XimTouch

CONTROLLER

User Manual

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Chapter 1: General Description

1.1: Proprietary Notice

1.2: Introduction

Thank you for purchasing **XimTouch Controller**, which is a card access system to control a single door. It may be used to restrict access to a room or any other sensitive area. The XimTouch Controller accepts door PIN from LCD keypad or proximity card reader technology.

Besides, it can be connected locally or remotely to a computer, in order to communicate with **XimTouch Access Control System**. The access control system is a powerful and user-friendly Windows-based application software that can support up to 64 door controllers. The application software also provides time and attendance management solution.

1.3: Hardware Specifications

- 2 input points (Door sensor & exit push button)
- 1 output point (Door latch control)
- Hardware real time clock for time keeping
- Onboard buzzer for audible sounds
- Resettable fuse & TVS protection for power input and communication line
- Proximity reader interface
- PC host connection via RS485 communication
- LCD keypad reader
- LED indication for power
- 128K Bytes Non-volatile EEPROM memory
- MCU built-in watchdog timer

1.4: Functional Specifications

- Door access mode:
  - ✓ Standalone single door access application
  - ✓ PC linked single door access application
  - ✓ Onboard LCD keypad reader, proximity reader and exit push button
  - ✓ Onboard LCD keypad reader and exit push button
- Capacities:
  - ✓ 2000 card users with 4-digit PIN number storage
  - ✓ 4000 transaction events with timestamp, event code, address and card number
- Operation mode:
  - ✓ Master PIN for setting menu entry (6-digit PIN number)

- ✓ Door PIN only with 10 sets (6-digit PIN number)
- ✓ Card only with 2000 card users entry
- ✓ Card + PIN with 4-digit PIN number for each card user
- ✓ Security ON by LCD keypad or via PC command (Permanent Door Locked)
- ✓ Security OFF by LCD keypad or via PC command (Permanent Lock Release)
- Access verification:
  - ✓ Site code checking
  - ✓ Expiry date checking
  - ✓ Active flag checking
  - ✓ Card user record validation
  - ✓ Anti-passback verification
- Programming methods:
  - ✓ Local programming via LCD keypad interface
  - ✓ PC software programming via RS485 interface
- Controller databases:
  - ✓ 3 sets 4-digit Site Code definitions
  - ✓ 24 sets of Time Set settings with 3 time intervals
  - ✓ 24 sets of Time Zone settings with 7 days + holiday Time Set definition
  - ✓ 60 sets of holiday settings
  - ✓ 99 seconds setting for lock release time and door open time
- Reader connection:
  - ✓ Support EM proximity reader connection via 26-bit Wiegand format interface
- Anti-passback function:
  - ✓ Local anti-passback mode with Time Zone control

1.5: Operational Characteristics

- Operating voltage/current (Controller): 12Vdc/65-130mA
- Operating voltage/current (Proximity reader): 12Vdc/60-70mA
- Operating temperature: 0 to 65°C
- Backup battery: Rechargeable battery 12Vdc, 7AH

1.6: Physical Characteristics

- Dimensions:
  - ✓ Controller (90mm x 125mm x 25mm)
  - ✓ Proximity Reader (42mm x 85mm x 10mm)
  - ✓ Power supply (250mm x 230mm x 75mm)
- Weight:
  - ✓ Controller (190g)
  - ✓ Proximity Reader (45g)
  - ✓ Power supply (1.7kg)

Chapter 2: Installation Procedures

Beginning the installation process:
1. Mount power supply unit on the wall.
2. Make sure the +12Vdc output switch is turned OFF.
3. Install power cord with all 3 wires connected as below:
   - EARTH: Green-Yellow
   - NEUTRAL: Blue
   - LIVE: Brown
4. Mount controller and proximity reader near to the door.
5. Mount EM lock on the door frame. Make sure to connect a diode across the coil for noise and spike suppression.
6. Install bypass keyswitch and emergency glassbreak for the EM lock.
7. Install magnetic door sensor and push button.
8. Connect controller to computer with a converter.
9. Connect all wires accordingly as shown in **XimTouch Controller Wiring Diagram**.
10. Apply power to the power supply unit. Turn ON +12Vdc output switch. The red LED of power supply unit will turn ON.

