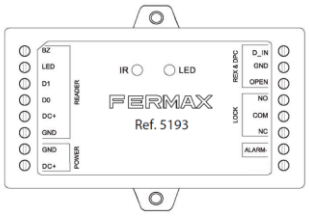
FERMAX
Cod. 970340I V11_25

WIEGAND 1 DOOR WIFI MINI CONTROLLER



EN Installer manual

Description

The wifi MINI controllers allow Wiegand readers to be provided with autonomous control and connection of both the electric lock and the exit button. The controller includes a master card for registering/unregistering users and an infrared remote control for programming and maintenance of the installation. **It is recommended to install the controller behind the reader in a separate register not accessible from the outside.**

Features

- 1,000 users + 500 users (in app).
- Operating modes: Card, card or keypad, card with keypad and valid multi-card/keypad.
- Allows the connection of 1 reader with Wiegand 26 output.
- Allows keyboards transmitting in 4-bit, 8-bit (ASCII), or 10-bit Virtual Card Number.
- Infrared programming keypad included.
- Allows an external device to be connected to act as an alarm (e.g. siren or LED signalling).
- Allows connection of a contact sensor for door status (available via the app).
- Interlock mode between 2 doors by connecting 2 WIFI mini controllers.
- Allows 1 master card, 2 panic users and 1 security user.
- Key fobs auto-collection mode.
- Remote user/keypad code adding/deleting (available via the app).*
- Temporary user restrictions (available through the app).*
- Guest and single-use codes.
- Monitoring of door openings (available through the app).*
- Remote door opening (available via the app).*

  (*) An Internet connection is required.

Technical data

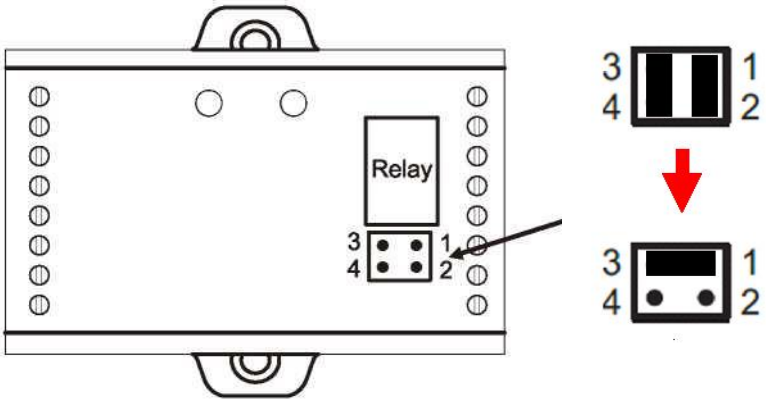
Mini Wiegand WIFI door controller.

Model	Wiegand 1 door WIFI mini controller
User capacity	1,000 (local) + 500 (in app)
No. of cards / keypad codes	1,000 (in local) + 1,000 (in app)
Access modes	Card, Card or Keypad (PIN), card + keypad (PIN)
Power supply	12Vdc
Consumption idle / operation	100mA / 150mA
*Relay (12Vdc/2A output depending on power supply) Adjustable output time	2A Maximum It can be internally configured to be a dry contact (potential free). 1-99 (5 seconds programmed by default)
Protocol	Wiegand 26bits
Material	ABS

Distance to the reader	Max. 100m. (Check distance for each compatible reader)
Operating temperature	-20ºC to +60ºC @ 0-90% Relative Humidity
Dimensions (length x width x depth)	91mm × 48mm × 20mm

REMARKS:

- 1 user in the app can have more than one keypad code or card.
- Up to 1,000 temporary codes can be created from the app without relating them to a user.



*When opening the controller plastic cover we see the following factory settings:

Relay with direct power supply output:

Jumper: 3 and 4.

Jumper: 1 and 2.

If you want the relay to work as a potential free relay leave only one jumper between 3 and 1:

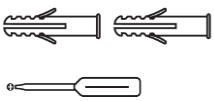
Jumper: 3 and 1.

