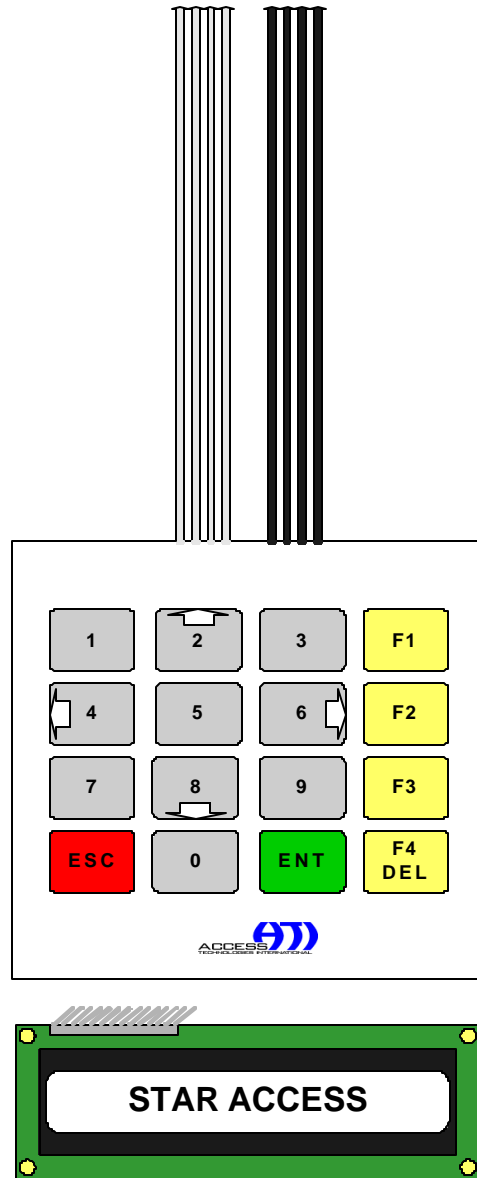


SA-KPLCD-1

LCD/KEYPAD PROGRAMMING MANUAL



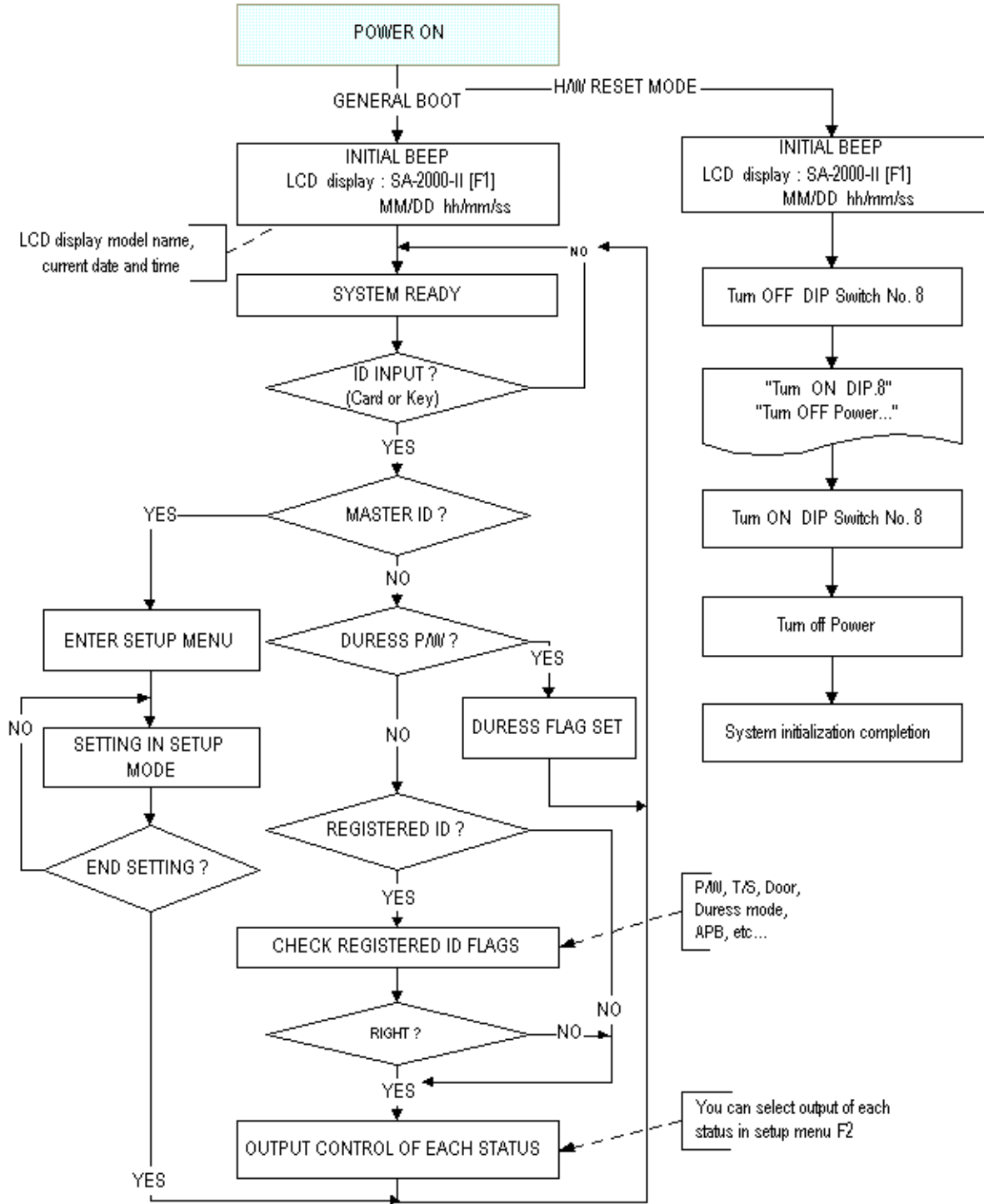
Access Technologies International, Inc.

Table of Contents

1. Basic settings	3
2. Setting Changes	8
3. Operating status indications	21
4. Warranty and Service	32

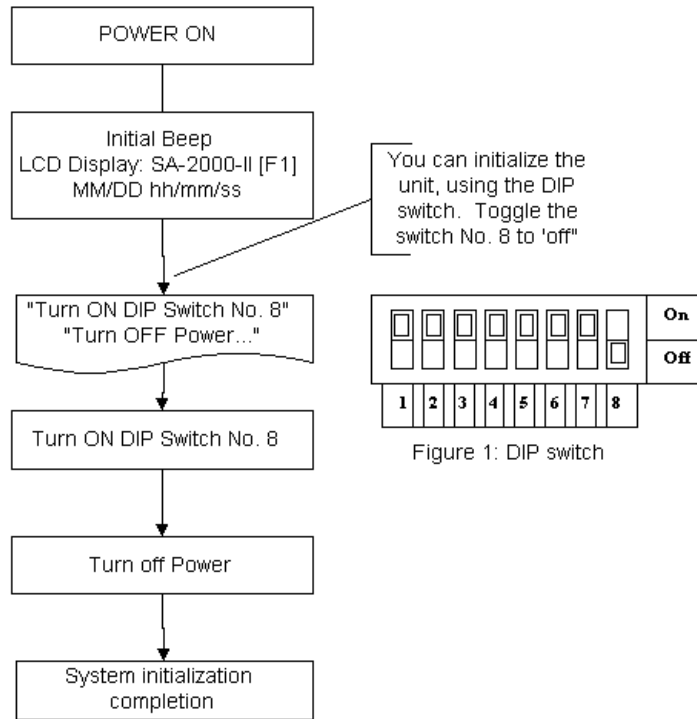
1. Basic settings

1.1 Basic operation

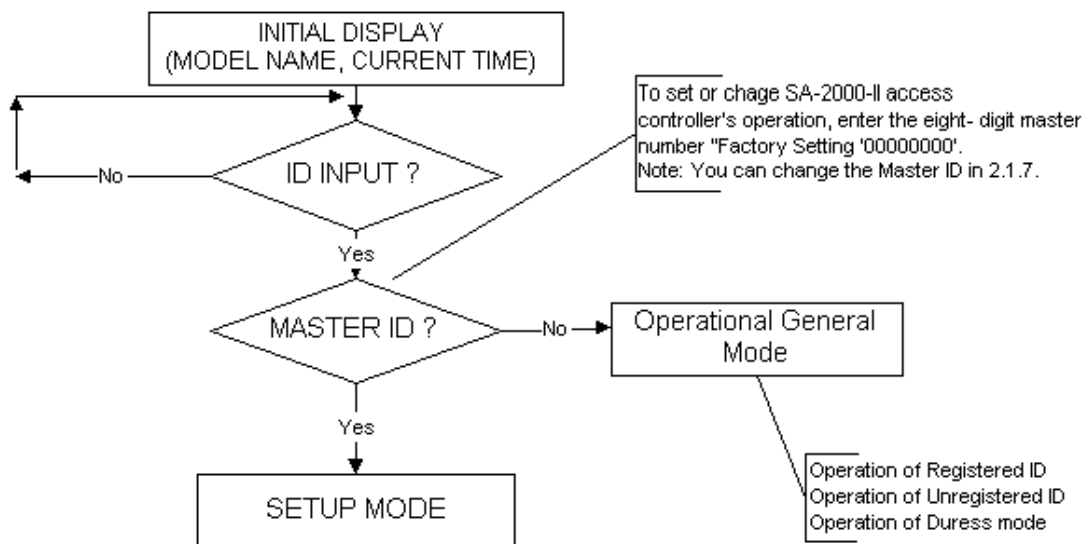


1.2 System initialization by using the addressing DIP switch

You can initialize the unit, using the DIP switch. Toggle the switch 8 to 'off' and toggle it back to 'on' when the power is on. Then you will see a message showing the initialization is completed on the LCD. Press the <ESC> key and finish. The illustration below shows the process.



