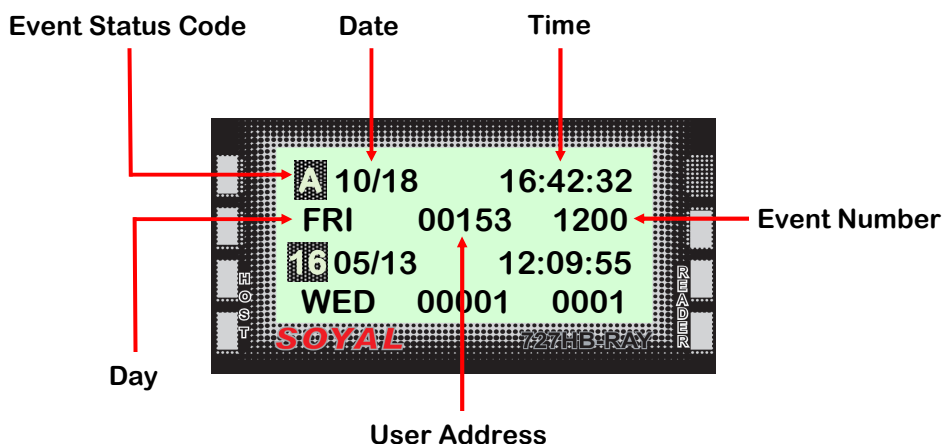
Event Status Code

A:	Indicates the start of a duty period
B:	Indicates the end of a duty period
C:	Indicates the start of an overtime period
D:	Indicates the end of an overtime period
E:	Indicates the start of a break period
F:	Indicates the end of a break period
G:	Indicates user has left the premises
H:	Indicates the user has returned to the premises
01:	Indicates an erroneous password has been entered
03:	Indicates an unprogrammed or invalid card has been presented
04:	Indicates a time-zone error
11:	Indicates normal access
16:	Indicates egress via exit function
17:	Indicates an alarm state
31:	Indicates an anti-passback error

Event Messages

When viewing events, the screen will always show 2 events at a time.
The controller can store a maximum of 1,200 events.
After the 1,200th event, the controller overwrites the messages from event number 0001 onwards.
Two messages are shown on screen at a time and scrolling up (with F1) or down (with F2) will take you to the next or previous message.
The messages can be deleted from the controller by performing a factory reset.

WARNING

If a Factory Reset is performed to erase the event messages, all other programming will be lost. Before attempting a Factory Reset make a record of all necessary programming.

PROGRAMMING

Entering and Exiting Programming Mode

In order to program any function of the AR-727HB-RAY Controller you must first access the programming mode by entering the factory master code. This is done as follows:-

To enter programming mode press `*123456#`

When the `#` button is pressed after the master code has been entered, the controller will enter into programming mode and the display will show `1. Add/Delete`

From here the programming can be carried out by following the relevant sections of this manual.

To escape from programming press the `*` button to step back through the menu until the display reads then `6. Quit` press `#` to confirm. If no keys are pressed for about 30 seconds, the unit will automatically revert back to Standby mode.

The Master Code can be changed, and it is recommended that system organisers do so for security reasons; however, if the new code is lost, the controller will need to have the master code reset to the factory default by using PC software.

Restoring Factory Settings

If for any reason there is any uncertainty about which settings have been changed, it is possible to restore the original factory default settings. It is always advisable to start by performing a factory reset before commencing with any other programming. This will ensure that all settings are started from a known condition.
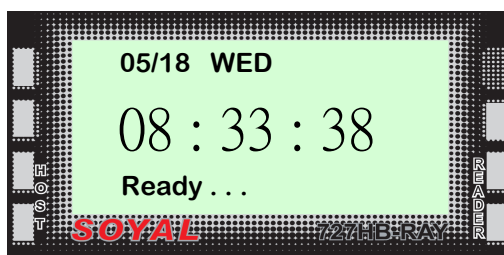The factory reset is performed as follows:-

Enter Programming Mode `*123456#` or `*MASTER CODE#` if already changed

Use F1 or F2 to scroll to `4. Parameters (2)` and press `#`

Use F1 or F2 to scroll to `5. Factory Reset` and press `#`

The Display will briefly show `Succeeded!` followed briefly by `Initial System...`

The Display will show:-


```
05/18  WED

08 : 33 : 38

Ready . . .

SOYAL              727HB-RAY
```

The factory default settings have now been restored.

WARNING

Performing a factory reset will permanently delete any tokens programmed into the controller. To ensure any programmed tokens are not permanently lost, it is recommended that the tokens are recorded in the Table of Users at the end of this manual.

CHANGING MASTER CODE AND TIME AND DATE
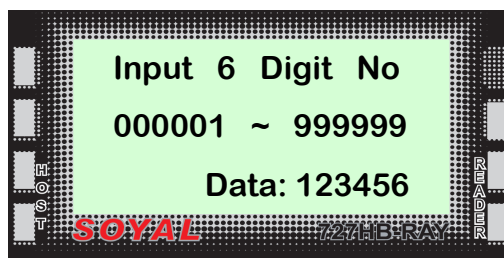
Changing Master Code

It is recommended that the Master Code be changed from the factory default to keep the system secure. This is done as follows:-

Enter Programming Mode `*123456#` or `*MASTER CODE#` if already changed

Use F1 or F2 to scroll to `5. Tools` and press `#`

Use F1 or F2 to scroll to `2. Master Code` and press `#`

The Display will show:-

```
Input  6  Digit  No

000001  ~  999999

    Data: 123456
SOYAL            727HB-RAY
```

Enter the new 6 digit master code.

The Display will now show `Succeeded!`

Record the new master code on the Table of Users in the back of this manual.

Changing Clock Setting

In the Standby mode, the display will show the date and time followed by **READY…** , the date and time are programmed as follows:-

Enter Programming Mode `*123456#` or `*MASTER CODE#` if already changed
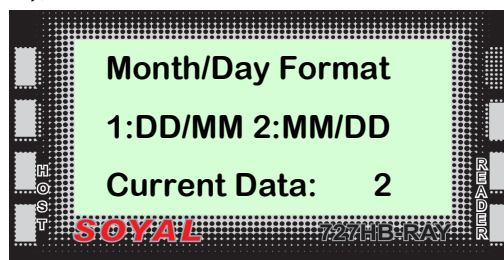
Use F1 or F2 to scroll to `5. Tools` and press `#`

Use F1 or F2 to scroll to `6. Clock Setting` and press `#`

The Display will show:-

```
Input   Date&Time



YyMmDdHhMmSs
SOYAL            727HB-RAY
```
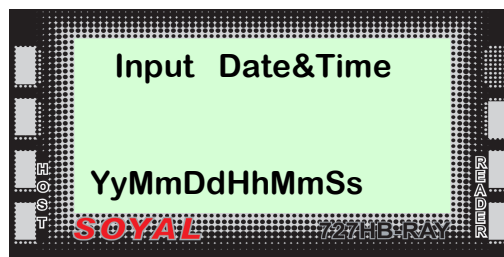
Enter 2 digits for the year, month, day, hour (in 24 Hour format), minutes and seconds.

The Display will show:-

```
Month/Day Format

1:DD/MM 2:MM/DD

Current Data:    2
SOYAL            727HB-RAY
```

Enter `1` or `2` depending on preference and press `#`

The Display will now show `Succeeded!`

CHANGING LANGUAGE AND TIME AND ATTENDANCE

Language

If, for any reason the language of the controller has been changed to Chinese, the display will look like the example below.

