

COMPUTERIZED DIGITAL ACCESS KEYPAD FOR SECURITY SYSTEM APPLICATIONS

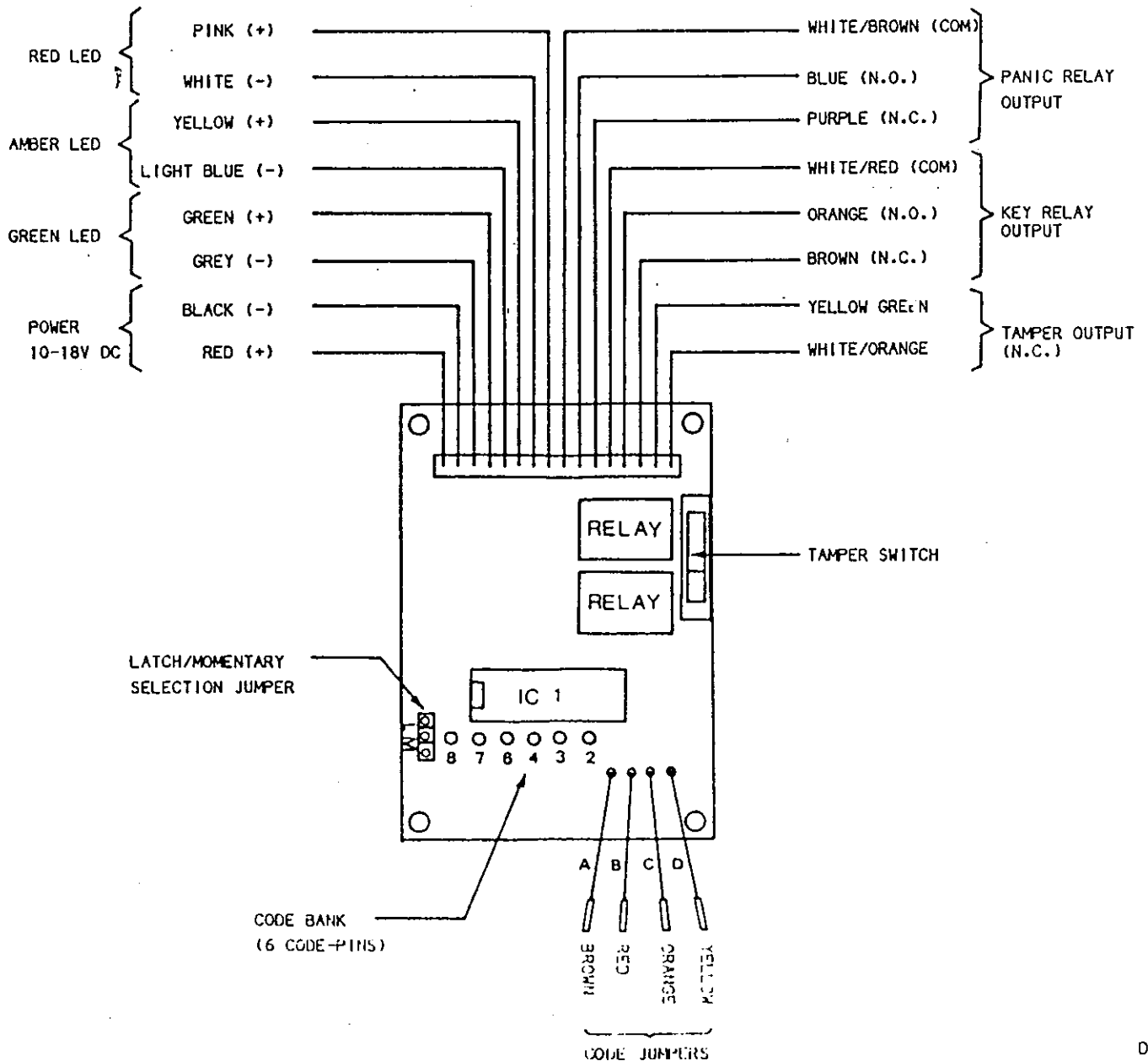
OPERATING INSTRUCTIONS

DESCRIPTION

DK-881 is a computerized digital access key-pad designed for security system applications. It employs 3-level of user programmable security codes which are default code, management code and user code. The default code which is programmable by hardware jumpers is not lost after power failure. The management code and user code are programmable from key-board; the owner may change the codes as often as he wishes. The key-pad is very convenient in operation while offering very high level of security. It has two output terminals, one is key relay output which is "LATCH" or "MOMENTARY" selectable, and the other is panic relay output offering momentary operation.