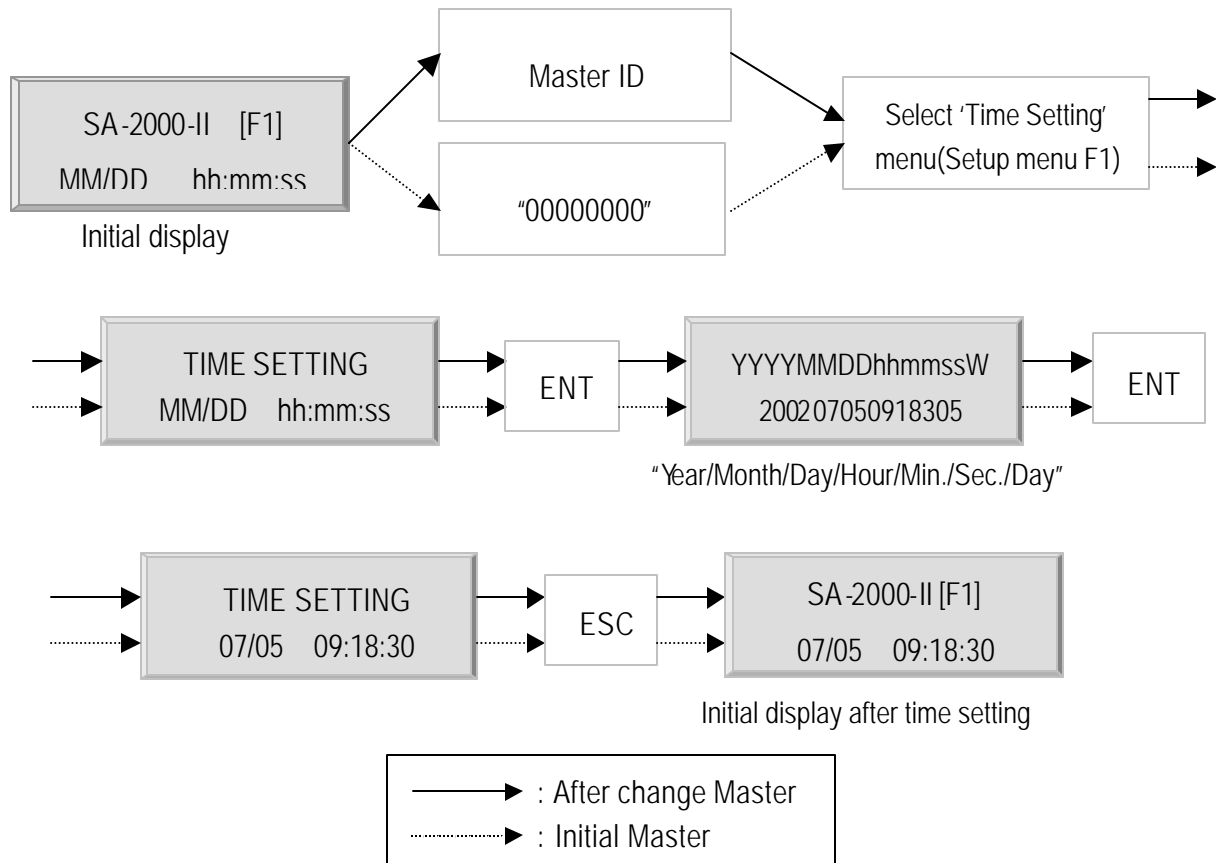
1.3 Enter into setup menu



1.4 Setting the Date and Time

Select 'Time setting' in "Setup menu F1" and enter the data of year /month /date /hour /minute /second /day (15digit) as the illustration below shows.

You will see the adjusted time on the LCD when finished.

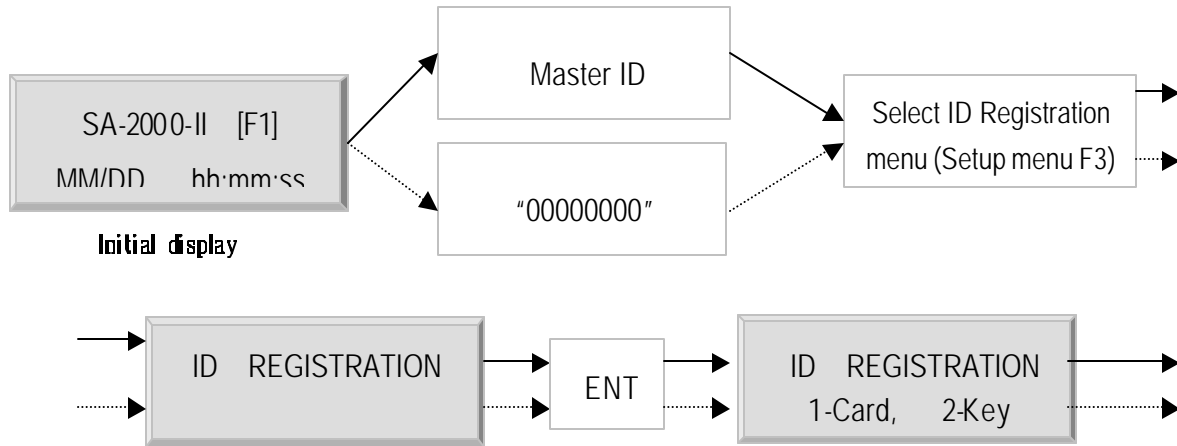


Day code 1 : Sun., 2 : Mon., 3 : Tue., 4 : Wed., 5 : Thu., 6 : Fri., 7 : Sat.
For example : '200207081825152' for Monday, July 8, 2002 06:25:15PM.

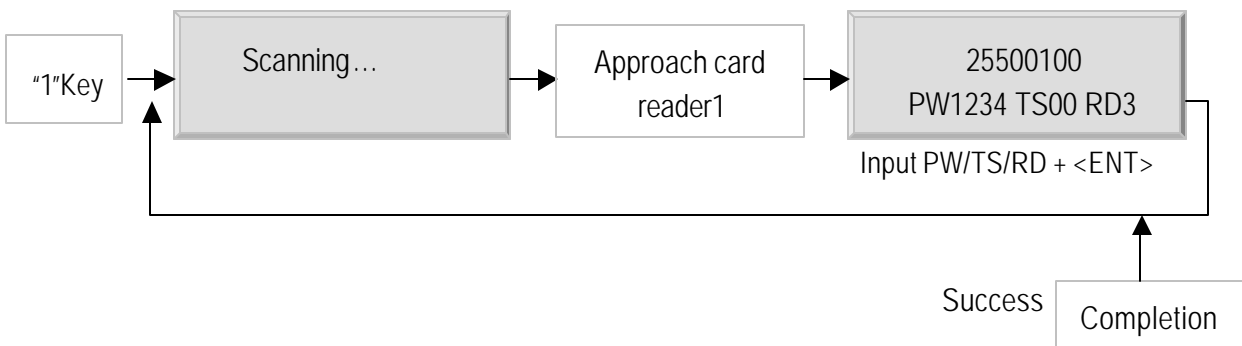
1.5 Registering Cards

You can register Cards (or PIN) to the system. (See, 2.3.1)

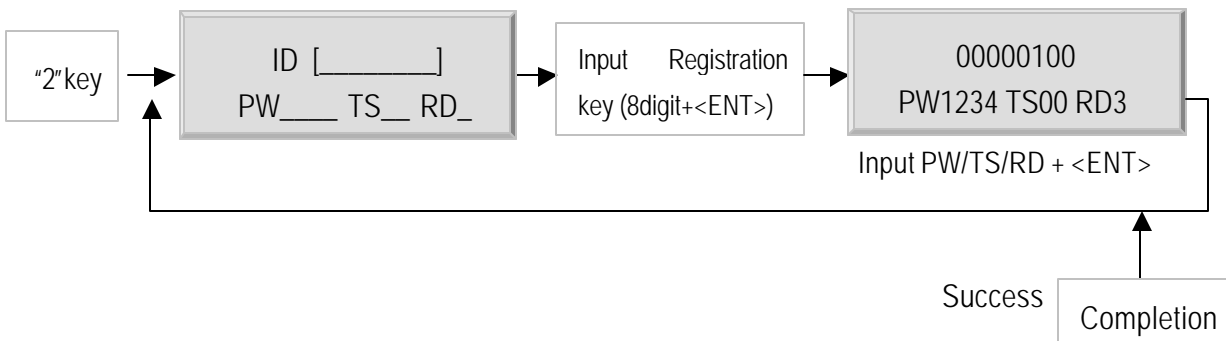
Select 'ID REGISTRATION' in Setup menu 3, follows through illustration below shows.



