AEI® RFID/DIGITAL KEYPAD CONTROL STATION   iDK-9206

Weatherproof Keypad Housing
Built-in and External Card Reader (Optional)
2 Relay Output :   Operate Individually
Relay 1 Output :   500 ID Cards / or 500 Codes, or
ID Cards and Codes Mix total 500 Sets
3 Operation Mode
Relay 2 Output :   500 Codes

CE
RoHS COMPLIANT

1.   INTRODUCTION

iDK-9206 is an RFID and digital keypad control station, designed for access control and home security applications. The control station provides 2 relay output which can operate individually, one relay output operated by 3 modes such as ID Card, User Code and ID Card + <u>User Number</u> combination. Another relay output operated by code.

iDK-9206 provides advanced functions : auto code entry or manual code entry, audible or silent operation, output relay activated announcer, door force-open alarm, also provides safety functions: locking or alarming after abnormal entries, tamper alarm etc.

iDK-9206 can be connected with access control system, home security system, can be connected with door-open buttons and door bell.

iDK-9206 has advanced features with the Microprocessor and EEPROM non-volatile memory for reliable performance.

iDK-9206 is fully keypad programmable, all programming proceed on the keypad.

iDK-9206 is weatherproof, which is suitable for both out-door and in-door installations.

iDK-9206 is a device of simple operation, easy to use, reliable functions, it is an ideal device for office, home and factory in access control and security system Installation.

2.   TECHNICAL DATA

Operating Voltage	:	12V DC
Current Drain	:	Quiescent State=33mA,
		Active State =105mA (3 Relays actuated and all LED lighted) (Without External Card Reader)
Relay Output Contacts	:	N.O. and N.C. Dry Contacts, Max Rating of Contact Current 3A/24VDC
Capacity of Recording	:	Output 1: 500 ID Cards or 500 Codes or ID Cards and Codes Mix total 500 sets
		Output 2: 500 Codes
Card Reading Distance	:	Max Distance 10 CM
Type of ID Card	:	EM Card 125 KHZ
Dimension	:	129 (H) mm x 84 (W) mm x 41 (D) mm. Weatherproof Plastic Case
Weight	:	205 g

3.   AUDIBLE AND VISIBLE INDICATIONS

Definition of Audible and Visible Indications	Status Indicator Amber LED	Output 1 Indicator Green LED	Output 2 Indicator Red LED	Audible Indicator Buzzer	Key Act Lamp Clear LED
Standby mode	1 Flash in 2 Sec interval				
Successful key entry	1 Flash, then light for 10 Sec			1Beep	Light for 10 Sec
Successful card/code 1 entry	2 Flashes	Light		2 Beeps	
Successful operation	2 Flashes			2 Beeps	
Successful code 2 entry	2 Flashes		Light	2 Beeps	
Unsuccessful card / code entry	5 Flashes			5 Beeps	
Unsuccessful operation	5 Flashes			5 Beeps	
In locking status (No response to card / code entry)	1 Flash in 10 Sec interval			1 Short beep in 10 Sec interval 1 Long beep finish locking	
In programming mode	Light	Light			
During programming	Light	Continuous Flash			
Confirmation of programming (PRESS KEY #)	Light	Light		2 Beeps	
Alarm status	Continuous flash			Continuous beeps	

Notice to user :   (1)   Successful key entry, it will keep 10 seconds, if no further key entry in 10 seconds, it will return to normal operation status (Standby mode).

(2)   In case of wrong entry, cancel the wrong entry by pressing key #, or waiting for 10 seconds then re-enter.

4.   PROGRAMMING

Before use of the new control station, programming every item to confirm the functions and settings meet the requirement of the users.

Programming code = Management code = Master code

Default Programming Code is 1234

Note : (1) Successful programming operation — The amber LED will show 2 flash and the buzzer will sound 2 beeps.
Unsuccessful programming operation — The amber LED will show 5 flash and the buzzer will sound 5 beeps.

(2) The User Number/User ID Card/User Code are not allowed to record repeatly. Repeat record will not be entered and will give warning signal: amber LED 5 flash, buzzer sound 5 beeps to signify rejection. It is required to delete the old data then re-enter.