AEI also offers key-pads for door strike applications, they are DK-882 and DK-883.

CONNECTION



Power 10 - 18V — Connect to a constant source of 10 - 18V DC power provided by your alarm system.

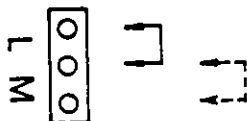
Red, Amber, and Green LED — Connect to the remote Indicator terminals on your alarm system. Be sure to observe the polarity (+ and -). Each of the on-board LEDs are equipped with 1.5K ohm current limiting resistor.

Panic Relay Output — Connect the appropriate pair of these terminals to the panic/24-hour loop on your alarm system. N.O. or N.C. loop connection is possible. The panic output is 2.5 seconds momentary in each operation.

Key Relay Output — Connect the appropriate pair of these terminals to the remote ARM/DISARM terminals on your alarm system; consult the manual for your system. N.O. or N.C. loop connection is possible. The key relay output is 2.5 seconds momentary or latch operation selectable.

Tamper Output — Connect these terminals to the normally closed (N.C.) tamper/panic/24-hour loop on your alarm system.

Key Output Mode Selection Jumper — Set the jumper for the type of switch closure necessary to operate your system's ARM/DISARM switch. Check your system's owner's manual if unclear.



Put jumper on "L" position for LATCH operation or "M" position for MOMENTARY operation for the key output.

LATCH — The key output will keep in operation when correct user code is entered until the correct code is re-entered again.

MOMENTARY — The key output will operate for 2.5 seconds when correct user code is entered, then will release after time out.

NOTE : The Jumper must be set before power is connected to the key-pad. After power is applied, the key-pad computer will not recognize a change in the jumper setting. Factory pre-set jumper on "M" position.

PROGRAMMING

The security key-pad consisting 3-level of 4-digit security codes, they are Default Code, Management Code and User Code. To prevent confusion in the process of programming for these codes; it is recommended to write down your intended 4-digit security codes on paper before starting of programming.

YOUR CODE TABLE

CODE AVAILABLE FOR YOUR SELECTION

| | | | | | |
|-----------------|---|----|----|----|----|
| DEFAULT CODE | : | __ | __ | __ | __ |
| MANAGEMENT CODE | : | __ | __ | __ | __ |
| USER CODE | : | __ | __ | __ | __ |

- 2 3 4 6 7 8
- 1 2 3 4 5 6 7 8 9 0
- 1 2 3 4 5 6 7 8 9 0

Setting The Default Code

The key-pad was pre-set to a Default Code of 2468 at the factory. The management code and user code will reset to the Default Code if power is disconnected. For security reasons, it is highly recommended that the owner to select his own Default Code for the key-pad; then the key-pad will reset to the owner's Default Code after power failure, so as to prevent the unauthorized persons to use the factory pre-set code to ARM/DISARM the security system. 360 Default Codes are possible for the owner's selection.

To program the Default Code is simple. All the owner has to do is just simply put the code jumpers on the selected code pins in the code bank.

The Code jumpers :
1st digit BROWN
2nd digit RED
3rd digit ORANGE
4th digit YELLOW

The available code pins in the code bank :
2, 3, 4, 6, 7, 8.

Programming Procedures for Default Code

Suppose that your selection for Default Code is ⁸⁶²³ 8623.

- a) Put BROWN jumper wire to code pin 8
- b) Put RED jumper wire to code pin 6
- c) Put ORANGE jumper wire to code pin 2
- d) Put YELLOW jumper wire to code pin 3

Now you can use the newly selected Default Code to ARM/DISARM the security system when the system is first power up or after power failure.

The Default Code must be entered to the key-board in precise and exact order in operation. Any deviation from the correct code will instantly reset the key-pad computer and erase the codes already entered.

NOTE : Repeat number is not allowed in Default Code programming, such as 2286, 2883 etc.

