# K401-I

**Internal**

# Stand-Alone Keypad & Proximity Card Reader

# User Manual

# INTRODUCTION

The K401-I is a single relay multifunction standalone access control keypad suitable for indoor 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-I has many extra features including block enrollment, anti-tamper alarm & backlit keypad buttons

These features make the K401-I 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

- Vandal resistant enclosure
- Backlit Keypad buttons
- Multi-color LED status display
- One programmable relay output
- 1000 Users (Card/PIN/Card & PIN)
- Low power consumption (50mA)
- Anti-Tamper Alarm
- Latch Mode/Toggle Mode
- 12-24V DC Power input

## Specifications:

| User Capacity | 1000 Cards/PINS |
|---|---|
| **Operating Voltage** | **12-24V DC** |
| Idle Current | 50mA |
| 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
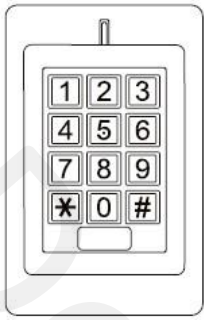


K401-I Keypad

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)
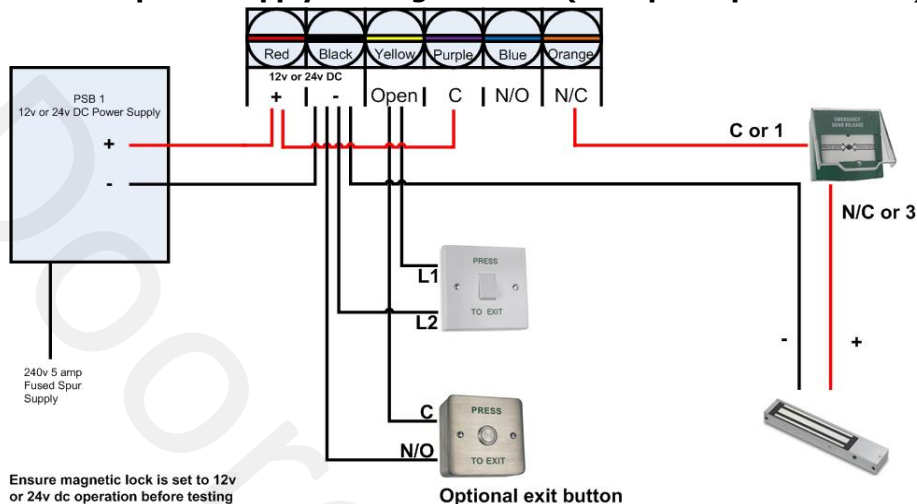- Attach the unit to the back cover
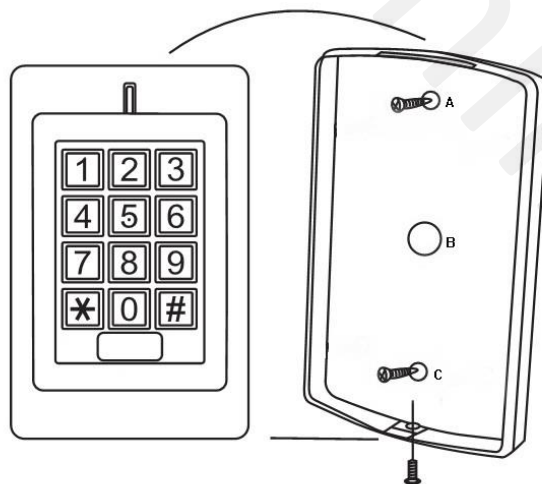