PROCEDURES OF PROGRAMMING

(1) Entry into programming

PRESS KEY ＊ → Enter the programming code (4-8 digits, default code is 1234) → # (The amber LED and green LED lighted, signifying entry into programming mode)

(2) Recording the new programming code

(For security purpose, change the programming code from default code before use of new control station)

PRESS KEY 0 → Enter the new programming code (4-8 digits) → #

(3) Recording the User ID Card / or the User Code 1 (Output 1)

- When recording the User ID Card or the User Code, should note if the recording is successful and the indications amber LED show 2 flash and buzzer sound 2 beeps, signifying acceptance of the entry.

- Assign a number of any 4 digits as the User Number for each User ID Card or User Code 1, the User Number is not allowed to repeat use in the programming. Keep the User Number as a record of an user.

- One User Number is only for one ID Card or one User Code, do not use the same User Number for recording both the ID Card and the User Code, otherwise the later one cannot enter for recording!

A. Recording the User ID Card

PRESS KEY 1→ Enter the User Number (4 digits) → Read the User ID Card → #

Note : If continue to record more User ID Cards, at the end of each recording, it is no necessary to press key # per each time, to repeat above steps until all User ID Cards recordings are finished. Finally to press the key # to confirm all recordings are completed.

Important Note : The 4-digit User Number for ID Card is to be used in " Card + User Number " Operation mode.

B. Recording the User Code 1

PRESS KEY 1→ Enter the User Number (4 digits) → Enter the User Code 1→ # (Confirmed code length) (Green LED flashing) → # (Green LED stop flashing), (Confirmed entering completed)

Note : If continue to record more User Code 1, at the end of each recording, it is no necessary to press key # of the second time, to repeat above steps until all User Code 1 recordings are finished. Finally to PRESS KEY # to confirm all recordings are completed.

(4) Deleting the User ID Card / or User Code 1 (Output 1)

A. PRESS KEY 2 → 0000 → # (Deleted all User ID Cards or all User Code 1)

B. PRESS KEY 2 1 → Read the User ID Card or Enter the User Code 1 to be deleted → # (Deleted the Read ID Card or the Entered User Code)

C. PRESS KEY 2 2 → Enter the User Number of the ID Card or the User Code 1 → # (Deleted the ID Card or User Code 1 of the User Number)

(5) Programming the open-door mode (For output 1)

A. PRESS KEY 3 → 00 → # (Open door by ID Card / or Open door by User Code 1)

B. PRESS KEY 3 → 01 → # (Open door by ID Card + User Number)

Note : Factory setting "Open door by ID Card / or User Code 1"

(6) Programming the door open time and relay output mode (Output 1)

A. PRESS KEY 4 0 → (01-99 seconds) → # (Output 1 setting 1-99 seconds momentary mode)

B. PRESS KEY 4 1 → # (Output 1 setting latch mode)

Note : Factory setting "3 seconds momentary mode"

(7) Recording the Aux User Code 2 (Output 2) – Aux User Codes control the output 2, the Aux User Code can be used individually

(Assign a number of any 3 digits as the User Number for each User Code 2, the User Number is not allowed to repeat use in the programming, keep the User Number as a record of an user)

PRESS KEY 5 1 → Enter the Aux User Number (3 digits) → Enter the new Aux User Code 2 (4-8 digits) → # (Confirmed code length) (Green LED flashing) → # (Green LED stop flashing), (Confirmed entering completed)

Note : If continue to record more Aux User Code 2, at the end of each recording, it is no necessary to press key # of the second time, to repeat above steps until all Aux User Code 2 recordings are finished. Finally to PRESS KEY # to confirm all recordings are completed.

(8)   Deleting the Aux User Code 2 (Output 2)

    A.   PRESS KEY   5   → 0000 → # (Deleted all Aux User Code 2)

    B.   PRESS KEY   5 2 → Enter the Aux User Code 2 to be deleted → # (Deleted the Entered Aux User Code 2)

    C.   PRESS KEY   5 3 → Enter the <u>User Number</u> of the Aux User Code 2 → # (Deleted the Aux User Code 2 of the <u>User Number</u>)

(9)   Programming the output time and relay output mode of output 2

    A.   PRESS KEY   6 0 →   (01-99 seconds) → # (Output 2 setting 1-99 seconds momentary mode)

    B.   PRESS KEY   6 1 → # (Output 2 setting latch mode)

       Note :   Factory setting "3 seconds momentary mode"