2.1: XimTouch Controller Wiring Diagram

Power Supply Unit

EARTH

240 Vac   NEUTRAL

LIVE

LED1

OFF

5A

-BATT+

+12V GND PG

ON

F1

GND

+12V

Rechargeable Battery
12Vdc 7AH

--   +

Controller

EM Lock

+

Diode
1N4004

--

U1

GND

BT1

Bypass Keyswitch

BZ1

Emergency Breakglass

RLY1

CMD
NO
NC   +12V
GND
IN2
IN1

E
X
I
T   **Push Button**

GND
D1
D0

Magnetic Door Sensor

12V 0V   C+ C- GND

+12V   RED

GND   BLACK

+12V

485+/
WHT   485-/
GRN   Power
Source

GREEN

GND

YELLOW

XimTouch
RS232-RS485
Converter

OR

C2000
TCP/IP-RS485
Converter

Proximity Reader

2.2: Colour Code and Wiring Table
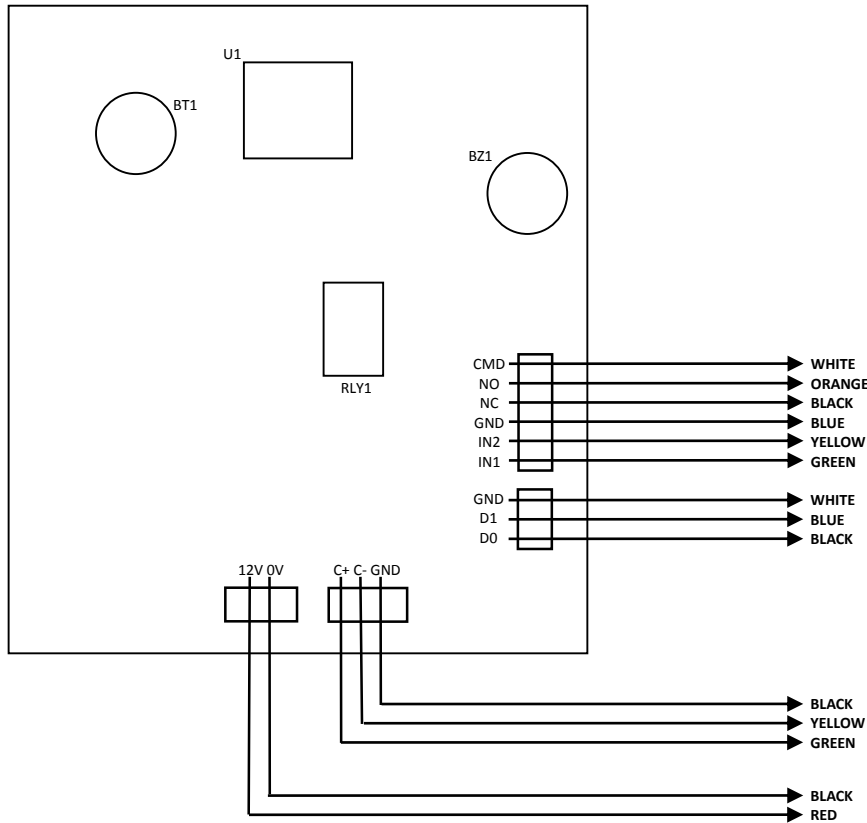
PCB Label	Description	Wire Colour Code
12V	+12Vdc Supply Unit	**RED**
0V	Ground	**BLACK**
C+	485+ Communication Line	**GREEN**
C-	485- Communication Line	**YELLOW**
GND	Ground	**BLACK**
D0	Data 0 Reader Input	**BLACK**
D1	Data 1 Reader Input	**BLUE**
GND	Ground	**WHITE**
IN1	Door Sensor Input	**GREEN**
IN2	Push Button Input	**YELLOW**
GND	Ground	**BLUE**
NC	Normally Close Relay Connection	**BLACK**
NO	Normally Open Relay Connection	**ORANGE**
CMD	Relay Common Input	**WHITE**

2.3: Cabling Information

Wiring From	Communication	Max Distance	Description
Controller to push button	-	600m	4 conductor, 22 AWG
Controller to lock	-	150m	1 pair, 18 AWG, solid
Controller to reader	Wiegand	50m	6 conductor, 18 AWG, stranded, shielded, drain conductor
Controller to PC converter	RS485	1.2km	2 twisted pairs, 24 AWG, shielded
PC converter to computer	RS232	10m	3 pairs, 22 AWG, stranded, shielded, comm cable

Chapter 3: Getting Started

3.1: Cold Start Operation

It is advice to perform a cold start after wiring is done, in order to clear all user databases and reset to default factory settings.