The following explains how to change the language back to English.

Enter Programming Mode *123456# or *MASTER CODE# if already changed

Then enter 5 1 1

The Display will now show Succeeded!
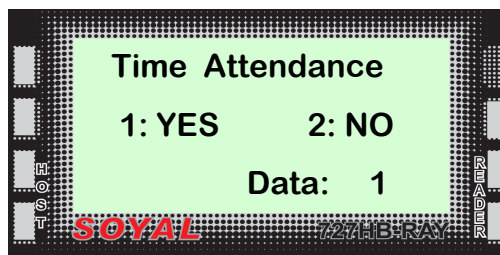
Time and Attendance

It is recommended that the Time and Attendance function is turned of in order to avoid confusion with the controller display. This is done as follows:-

Enter Programming Mode *123456# or *MASTER CODE# if already changed

Use F1 or F2 to scroll to 4. Parameters (2) and press #

Use F1 or F2 to scroll to 2. Attendance and press #

The Display will show:-

Enter 2

The Display will now show Succeeded!

SETTING LOCK TIMES

Door Relay Time

The time duration for which the lock relays are active can be adjusted between 0 to 600 seconds. This is done as follows:-

Enter Programming Mode `*123456#` or `*MASTER CODE#` if already changed

Use F1 or F2 to scroll to `3. Parameters (1)` and press `#`

Use F1 or F2 to scroll to `3. Door Relay TM` and press `#`

The Display will show:-

```
Input: (0~600)

Relay  0

Current Data:   002
SOYAL            727HB-RAY
```

This is for Door 1.
Enter the required activation time and press `#`

The Display will show:-

```
Input: (0~600)

Relay  0

Current Data:   002
SOYAL            727HB-RAY
```

This is for Door 2.
Enter the required activation time and press `#`

The Display will now show `Succeeded!`

SETTING LOCK TIMES

Setting Latch Mode

When Latch Mode has been set, the lock relay will switch and the door will latch open after a valid programmed token or card has been presented.
The door will then stay open until a valid programmed token or card is presented and then the relay will switch back and the door will lock.

This is done as follows:-

Enter Programming Mode `*123456#` or `*MASTER CODE#` if already changed

Use F1 or F2 to scroll to `3. Parameters (1)` and press `#`

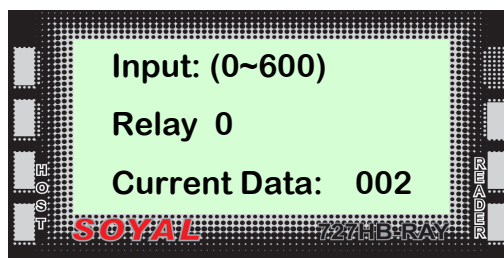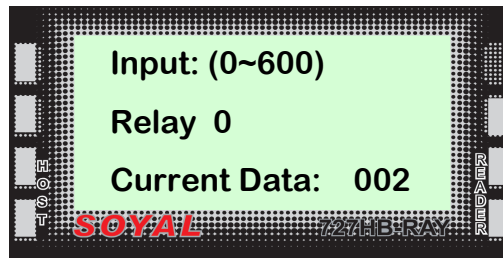Use F1 or F2 to scroll to `3. Door Relay TM` and press `#`

The Display will show:-

```
Input: (0~600)

Relay  0

Current Data:    002
SOYAL              727HB-RAY
```

This is for Door 1.
Enter `000` and press `#`

The Display will show:-

```
Input: (0~600)

Relay  0

Current Data:    002
SOYAL              727HB-RAY
```
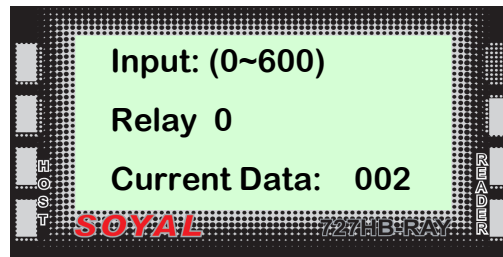
This is for Door 2.
Enter `000` and press `#`

The Display will now show `Succeeded!`

CHANGING READER NODE ID

Setup Reader

All new readers are factory set to be node 1. In a 2 door system with 2 readers, the second reader will have to be programmed to be node 2.
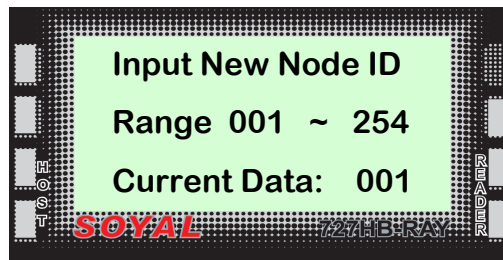To do so, first connect **only one** reader ie. the reader that is to be designated node 2, to the controller and follow this sequence:-

Enter Programming Mode | *123456# | or | *MASTER CODE# | if already changed

Use F1 or F2 to scroll to | 3. Parameters (1) | and press | # |

Use F1 or F2 to scroll to | 5. Setup Reader | and press | # |

The Display will show:-

> **Input New Node ID**
>
> **Range 001 ~ 254**
>
> **Current Data: 001**
>
> *SOYAL*   727HB-RAY

Enter | 2 | and press | # |

The Display will show:-

> **Tag In RF Field :**
>
> **Beep On/Off (1/0)**
>
> **Current Data: 001**
>
> *SOYAL*   727HB-RAY
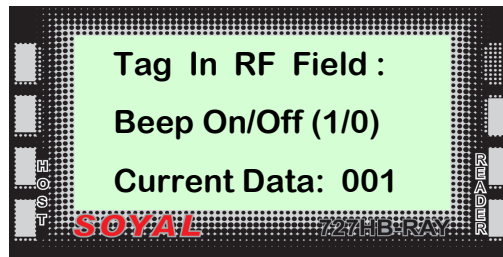
This selects whether or not the Reader beeps when a token is presented. Enter 1 for a beep or 0 for no beep.

The Display will show:-

> **The LED: Green**
>
> **On/Off (1/0)**
>
> **Current Data: 001**
>
> *SOYAL*   727HB-RAY

This selects whether or not the Green LED flashes when a valid token is presented.
Enter 1 for the LED to flash or 0 for no LED flash.

Continued Over
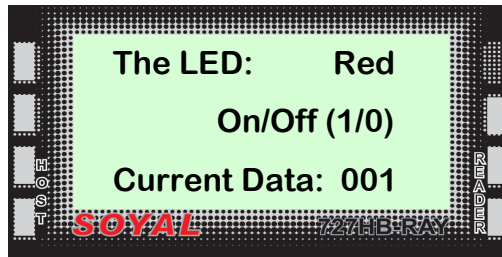
CHANGING READER NODE ID

Setup Reader

The Display will show:-

> The LED: Red
>
> On/Off (1/0)
>
> Current Data: 001
>
> *SOYAL*   727HB-RAY

This selects whether or not the Red LED flashes when access is denied.
Enter 1 for the LED to flash or 0 for no LED flash.

The Display will now show   Succeeded!

The reader that is connected has now been changed to node 2 and the LED's and sounder have also been set.

Now a second reader that already has a default setting of node 1 can be connected to the controller. Unless the LED and sounder settings need to be changed, there should be no need to program the node 1 reader.

NOTICE

If uncertain about a readers ID connect one reader at a time and program one as node 1 and the other as node 2. Then connect both readers and follow the programming for SCAN READERS on the following page.