(10)   Programming – Function Settings

    A.   User Code entry mode

      i) PRESS KEY   7 0 → 0 → #   (Manual entry mode, have to press key # following the User Code entered to confirm the code
                               length of the User Code entered. The User Code can be 4-8 digits)

      ii) PRESS KEY   7 0 → 1 → #   (Auto entry mode, the User Code must be set in the same code length as the programming code.
                               No need to PRESS KEY # to confirm the code length of the User Code entered. The User Code
                               can be 4-8 digits)

       Note :   Factory setting "Manual code entry mode"

    B.   Output relay activated announcer

      i) PRESS KEY 7 1 → 0 → #   (Announcer is disabled)

      ii) PRESS KEY 7 1 → 1 → #   (Buzzer sounds for 1 second time to indicate output relay is activated)

       Note :   Factory setting "Announcer is disabled"

    C.   Pacifier tone

      PRESS KEY   7 2 → 0 → #   (Pacifier tone prohibited, silent during operation)

      PRESS KEY   7 2 → 1 → #   (Pacifier tone available)

       Note :   Factory setting "Pacifier tone available"

    D.   Door force-open alarm (To be operated with magnetic door switch) (For output 1 only)

      i) PRESS KEY   7 3 → 0 → #   (Door force-open alarm is disabled)

      ii) PRESS KEY   7 3 → 1 → #   (Door force-open alarm is enabled)

       Note :   Factory setting "Door Force-open alarm is disabled"

    E.   Programming the alarm time

      PRESS KEY   7 4 → (01-99 minutes) → #   (Alarm time setting 1-99 minutes)

       Note :   Factory setting "Alarm time 1 minute"

(11)   Programming the safety functions (For output 1 only)

    A.   PRESS KEY   8   → 00 → #   (Safety function is disabled)

    B.   PRESS KEY   8   → 01 → #   (Alarming - ALM OUT switched to ground after 10 entries of invalid ID Card or 10
                                        entries of false code, or 1 entry of valid ID Card then 5 entries of false <u>User Number</u>.
                                        Alarming can be released by reading valid User ID Card, or entering User Code or
                                        User ID Card + <u>User Number</u>, depends on programming of the mode)

    C.   PRESS KEY   8 1 → (03-10 entries) →   (Selectable of after 3-10 entries of invalid ID Card, or 3-10 entries of false code, or
                      ✱ → (01-99 minutes) → #   1 entry of valid ID Card + 5 entries of false <u>User Number</u>, the control station locks for
                                          1-99 minutes. Locking can be released by reading valid User ID Card, or entering
                                        User Code, or User ID Card + <u>User Number</u>, depends on the programming of the
                                        mode)

       **Note :   Factory Setting "After 10 entries of invalid ID Card, or 10 entries of false code, or 1 entry of valid ID Card + 5
                entries of false <u>User Number</u>, the control station locks for 1 minute"**

<u>**Control station in locking state**</u> :

No response to ID Card / or key entry, amber LED shows 1 flash and buzzer sounds 1 short beep in 10 seconds interval, at the end of
locking the buzzer sounds 1 long beep to signify the end of locking and return to normal operation mode.

(12)   **Door state monitoring   (To be operated with magnetic door switch) (For output 1 only)**

      A.   PRESS KEY 9 → 00 → #   (The Monitoring function is disabled)

      B.   PRESS KEY 9 → (01-99 seconds) → #   (The monitoring function is enabled)

      The function has 2 performance :

      i)   The door is left open longer than pre-setting of door open time (1-99 seconds) and forget to close the door the buzzer will beep continuously to remind the user to close the door. The buzzer will stop beep after the door closed.

      ii)   In case of door is force-opened, the buzzer will beep as alarming signal, closing the door can not stop alarming, should read valid ID Card, or enter User Code, or ID Card + <u>User Number</u> to stop alarming.

      Note :   Factory Setting "The monitoring function is disabled"

(13)   **End of Programming**

Exit programming mode in 60 seconds

PRESS KEY ✳ To exit programming mode and return to normal operation status (Standby mode).

5.   OPERATION OF THE CONTROL STATION

Note : The amber LED 1 flash in 2 second interval - the control station is in normal operation mode, standby for use.

