

FERMAX

BLUETOOTH READER

INSTALLATION MANUAL

MANUAL DE INSTALADOR INSTALLER'S MANUAL MANUEL D'INSTALLATION
INSTALLATIONSHANDBUCH MANUAL DO INSTALADOR MANUAL DE INSTAL
30420412.PDF MANUAL MANUEL D'INSTALLATION INSTALLATIONSHANDBUC
STALADOR MANUAL DE INSTALADOR INSTALLER'S MANUA
FALLATION INSTALLATIONSHANDBUCH MANUAL DO INSTALA
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CONGRATULATIONS ON PURCHASING THIS QUALITY PRODUCT!

Fermax electronics develops and manufactures systems of renown that meet the highest standards of design and technology. We hope you enjoy its range of functions.

Code 97588I, V06_10

Technical information booklet published by FERMAX ELECTRONICA S.A.E.

As part of its policy of constant improvement, FERMAX ELECTRONICA S.A.E. reserves the right to modify the content of this document and the characteristics of the products referred to in it at any time and without prior notice. Any modification will be reflected in subsequent editions of this document.

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Introduction

Now your mobile phone can do yet another thing: open the garage door, your office door or your own front door. Why carry more keys or remote controls? Your phone, always with you, incorporates Bluetooth® technology and will open doors for you.

All you have to do is install a Bluetooth access control receiver and connect it to the garage door's electric lock release or motor, parallel to the current opening system.

- Extremely easy and quick to install.
- Does not require external installation: vandal-proof.
- Operation options
 - Authorised phones: automatic opening of door / PIN request.
 - Any phone: PIN request. Like a laptop keyboard.
- Ideal hands-free vehicle or pedestrian access.
- Embedded or surface option.
- Integratable in door interphone boards.

The reader has 2 operating modes:

- Autonomous (Class I)
- Centralised (Class II/III)

The operating mode is selected using dip-switch1.

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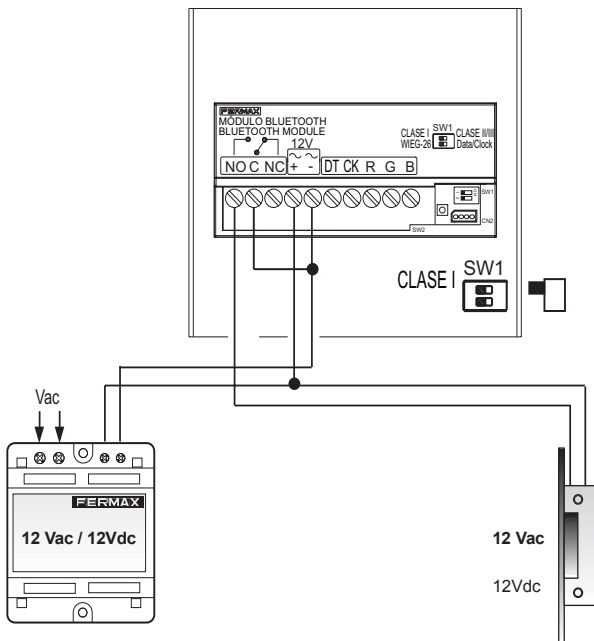
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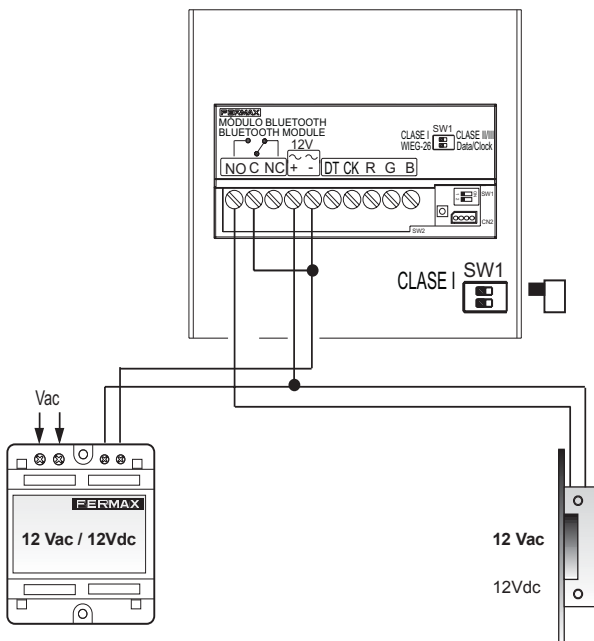
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Connection diagram as AUTONOMOUS reader (Class I)