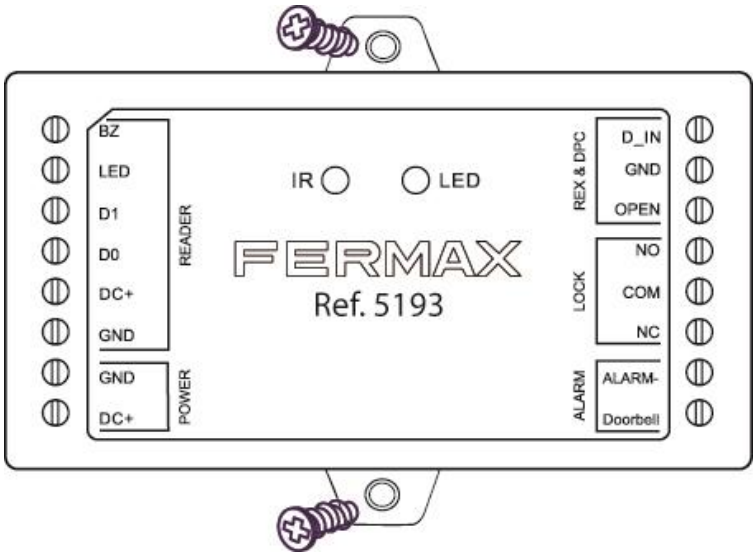
Installation

Diode 1N4004 (Relay protection)

See diagram (page 4

Φ3*25mm





Connections

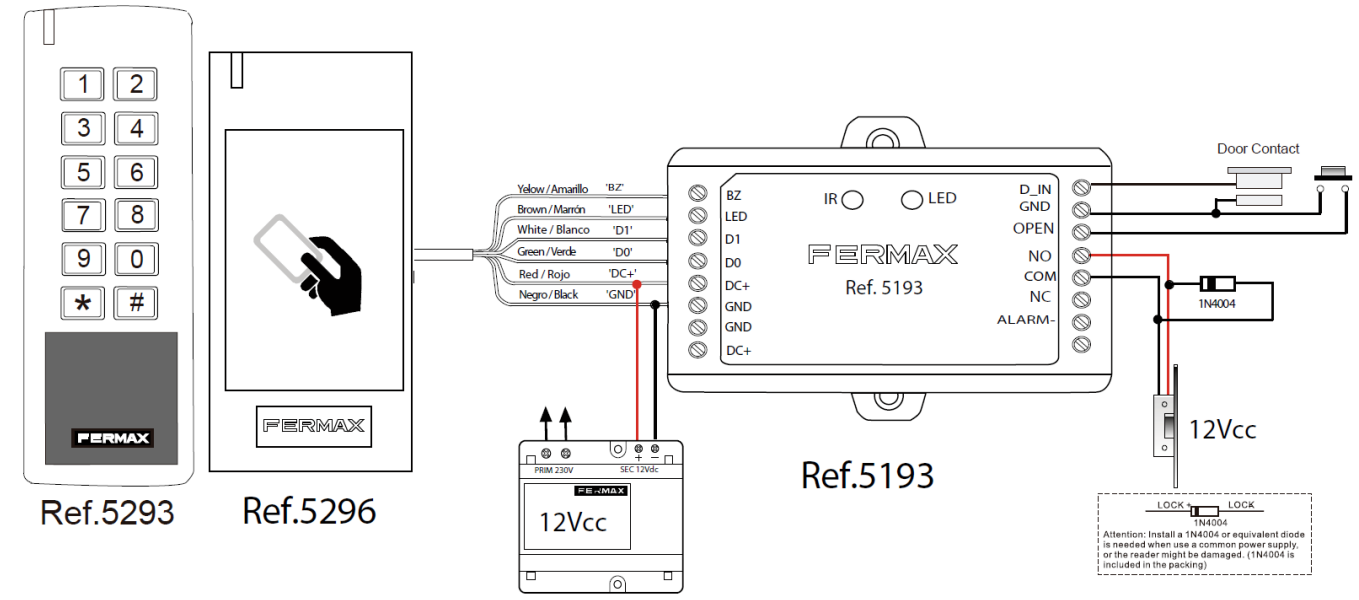
Name	Notes
Left-hand side trimmer	
BZ	Activation of the reader buzzer
LED	Reader LED control
D1	Wiegand input Data 1
D0	Wiegand input Data 0
+DC	DC Positive Pole (12V) Reader input power supply.
GND	DC Negative Pole (12V) Reader input power supply.
GND	Negative DC Pole (12V) Input power supply of the mini wifi controller.
+DC	Positive DC pole (12V) Input power supply of the mini wifi controller.
Right-hand side trimmer	
D_IN	Connector of one of the door sensor wires
GND	Connector for one of the wires of the door sensor and the exit button
OPEN	Connector of one of the wires of the exit button.
NO	Normally Open relay output connector (install protection diode)
COM	Common connector and negative pole of the electric lock release power supply. (Relay output common connector)
NC	Normally Closed relay output connector (install protection diode)
ALARM-	Negative pole to connect a siren/light during alarm activation