1. Registration by Cards



2. Registration by Keypad



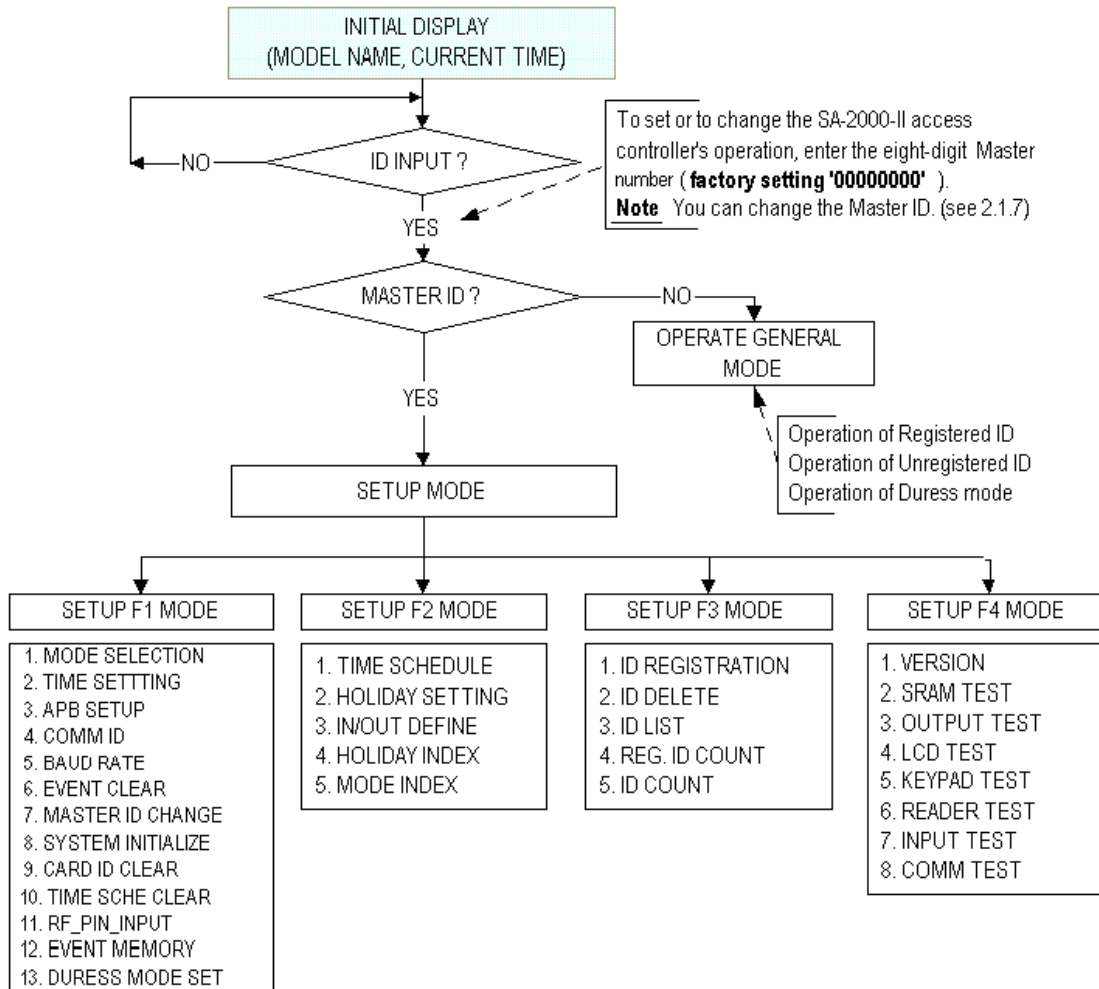
When registering cards,

1. The 'PW' is for password input. The password is needed to access doors when the controller is operating in RDR + PW mode. But regardless of the operating mode, it is necessary to input a password when registering.

2. The 'TS' is for Time Schedule index (01~10). To control the accessible periods of time for each card, set Time schedules first (see 2.2.1 page 17) and enter the Time Schedule index number here.
If there is no need to apply the Time Schedule (anytime accessible with that card), enter '00' for the value.

3. The 'RD' is for selecting accessible reader for the card. Usually '3' (both readers) is used when using both entry and exit readers. If '1' is entered for the value, only reader 1 will recognize the card and reader 2 will deny access, indicating 'ACCESS DOOR ERR' on the LCD (this is also the choice when using a one reader setup, meaning using one reader for entry and no reader for exit). Likewise, when '2' is entered, only the reader 2 is accessible with that card and reader 1 access will be denied. And again, both readers are accessible when '3' is entered for the 'RD' value.

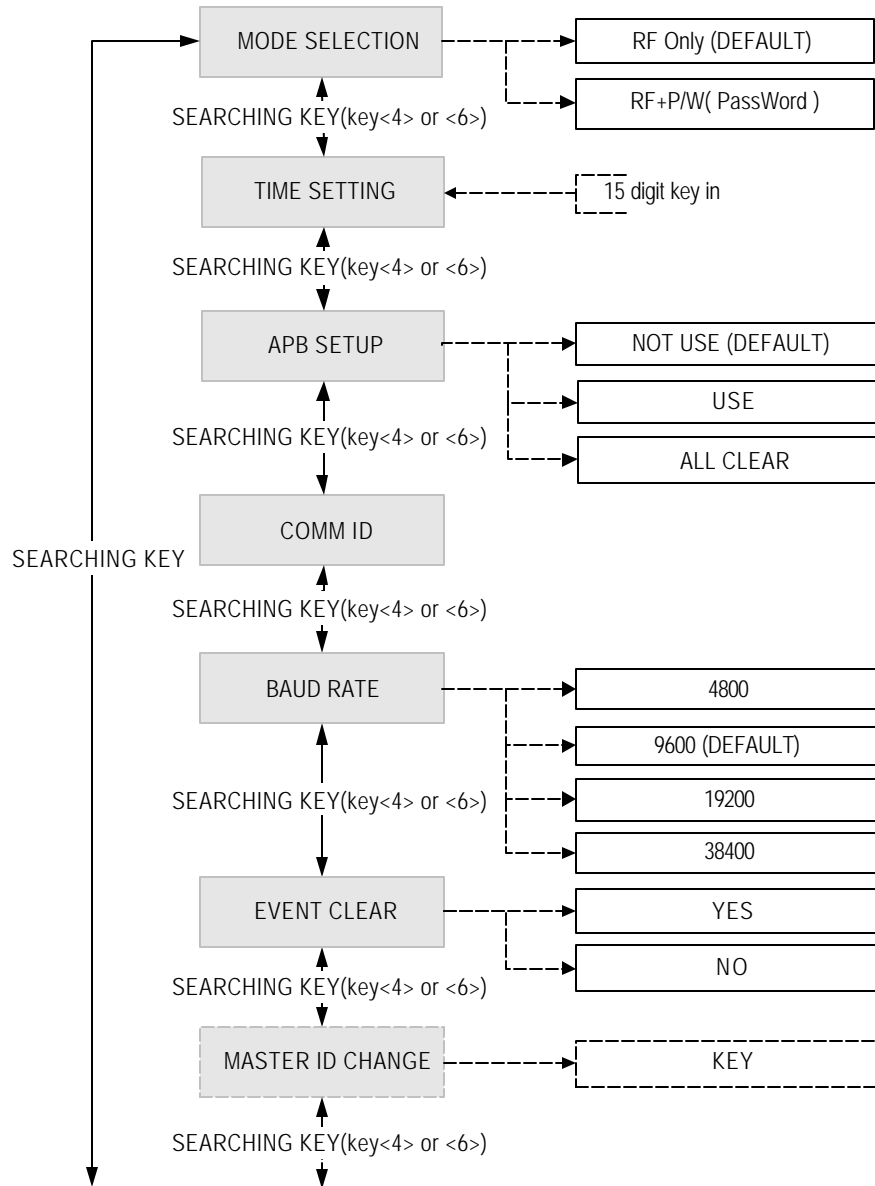
2. Setting Changes



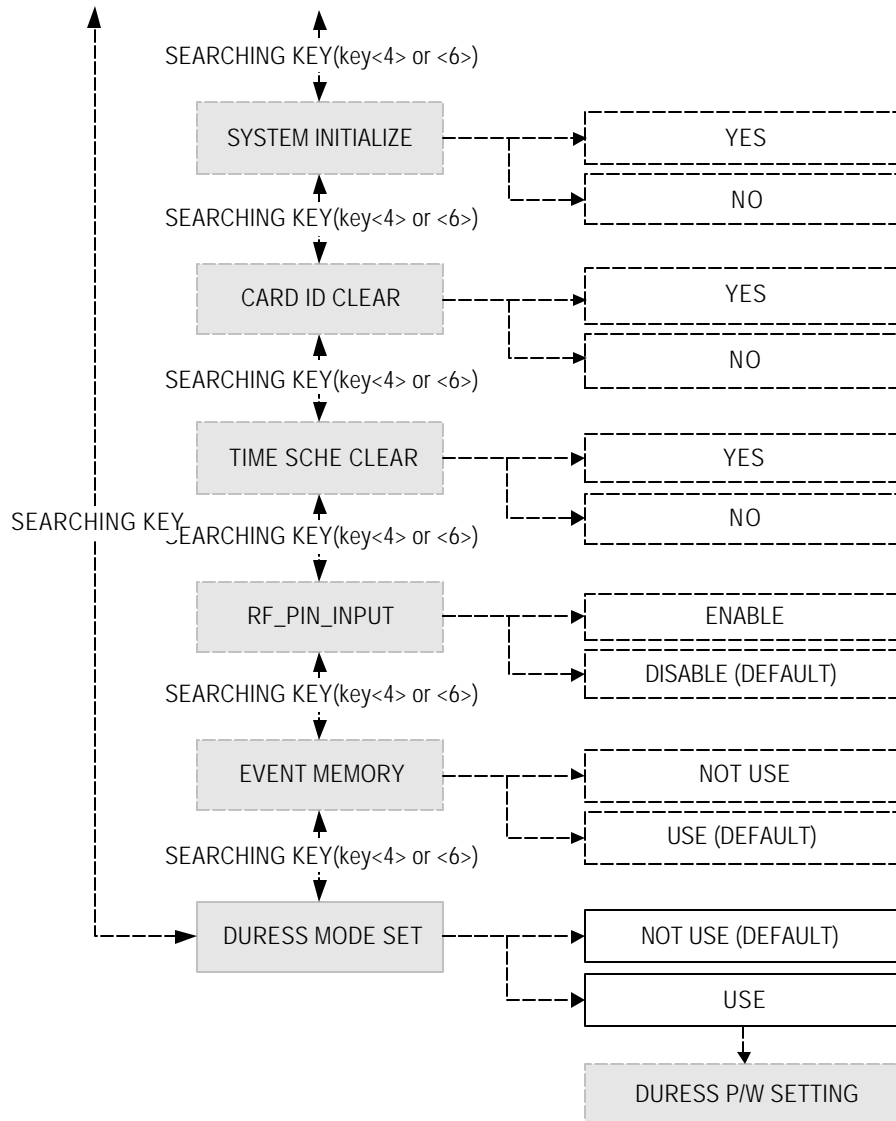
To set or to change the SA-2000-II's operation, enter the eight-digit Master number **factory setting "00000000"** <ENT>key, then you are ready to set or to change all the settings of the controller. There are four main setup menus. You need to press <F1> key for setup menu F1, <F2> key for setup menu F2, <F3> key for setup menu F3 and <F4> key for setup menu F4.

