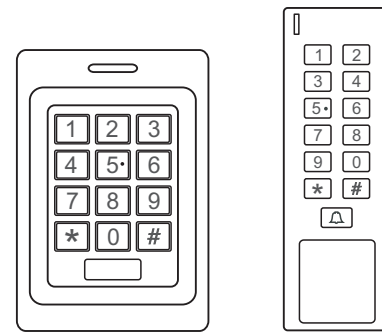# Access control/Reader WMK series

WMK1   WMK2

User Manual

INTRODUCTION

WMK is waterproof metal keypad Access Control/Wiegand Reader for single door. It adopts Atmel MCU, which ensure stable performance. Multi-format Wiegand input &output, supporting Keypad, EM, HID, IC cards. User capacity is 2000, PIN is 4-6 digits.

It is equipped with an Admin cards, which can add / delete users quickly and have the functions of anti-duress, anti- pass back function, and backlit of keyboard.

Features and Benefits

> Wide voltage input: AC / DC 10-30V
> Ani-duress, Anti-passback for single door
> Waterproof, conforms to IP67
> Wiegand 26-37 bits input & output
> Access by multiple cards/PINs
> Can be installed on 86 type box (WMK1)
> Keypad output:4 bits, 8 bits, 10 digits virtual number
> Pulse Mode, Toggle Mode

Specifications

Power supply	10-30V AC/DC
Idle Current	<45mA
Active Current	<80mA
Waterproof	IP67
User Capacity	2000
Read Range	4 ~ 6cm
Card type	EM, IC, EM+IC (WMK2), HID customized
Frequency	EM & HID: 125KHz, Mifare: 13.56MHz

Packing List

Wide   Slim

Wall Anchors
Self Tapping Screws
Admin Cards
Screw Driver
Diode 1N4004
(For relay circuit protection)

Wiegand Interface	Card: 26-37 bits, PIN: 4bits, 8bits(ASCII), 10 digits Virtual Number
Lock Output Load	<2A
Alarm Output Load	<2A
Operating Temperature	-40°C~+70°C,(-40°F ~ 158°F)
Operating Humidity	10% ~ 98%RH
Dimensions	L110xW76xH22mm(Wide) L129xW44xH20mm(Slim)
Unit Weight	WMK1:460g; WMK2:350g
Shipping Weight	WMK1:530g; WMK2:415g
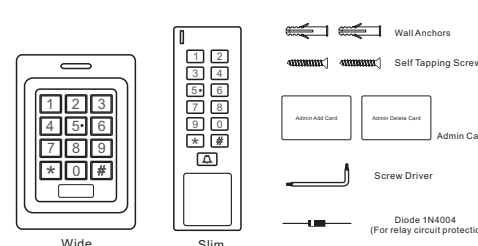
INSTALLATION

1 Drill hole on the wall according to the back size of the machine or install distributing box well.
2 Thread the cable through cable hole, connect related cable. For the un-used cable please separate with insulating tape and keep well in case of short circuit
3 Fix back cover on the wall or distributing box with screw.
4 After wiring, install front casing to the back casing and fix well.

Wiring

Wire Color	Function	Notes
Orange	NC	Relay NC
Purple	COM	Relay COM
Blue	NO	Relay NO
Black	GND	Negative Pole
Red	AC/DC	10-30V AC/DC Power Input
Pink	AC/DC	10-30V AC/DC Power Input
Yellow	OPEN	Request to Exit Button
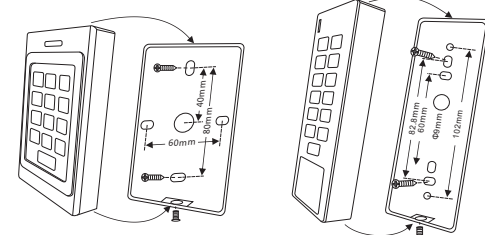
Brown	D_IN	Door Contact
Grey	ALARM-	Alarm Negative
Green	D0	Wiegand 26-37 output/input
White	D1	Wiegand 26-37 output/input
Grey & Black	BELL	External BELL (Slim mode)
Yellow & Black	BELL	External BELL (Slim mode)

Sound and Light Indication

Operation Status	LED	Buzzer
Stand by	Red light bright	– –
Enter programming mode	Red light shines	One beep
In the programming mode	Orange light bright	One beep
Open lock	Green light bright	One beep
Operation failed	– –	3 beeps

Sound and light mode setting
(Factory defaults are ON)

