K401-IE

Internal/External

Stand-Alone Keypad & Proximity Card Reader

User Manual

INTRODUCTION

The K401-IE is a single relay multifunction standalone access control keypad suitable for indoor/external use
It is housed in a strong, sturdy and vandal resistant Zinc Alloy electroplated case

It supports up to 1000 users in a Card, PIN, or a Card + PIN option. The inbuilt card reader supports 125KHZ EM frequency card or key fob, and the Pin length is 4-6 digits

The single relay can operate in Pulse Mode (suitable for access control) or Toggle Mode (suitable for arming/disarming alarms, switching lights, machines….etc)

The K401-IE has many extra features including block enrollment, anti-tamper alarm & backlit keypad buttons
These features make the K401-IE an ideal choice for door access not only for small shops and domestic households but also for commercial and industrial applications such as factories, warehouses, laboratories, banks and prisons

Features
- Weather resistant to IP66
- Strong Zinc Alloy Electroplated anti-vandal case – Vandal resistant
- Backlit Keypad buttons
- Multi-color LED status display
- One Programmable Relay Output
- **Relay:** Up to 1000 Pin & Card holders (990 standard users and 10 visitor users)
- Master Add & Master Delete Cards
- Integrated Alarm Buzzer & Output
- Low power consumption (55mA)
- Anti-Tamper Alarm
- Latch Mode/Toggle Mode
- 12-24V DC Power Input
- 900mm sheathed cable tail

Specifications:

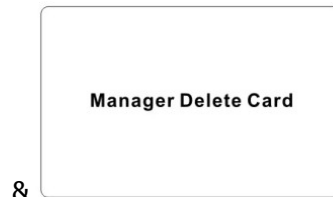|	
User Capacity	**1000 Cards/PINS**
	1000 (0-989 standard users and 10 visitor users)
Operating Voltage	**12-24V DC**
Idle Current	35mA
Active Current	80mA
Keypad	**12 Key (3*4)**
Proximity Card Reader	**EM**
Radio Technology	125 KHz Industry Standard Proximity Card
Read Range	25mm-35mm
Wiring Connections	Relay Output, Exit Button
Relay	**One (NO, NC, Common)**
Adjustable Relay Output Time	1-99 Seconds (5 seconds default)
Lock Output Load	3 Amp Maximum
Environment	**Indoor**
Operating Temperature	-30℃ - 60℃
Operating Humidity	20%RH-85%RH
Physical	**Zinc-Alloy Enclosure**
Surface Finish	Powder Coat
Dimensions	H: 120 x W: 76 x D: 25 (mm)
Unit Weight	550g

Package contents
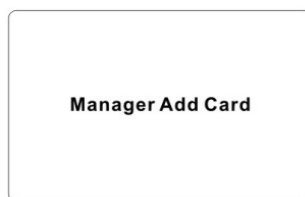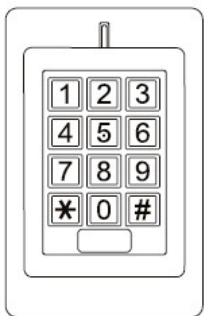

Screw Driver   Manager Add Card   &   Manager Delete Card

K401-IE Keypad

Diode IN4004 (For relay circuit protection)
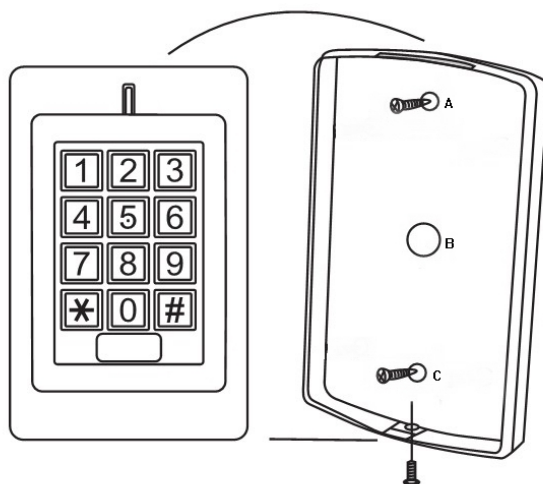

