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## INTRODUCTION

The device is a single door multifunction standalone access controller or a Wiegand output reader. It uses Atmel MCU assuring stable performance. The operation is very friendly, and low-power circuit makes it long service life.

The device supports 1,000 users (988 common users + 2 panic users + 10 visitor users), all user data can be transferred from one to another. It supports multi access modes in card access, PIN access, card + PIN access, or multi cards/PINs access. It has extra features including block enrollment, interlock, Wiegand input & output interface, etc.

Three Versions Optional:

- The device with Bluetooth function is optional
- The device with big user capacity is optional
- The device with WIFI function is optional

## Features

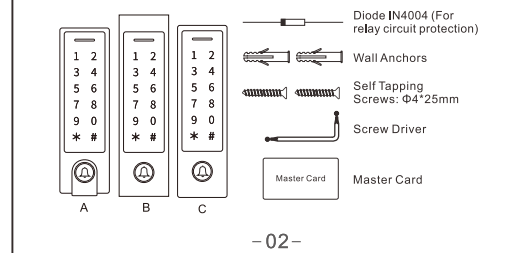
- > Touch key
- > Metal case, anti-vandal
- > Waterproof, conforms to IP66
- > One relay, 1,000 users (988 common + 2 panic + 10 visitor)
- > PIN length: 4-6 digits
- > EM card, EM+ Mifare cards optional
- > EM card: Wiegand 26-44 bits input & output
- > Mifare card: Wiegand 26-44bits, 56bits, 58bits input & output
- > Can be used as Wiegand reader with LED & buzzer output
- > Card block enrollment
- > Tricolor LED status display
- > Integrated alarm & buzzer output
- > Pulse mode, Toggle mode
- > User data can be transferred
- > 2 devices can be interlocked for 2 doors
- > Built-in light dependent resistor (LDR) for anti tamper
- > Backlit keypad, can set automatic OFF after 20 seconds

## Specifications

|                   |           |
|-------------------|-----------|
| User Capacity     | 1000      |
| Common User       | 988       |
| Panic User        | 2         |
| Visitor User      | 10        |
| Operating Voltage | 12~18V DC |
| Working Current   | ≤150mA    |
| Idle Current      | ≤60mA     |
|                   | -01-      |

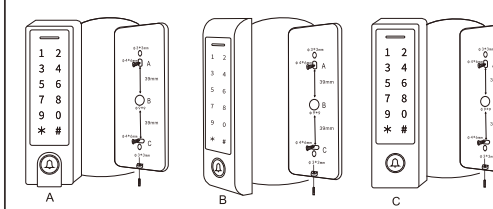
|                              |                                                                                                                                                                                         |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Proximity Card Reader        | EM / EM + Mifare                                                                                                                                                                        |
| Radio Technology             | 125KHz / 125KHz + 13.56MHz                                                                                                                                                              |
| Read Range                   | 2~6 cm                                                                                                                                                                                  |
| PIN Length                   | 4-6 digits                                                                                                                                                                              |
| Wiring Connections           | Relay Output, Exit Button, Alarm, Door Contact, Wiegand Input, Wiegand Output                                                                                                           |
| Relay                        | One (NO, NC, Common)                                                                                                                                                                    |
| Adjustable Relay Output Time | 0-99 Seconds (5 seconds default)                                                                                                                                                        |
| Lock Output Load             | 2 Amp Maximum                                                                                                                                                                           |
| Wiegand Interface            | EM card: Wiegand 26-44 bits input & output, Mifare card: Wiegand 26-44bits 56bits, 58bits input & output. (Factory default: Wiegand 26bits for EM card, Wiegand 34bits for Mifare card) |
| PIN Output                   | 4 bits, 8 bits(ASCII), 10 digits Virtual Number (Factory Default: 4 bits)                                                                                                               |
| Environment                  | Meets IP66                                                                                                                                                                              |
| Operating Temperature        | -40°C ~ 60°C (-40°F ~ 140°F)                                                                                                                                                            |
| Operating Humidity           | 0%RH~98%RH                                                                                                                                                                              |
| Physical Color               | Zinc-Alloy (A/B) ABS (C)                                                                                                                                                                |
| Dimensions                   | 144x54x35 (mm) → A-C, 146x54x35 (mm) → B                                                                                                                                                |
| Unit Weight                  | 330g → A, 415g → B, 190g → C                                                                                                                                                            |
| Shipping Weight              | 405g → A, 500g → B, 280g → C                                                                                                                                                            |