Setting The Management Code

The key-pad offers 10,000 selections of 4-digit management code which is a secret, private code for the owner or the senior management staff of an organization to enable user code programming. If a person does not know the management code he can not change the user code; so as to prevent the unauthorized person to jeopardize the user code.

The management code can be programmed to have two operation modes; and the code may be changed from key-board as often as the owner likes.

Mode 1 : When the management code is programmed with mode 1. It is solely an authorization code for user code programming.

Mode 2 : When the management code is programmed with mode 2. It is a code for both user code "programming authorization" and "key operation" being as a master's private user code. That means the owner can use the management code as user code to operate the key output.

When power is first connected to the key-pad, the preset Default Code will be in effect for both management code and user code.

Example : The Default Code was selected 8623.

The procedures for setting the management code are as follows :

- (1) Press [*] twice for initializing Mode 1 programming; or press [*] three times for initializing Mode 2 programming.
- (2) Enter the current management code — It is the default code (e.g. 8623) or any management code that you have previously programmed.

NOTE : Procedures (1) and (2) must be strictly followed; any deviation from the correct procedure the key-pad computer will turn down your programming intention.

a) Procedures (1) and (2) must be completed in exact order within 30 seconds

- * * 8 6 2 3 Correct procedure for Mode 1
- * * * 8 6 2 3 Correct procedure for Mode 2

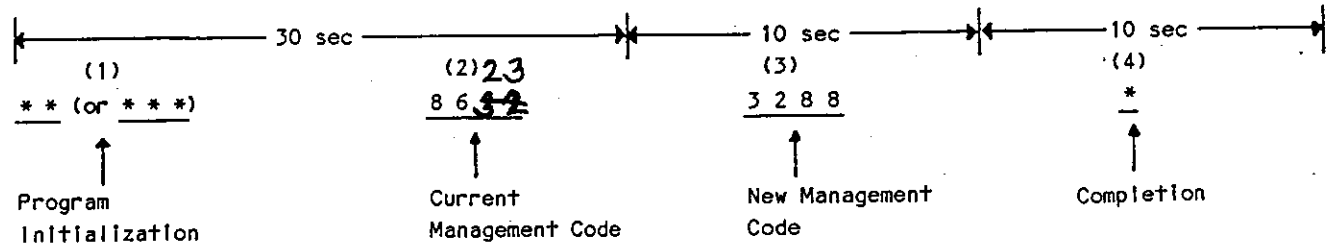
b) No number is allowed to be pressed before the * is pressed in programming, otherwise the key-pad computer will consider as general key access and will not enable its programming register.

- 3 * * 8 6 2 3
 - 8 * * * 8 6 2 3
- } not allowed

- c) In case you have accidentally pressed number before pressing the *. One of the following actions can reset the key-pad computer.
 - i) Leave the key-pad and wait, the key-pad computer will reset itself after 30 seconds; or
 - ii) Enter the user code for key operation once if the total numbers that you enter will not exceed 12 digits, the maximum allowed digit access for user code.

After the key-pad computer is reset. You can proceed procedures (1) and (2) again.

- (3) Enter your new management code — The code may be any 4-digit number. You may repeat a digit as many time as you like. The time limit for code entry is 10 seconds.
Example : {3288}, {6669}, {3333} etc.
- (4) Press [*] a final time to complete the management code entry. The time limit for code entry is 10 seconds.
- (5) After the management code is selected. You can use it to enable the key-pad for user code programming if Mode 1 is adopted; or you can use it to enable the key-pad for user code programming and to operate the key output if Mode 2 is adopted.
Example : Overall procedures in a glance for programming a new management code 3288.



- NOTE : a) If you take more than 10 seconds to complete step 3 or 4, the key-pad will reset to the old code. You must begin again with step 1 after 30 seconds.
 b) If you made error in step 3 or 4. Press [#] and begin again with step 1.

Setting The User Security Code

The Key-pad offers 10,000 selections of 4-digit user code. The owner may change the code as often as he likes from the key-board.
 The User Code is the code to be announced for the members of a family or the staff of an organization. It is the code for arming or disarming the security system.

The procedures for setting the user code are as follows :

- (1) Press [*] once.
- (2) Enter the management code — The 4-digit code that you have previously selected. [e.g. 3288]

NOTE : Procedures (1) and (2) must be strictly followed; any deviation from the correct procedure, the key-pad computer will turn down your programming intention.