Self Tapping Screws

Wall Anchors

Screw Driver

INSTALLATION

- Remove the back cover from the unit
- Drill 2 holes (A,C) on the wall for the screws and one hole for the cable
- Knock the supplied rubber bungs to the screw holes (A,C)
- Fix the back cover firmly on the wall with 4 flat head screws
- Thread the cable through the cable hole (B)
- Attach the unit to the back cover

Wiring

Wire Insulation Colour	Function	Notes
Yellow	OPEN	Request to Exit input (REX)
Red	Power +	12-24V DC Regulated Power Input
Pink	GND	Ground
Blue	NO	Normally Open Relay Output
Purple	COM	Common Connection for Relay Output
Orange	NC	Normally Closed Relay Output

Function Description

Relay operation (Pulse mode and Toggle mode)

The relay can operate in Pulse Mode (suitable for access control) or Toggle Mode (suitable for arming/disarming alarms, switching lights, machines….etc)

Every time a valid card/fob is presented or a Pin input is made in Pulse Mode, the relay will operate, for the pre-set relay pulse time

Every time a valid card/fob is presented or a Pin input is made in Toggle Mode, the relay changes state, which will not revert until a valid card/fob is re-presented or a Pin input is re-made

Master Cards

The K401-IE can use Master Cards to program user cards/fobs into and out of the system. There are two pre-programmed Master Cards (an Add Card, and a Delete Card) to allow rapid card enrollment

Anti Tamper Alarm – Please the last page for this

The K401-IE uses an LDR (light Dependent Resistor) as an anti tamper alarm. If the keypad facia is removed, or a sudden change in light source, the tamper alarm will bleep constantly

PROGRAMMING

Programming will vary depending on access confirguration. Follow the instructions according to your access configuration

Programming 1 ------------------ Configure the K401-IE

Change the configure settings according to your application (optional). Multiple configuration settings can be changed at one time: enter program mode, change the desired settings, then exit program mode

Set Master Code

The 6 digit Master Code is used to prevent unauthorized access to the system. To interface with the K401-IE, the manager will need a Master Code (Factory default code: 123456). We recommend immediate update and recording of your Master Code

Programming Step	Keystroke Combination
1. Enter Program Mode	* (123456) #
2. Update Master Code	0（New Master Code）#（Repeat New Master Code）#
3. Exit Program Mode	*

SET ACCESS CONFIGURATION

There are 3 types of access configurations for the K401-IE
● **Card or PIN (Default):** The User must present a valid Card to the K401-IE or enter their PIN code followed by the # key, in order to be granted access
● **Card + PIN:** The User must first present a valid Card to the K401-IE and then enter their PIN code followed by the # key, in order to be granted access
● **Card Only:** The User must present a valid Card to the K401-IE in order to be granted access

Programming Step	Keystroke Combination
1. Enter Program Mode	* (Master Code) #
2. Card or PIN	3 0 # (Default)
3. Card + PIN	3 1 #
4. Card only	3 2 #
5. Exit program mode	*

Set Relay Configuration

The relay configuration sets the behaviour of the output relay on activation

Programming Step	Keystroke Combination
1. Enter Program Mode	* (Master Code) #
2. Pulse Mode	4 (1-99) # The relay time is 1-99 seconds. (1 is 50ms) Default is 5 seconds
3. Latch Mode	4 0 # Sets the relay to ON/OFF Latch mode
4. Exit program mode	*

Keypad lock-out Alarm

The keypad lock-out alarm will engage after 10 failed card/PIN attempts. Factory default is OFF. The strike-our alarm can be set to deny access for 10 minutes after engaging or it can be set disengage only after entering a valid card/PIN or Master Code

Programming Step	Keystroke Combination
1. Enter Program Mode	* **(Master Code) #**
2. Lock-Out OFF	**7 0 #** *(Default)*
3. Lock-Out ON	**7 1 #** *Access will be denied for 10 minutes*
5. Set alarm time	**5 (0 - 3) #** *(Default is 1 minute)*
5. Exit program mode	*

Programming 2 ------------------ Program Cards and PINS

Programming will vary depending on the access configuration. Follow the instructions according to your access configuration

