iCON100

SINGLE DOOR ACCESS CONTROL SYSTEM

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Safety Information

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CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK) NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.


This symbol indicates that dangerous voltage consisting a risk of electric shock is present within this unit.


This exclamation point symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING

To reduce the risk of fire or electric shock, do not expose this appliance to rain or moisture.

WARNING

1. Be sure to use only the standard adapter that is specified in the specification sheet. Using any other adapter could cause fire, electrical shock, or damage to the product.
2. Incorrectly connecting the power supply or replacing battery may cause explosion, fire, electric shock, or damage to the product.

3. Do not connect multiple controllers to a single adapter. Exceeding the capacity may cau se abnormal heat generation or fire.
4. Securely plug the power cord into the power receptacle. Insecure connection may caus e fire.
5. When installing the controller, fasten it securely and firmly. The fall of controller may ca use personal injury.
6. Do not place conductive objects (e.g. screwdrivers, coins, metal parts, etc.) or container s filled with water on top of the controller. Doing so may cause personal injury due to fi re, electric shock, or falling objects.
7. Do not install the unit in humid, dusty, or sooty locations. Doing so may cause fire or el ectric shock.
8. If any unusual smells or smoke come from the unit, stop using the product. In such case, immediately disconnect the power source and contact the service center. Continued us e in such a condition may cause fire or electric shock.
9. If this product fails to operate normally, contact the nearest service center. Never disass emble or modify this product in any way. (SAMSUNG is not liable for problems caused by unauthorized modifications or attempted repair.)
10. When cleaning, do not spray water directly onto parts of the product. Doing so may ca use fire or electric shock.

CAUTION

1. Do not drop objects on the product or apply strong blows to it. Keep away from a locat ion subject to excessive vibration or magnetic interference.
2. Do not install in a location subject to high temperature (over 50°C), low temperature (b elow -30°C), or high humidity. Doing so may cause fire or electric shock.
3. If you want to relocate the already installed product, be sure to turn off the power and then move or reinstall it.
4. Remove the power plug from the outlet when there is a lighting storm. Neglecting to d o so may cause fire or damage to the product.
5. Keep out of direct sunlight and heat radiation sources. It may cause fire.
6. Install it in a place with good ventilation.
7. Avoid aiming the controller directly towards extremely bright objects such as sun.
8. Apparatus shall not be exposed to dripping or splashing and no objects filled with liqui ds, such as vases, shall be placed on the apparatus.
9. The Mains plug is used as a disconnect device and shall stay readily operable at any tim e.

1 IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's ins tructions.
8. Do not install near any heat sources such as radiators, heat registers, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two bla des and a third grounding prong. The wide blade or the third prong is provided for you r safety. If the provided plug does not fit into your outlet, consult an electrician for repla cement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenie nce receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with cart, stand, tripod, bracket, or table specified by the manufacturer, or sol d with the apparatus.
13. Unplug this apparatus when a card is used. Use caution when moving the cart/ apparat us combination to avoid injury from tip-over.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparat us has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been expo sed to rain or moisture, does not operate normally, or has been dropped.

GENERAL

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Star iCON100/ IDTECK iCON100SR is an intelligent 1 Door Access Controller designed to me et the market requirements for a simple and cost effective access controller. It is designed to achieve low cost as well as high security, convenience, and reliability. This user-friendly devic e is capable of storing up to 10,000 to 50,000 cardholders. Depending on the total number of cardholders, up to 10,000 to 50,000 events and alarms can be stored in the memory. (Th e sum of cardholder ID and Event Buffer cannot exceed 60,000).

2 reader ports can be connected with Proximity Readers or Proximity + PIN Readers and this reader can be operated as any combination of RF card / PIN, password. Independent 5 input ports can be connected with various devices such as Exit Buttons, Door Contact Sensors, PIR Sensors, Window Breakage Sensors and Fire Sensors to strengthen security. Optional Keypa d and LCD Display module can be used to set functions manually and program inputs and o utputs. Using RS232 or RS422 communication, a network system can be set up, consolidatin g up to 32 units. All setting values including ID numbers, Inputs/Outputs, Real Time Clock, Ti me Schedules and all Event Transaction Reports can be downloaded /uploaded from/to the host computer with software supporting a variety of reporting formats.

Star iCON100/ IDTECK iCON100SR can be installed and managed inside the security zone to prevent any thief. Experience a high level security access control system with Star iCON100/ I DTECK iCON100SR

FEATURES

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- Intelligent Multi Doors Access Control and Time and Attendance Management
- Huge Capacity of Memory and available to control it to 10,000~50,000 Users / 50,000~10,000 Event Buffers
- Network Communication via RS232 / RS422 / Internal TCP/IP (Optional)
- Cut off Check Function.
- Application Software: STARWATCH DUAL PRO I / II, STARWATCH STANDARD

iCON100	26bit Wiegand, 4 / 8 bit Burst for PIN
iCON100SR	34bit Wiegand, 4 / 8 bit Burst for PIN

SPECIFICATION

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Model		iCON100
CPU		8bit Microprocessor
Memory	Program Memory	128Kbyte Flash Memory
	Data Memory	1Mbyte Flash Memory
User		Users and Event Buffers Defined Available(Caution: The Sum of User ID and Event Buffer cannot exceed 60,000)
		10,000 ~ 50,000 Users(Default: 10,000)
Event Buffer		50,000 ~ 10,000 Event Buffers(Default: 50,000)
Power / Current		DC 12V / Max.200mA
Reader Port		2ea
Reader data Type		26bit Wiegand/ 34bit Wiegand (User Setting by DIP Switch) 4bit/8bit burst Type for Keypad Input
Communication		RS232 / RS422 (Max.32ch)
		TCP/IP (Internal LAN Module Required)
Baud Rate		9600bps (Default) / 4800bps, 19200bps, 38400bps, 57600bps and 115200bps (Selectable)
Input Port		5ea (Exit Button, Door Contact, AUX#1, AUX#2, AUX#3)
Output Port		2ea (FORM-C Relay Output (COM, NO, NC) / DC12V~18V, Rating Max.2A)
		2ea (TTL Output / DC5V, Rating Max.20mA)
LED Indicator		16 LED Indicators (Red, Green and Yellow)
Beeper		Piezo Buzzer

Operating Temperature	0 to +40C (+32 to +104F)
Operating Humidity	10% to 90% Relative Humidity Non-Condensing
Weight / Dimension (W x H x T)	170g (0.38lbs) / 137mm x 137mm x 18mm (5.4" x 5.4" x 0.75")
Options	
LCD	Character LCD (2 Lines x 16 Char) / 65.6 mm x 13.8 mm (65.5" x 0.55") Screen
Keypad	16 Key Numeric Keypad / Membrane
TCP/IP Module	IIM7100A

IDENTIFYING SUPPLIED PARTS

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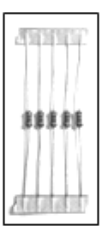
Please unpack and check the contents of the box.

(Optional accessories, if purchased, may be included in the package)

Main Unit
(1ea)

User's Manual
(1copy)

Diode
(2ea)



Register
(5ea)

PRODUCT OVERVIEW 6

1 . Functions

Stand-Alone Operation

Star iCON100/ IDTECK iCON100SR is capable of having 2 readers (1 Door Control). T he unit receives card ID numbers from the proximity readers and determines whether or not to unlock the door. When an input signal is entered, for example from a sensor activated or an exit button pressed, the controller generates and logs an appropriate r esponse by input signals. All events are stored into the memory buffers and sent to th e host computer. The access controller is a true stand-alone device that, in the event o f malfunction, will not affect to other units when used in conjunction with one anoth er.

Operation with Host Computer

All event transactions can be managed by the host computer. The data transmitted fr om the controller can be displayed and stored in the host PC.

Manage by PC

Star iCON100/ IDTECK iCON100SR is capable of saving status of Passer's access, Auxili ary input signal in internal memory. By the fixed communication protocol, saved data is sent to PC. Main PC processes store, generate result (Passer, Alarm Status) about re ceived data.

Anti-Pass-Back

Using an additional proximity reader for exiting, the Anti-Pass-Back mode can be set. Anti-pass-back mode prevents any entry or exit when the registered user did not prop

erly followed one entry and one exit by the Anti-pass-back rule. APB only allowed exit for the user once got into the door first and it doesn't allow any user trying twice entr y or twice exit.

Data Retention

All user information and event/alarm data are retained even in the event of Power Fail ure unless the memory or the device itself is damaged.

Keypad Registration

If Star iCON100/ IDTECK iCON100SR is not connected to host PC, the integrated keyp ad and LCD display module can also be used for the entire programming process man ually.

Input / Output

Star iCON100/ IDTECK iCON100SR has built-in 5 inputs and 4 outputs (2 relay output s and 2 TTL outputs) which can be used to manipulate a wide variety of controls.

Time Schedule Setup

You can program 10 time schedules and apply one time schedule to each user. Each t ime schedule has 8 different time zones from Monday to Sunday (7 time zones) and o ne holiday. Each time zone has 5 different time codes so you can program 5 different time codes to each day. Also you can program time schedule for individual inputs and outputs. Note that the time schedule for input is activated time code for input device so that the input is activated during the time code on this time schedule. Each time sc hedule is linked to one of holiday schedule and this linked holiday only validates to hol iday time code of the time schedule.

Holiday Schedule Setup

Excepting Sunday, you can program 32 holidays to one holiday schedule. Each holida y schedule is linked to one time schedule which has time code for holidays. So you ca n program all holidays to holiday schedule and the time code for holidays is program med to holiday time zone of time schedule.

Example:

A. Holiday schedule 01 linked to time schedule 01,

Holiday schedule 02 linked to time schedule 02

B. Holiday schedule 01 linked to time schedule 01,

Holiday schedule 01 linked to time schedule 02

Forced Door Open Alarm

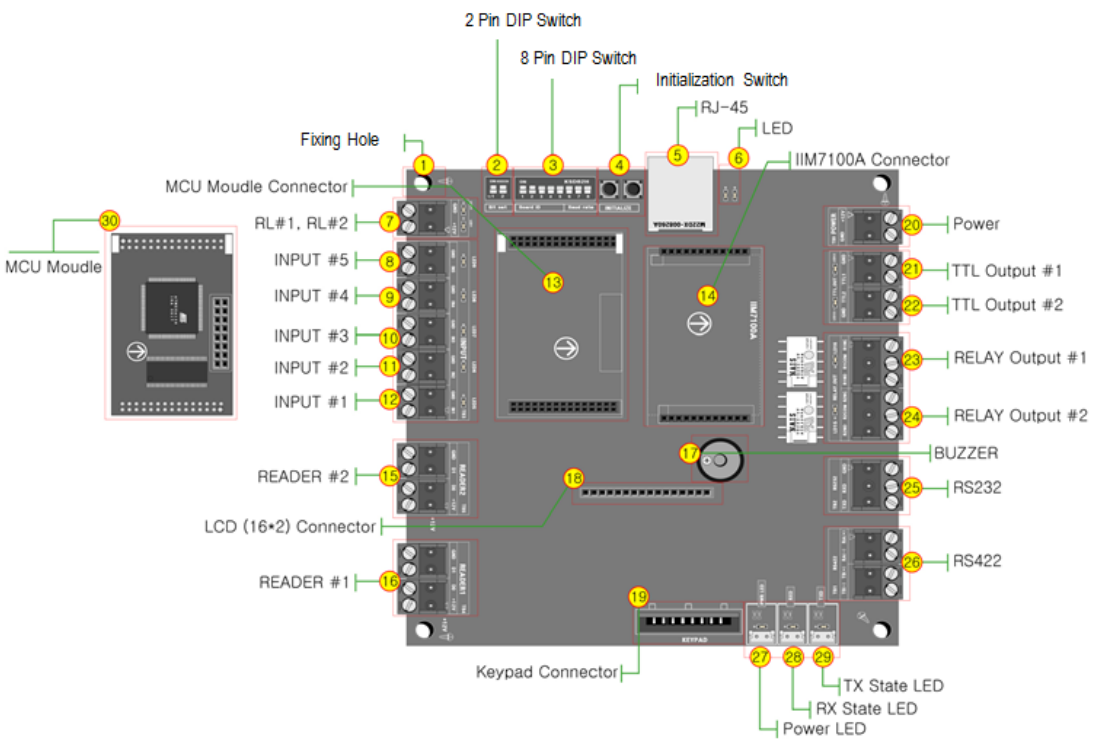
When door is opened by force, door contact sensor is activated then forced door ope n alarm will be generated until the door is closed. For this application, you have to ins

tall door contact sensor to the door and you have to properly set door contact time an d outputs to alarm devices.

Duress Alarm

In case of duress, enter the 2 digits Duress Password and <ENT> key before the norma l access process then door will be opened as normal but the duress alarm is also gener ated at the same time and the duress alarm output will be activated to TTL output an d alarm event will be sent to the host PC.

2 Board Layout



1 Fixing Hole

These holes are to attach the iCON100 board to the Nema case.

2 2Pin DIP Switches

These switches are to set the type of reader input (26bit wiegand for iCON100 34bit wiegand for iCON100 SR).

3 8PIN DIP Switches

These switches are to set board ID and baud rate to communicate with PC. (#1~#5 DI P switches for board ID, #6~#8 DIP switches for baud rate)

4 Initialization Switches

These switches are to initialize user data in the memory. To be default setting by Initia lization, press the two switches simultaneously then keep pressing more than 2 secon ds to initialize properly.

5 RJ45 LAN port

This port is to connect RJ45 LAN cable for communicating with PC.

6 LED

This is to show the status of LAN communication

7 RL #1 ~ #2 Ports

These ports are connected to control signal line of buzzer and LED of the reader. It is used to show operating status for the reader during operating RL#1 and RL#2.

8 Input #5 Port

This is the Input #5 port. LED is turned on when Input signal is perceived.

9 Input #4 Port

This is the Input #4 port. LED is turned on when Input signal is perceived.

10 Input #3 Port

This is the Input #3 port. LED is turned on when Input signal is perceived,

11 Input #2 Port

This is the Input #2 port. LED is turned on when Input signal is perceived.

12 Input #1 Port

This is the Input #1 port. LED is turned on when Input signal is perceived.

13 MCU Module connecter

It's the terminal for MCU module connection.

14 IIM7100A Connector

It's the terminal for IIM7100A(Optional) connection.

15 Reader #2 Port

This is the port to connect reader #2.

16 Reader #1 Port

This is the port to connect reader #1.

17 Buzzer

This is an internal buzzer, which makes beep sounds when the keypad is pressed from the optional keypad.

18 LCD Display Connector

This connector is to connect optional LCD display. It can be used with optional keypad for manual setup and to check the device's set-up status.

19 Keypad Connector

This connector is to connect optional keypad. It can be used with optional LCD display for manual setup and to check the device's set-up status.

20 Main Power Port

This is main power port and iCON100 is working at DC12V, maximum of 200mA curr ent. (It is applied only when door lock devices, alarms, sensors and reader is not conn ected.)

21 TTL #1

This is the TTL #1 output port.

22 TTL #2

This is TTL #2 output port.

23 Relay #1

This is the relay #1 output port.

24 Relay #2

This is the relay #2 output port.

25 RS-232 Serial Communication Port

This is the RS232 communication port to directly connect this board to PC in short dis tance.

26 RS-422 Serial Communication Port

This is the RS422 communication port to directly connect this board to PC in long dist ance.

Maximum of 32 boards can be communicated with each other by Multi Drop.

You need RS422/RS232 converter to connect RS422 port to PC.

27 Power Status LED

This is the LED to show the status of power supply.

28 RX Status LED

This is the LED to show status of reception during communication

29 TX Status LED

This is the LED to show status of transmission during communication

30 MCU Module

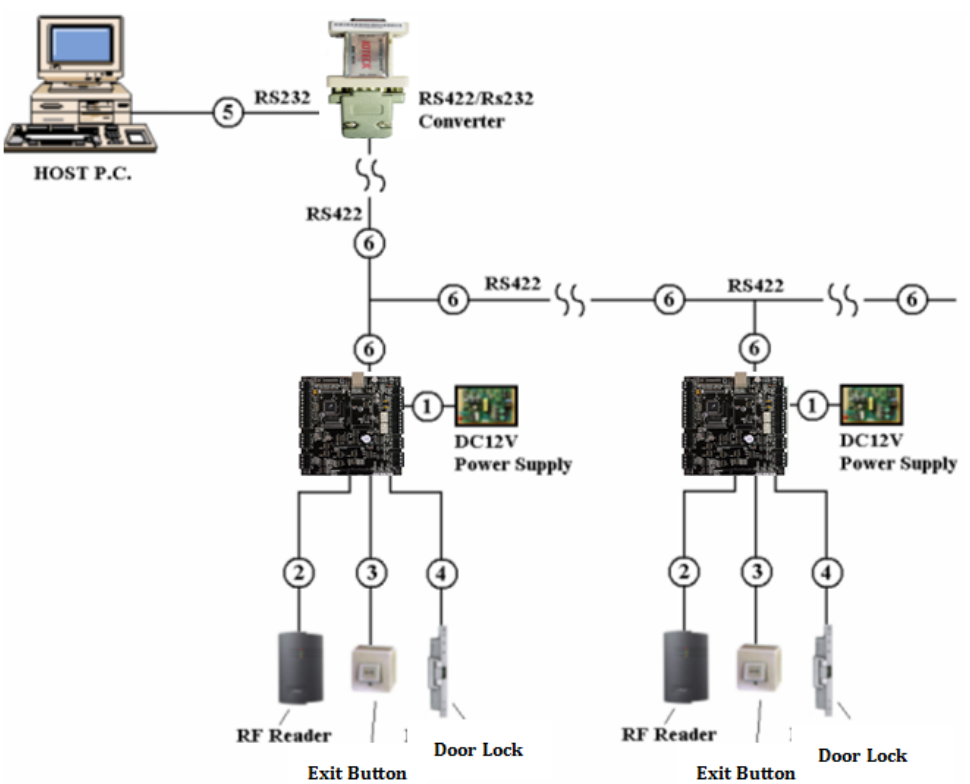
This is the optional MCU module.