Note You can change the Master number. (see 2.1.7)

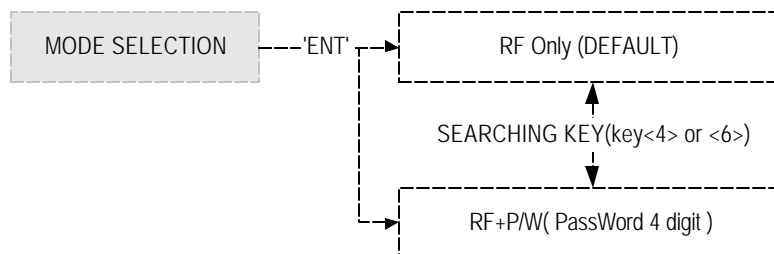
2.1 Setup Menu F1



Note There are four main setup menus. You need to press <F1> key for setup menu F1, <F2> key for setup menu F2, <F3> key for setup menu F3 and <F4> key for setup menu F4. The keys <4>, <6>, <2> and <8> are used to change submenus or to select values, <ENT> to select and set, <ESC> to go to upper step or to leave setup mode. When selecting mode or setting values is completed, in all kind of menu, the figure on the LCD returns to the first figure of that menu. Then, for the next setting, use <4> and <6> keys (searching key).



2.1.1 Changing Operating Mode



MODE SELECTION
RF ONLY

This menu is to select reader1 operating mode. You may choose to use prox, PIN # verification, or both. The lower line on the LCD indicates the current operating mode. Press the <ENT> key to change the mode.

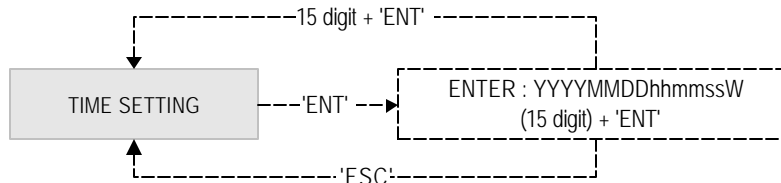
MODE SELECTION
--> RF ONLY

Then, this figure appears on the LCD, press <4> key or <6> key to toggle the mode, and finish selecting by pressing <ENT> key. For the next setting, use <4> and <6> keys.

MODE SELECTION
--> RF + PW

Note: RF only : The door is accessible with the card alone.
RF + PW : To access the door, the card and the password is needed.

2.1.2 Time Setting



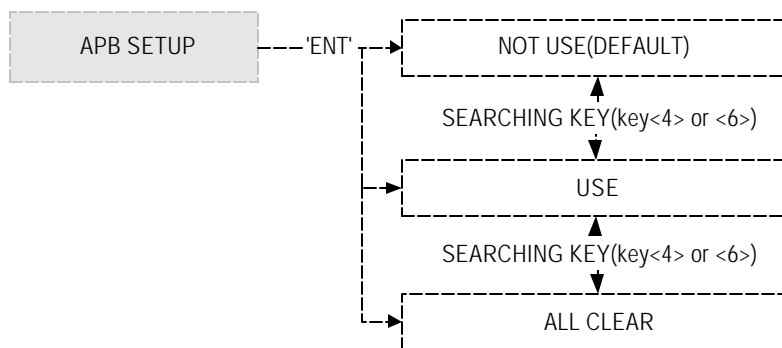
TIME SETTING
MM/DD hh:mm:ss

The lower line on the LCD indicates present time. To set time, press <ENT> key.

YYYYMMDDhhmmssW

Enter the correct information of the year, month, date, hour, minute, second, day code in due order, then the setting is finished. If the input information is out of range, an error message appears on the LCD and the current time value is to be kept.
Day code 1 : Sun., 2 : Mon., 3 : Tue., 4 : Wed., 5 : Thu., 6 : Fri., 7 : Sat.
For example : '200207081825152' for Monday, July 8, 2002 06:25:15PM.

2.1.3 Anti-Pass-Back Setup



APB SETUP
NOT USE

You can select whether the Anti-passback (APB) is used or not. The lower line on the LCD indicates the current mode. To change mode, press <ENT> key.

APB SETUP
--> NOT USE

Press <4> or <6> to toggle the mode, from NOT USE to USE or the reverse, and finish selecting by pressing <ENT> key. Then the figure on the LCD returns to the first figure of that menu, which indicates the selected mode now. Then, for the next setting, use <4> and <6> keys.
Note: If you select All Clear, then system ignore all registered ID's APB flag only once.

APB SETUP
--> USE

APB SETUP
--> All Clear

2.1.4 Communication ID

COMM ID
00

This is communication ID checking menu. For the next setting, use <4> and <6> keys.

2.1.5 Adjusting Communication Speed

BAUD RATE
9600

The number on the LCD is the current communication speed in Baud rate. Press <ENT> key to adjust the speed.

BAUD RATE
--> 9600

Available speeds are 4800bps, 9600bps and 19200bps and the default value is 9600 baud. Press <4> or <6> to change speed, and finish selecting by pressing <ENT> key. Then, for the next setting, use <4> and <6> keys.

BAUD RATE
-->19200

2.1.6 Clearing Event Data Buffer

EVENT CLEAR	Used to erase ALL of the event data such as the permitted access and denied access records. If you want to do so, press <ENT> key.
Event Clear 1 - Yes , 0 - No	When this figure appears on the LCD, press <1> key to clear and <0> key to cancel the operation. CAUTION: Be careful in using this operation, or you may lose important data.

2.1.7 Changing Master Number

MASTER ID CHANGE	Press <ENT> key to change the current Master ID. You should use the new Master ID to access the setup menu since the change is finished.
MASTER ID CHANGE [_ _ _ _ _]	You should use eight-digit number. Enter the eight-digit new Master number. And press <ENT> key.
Master Card Registered	The figure indicates that changing Master ID is finished successfully, and soon, will return to the first figure of this menu. For the next setting, use <4> and <6> keys.

2.1.8 Initializing the System

SYS INITIALIZE	This operation will initialize the SA-2000-II. Press <ENT> key, if an initialization is needed (first time installation or resetting in the event of a malfunction). CAUTION: Initializing will erase all stored data incl. registered IDs event data.
Sys Initializing 1 - Yes , 0 - No	When this figure appears on the LCD, press <1> key to clear and <0> key to cancel the operation, then the LCD displays the first figure of this menu.
System Initializing..	This message appears while the system is being initialized. When finished, you will be automatically returned to the setup menu.

2.1.9 Clearing Card IDs

CARD ID CLEAR

Used to erase ALL the card ID data. stored in the device.
If you want to do so, press <ENT> key.

Card ID Clear
1 - Yes , 0 - No

When this figure appears on the LCD, press <1> key to clear and <0> key to cancel the operation , then the LCD automatically returns to the start menu.

CAUTION: Be careful in using this operation, or you may lose important data.

2.1.10 Clearing Time Schedule

TIME SCHE CLEAR

Used to erase ALL the time schedules. If you want to do so, press <ENT> key. **CAUTION: This function will erase ALL programmed time schedules.**

Time Sche Clear
1 - Yes , 0 - No

When this figure appears on the LCD, press <1> key to clear and <0> key to cancel the operation , then the LCD automatically returns to the start menu.

2.1.11 Selecting ID Input mode

RF_PIN_INPUT
ENABLE

You can enable PIN (card number) to be input through the keypad, so that someone who doesn't carry RF cards with him can access the door. When it is disabled, accessing the door by keypad will be denied. The display shows the current mode. Press <ENT> key to toggle the mode.

RF_PIN_INPUT
-->DISABLE

2.1.12 Selecting Event memory USE or NOT USE

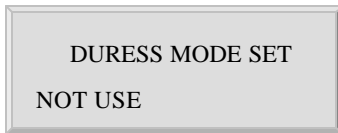
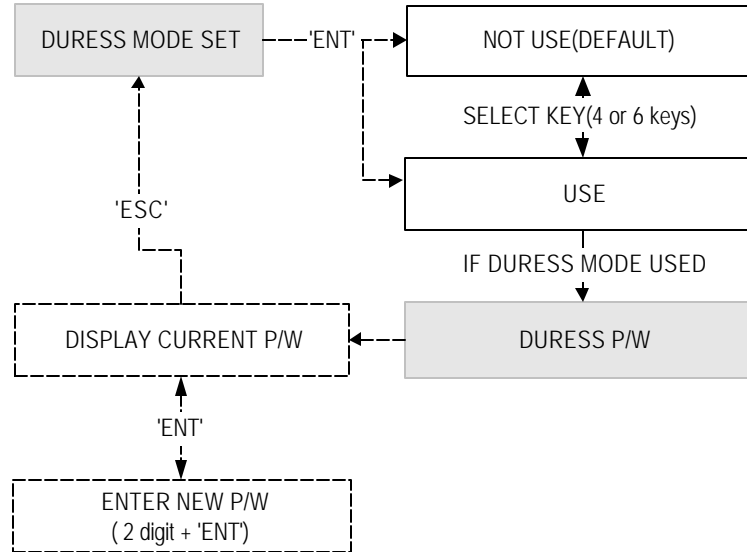
EVENT MEMORY
NOT USE

You can select whether the Stand Alone is used or not. The lower line on the LCD indicates the current mode. Press <4> or <6> to toggle the mode, from NOT USE -to-USE or the reverse, and finish selecting by pressing <ENT> key.