SETTING UP READERS

Scan Readers

Each controller scans the RS485 output to see if the readers are connected. If they are not connected it will show the reader as being disconnected on the PC software event log if the system is networked.
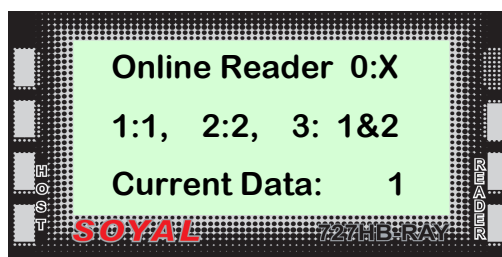
For this reason, each controller should be programmed with the number of readers it has Connected, as follows:-

Enter Programming Mode *123456# or *MASTER CODE# if already changed

Use F1 or F2 to scroll to 3. Parameters (1) and press #

Use F1 or F2 to scroll to 4. Scan Readers and press #

The Display will show:-

```
Online Reader  0:X

1:1,   2:2,   3: 1&2

Current Data:       1

SOYAL              727HB-RAY
```

This tells the controller how many readers are connected and what Node ID has been assigned to them.

Enter 1 for 1 reader with Node ID 1.

Enter 2 for 1 reader with Node ID 2.

Enter 3 for 2 readers with Node IDs 1 & 2.

The Display will now show Succeeded!

PROGRAMMING TOKENS

Checking Available Memory Locations

Memory locations can be overwritten on controllers with Firmware version 7V2 and earlier (on later versions of firmware, existing tokens cannot be overwritten but it is still necessary to keep a record of token addresses in the memory), therefore it is advisable to check which firmware version is installed on the controller as follows:-

Enter Programming Mode `*123456#` or `*MASTER CODE#` if already changed

Use F1 or F2 to scroll to `5. Tools` and press `#`

Use F1 or F2 to scroll to `5. Informations` and press `#`

The Display will show:-

```
RAY727  7V3.125K

Users:        00025

Messages:    00456
SOYAL              727HB-RAY
```

RAY727   = Controller type.
7V3.   = Firmware Version. (See introduction above)
125K   = The Controllers Frequency.
Messages   = The number of stored events such as egress via an exit button, or tokens that have been presented, in the controllers memory.
Users   = The number of memory locations already taken by programmed tokens, when looking for memory locations start at the address shown here.

In an existing installation with firmware version 7V2 or earlier, before programming tokens, it is advisable to check the number and location of free memory locations to avoid overwriting any previously programmed tokens.

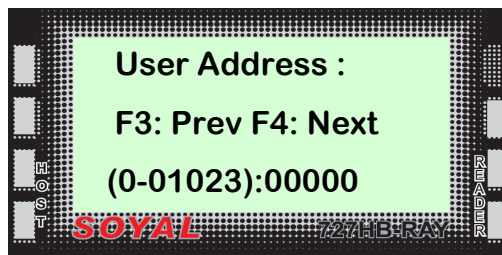To exit this function, press `*` until the display shows `6. Quit` then press `#`

View the remaining memory locations as follows:-

Enter Programming Mode `*123456#` or `*MASTER CODE#` if already changed

Use F1 or F2 to scroll to `1. Add/Delete` and press `#`

Use F1 or F2 to scroll to `1. Add→Card ID` and press `#`

The Display will show:-

```
User Address :

F3: Prev F4: Next

(0-01023):00000
SOYAL              727HB-RAY
```
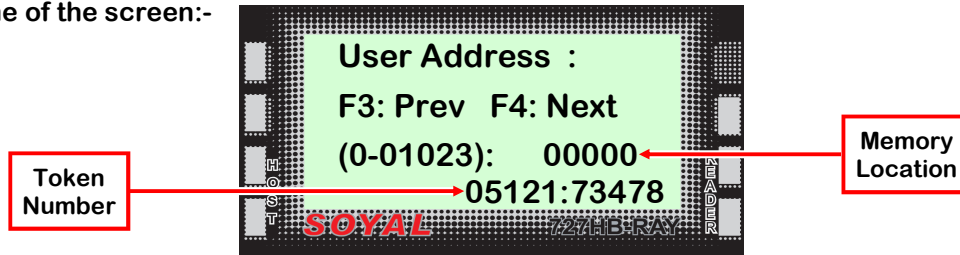
Continued Over

PROGRAMMING TOKENS

Checking Available Memory Locations

Use F4 to scroll forwards through the Memory Locations, use F3 to scroll backwards through the Memory Locations until a suitable number of empty slots is found.

When a Memory Location contains a programmed token, the token number is shown on the bottom line of the screen:-

An empty slot will show 00000:00000 on the bottom line of the screen.
If F4 is used to continue scrolling forward past position 01023, the memory will return to position 00000. Similarly if F3 is used to continue backwards past 00000, the memory will return to position 01023. In other words, the memory operates in a circular fashion with the last memory slot, 01023 being followed by the first memory slot 0000 and vice versa.

WARNING

Before Proceeding with any token programming, please read the following.

The last page of this manual is a token/memory slot record sheet. The blank sheet should be photocopied and the photocopy kept up-to-date with the location and number of each token added or deleted.

Failure to do so might result in valid tokens being overwritten when batches of tokens are added en bloc, if deletion of individual tokens have left vacant memory slots scattered amongst valid tokens.

If the first token in a new batch is directed to a single vacant memory slot, then the rest of the batch will overwrite (and replace) any subsequent valid tokens in the memory.

For this reason, it is advisable to read the section "Checking Available Memory Locations" (pages 33 and 34) before adding tokens since the F3 and F4 functions can be used to identify the location and quantity of vacant memory slots even if the Token Record Sheet has not been kept up-to-date.

This applies to all firmware versions up to and including 7V2. Version 7V3 automatically avoids overwriting valid tokens.

A record of tokens and memory locations should be kept by the system administrator to enable deletion of lost tokens. A blank Token Record Sheet can be found on the last page of this manual, it is recommended that this is photocopied and filled in regularly and kept in a safe place.

ADD/DELETE

Adding a Single Token Only Using The Token ID

There are two ways a single token can be added, one method uses the controller's internal reader to add the token to the controller, the other method is to enter the token Identification number into the controller.
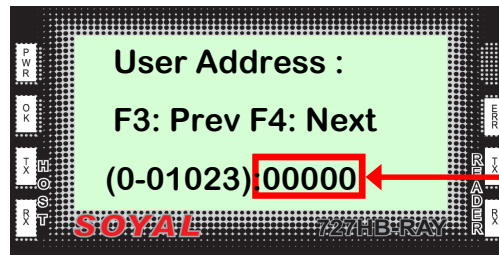
To program a single token using the token ID follow this sequence.

Enter Programming Mode *123456# or *MASTER CODE# if already changed

Use F1 or F2 to scroll to 1. Add/Delete and press #

Use F1 or F2 to scroll to 1. Add→Card ID and press #

The Display will show:-

User Address :

F3: Prev F4: Next
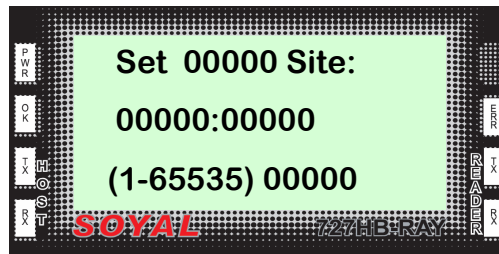
(0-01023):00000 ← This indicates the first memory slot
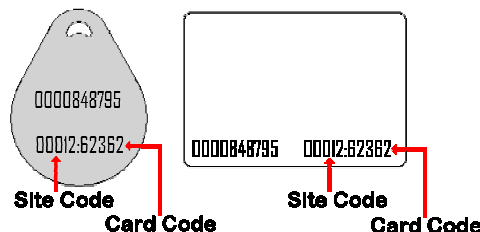
Enter the User Address, for this example 00000 and press #

If this is a new installation enter 0 and press # otherwise use the next available memory location shown by pressing # without entering a number.