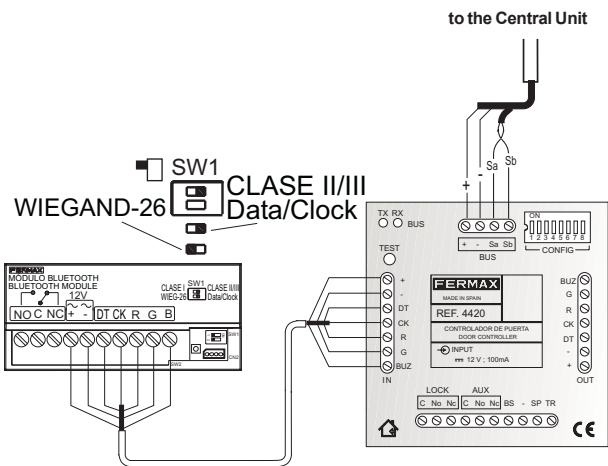
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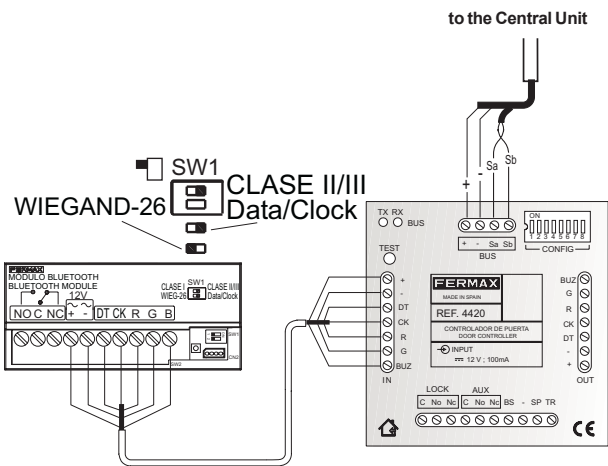
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Connection diagram as CENTRALISED reader (Class II/III)