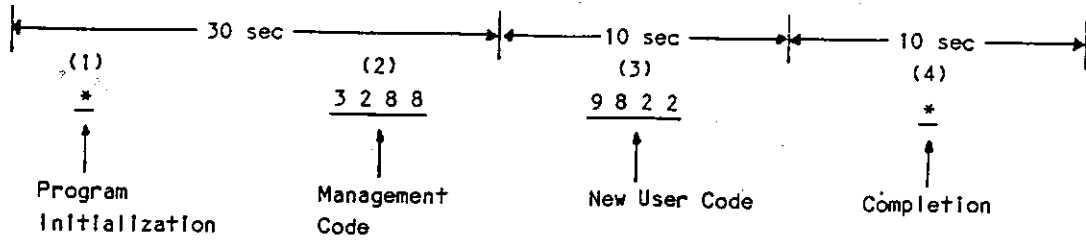
- a) Procedure (1) and (2) must be completed in exact order within 30 seconds.
 - * 3 2 8 8 —————> correct
 - b) No number is allowed to be pressed before the * is pressed in programming, otherwise the key-pad computer will consider as general key access and will not enable its programming register.
 - 8 * 3 2 8 8 —————> Not allowed
 - c) In case you have accidentally pressed number before pressing the *. One of the following actions can reset the key-pad computer.
 - i) Leave the key-pad and wait; the key-pad computer will reset itself after 30 seconds; or
 - ii) Enter the user code for key operation once if the total numbers that you enter will not exceed 12 digits, the maximum allowed digit access for user code.

After the key-pad computer is reset, you can proceed procedures (1) and (2) again.

- (3) Enter the new user code — The code may be any 4-digit number. You may repeat a digit as many time as you like. The time limit for code entry is 10 seconds.
Example : {9822}, {6669}, {8888} etc.

- (4) Press [*] a final time to complete the code entry. The time limit for code entry is 10 seconds.
- (5) After the new User Code is selected, enter the code to ARM the security system; enter the code again to DISARM the security system.

Example : Overall procedures in a glance for programming a new User Code 9822.



NOTE : a) If you take more than 10 seconds to complete step 3 or 4, the key-pad will reset to the old code. You must begin again with step 1 after 30 seconds.
b) If you made error in step 3 or 4, press [#] and begin again with step 1.

INSTALLATION

Mounting

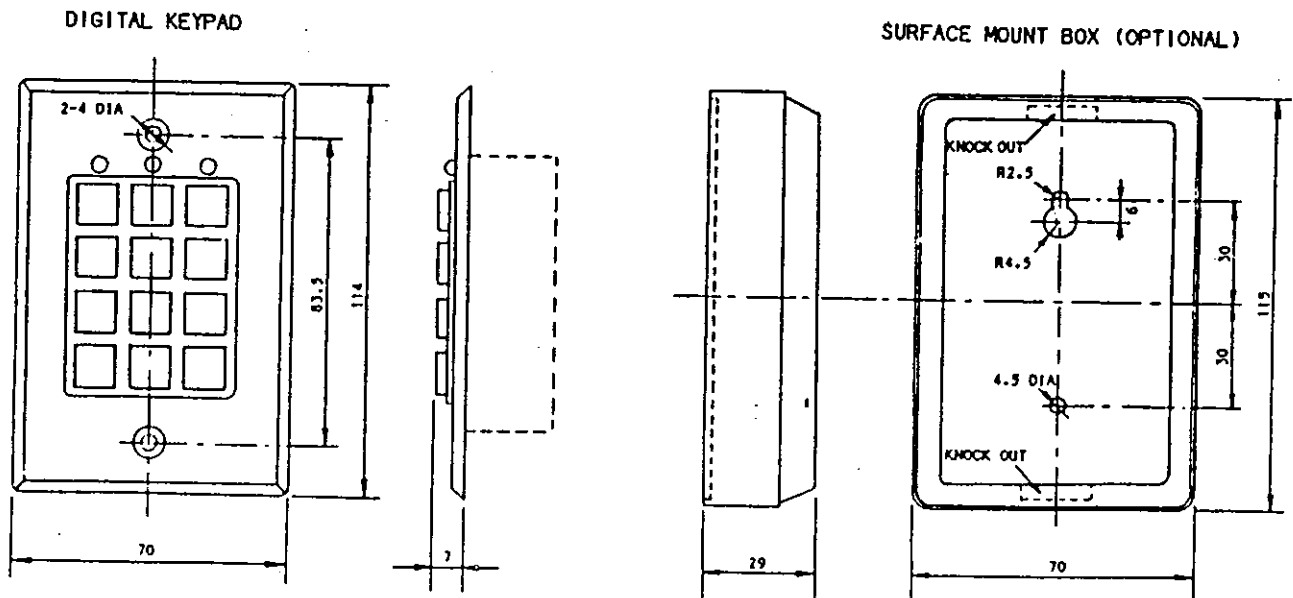
The DK-881 may be flush mount or surface mount. It is recommended to mount the unit approximately 50"(1.2m) above the floor.