The Display will now show:-

Set 00000 Site:

00000:00000

(1-65535) 00000

Enter the FIRST five digit number on the bottom line of the token/card

0000848795

00012:62362
Site Code   Card Code

0000848795   00012:62362
Site Code   Card Code

Using this token as an example, type in 00012

Continued Over

ADD/DELETE

Add Card ID continued.

The Display will now show:-

> Set 00000 Code:
>
> 00012:_xxxx
>
> (1-65535) 00000
>
> *SOYAL*   727HB-RAY

Enter the SECOND five digit number on the bottom line of the token/card
Using the above example, type in | 62362 |

The Display will briefly show:-

> Set ***** Code:
>
> 00012:62362
>
> Scan Data: XXXX
>
> ****
>
> *SOYAL*   727HB-RAY

Scan Data: | XXXX | **will quickly scroll through 00001 to 65535**

The Display will now show:-

> Completed!
>
> Address: 00000
>
> ID: 00012:62362
>
> *SOYAL*   727HB-RAY
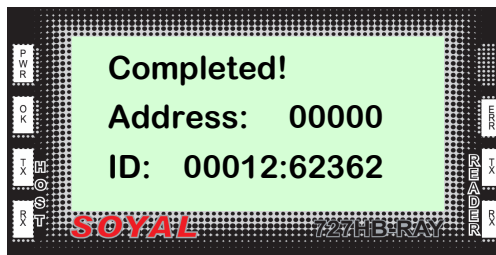
The token/card has been programmed successfully.

ADD/DELETE

Add RF-Learn To Enter A Single Token/Card

Enter Programming Mode   `*123456#`   or   `*MASTER CODE#`   if already changed

Use F1 or F2 to scroll to   `1. Add/Delete`   and press   `#`

Use F1 or F2 to scroll to   `2. Add->RF-Learn`   and press   `#`
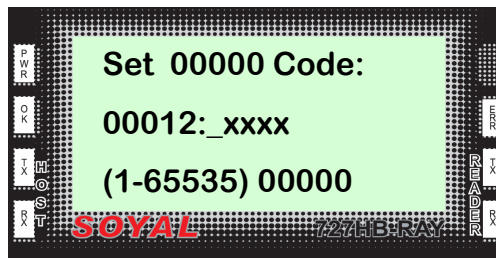
The Display will show:-

```
PWR  User Address :          ERR
OK   F3: Prev F4: Next
TX   (0-01023):00000         TX
HOST                      READER
RX   SOYAL      727HB-RAY    RX
```

Enter the User Address, for this example   `00001`   and press   `#`

(User Address is the memory slot into which the first token of the batch will be entered)

The Display will now show:-

```
PWR  Tag   Units   (pcs)      ERR
OK   Must Be Sequence
TX   (1-01023):  00001        TX
HOST                       READER
RX   SOYAL      727HB-RAY     RX
```

Enter the quantity of tokens/cards to be programmed, for this example   `1`   and press   `#`

The Display will now show:-

```
PWR                           ERR
OK       Close  Tag
TX     Into  RF  Area         TX
HOST                       READER
RX   SOYAL      727HB-RAY     RX
```

Present the token/card to the bottom of the controller.

The Display will now show:-

```
PWR                           ERR
OK       Close  Tag
TX     Into  RF  Area
HOST  00001 - 00001  OK !  READER
RX   SOYAL      727HB-RAY     RX
```

The token/card has been programmed successfully.

ADD/DELETE

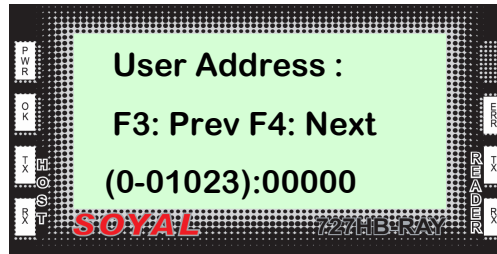## Add RF-Learn To Enter Sequential Tokens/Cards

Enter Programming Mode *123456# or *MASTER CODE# if already changed

Use F1 or F2 to scroll to 1. Add/Delete and press #
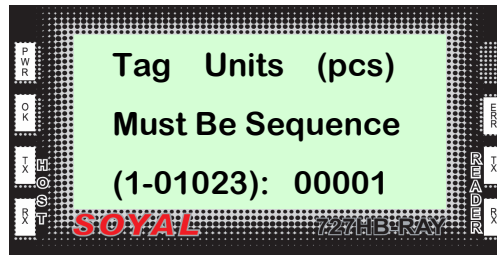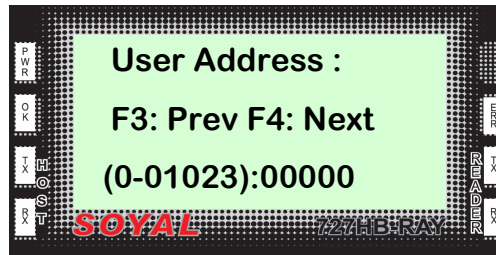
Use F1 or F2 to scroll to 2. Add→RF-Learn and press #

The Display will show:-

> User Address :
>
> F3: Prev F4: Next
>
> (0-01023):00000
>
> SOYAL   727HB-RAY

Enter the User Address, for this example 00001 and press #

(User Address is the memory slot into which the first token of the batch will be entered)

If this is a new installation enter 0 and press # otherwise follow the procedure for checking available memory locations for finding the next available block of memory locations, on pages 34 & 35.

The Display will now show:-

> Tag   Units   (pcs)
>
> Must Be Sequence
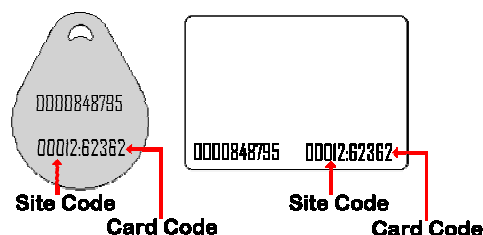>
> (1-01023):   00001
>
> SOYAL   727HB-RAY
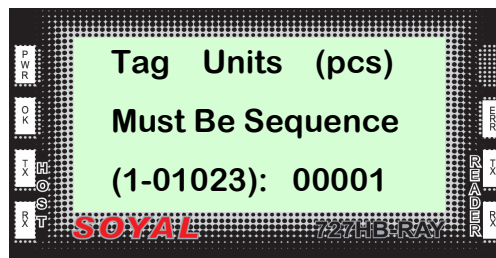
Enter the quantity of tokens/cards to be programmed, for this example enter 10 and press #

The Display will now show:-

> Close   Tag
> Into   RF   Area
>
> SOYAL   727HB-RAY

Present the token or card with the lowest Card Code number to the bottom of the controller.

Continued Over

ADD/DELETE

Add RF-Learn To Enter Sequential Tokens/Cards

The Display will now show:-

```
        Close   Tag
     Into   RF   Area
   00001 - 00010   OK !

SOYAL              727HB-RAY
```

All tokens/cards have been successfully programmed.