Programming Step	Keystroke Combination
1.Enter Program mode	＊ (Admin Code) #
2.Control LED: OFF	8 (1 0) #
ON	8 (1 1) #
2.Control Sounds: OFF	8 (2 0) #
ON	8 (2 1) #
2.Control Keypad Backlit: OFF	8 (3 0) #
ON	8 (3 1) #
2.Intelligent keyboard light	8 (3 2) #
2.Anti-tamper Alarm: OFF	8 (4 0) # (Factory default)
ON	8 (4 1) #
3.Exit	＊ ＊

Enter and Exit Program mode

Programming Step	Keystroke Combination
Enter Program Mode	＊ (Admin Code) # (Factory default is 888888)
Exit Program Mode	＊

Modify Admin Code

Programming Step	Keystroke Combination
Enter Program Mode	＊ (Admin Code) # (Factory default is 888888)
Update Admin Code	0 (New Admin Code) # (Repeat New Admin Code) # (Admin Code is any 6 digits)
Exit Program Mode	＊

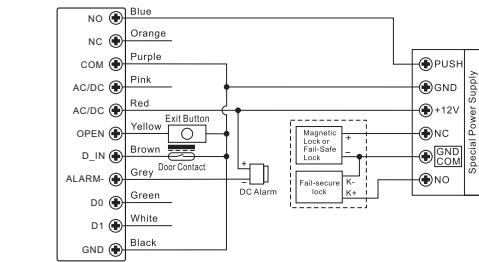For security, you must change the Admin Code and then keep in mind.

Factory Default settings

Power off, press "＊", power on, release it until hear two beeps, then one beep more, the device enter standby mode, restore to factory default is done. The users' information is still retained.
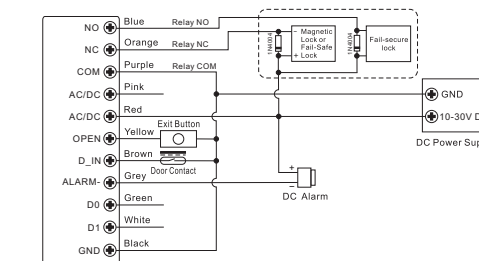
1. Special Power Supply for Access Control

2.DC Power Supply

Attention: IN4004(or equivalent diode) must be connected to the wiring when use a common power supply, otherwise the device might be damaged.
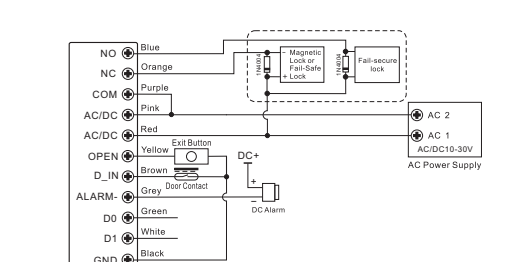

STANDALONE MODE
Connection Diagram

3. AC Power Supply

Attention: IN4004(or equivalent diode) must be connected into the wiring when use a common power supply, otherwise the device might be damaged.

Add Users by Keypad

Programming Step	Keystroke Combination	LED
Enter Program Mode	＊ (Admin Code) #	Red shines

Add Card User

Add card: by Card	1 (Read Card) #	
Add Card: by ID number	1 (Input ID number) # (Read Card/input card number) #	Orange bright
Add Card: by Card Number	1 (Input 8/10 digits card number) #	

Add PIN users

Add PIN user	1 (Input ID number) # (PIN: 4-6 digits) #	Orange bright
Exit	＊ ＊	Red bright

Instruction
The range of User ID: 1 ~ 2000. The ID number is generated automatically and continuously from small to big. At the same time, a pin "1234" will be associated to card user automatically. This pin is different from independent pin, and it cannot used to open door.

The best choice for adding users: appoint ID to User. It will be helpful when you want to delete the specific users who lost the cards or forget the pin.