## Carton Inventory



## 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 Color                                         | Function      | Notes                                                 |
|----------------------------------------------------|---------------|-------------------------------------------------------|
| Red                                                | DC +          | 12-18V DC Power Input                                 |
| Black                                              | GND           | Negative Pole of DC Power Input                       |
| Blue & Black                                       | Relay NO      | Normally Open Relay Output (install diode provided)   |
| White & Black                                      | Relay Common  | Common Connection for Relay Output                    |
| Green & Black                                      | Relay NC      | Normally Closed Relay Output (install diode provided) |
| Yellow                                             | OPEN          | Reconnect to Exit/REX Input                           |
| Pass-Through Wiring (Wiegand Reader or Controller) |               |                                                       |
| Green                                              | Data 0        | Wiegand Output (Pass-Through) Data 0                  |
| White                                              | Data 1        | Wiegand Output (Pass-Through) Data 1                  |
| Advanced Input and Output Features                 |               |                                                       |
| Grey                                               | Alarm Output  | Negative contact for Alarm                            |
| Grey                                               | Contact Input | Contact Input (Normally Closed)                       |
| Brown & Black                                      | Doorbell A    | Contact for Doorbell                                  |
| Yellow & Black                                     | Doorbell B    | Contact for Doorbell                                  |



## Sound and Light Indication

| Operation Status               | LED                      | Buzzer      |
|--------------------------------|--------------------------|-------------|
| Stand by                       | Red light bright         | —           |
| Enter into programming mode    | Red light shines         | One beep    |
| In the programming mode        | Orange light bright      | One beep    |
| Operation error                | —                        | Three beeps |
| Exit from the Programming mode | Red light bright         | One beep    |
| Open lock                      | Green light bright       | One beep    |
| Alarm                          | Red light shines quickly | Beeps       |

## Basic Configure

| Programming Step   | Keystroke Combination |
|--------------------|-----------------------|
| Enter Program Mode | * (Master Code) #     |
| Exit Program Mode  | *                     |

| Programming Step      | Keystroke Combination                                                          |
|-----------------------|--------------------------------------------------------------------------------|
| 1. Enter Program Mode | * (Master Code) #                                                              |
| 2. Update Master Code | 0 (New Master Code) # (Repeat New Master Code) # (Master code is any 6 digits) |
| 3. Exit Program Mode  | *                                                                              |

## Set the Working Mode

Notes: The device has 3 working modes: Standalone Mode, Controller Mode, Wiegand Reader Mode, choose the mode you use, (Factory default is Standalone Mode / Controller Mode)

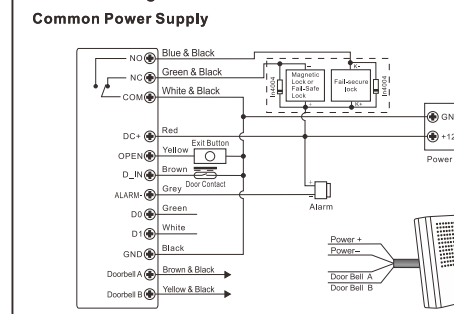
| Programming Step              | Keystroke Combination   |
|-------------------------------|-------------------------|
| 1. Enter Program Mode         | * (Master Code) #       |
| 2. Standalone/Controller Mode | 7 7 # (Factory default) |
| OR                            |                         |
| 2. Wiegand Reader Mode        | 7 8 #                   |
| 3. Exit                       | *                       |



## STANDALONE MODE

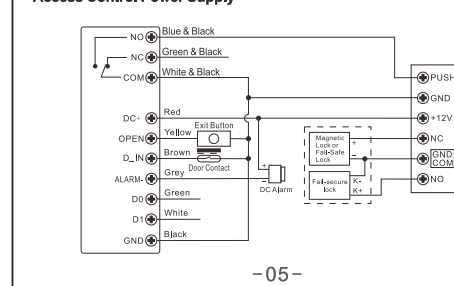
The device can work as Standalone Access Control for single door, (Factory default mode) → 7 #