ADD/DELETE
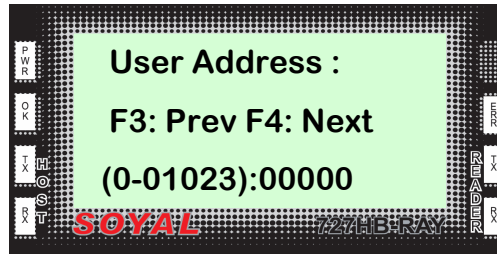
Add RF-Learn To Enter Non Sequential Tokens

Enter Programming Mode *123456# or *MASTER CODE# if already changed

Use F1 or F2 to scroll to 1. Add/Delete and press #

Use F1 or F2 to scroll to 2. Add→RF-Learn and press #

The Display will show:-

```
PWR          User Address :          ERR
OK         F3: Prev F4: Next
TX  H                                R  TX
    O      (0-01023):00000           E
RX  S                                A  RX
    T   SOYAL        727HB-RAY       D
                                     E
                                     R
```
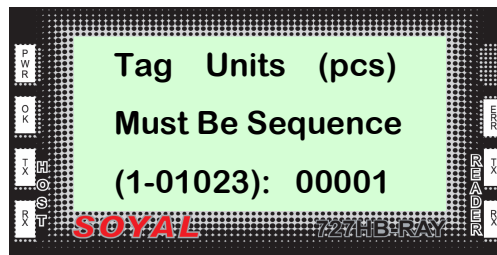
Enter the User Address, for this example 00001 and press #

(User Address is the memory slot into which the first token of the batch will be entered)

If this is a new installation enter 0 and press # otherwise follow the procedure for checking available memory locations on pages 34 & 35.

The Display will now show:-

```
PWR       Tag   Units   (pcs)       ERR
OK       Must Be Sequence
TX  H                                R  TX
    O    (1-01023):   00001          E
RX  S                                A  RX
    T   SOYAL        727HB-RAY       D
                                     E
                                     R
```

Press 1 and # together.

The Display will now show:-

```
PWR            Close  Tag           ERR
OK         Into   RF   Area
TX  H                                R  TX
    O                                E
RX  S                                A  RX
    T   SOYAL        727HB-RAY       D
                                     E
                                     R
```

Present the first token/card to the bottom of the controller.

Continued Over

ADD/DELETE

Add RF-Learn To Enter Non Sequential Tokens

The Display will now show:-

```
          Close  Tag
        Into   RF   Area
      00001 - 00001   OK !


  SOYAL              727HB-RAY
```

Present the rest of the tokens/cards one at a time, and when finished press **✳** until the display shows **6. Quit** and then press **#**

Suspend Address/ID

There might be occasions when it is necessary to suspend either individual tokens or a batch of tokens on a temporary basis rather than having to delete them completely and then having to re-enter them at a later date.

Tokens can be suspended and then reinstated later by using the Suspend and Recover functions of the controller. This can be done either by using the token/card memory slot address or by the ID's of the tokens.

The method of doing this is shown on the following pages.

Complete deletion of tokens can be carried out in a similar manner as shown on pages 47 and 48.

ADD/DELETE

Suspend Address

Enter Programming Mode `*123456#` or `*MASTER CODE#` if already changed

Use F1 or F2 to scroll to `1. Add/Delete` and press `#`

Use F1 or F2 to scroll to `3. Suspend→Addr` and press `#`

The Display will show:-

Input Start Address

(0-01023): 00001

Enter the User Address, for this example `00001` and press `#`

The Display will now show:-

Input End Address

(˜-01023): 00001
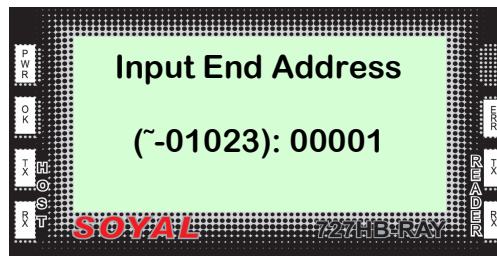
Enter the User Address, for this example `00001` and press `#`

The Display will now show `Succeeded!`

To suspend multiple addresses input the start address and press #, then input the end Address and press#.

E.g. To suspend 25 addresses starting with address 00012:-

Input Start Address

(0-01023): 00000

Enter `00012` and press `#`

The Display will now show:-

Input End Address

(˜-01023): 00012

Enter `00036` and press `#`

The Display will now show `Succeeded!`

ADD/DELETE

Recover Address

Enter Programming Mode `*123456#` or `*MASTER CODE#` if already changed

Use F1 or F2 to scroll to `1. Add/Delete` and press `#`

Use F1 or F2 to scroll to `7. Recover->Addr` and press `#`

The Display will show:-

Input Start Address

(0-01023): 00000

SOYAL   727HB-RAY

Enter the User Address, for this example `00001` and press `#`

The Display will now show:-

Input End Address

(˜-01023): 00001

SOYAL   727HB-RAY
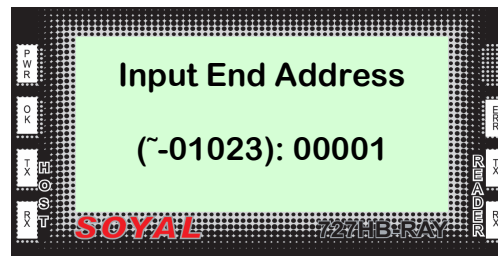
Enter the User Address, for this example `00001` and press `#`
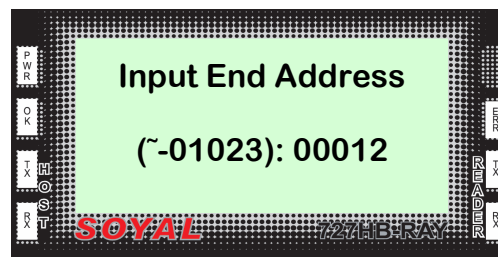
The Display will now show `Succeeded!`

To recover multiple addresses input the start address and press #, then input the end Address and press#.

E.g. To recover 25 addresses starting with address 00012:-
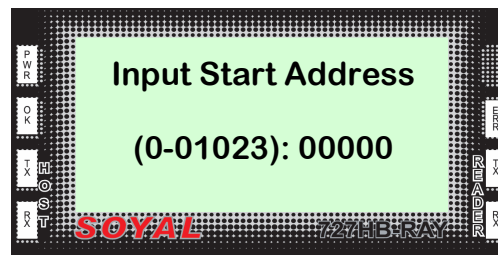
Input Start Address

(0-01023): 00000

SOYAL   727HB-RAY

Enter `00012` and press `#`

The Display will now show:-

Input End Address

(˜-01023): 00012

SOYAL   727HB-RAY

Enter `00036` and press `#`

The Display will now show `Succeeded!`

ADD/DELETE

Suspend ID

Enter Programming Mode `*123456#` or `*MASTER CODE#` if already changed
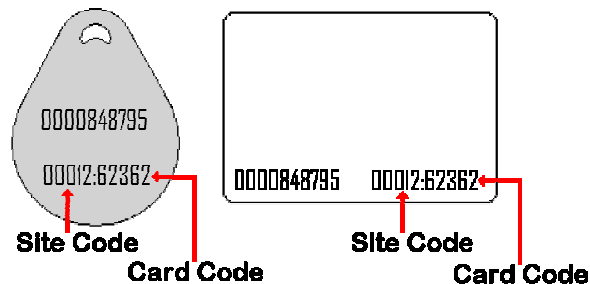
Use F1 or F2 to scroll to `1. Add/Delete` and press `#`