INSTALLATION TIPS & CHECK POINT 7

1 Check Points before Installation

1.1 Selection of Cable

System installation cabling will be configured as follow.



1.2 Recommended Cable Type and Permissible Length of Cable

Reference	Description	Cable Specification	Maximum Distance
①	Power (DC12V) DC Power -> iCON100	Belden #9409, 18 AWG 2 conductor, unshielded	3m
②*[1]	Reader (Power and Data) Extra Reader -> iCON100	Belden #9512, 22 AWG 4 conductor, shielded	150m
		Belden #9514, 22 AWG 8 conductor, shielded	
③	Door Contact Exit Button Sensor Input Input -> iCON100	Belden #9512, 22 AWG 4 conductor, shielded	300m
		Belden #9514, 22 AWG 8 conductor, shielded	
④	Door Lock, Alarm Device Lock (Alarm) -> iCON100	Belden #9409, 18AWG 2 conductor, unshielded	300m
⑤	RS232 Cable Converter -> Host P.C.	Belden #9829, 24 AWG 2-twisted pair, shielded	15m
⑥	RS485 Cable iCON100 -> iCON100 iCON100 -> Converter	Belden #9829, 24 AWG 2-twisted pair, shielded	1,200m
	RS422 Cable iCON100 -> iCON100 iCON100 -> Converter	Belden #9830, 24 AWG 3-twisted pair, shielded	

1 Requires thicker wire if you connect the reader with high current consumption.

2 Check Points during Installation

2.1 Termination Resistor

Termination resistors are used to match impedance of the network to the impedance of the transmission line being used. When impedance is mismatched, the transmitted signal is not completely absorbed by the receiver and a portion of signal is reflected back into the transmi ssion line.

The decision whether or not to use termination resistors should be based on the cable lengt h and data rate used by the communication system.

For example, if you use 9,600 baud rate and 1,200m length of cable, the propagation veloci ty of cable is 0.66 x speed of light (This value is specified by the cable manufacturer), if we a ssume the reflections will damp out in three round trip up and down the cable length, the tr ansmitted signal will stabilize 18.6us after the leading edge of a bit. Since the data bit is cap tured in the middle of the bit which is approximately 52us after the leading edge of a bit. Th e reflection stabilizing time 18.6us is much before the center of the bit therefore the termin ation resistors are not required.

However, if you install the cable to maximum length, the impedance of cable and network is mismatched and the transmitted signal is overlapped by the reflected signal. In this case, it is recommended to add termination resistors to the end of the receiver lines. A 120Ω resistor c an be used for termination resistor in parallel between the receiver lines “A” and “B” for 4 wir es RS422 system. A termination resistor of less than 90Ω should not be used and no more th an 2 terminations should be used in one networking system.

2.2 How to Connect Termination Resistors

Termination Resistors for 4 Wire RS485 Communication System

2.3 Grounding System for Communication Cable

We recommend to using proper grounding system on the communication cable. The best m ethod for grounding system is to put the shield wire of the communication cable to the 1st c lass earth grounding; however it is not so easy to bring the earth ground to the communicat ion cable and also the installation cost is raised.

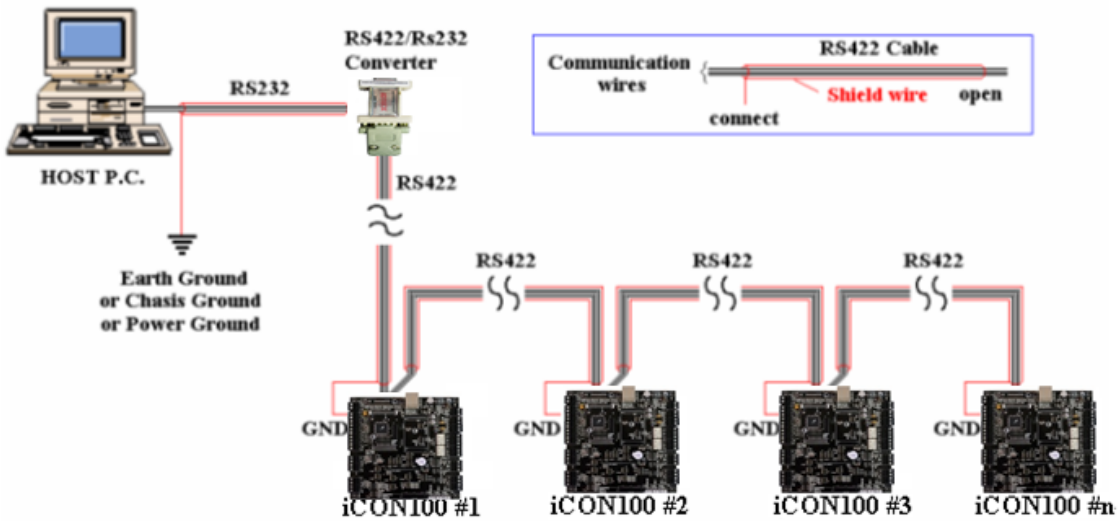
There will be three grounding point where you can find during installation;

1. Earth Ground
2. Chassis Ground
3. Power Ground

The most important point for grounding system is not to connect both ends of shield wires t o the grounding system; in this case there will be a current flow through the shield wire whe n the voltage level of both ends of shield wire is not equal and this current flow will create n oise and interfere to communications.

For the good grounding, we recommend to connecting Only one end of shield wire of com munication cable to grounding system; If you find earth ground nearby, then connect one e nd of shield wire to earth ground; If you do not have earth ground nearby, then find chassis ground and connect one end of shield wire to chassis ground; If you do not find both earth ground and chassis ground, then connect one end of shield wire to power ground. (GND of iCON100)

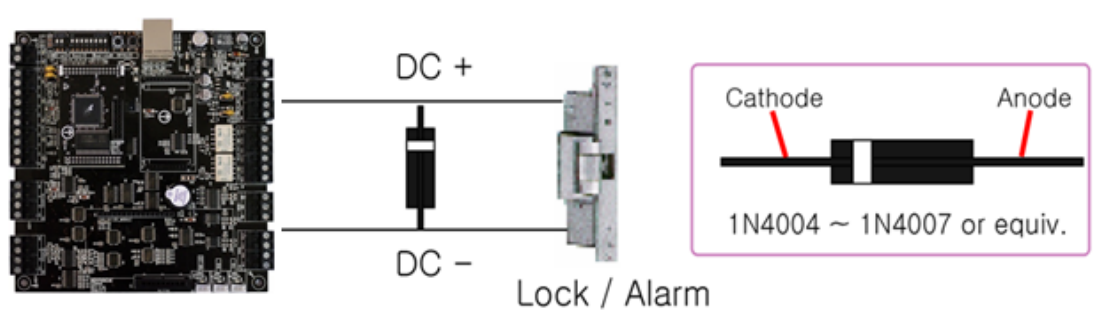
Note that if the chassis ground is not properly connected to the earth and floated from the ground level, then grounding to the chassis ground will give the worst communication; in th is case we recommend to using power ground instead of chassis ground.



2.4 Reverse Diode Connection

If you connect an inductor (Door Locks or Alarm device) to the output relays, there will be a high surge voltage created while the inductor is turning on and off. To protect this problem, connect the reverse diode as the figure below.

> It is strongly recommended to add a reverse diode between the inductor coils to a bsorb this surge voltage. If you do not connect a reverse diode, the surge voltage will transfer and damage the electronic circuit of the controller. 1N4004 - 1N4007 or equality efficiency diode is included in gift box.



INSTALLATION OF THE PRODUCT 8

1 Dimension (Unit: inch (mm))

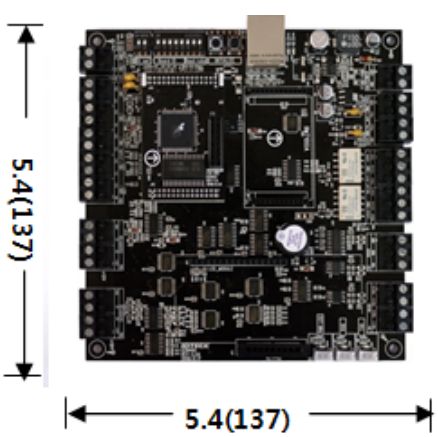


Figure: iCON100 Dimension

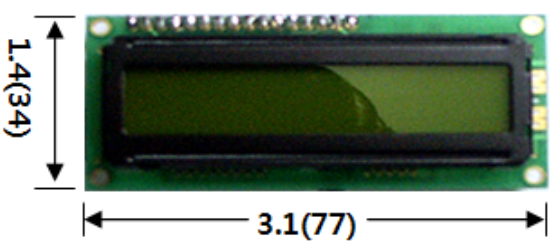
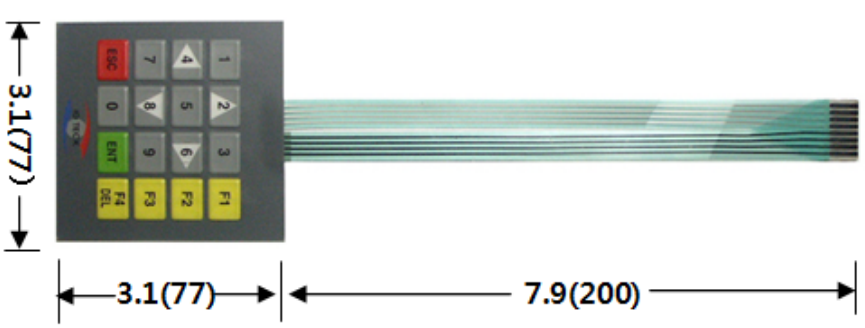


Figure: LCD Module Dimension



2 System Initialization of iCON100

Initialization must be performed before first installation of iCON100. Press down the two init ialization switches simultaneously then keep pressing more than 2 seconds. Once buzzer sou nd is generated, release the switches then initialization is done and system restarts automati cally.

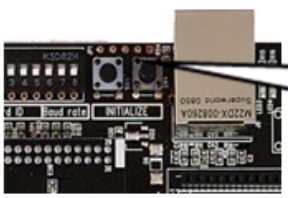


Figure: Switches Location

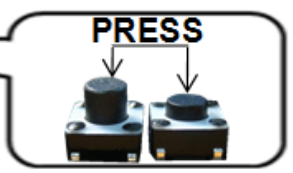


Figure: Magnification of Switches

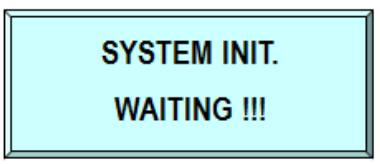


Figure: LCD Display

If you initialize the iCON100, all data such as user ID, baud rate, door setting, time schedule and event information stored in the controller will be cleared and the def ault values (factory setting values) will be reloaded. Therefore, the Initialization sho uld be performed by authorized person only. It is recommended to upload all even ts data before initialization in case you use events data for time and attendance pu rpose.

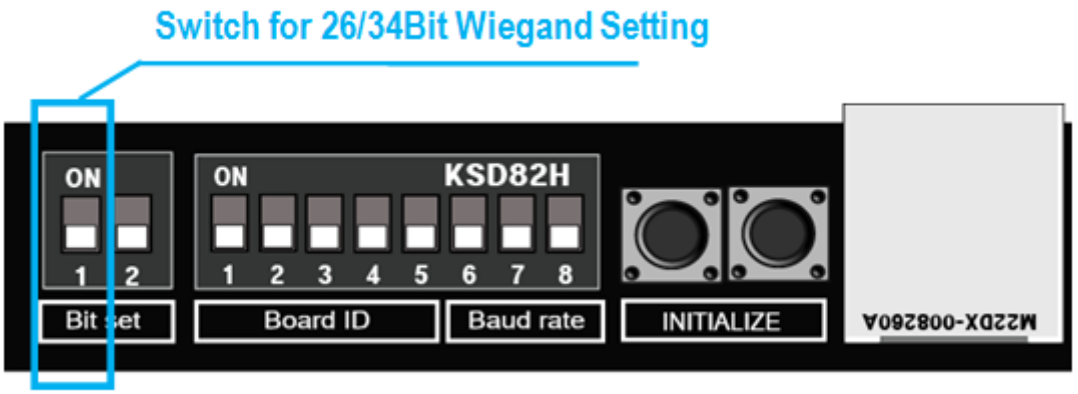
3 Device Setting

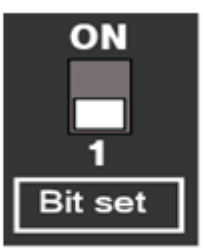
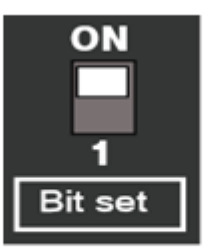
3.1 26Bit / 34Bit Wiegand Setting

Select the data format (26bit/34bit) input to reader port. There is a switch for bit setting on the upper left side of iCON100 board. The switch is set to 'OFF' position as the default (26Bit Wiegand setting). If the switch is set to 'ON' position as shown below table, the system is set to 34Bit Wiegand.

- 26bit Wiegand type format: Using 26bit Wiegand format reader (RF10, 20, 30, 70 RFK1 01.)
- 34bit Wiegand type format: Using 34bit Wiegand format reader (SR10, 20, 30 SRK101)

If DIP switch turns from ‘ON’ to ‘OFF’ or ‘OFF’ to ‘ON’, buzzer is generated. If the buzzer does n’t stop after the DIP switch is changed, it means ID information or event is stored in the me mory. In this case, delete existing ID and event by initialization then you can change data typ e of reader port.

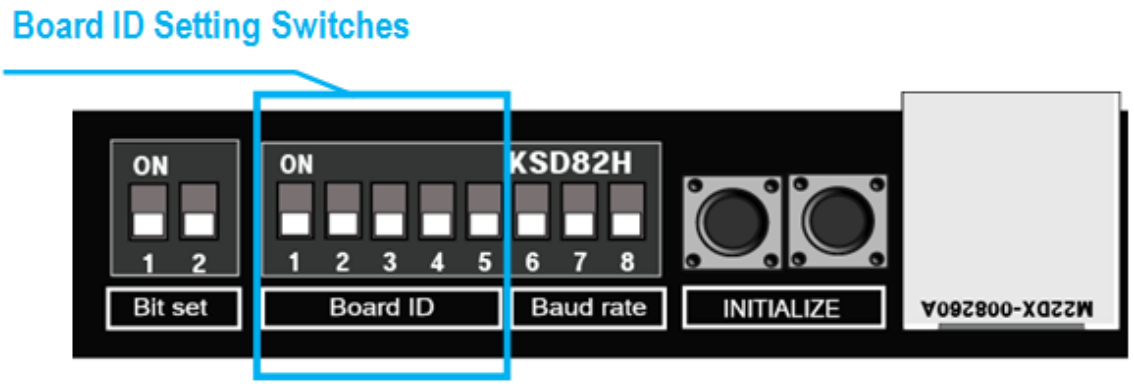


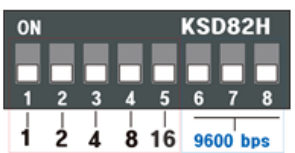
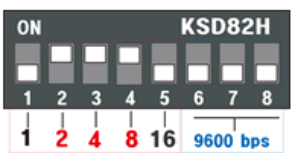
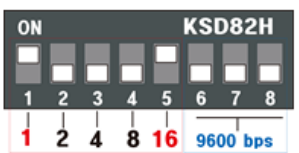
	
26Bit Wiegand (Default)	34Bit Wiegand

3.2 Board ID(Communication ID) Setting

Board ID is the unique address to communicate with PC. There is 5 channel DIP switch on th e upper left side of the iCON100 board for board ID setting. Each DIP switch has assigned a ddress value and the board ID is calculated by the sum value of each switch set to “ON” posit ion. Board ID can be set from ‘0’ to ‘31’. The default value of board ID is’0’ (5 channel DIP swi tch is set to ‘OFF’ position). Refer to the example below.

⚠ Each Board ID on the same communication loop must be not duplicated. If the sa me Board IDs are on the same loop, the communication error will occur.



		
Communication ID= 0 (Default)	Communication ID=14 (2+4+8 = 14)	Communication= ID (1+16 = 17)

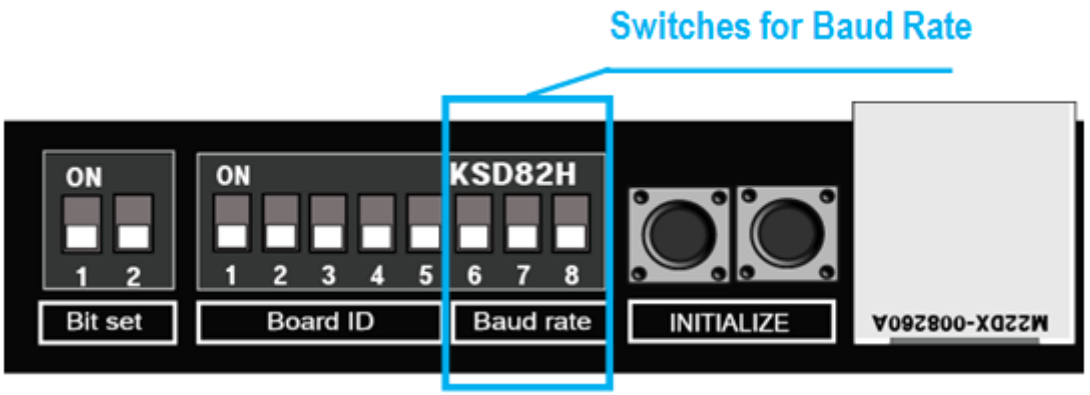
3.3 Baud Rate Setting

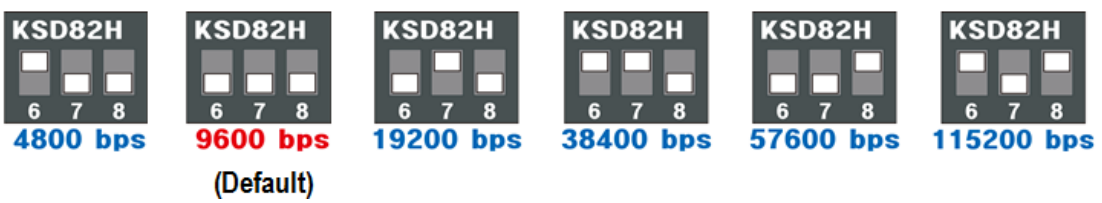
Baud rate is the speed rate during communication with host PC. The 3 DIP switches are assi gned for baud rate setting on the upper left side of the iCON100 board. You can select one of 4800bps, 9600bps, 19200bps, 38400bps, 57600bps and 115200bps.You have to set ap plicable baud rate according to communication environment, and the connected devices on one loop must have the same baud rate. If DIP switch turns from 'ON' to 'OFF' or 'OFF' to 'ON' , buzzer is generated. Also under TCP/IP communication, the baud rate has to be matched with TCP/IP module.