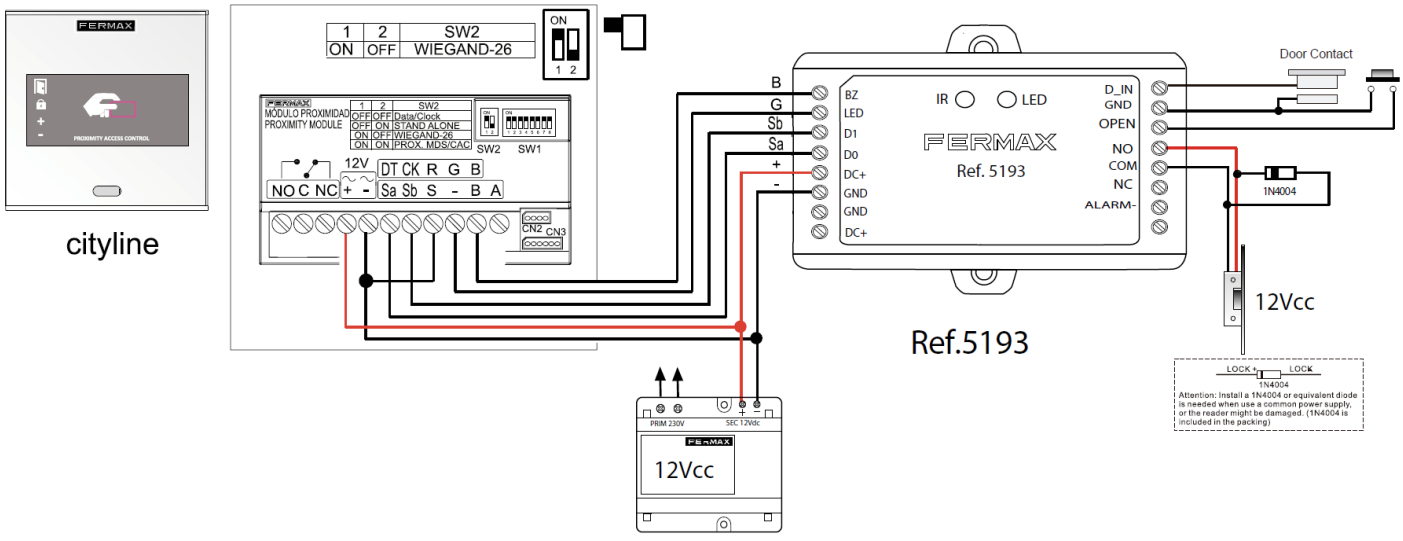
LED and audible indications of the mini WIFI controller

Operation	LED	Buzzer
Rest	Steady red LED	No beep
Access Programming Mode	Flashing red LED	1 beep
During Programming Mode	Steady orange LED	1 beep
Operating error	NA	3 beeps
Programming Mode Output	Steady red LED	1 beep
Door opening	LED solid green	1 beep
Alarm	Red LED flashes fast	Continuous beep

Schematics

With normal operating lock release. Relay with 12Vdc direct power supply output





Compatible readers:

- REF. 5293 - KEYPAD W/PROXIMITY RESISTANT [max. Distance 100m]
- REF. 5296 - RESISTANT PROX. READER WG [max. Distance 100m]
- REF. 6957 – CITYLINE DESFIRE PROXIMITY READER (Skyline Ref. 7463 or Marine Ref. 5509) [max. Distance 40m]
- REF. 6992 - CITYLINE PROXIMITY READER (Skyline Ref. 7440 or Marine Ref. 5472) [max. Distance 40m]
- REF. 6958 - CITYLINE WG MIFARE/EM PROXIMITY READER (Skyline Ref. 7461) [max. Distance 100m]
- REF. 5190 - CITY WIEGAND KEYPAD READER (Skyline Ref. 5191 or Marine Ref. 5192) [max. Distance 100m]

Programming

There are 3 ways to program the WIFI mini controller:

1. By Master Card
2. By IR remote control
3. Through the TUYA app

Users

For modes 1 and 2, up to 1,000 users are allowed, who have a unique User ID:

- Common User: User ID = 0-986
- Security User: User ID = 987
- Panic User: User ID = 988-989
- Guest User: User ID = 990-999

For mode 3 (app) up to 500 users are allowed. A user can have 1 or more related keypad/card codes. In total up to 1,000 codes/cards can be managed from the app.

Programming via Master card

It is only possible to add and/or delete common users by means of the master card.

The default Master card is included in the packaging.