Steps:

1. Turn off power supplied to the door access controller.
2. Press and hold [*] + [#] while turning on the power.
3. Release the buttons until LCD shows cold start message.

```
Sys Initialize..
Wait For Reset..
```

3.2: Normal Operation

During normal operation, the LCD always shows the current date and time.

```
31/08 Mon 12:34
System Ready …
```

3.3: Card Flash Operation

For valid card flash: For invalid card flash:

```
31/08 Mon 12:34
Valid Access
```

```
31/08 Mon 12:34
Unknown Card No.
```

3.4: Door PIN Operation

Enter 6-digit Door PIN in order to open the door:

```
31/08 Mon 12:34
PIN=[000000]
```

3.5: Duress Alarm Operation

Press [Menu] button followed by flashing card.

3.6: Setting Menu Operation

Press [Menu] button followed by the 6-digit Master PIN in order to enter the setting menu:

```
Setting Menu
[000000]
```

Chapter 4: Setting Main Menu

```
┌──────────────┐
│  Main Menu   │
└──────┬───────┘
       │
       │        ┌──────────────────────────┐
       ├───────▶│      1-System Param      │
       │        └──────────────────────────┘
       │        ┌──────────────────────────┐
       ├───────▶│      2-Door Database     │
       │        └──────────────────────────┘
       │        ┌──────────────────────────┐
       ├───────▶│      3-Card Database     │
       │        └──────────────────────────┘
       │        ┌──────────────────────────┐
       ├───────▶│      4-Time Database     │
       │        └──────────────────────────┘
       │        ┌──────────────────────────┐
       ├───────▶│       5-System Info      │
       │        └──────────────────────────┘
       │        ┌──────────────────────────┐
       └───────▶│     6-Exit Main Menu     │
                └──────────────────────────┘
```