GENERAL PROGRAMMING INFORMATION

• **User ID Number:** Assign a user ID number to the access code in order to keep track of the users of access cards or PINS. The user ID number can be any number from 0-989
Visitor user ID numbers are 990-999

IMPORTANT: User IDs do not have to be proceeded with any leading zeros. Recording of User ID is critical Modifications to user data require either the card or the User ID be available

• **Proximity Card:** 125 KHz industry standard 26 bit EM Proximity Card
• **Keypad PIN:** The PIN can be any 4-6 digits between 0000-999999 (except 1234 which is reserved)

Using Master Cards

Add a User Card	1. **(Present Master Add Card)**
	2. **(Read User Card)**
	Repeat Step 2 for additional user cards
	3. **(Present Master Add Card again to confirm)**
Delete a User Card	1. **(Present Master Delete Card)**
	2. **(Read User Card)**
	Repeat Step 2 for additional user cards
	3. **(Present Master Delete Card again to confirm)**

ACCESS CONFIGURATION: CARD OR PIN & CARD ONLY
Add User Cards/Key fobs

Programming Step	Keystroke Combination
1. Enter Program Mode	*** (Master Code) #**
2. Add Card: Using Auto ID *(Allows K401-IE to assign Card to next available User ID number)*	**1 (Read Card) #** *Cards can be added continuously*
3. Add Card: Select Specific ID *(Allows manager to define a specific User ID to associate the card to)*	**1 (User ID) # (Read Card) #** *The user ID is any number from 0-989*
4. Exit program mode	*

Delete User Cards/Key fobs

Programming Step	Keystroke Combination
1. Enter Program Mode	*** (Master Code) #**
2. Delete Card: By card	**2 (Read Card) #** *Cards can be deleted continuously*
3. Delete Card: Select Specific ID	**2 (User ID) #** *The user ID is any number from 0-989*
4. Exit program mode	*

Add or Delete a PIN

Programming Step	Keystroke Combination
1. Enter Program Mode	*** (Master Code) #**
2. Add a PIN Assigns PIN to user ID number	**1 (User ID) # (PIN) #** *PINS can be added continuously*
3. Delete a PIN with the user ID *Deletes the User ID number and associated PIN*	**2 (User ID) #** *PINS can be deleted continuously*
4. Delete a PIN with the PIN *Deletes the User ID number and associated PIN*	**2 (Enter the PIN) #** *PINS can be deleted continuously*
5. Exit program mode	*

Change a PIN
This operation is executed from outside of Program Mode

Programming Step	Keystroke Combination
1. Change a PIN	*** (User ID#) (Old PIN #) (New PIN #) (New PIN #)**
2. Exit program mode	*

ACCESS CONFIGURATION: CARD+PIN

Add a Card+ PIN User

Programming Step	Keystroke Combination
1. Enter Program Mode	*(Master Code) #
2. Add a User Card by ID number	1 (User ID) # (Read Card) #
3. Exit Program Mode	*
4. Add PIN	* (Read Card) (1234#) (New PIN #) (New PIN #) *This operation is executed from outside of Program Mode*
5. Exit program mode	*

Change PIN

Allows card user to update the PIN for their card + PIN User ID. *This operation is executed from outside of Program Mode*

Programming Step	Keystroke Combination
1. Change PIN using a Card	(Read Card) (Old PIN #) (New PIN #) (New PIN #)
2. Change PIN using PIN	(User ID) (Old PIN #) (New PIN #) (New PIN #)
3. Exit program mode	*

Delete Card by User ID

Deleting by ID number will clear cards and PINS

Programming Step	Keystroke Combination
1. Enter Program Mode	*(Master Code) #
2. Delete User Card by User ID	2 (User ID) #
3. Exit program mode	*

Add Visitors

Up to 10 Visitor Users can be added and allowed no more than ten times of usage until they are automatically invalid. The USER ID numbers must be 990-999 for this function to operate

Programming Step	Keystroke Combination
1. Enter Program Mode	*(Master Code)
2. Add a visitor PIN **OR**	1 (User ID) # (0-9) # (Enter PIN number, 4-6 digits) #
3. Add a Card/Key fob	1 (User ID) # (0-9) # (Present Card) # The user ID numbers must be from 990-999 (0-9) Means the number of usage times – 0=10 times
4. Exit program mode	*