## Common Power Supply



Attention: Install a 1N4004 or equivalent diode is needed when use a common power supply, or the keypad might be damaged. (1N4004 is included in the packing)

## Access Control Power Supply



## Programming

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

## Notes:

- > User ID Number: Assign a user ID to the access card / PIN in order to track it
- The Common User ID: 0-987
- Panic User ID: 988 ~ 989
- Visitor User ID: 990 ~ 999

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

## > Proximity Card:

Example PIN: 123434

You could use "123434" or "12343434"

\* PIN: Can be any 4-6 digits except 8888 which is reserved.

## Add Common Users

PIN/ Card user ID: 0-987; PIN length: 4-6 digits except 8888

| Programming Step                                                      | Keystroke Combination                                                    |
|-----------------------------------------------------------------------|--------------------------------------------------------------------------|
| 1. Enter Program Mode                                                 | * (Master Code) #                                                        |
| Add Card User                                                         |                                                                          |
| 2. Using Auto ID                                                      | 1 (Read Card) / (Input 8/10/17 Digits Card Number) #                     |
| (Allow the device to assign card to need available User ID number)    |                                                                          |
| OR                                                                    |                                                                          |
| 2. Select Specific ID                                                 | 1 (User ID) # (Read Card) / (Input 8/10/17 Digits Card Number) #         |
| (Allows Master to define a specific User ID to associate the card to) |                                                                          |
| OR                                                                    |                                                                          |
| 2. Add Card: Block Enrollment                                         | 1 (User ID) # (Card Quantity) # (The First Card 8/10/17 Digits Number) # |
| (Allows Master to add up to 988 cards to the Reader in a single step) |                                                                          |
| Takes 2 minutes to program.                                           |                                                                          |

## Add Panic Users

User ID number is 988, 989; PIN length: 4-6 digits except 8888

| Programming Step                                                      | Keystroke Combination                                                    |
|-----------------------------------------------------------------------|--------------------------------------------------------------------------|
| 1. Enter Program Mode                                                 | * (Master Code) #                                                        |
| Add Card User                                                         |                                                                          |
| 2. Using Auto ID                                                      | 1 (Read Card) / (Input 8/10/17 Digits Card Number) #                     |
| (Allow the device to assign card to need available User ID number)    |                                                                          |
| OR                                                                    |                                                                          |
| 2. Select Specific ID                                                 | 1 (User ID) # (Read Card) / (Input 8/10/17 Digits Card Number) #         |
| (Allows Master to define a specific User ID to associate the card to) |                                                                          |
| OR                                                                    |                                                                          |
| 2. Add Card: Block Enrollment                                         | 1 (User ID) # (Card Quantity) # (The First Card 8/10/17 Digits Number) # |
| (Allows Master to add up to 988 cards to the Reader in a single step) |                                                                          |
| Takes 2 minutes to program.                                           |                                                                          |

## Add Visitor Users

User ID number is 990-999; PIN length: 4-6 digits except 8888

There are 10 groups Visitor PINCard available, the users can be specified up to 10 times of usage, after a certain number of times, i.e. 5 times, the PINCard become invalid automatically.

| Programming Step                                                      | Keystroke Combination                                                    |
|-----------------------------------------------------------------------|--------------------------------------------------------------------------|
| 1. Enter Program Mode                                                 | * (Master Code) #                                                        |
| Add Card User                                                         |                                                                          |
| 2. Using Auto ID                                                      | 1 (Read Card) / (Input 8/10/17 Digits Card Number) #                     |
| (Allow the device to assign card to need available User ID number)    |                                                                          |
| OR                                                                    |                                                                          |
| 2. Select Specific ID                                                 | 1 (User ID) # (Read Card) / (Input 8/10/17 Digits Card Number) #         |
| (Allows Master to define a specific User ID to associate the card to) |                                                                          |
| OR                                                                    |                                                                          |
| 2. Add Card: Block Enrollment                                         | 1 (User ID) # (Card Quantity) # (The First Card 8/10/17 Digits Number) # |
| (Allows Master to add up to 988 cards to the Reader in a single step) |                                                                          |
| Takes 2 minutes to program.                                           |                                                                          |