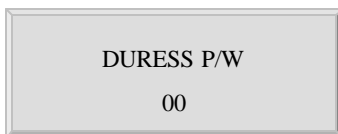
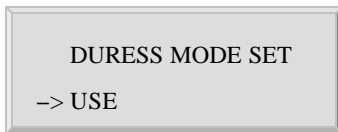
Note: If you select NOT USE, then system will not display event full message.

EVENT MEMORY
-->USE

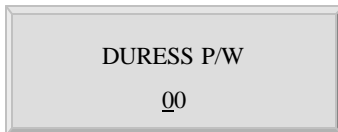
2.1.13 Setting Duress Mode



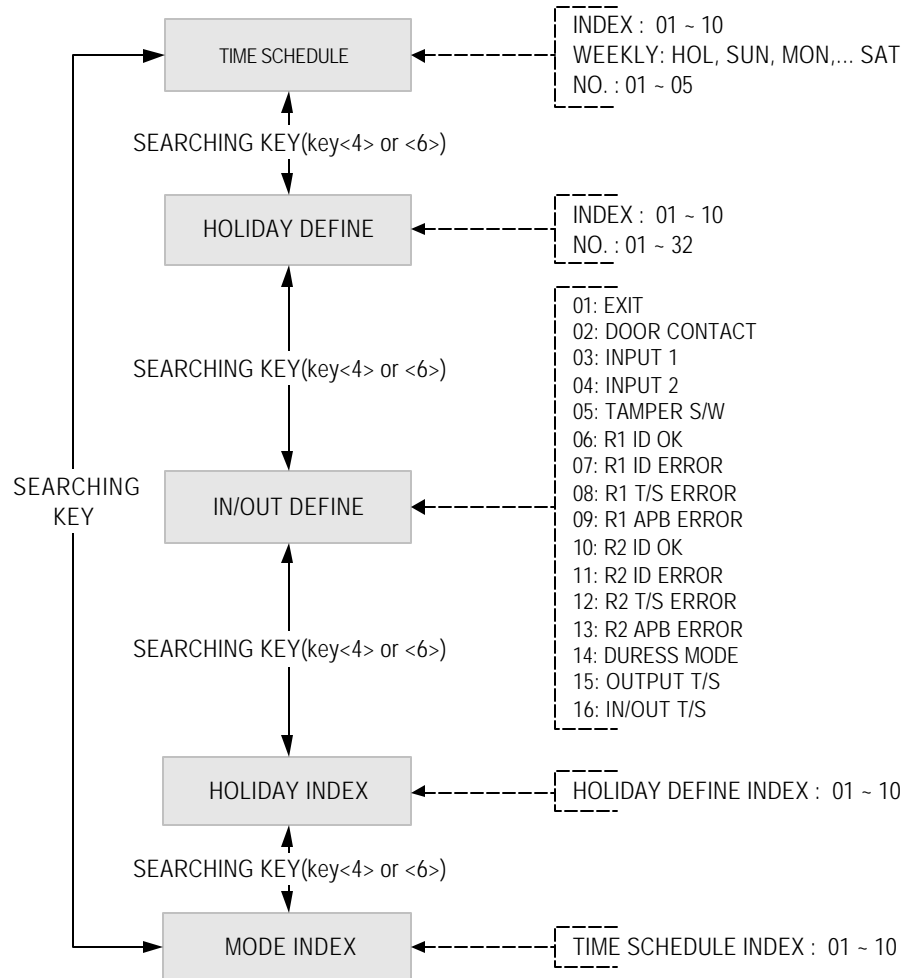
You can select whether the Duress mode is used or not. The lower line on the LCD indicates the current mode. To change mode, press <ENT> key.



If you select USE, then system displays the current DURESS P/W. To change P/W, press <ENT> key.
Note: You can set the duress output in setup menu F2 (in/out define). In case of Duress, enter the 2 digits Duress Password and press <ENT> and open the door using general process.
 If you registered ID, then duress output (see 2.2.3) will be generated.

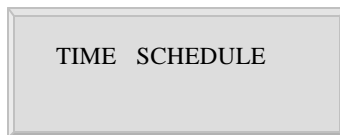
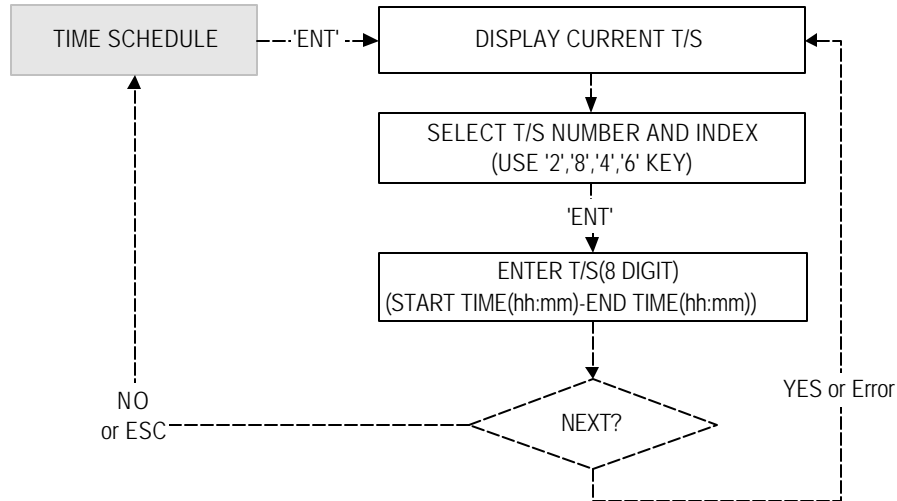


2.2 Setup Menu F2

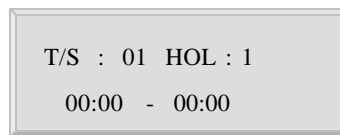


Note The keys <4>, <6>, <2> and <8> are used to change menu, <ENT> to select and store. Press <ESC> to go to back one level and/or to leave setup mode.

2.2.1 Registering and Changing Time Schedule



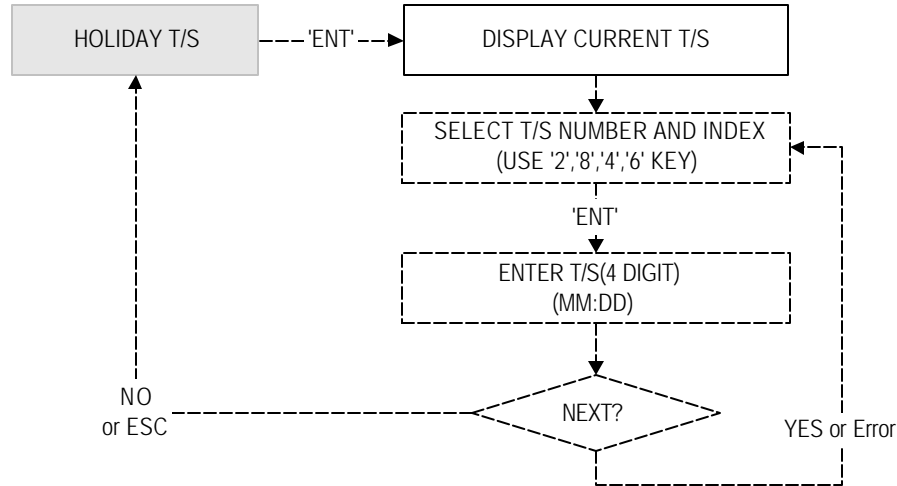
You may program time schedules to grant and restrict access for each user. There can be up to ten different schedules. A minimum of one schedule must be defined. If only one schedule is programmed the most common setting allows access for all users 24 hours / day. A time schedule can be programmed for each day of the week and holidays (see 2.2.2 page 18), and five shifts can be defined for each day. To set time schedules, press <ENT> key from this menu. If you want to set time schedule s, press <ENT> key when this figure is displayed.



Press <2> key or <8> key to adjust the Time Schedule (T/S) number (1-10) and the day of the week (Mon-Sun and 'HOL'). Define which shift of the day (1-5), using the <4> key and <6> key. 'HOL' refers to specific holidays you will register (see 2.2.2 page 18). Press <ENT> key, and the cursor will blink, then enter the beginning time of the period, in the form of hour (2-digit): minute (2-digit) and the ending time in the same form. Then the lower line will indicate the defined period. For more schedules, repeat the process. To end time scheduling, press <ESC> key.