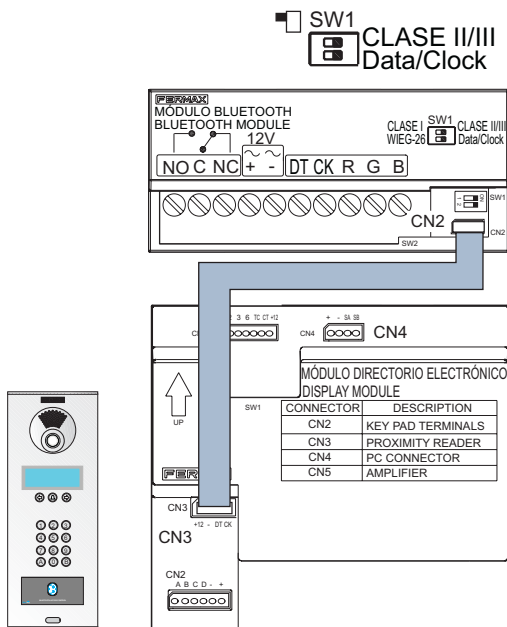


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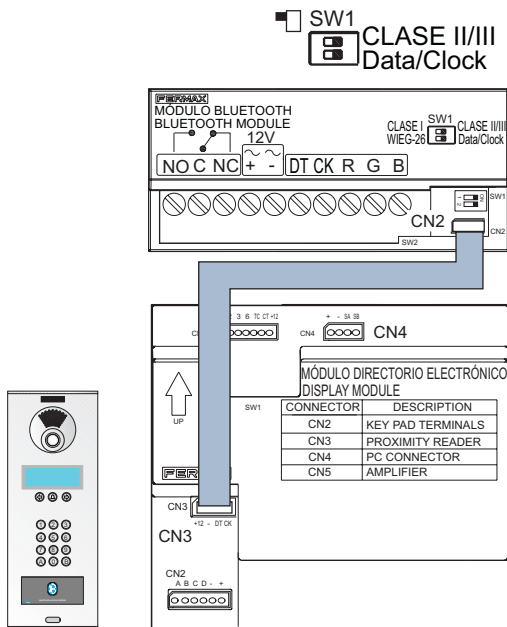
Connection diagram as CENTRALISED reader (Class II/III)



Connection diagram as **SECONDARY** reader



Connection diagram as **SECONDARY** reader



Connection Grid

- + , - : Power Supply
- Autonomous (12 Vac / 12 Vdc).
- Centralised (12 Vdc).

CENTRALISED:

- **Dt, Ck:** data connection to controller.
 - **R:** red led to controller.
 - **G:** green led to controller.
 - **B:** buzzer to controller.
- Note: the lock release will be connected in the controller

AUTONOMOUS:

- **C, NO, NC:** Lock-release relay output (potential free)
- **C:** Common
 - **NO/NC:** Normally Open/Normally Closed

SW1: System encoding dipswitches.

CN2: Secondary Reader.

- **+12, - :** Power Supply (100mA. not including lock release.).
- **Dt:** Data.
- **Ck:** Clock

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- Autonomous (12 Vac / 12 Vdc).
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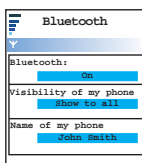
CN2: Secondary Reader.

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CONFIGURATION OF THE BLUETOOTH RECEIVER

The Bluetooth access control works with any mobile phone as its features include Bluetooth connectivity.

The phone must have *Bluetooth "On"* and *Visibility "enabled"*.



AUTONOMOUS system operating modes (Class I)

The system can work in various modes, depending on the security requirements:

1. Working with list of authorised phones: This is a list memorised in the receiver which specifies which specific phones are authorised to open the door. The list has a capacity of up to 40 different mobile phones. This working mode has three possible options:

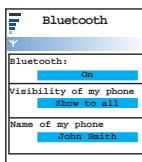
- **Request PIN :** When the receiver detects a phone on the list it requests the PIN (4-digit code configurable by the administrator).
- **Request Confirmation:** When the receiver detects a phone on the list, it requests confirmation to open the door. The user must press the 1 key and Accept to open the door.
- **Automatic Mode (without PIN):** The door opens when it detects the presence of an authorised phone.

If the phone stays near the receiver and no other authorised phone appears, the door does not open again for approximately 30 seconds (programmable repeat time which can be changed). If another authorised phone appears the door opens without waiting these 30 seconds.

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If the phone stays near the receiver and no other authorised phone appears, the door does not open again for approximately 30 seconds (programmable repeat time which can be changed). If another authorised phone appears the door opens without waiting these 30 seconds.

When working with PIN code request (with or without authorised phones list), the receiver detects nearby phones and if there is more than one authorised phone it alternates the PIN request between the detected phones to avoid asking the same phone twice in a row.

2. Working without authorised telephones list (this is the default configuration): The PIN will be requested of any nearby phone with bluetooth on and only if entered correctly will the lock release be activated.

3. Mobile Management: All bluetooth receivers can be configured from a mobile phone with bluetooth connectivity.

To configure the receiver we have to momentarily modify the bluetooth name of the phone acting as administrator. This can be done in the corresponding option of the phone's bluetooth configuration.

This is the name with which the configuration orders will be given.

The phone acting as administrator does not have to be on the authorised phones list.

The steps are as follows:



1. Modify the bluetooth name of the phone that is going to act as administrator with the code **in capitals** corresponding to the action to be executed.
The table on the next page shows the list of existing codes and the action associated with each.
2. Place the phone that is going to act as administrator near to the receiver.
3. Turn off and turn on the receiver (switch the power supply off and on).