## Add PIN User

1. Using Auto ID (Allow the device to assign PIN to need available User ID number)

| Programming Step                                                      | Keystroke Combination                                |
|-----------------------------------------------------------------------|------------------------------------------------------|
| 1. Enter Program Mode                                                 | * (Master Code) #                                    |
| Add Card User                                                         |                                                      |
| 2. Using Auto ID                                                      | 1 (Read Card) / (Input 8/10/17 Digits Card Number) # |
| (Allow the device to assign PIN to need available User ID number)     |                                                      |
| OR                                                                    |                                                      |
| 2. Select Specific ID                                                 | 1 (User ID) # (PIN) #                                |
| (Allows manager to define a specific User ID to associate the PIN to) |                                                      |
| 3. Exit                                                               | *                                                    |

## Tips for PIN Security (Only valid for 6 digits PIN):

For higher security we allow you to hide your correct PIN with other numbers up to a max of 10 digits.

Example PIN: 123434

You could use "123434" or "12343434"

\* PIN: Can be any 4-6 digits except 8888 which is reserved.

## Add Panic Users

User ID number is 988, 989; PIN length: 4-6 digits except 8888

| Programming Step                                                      | Keystroke Combination                                                    |
|-----------------------------------------------------------------------|--------------------------------------------------------------------------|
| 1. Enter Program Mode                                                 | * (Master Code) #                                                        |
| Add Card User                                                         |                                                                          |
| 2. Using Auto ID                                                      | 1 (Read Card) / (Input 8/10/17 Digits Card Number) #                     |
| (Allow the device to assign card to need available User ID number)    |                                                                          |
| OR                                                                    |                                                                          |
| 2. Select Specific ID                                                 | 1 (User ID) # (Read Card) / (Input 8/10/17 Digits Card Number) #         |
| (Allows Master to define a specific User ID to associate the card to) |                                                                          |
| OR                                                                    |                                                                          |
| 2. Add Card: Block Enrollment                                         | 1 (User ID) # (Card Quantity) # (The First Card 8/10/17 Digits Number) # |
| (Allows Master to add up to 988 cards to the Reader in a single step) |                                                                          |
| Takes 2 minutes to program.                                           |                                                                          |

## Add Visitor Users

User ID number is 990-999; PIN length: 4-6 digits except 8888

There are 10 groups Visitor PINCard available, the users can be specified up to 10 times of usage, after a certain number of times, i.e. 5 times, the PINCard become invalid automatically.

| Programming Step                                                      | Keystroke Combination                                |
|-----------------------------------------------------------------------|------------------------------------------------------|
| 1. Enter Program Mode                                                 | * (Master Code) #                                    |
| Add Card User                                                         |                                                      |
| 2. Using Auto ID                                                      | 1 (Read Card) / (Input 8/10/17 Digits Card Number) # |
| (Allow the device to assign PIN to need available User ID number)     |                                                      |
| OR                                                                    |                                                      |
| 2. Select Specific ID                                                 | 1 (User ID) # (PIN) #                                |
| (Allows manager to define a specific User ID to associate the PIN to) |                                                      |
| 3. Exit                                                               | *                                                    |

## Change PIN Users

User ID number is 988, 989; PIN length: 4-6 digits except 8888

| Programming Step                                                      | Keystroke Combination                                |
|-----------------------------------------------------------------------|------------------------------------------------------|
| 1. Enter Program Mode                                                 | * (Master Code) #                                    |
| Add Card User                                                         |                                                      |
| 2. Using Auto ID                                                      | 1 (Read Card) / (Input 8/10/17 Digits Card Number) # |
| (Allow the device to assign PIN to need available User ID number)     |                                                      |
| OR                                                                    |                                                      |
| 2. Select Specific ID                                                 | 1 (User ID) # (PIN) #                                |
| (Allows manager to define a specific User ID to associate the PIN to) |                                                      |
| 3. Exit                                                               | *                                                    |