Use F1 or F2 to scroll to `4. Suspend->ID` and press `#`

The Display will show:-

```
Set                    Site:

    _xxxx:xxxxx

(1-65535)              00012
SOYAL          727HB-RAY
```

Enter the FIRST five digit number on the bottom line of the token/card

```
0000848795

00012:62362          0000848795    00012:62362

Site Code                  Site Code
     Card Code                  Card Code
```

Using this token as an example, type in `00012` and press `#`

The Display will now show:-

```
Set                    Code:

    00012:xxxxx

(1-65535)              62362
SOYAL          727HB-RAY
```
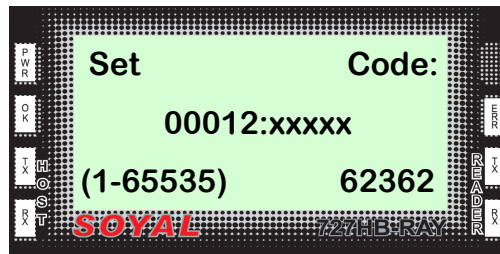
Enter the SECOND five digit number on the bottom line of the token/card

Using the above example, type in `62362`

The Display will now show `Succeeded!`

ADD/DELETE

Recover ID

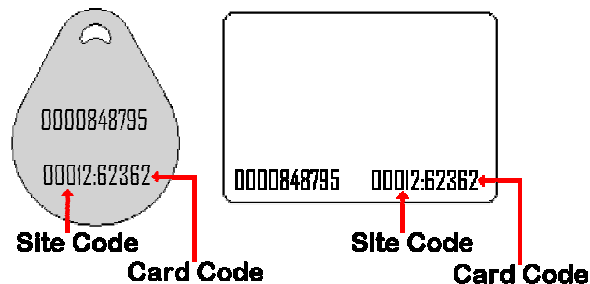Enter Programming Mode *123456# or *MASTER CODE# if already changed

Use F1 or F2 to scroll to 1. Add/Delete and press #

Use F1 or F2 to scroll to 8. Recover–>ID and press #

The Display will show:-

```
Set              Site:

   _xxxx:xxxxx

(1-65535)        00012
SOYAL        727HB-RAY
```

Enter the FIRST five digit number on the bottom line of the token/card

```
0000848795

00012:62362
```

Site Code

Card Code

```
0000848795    00012:62362
```

Site Code

Card Code

Using this token as an example, type in 00012 and press #

The Display will now show:-

```
Set              Code:

   00012:xxxxx

(1-65535)        62362
SOYAL        727HB-RAY
```

Enter the SECOND five digit number on the bottom line of the token/card

Using the above example, type in 62362

The Display will now show Succeeded!

ADD/DELETE

Delete Address

Enter Programming Mode `*123456#` or `*MASTER CODE#` if already changed
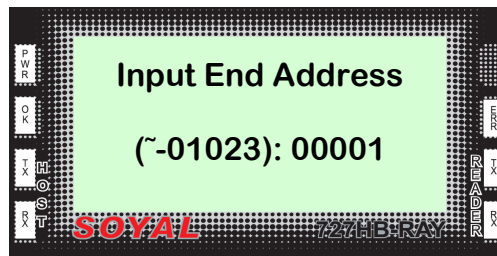
Use F1 or F2 to scroll to `1. Add/Delete` and press `#`

Use F1 or F2 to scroll to `5. Delete→Addr` and press `#`

The Display will show:-

Input Start Address

(0-01023): 00000

SOYAL   727HB-RAY

Enter the User Address, for this example `00001` and press `#`

The Display will now show:-

Input End Address

(˜-01023): 00001

SOYAL   727HB-RAY

Enter the User Address, for this example `00001` and press `#`
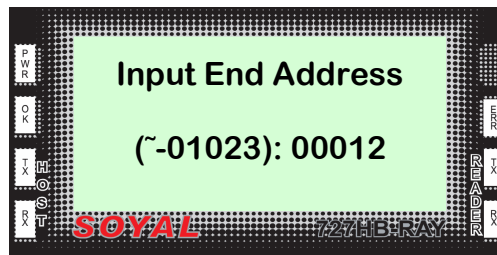
The Display will now show `Succeeded!`

To delete multiple addresses input the start address and press #, then input the end Address and press#.

E.g. To delete 25 addresses starting with address 00012:-

Input Start Address

(0-01023): 00000

SOYAL   727HB-RAY

Enter `00012` and press `#`

The Display will now show:-

Input End Address

(˜-01023): 00012

SOYAL   727HB-RAY

Enter `00036` and press `#`

The Display will now show `Succeeded!`

ADD/DELETE

Delete ID

Enter Programming Mode *123456# or *MASTER CODE# if already changed

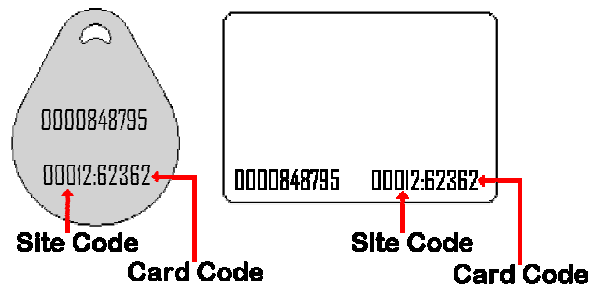Use F1 or F2 to scroll to 1. Add/Delete and press #

Use F1 or F2 to scroll to 6. Delete→ID and press #

The Display will show:-

```
Set                    Site:

   _xxxx:xxxxx

(1-65535)             00012
SOYAL              727HB-RAY
```

Enter the FIRST five digit number on the bottom line of the token/card

0000848795
00012:62362

Site Code
Card Code

0000848795   00012:62362

Site Code
Card Code

Using this token as an example, type in 00012 and press #

The Display will now show:-

```
Set                    Code:

   00012:xxxxx

(1-65535)             62362
SOYAL              727HB-RAY
```
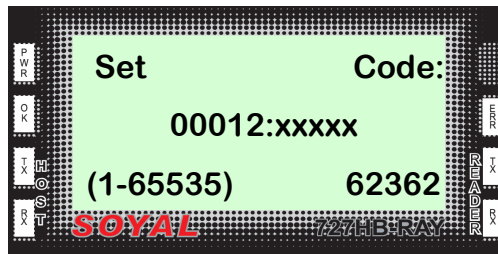
Enter the SECOND five digit number on the bottom line of the token/card

Using the above example, type in 62362

The Display will now show Succeeded!