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3. Turn off and turn on the receiver (switch the power supply off and on).

4. Approximately 20 seconds later if the command is correct, the phone acting as administrator will be requested the *Administrator PIN, NOT the user PIN*. The administrator PIN is factory preset.

Once the Administrator PIN has been entered, the receiver will open the door twice indicating that the maintenance order has been executed. If the PIN has not been correctly entered the administration order will not be cleared.

At this moment it goes over to normal operation and from now on any PIN code requested will always refer to the normal opening PIN.

5. Change the phone's bluetooth name for another one figuring in the administrator codes.

4. PC/PDA Programming: We access this mode by pressing the receiver's PRG button or from Mobile Management mode by means of the corresponding command.

An alternative is entry into this mode if the reader discovers that the device that entered into PC programming the previous time is present. It will be requested the administrator code and if correct it will go over to PC Programming mode.

If the configuration PC is very near the reader it is very important that its Bluetooth connectivity be turned off as otherwise the BT receiver will be continuously requesting the administrator code from it and therefore will not be responding to users' phones.

This status permits wireless connection via Bluetooth to a PC or PDA in order to execute all the configuration operations more conveniently.

We can exit this status in 3 different ways:

- By selecting the exit option from the application.
- By pressing the PRG button on the receiver.
- When 5 minutes have passed with no communication between receiver and PC/PDA.

The «FermaxPC» programming software can be downloaded from the Fermax website, in the Products-Downloads-Software section.

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5. Standby: Mode in which the system waits for a user's phone to approach to give it the access authorisation.

- o Door closed



- o Code accepted and Lock-Release Active



System default configuration - COMMANDS table

The system's factory configuration is:

- Operating mode:
 - o Autonomous (Class I): without authorised phones list with PIN request
 - o Centralised (Class II/III): without PIN
- User PIN: 1234
- Administrator Pin: 4444
- Opening time: 3 secs
- Power Value: Medium
- Repeat time: 30 seconds

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- Repeat time: 30 seconds

List of COMMANDS for Autonomous Mode configuration from mobile (Class I)

CODE - DESCRIPTION
ADDXX Serves to create the authorised phones list (ordered in a list). Adds the new phone detected in a short range in the XX memory position (01..40). The phones are registered 1 by 1. The administrator will keep account of the list of phones registered and their memory position.
ADMADD Serves to create the authorised phones list (without ordering in a list). Puts the receiver in self-learning mode, automatically adding to the list the phones that are nearby at the time. It adds these after any already on the list and without exceeding the maximum limit of 40. It can incorporate a maximum of 4 new phones on each self-learn. Therefore, if we have to add more, we must do this in blocks of 4. It is important that no more than four be in the coverage radius as otherwise we will not know which have been added. This process is carried out at low power level, irrespective of the power programmed.
ADCXX 1234567890 (MAC without points) Serves to add a telephone by its MAC identifier. Adds the phone 1234567890 in the XX memory position (01..40), without having to physically have it. The phones are registered 1 by 1. The administrator will keep account of the list of phones registered and their memory position.
DELXX Serves to unregister phones from the authorised phones list. Unregisters the phone from the XX memory position (01..40), without having to physically have it.

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DELXX Serves to unregister phones from the authorised phones list. Unregisters the phone from the XX memory position (01..40), without having to physically have it.

DEC 12345678990 (MAC without points) Serves to unregister a phone by its MAC identifier. Unregisters phone 1234567890, without needing to physically have it.
DELALL Completely empties the authorised phones list.
PINUSRxxxx User PIN: Serves to configure a new User pin «xxxx» value (4 numerical digits) for opening.
PINADMxxxx Administrator PIN: Serves to configure a new administrator PIN «xxxx» value (4 numerical digits).
ADMRES Restores the default value for the administrator PIN code
CTAxx Change Opening Time: Serves to specify the duration in seconds of the opening (2 «XX» digits); example: 05 seconds, 12 seconds.
CVPx Change (Coverage) Power Values x = 0: Low Coverage: Approximately 2 m (6.5 feet). x = 1: Medium coverage: Approximately 9 m (30 feet). Default: x = 2: High coverage: Approximately 20 m (65 feet). (See NOTES).