⚠ Baud rate must be the same as the values set by application software (Starwatch d ual pro I, II) and the baud rate of all products on the same loop must be same.

⚠ If you use ver. 6.0 and lower with ver. A1.0 and higher together, set the baud rate to 9600bps only. When you only use ver. A.1.0 and higher, you can set other baud rate including 9600bps.

If you set high baud rate in bad environment for communication, communication may not properly operate. In this case, let baud rate lower.





4 Wiring

4.1 Power

- Connect (+) wire of DC 12V power to +12V terminal
- Connect GND (-) wire of DC 12V power to GND terminal

4.2 Input Connections

Exit Button Connection (Input #1)

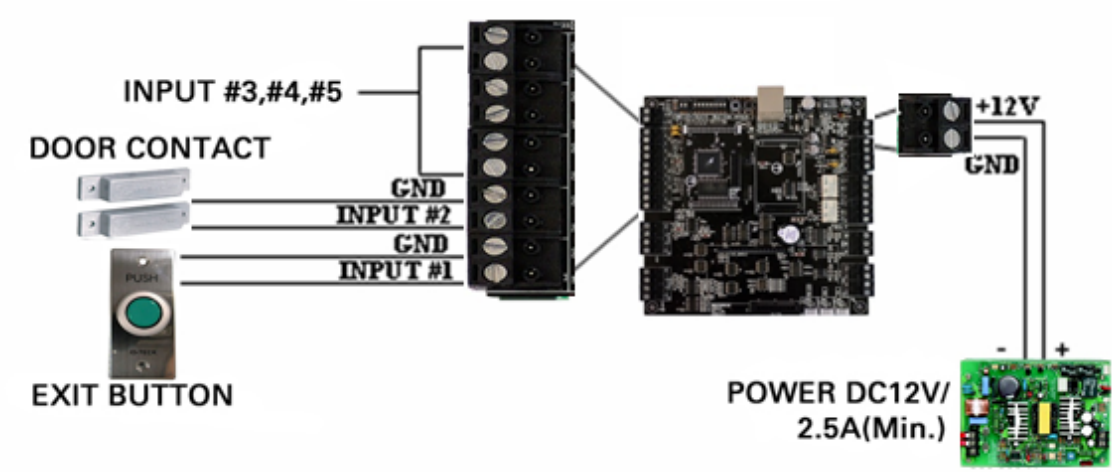
- Connect one wire from an Exit Button to Input #1
- Connect the other wire from the Exit Button to the GND

Door Contact Sensor Connection (Input #2)

- Connect one wire from a Door Contact Sensor to Input #2
- Connect the other wire from the Door Contact Sensor to GND

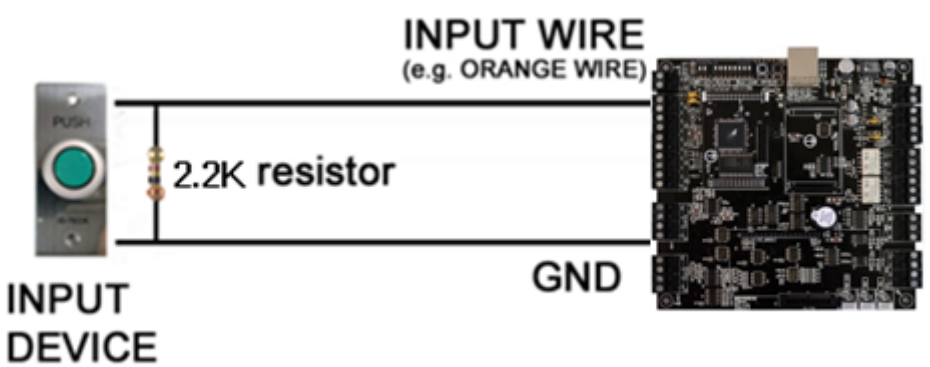
Auxiliary Input Connection (Applied to Input #3, Input #4 and Input #5)

- Connect one wire from an Auxiliary Input Device to one of the Input #3, #4 and #5.
- Connect the other wire from the Auxiliary Input Device to GND



2.2K Resistance Connection for 'Cut Off Check'

To use the 'Cut Off Check' function, you have to connect 2.2K resistance between Input wire (ex. Orange) and GND. Firstly you choose to use 'Cut Off Check'. Follow the process as [F2 SETUP MENU] -〉"5. IN/OUT DEFINE" 身 "21.CUT OFF CHECK". For setting of output, follow the process as [F2 SETUP MENU]-〉"5. IN/OUT DEFINE" 身 "18. CUT OFF ALARM".



4.3 Output Connections

Door Lock (Power Fail Safe) Connection (Relay #1)

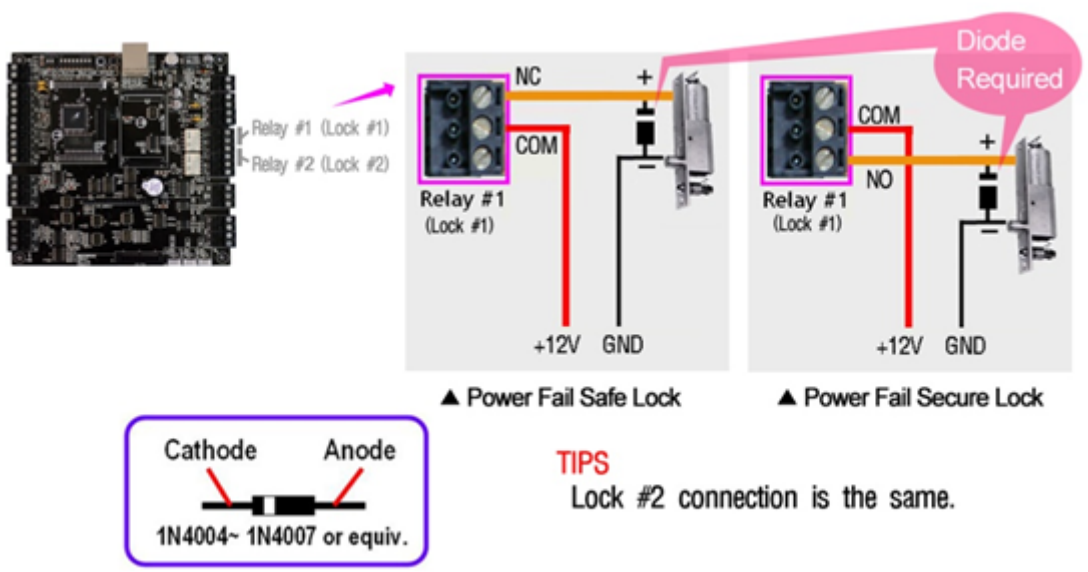
- Connect COM port of Relay #1 to DC+12V
- Connect NC port of Relay #1 to (+) wire of door lock device
- Connect GND port to (-) wire of door lock devices

Door Lock (Power Fail Secure) Connection (Relay #1)

- Connect COM port of Relay #1 to DC+12V
- Connect NO port of Relay #1 to (+) wire of door lock device
- Connect GND port to (-) wire of door lock devices

Alarm Device Connection (Relay #2)

- Connect COM port of Relay #2 to DC+12V
- Connect NO port of Relay #2 to (+) wire of Alarm devices
- Connect GND port to (-) wire of Alarm devices



You need to connect the diode (1N4001 ~ 1N4007 or Similar) when connecting e xternal devices to relay.

4.4 Reader Connections

Proximity Reader Connection

- Connect (+) wire of the Proximity Reader to DC+12V of Reader port
- Connect (-) wire of the Proximity Reader to GND of Reader port
- Connect Data-0 wire of the Proximity Reader to D0 of Reader Port
- Connect Data-1 wire of the Proximity Reader to D1 of Reader Port

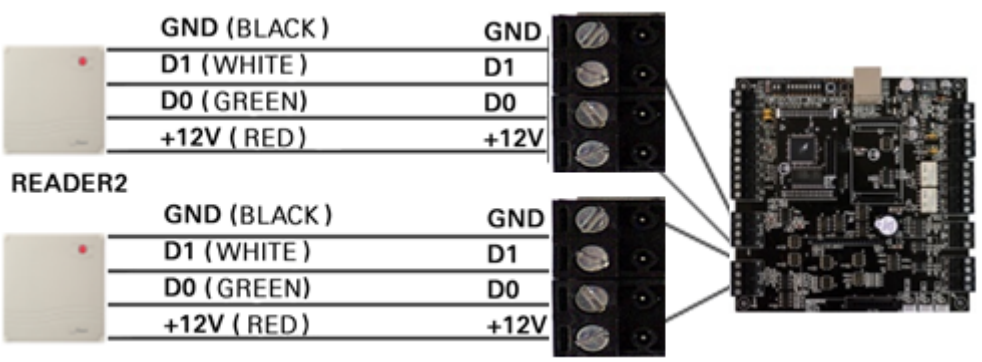
Compatible Readers:

iCON100

Standard 26bit Wiegand Format Proximity Readers, Standard 26bit Wiegand + 8bit Burst Format Proximity and Keypad Readers.

iCON100SR

Standard 34bit Wiegand Format Proximity Readers, Standard 34bit Wiegand + 8bit Burst Format Proximity and Keypad Readers.



4.5 Optional Accessory Connections

Keypad and LCD Display Connection

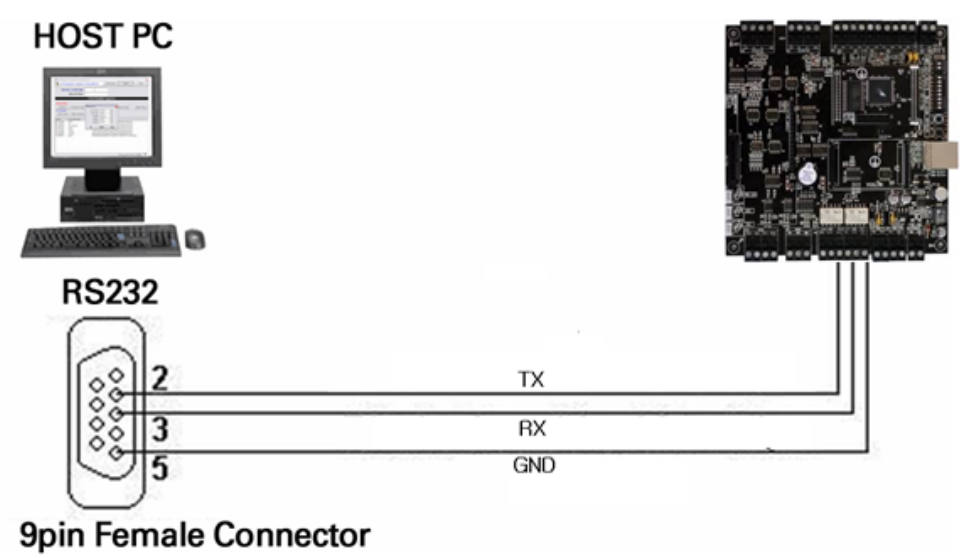
Connect the Keypad and LCD Display to the Keypad and LCD ports as shown on below.

COMMUNICATION 9

1 RS232 Communication Port Connection

A 9-pin connector (Serial communication connector, female) is required to connect the iCO N100 to a host computer via RS232 communication. Please follow the instructions.

- Connect RS232-TX port of iCON100 to the pin #2(RX) of the 9-pin connector.
- Connect RS232-RX port of iCON100 to the pin #3(TX) of the 9-pin connector.
- Connect RS232-GND of iCON100 to the pin #5 of the 9-pin connector.
- Plug in the 9-pin connector to COM1 or COM2 Port of the host PC.
- Install and run iCON100 Application Software.



2 RS-422 Communication Port Connection

2.1 RS-422 Connection (Single iCON100 Connection)

An RS422/RS232 converter is required to use RS422 communication between the iCON100 and the PC.

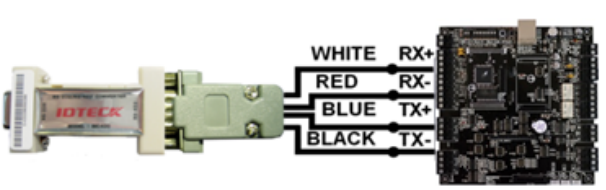
> The INC400 converter is recommended for stable communication when the distan ce between the converter and the device is too far.

Please follow the instructions below;

- Connect RS422-TX (+) (Gray wire) of iCON100 to RS422-RX (+) port of converter.
- Connect RS422-TX (-) (Yellow wire) of iCON100 to RS422-RX (-) port of converter.
- Connect RS422-RX (+) (Brown wire) of iCON100 to RS422-TX (+) port of converter.
- Connect RS422-RX (-) (Blue wire) of iCON100 to RS422-TX (-) port of converter.
- Plug in the RS232 9PIN connector of the converter to the COM1 or COM2 port of the P C.
- Install and run iCON100 Application Software.

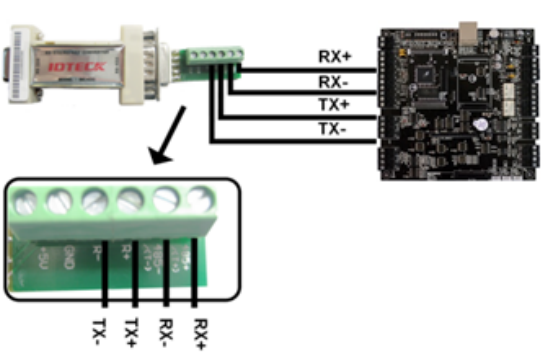
< A Type >

INC400	Unit(RS422)
WHITE	RX+
RED	RX-
BLUE	TX+
BLACK	TX-



< B Type >

INC400	Unit(RS422)
485+/(T+)	RX+
485-/(T-)	RX-
R+	TX+
R-	TX-

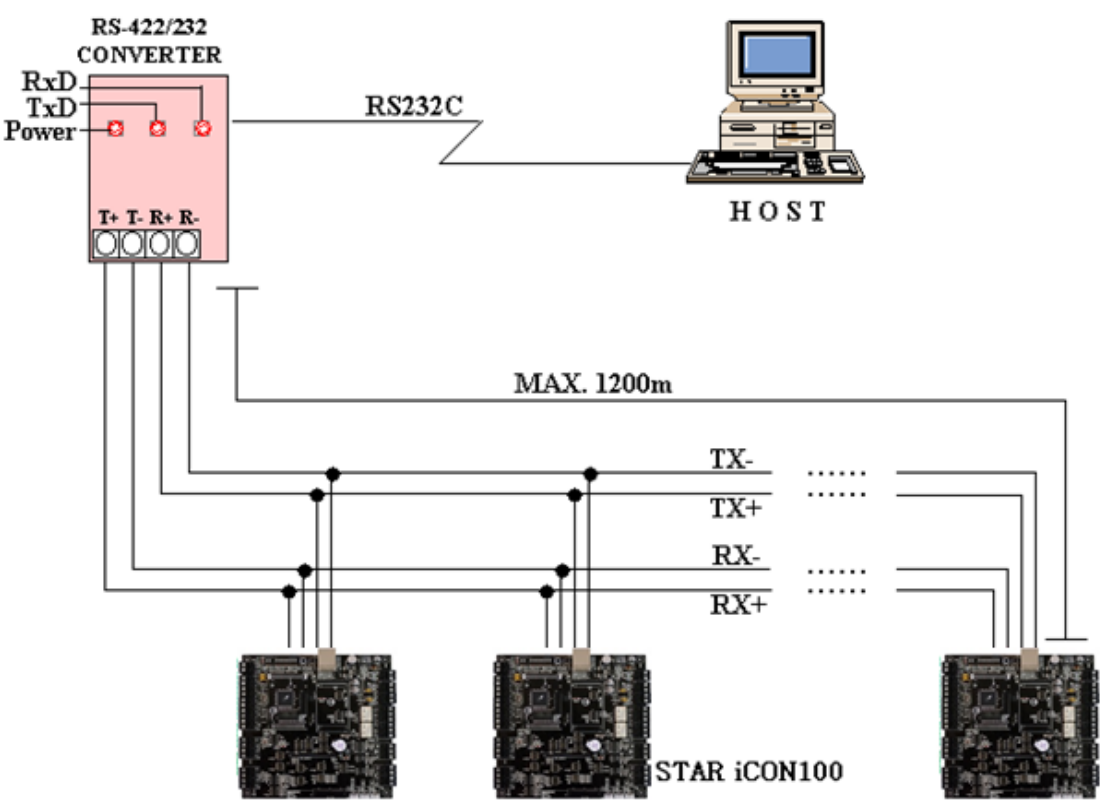


2.2 RS-422 Connection (Multiple iCON100 Connections)

RS422/RS232 converter is required to use RS422 communication between multiple iCON10 0s and a host computer. Please follow the following instructions.

- Connect RS422-TX(-) of one iCON100 to RS422-TX(-) of another iCON100.
- Connect RS422-TX(+) of one iCON100 to RS422-TX(+) of another iCON100.
- Connect RS422-RX(-) of one iCON100 to RS422-RX(-) of another iCON100.
- Connect RS422-RX(+) of one iCON100 to RS422-RX(+) of another iCON100.