4.1: System Parameter

```
┌──────────────────────────┐
│    1-System Param        │
└──────────────────────────┘
```

```
┌──────────────────────────┐          ┌──────────────────────────┐
│  01-Master PIN           │          │  1-Site Code 1           │
│  123456                  │          │  0000                    │
└──────────────────────────┘          └──────────────────────────┘

┌──────────────────────────┐          ┌──────────────────────────┐
│  02-Site Code            │          │  2-Site Code 2           │
│  Press # Key             │          │  0000                    │
└──────────────────────────┘          └──────────────────────────┘

┌──────────────────────────┐          ┌──────────────────────────┐
│  03-Clr Database         │          │  3-Site Code 3           │
│  Yes = [#]               │          │  0000                    │
└──────────────────────────┘          └──────────────────────────┘

┌──────────────────────────┐          ┌──────────────────────────┐
│  04-Date & Time          │          │  4-Quit                  │
│  YY-MM-DD-hh-mm          │          │  Yes = [#]               │
└──────────────────────────┘          └──────────────────────────┘

┌──────────────────────────┐
│  05-Terminal ID          │
│  00                      │
└──────────────────────────┘

┌──────────────────────────┐
│  06-Swap Reader          │
│  OFF                     │
└──────────────────────────┘

┌──────────────────────────┐
│  07-Tamper Switch        │
│  OFF                     │
└──────────────────────────┘

┌──────────────────────────┐
│  08-Buzzer Sound         │
│  ON                      │
└──────────────────────────┘

┌──────────────────────────┐
│  09-Quit                 │
│  Yes = [#]               │
└──────────────────────────┘
```
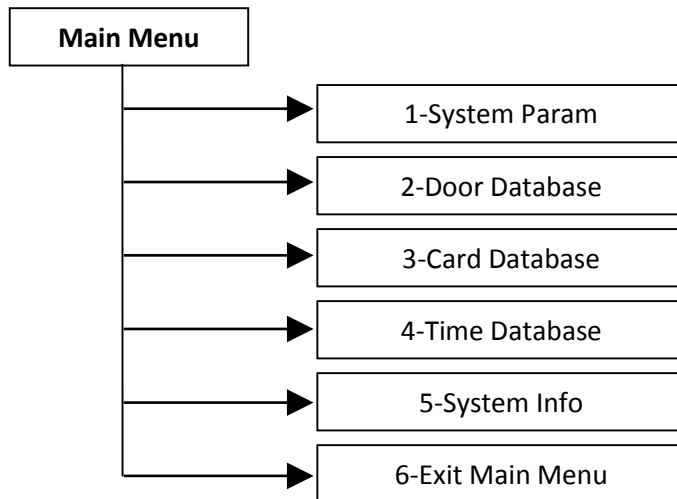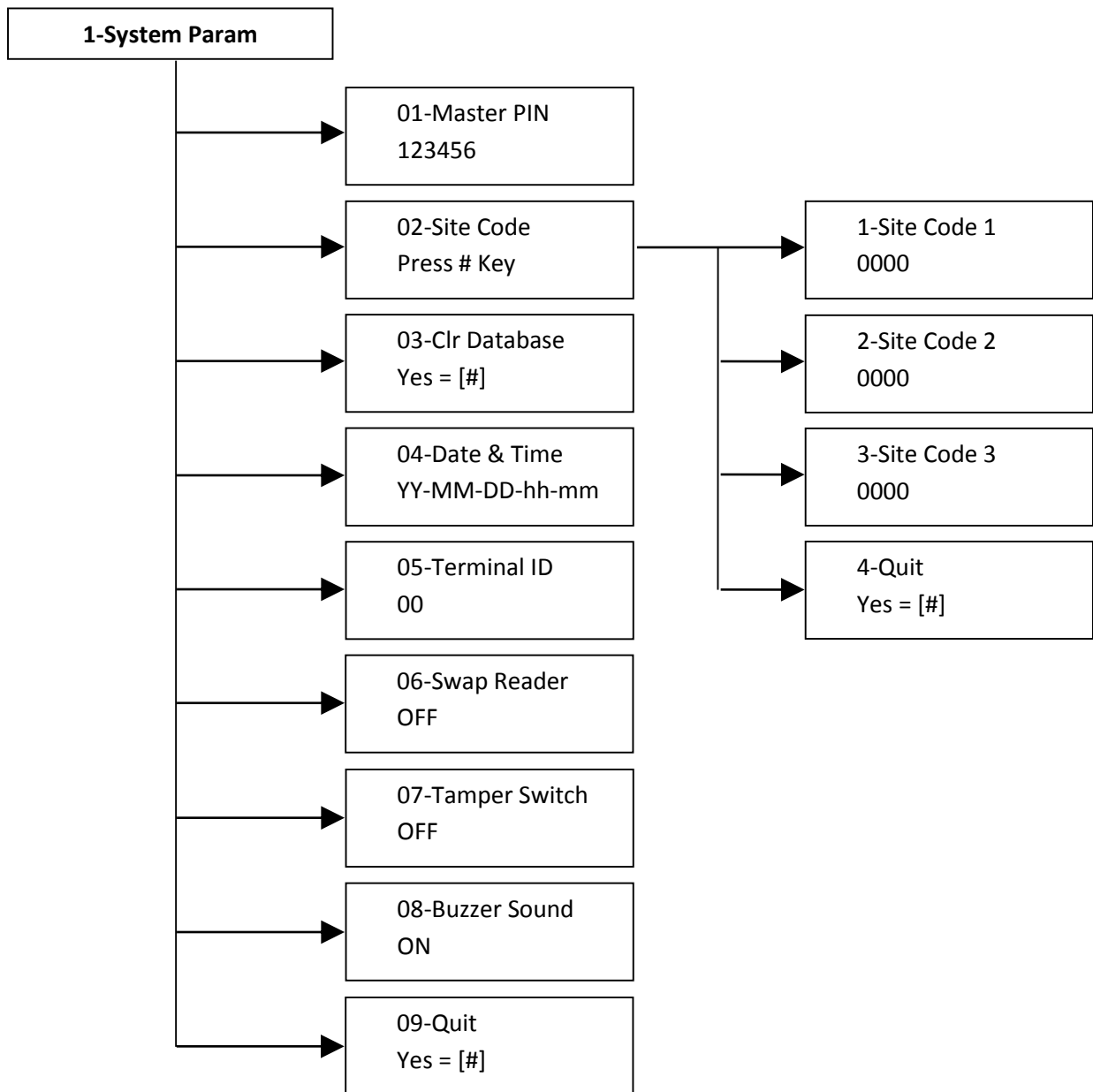
01-Master PIN
- Key in 6-digit Master PIN for setting menu entry.

02-Site Code
- Key in 4-digit Site Code.
- For example, a proximity card is printed with 123,45678:
  Site Code: 0123
  Card No: 045678
- To grant access, controller validates the site code and the card number.
- Site code is used to prevent access of other card with same card number.
- Support up to 3 Site Codes.

03-Clear Database
- To clear all user databases and reset all settings back to default.

04-Date & Time
- Key in current date and time in YY-MM-DD-hh-mm format.
- For example, 0908071153 for 09 (Year), 08 (Month), 07 (Day), 11 (Hour), 53 (Minute)

05-Terminal ID
- Key in 2-digit Terminal ID (00-15).
- Support up to 4 data lines, each data line with 16 controllers connection.