(1) <u>OUTPUT 1 :</u>

   i)   Open door by User ID Card (Door opened by reading User ID Card)

   ii)   Open door by User Code 1 (Door opened by entering User Code 1)

   iii)   Open door by User ID Card + <u>User Number</u> (Door opened by reading User ID Card, green LED will flash, in 10 seconds entering the User Number)   **(NOTE: During the period of the Green LED Flashing, it can be returned to normal operation status-standby mode by pressing the key ✳).**

(2) <u>OUTPUT 2 :</u>

   Operated by User Code 2   (Enter the User Code 2 can activate the output 2)

In any case, the programming code can operate the output 1 and output 2, operation as follows :

i) Operate output 1,	Enter programming code → # → 1	(For manual code entry mode)
	Enter programming code → 1	(For auto code entry mode)
ii) Operate output 2,	Enter programming code → # → 2	(For manual code entry mode)
	Enter programming code → 2	(For auto code entry mode)

6.   SAFETY FUNCTIONS

(1)   The control station automatically locks or alarms after 3-10 abnormal entries.

(2)   The control station alarms when the door is force-opened.

(3)   The control station alarms if the door is left open longer than the pre-setting of door open time, to remind the user to close the door.

(4)   In case of the tamper switch is activated, the control station can send warning signals : The amber LED continuous flashes, the buzzer continuous beeps, until tamper switch is deactivated. Tamper switch also can be connected to security system.

7.   RESTORING THE DEFAULT PROGRAMMING CODE

If the programming code is lost (or unknown), use the DAP jumper to restore the default programming code, procedures as follows:

(1)   Disconnect power supply.

(2)   Put the DAP jumper from OFF position to ON position.

(3)   Re-connect power supply, the amber LED will flash constantly and the buzzer will beep constantly.

(4)   Put the DAP jumper back to OFF position, amber LED will stop flashing, buzzer will stop beep.

(5)   The default programming code 1234 is restored.

Note : The restoring operations only restore the default programming code 1234, the recorded Data or Settings will not be changed or deleted.

8.   NOTICE TO INSTALLER

(1)   Around the control station in 50 CM distance, there must be no any apparatus with 100 KHZ-150 KHZ frequency sources (In order that no interference is appeared).

(2)   In the installation, the distance of 2 control stations, or one control station and other card readers, should over 50 CM.

(3)   **For safety purpose, the power supply for iDK-9206 Access Control Station must provide over current protection device such as a Fuse or Thermal Cut-out of 1 Amp current rating. A readily accessible disconnect device shall be incorporated external to the equipment.**

(4)   Do not connect wires with power ON. Before apply power to the control station should confirm power voltage is 12V DC and the polarity (+ -) is correct.

(5)   To install the back-box of the control station after pass all performance and function testing.