Add/Delete Users by Admin Cards (in standby mode)

Add users	Step 1: Read Admin Add Card Step 2: Read user cards (Repeat step 2 for additional user cards) Step 3: Read Admin Add Card again to end
Delete users	Step 1: Read Admin Delete Card) Step 2: Read user cards (Repeat step 2 for additional user cards) Step 3: Read Admin Delete Card again to end

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Change PIN

Programming Step	Keystroke Combination

Note: Below is done outside programming mode, users can make this this themselves

Change Card's PIN: By Card It will allocate PIN (1234) automatically to the card when adding card users.	＊ (Read Card) (Old PIN) # (New PIN) # (Repeat New PIN) #
Change Independent PIN: By User ID	＊ (User ID) # (Old PIN) # (New PIN) # (Repeat New PIN) #

Delete Users by Keypad

Programming Step	Keystroke Combination	LED
Enter Program Mode	＊ (Admin Code) #	Red shines

Delete Card User

Delete Card - By Card	2 (Read Card) #	
Delete Card - By Card number	2 (Input 8/10 digits Card number) #	Orange bright
Delete by ID number	2 (Input ID number) #	Orange bright
Delete All User	2 0000 #	Orange bright
Exit	＊ ＊	Red bright

Set Access Mode

Programming Step	Keystroke Combination	LED
Enter Program Mode	＊ (Admin Code) #	Red shines
Open by cards	3 0 #	
Open by cards + PIN	3 1 #	Orange bright
Open by cards or PIN	3 2 # (Factory default)	
Exit	＊	Red bright

How to Release the Door

Programming Step	Keystroke Combination	LED
Open door by users card	(Read Card)	
OR		
Open door by users PIN	(Users PIN) #	
OR		
Open door by users card+PIN	(Read Card) (Users PIN) #	
To remove the alarm	(Read Valid card) or (press Admin code) #

Set door opening time

Programming Step	Keystroke Combination	LED
Enter Program Mode	＊ (Admin Code) #	Red shines
Time Setting	4 (0~99) # (Factory default is 5 seconds)	Orange bright
Exit	＊ ＊	Red bright

Note: 0 means 100ms, and it only used for Electric Control Lock

Set safe mode

Programming Step	Keystroke Combination	LED
Enter Program Mode	＊ (Admin Code) #	Red shines
Normal Status	8 5 0 # (Factory default)	
Lockout Mode	8 5 1 #	Orange bright
Alarm Output Mode	8 5 2 #	
Exit	＊ ＊	Red bright

Note:
Lockout Mode: If swipe card/input PIN with invalid user for 10 times in 1 minute, the device will be lockout for 10 minutes.
Alarm Output Mode: If swipe card/input PIN with invalid user for 10 times in 1 minute, the buzzer built-in and the external alarm will be activated.

Simplified Instruction

Function Description	Operation
Enter the Programming Mode	＊ (Admin Code) # then you can do the programming (888888 is the factory default Admin code)
Change the Admin Code	0 - New Code - # - Repeat the New Code - # (code:6 digits)
Add Card User	1 - Read Card - # (can add Cards continuously)
Add PIN User	1 - User ID# - PIN - # (ID number: 1-2000)
Delete User	2 - Read Card - # for Card User 2 - User ID - # for PIN or Card User (ID number: 1-2000)
Exit from the Programming Mode	＊
How to release the door	
Open door by card	(Read Card)
Open door by User PIN	(Users PIN) #
Open door by user card + PIN	(Read Card) (Users PIN) #

Alarm output time (factory default is 1 minute)

Programming Step	Keystroke Combination	LED
Enter Program Mode	＊ (Admin Code) #	Red shines
Time Setting	7 4 (0-3) # (Factory default 1 min, 0 meaning no alarm)	Orange bright
Exit	＊ ＊	Red bright

Set standalone mode

Programming Step	Keystroke Combination	LED
Enter Program Mode	＊ (Admin Code) #	Red shines
Set Standalone Mode	7 1 1 # (Factory default)	Orange bright
Exit	＊ ＊	Red bright

WIEGAND READER MODE

Reader   Controller

Red — DC +
Black — GND
Green — D0
White — D1
Brown — LED
Yellow — BZ
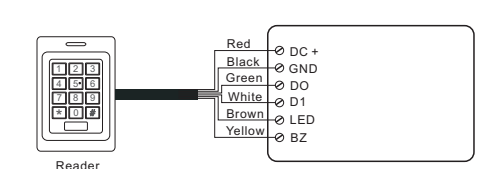
Set Wiegand reader mode

Programming Step	Keystroke Combination	LED
Enter Program Mode	＊ (Admin Code) #	Red shines
Set Wiegand Reader Mode	7 1 0 #	Orange bright
Exit	＊ ＊	Red bright

Note: In this mode, brown wire control the Green LED, yellow wire control the buzzer, only active with low voltage.