(I) Flush mount :

Select a location and cut a rectangular hole of 2.1"(53mm) x 2.9"(73mm) or mount a single electrical gang box in the wall for flush mounting. Fix the DK-881 use the 2 screws provided.

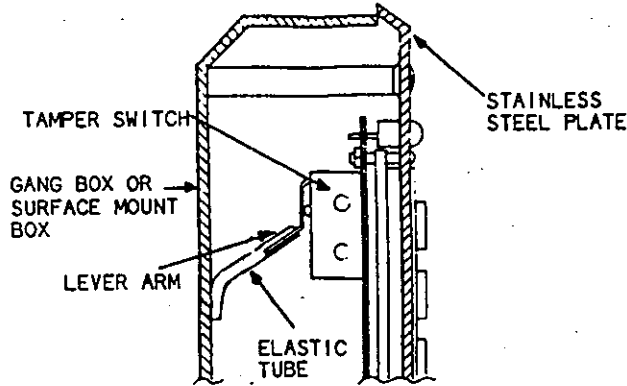
(II) Surface mount :

An optional surface mounting box (Model DK-01) is required. Use the mounting box as a template and mark the locations of the mounting screws and wiring hole on the wall. Two knock-outs are available on the back of the mounting box for running wires thru; one at the top and one at the bottom. Mount the surface mounting box on the wall using the 2 screws provided.



Tamper Switch Adjustment

The tamper switch is Normally Closed when depressed. To ensure the tamper switch is depressed when the key-pad is secured on wall. It is necessary to have an elastic tube with appropriate length snapping over the lever arm of the tamper switch. An elastic tube is provided for that purpose and it may be cut for appropriate length to suit different type of gang boxes.



Wiring

The following is the procedures for wiring the external wires to the digital key-pad:

- (i) Remove the wiring harness from the male socket carefully, so as not to damage the unit.
- (ii) Connect external wires to the wiring harness.
- (iii) Tape all the wire ends of the unused wires.
- (iv) Make sure all wirings are correct before applying power to the unit.
- (v) Plug the wiring harness back to the male socket of the digital key-pad.

NOTE : The on-board LEDs are equipped with current limiting resistors. They can work at any voltage between 10-18V DC. Be sure that the LEDs are wired with correct polarity.

OPERATION

Security Key

- (1) To operate the security key, the 4-digit User Code [e.g. 9822] must be pressed in a precise and exact order within 30 seconds. Any deviation from the correct code instantly resets the key-pad computer and erases the codes already entered.

Example :

| | |
|--|---------|
| <div style="display: inline-block; border-left: 1px solid black; border-right: 1px solid black; padding: 0 10px;"> <div style="text-align: center; margin-bottom: 5px;">30 seconds</div> <div style="text-align: center; margin-top: 5px;"> <u>9 8 2 2</u> </div> </div> | ✓ VALID |
|--|---------|

- (2) The key-pad computer will allow 12 digits maximum to be entered within 30 seconds and it will recognize a code as valid code if the last 4 digits are in precise and exact order.