Set Audio sound & Visual LED display

LED status always **OFF**	**62 #**
LED status aways **ON**	**63 #** *(Default)*
Keypad back lit always **OFF**	**64 #**
Keypad back lit always **ON**	**65 # We recommend this setting**
Keypad back lit **Automatic OFF**	**66 #** *(Default)* After 20 seconds the keypad backlight will go off and only return to normal mode upon pressing any button
Enable sound	**68 #***(Default)*
Disable sound	**67 #**

Others

Reset to Factory Default:

This will reset the K401-IE to the factory default but all card/PIN information will still be retained

This procedure will also require reprogramming of the Master Add and Delete Cards

NOTE: This is also useful if the original Master Add and Delete Cards have been lost

1. Power down the K401-IE
2. Press the * (Star) button and hold, at the same time power up the keypad
3. Release the button when you hear two bleeps and wait until the amber LED shines

(Parts 4 & 5 must be undertaken within 10 seconds)

4. Present any 125KHz proximity EM card or the Master Add Card (provided) to the K401-IE. This card is now the Master Add Card
5. Present any 125KHz proximity EM card or the Master Delete Card (provided) to the K401-IE. This card is now the Master Delete Card

When the red LED is on, the K401-IE has been successfully reset

Erase all Cards

This will delete ALL User data

1. Enter Program Mode: ***(Master Code) #**
2. Press **2 (Master Code) #**
3. Exit: *****

All configuration data is retained

Reset Strike-Out Alarm

Enter Master Code or Valid Card/PIN to silence

Sound and Light indication

Operation Status	Red LED	Green OR Yellow LED	Sounds
Power on	ON		Short Single Bleep
Stand by	ON		
Press Keypad			Short Single Bleep
Enter Master Code Entry Mode	ON		Short Single Bleep
In program mode		Yellow on	Short Single Bleep
Entered Program Step Successfully	ON		Short Single Bleep
Entered Program Step Incorrectly			3 Short Bleeps
Exit from the programming mode	ON		Short Single Bleep
Entry Granted		Green LED on	Short Single Bleep
Open lock		Green LED on	One Bleep
Alarm Mode Engaged	Flashing		Alarm
Alarm	Red light Shines quickly		Bleeps
Pressing * Toggles Standby/Master Code Entry	ON/Flashing		Short Single Bleep

K401-IE- Simplified Instruction	
Function Description	**Operation**
Enter the Programming Mode	*** (Master Code) #** *(123456 is the default factory master code)*
Change the Master Code	**0（New Master Code）#（Repeat New Master Code）#** *(code: 6 digits)*
Add Card User	**1 (Read Card) #**
Add PIN User	**1 (User ID) # (PIN) #** *The ID number is any number between 0 - 989.The PIN is any 4-6 digits between 0000 - 999999*
Delete User	**2 (Read Card) #** **2 (User ID) #**
Exit from the programming mode	*****
How to be granted access	
Card User	**Read card**
PIN User	**Enter (PIN) #**

Anti Tamper Alarm

The K401-IE's alarm trigger is activated by an LDR (Light Dependant Resistor) which is located to the lower side of the unit as illustrated below using the K401-E

The alarm function is designed as an 'Anti-Theft' facility. Forceful removal of the installed keypad or a sudden change in light source will trigger the keypad to bleep constantly. The keypad will also be "Blocked" from use

The function cannot be disabled but it can be stopped by presenting a valid card or key fob to the reader or entering the Master Code followed by the # sign

Alternatively, you can prevent the alarm from future activation by covering the LDR with a non-light absorbent substance in addition to sealing around all edges of the keypad

This is the LDR (Light Dependent Resistor). The LDR is the K401-IE's Alarm Trigger Sensor and activated by light

Gray&black	GND
Gray	ALARM-
Yellow&black	OPEN2
Yellow	OPEN1
Brown	D_IN
Red	AC&DC
Black	AC&DC
Blue&black	NO2
White&black	COM2
Green&black	NC2
Blue	NO1
White	COM1
Green	NC1

K401-E
S/N:15060063

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