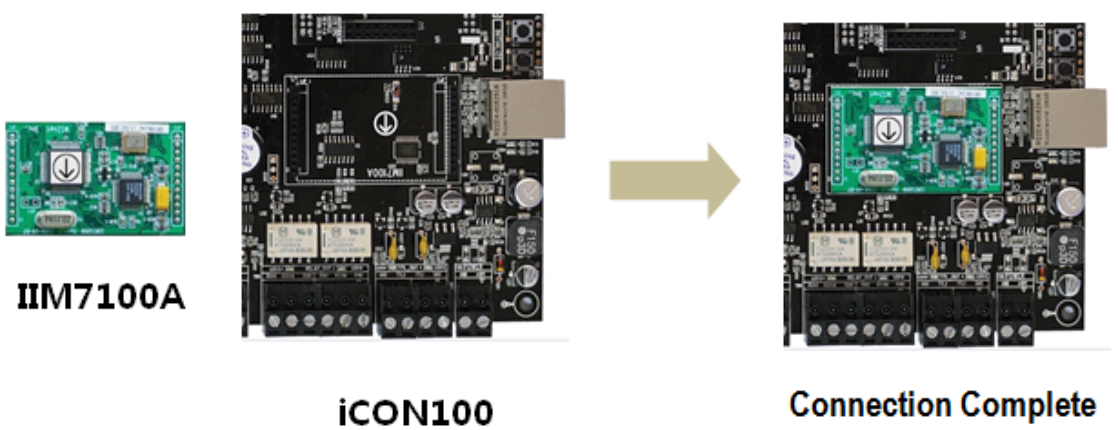
- Second, you have to connect one of RS422 port of iCON100 to RS422/RS232 converter.
  - Connect RS422-TX(-) of the one iCON100 to RX(-) port of the converter.
  - Connect RS422-TX(+) of the one iCON100 to RX(+) port of the converter.
  - Connect RS422-RX(-) of the one iCON100 to TX(-) port of the converter.
  - Connect RS422-RX(+) of the one iCON100 to TX(+) port of the converter.
  - Plug in the RS232 9-pin connector of the converter to the COM1 or COM2 Port of t he PC.
  - Install and run iCON100 Application Software.



3 TCP/IP Communication Port Connection (Optional)

3.1 How to Connect TCP/IP Module to iCON100

1. As below figure, Insert TCP/IP module (IIM7100A) to iCON100 in right direction. Direction of arrows have to be matched between iCON100 (⇩) and TCP/IP (⇩) module.



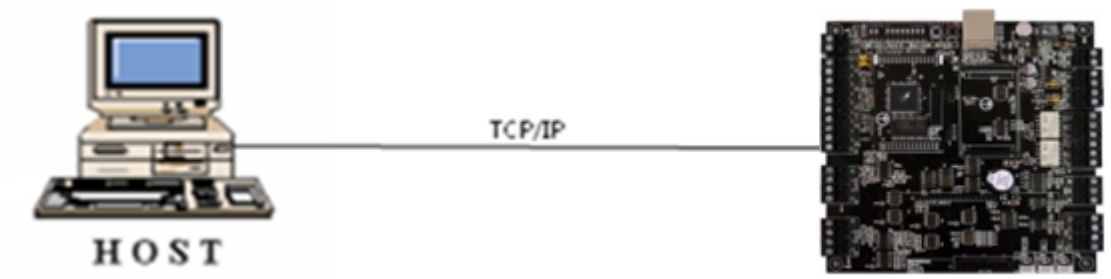
2. As below figure, connect LAN cable to TCP/IP RJ-45 jack.

3.2 How to wire TCP/IP Communication

Optional TCP/IP module is required for TCP/IP communication between the iCON100 and the PC. Please follow the instructions below;

1. Connect the LAN cable of the network system to the RJ45 jack of the iCON100.

2. Set the board ID of the iCON100.
3. Install and run the iCON100 application software.



4 TCP/IP Converter (External Version)

When using the TCP/IP converter for communication, select either RS232 or RS422.

INTERFACE	iCON100	ILAN422	LINE COLOR
RS232	TX (CON2)	RX (RS232 DSUB9)	BLACK+WHITE
	RX (CON2)	TX (RS232 DSUB9)	RED + WHITE
	GND(CON2)	GND	BLACK
RS422	TX+ (CON3)	RX+ (RS422 CONNECTOR)	GRAY
	TX- (CON3)	RX- (RS422 CONNECTOR)	YELLOW
	RX+ (CON3)	TX+ (RS422 CONNECTOR)	BROWN
	RX- (CON3)	TX- (RS422 CONNECTOR)	BLUE

INITIAL SETUP 10

1 Initialization of iCON100

Initialization is needed before initial installation or when any function is not operated properl y.

For initialization, press 2 initialization switches simultaneously then keep pressing more than 2 seconds. Once buzzer sound is generated, release 2 switches then initialization is done an d system restart automatically. After all initialization process is completed, the system will be operating in the normal mode and the LCD will display “iCON100 [F1], MM/DD hh : mm : ss” .

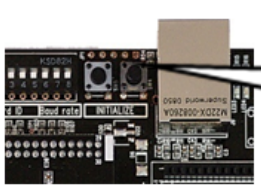


Figure: Switch Location

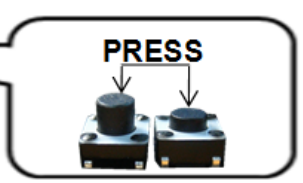


Figure: Magnification of Switch

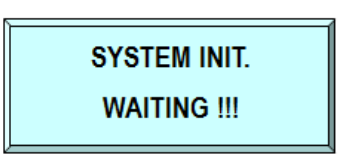


Figure: LCD Display

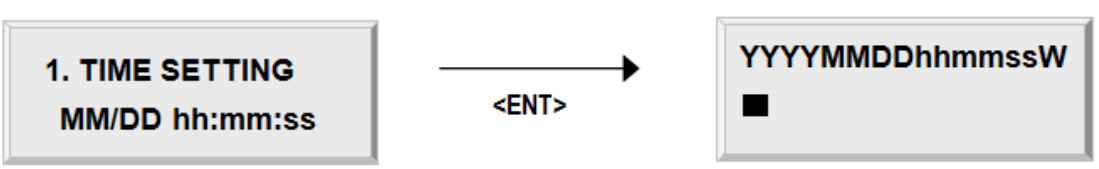
2 Entering Setup Mode

To setup or to change the iCON100 settings, you have to enter the Setup Mode first. To do so, enter the Master ID (default=00000000)* and press the <ENT> key. There are 4 main Set up menus and you automatically get into “SETUP MENU F1” first. You can move to other Set up menus by pressing the <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”. There are setting items i n the main Setup Menu and you can scroll up or down the menu by pressing the <4> or <6> key. If you press the <ESC> key then the iCON100 will exit the Setup Mode and return to nor mal operation in Reader Mode.

*The default Master ID for the iCON100SR is ‘0000000000’ (Press the <0> key 10 ti mes)

3 Time / Date Setting

After you enter the Setup Mode, you can see the following screen with the current date and time. To change the time / date setting, press <ENT>, then enter 15 Digits in the YYYYMMD DhhmmssW format, and then enter <ENT> again to confirm.



For the day of the week (W), 1 : Sun, 2 : Mon, 3 : Tue, 4 : Wed, 5 : Thu, 6 : Fri, 7 : Sat.
e.g. To express August 24, 2009, 13:30:15, Monday, enter 200908241330152.

4 Setting Maximum Number of Cardholder IDs

You can set the maximum number of cardholder IDs that can be registered on your iCON100. By default, the iCON100 is set to store up to 10,000 cardholders and 50,000 events and you can adjust this setting to increase the cardholder capacity at the expense of event memory.

To change the ID memory setting, enter the “Setup Mode” (Refer to 10.2 Entering setup mode), press <F3>, then press <6> 4 times until you can see “5.MAX USER SETUP” on the LCD. (See figure 1.) Once the “5.MAX USER SETUP” item appears on the LCD, press <ENT>, and press <4> or <6> to select “10000/50000”, “20000/40000”, “30000/30000”, “40000/20000” or “50000/10000” (No. of IDs / No. of events), and then press <ENT> again to confirm.

Prior to changing the maximum number of cardholders, you must clear the event data from the memory. Because entering the Setup Mode itself generates an event, you must always initialize the event memory prior to changing the maximum ID number setting. For additional information on how to intialize the event memory.(Refer to 12.1.9 Event clear). If you attempt to change the setting with some event data still in the memory, the LCD will display “EVENT MEMORY NOT EMPTY” error message. (See figure 2.)

If you attempt to reduce the ID memory size to a value lower than the current number of IDs stored in the memory, the LCD will display the “ID TOTAL COUNT WRONG” error message. (See figure 3.) If this is the case, please clear the card data from the memory. For additional information on how to initialize the card memory (Refer to 12.1.8 All ID clear.)

Figure 1.

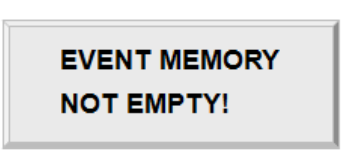


Figure 2.

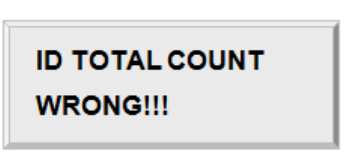


Figure 3.

5 Registering Cardholder IDs

To add new cardholder IDs to the iCON100, enter the “Setup Mode”, and press 〈F3〉. Once t he “1.REGISTRATION” item appears on the LCD, press 〈ENT〉 to begin the ID registration pro cess.

For detailed information on the ID registration process, please refer to “12.3.1 REGISTRATIO N”.

OPERATION 11

1 Normal Operation

Power On

When the power is supplied to iCON100, the red LED #14 is turned on.

Registered Card Reading

When a registered card (or PIN) is read, the door (Relay #1) will open for 3 seconds (D efaults) with the “LED #16” on.

Exit Button

To request for exiting from the inside, an Exit Button (Or External Reader) can be use d.

The Door (Relay #1) will open for 3 seconds (Defaults) with the blue LED (LED #5) on.

Alarms (Unregistered / Password / Time Schedule / Door error)

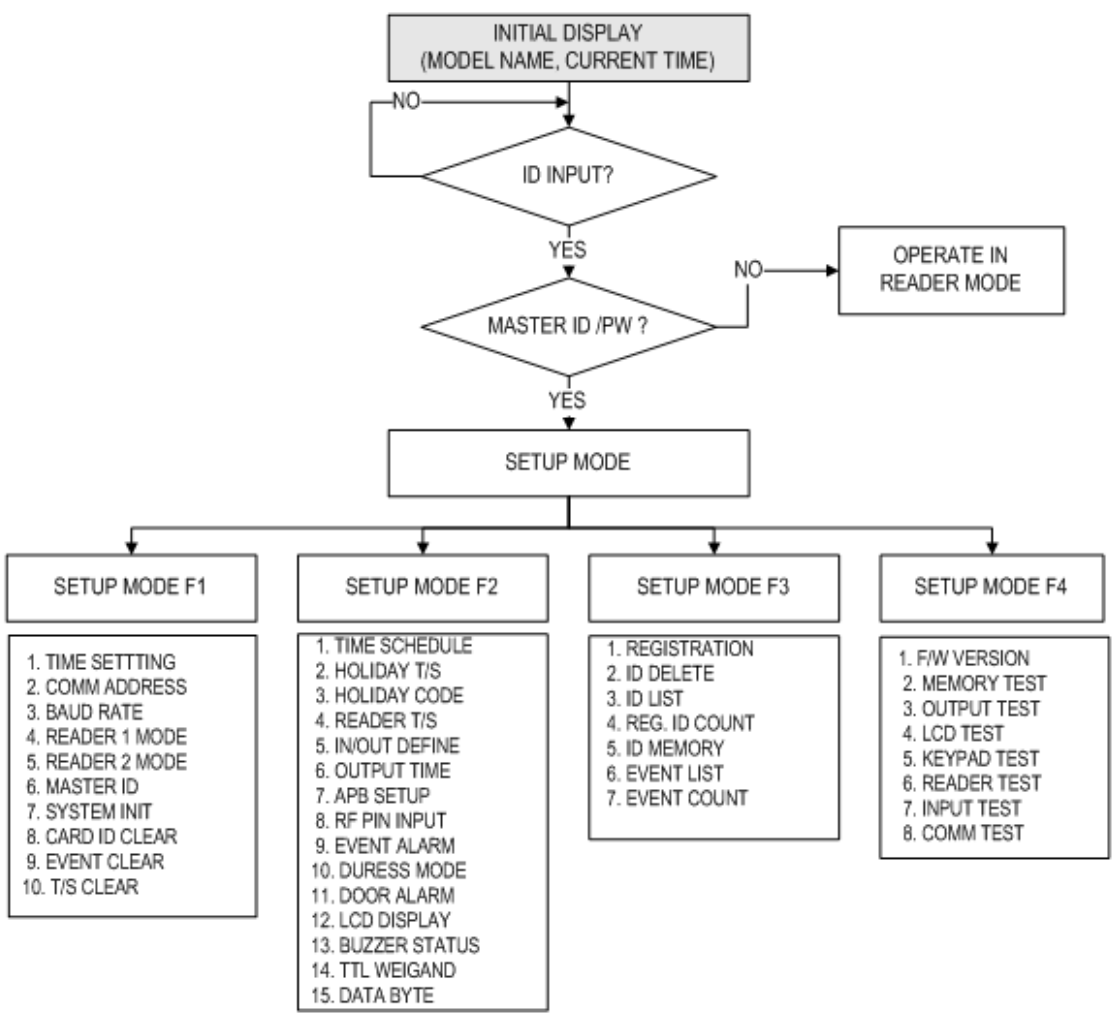
When an unregistered card is read, wrong password is input, over the Time Schedule, and access wrong door, the access is denied and the alarm (Relay #2) will be activate d for 3 seconds (Defaults) with “LED #15” on.

2 Default Setting

When you operate the iCON100 first time or you initialize the iCON100, the controller will s et all values to default setting values (Factory Settings). You can change the settings for desi red application. Please refer to the “APPENDIX” section at the back of this manual for the de fault setting values.

SETTING CHANGES

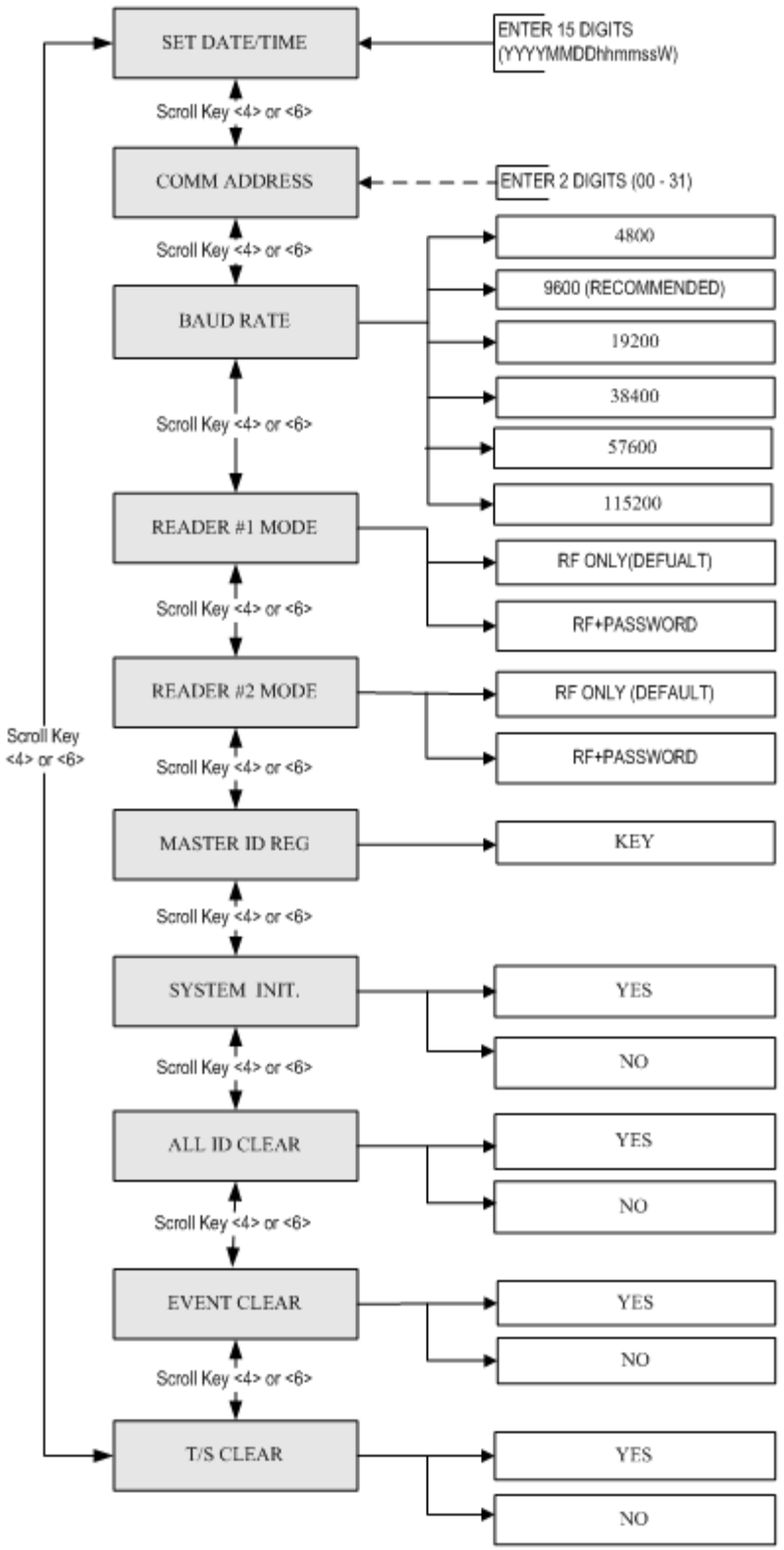
12



To setup or to change the iCON100 settings, you have to enter the setup mode firs t. To do so, enter the Master ID (Default=00000000)* [1]and press the <ENT> key. T here are 4 main Setup menus and you automatically get into “SETUP MENU F1” firs t. You can move to other setup menus by pressing the <F1> key for “SETUP MENU F1”, <F2> key for “SETUP MENU F2”, <F3> key for “SETUP MENU F3” and <F4> key f or “SETUP MENU F4”. There are setting items in the main setup menu and you can scroll up or down the menu by pressing the <4> or <6> key. If you press the <ESC> key then the iCON100 will exit the Setup Mode and return to normal operation .