## Wiring

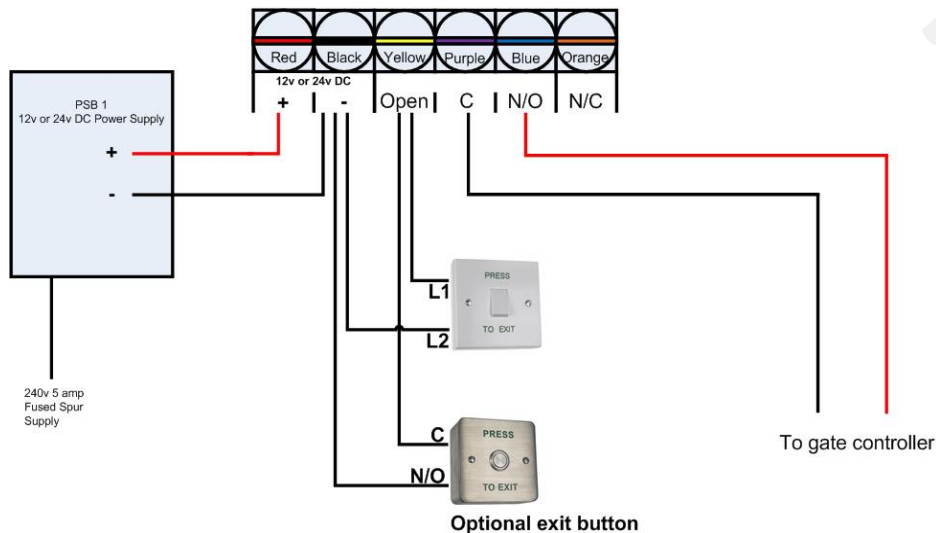| Wire Insulation Colour | Function | Notes |
|---|---|---|
| Yellow | OPEN | Request to Exit input (REX) |
| Red | Power + | 12-24V DC Regulated Power Input |
| Black | GND | Ground |
| Blue | NO | Normally Open Relay Output |
| Purple | COM | Common Connection for Relay Output |
| Orange | NC | Normally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

# Connection Diagram Examples

## Common power supply for magnetic lock (Fail open – power to lock)



Ensure magnetic lock is set to 12v or 24v dc operation before testing

Optional exit button

## Common power supply for lock release (Fail secure – power to unlock)



Ensure lock release is set to 12v or 24v dc operation before testing

Optional exit button
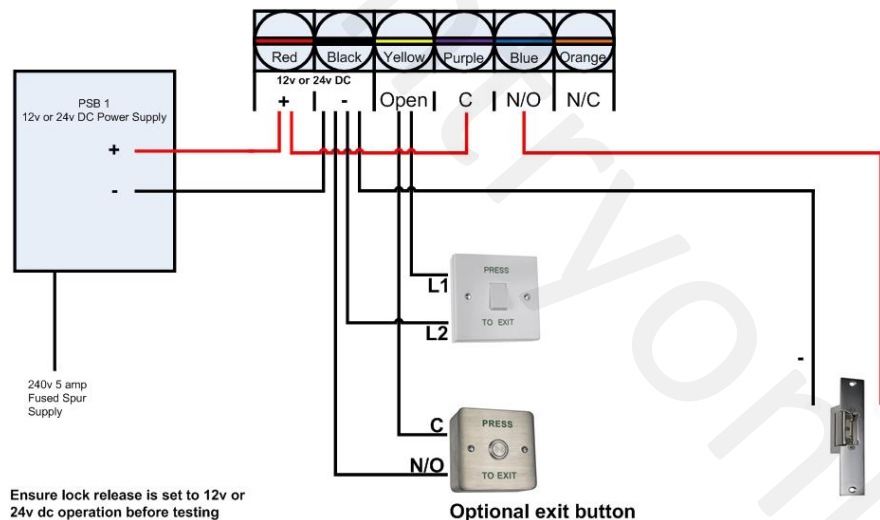
## Common power supply for auto gate controller (using Normally Open contact)



To gate controller

Optional exit button

**Attention**: Install a 1N4004 or equivalent diode across the locking device when using a common power supply to prevent any back E.M.F as the reader might damage. (1N4004 is included in the packing)

# PROGRAMMING

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

## Programming 1 ------------------ Configure the K401-I

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 4-6 digit Master Code is used to prevent unauthorized access to the system. To interface with the K401-I, the manager will need a Master Code (factory default code: 6666). We recommend immediate update and recording of your Master Code

| Programming Step | Keystroke Combination |
|---|---|
| 1. Enter Program Mode | * (Master Code) # |
| 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-I