ANTI-PASSBACK

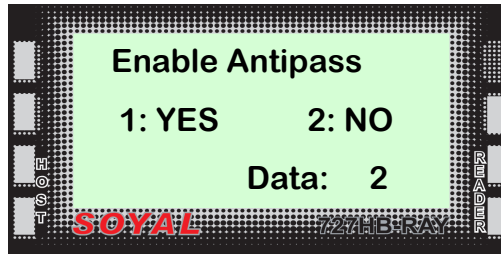## Enabling Anti-Passback

Enter Programming Mode `*123456#` **or** `*MASTER CODE#` **if already changed**

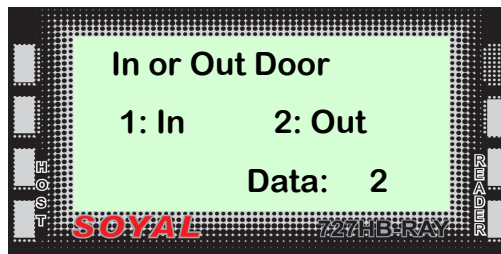Use F1 or F2 to scroll to `4. Parameters (2)` and press `#`

Use F1 or F2 to scroll to `4. Anti-Passback` and press `#`

The Display will show:-

```
        Enable Antipass

       1: YES        2: NO

                   Data:    2
SOYAL                    727HB-RAY
```

Enter `1`

The Display will show:-

```
        In or Out Door

        1: In        2: Out

                   Data:    2
SOYAL                    727HB-RAY
```

Enter the number required

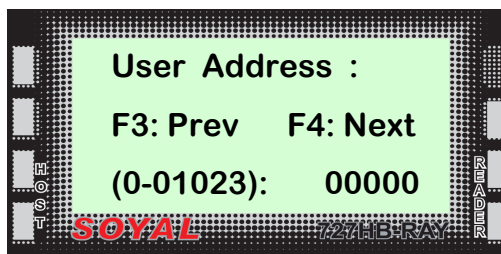**The Display will now show** `Succeeded!`

Setting Anti-Passback For Individual Tokens/Cards

Enter Programming Mode `*123456#` **or** `*MASTER CODE#` **if already changed**

Use F1 or F2 to scroll to `2. User Settings` and press `#`

Use F1 or F2 to scroll to `3. Extend Options` and press `#`

The Display will show:-

```
      User  Address :

      F3: Prev     F4: Next

      (0-01023):     00000
SOYAL                    727HB-RAY
```

Enter the User Address for the token/card and press `#` or use F3
or F4 to scroll to the next User Address and press `#`

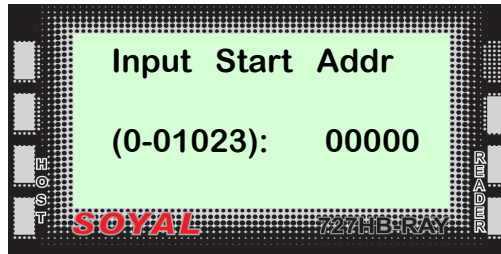**The Display will now show** `Succeeded!`

ANTI-PASSBACK

Setting Anti-Passback for a Group of Tokens/Cards

Enter Programming Mode `*123456#` or `*MASTER CODE#` if already changed
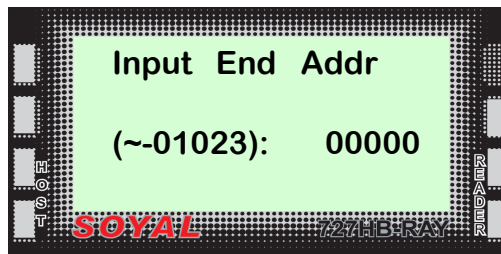
Use F1 or F2 to scroll to `1. Add/Delete` and press `#`

Use F1 or F2 to scroll to `9. Antipass Group` and press `#`

The Display will show:-
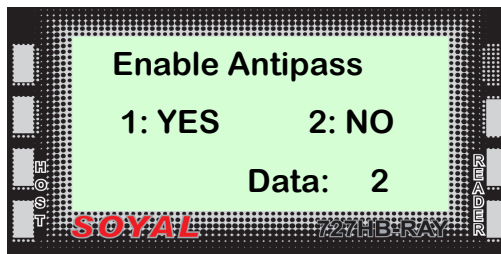
```
        Input  Start  Addr

        (0-01023):      00000

        SOYAL              727HB-RAY
```

Enter the first User Address and press `#`

The Display will show:-

```
        Input  End  Addr

        (~-01023):      00000

        SOYAL              727HB-RAY
```

Enter the last User Address and press `#`

The Display will show:-

```
        Enable Antipass

         1: YES        2: NO

                      Data:   2

        SOYAL              727HB-RAY
```

Enter `1` and press `#`

The Display will now show `Succeeded!`

NOTICE

The Anti-Passback function will only work if it has been enabled following the programming on the previous page.
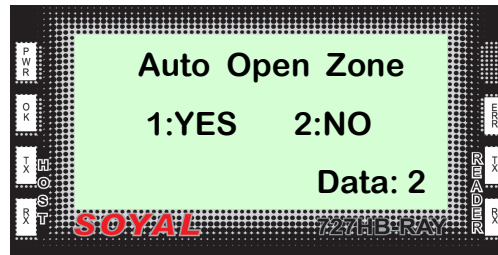
ENABLING AUTO OPEN ZONES

Auto Open Zone

Enter Programming Mode `*123456#` or `*MASTER CODE#` if already changed

Use F1 or F2 to scroll to `3. Parameters (1)` and press `#`

Use F1 or F2 to scroll to `2.Auto Open Zone` and press `#`

The Display will show:-

```
Auto  Open  Zone

1:YES      2:NO

            Data: 2
SOYAL           727HB-RAY
```

To enable Auto Open Zones press `1`

To disable Auto Open Zones press `2`

The Display will now show `Succeeded!`

NOTICE

This will only enable the Auto Open Zone function. To set times, refer to the programming details on the following pages.
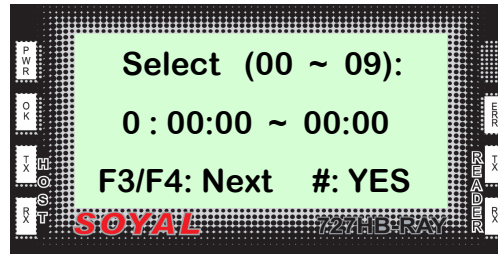
SETTING AUTO OPEN TIMES

Open Time Zones

Enter Programming Mode ***123456#** or ***MASTER CODE#** if already changed

Use F1 or F2 to scroll to **5. Tools** and press **#**

Use F1 or F2 to scroll to **4. Open Time Zone** and press **#**

The Display will show:-

```
Select  (00 ~ 09):

0 : 00:00 ~ 00:00

F3/F4: Next    #: YES
```
SOYAL   727HB-RAY

It is possible to program up to 10 different Open Time Zones.
Enter a number from 0 to 9 to set that Time Zone, see below:-

Number	Time Zone
00	1
01	2
02	3
03	4
04	5
05	6
06	7
07	8
08	9
09	10

The Display will now show:-

```
Available Weekday

Sun—Mon—…—Sat

Cur.—> 0: 0000000
```
SOYAL   727HB-RAY

For this example, Zone 0 has been used.
The days the Time Zone is to be active are programmed here.
Enter a 1 for on and a 0 for off, see table below.

Day	Number
Sunday	1000000
Monday	0100000
Tuesday	0010000
Wednesday	0001000
Thursday	0000100
Friday	0000010
Saturday	0000001
Weekdays	0111110

Continued Over

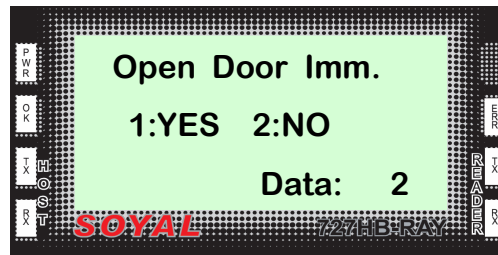# SETTING OPEN TIME ZONES

Open Time Zones Continued

For the Time Zone to be active on weekdays only enter 0111110

The Display will show:-

```
Start ~ Stop Time
Ex: 08001230
Cur.—> 1: 0000000
SOYAL          727HB-RAY
```

Enter the start and stop times in 24 hour format.