1 **The default Master ID for the iCON100SR is 0000000000 (Press the <0> key 10 times)**

1 Setup Menu F1

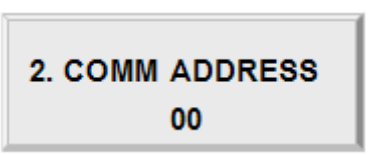


1.1 Date and Time

The LCD displays the current time. To change the time, press <ENT>, enter 15 Digits in a “YYYYMMDDhmmssW” format, and then enter <ENT> again to confirm.

NOTE: For the days of the week (W),
1 : Sun, 2 : Mon, 3 : Tue, 4 : Wed, 5 : Thu, 6 : Fri, 7 : Sat.
e.g. To input August 24, 2009, 13:30:15, Monday,
enter 200908241330152.

1.2 Communication Address



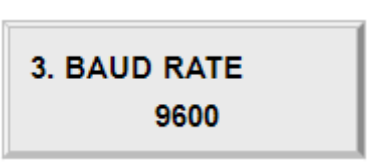
A communication address (board ID or Communication ID) is a unique number assigned to each device for communication. The default address is 00.

For proper communication with the PC, it is important that the value you set here should match the value you set on the application software. It is also important to make sure each device on a loop has a unique address.

To change the communication address of the iCON100, press <ENT>, enter the desired 2-Digit address in the 00-31 range, and then press <ENT> again to confirm.

When you change DIP switch the changed address is displayed on LCD.

1.3 BAUD RATE



Set the communication speed in terms of PC program.

The matching values of communication speed have to be required between device and PC program.

Baud rates of 4800bps, 9600bps (Default), 19200bps, 38400bps, 57600bps and 115200bps are supported, and 9600bps is recommended.

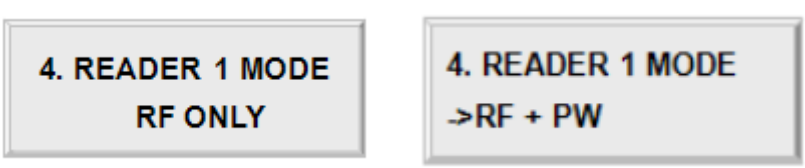
When you change DIP switch, the value of 'Baud Rate' will be displayed on LCD.

If a TCP/IP module is being used, the baud rate setting must be set the same as the TCP/IP module setting.

> If a TCP/IP module is being used, the Baud Rate setting must be the same as the TCP/IP module setting.

> Troubleshooting Communication Problems
> Step 1. Match the communication address between the device and the Application Software.
> Step 2. Match the Baud Rate between the device and the Application Software.
> Step 3. Ensure that the COM port setting in the Application Software is correct.
> Step 4. Ensure that the communication settings in the Application Software are as follows;
> 1) Parity Bit: None 2) Data Bit: 8 Bits 3) Stop Bit: 1 Bit

1.4 Reader1 Mode



You can decide which combination of RF card, fingerprint and password verification you wish to use on Reader1 (the iCON100 device itself).

To change the Access Mode for Reader 1, press <ENT>, select the "DESIRED MODE" by pressing <4> or <6>, and then press <ENT> again to confirm.

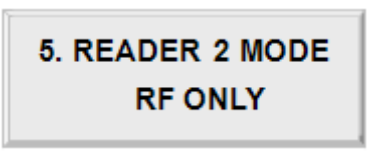
RF ONLY

Users can access the door by presenting their card or entering their ID number.

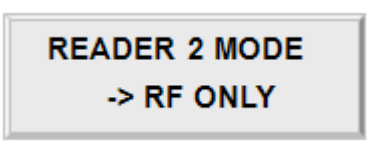
RF + Password

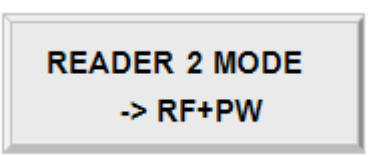
Users can access the door by presenting their card or entering their ID number and th
en verifying their identity by a Password.

1.5 Reader 2 Mode



If you have an external reader connected to the iCON100 (referred to herein as Reader 2), y
ou must adjust this setting according to what access mode is used on Reader 2.





To change the Access Mode for Reader 2, press <ENT>, select the desired mode by pressing
<4> or <6>, and then press <ENT> again to confirm.

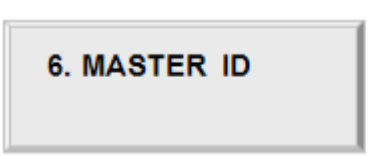
RF ONLY

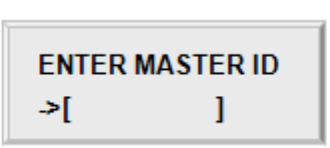
Select this option if Reader 2 is operating without password verification

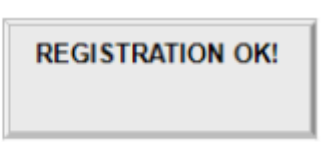
RF+ P/W

Select this option if Reader 2 uses password verification.

1.6 Master ID Registration







Master ID is the number/card that you use to enter the Setup Mode. For security reasons, it i
s advisable that you change the default Master ID immediately and keep the new Master ID

/ card confidential.

Beware that if you forget the Master ID, you cannot access the Setup Mode.

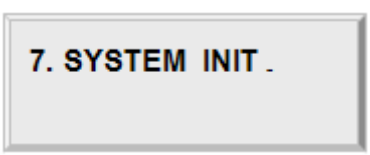
To change the Master ID, press <ENT>, and then either enter the desired 8Digit Master ID or present a card to the reader.

For the iCON100SR, the Master ID is 10Digits long in the range of 0000000000 to 4294967295. For using the 2BYTE MODE of iCON100SR, the digit range becomes 0000000000 to 6553565535.

When the Master ID/card registration is successfully completed, the LCD displays the “REGIS TRATION OK” message.

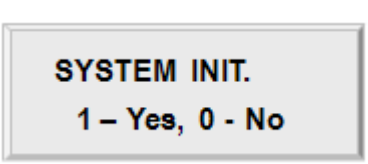
The default Master iCON100SR, it is 0000000000 (Ten zeros.)

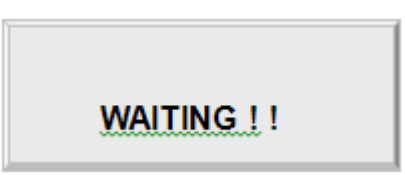
1.7 System Initialization



System initialization allows you to initialize the iCON100. Initialization clears all the user-defi ned data stored in the device such as card data, input/output setting, Time Schedules, etc.

Prior to system initialization, make sure to check whether or not the data stored in the device is not needed, since it will be deleted after the initialization.





To initialize the iCON100, press <ENT>, and then press <1> to confirm. If you wish to cancel

and exit without initialization, press <0> instead. Device address and communication speed i s maintained.

1.8 All ID Clear

All ID clear allows you to delete all the card ID data from the iCON100. To clear the card dat a stored in the memory, press <ENT>, and then press <1> to confirm. If you wish to cancel a nd exit, press <0> instead.

> ⚠ Prior to choosing “YES”, make sure to check whether or not the data stored in the device is not needed, since it will be deleted after the “All ID CLEAR” is done.

1.9 Event Clear

Event clear allows you to delete all the event data from the iCON100. To clear the event dat a stored in the memory, press <ENT>, and then press <1> to confirm. If you wish to cancel a nd exit, press <0> instead.

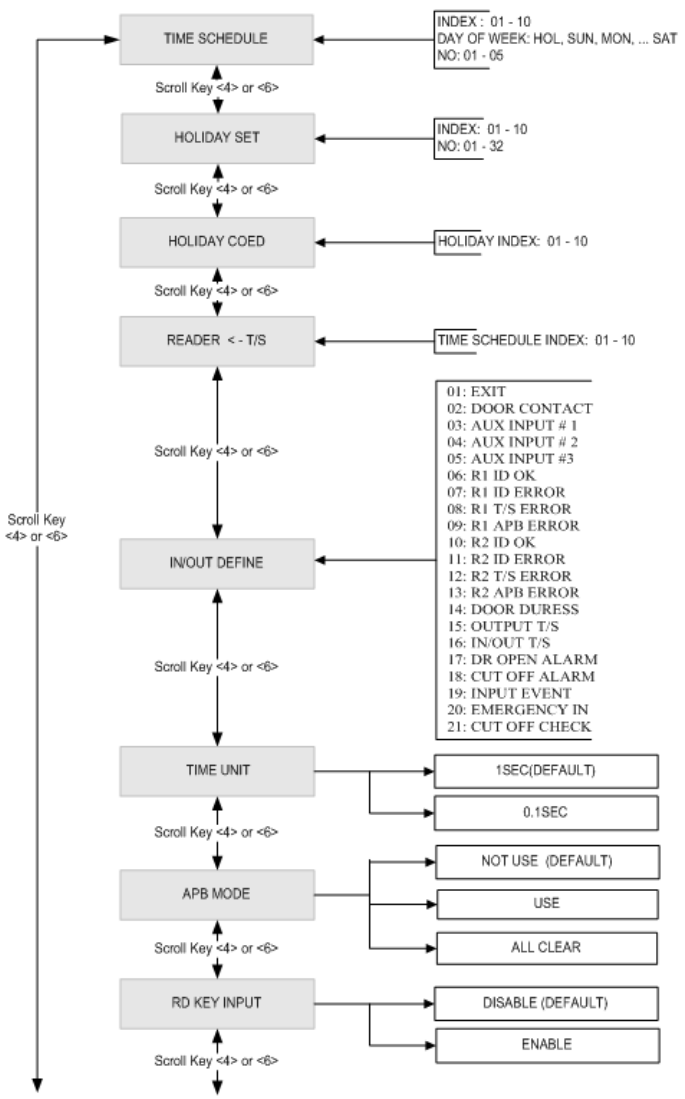
> ⚠ Before you clear the event memory, make sure you do not need the data stored in the device.

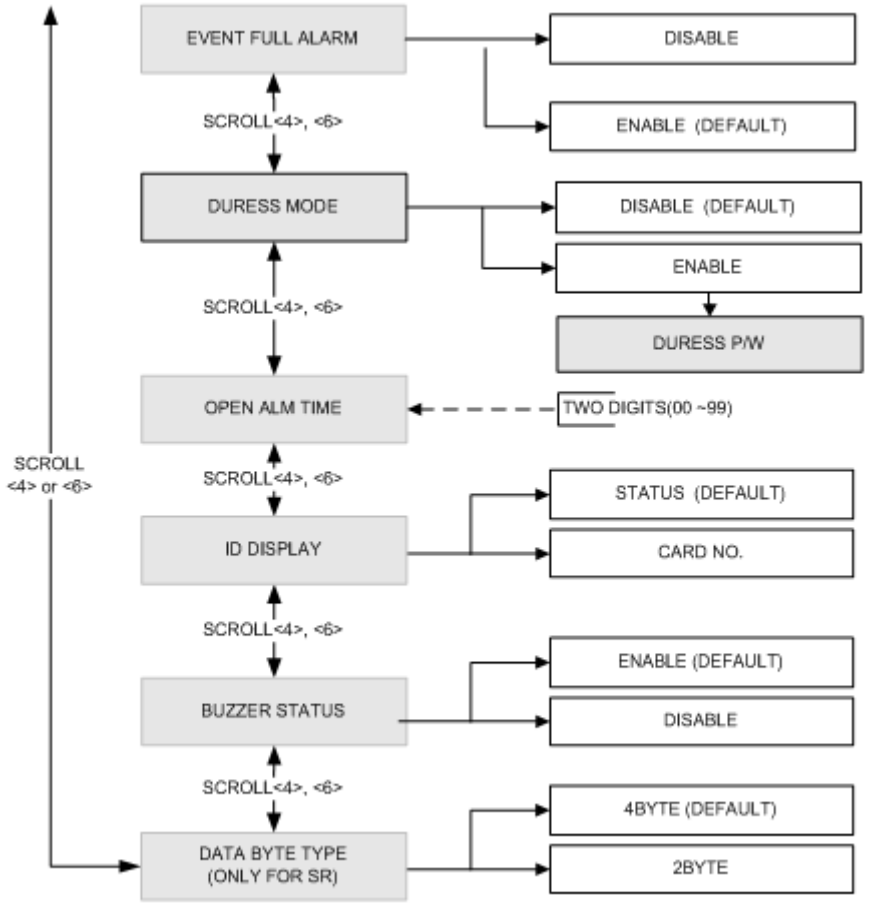
1.10 Time Schedule Clear

T/S Clear allows you to delete all the data related to time scheduling, such as Time Schedule s, Holiday and Reader Time Schedules, Holiday Codes, etc. To clear the time schedule data st ored in the memory, press <ENT>, and then press <1> to confirm. If you wish to cancel and e xit, press <0> instead.

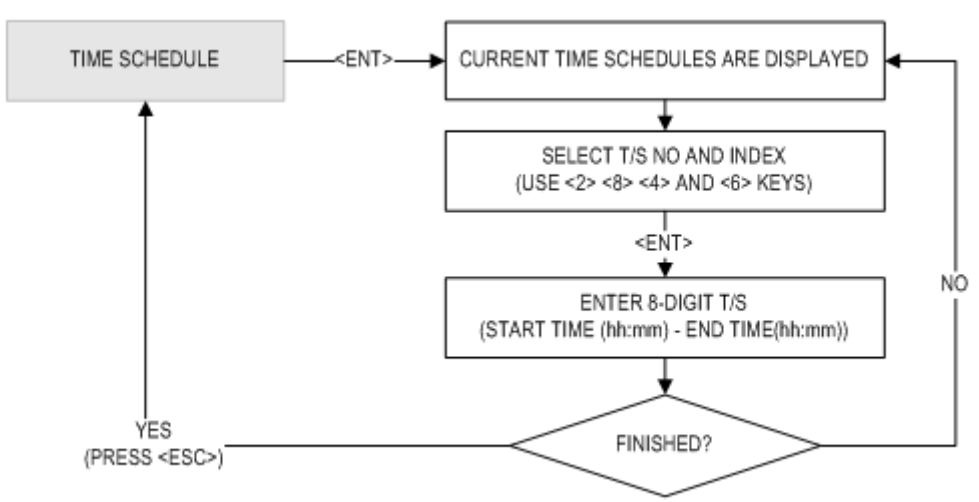
Before you clear the time schedule Memory, make sure you do not need the data s tored in the device.

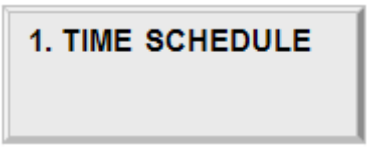
2 Setup Menu F2



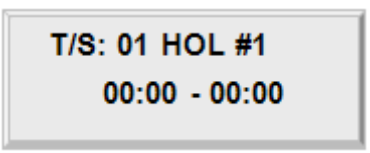


2.1 Time Schedule





You can define up to 10 time schedule codes. Time schedule code 00 is the default code an d can be used to allow round-the-clock access. You can define time schedule codes 01 to 10. Each time schedule code has 8 programmable days (i.e. Sun, Mon, Tue, Wed, Thu, Fri, Sat a nd holiday) and each day has 5 time intervals.

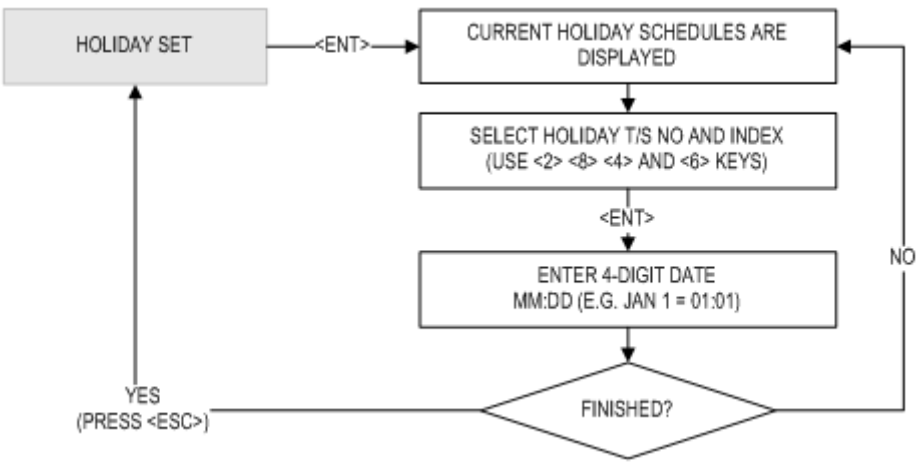


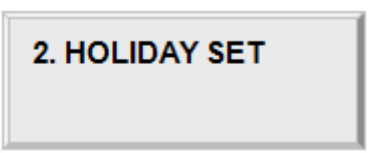
How to Define Time Schedule Codes

To define a new T/S code or change an existing one, press <ENT>, and the LCD will show T/S information such as T/S code, day, ti7me interval and time period. Press <2> or <8> to scroll up or down the time schedule code (01-10) and the day of the week. (Mon - Sun and holiday). Press <4> or <6> to scroll up or down the time inte rval. The holiday in this time schedule will be linked to the holiday schedule code. S elect a time schedule code, day and Interval, and press <ENT>. Enter the start and end time for the time interval in the 24-hour, hh/mm format, then press <ENT> to save the new T/S settings. Once all information is entered, press <ESC> to return to the menu.

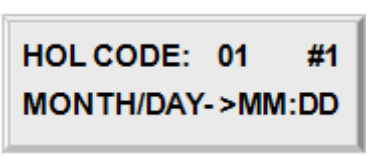
You can also define time schedule codes using the Application Software. For more information, please refer to the Software Manual.

2.2 Holiday Set and Change





You can define up to 10 Holiday T/S codes. Holiday T/S code 00 is the default code without any holidays. (This means that applying Holiday T/S code 00 is the same as applying no holid ays at all.) You can define Holiday T/S codes 01 to 10. Each holiday schedule code can have up to 32 holidays defined.