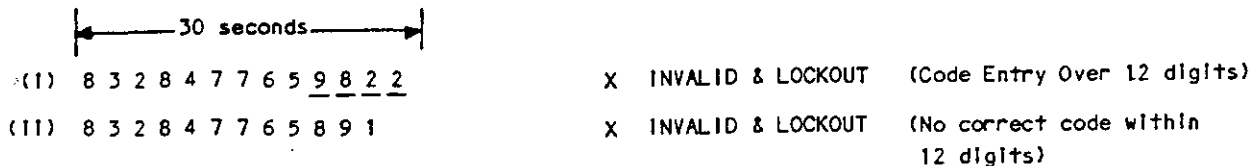
This feature allows you to randomly press some digits before entering the 4-digit User Code when an unauthorized person is standing close to you while you are accessing the key-pad. As he does not know when the User Code is entered; and he is also very difficult to remember the 12 digits that you have pressed. Moreover, you can enter different number of digits every time so as to make him more confused.

Example :

| | |
|---|---------|
| <div style="display: inline-block; border-left: 1px solid black; border-right: 1px solid black; padding: 0 10px;"> <div style="text-align: center; margin-bottom: 5px;">30 seconds</div> </div> | |
| (i) 0 1 2 3 4 8 6 6 <u>9 8 2 2</u> | ✓ VALID |
| (ii) 3 1 <u>9 8 2 2</u> | ✓ VALID |
| (iii) 8 4 3 2 <u>9 8 2 2</u> | ✓ VALID |

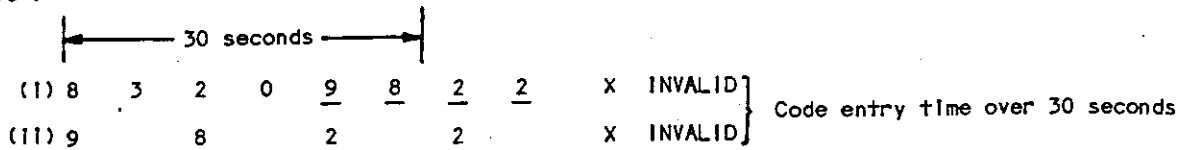
(3) If the number that you entered is more than 12 digits or the 12 digits contains no correct code the key-pad computer will lock-out for 30 seconds. This feature prevents the unauthorized person to randomly access the key-pad.

Example :



(4) If the time you take for code entry is more than 30 seconds, the key-pad computer will automatically reset and erase the number that you entered. This auto-reset feature prevents the unauthorized person to make "last number access" when the user unconsciously pressed the first 3 digits of the user code and left the key-pad.

Example :



(5) The key output relay will operate when the 4-digit User Code is correctly entered. The operation of the relay may be Momentary (2.5 seconds) or Latch depending on the setting selection made previously. Both N.O. and N.C. relay output contacts are available.

NOTE : If the management code was programmed with mode 2. The owner can use it as a private user code to operate the security key; and the operation is same as described above.

Panic Buttons

- (1) The panic relay output will operate when * and # buttons are pressed simultaneously.
- (2) The operation of the panic relay output is 2.5 seconds momentary. Both N.O. and N.C. relay output contacts are available.

Security Key Operation After Power Failure

The key-pad will reset to the Default Code after power failure, that means the Default Code, Management Code and User Code are in the same number. It is highly recommended to re-program the key-pad with new management code and user code as soon as possible.

When the key-pad has reset to default code after power failure. You can use the default code to operate the security key but it is not allow to press the * first before pressing the default code; otherwise the key-pad computer will consider that you intent to do programming; as the key-pad computer can not discriminate the code that you entered is a user code or management code, while both codes are being in the same number.

Other operation criteria are same as stated in Security Key section.

SPECIFICATIONS

- * Operating Voltage Range : 10 - 18V DC
- * Quiescent Current Drian : 10mA typical
- * Key/Panic Relay Output Contact : 24V DC 1 A MAX
- * Key Code Combinations — Management : 10,000
 - User : 10,000
 - Default : 360
- * Key Output Mode : Momentary/Latch Selectable
- * Panic Output Mode : 2.5 seconds Approx., Momentary
- * Code Entry Access Time : 30 seconds Approx.
- * Code Programming Time : 10 seconds/Step Approx.
- * Lockout Time : 30 seconds Approx.
- * Maximum Allowed Random Digit Access : 12 digits
- * Weight : 100g Approx.
- * Dimensions : 114mm(H) x 70mm(W) x 36mm(D)

SPECIFICATIONS ARE SUBJECT TO CHANGE FOR MODIFICATION WITHOUT NOTICE

ADVANCED ELECTRONICS INDUSTRY