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MODxy

Change Operating Mode (x) and Type of Opening (y)

- Change Operating Mode:

x =T: Operation without authorised phones list.
The bluetooth requests the PIN (obligatory) of all devices near to the receiver.

x =L: Operation WITH authorised phones list.
In this option the PIN may be requested or just confirmation, depending on the configuration.

- Change Type of Opening:

y =N: without PIN
When an authorised phone is detected the door opens, without requesting PIN or confirmation.
The «N» configuration is not permitted when working without authorised phones list.

y =T: With confirmation.
When the receiver detects a phone on the list, it requests confirmation to open the door. The user must press the 1 key and Accept to open the door.
The «T» configuration is not permitted when working without authorised phones list.

y =P: With PIN.
In the «P» configuration when a phone, whether authorised or not (depending on the operating mode) is detected, the receiver asks it for the PIN; if the user enters it correctly the door opens.

REPxx

Repeat Time.

This is the repeat time for a phone already detected: xx seconds (10..90).
The receiver reactivates the relay for a phone already detected beforehand after xx seconds. See NOTE.

ADMPC

Enters Programming from PC mode.

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NOTES:

- Coverage (Power Values):
 - This can be changed with an administration command (see configuration section).
It can vary from 2m (6.5 feet), up to 9m (30 feet) and 20m (65 feet).
 - It is important to remember that coverage tests should be carried out simulating a real door approach situation and not stationary a certain distance away and in the most realistic positions possible.
 - Note that bluetooth access control works even in places with no phone coverage (GSM), because it uses another communication system of no extra cost to the user.

- Repeat time. This is approximate and the programmed value is in tenths (10, 20, 30...). The real value depends on a number of factors: type of phone used, distance from the phone to the reader, phones present, etc.... In general the real time is a little longer than the programmed time.

- iPhone:
 - This device does not permit us to change the name of the phone and therefore cannot be used as administrator.
 - In autonomous operation with confirmation list it doesn't work as it doesn't permit the «1» to confirm
 - It has to be in pairing mode for it to detect the reader as in all other situations it is not visible.

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CENTRALISED System (Class II / Class III)

CENTRALISED System (Class II / Class III)

CENTRALISED system operating modes (Class II / Class III)

In this operating mode the receiver connects to a door controller and generates the phone code via the interface it incorporates. The leds and buzzer are managed by the door controller in the reader.

In this operating mode, we do not need to register users as the access control system is the one that has to validate acceptance of the user. The quantity of users to be managed will depend on the controller / central unit.

The operating mode is selected by means of dipswitch2 in SW1. We can select the communication protocol:

- o Wiegand- 26.
- o Data/Clock.

The codes of phones in wiegand and data/clock format are provided by the **FermaxPC** application and must be registered in the control system (Central Unit or Controller).

The system can work in various modes:

▪ **Request PIN** : When the receiver detects a phone it requests the PIN (4-digit code configurable by the administrator).

▪ **Request Confirmation**: When the receiver detects a phone, it requests confirmation to open the door. The user must press the 1 key and Accept to open the door.

▪ **Automatic Mode (without PIN)**: The door opens when it detects the presence of an authorised phone.

If the phone stays near the receiver and no other authorised phone appears, the door does not open again for approximately 30 seconds (default repeat time programmed in the phone and which can be changed). If another authorised phone appears the door opens without waiting these 30 seconds.

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- o Wiegand- 26.
- o Data/Clock.

The codes of phones in wiegand and data/clock format are provided by the **FermaxPC** application and must be registered in the control system (Central Unit or Controller).

The system can work in various modes:

▪ **Request PIN** : When the receiver detects a phone it requests the PIN (4-digit code configurable by the administrator).

▪ **Request Confirmation**: When the receiver detects a phone, it requests confirmation to open the door. The user must press the 1 key and Accept to open the door.

▪ **Automatic Mode (without PIN)**: The door opens when it detects the presence of an authorised phone.