- Possible values for time scheduling**
- 1) Time schedule number : 01 ~ 10 (Needed when IDs are registered)
 - 2) A day of the week : MON, TUE, WED, THU, FRI, SAT, SUN, HOL
 - 3) Index : 1 ~ 5 (referred to the five periods of time of a

2.2.2 Registering and Changing Holiday Time Schedule



HOLIDAY T/S

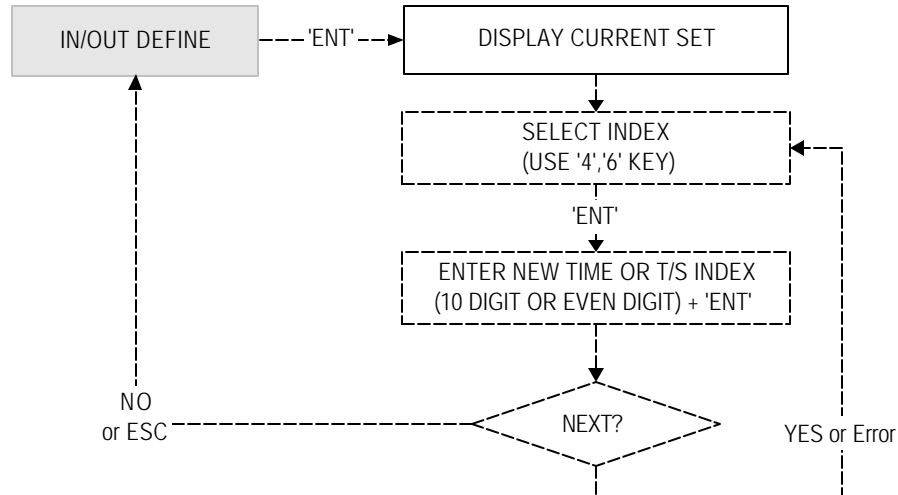
You can register up to 32 specified "holidays," per year for each schedule setting. There can be 10 other registration sets created, meaning holidays can be set for up to 10 years. Press <ENT> to register the days.

HOL T/S: 01 #01
00 : 00

With <2> key and <8> key, select the date registration set number (1-10), and with <4> key and <6> key, select the index for the days (1-32). Then, press <ENT> key, and the cursor will blink, then enter the date, in the form of Month (1-12):date, Then the LCD will indicate the defined date. Now, a day has been registered. For further registration, repeat the process.
To end registering the days, press <ESC> key to return to the setup menu.

- 1) Holiday Time schedule (Date registration set) number : 01 ~ 10(10 years)
- 2) Index for the days : 01 ~ 32(32 days)

2.2.3 Defining Outputs in Compliance with Inputs



IN/OUT DEFINE

You can program or deactivate each output to be generated and choose how long (in seconds) they will last. There are default values as seen in the table 2 below.

1. EXIT
03 00 00 00 00

Select input sources by changing index No. with the keys <4> or <6>, and press <ENT> key, and you'll see a cursor blinking at the first digit, from the left, of the five couples of digit, which corresponds to relay1, relay2, TTL1, TTL2 and buzzer, respectively. Then enter the delay times (refer to the table below) one by one. Now, an inputs/outputs definition has completed. For further definition, repeat the process. To end defining inputs/outputs, press <ESC> key, and you will see the first figure of the menu.

Note: The five couples of digit of [15] Output T/S and [16] Input/Output T/S are time schedule indexes.

Table 2 : The relation between index (Source, Input and Output(default))

Index No	Relay1	Relay2	TTL1	TTL2	Buzzer
[1] Exit button	03	00	00	00	00
[2] Door contact	00	00	00	00	00
[3] Input #1	00	00	00	00	00
[4] Input #2	00	00	00	00	00
[5] Tamper S/W	00	00	00	00	00
[6] Reader(1) ID OK	03	00	00	00	00
[7] Reader(1) ID Error	00	03	00	00	00
[8] Reader(1) ID T/S Error	00	03	00	00	00
[9] Reader(1) APB Error	00	03	00	00	00
[10] Reader(2) ID OK	03	00	00	00	00
[11] Reader(2) ID Error	00	03	00	00	00
[12] Reader(2) ID T/S Error	00	03	00	00	00
[13] Reader(2) APB Error	00	03	00	00	00
[14] Duress Mode	03	00	03	03	03
[15] Output T/S	00	00	00	00	00
[16] Input/Output T/S	Input1	Input2	Input3	Input4	Input5
	00	00	00	00	00

Note:

- 1) The relation between index number and input is shown in the table above.
- 2) The inputs of index No. 3-4 are signals from extra equipments, such as PIR sensor, Fire sensor and etc, connected to the controller.
The index No. 5 corresponds to the tamper switch input (activated when the controller has a physical damage).
The messages of the No. 6 ~ 13 is generated after reading a card.
The index No. 15 ~ 16 are not output time but time schedule number.
- 3) The second line of the LCD shows the output status. (see the table)
(00 :No operation , 99 : Always on , 01~98 : Activated for given seconds long)
- 4) Relay 1(**Lock Door**), Relay 2(**Alarm**)

2.2.4 Setting Holiday Index

HOLIDAY INDEX
00

You choose which Holiday time schedule (date registration set) is to be used. The default index is "00". Choose the schedule you programmed (01-10). If necessary, press <ENT> key.

HOLIDAY INDEX
00

Enter Index number(00-10) and press <ESC> key to finish selecting. You will then automatically be returned to the setup menu.

2.2.5 Setting Mode Index

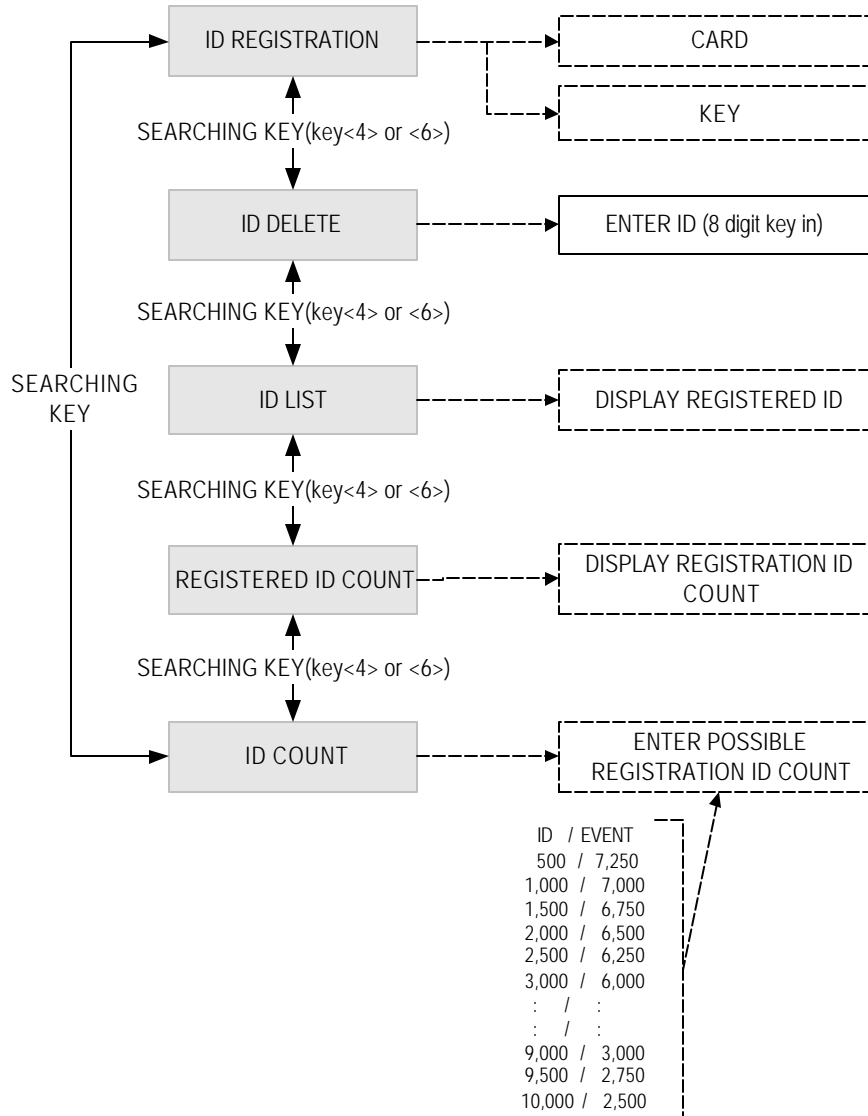
MODE INDEX
00

The function to apply the Time schedule to operating mode, which must be applied. The default index is "00". If necessary, press <ENT> key.

MODE INDEX
00

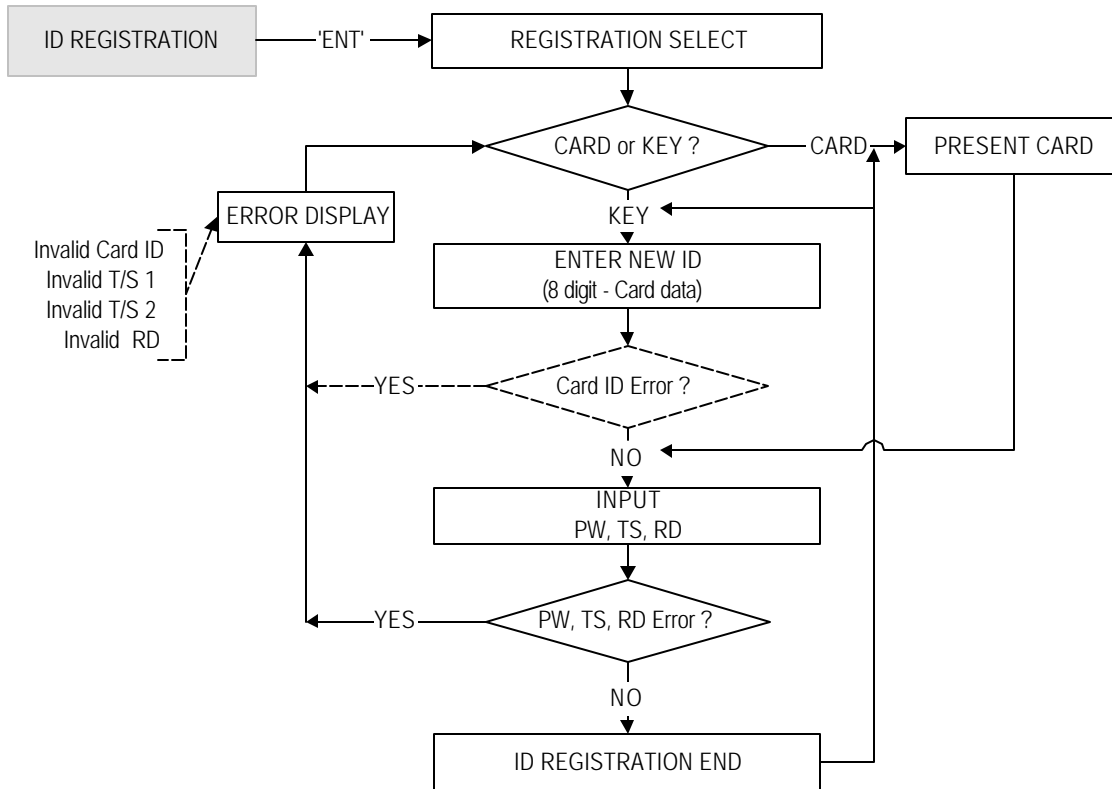
Enter Index number (00-10) and finish. During the period of time the applied T/S indicates, your controller will operate in RF only mode and for the rest of the time, in RF card + four digit password mode. Press <ESC> key to end the selecting, then the first figure of the menu is displayed on the LCD.