How to Define Holiday T/S Codes

To define a new Holiday T/S code or change an existing one, press 〈ENT〉, and the LCD will show holiday T/S information such as Holiday T/S code, holiday number a nd date. Press 〈2〉 or 〈8〉 to scroll up or down the Holiday T/S code (01-10). Press 〈4〉 or 〈6〉 to scroll up or down the time interval. Select a Holiday T/S code and ind ex, and press 〈ENT〉. Enter the date in the MM / DD format, then press 〈ENT〉 to s ave the new holiday definition. Once all information is entered, press 〈ESC〉 to ret urn to the menu.

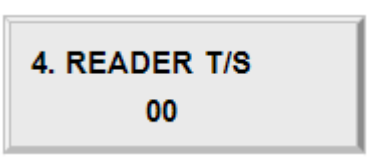
You can also define time schedule codes using the Application Software. For more information, please refer to the Software Manual.

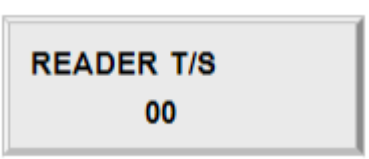
2.3 Holiday Code

The Holiday code setting lets you link a holiday schedule to a time schedule. The default holi day schedule code is 00, which means no holidays are applied to the time schedule.

Use <4> or <6> to scroll up or down from the T/S code 01 to 10, and press <ENT>. Then, ent er a 2Digit holiday schedule code and press <ENT> to store the changed settings to the mem ory. To return to the previous menu, press <ESC>.

2.4 Reader Time Schedule

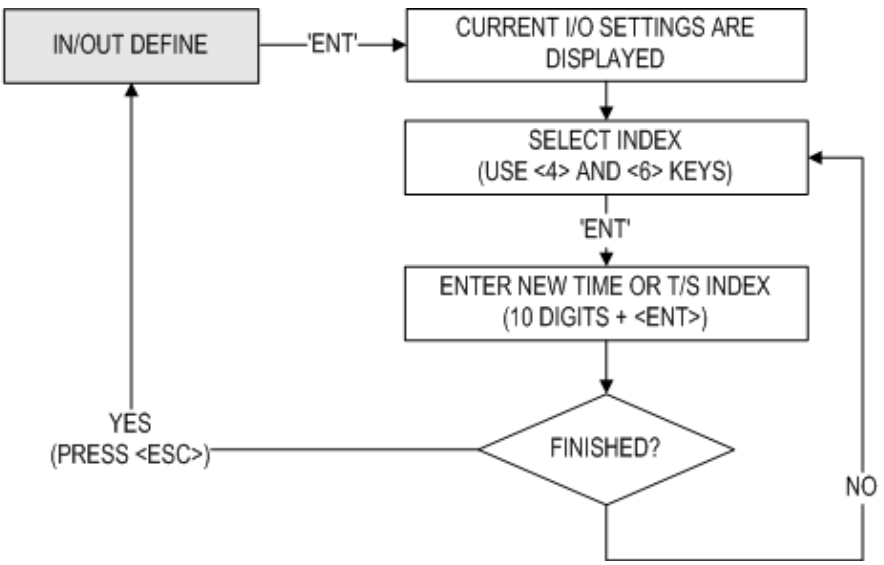


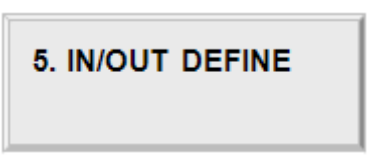


You can select one of 2 Access Modes (i.e. RF Only Mode, RF+PW Mode) in “READER1 MO DE” of “F1 SETUP MENU”. However, you may apply RF Only Mode during a certain period of the day. For example, if you wish to allow RF-Only Access from 09:00 to 17:00 while using fi ngerprint verification for the rest of the time, you can proceed as follows;

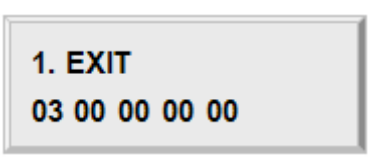
1. Set “READER 1 MODE” to RF+P/W Mode.
2. Define T/S code 01 so that it can include a Time Interval between 09:00 and 17:00 for t he desired days of the week.
3. Here in Reader T/S, press <ENT>, enter the 2Digit T/S code (In this case, 01), and then p ress <ENT> again to confirm.
4. To return to the previous menu, press <ESC>.

2.5 Input / Output Definition





In/Output Define allows you to adjust In/Output settings (Output activation time, In/Output Time Schedule, Cut-Off Check, etc.).



To change the In/Output Settings, press 〈ENT〉 and select an item using 〈4〉 or 〈6〉 key, and press 〈ENT〉 again. After the cursor appears, enter the 10Digit number for the desired settin g. Once all information is entered, press 〈ESC〉 to exit.

The range of values you can enter in each field is as follows;
1-14, 17-18: 00 - 99 (Output Signal Time)
15-16: 00-10 (Time Schedule Code)
19-21:" Enable" or" Disable"(Selecting "01" is "Enable", Selecting "00" is "Disable")

The 14.Duress mode setting allows you to decide the output signal time for when access is granted following a duress event.

When a particular event occurs, the iCON100 will generate an output signal for Re lays #1 and #2, TTL #1 and #2, and Buzzer for the length of time defined for each.

2.6 Output Time Setting

Output Time Set allows you to define the unit of time.

1 sec

Output Time is calculated in the time unit of 1 second for the In/Output definition.

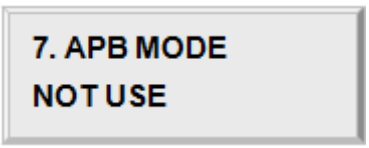
0.1 sec

Output Time is calculated in the time unit of 1/10 second (or 100ms) for the In/Outp ut definition

To change the setting, press <ENT> and press <4> or <6> to select the desired time unit and press <ENT> to confirm.

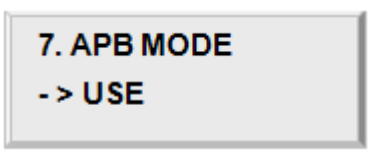
Output Time Setting Examples
e.g. If you want to activate the Relay#1 (OUT #1) for 3 seconds;
- The Time Unit should be set to “03” for Relay#1 in the menu “1. EXIT”.
- Set to 1Sec in the menu ‘OUTPUT TIME SET”
e.g. If you want to activate Door Relay#1 (OUT #1) for 0.3 seconds;
- The Time Unit should be set to “03” for Relay#1 in the menu “1. EXIT”
- Set to 100ms in the menu “OUTPUT TIME SET”

2.7 Anti-Passback



The Anti-Pass Back feature is used to prevent an identical user from entering or exiting the d oor more than twice in a row so that employees cannot pass back their cards to their cowor kers. Anti-Pass Back can be applied only when an Exit Reader is installed. “DO NOT” enable it if an “Exit Button” is installed instead of an Exit Reader.

For enable or disable Anti-Pass Back or resetting all APB flags, press <ENT> and press <4> or <6> to select the desired item and press <ENT> to confirm.



NOT USE

The Anti-Pass Back feature is disabled.

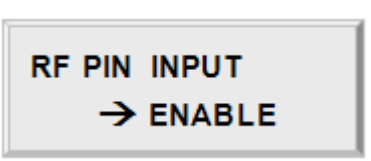
USE

The Anti-Pass Back feature is enabled.

ALL CLEAR!

All Anti-Pass Back flags are reset, and access will be allowed one time regardless of th e current status of the existing flags.

2.8 RF PIN Input

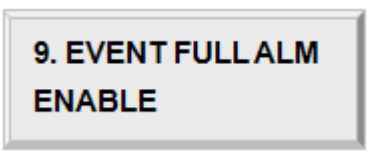


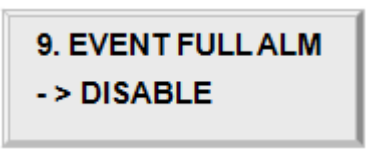
RF Pin Input allows you to decide whether to enable or disable PIN (or RF card number) Inpu t via the keypad. By default, PIN Input is disabled.

If you choose “Disable”, you cannot gain access via password input when using RF +PW mode.

To enable or disable PIN Input, press <ENT> and press <4> or <6> to select “ENABLE” or “DIS ABLE”, and then press <ENT> again to confirm.

2.9 Event Full Alarm



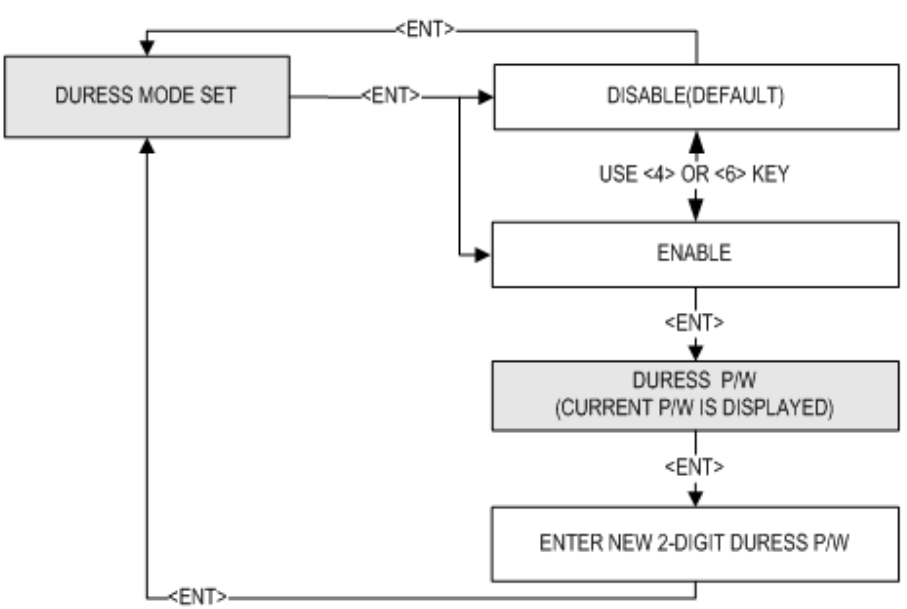


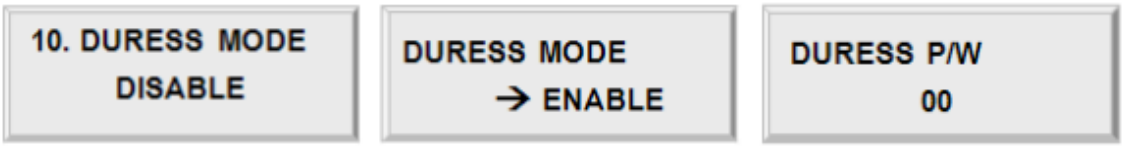
Event Alarm allows you to decide whether to enable or disable the event memory full alarm. If you enable Event Alarm, the iCON100 beeps with an alarm message when the event mem ory becomes more than 90% full.

To enable or disable Event Alarm, press <ENT> and press <4> or <6> to select “ENABLE” or “D ISABLE”, and then press <ENT> again to confirm.

If the event memory becomes full, the oldest event data is overwritten and lost.

2.10 Duress Mode





Duress Mode enables a cardholder under duress to activate a silent alarm to notify the securi ty.

To enable or disable the Duress Mode and / or set the Duress Password, press <ENT> and pr ess <4> or <6> to select either “DISABLE” or “ENABLE” If you select “ENABLE” the LCD will dis play the current “DURESS PASSWORD”. To change the password, press <ENT> and enter the desired 2-Digit Duress Password, and press <ENT> again to confirm. If you do not wish to ch ange the password, press <ESC>.

In case of duress, enter the 2Digit Duress Password and press <ENT> prior to the re gular access process. Following a successful access process, access will be granted as usual but, at the same time, a duress alarm will be generated.

2.11 Door Open Alarm Time

Door Open Alarm Time refers to the delay between the time at which the Door Relay time fi nishes and the time at which a Door Open Alarm is activated. To change the Door Open Ala rm Time, press <ENT> and enter a 2Digit number as follows;

00

The alarm will be activated immediately if the door is still left open past the Door Rela y Time.

01-98

Delay (01-98 sec) will be inserted before an alarm is activated.

99

No alarm.

After entering the number, press <ENT> to confirm.

For this application, a Door Contact Sensor must be installed on the door.

2.12 ID Display

ID DISPLAY allows you to decide whether to display the card number or the status message on the LCD when access is granted or denied. To change the setting, press <ENT> and press <4> or <6> to select “STATUS” or “CARD NO” and press <ENT> to confirm.

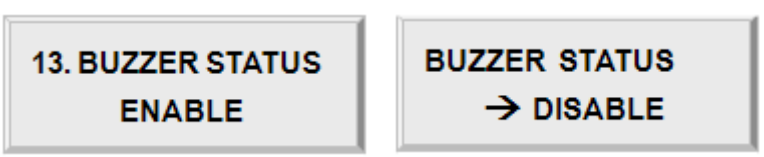
STATUS

The LCD will display the text message indicating the status, i.e. “ACCESS GRANTED” o r “ACCESS DENIED”

CARD NO

Display the number of the card.

2.13 BUZZER STATUS



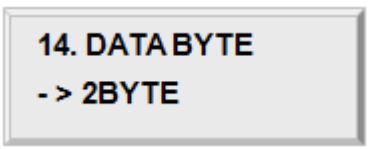
The buzzer generates a beep when a button on the keypad is pressed, when a card is read, when an error occurs, etc.

To enable or disable the buzzer sound, press <ENT> and press <4> or <6> to select “ENABLE” or “DISABLE” and press <ENT> to confirm.

The buzzer beeps regardless of this setting, when you exit the Setup Mode, when a memory alarm is activated, or when Buzzer Output is defined in “In/Output Defin e”.

2.14 Data Byte (iCON100SR Only)

This feature only applies to the iCON100SR.



By default, the iCON100SR can read smart card written in the 4BYTE format, but, for advanced applications, you can use 2BYTE format smart cards. To do so, you must change the Data BYTE setting to “2BYTE”. To change the setting, press <ENT> and press <4> or <6> to select “4BYTE” or “2BYTE” and press <ENT> to confirm.

4 Byte (Default)

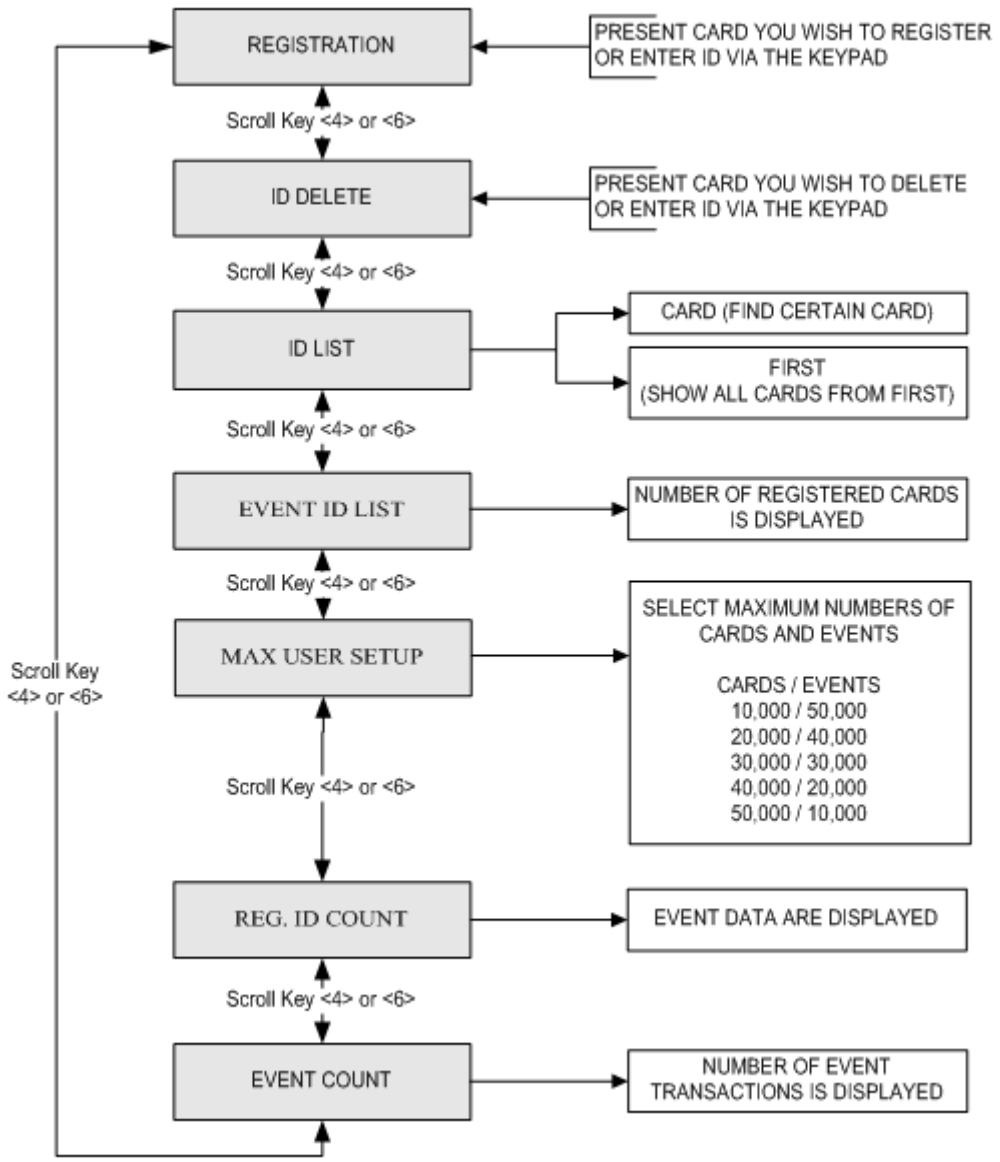
The Card Number can be in the ranges of 00000000 - 4294967295.

2 Byte

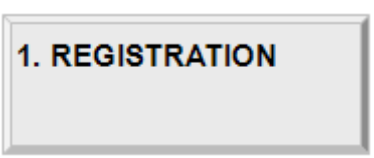
The first and last 5 digits can each be in the ranges of 00000 ~ 65535, respectively.