06-Swap Reader
- Press '0' to turn OFF or '1' to turn ON.
- Turn ON the swap reader when a controller and a proximity reader are installed. The controller will be assigned as EXIT reader and the proximity reader will be assigned as ENTRY reader.
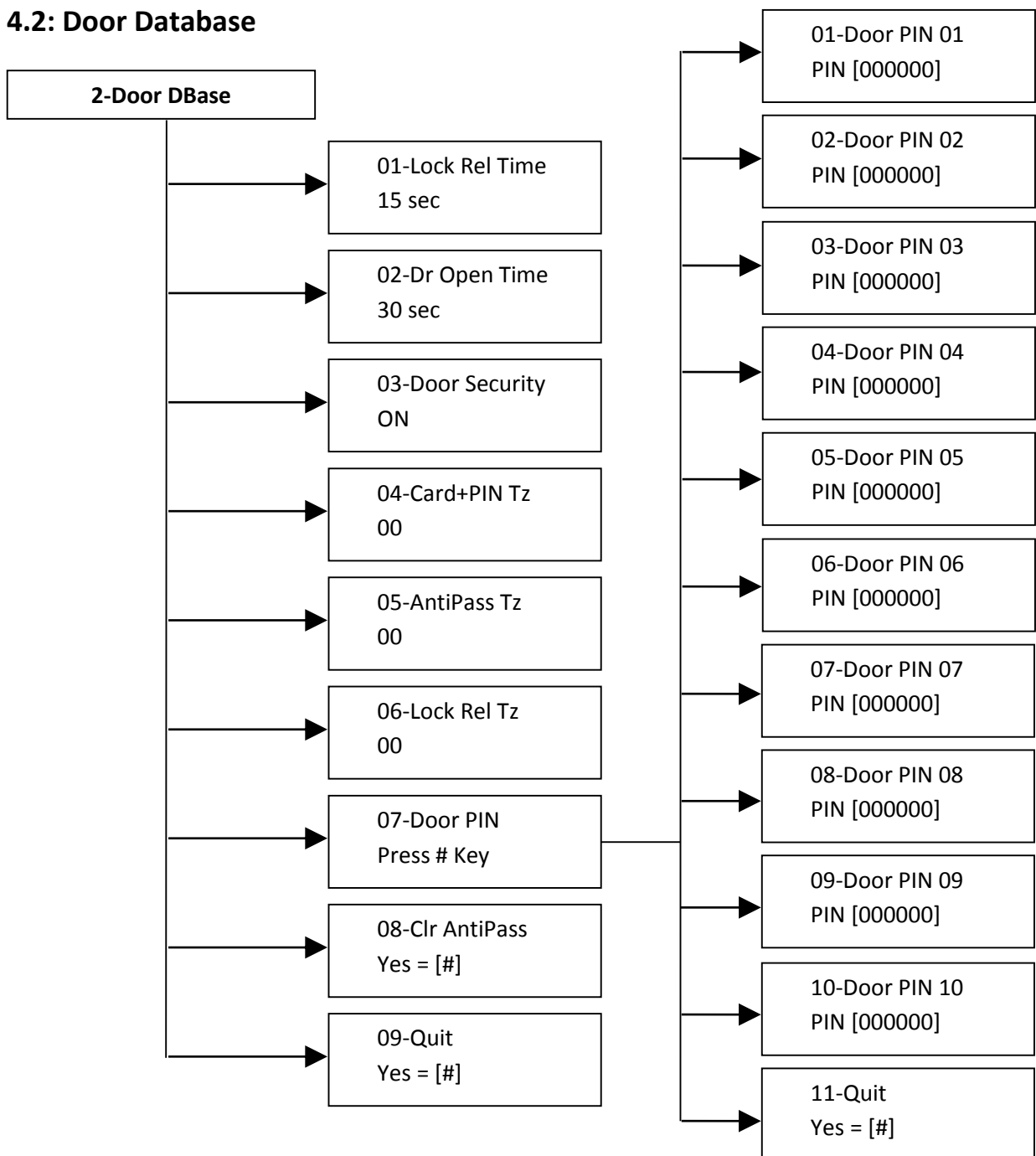
07-Tamper Switch
- If the tamper switch is ON, the buzzer will generate beep sound whenever the controller is open up.

08-Buzzer Sound
- If the buzzer sound is OFF, the buzzer will be muted.