● **Card or PIN (Default):** The User must present a valid Card to the K401-I or 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-I in order to be granted access

● **Card + PIN:** The User must first present a valid Card to the K401-I and then enter their PIN code followed by the # key, 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 | * |

## Set Strike-out Alarm

The strike-our alarm will engage after 5 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. Strike-Out OFF | 6 0 # *(Default)* |
| 3. Strike-Out ON | 6 1 # *Access will be denied for 10 minutes* |
| 4. Strike-Out ON | 6 2 # *The buzzer alarms* |
| 5. Set alarm time | 5 (0 - 30) # *(Default is 1 minute)* |
| 6. 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 1-1000

**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 for factory testing)

## ACCESS CONFIGURATION: CARD OR PIN & CARD ONLY
### Add User Cards

| Programming Step | Keystroke Combination |
|---|---|
| 1. Enter Program Mode | * (Master Code) # |
| 2. Add Card: Using Auto ID<br>*(Allows K401-I to assign Card to next available User ID number)* | 1 (Read Card) #<br>*Cards can be added continuously* |
| 3. Add Card: Select Specific ID<br>*(Allows manager to define a specific User ID to associate the card to)* | 1 (User ID) # (Read Card) #<br>*The user ID is any number from 0-999* |
| 4. Exit program mode | * |

### Delete User Cards

| Programming Step | Keystroke Combination |
|---|---|
| 1. Enter Program Mode | **\* (Master Code) #** |
| 2. Delete Card: By card | **2 (Read Card) #**<br>*Cards can be deleted continuously* |
| 3. Delete Card: Select Specific ID | **2 (User ID) #**<br>*The user ID is any number from 0-999* |
| 4. Exit program mode | **\*** |

### Add or Delete a PIN

| Programming Step | Keystroke Combination |
|---|---|
| 1. Enter Program Mode | **\* (Master Code) #** |
| 2. Add a PIN<br>Assigns PIN to user ID number | **1 (User ID) # (PIN) #**<br>*PINS can be added continuously* |
| 3. Delete a PIN<br>*Deletes the User ID number and associated PIN* | **2 (User ID) #**<br>*PINS can be deleted continuously* |
| 4. 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 #)**<br>*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 | * |

# Others

### Reset to Factory Default:

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

1. Power the K401-I down

2. Press and hold the **\*** button and power up the K401-I

3. There will be two bleeps. Then release the **\*** button, after a second there will be one more bleep to confirm reset

### Erase all Cards

This will delete ALL User data

1. Enter Program Mode: **\*(Master Code) #**

2. Press **20000 #**

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 LED | Sounds |
|---|---|---|---|
| Power on | Flashing | | Short Single Bleep |
| Stand by | Flashing | | |
| Press Keypad | Flashing | | Short Single Bleep |
| Enter Master Code Entry Mode | ON | | Short Single Bleep |
| In program mode | ON | Single Flash | Short Single Bleep |
| Entered Program Step Successfully | ON | Single Flash | Short Single Bleep |
| Entered Program Step Incorrectly | | | 3 Short Bleeps |
| Exit from the programming mode | Flashing | | Short Single Bleep |
| Entry Granted | | ON | Short Single Bleep |
| Open lock | Green light bright | | 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-I- Simplified Instruction

| Function Description | Operation |
|---|---|
| Enter the Programming Mode | **\* (Master Code) #**<br>*(6666 is the default factory master code)* |
| Change the Master Code | **0（New Master Code）#（Repeat New Master Code）#**<br>*(code: 4-6 digits)* |
| Add Card User | **1 (Read Card) #** |
| Add PIN User | **1 (User ID) # (PIN) #**<br>*The ID number is any number between 0 - 999.The PIN is any 4-6 digits between 0000 - 999999* |
| Delete User | **2 (Read Card) #**<br>**2 (User ID) #** |
| Exit from the programming mode | **\*** |
| **How to be granted access** | |
| Card User | **Read card** |
| PIN User | **Enter (PIN) #** |