Set facility code

Programming Step	Keystroke Combination	LED
Enter Program Mode	＊ (Admin Code) #	Red shines
Facility Code	7 0 (0~15) # (Factory default setting: 0)	Orange bright
Exit	＊ ＊	Red bright

Note: The facility code is only valid for keypad output with virtual card number format. For example: Set the device facility code to 11, pin is 666666, and the Wiegand output is a 10-bit decimal card number: 0011666666.

Set Wiegand Output Formats of Card

Programming Step	Keystroke Combination	LED
Enter Program Mode	＊ (Admin Code) #	Red shines
Wiegand Format	7 2 (26~37) # (Factory default 26 bits)	Orange bright
Exit	＊ ＊	Red bright

Set Wiegand Output Formats of Password

Programming Step	Keystroke Combination	LED
Enter Program Mode	＊ (Admin Code) #	Red shines
10 Digits Virtual Card Number output	7 3 0 #	
4 bits	7 3 1 # (Factory default)	Orange bright
8 bits	7 3 2 #	
Exit	＊ ＊	Red bright

Notes: there is only one group of Admin Cards, if new admin cards added, the old ones will be deleted automatically.

Notes: (1) 10 Digits Virtual Card Number: Input 4-6 digits PIN, press "#", output a 10-bit decimal card number. For example, input password 666666, the output card number is 0000666666.

(2) Each key press sends 4 bits data, the corresponding relationship is:
1 (0001) 2 (0010) 3 (0011)
4 (0100) 5 (0101) 6 (0110)
7 (0111) 8 (1000) 9 (1001)
＊ (1010) 0 (0000) # (1011)

(3) Each key press sends 8 bits data, the corresponding relationship is:
1 (1110 0001) 2 (1101 0010) 3 (1100 0011)
4 (1011 0100) 5 (1010 0101) 6 (1001 0110)
7 (1000 0111) 8 (0111 1000) 9 (0110 1001)
＊ (0101 1010) 0 (1111 0000) # (0100 1011)

ADVANCED FUNCTIONS

Add Admin Card

Programming Step	Keystroke Combination	LED
Enter Program Mode	＊ (Admin Code) #	Red shines
Add Admin Add Card	6 1 (Read Card)	Orange bright
Add Admin Delete Card	6 2 (Read Card)	Orange bright
Exit	＊ ＊	Red bright

Note:
Pulse Mode: Under this mode, after opening the door, the door won't be closed automatically until next valid user input. That is to say, whether open or close the door, you must swipe valid card or input valid PIN.

Add anti-duress users

Programming Step	Keystroke Combination	LED
Enter Program Mode	＊ (Admin Code) #	Red shines
Add anti-duress Card	6 3 (Read Card) #	Orange bright
Add anti-duress PIN	6 4 (8 digits PIN) #	Orange bright
Exit	＊ ＊	Red bright

Usage: If under threat, swiping the Anti-duress card or input anti-duress PIN, the door will open, but the external alarm will activate to inform your friends to help you.
It only supports 1 anti-duress card and 1 anti-duress PIN, if new anti-duress card or PIN added, the old ones will be deleted automatically.

Set relay configuration

Programming Step	Keystroke Combination	LED
Enter Program Mode	＊ (Admin Code) #	Red shines
Pulse Mode	6 5 0 # (Factory Default)	Orange bright
Toggle Mode	6 5 1 #	Orange bright
Exit	＊ ＊	Red bright

Set Open Door by Multiple Cards

Programming Step	Keystroke Combination	LED
Enter Program Mode	＊ (Admin Code) #	Red shines
Input Card Number	6 6 (1-10) # (Factory default is 1)	Orange bright
Exit	＊ ＊	Red bright

Note:
The door can be opened only when the valid card quantity up to the number of cards setting (the number of cards can be set to 1-10. Factory default is 1). And it is only for **Access by Card Mode**.

Add proximity cards sequentially numbered

Programming Step	Keystroke Combination
Enter Program Mode	＊ (Admin Code) #
Add card continuously	6 7 ID #(8 or 10 digits card number) # (Input the number of card) #
Exit	＊ ＊

Note:
ID number: 1-2000; Card number: 1-2000

Set Anti-pass back mode for single door

Programming Step	Keystroke Combination	LED
Enter Program Mode	＊ (Admin Code) #	Red shines
Anti-pass back mode	7 1 5 #	Orange bright
Exit	＊ ＊	Red bright

Note:
Install this device indoor, and connect a reader which installed outside the door. And then if you want to swipe a card out, you must swipe the card in firstly.

Doorbell Wiring

Outdoor   Indoor

Grey & Black
Yellow & Black