## Change PIN Users

User ID number is 988, 989; PIN length: 4-6 digits except 8888

| Programming Step                                                      | Keystroke Combination                                |
|-----------------------------------------------------------------------|------------------------------------------------------|
| 1. Enter Program Mode                                                 | * (Master Code) #                                    |
| Add Card User                                                         |                                                      |
| 2. Using Auto ID                                                      | 1 (Read Card) / (Input 8/10/17 Digits Card Number) # |
| (Allow the device to assign PIN to need available User ID number)     |                                                      |
| OR                                                                    |                                                      |
| 2. Select Specific ID                                                 | 1 (User ID) # (PIN) #                                |
| (Allows manager to define a specific User ID to associate the PIN to) |                                                      |
| 3. Exit                                                               | *                                                    |

## Change PIN Users

User ID number is 988, 989; PIN length: 4-6 digits except 8888

| Programming Step                                                      | Keystroke Combination                                |
|-----------------------------------------------------------------------|------------------------------------------------------|
| 1. Enter Program Mode                                                 | * (Master Code) #                                    |
| Add Card User                                                         |                                                      |
| 2. Using Auto ID                                                      | 1 (Read Card) / (Input 8/10/17 Digits Card Number) # |
| (Allow the device to assign PIN to need available User ID number)     |                                                      |
| OR                                                                    |                                                      |
| 2. Select Specific ID                                                 | 1 (User ID) # (PIN) #                                |
| (Allows manager to define a specific User ID to associate the PIN to) |                                                      |
| 3. Exit                                                               | *                                                    |

## Change PIN Users

User ID number is 988, 989; PIN length: 4-6 digits except 8888

| Programming Step                                                      | Keystroke Combination                                |
|-----------------------------------------------------------------------|------------------------------------------------------|
| 1. Enter Program Mode                                                 | * (Master Code) #                                    |
| Add Card User                                                         |                                                      |
| 2. Using Auto ID                                                      | 1 (Read Card) / (Input 8/10/17 Digits Card Number) # |
| (Allow the device to assign PIN to need available User ID number)     |                                                      |
| OR                                                                    |                                                      |
| 2. Select Specific ID                                                 | 1 (User ID) # (PIN) #                                |
| (Allows manager to define a specific User ID to associate the PIN to) |                                                      |
| 3. Exit                                                               | *                                                    |

## Change PIN Users

User ID number is 988, 989; PIN length: 4-6 digits except 8888

| Programming Step                                                      | Keystroke Combination                                |
|-----------------------------------------------------------------------|------------------------------------------------------|
| 1. Enter Program Mode                                                 | * (Master Code) #                                    |
| Add Card User                                                         |                                                      |
| 2. Using Auto ID                                                      | 1 (Read Card) / (Input 8/10/17 Digits Card Number) # |
| (Allow the device to assign PIN to need available User ID number)     |                                                      |
| OR                                                                    |                                                      |
| 2. Select Specific ID                                                 | 1 (User ID) # (PIN) #                                |
| (Allows manager to define a specific User ID to associate the PIN to) |                                                      |
| 3. Exit                                                               | *                                                    |

## Change PIN Users

User ID number is 988, 989; PIN length: 4-6 digits except 8888

| Programming Step                                                      | Keystroke Combination                                |
|-----------------------------------------------------------------------|------------------------------------------------------|
| 1. Enter Program Mode                                                 | * (Master Code) #                                    |
| Add Card User                                                         |                                                      |
| 2. Using Auto ID                                                      | 1 (Read Card) / (Input 8/10/17 Digits Card Number) # |
| (Allow the device to assign PIN to need available User ID number)     |                                                      |
| OR                                                                    |                                                      |
| 2. Select Specific ID                                                 | 1 (User ID) # (PIN) #                                |
| (Allows manager to define a specific User ID to associate the PIN to) |                                                      |
| 3. Exit                                                               | *                                                    |