2.3 Setup Menu F3



Note: On setup menu F3, there are functions to register additional IDs, to delete registered IDs and to display the registered IDs.

2.3.1 Registering IDs



<p>ID REGISTRATION</p>	<p>This is ID registration menu. To register additional IDs. Press <ENT> key.</p>
<p>ID REGISTRATION 1: Card, 2: Key</p>	<p>ID Number is registered in the controller by RF cards or through the keypad. For RF cards, Press <1>key, the keypad, <2>key, or you can quit the registration by pressing <ESC>key.</p>
<p>Scanning ...</p>	<p>The reader is waiting for an RF card, which is to be registered. The card number will appear with a beep as the card is read.</p>
<p>[_ _ _ _ _] PW _ _ _ _ TS _ _ RD _</p>	<p>This figure appears when you press the <2>key for through keypad registration, and then you are to enter eight-digit ID number. The ID number is card number format. Eight digit ID : First 3 digit : 0 ~ 255 Next 5 digit : 0 ~ 65535</p>

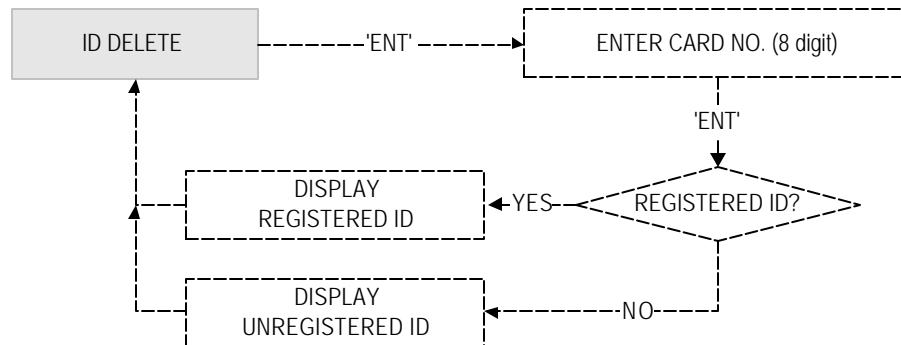
XXXXXXXX
PW_ _ _ _ TS_ _ RD_

ID Registered

The LCD's upper line shows the number read, and the lower line indicates that the four-digit password, time schedule index and reader code are needed. Enter those values, referring to the following information. Then the registration of the card is finished, and the reader will be waiting for another card, displaying the second menu of the menu. Press <ESC> key to end registering IDs, then the first figure of the menu will appear.

- 1) PW (password): the password used in RF + password mode.
- 2) TS(Time schedule) :
 - 00 : Anytime accessible
 - 01 ~ 10 : Accessible according to each T/S index
- 3) RD(Reader code) - 1 : for using reader 1 alone,
2 : for using reader 2 alone,
3 : for using both reader 1 and 2.

2.3.2 Deleting IDs



ID DELETE

To delete some registered ID, press <ENT> key.

Enter Card No.
-> _ _ _ _ _

Enter the eight-digit ID number that you want to delete. Then the following message will show on the LCD.

ID Deleted

The display shows on the LCD for a second, indicating that the deletion is finished successfully, and then the first figure of the menu appears.

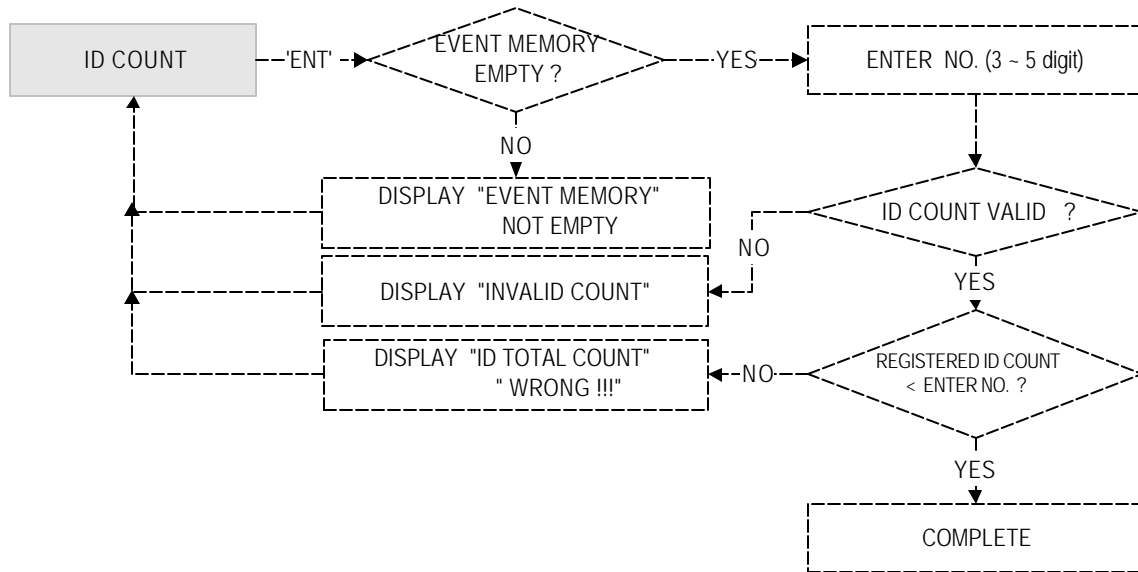
2.3.3 Listing Registered IDs

<p>ID LIST</p>	<p>If you wish to list the registered user IDs, press the <ENT> key in this menu.</p>
<p>MEMORY EMPTY</p>	<p>This message is displayed when there are no registered users.</p>
<p>XXXXXXXX PWXXXX TSXX RDX</p>	<p>An ID number, the password, the applied T/S and the reader code are displayed on the LCD, and you can scroll to the next ID using the <4> and <6> keys. Press <ESC> key when you finished to return to the setup</p>
<p>ID LIST TOP</p>	<p>This message will appear momentarily when scrolling back to the top of the list (using the <4> key). After a few seconds the ID for the first user reappears.</p>
<p>ID LIST BOTTOM</p>	<p>This message will appear momentarily when scrolling forward (using the <6> key) . After a few seconds it disappears revealing the very first ID number.</p>

2.3.4 Counting Registered IDs

<p>REGISTERED ID XXXXX</p>	<p>This menu displays the total number of registered IDs.</p>
--------------------------------	---

2.3.5 Setting Possible Registration ID Count



ID COUNT
500

You should choose which possible registration ID count is to be applied. The default count is "500"(up to 7,250 events can be stored off-line.). If necessary, press <ENT> key.

ENTER ID COUNT
[_ _ _ _]

This figure appears when you press the <ENT> key (and event memory is empty or not used.). You are to enter a new upper limit of ID registration, which must be a multiple of 500.