Add an identifier user (card/key fob)

1. Present MASTER CARD into the proximity reader connected to the wifi mini controller.
2. Present new card/key ring (present the cards you want to register. They will take the User ID position according to the order in which they are presented from 0 to 986).
3. Present MASTER CARD to exit programming mode.

Add a Keypad Code user

1. Present MASTER CARD into the keypad/proximity reader connected to the wifi mini controller.
2. Enter new keypad code and # to confirm (repeat this step for as many keypad codes as you want to register. They will take the User ID position according to the order in which they are presented from 0 to 999).
3. Present MASTER CARD to exit programming mode.

REMARKS:

- **User ID:** Each user is assigned an ID identifier from 0-999, in the order in which they register. IDs do not recognise leading zeros. IMPORTANT: Remember the USER ID of each user to be able to modify the user (delete the card or keypad code).
- **Keypad Code:** The code can contain 4 to 6 digits.

Delete identifier users (card/key fob)

1. Present MASTER CARD into the proximity reader 2 times in less than 5 seconds.
2. Present the cards/key rings to be deregistered.
3. Present MASTER CARD to exit programming mode.

Delete Keypad code users

1. Present MASTER CARD into the keypad/proximity reader 2 times in less than 5 seconds.
2. Enter the keypad code and # you want to unsubscribe to confirm (repeat this step for as many keypad codes as you want to unsubscribe).
3. Present MASTER CARD to exit programming mode.

Change of master card

1. Power off the device.
2. Connect GND and OPEN (press and hold the output button).
3. Power on the device.
4. You will hear 2 beeps.
5. Within 5 seconds disconnect the jumper between GND and OPEN (stop pressing the exit button).
6. The LED on the mini wifi controller will light up orange.
7. Swipe any card/keyfob compatible with the reader's technology (DESFIRE/EM/MIFARE) depending on the reader connected.
8. The LED on the mini wifi controller will light up red.
9. The card/keychain read will be the new mastercard

IMPORTANT: the new master card/key fob cannot be a user already registered on the mini wifi controller.

Programming via IR remote control

This programming mode requires pointing the IR remote directly towards the WIFI mini controller.

Enter and exit programming mode

Programming steps	Dial
1. Enter programming mode	* **(Master Code) #** *(Default code is 123456)*
2. Exit programming mode	*

Change master code

Programming steps	Dial
1. Enter programming mode	*** (Master Code) #**
2. Then	**0 (new master code) # (repeat new master code) #** *(The master code must be 6 digits long)*
3. Exit programming mode	*

User Management

Add common users

- Type of badge: card/key fob or keypad code
- User ID: 0-986
- Keypad code length: 4-6 digits

Programming steps	Dial
1. Enter programming mode	*** (Master Code)** *(The default code is 123456)*
2. Add **card/key fob** (choose one of the 2 options)	
a) Via Auto User ID (User ID is automatically assigned)	**1 (present the identifier into the reader) #** (One identifier can be submitted after another)
b) Manually entering the User ID	**1 (User ID) # (present the identifier into the reader) #**
2. Add **keypad code** (choose one of the 2 options)	
a) Via Auto User ID (User ID is automatically assigned)	**1 (keypad code) #** (One keypad code can be submitted after another)
b) Manually entering the User ID	**1 (User ID) # (keypad code) #**
3. Exit programming mode	*

REMARKS:

To add extra security, it is allowed to mask the valid keypad code up to a maximum of 9 digits (only compatible with valid 6-digit keypad codes).

Example: For a valid keypad code 123456, dial the following:

1 **(123456)* # o **1 *(123456)** #**

where * is any number from 0 to 9 that is dialled in the reader to mask the valid code.

In the first example, entering the keypad code 87**123456**2 into the reader will open the door.

In the second example, entering the keypad code 1**123456**78 into the reader will open the door.

Add security user

- Type of badge: card/key fob or keypad code
- User ID: 987
- Keypad code length: 4-6 digits

Programming steps	Dial
1. Enter programming mode	*** (Master Code) #**
2. Add **card/key fob**	
Manually entering the reserved User ID	**1 (User ID) # (present the identifier on the reader) #**
2. Add **keypad code**	
Manually entering the reserved User ID	**1 (User ID) # (keypad code) #**
3. Exit programming mode	*****

REMARKS:

- The security user can block the reading of valid identifiers or keypad codes.
- By swiping their card/key fob or entering their keypad code, registered users will not be able to open the door.
- When you re-swipe your card/key fob or enter your keypad code, registered users can open the door.