9. WIRING DIAGRAM

(1) The Control Station controls the apparatus Via Power Supply
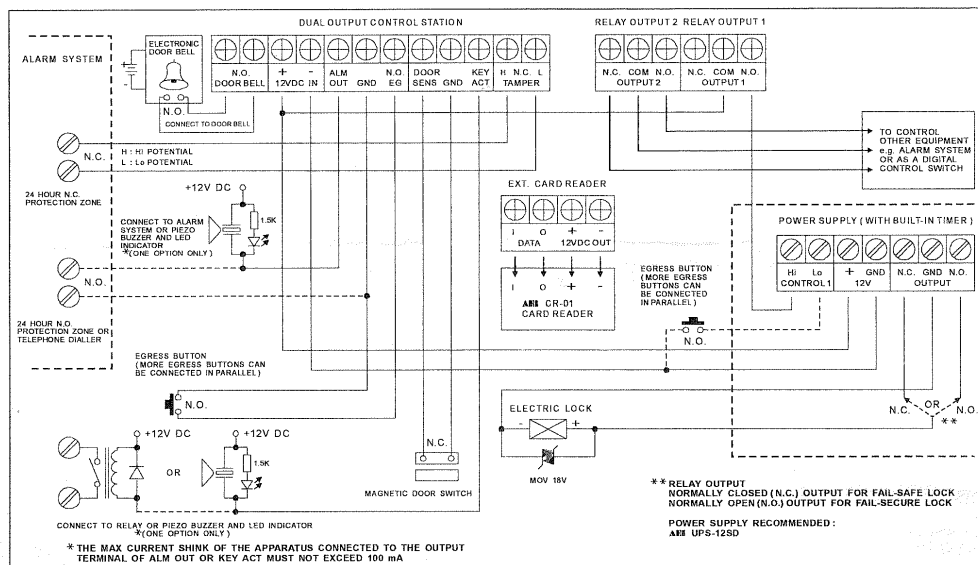
(2) The Control Station directly controls the connecting apparatus (Note : Max Rating of Relay Contact Current 3A/24VDC)
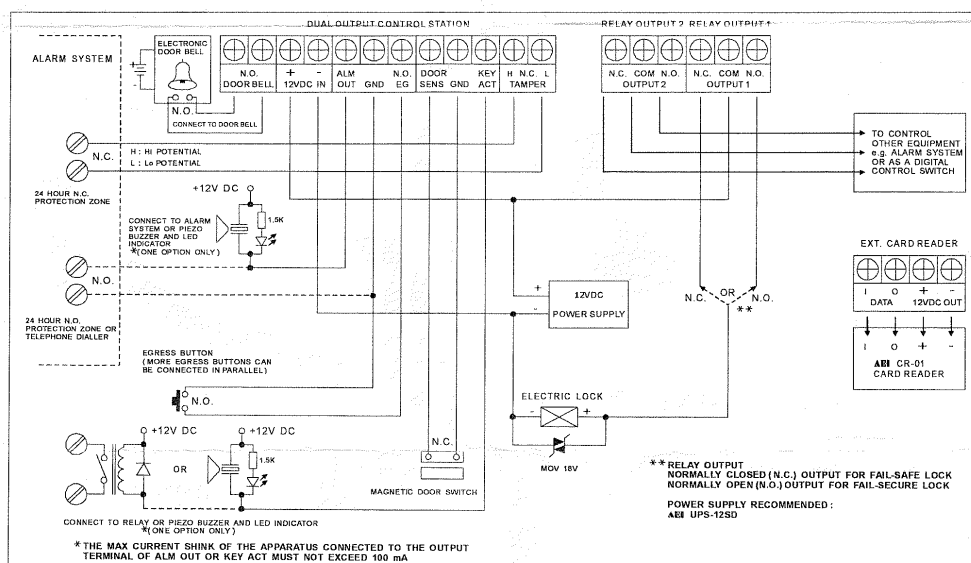

Manufacturer and Exporter

**AEI®**

ADVANCED ELECTRONICS INDUSTRY LTD.
HONG KONG

APPENDIX

＊ **TRANSISTOR OPEN COLLECTOR OUTPUT**

An open collector output is equivalent to a Normally Open (N.O.) contact referring to ground similar to an N.O. relay contact referring to ground. The transistor is normally OFF, and its output is switched to ground (-) when activated if it is an NPN transistor. The open collector transistor can only provide swiching function for small power but it is usually good enough for controlling an alarm system or for activating a power supply relay. The ALARM OUT and KEY ACT in the keypads are NPN transistor open collector output. Max current shink MUST NOT EXCEED 100MA.
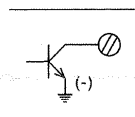
OPEN COLLECTOR
OUTPUT ----
Output switches to
ground when activates

EQUIVALENT
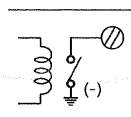
N.O. CONTACT
OUTPUT----
Output switches to
ground when activates

＊ **THE TERMINALS OF TAMPER – CONNECTING TO ALARM SYSTEM**

These are collector terminal (H) and emitter terminal (L) of an Optical Coupled Photo Transistor operated by the Tamper Switch. Should connect the collector (H) to high potential, and emitter (L) to low potential relatively, the transistor will be in ON condition making a close loop to alarm system when the tamper switch is closed (deactivated). The Max current of the close loop MUST NOT EXCEED 100MA
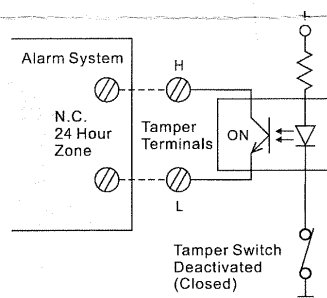
Transistor in ON Condition

The tamper terminals make a
Close loop to alarm system
When the tamper switch is closed
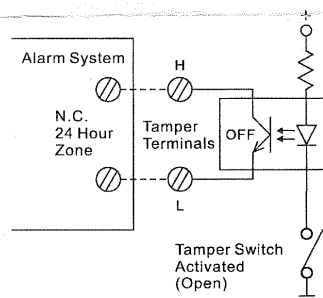
Transistor in OFF Condition

The tamper terminals make an
Open loop to alarm system when
The tamper switch is open