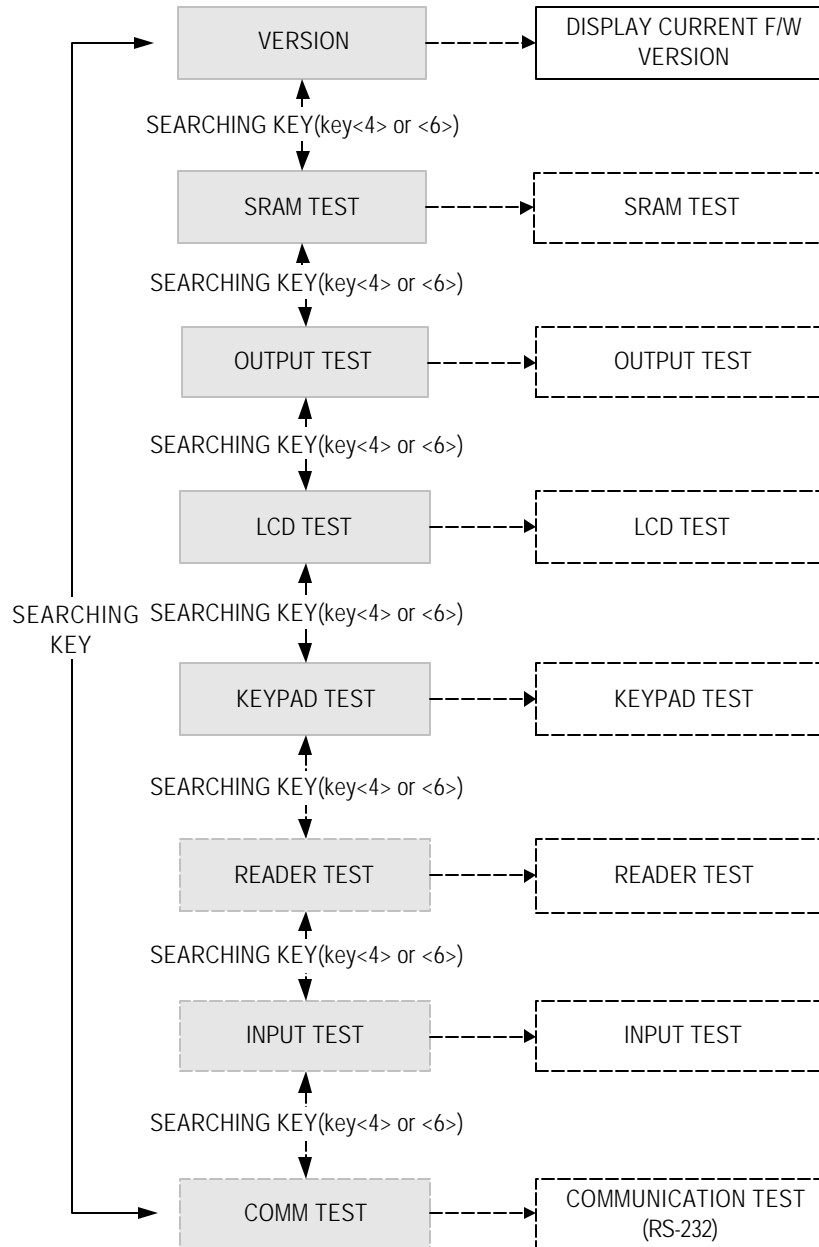
EVENT MEMORY
NOT EMPTY !!!

You'll see this message when the event memory has been used and it's not empty. You can try again after uploading the data to the host or deleting them, using the setup mode F1.

ID TOTAL COUNT
Wrong !!!

This message will show when the entered number is less than the total number of the registered IDs. If you want to delete some of the IDs and reduce the possible registration ID count, clear the event memory, using the setup mode F1 first and try again from the beginning.

2.4 Setup Menu F4



Note: On setup menu F4, there are self-diagnosis functions to test the performances of the operations. To test, press <ENT> key.

2.4.1 VERSION

VERSION
F/W : Rev. 3.0

The version of the controller's firmware is displayed on the LCD.
Press <4> or <6> key to look for other menus of setup menu F4.

2.4.2 SRAM TEST

SRAM TEST

To test the memory, press <ENT> key.

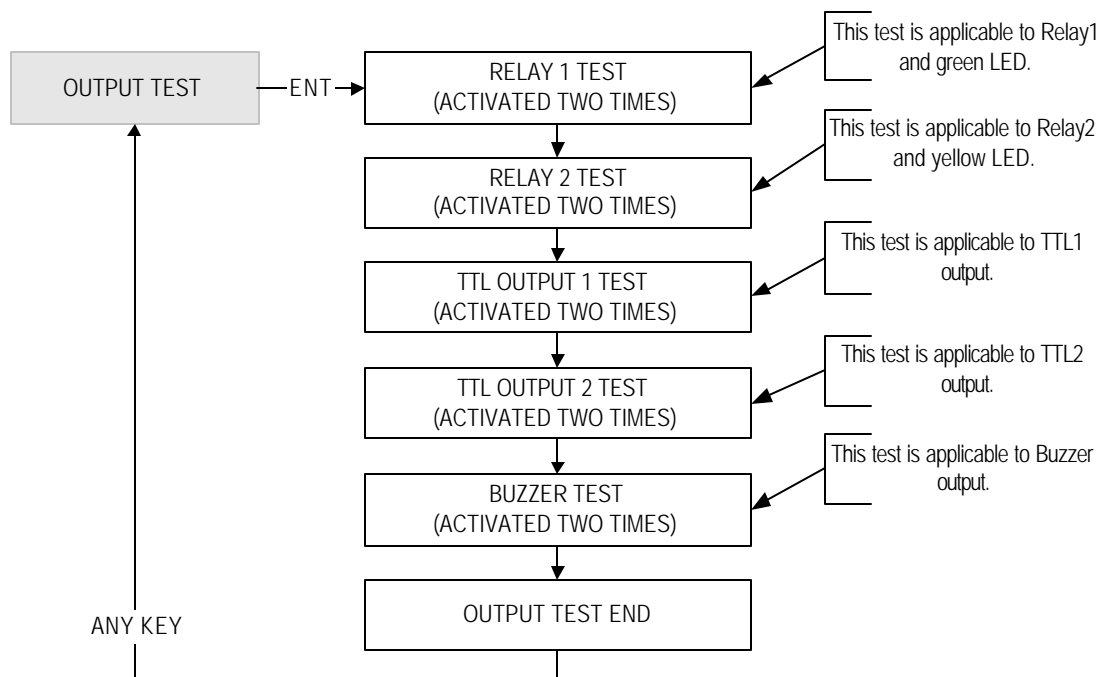
Memory fail !!! 0
RAM testing...

This message would indicate the SRAM has problems. In this event, contact technical support. Press any key to return to the setup menu . Use <4> key and <6> key for testing other performances.

RAM test pass !!!
Press any key . . .

This message appears when the SRAM is operating normally. Press any key to return to the setup menu. Use <4> key and <6> key for testing other performances.

2.4.3 Outputs TEST



OUTPUT TEST

To test the output performances, press <ENT> key. If the output performance has no problems, the test will proceed as follows:
First, the green LED blinks twice as the relay is being shorted and opened twice. The relay makes a clicking sound as it runs. **Second**, the yellow LED blinks twice as the relay is being shorted and opened twice. The relay makes a clicking sound as it works. **Third**, the LCD changes its figure, 'ON, OFF, ON, OFF'. **Fourth**, the buzzer beeps twice.
Note: The LCD provides no message to indicate if the test has finished successfully

OUTPUT 5
 Press any key . . .

This figure means that the test has finished. Press any key to return to the setup menu. Use <4> or <6> key to scroll to perform other tests.

2.4.4 LCD TEST

LCD TEST

To test the performance of the LCD, press <ENT> key. As the test proceeds several characters will move quickly from right to left.

Last Update
 Press any key . . .

This means the test has finished. Press any key to return to the setup menu. Use <4> key and <6> key for testing other performances.

2.4.5 Keypad TEST

KEYPAD TEST

To test the performance of the keypad, press <ENT> key.

0123456789ABCDEF

When operating normally, pressing the keys on the keypad will display the corresponding letter on the LCD.
Note: For function keys, the letters A, B, C, D, E and F will refer to the <F1>, <F2>, <F3>, <F4>, <ESC> and <ENT>key, respectively.

2.4.6 Readers TEST

READER TEST

To test the performance of the reader, press <ENT> key.

Scanning . . .	The reader is waiting for an RF card to read. Present an RF card to the reader.
<p>Reader 1</p> <p style="text-align: center;">00312345</p> <p style="text-align: center;">↑ ↑</p> <p style="text-align: center;">Reader No. Card No.</p>	The test has completed successfully if the LCD displays the ID card number (example shown to left).

2.4.7 Input and DIP Switch TEST

INPUT TEST	To test the performance of input ports, press <ENT> key.
<p>INPUT TEST</p> <p>111111 11 11111</p> <p style="text-align: center;">↑ ↑</p> <p style="text-align: center;">DIP SW 1 INPUT 1</p>	<p>The fore part of the lower line on the LCD indicates DIP switch status and the rear part indicates the status of the five input signals.</p> <p>Note:</p> <ol style="list-style-type: none"> 1. DIP switch : "1"=ON, "0"=OFF 2. Input 1~4 : "0"=ON, "1"=OFF 3. Input 5 : "0"=OFF, "1"=ON

2.4.8 Communication TEST

COMM TEST

Connect the RS-232 Rx, Tx wires

```

graph TD
    Start[COMM TEST] -.->|ENT| Connect[Connect the RS-232 Rx, Tx wires]
    Connect --> Decision{PASSED?}
    Decision -- YES --> DisplayPass[DISPLAY TEST PASS]
    Decision -- NO --> DisplayError[DISPLAY ERROR]
    DisplayPass -.->|ANY KEY| Start
    DisplayError -.->|ANY KEY| Start
  
```

COMM TEST	Before this communication test, connect the RS-232 Rx, Tx wires to each other. And to begin the test, press <ENT> key.
-----------	--

TX data = 0
COMM fail

This message indicates there is a problem with the communication performance. Check connections and try again. Press any key to return to the setup menu.

COMM test pass !!
Press any key . . .

As the test proceeds, you can see the characters being transmitted and received. This message indicates that the communication test has succeeded.

3. Operating Status Indications

- Granted Access : Displayed when an access is granted.
- UNREGISTERED CARD : Displayed when an unregistered card (or PIN) is presented to the unit.
- SCHEDULE ERROR : Displayed when a Time Schedule error occurs.
- APB ERROR : Displayed when an anti-passback error occurs.
- PASSWORD ERROR : Displayed when an invalid password is entered.
- ACCESS DOOR ERR : Displayed when a registered card (or PIN) that is supposed to access the other reader is presented to the reader. This may occur if 1 or 2 is entered for the RD value when the card was being registered.

4. Warranty and Service

SA-2000-II warranty is 2 years from the shipped date; returns must have an RMA (Return Material Authorization) number. The customer is to provide a description of the specific problem. The customer is to include serial numbers, formats, and model numbers with the items to be returned.

Contact Technical Support

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Milwaukee, WI 53203

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Note: Damage occurring during shipment is deemed the responsibility of the carrier, and claims should be made directly to the carrier.