The Display will show:-

```
Open  Door  Imm.
  1:YES   2:NO
              Data:   2
SOYAL          727HB-RAY
```

This selects whether the doors will open automatically or after a valid token/card has been presented.
Enter the required number, see below:-
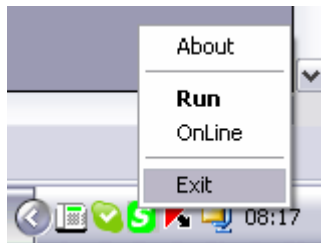
Number	Type of Open Zone
1	Doors open immediately
0	Doors open after valid token/card has been presented

The Display will now show Succeeded!

AR-727HB-RAY RESETTING MASTER CODE
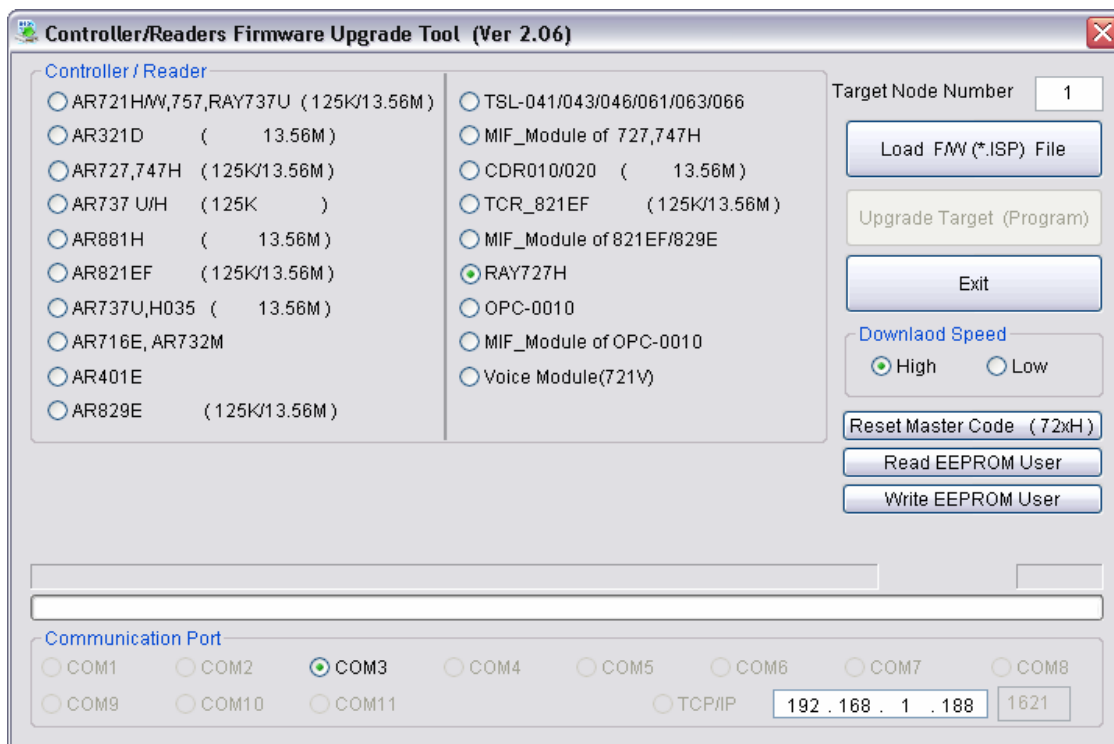
Resetting Master Code

If for any reason the master code needs resetting, you will need to exit 701 Server first. Right click on the 701 server icon in the bottom right of the toolbar and click exit.

Connect the controller to the PC using an AR-701CM RS-232/RS-485 Converter or an AR-321CM USB/RS-485 Converter.

Open ISP Tools and select RAY727H from the list on the left hand side, then select the relevant COM Port and Node Number of the controller.
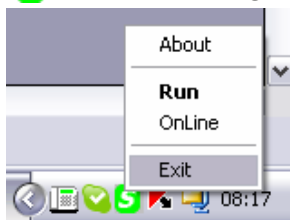

Click on the Reset Master Code button Reset Master Code (72xH) and the master code will be reset to *123456#.

UPGRADING AR-727HB-RAY FIRMWARE
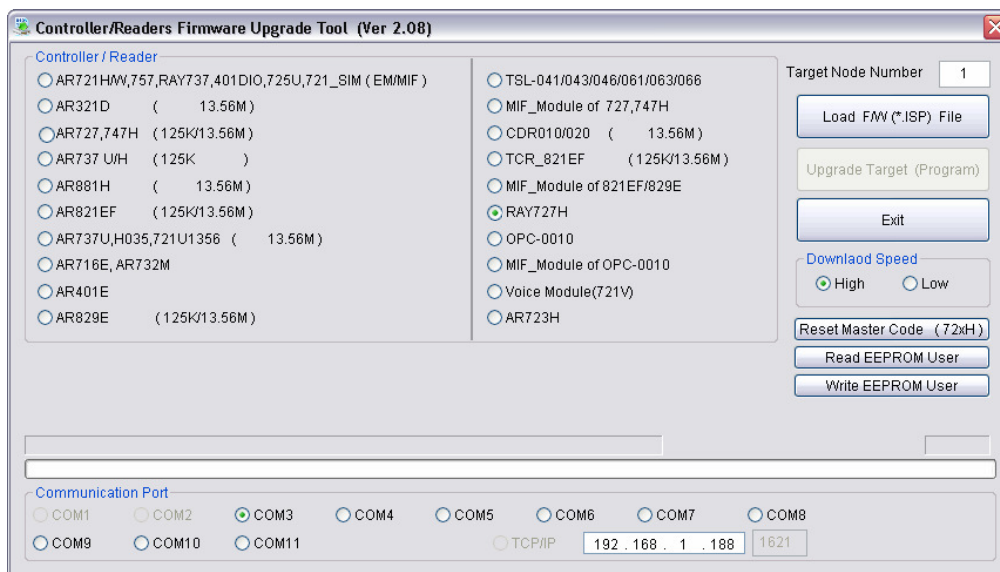
Upgrading Firmware

If for any reason the firmware needs upgrading, you will need to exit 701 Server first.
Right click on the 701 server icon **S** in the bottom right of the toolbar and click exit.

Connect the controller to the PC using an AR-701CM RS-232/RS-485 Converter or an AR-321CM USB/RS-485 Converter.

+12VDC
0V
B-
A+
TO PC
TO PC
A+
B-

Open ISP Tools and select RAY727H from the list in the middle, then select the relevant COM Port and Node Number of the controller.

Click on the Load F/W button **Load F/W (*.ISP) File** and select the version of firmware you want to upgrade to.
Then click on the Upgrade Target button. **Upgrade Target (Program)**

WARNING

Disconnect the PC and controller from any network before upgrading.
If the controller is disconnected from the PC before the firmware upgrade has completed or there are any interruptions, such as network software updates, it can cause a failure of the main processor in the controller.
This type of interruption WILL stop the controller from functioning and the processor will need to be replaced for the system to function correctly.

TABLE OF USERS

Name of On-Site Programmer(s):

Installation Company:

Tel:

Date:

DEFAULT MASTER CODE:- *123456#

USER MASTER CODE:

Lock Time:

Lock Type:

User Address	Users Name	Card ID	User Code	Date
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		;		
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We recommend this page should be filled in and regularly updated and kept in a safe and secure location by the person responsible for the upkeep of the system.