4.2: Door Database

2-Door DBase

| 01-Lock Rel Time |
| 15 sec |

| 02-Dr Open Time |
| 30 sec |

| 03-Door Security |
| ON |

| 04-Card+PIN Tz |
| 00 |

| 05-AntiPass Tz |
| 00 |

| 06-Lock Rel Tz |
| 00 |

| 07-Door PIN |
| Press # Key |

| 08-Clr AntiPass |
| Yes = [#] |

| 09-Quit |
| Yes = [#] |

| 01-Door PIN 01 |
| PIN [000000] |

| 02-Door PIN 02 |
| PIN [000000] |

| 03-Door PIN 03 |
| PIN [000000] |

| 04-Door PIN 04 |
| PIN [000000] |

| 05-Door PIN 05 |
| PIN [000000] |

| 06-Door PIN 06 |
| PIN [000000] |

| 07-Door PIN 07 |
| PIN [000000] |

| 08-Door PIN 08 |
| PIN [000000] |

| 09-Door PIN 09 |
| PIN [000000] |

| 10-Door PIN 10 |
| PIN [000000] |

| 11-Quit |
| Yes = [#] |

01-Lock Rel Time
- The controller will release the door lock according to the lock release time (00-99 sec) if there is a valid entry.

02-Dr Open Time
- If the door is open more than the door open time (00-99 sec), then the buzzer will generate beep sound.

03-Door Security
- Press '0' to turn OFF or '1' to turn ON.
- The controller will release the door lock if the door security is OFF.

04-Card+PIN Tz
- Key in 2-digit Time Zone number for Card + PIN.
- During this Time Zone, the user is required to flash the card followed by PIN number in order to open the door.

05-AntiPass Tz
- Key in 2-digit Time Zone number for Anti-Passback.
- During this Time Zone, the controller will prevent card user from entering the same area twice.
- To use anti-passback, an entry reader (proximity reader) and an exit reader (controller) are required to install.
- The main purpose of an anti-passback is to prevent a card user from passing his card back to a second person to gain entry into the same door.
- Besides, if a user follows a colleague OUT of the building without presenting his own card, he will not be able to return through IN door.

06-Lock Rel Tz
- Key in 2-digit Time Zone number for Auto Lock Release.
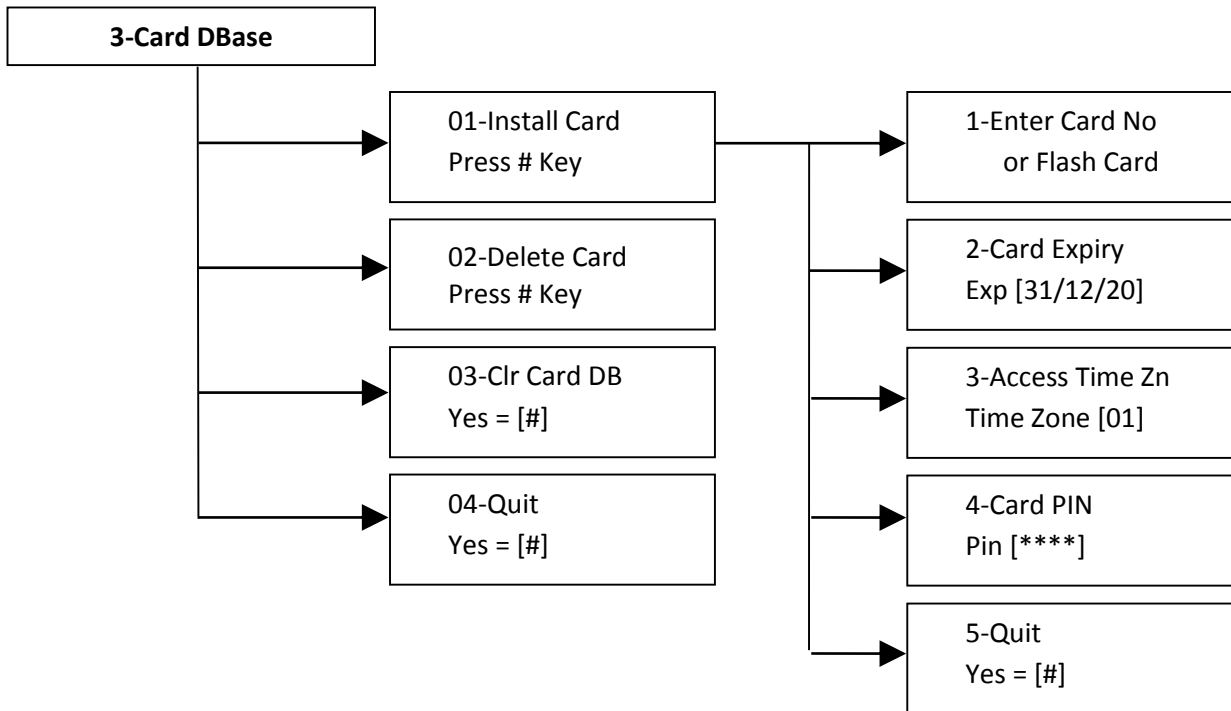- During this Time Zone, the controller will release the door lock (Door security is OFF).