The total is in the ranges of 0000000000~6553565535

3 Setup Menu F3

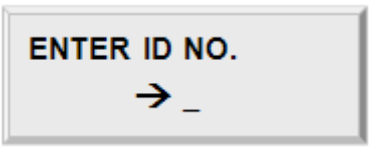


3.1 ID Registration



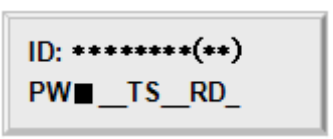
Registration allows you to add new cardholders to the iCON100. To add a new cardholder I

D, press <ENT>.

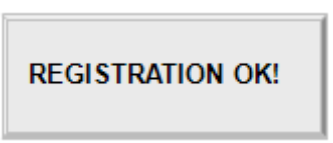


Either present a card you wish to register to the iCON100 or enter the card number (ID) via t he keypad and press <ENT>.

A Card Number (ID) can be 4 to 8Digits long. For the iCON100SR, it can be 4 to 10 Digits long.



Once the Card Number is entered, enter the Password (PW), Time Schedule (TS) and Reader Number (RD) and press <ENT>.



If the registration is successful, the “REGISTRATION OK!” message will be displayed on the L CD. If the registration is not successful, the “REGISTRATION ERR!” Message will be displayed on the LCD.

Description of Fields

PW (Password)

Enter the 4Digit password. Password verification can be enabled in 11.1.4. Reader1 Mode. This field is compulsory even if you do not use password verification.

TS (Time Schedule)

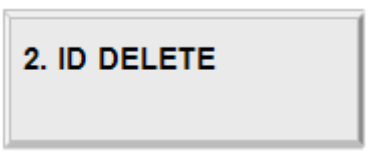
If you wish to apply a certain time schedule to the cardholder, enter the T/S code. If y ou wish to allow the cardholder round-the-clock access, enter 0.

RD (Reader Code)

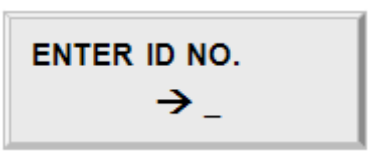
To use both Reader 1 and 2 for the cardholder. Enter 0. To use just Reader1, enter 1. To use just Reader2, enter 2.

The TS and RD fields do not appear if the Star iCON100 is set in Reader Mode.

3.2 ID Deletion



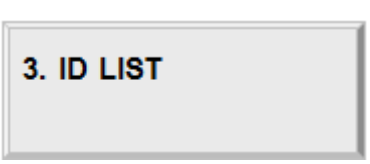
ID Delete allows you to delete existing cards from the iCON100. To delete an existing card (Or ID), press <ENT>.



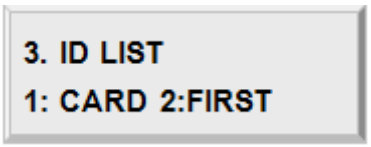
Either present a card you wish to delete to the iCON100 or enter the card number (ID) via th e keypad and press <ENT>.

If the card was successfully deleted, the “DELETE SUCCESS!” message will be displayed on th e LCD. If the card you presented or the card number you entered is not found, the “UNREGIS TERED ID” message will be displayed.

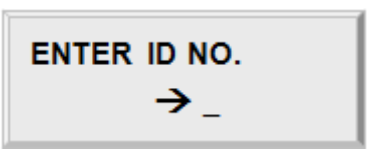
3.3 ID List



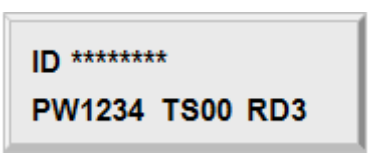
ID List allows you to search for a certain registered card or view the list of all registered cards. To begin, press <ENT>



To search for a certain registered card, press <1>. To view the entire list of all registered card s, press <2>.



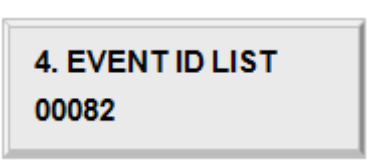
If you have entered <1>, enter the Card Number (ID) or present the card you wish to view th e information of.



The LCD will show the information of the card you have selected in the previous step or the first card on the list. Press <4> or <6> to view the information of the previous or next card. T he “FIRST ID” or “LAST ID” message will appear if you are viewing the first or last ID. If there is no card data, the LCD will display the “MEMORY EMPTY” message.

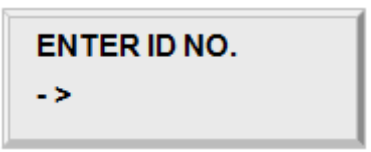
If your iCON100 is set in Reader Mode, the TS and RD values are not valid and the LCD will d isplay “TS00RD3”.

3.4 Registered ID Count

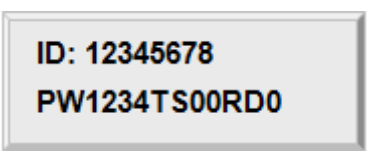


Event ID List allows you to search for a certain registered card or view the list of all registere d cards. To begin, press <ENT>

To search for a certain registered card, press <1>. To view the entire list of all registered card s, press <2>.

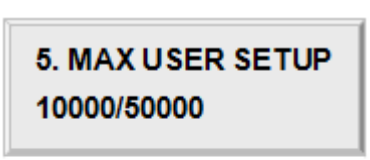


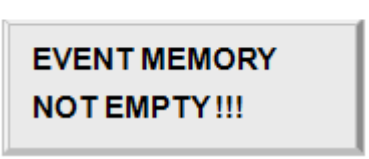
If you have entered <1>, enter the Card Number (ID) or present the card you wish to view th e information of.

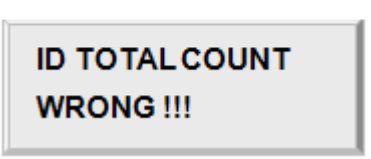


The LCD will show the information of the card you have selected in the previous step or the first card on the list. Press <4> or <6> to view the information of the previous or next card. T he “FIRST ID” or “LAST ID” message will appear if you are viewing the first or last ID. If there is no card data, the LCD will display the “MEMORY EMPTY” message.

3.5 Max User Setup







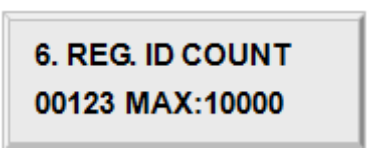
ID Memory allows you to decide how to divide the memory space between IDs and event tra nsactions. The total number of IDs and event transactions combined is a maximum of 60,00 0. The default setting is 10,000 users and 50,000 event transactions. If you increase the max imum number of IDs, the maximum number of events decreases in the same proportion, an

d vice versa. To change the memory partition setting, press <ENT>, and press <4> or <6> to s elect 10000/50000, 20000/40000, 30000/30000, 40000/20000 or 50000/10000 (No. of ID s / No. of Events), and then press <ENT> again to confirm.

The event memory must be emptied prior to changing this setting. If you attempt t o change the setting with some event data still in the memory, the LCD will display “EVENT MEMORY NOT EMPTY” error message.

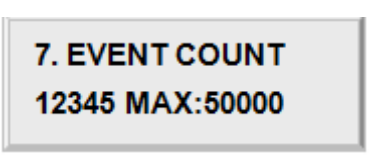
If you attempt to reduce the ID memory size to a value lower than the current num ber of IDs stored in the memory, the LCD will display the “ID TOTAL COUNT WRON G” error message.

3.6 Event List



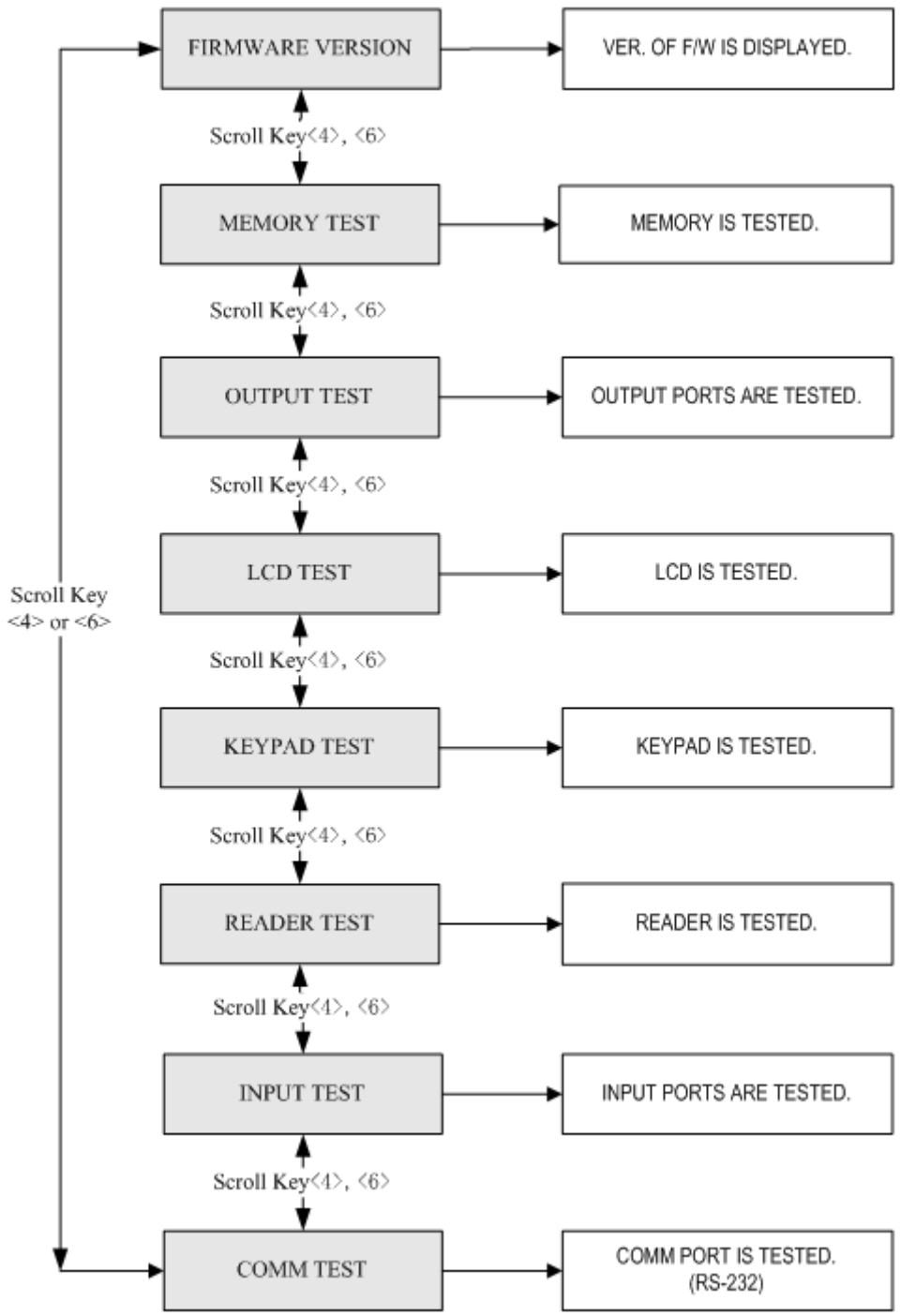
The number of registered user IDs is displayed. This count automatically increases or decreas es as IDs are registered or deleted. The LCD on the left shows that the sum totals of 123 use r IDs are registered in the memory. And ‘MAX’ is the maximum registerable ID number

3.7 Event Count

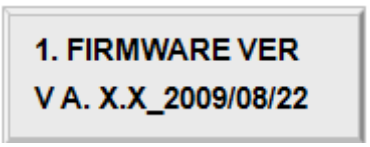


The number of event transactions is displayed. This count automatically increases or decreas es as new events occur or the existing events are uploaded to the PC. The LCD on the left sh ows that the sum totals of 12345 event transactions are stored in the memory. And ‘MAX’ is the maximum registerable event number

4 Setup Menu F4

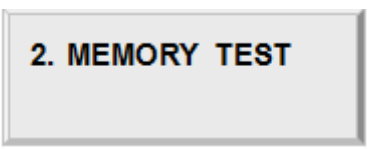


4.1 Firmware Version

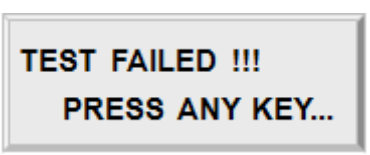


The version of the firmware installed in the iCON100 is displayed on the LCD. Also you can s ee the last update date.

4.2 Memory Test

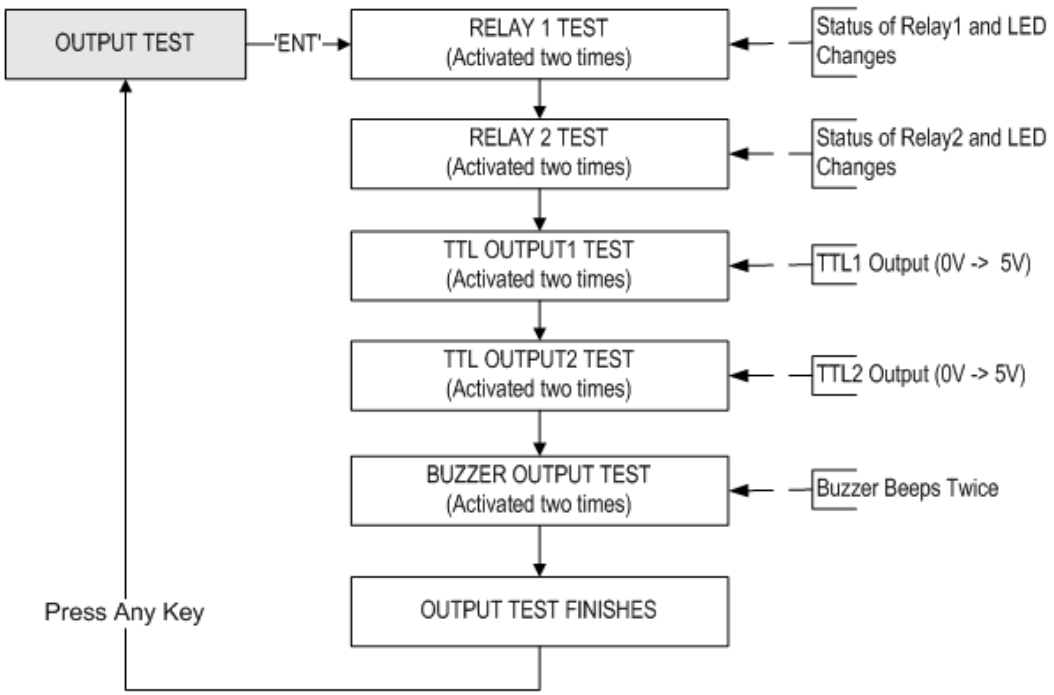


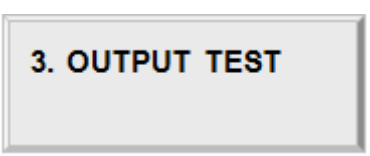
Memory Test allows you to test the memory of the iCON100. To begin the test, press 〈ENT〉.



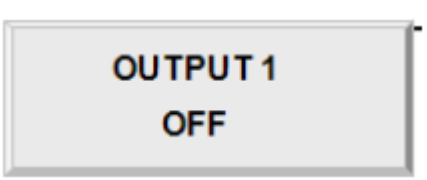
If the test is successful, the LCD will display the “TEST PASSED” message. Press any key to fini sh the test. If the test is unsuccessful, the LCD will display the “TEST FAILED” message. Press any key to finish the test and try again. If the problem persists, please contact your local IDTE CK dealer for assistance or service.

4.3 Output Test



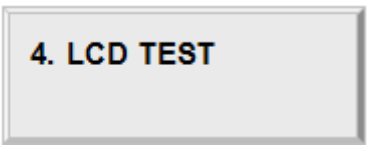


Output Test allows you to test the output ports of the iCON100. To begin the test, press <ENT>.

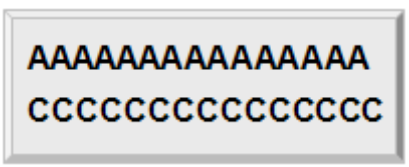


First, output ports1 and 2 will be tested. During the test, relay outputs are activated and you will hear Tick-Tack sounds with the green LED blinking twice. Second, output oorts3 and 4 will be tested. During the test, TTL outputs are activated and the yellow LED blinks twice. You can check the voltage level of the TTL outputs with appropriate test equipment. Lastly, output port 5 will be tested. During the test, you will hear 2 beeps. After all the tests are over, press any key to exit.

4.4 LCD Test

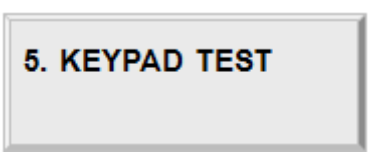


LCD Test allows you to test the LCD of the iCON100. To begin the test, press <ENT>.

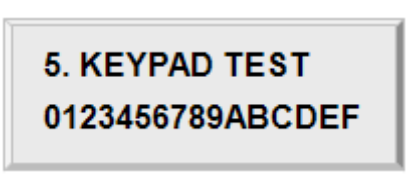


Once the test begins, the LCD will display a series of different screens. Ensure that all the scr eens on the LCD are properly displayed. The test ends with the display of the firmware upda te date (YYYY/MM/DD). After the test is finished, press any key to exit.

4.5 Keypad Test



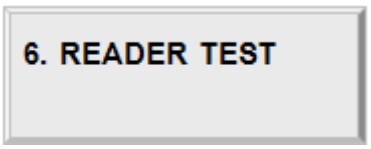
Keypad Test allows you to test the keys on the keypad. To begin the test, press <ENT>.



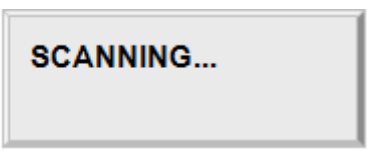
Press each key on the keypad, then the number or letter that corresponds to the key pressed will disappear from the screen. After all the keys are pressed, the LCD displays the “TEST PAS SED” message.