IMPORTANT: This lock also affects app users. Keypad codes and identifiers entered via the app will not allow the door to be opened if the security user has activated the reader blocking. However, from the app it will be possible to open the door via remote unlocking.

Add panic users

- Type of badge: card/key fob or keypad code
- User ID: 988-989
- Keypad code length: 4-6 digits

Programming steps	Dial
1. Enter programming mode	*** (Master Code) #**
2. Add **card/key fob**	
Manually entering a reserved User ID	**1 (User ID) # (present the identifier at the reader) #**
2. Add **keypad code**	
Manually entering a reserved User ID	**1 (User ID) # (keypad code) #**
3. Exit programming mode	*

REMARKS:

- Panic users can open the door and activate the ALARM- output permanently.
  This makes it possible to activate a siren or LED signalling to initiate an evacuation, for example.
- Registered users can open the door even if the ALARM- output is activated.
- Additionally, a notification is sent to TUYA app users indicating Panic Alarm.
- The only way to disconnect the ALARM- output is to reset the power supply in the wifi mini controller.

Add visiting users

- Type of badge: card/key fob or keypad code
- User ID: 990-999
- Keypad code length: 4-6 digits

Programming steps	Dial
1. Enter programming mode	*** (Master Code) #**
2. Add **card/key fob**	
Manually entering a reserved User ID	**1 (User ID) # (0-9) # (present the identifier on the reader) #** *(1 being the minimum number of uses = 1 use)*
2. Add **keypad code**	
Manually entering a reserved User ID	**1 (User ID) # (0-9) # (keypad code) #** *(where 0 is the maximum number of uses = 10 uses)*
3. Exit programming mode	*

REMARKS:

- Visiting users have a limited number of uses of the badge that is issued (from 1 to 10 uses).
- When the configured number of uses is reached, the identifier or keypad code is no longer valid.

Delete users

Programming steps	Dial
1. Enter programming mode	*** (Master Code) #**
2. Delete **card/key ring** user	
a) Passing the identifier through the reader	**2 (present the identifier to the reader) #**
b) By User ID	**2 (User ID) #**
2. Delete **keypad code** user	
a) Entering the keypad code into the reader	**2 (keypad code) #**
b) By User ID	**2 (User ID) #**
2. Delete **all users**	**2 (master code) #**
3. Exit programming mode	*****

REMARKS:

- If all users are deleted, both those registered locally and via the app are deleted.

Configuration of additional functions

Relay operating mode

- Pulse mode: the door relay is activated for a defined time (default 5 seconds).
- Toggle mode: The relay will switch on and off with each valid keypad code or identifier (ON/OFF mode).

Programming steps	Dial
1. Enter programming mode	*** (Master Code) #**
2. Set relay operating mode	
a) Pulse mode	**3 (1-99) #** *(default mode of operation)* *(where 1-99 is the relay activation time in seconds)*
b) Toggle mode	**3 0 #**
3. Exit programming mode	*****

Access mode configuration

4 different access modes are allowed:

- Access by card/key fob
- Keypad code access
- Access by card/key fob or keypad code (enables mode by default)
- Multi-user access (more than one user must validate the credential in order to open the door).

For multi-user mode, the time interval in which each credential must be presented may not exceed 5 seconds. Otherwise, the reader shall go into idle mode and the reading of credentials shall be restarted.

Programming steps	Dial
1. Enter programming mode	*** (Master Code) #**
2. Configure access mode	
a) Card/key ring mode	**4 0 #**
b) Keypad code mode	**4 1 #**
c) Card/key fob or keypad code mode	**4 3 #** *(default)*
d) Multi-user mode	**4 3 (2-9) #** *(2 to 9 users will have to validate their credentials to open the door)*
3. Exit programming mode	*

REMARKS:

- If multi-user mode is enabled, panic users do not require multi-validation to open the door (and activate the ALARM- output).

Alarm configuration

There are 4 types of alarm messages configurable on the wifi mini controller:

- Panic alarm (explained in section *Adding panic users*)
- 10 failed attempts alarm
- Forced door alarm (explained in section *Door open/closed detection settings*)
- Door open alarm (explained in section *Door open/closed detection settings*)

10 failed attempts alarm configuration

Alarm triggered when a keypad code is entered 10 times incorrectly or a non-registered identifier (card/key fob) is presented into the reader. By default it is disabled.