07-Door PIN
- Key in 6-digit door PIN number for door open with PIN entry.
- Support up to 10 door PIN numbers.

08-Clr AntiPass
- To clear all anti-passback violations.

4.3: Card Database

```
┌──────────────────────────┐
│      3-Card DBase        │
└──────────────────────────┘
```

01-Install Card Press # Key	→	1-Enter Card No or Flash Card
02-Delete Card Press # Key	→	2-Card Expiry Exp [31/12/20]
03-Clr Card DB Yes = [#]	→	3-Access Time Zn Time Zone [01]
04-Quit Yes = [#]	→	4-Card PIN Pin [****]
	→	5-Quit Yes = [#]

01-Install Card
- 1-Enter Card No or Flash Card: Enter 6-digit card number or flash card.
- 2-Card Expiry: Enter expiry date for the card in DD-MM-YY format.
- 3-Access Time Zn: Enter 2-digit access Time Zone number for the card.
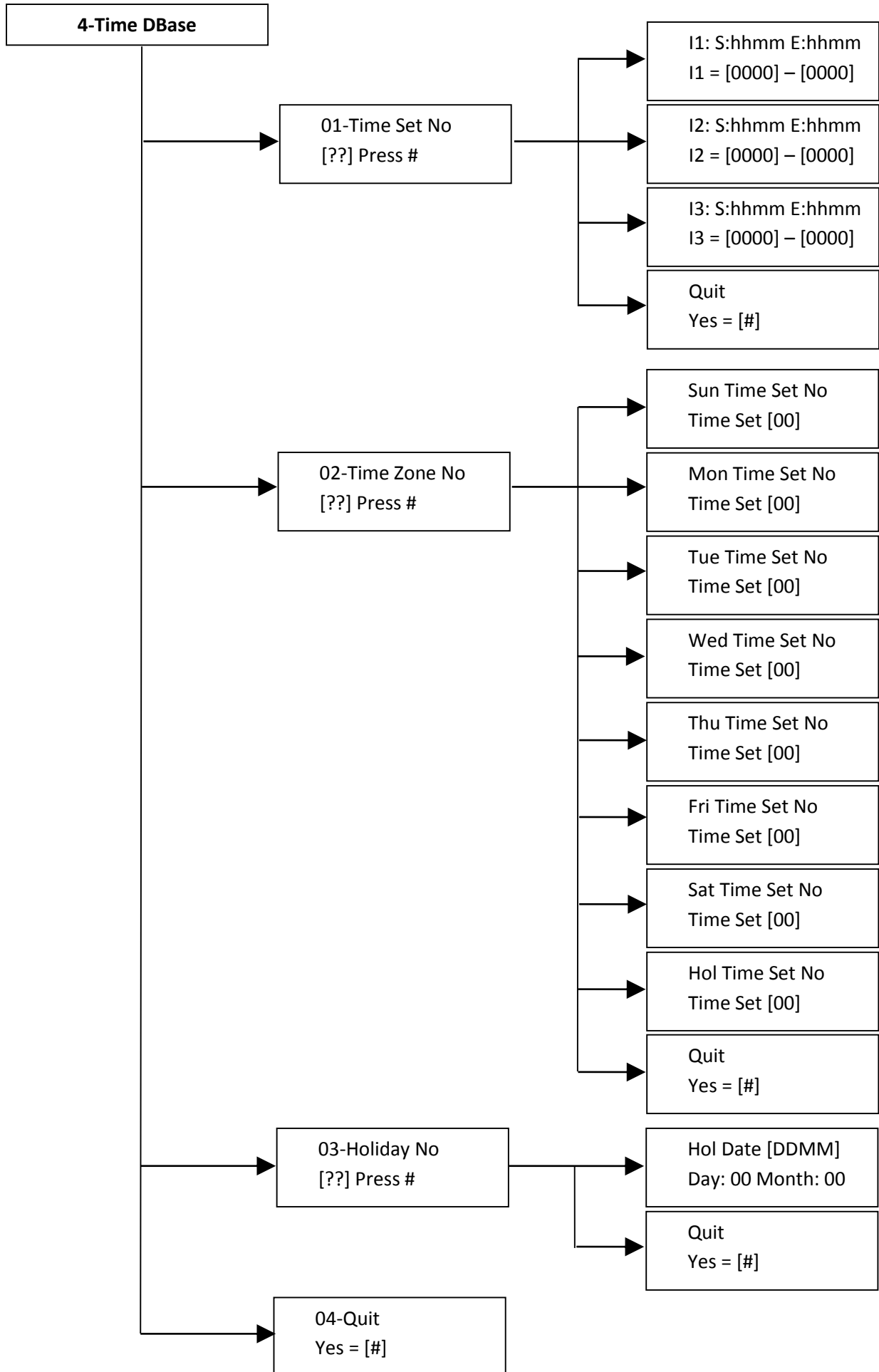- 4-Card PIN: Enter 4-digit PIN number for the card.