## Change PIN Users

User ID number is 988, 989; PIN length: 4-6 digits except 8888

| Programming Step                                                      | Keystroke Combination                                |
|-----------------------------------------------------------------------|------------------------------------------------------|
| 1. Enter Program Mode                                                 | * (Master Code) #                                    |
| Add Card User                                                         |                                                      |
| 2. Using Auto ID                                                      | 1 (Read Card) / (Input 8/10/17 Digits Card Number) # |
| (Allow the device to assign PIN to need available User ID number)     |                                                      |
| OR                                                                    |                                                      |
| 2. Select Specific ID                                                 | 1 (User ID) # (PIN) #                                |
| (Allows manager to define a specific User ID to associate the PIN to) |                                                      |
| 3. Exit                                                               | *                                                    |

## Programming Step

| Programming Step                                                      | Keystroke Combination                                                    |
|-----------------------------------------------------------------------|--------------------------------------------------------------------------|
| 1. Enter Program Mode                                                 | * (Master Code) #                                                        |
| 2. Add Card OR                                                        |                                                                          |
| 2. Add Card                                                           | 1 (User ID) # (0-9) # (Read Card) / (Input 8/10/17 Digits Card Number) # |
| OR                                                                    |                                                                          |
| 2. Select Specific ID                                                 | 1 (User ID) # (PIN) #                                                    |
| (Allows manager to define a specific User ID to associate the PIN to) |                                                                          |
| 3. Exit                                                               | *                                                                        |

## Change PIN Users

PIN length: 4-6 digits except 8888

(Note: WIFI versions don't support change PIN)

## Programming Step

| Programming Step                                                      | Keystroke Combination                                            |
|-----------------------------------------------------------------------|------------------------------------------------------------------|
| 1. Enter Program Mode                                                 | * (Master Code) #                                                |
| 2. Add Card OR                                                        |                                                                  |
| 2. Add Card                                                           | 1 (User ID) # (Read Card) / (Input 8/10/17 Digits Card Number) # |
| OR                                                                    |                                                                  |
| 2. Select Specific ID                                                 | 1 (User ID) # (PIN) #                                            |
| (Allows manager to define a specific User ID to associate the PIN to) |                                                                  |
| 3. Exit                                                               | *                                                                |

## Delete Users

1. Enter Program Mode

| Programming Step                  | Keystroke Combination       |
|-----------------------------------|-----------------------------|
| 1. Enter Program Mode             | * (Master Code) #           |
| 2. Delete User- By ID number OR   |                             |
| 2. Delete User- By Card number OR | 2 (Read Card)/(Input PIN) # |
| 2. Delete ALL Users               | 2 (Master Code) #           |
| 3. Exit                           | *                           |

## Set Strike-out Alarm

The strike-out alarm will engage after 10 failed entry attempts (Factory is OFF). It can be set to deny access for 60 minutes after engaging or disengage only after entering a valid card/PIN or Master Code / card.

| Programming Step                                                      | Keystroke Combination                                                    |
|-----------------------------------------------------------------------|--------------------------------------------------------------------------|
| 1. Enter Program Mode                                                 | * (Master Code) #                                                        |
| 2. Add Card OR                                                        |                                                                          |
| 2. Add Card                                                           | 1 (User ID) # (0-9) # (Read Card) / (Input 8/10/17 Digits Card Number) # |
| OR                                                                    |                                                                          |
| 2. Select Specific ID                                                 | 1 (User ID) # (PIN) #                                                    |
| (Allows manager to define a specific User ID to associate the PIN to) |                                                                          |
| 3. Exit                                                               | *                                                                        |

## 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 OR      |                              |
| 2. Toggle Mode        | 3 (1-99) # (factory default) |
| 3. Exit               | *                            |

## Set Access Mode

For Multi user access mode, the interval time of reading can not exceed 5 seconds, or else, the device will exit to standby automatically.

| Programming Step        | Keystroke Combination   |
|-------------------------|-------------------------|
| 1. Enter Program Mode   | * (Master Code) #       |
| 2. Card Access OR       |                         |
| 2. PIN Access OR        | 4 0 #                   |
| 2. Card + PIN Access OR | 4 1 #                   |
| 2. Multi User Access    | 4 2 # (factory default) |
| 3. Exit                 | *                       |

## Set Strike-out Alarm