Programming steps	Dial
1. Enter programming mode	*** (Master Code) #**
2. Set up 10 failed attempts alarm mode	
a) Disabled mode (OFF)	**6 0 #** *(default)*
b) Silent enabled mode (ON)	**6 1 #**
c) Noisy enabled mode (ON) Alarm Time Configuration	**6 2 #** **5 (0-3) #** *(default 1 minute)*
3. Exit programming mode	*

REMARKS:

- Silent mode disables door opening by card/key fob for 10 minutes. Valid keypad codes, exit push button and remote opening via the app are allowed during the 10 minutes to open the door. Additionally, at the moment of activation, a notification is sent to the app with 10 failed attempts alarm, and the LED on the wifi mini controller starts flashing red.
- In silent mode the ALARM- output is not activated.

- The only way to unblock the 10 minutes during the period when the alarm is active is to disconnect the power supply to the mini wifi controller.
- If the noisy mode is enabled, the ALARM- output is activated when the 10 failed attempts alarm is triggered. Additionally, a notification is sent to the app with 10 failed attempts alarm, the LED on the mini wifi controller starts flashing red and a continuous beep is emitted.
- On presentation of a valid identifier (card/key fob) or if a valid keypad code is entered, the alarm is deactivated. If the master card is presented, the alarm is also deactivated.
- During the 10-minute alarm period, the exit button and the app allow the door to be unlocked, but do not deactivate the alarm.
- The alarm time can also be set via the app (from 1 second up to 3 minutes duration)

Door open/closed detection configuration

In order for the wifi mini controller to know the door status, a magnetic door sensor (ref. 1076) or door contacts (ref. 2913 / ref. 7776) must be installed. See the installation diagram on page 4.

Door status is available via the app.

Programming steps	Dial
1. Enter programming mode	*** (Master Code) #**
2. Configure door status detection	
a) Mode disabled (OFF)	**6 3 #** *(default)*
b) Mode enabled (ON) Alarm Time Configuration	**6 4 #** **5 (0-3) #** *(default value 1 minute)*
3. Exit programming mode	*

REMARKS:

- If door detection is enabled, 2 alarms are enabled accordingly: the door open alarm and the forced door alarm.
- The door open alarm is activated when the controller detects the door as open for more than 1 minute after opening the door and the door is physically opened. At that moment the wifi mini controller emits a continuous beep and the ALARM- output is activated for the configured time.
- The forced door alarm is activated when the wifi mini controller detects the door as open without a previous opening of the door. At that moment the controller emits a continuous beep and the ALARM- output is activated for the configured time.
- The alarm time is the same as the one configured for the 10 failed attempts alarm (either by the app or by programming by IR remote control).

Light and sound response configuration

The wifi mini controller has an LED and a buzzer that beeps in response to different operating modes. These light and sound indications can be enabled/disabled:

Programming steps	Dial
1. Enter programming mode	*** (Master Code) #**
2. Setting the sound response	
a) Disable sound (OFF) b) Enable sound (ON)	**7 0 #** **7 1 #** *(default)*
3. Configuring the light response (LED)	
a) Disable LED (OFF) b) Enable LED (ON)	**7 2 #** **7 3 #** *(default)*
4. Exit programming mode	*

Configuration of the key fobs auto-collection mode

When this feature is enabled, any key fob/card will be able to open the door and, in addition, will be registered as a common user. This function is useful to avoid having to collect the key fobs/cards of the building residents when the wifi mini controller is installed in an installation where there are already users with their own identifiers.

This function is disabled by default.

IMPORTANT: after a limited time, this function must be deactivated for safety reasons.

Programming steps	Dial
1. Enter programming mode	*** (Master Code) #**
2. Configure the self-collection mode of key fobs	
a) Disabled (OFF) b) Enabled (ON)	**9 2 #** *(default)* **9 3 #**
4. Exit programming mode	*

REMARKS:

- This function does not apply to keypad codes.

Interlock mode configuration

If there are two wifi mini controllers in an installation to open two different doors, the interlock function allows to limit the opening of the second door only when the first one is closed, and vice versa.