02-Delete Card
- Enter 6-digit card number or flash card for delete.

03-Clr Card DB
- To clear all user databases.

4.4: Time Database

4-Time DBase

01-Time Set No [??] Press #

I1: S:hhmm E:hhmm I1 = [0000] – [0000]

I2: S:hhmm E:hhmm I2 = [0000] – [0000]

I3: S:hhmm E:hhmm I3 = [0000] – [0000]

Quit Yes = [#]

02-Time Zone No [??] Press #

Sun Time Set No Time Set [00]

Mon Time Set No Time Set [00]

Tue Time Set No Time Set [00]

Wed Time Set No Time Set [00]

Thu Time Set No Time Set [00]

Fri Time Set No Time Set [00]

Sat Time Set No Time Set [00]

Hol Time Set No Time Set [00]

Quit Yes = [#]

03-Holiday No [??] Press #

Hol Date [DDMM] Day: 00 Month: 00

Quit Yes = [#]

04-Quit Yes = [#]

01-Time Set No
- Key in 2-digit Time Set number (00-23).
- Each Time Set supports 3 time intervals (Interval 1-3).
- I1: S:hhmm E:hhmm: Key in time interval 1 in hh-mm format.
- I2: S:hhmm E:hhmm: Key in time interval 2 in hh-mm format.
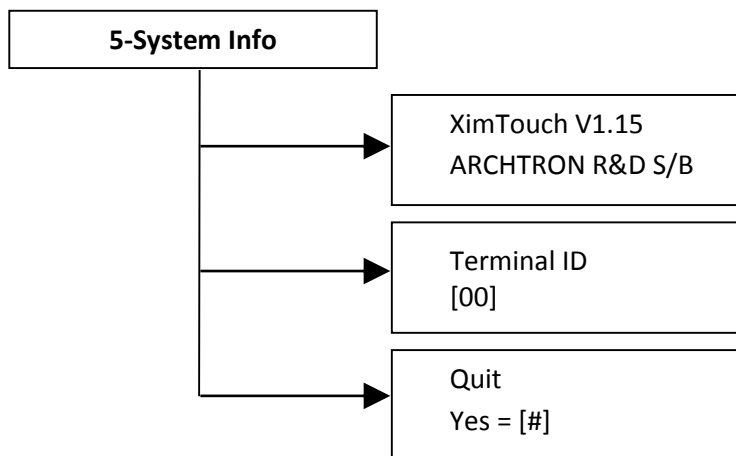- I3: S:hhmm E:hhmm: Key in time interval 3 in hh-mm format.

02-Time Zone No
- Key in 2-digit Time Zone number (00-23).
- Sun Time Set No: Key in 2-digit Time Set number for Sunday.
- Mon Time Set No: Key in 2-digit Time Set number for Monday.
- Tue Time Set No: Key in 2-digit Time Set number for Tuesday.
- Wed Time Set No: Key in 2-digit Time Set number for Wednesday.
- Thu Time Set No: Key in 2-digit Time Set number for Thursday.
- Fri Time Set No: Key in 2-digit Time Set number for Friday.
- Sat Time Set No: Key in 2-digit Time Set number for Saturday.
- Hol Time Set No: Key in 2-digit Time Set number for Holiday.

03-Holiday No
- Key in 2-digit holiday number (01-60).
- Hol Date [DDMM]: Key in holiday date in DD-MM format.

4.5: System Info

```
┌─────────────────────┐
│   5-System Info     │
└─────────────────────┘
        │
        │         ┌─────────────────────────┐
        ├────────▶│  XimTouch V1.15         │
        │         │  ARCHTRON R&D S/B       │
        │         └─────────────────────────┘
        │
        │         ┌─────────────────────────┐
        ├────────▶│  Terminal ID            │
        │         │  [00]                   │
        │         └─────────────────────────┘
        │
        │         ┌─────────────────────────┐
        └────────▶│  Quit                   │
                  │  Yes = [#]              │
                  └─────────────────────────┘
```

4.6: Exit Main Menu

To exit Setting Main Menu.
You can also press [Esc] button to exit.