“A”=ESC, “B”=ENT, “C”=F1, “D”=F2, “E”=F3, “F”=F4

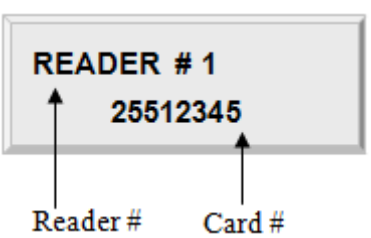
4.6 Reader Test



Reader Test allows you to test the reader(s). To begin the test, press <ENT>.



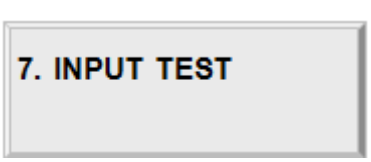
While the LCD displays “SCANNING”, present a card to the reader you would like to test, and the LCD will display the reader number and the card number. After the test is finished, press <ESC> to exit.



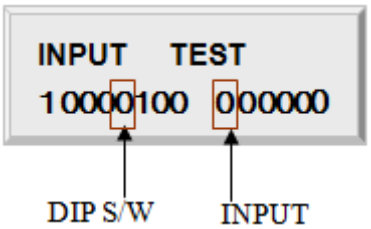
Reader#1 refers to the built-in reader of the iCON100, and Reader #2 refers to an external r eader.

You can also use Reader Test to check the number of a card.

4.7 Input / DIP Switch Test



Input Test allows you to check the status of Input Ports and DIP switches (Communication A ddress Setting Switches). To begin the test, press <ENT>.



DIP Switch

1=ON, 2=OFF (It shows how the DIP switch on the back of the ICON100 is set.) (First two for S/W3 and last eight for S/W1)

Input 1-5

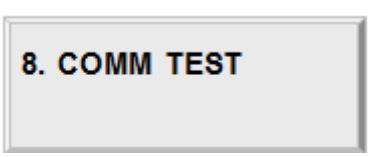
0=OFF (Disabled)

1=ON (Enabled)

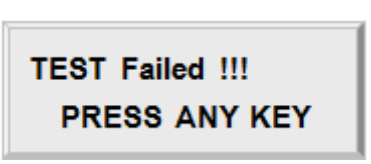
2=Input Disconnected

If you activate the Cut-Off Check feature for all the input ports in “5.IN/OUT DEFINE” from F2 Setup menu, the result of an input port test will change to 222200 (If termination resistors are not connected) or 000000 (If termination resistors are connected).

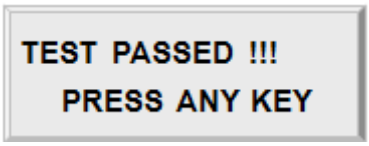
4.8 Communication Test



COMM Test allows you to test communication. Prior to the test, connect the RS232-RX wire (Black wire with White stripe) and the RS232-TX wire (Red wire with Black stripe) together. To begin the test, press <ENT>.



If the test is unsuccessful, the LCD will display the “TEST FAILED” message. Press any key to finish the test and try again after powering the iCON100 off and back on.



If the test is successful, the LCD will display the “TEST PASSED” message. Press any key to fini sh the test.

APPENDIX 13

1 Default Values for Parameters

No	Parameter	Default Value
1	READER #1 Operation Mode	ID ONLY
2	READER #2 Operation Mode	ID ONLY
3	READER #1 Keypad Input Limit	NOT USE
4	READER #2 Keypad Input Limit	NOT USE
5	Use of Event Memory Alarm	NOT USE
6	Unit of Time for Output Ports	UNIT: 1 SEC
7	Output Port Time Schedules	NOT USE
8	Anti-Pass Back Feature	NOT USE
9	Duress Mode	NOT USE
10	Door Open Alarm Time	03
11	Time Schedule	All Time ()
12		All Date ()
13	Code	00(All holiday codes)
14	Time Schedule Assigned to Reader #1 Mode	00
15	Time Schedule Assigned to Reader #2 Mode	00

2 Default Output Settings for Input / Output Relations

	Relay#1	Relay#2	TTL#1	TTL#2	BUZZER
[1] Input #1(EXIT BUTTON)	**03**	00	00	00	00
[2] Input #2(Door Contact SW)	00	**99**	00	00	00
[3] Input #3	00	00	00	00	00
[4] Input #4	00	00	00	00	00
[5] Input #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	00	00	00
[15] OUTPUT TIME SCHEDULE	00	00	00	00	00
[16] INPUT TIME SCHEDULE	Input #1	Input #2	Input #3	Input #4	Input #5
	00	00	00	00	00
[17] DR OPEN ALARM	Relay#1	Relay#2	TTL#1	TTL#2	BUZZER
	00	**03**	00	00	00
[18] CUT OFF ALARM	Input #1	Input #2	Input #3	Input #4	Input #5
	00	00	00	00	00
[19] INPUT EVENT	**01**	**01**	**01**	**01**	**01**
[20] EMERGENCY IN	00	00	00	00	00
[21] CUT OFF CHECK	00	00	00	00	00

* Index No. [1] - [14], [17]-[18]
The values indicate the operating time of each output for the input signal.
99 denote “Operating time is not limited”.

* Index No. [15]
The values indicate the Time Schedule Code (index) applied to each output.
* Index No. [16]
The values indicate the Time Schedule Code (index) applied to each input.
* Index No. [19]-[21]
The values indicate whether to enable or disable the feature for each output.
(01-Enable, 00-Disable)

Troubleshooting 14

Before requesting RMA, please check the cases below if your problem is one of them.

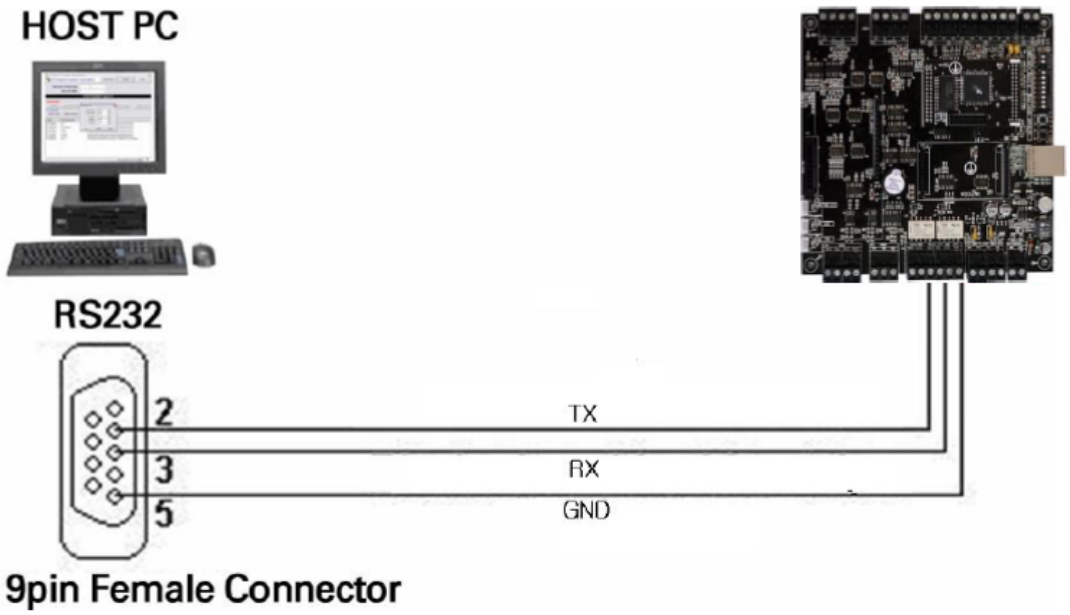
1 The device dose not communicate with PC.

1.1 Please check wiring.

See **[Communication]** of the manual and check if the wiring is good.

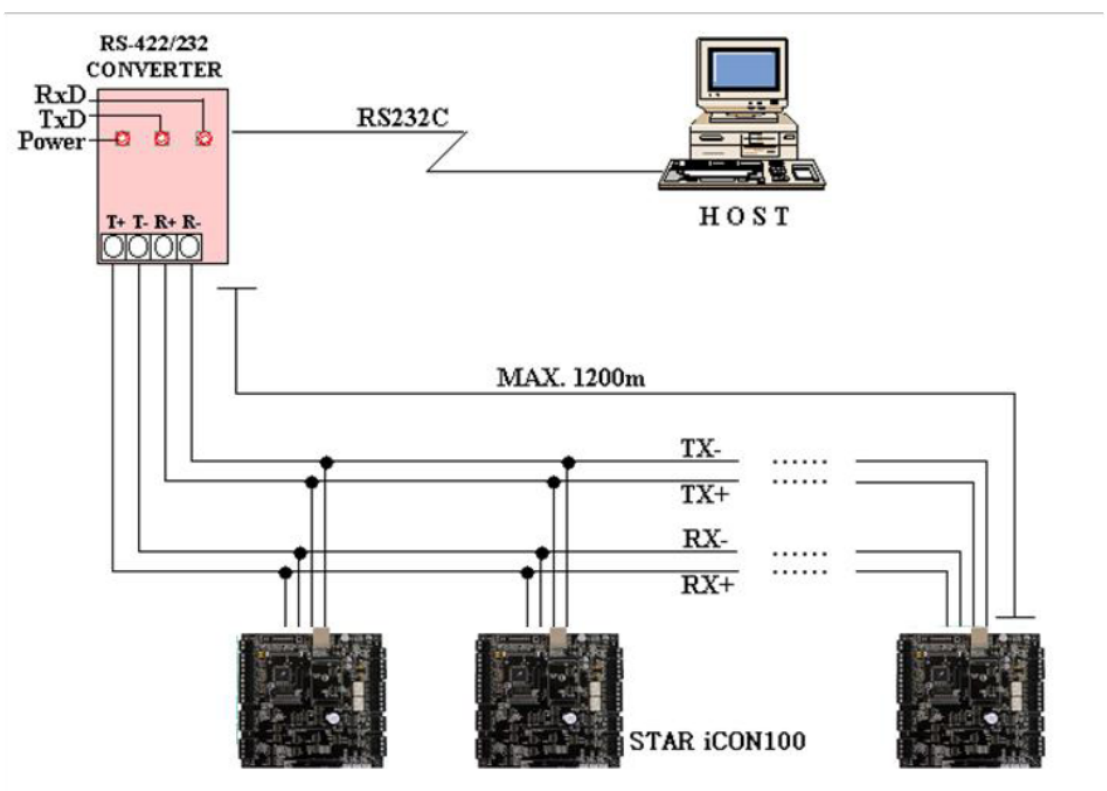
In the case of RS232 communication

See **[Communication] > [RS232 Communication Port Connection]** of the manual and check i f the wiring is good.



In the case of RS422 communication

See **[Communication] > [RS422 Communication Port Connection]** of the manual and check i f the wiring is good.



1.2 Please check if the communication address is good.

Check communication address setting of software and the device.

1. Check if communication ID set in the device is same with communication ID set in a soft ware.

   See **[Setting Changes] > [SETUP MENU F1] > [Communication Address (Board ID or Co mmunication ID)]** and check a communication address set in the device.
2. When you use several devices together, communication addresses set in the devices sh ould be different from each other.
3. Check if baud rate is same with baud rate set in a software.

   See **[Setting Changes] > [SETUP MENU F1] > [Baud Rate]** and check baud rate set in the device.

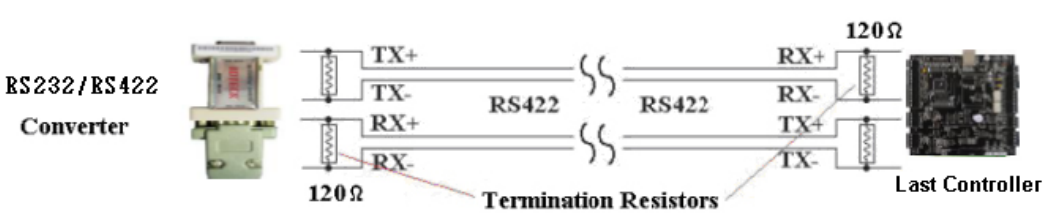
   * If you initialize the device, baud rate is set to **9,600** bps which is the default.

1.3 Please check if the communication port setting is good.

Check if communication port set in software is same with communication port set in PC.

1.4 Please check if the termination resistor is connected.

For long distance communication of RS422 or RS485, a resistor is connected to match impe dance to reduce distortion and attenuation which are caused by delay. This resistor is called termination register.

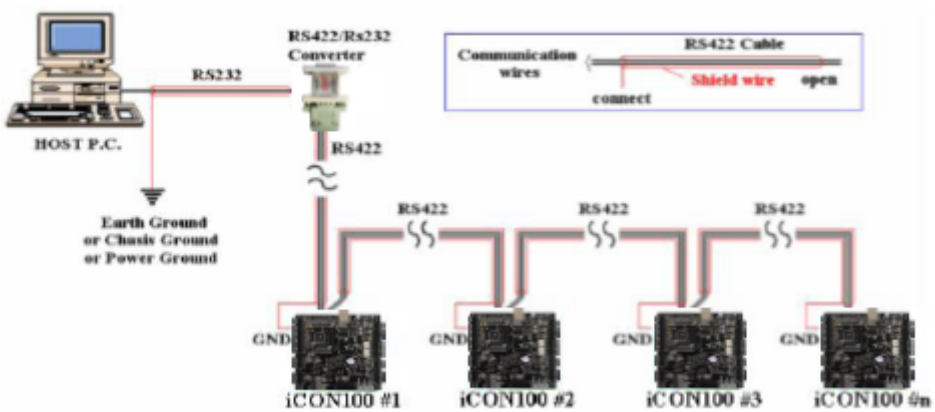


In the case that several controllers are installed, the termination resistor should be connected to the last controller and the last controller only.

Resistors below 90Ω are not used as a terminal resistor.

1.5 Please check if the device is grounded well.

See **[INSTALLATION TIPS & CHECK POINT] > [Check Points during Installation] >[Grounding System for Communication Cable]** of the manual and check if the device is grounded well.



If the problem persists, connect service center.

2 When turning on the device, Date / Time is not displayed on the LCD and special characters are displayed.

This is for when using LCD and Keypad modules with the device.

2.1 This may happen when the device is not initialized. Please initialize the device.

See **[Initial Setup] > [Initialization of iCON100]** or **[Setting changes] > [Setup menu F1] > [System Initialization]** of the manual and initialize the device.

If the problem persists, contact service center.

3 When configuring the device using MASTER ID, sudde nly the device goes back to the normal mode.

3.1 If you do not input anything for 60 seconds in setting mode, the device goes back to the normal mode.

To prevent the setting from being changed by one who is not a manager, when the manage leaves the device in setting mode, the device goes back to the normal mode when there is n o input for 60 seconds.

4 The device does not go to setting mode after inputtin g MASTER ID.

This is for when using LCD and Keypad modules with the device.

4.1 A MASTER ID may have changed.

1. Change the MASTER ID from software and transmit it to the device.
2. If you cannot change MASTER ID using software, see **[Initial setup] > [Initialization of iC ON100]** or **[Setting changes] > [Setup menu F2] > [System Initialization]** of the manual and initialize the device.

Once you initialize the device, MASTER ID of the device goes back to 00000000 (8 digits). In the case of SR model, MASTER ID goes back to 0000000000 (10 digits).

If the problem persists, please contact service center.

5 The device work well with RF Card, but does not work when inputting card number.

5.1 Please check if Keypad is set to "ENABLE".

The default of the keypad input is "DISABLE".

1. See **[Setting Changes] > [Setup Menu F2] > [RD Key Input]** of the manual and set it to "USE".
2. Or, set keypad setting to "ENABLE" from a software and transmit it to the device.

If the problem persists, please contact service center.

6 When the device have read a card, the device does no t response or a different card number appears.

6.1 Please check if a reader is good.

1. Check input power of the reader.
   Check if LED blinks when the reader reads a card.
2. Check if the reader is good.
   Disconnect the reader from the system and measure output terminal of the reader using a oscilloscope.

6.2 Please check if wiring between a reader and the system.

See **[Installation of the Product] > [Wiring] > [Reader Wiring]** of the manual and check wirin g between the reader and the device.

If you use a separate power for a reader not connecting to the device, GND of the reader must be connected to GND of the device.

6.3 Please check if software settings are good.

1. In the case of using iTDC, check if controller definition of a software is set to iTDC-SR. If it is iTDC-SR, change it to iTDC.
2. In the case of using iTDC-SR, check if controller definition of a software is set to iTDC. If it is iTDC, change it to iTDC-SR.

6.4 Remove noise.

1. Shield wire and extra wire of cable to GND.
2. Use repeater.
3. See **[INSTALLATION TIPS & CHECK POINT] > [Check Points before Installation] > [Recom mended Cable Type and Permissible Length of Cable]** and check distance between a re ader and the device.

If the problem persists, please contact service center

7 A registered card is not authenticated.

7.1 Check data format setting of the device.

1. See **[INSTALLATION OF THE PRODUCT] > [Device Setting] >[26Bit / 34Bit Wiegand Setti ng]** and check input data format of reader port of the device.
   I. In the case of 26 bit
   Cards are not authenticated if you use 34bit Wiegand format reader such as SR10/ 20/30 and SRK101.

II. In the case of 34 bit

Cards are not authenticated if you use 26bit Wiegand format reader such as RF10/20/30, RFK101.

If the problem persists, please contact service center

FCC REGISTRATION INFORMATION 15

FCC Requirements Part 15

Caution: *Any changes or modifications in construction of this device which are not expressly approved by the responsible for compliance could void the user's authority to operate the e quipment.*

NOTE: *This device complies with* ***Part 15 of the FCC rules.***

Operation is subject to the following two conditions:

1. This device may not cause harmful interface, and
2. This device must accept any interference received, including interference that may caus e undesired operation.

This equipment has been tested and found to comply with the limits for a **Class A Digital De vice**, pursuant to **Part 15 of the FCC rules**. These limits are designed to this equipment gener ates, uses, and can radiate radio frequency energy and, if not installed and used in accordan ce with the instructions, may cause harmful interference to radio communications.

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on another circuit.
4. Consult the dealer or an experienced radio/TV technician for help.

RMA Request

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If you have any questions or problems regarding the RMA services, please contact us using t he contact information below. Friendly representatives at IDTECK are always standing by to provide the best after sales services.

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The specifications contained in this manual are subject to change without notice at any time.