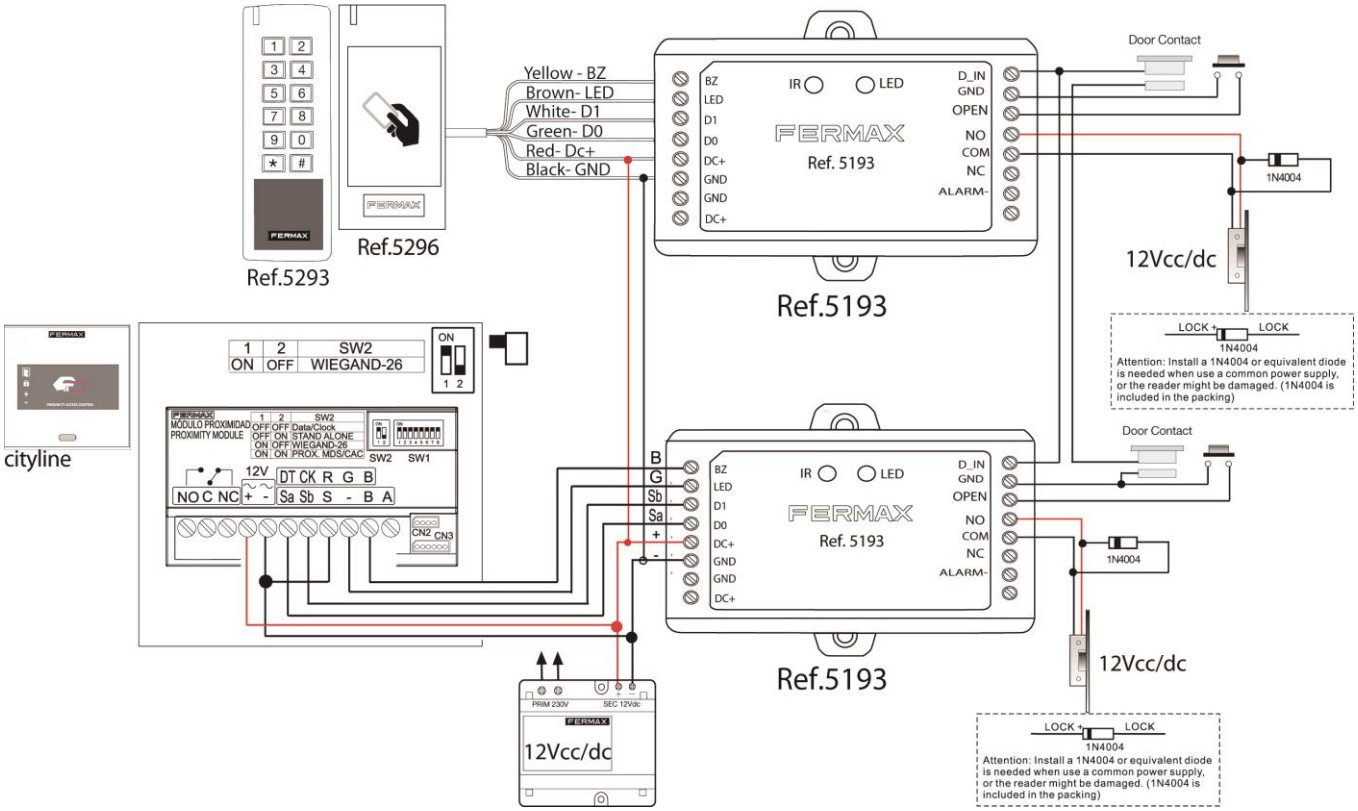
For this purpose, both wifi mini controllers must have a door sensor to know their door status.

Examples:

- Valid user of controller 1 opens the door and does not close it. Valid user of controller 2 attempts to open the door but access is not allowed.
- Valid user of controller 1 opens the door and closes it. Valid user of controller 2 opens the door and access is allowed.

Programming steps	Dial
1. Enter programming mode	*** (Master Code) #**
2. Configure the interlock mode	
a) Disabled (OFF) b) Enabled (ON)	**9 0 #** *(default)* **9 1 #**
4. Exit programming mode	*

Installation diagram:



REMARKS:

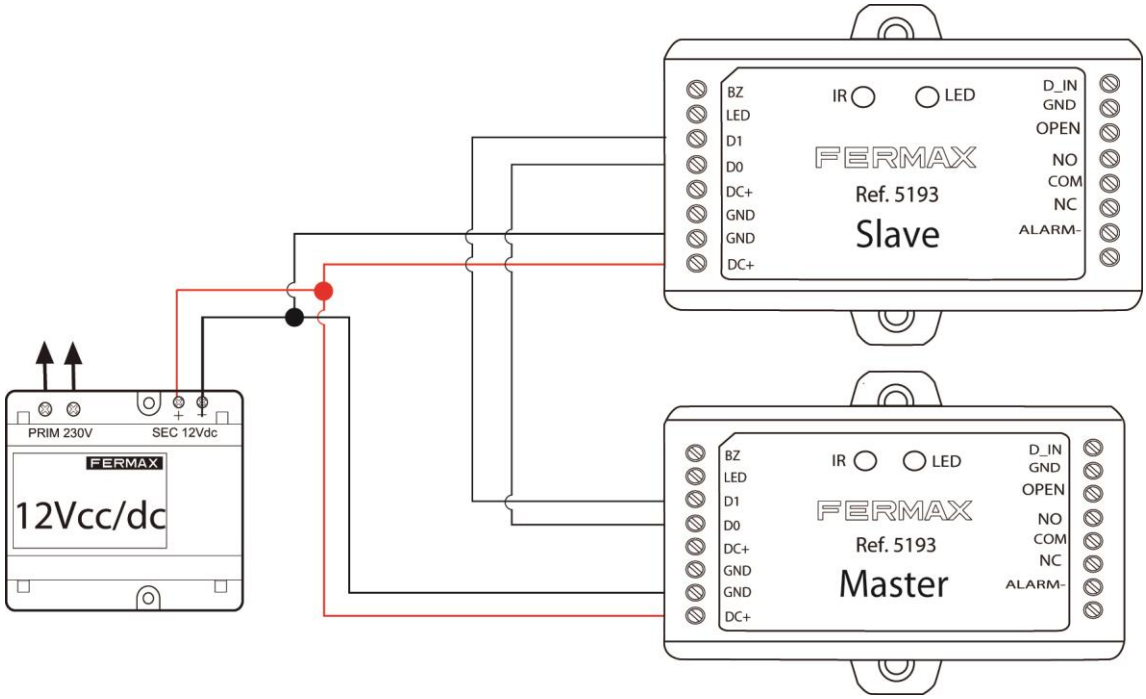
- In both mini wifi controllers the interock function must be activated.
- If the controllers are powered by different power supplies, both negatives must be connected.
- The validation of door openings is carried out both for registered users in the premises and via the app.
- It is not required to enable open/closed detection mode. The door status is determined by the opening door time. However, until de door sensor of door 1 is not closed, it is not possible open the door 2.

Users transfer from one wifi mini controller to another one.

Feature useful for transferring the users registered locally (via the master card or IR remote control) from one wifi mini controller to another one. To do this, the Master controller (the one that contains the users) must be connected to the Slave controller (the one that is going to receive the transfer of users).

Programming steps	Dial
1. Enter programming mode	*** (Master Code) #**
2. Transfer users	**9 8 #**
3. Exit programming mode	*

Installation diagram:



REMARKS:

- The Master code must be the same on both devices.
- The transfer operation must be programmed only from the Master unit.
- If all 1,000 users are transferred, it may take about 30 seconds.
- If the Slave controller has registered users, they will be deleted and those of the master controller will be saved.
- Common, panic and security users are transferred from one controller to another.
- Visiting users are not transferred from one controller to another.
- Users registered in the app are not transferred from one controller to another.

Factory reset

1. Power off the device.
2. Connect GND and OPEN (press and hold the output button).
3. Power on the device.
4. You will hear 2 beeps.
5. Wait at least 5 seconds.
6. A beep is heard.
7. Disconnect GND and OPEN (stop pressing the output button).
8. Swipe any card/keyfob compatible with the reader's technology (DESFIRE/EM/MIFARE) depending on the reader connected. It also works with any keypad code if what is connected is a keypad and not a reader.
9. The LED on the wifi mini controller will light up red.

REMARKS:

- A factory reset does not delete users stored locally or via the app.
- If you do not wait 5 seconds before releasing the exit button, the card/keyfob read by the reader will be a new master card (as indicated in the section *Changing master card*).

Basic APP configuration

1. Download and install the TUYA Smart app.

2. Register user (if you do not already have an existing user) and log in.
3. Add new device and pair the mini wifi controller to the 2.4 Ghz Wi-Fi network with Internet connection
4. Enjoy the functions available in the app: Open the door remotely, register users, temporary codes, etc.

For more information on the functions and use of the app, consult the app's online manual:

EC DECLARATION OF CONFORMITY

Hereby, **FERMAX ELECTRONICA, S.A.U.** declares that the ref. 5193 - MINI WG 1 PTA WIFI DOOR CONTROLLER is in compliance with the requirements of the RED Directive 2014/53/EU and the RoHS Directive 2011/65/EU.
See website www.fermax.com
FERMAX Avd. Tres Cruces, 133, 46017 Valencia, Spain.
https://www.fermax.com/spain/pro/documentacion/documentacion-tecnica/DT-13-declaraciones-de-conformidad.html
Radio frequency module:
Frequency Band: 2.4GHz (2412MHz - 2472MHz) / Maximum Power: 15.75 dBm

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