If the phone stays near the receiver and no other authorised phone appears, the door does not open again for approximately 30 seconds (default repeat time programmed in the phone and which can be changed). If another authorised phone appears the door opens without waiting these 30 seconds.

Lectores/Readers/Lecteurs/Näherungsleser FERMAX

1. Mobile Management:

Identical to AUTONOMOUS (Class I) except that it does not admit the add or delete user or configure door opening time functions.

List of COMMANDS for CENTRALISED Mode configuration from mobile (Class II/III)

CODE - DESCRIPTION
PINUSRxxx User PIN: Serves to configure a new User pin «xxxx» value (4 numerical digits) for opening.
PINADMxxx Administrator PIN: Serves to configure a new administrator PIN «xxxx» value (4 numerical digits).
CVPx Change (Coverage) Power Values x = 0: Low Coverage: Approximately 2 m (6.5 feet). x = 1: Medium coverage: Approximately 9 m (30 feet). Default: x = 2: High coverage: Approximately 20 m (65 feet). (See NOTES).
REPxx Repeat Time. This is the repeat time for a phone already detected: xx seconds (10..90). The receiver reactivates the relay for a phone already detected beforehand after xx seconds. See NOTE.

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<p>MODxy</p> <p>Change Operating Mode (x) and Type of Opening (y)</p> <p>- <i>Change Operating Mode:</i></p> <p>x =T: Operation without authorised phones list. The bluetooth requests the PIN (obligatory) of all devices near to the receiver.</p> <p>x =L: Operation WITH authorised phones list. In this option the PIN may be requested or just confirmation, depending on the configuration.</p> <p>- <i>Change Type of Opening:</i></p> <p>y =N: without PIN When an authorised phone is detected the door opens, without requesting PIN or confirmation. The «N» configuration is not permitted when working without authorised phones list.</p> <p>y =T: With confirmation. When the receiver detects a phone on the list, it requests confirmation to open the door. The user must press the 1 key and Accept to open the door. The «T» configuration is not permitted when working without authorised phones list.</p> <p>y =P: With PIN. In the «P» configuration when a phone, whether authorised or not (depending on the operating mode) is detected, the receiver asks it for the PIN; if the user enters it correctly the door opens.</p>
<p>ADMRES</p> <p>Restores the default value for the administrator PIN code</p>
<p>ADMPC</p> <p>Enters Programming from PC mode.</p>

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Lectores/Readers/Lecteurs/Näherungsleser FERMAX

2. PC Programming: Works identically to AUTONOMOUS (Class I), except that the user list options are not available.

The «FermaxPC» programming software can be downloaded from the Fermax website, in the Products-Downloads-Software section.

Technical Characteristics

- **Power supply:**
 - Autonomous: 12 Vac / 12 Vdc
 - Centralised: 12 Vdc
- **Consumption (12 Vdc / 12 Vac):**
 - Standby: 50 mA
 - Active: 80 mA
- **Number of users:**
 - Autonomous:
 - 40 in WITH User List mode.
 - Unlimited in without User List mode.
 - Centralised: Depends on the Controller / Central unit.
- **Number of administrators:** 1 pin code.
- **Opening time / relay:** 2 Amps, double contact. Timing: 1 to 99 seconds.
- **Repeat time:** 10, 20, 30, 40, 50, 60, 70, 80, 90 seconds. The repeat time is not an exact quantity. The reader tends to be above the value indicated in a decade.
- **Reading range configurable:**
 - up to 2 m (6.5 feet)
 - up to 9m (30 feet)
 - up to 20m (65 feet) approximately.

It is important to remember that coverage tests must be carried out simulating a real door approach situation and not stationary a certain distance away and in the most realistic positions possible.

- **Valid phones:** Any with Bluetooth technology. See iPhone Notes.

- **Programming:** By phone with Bluetooth, validated with password and special PIN code and from PC/PDA.

- **The Bluetooth receiver incorporates BlueKey® technology.** A trademark registered by COLTEC.

Note that bluetooth access control works even in places with no phone coverage (GSM), because it uses another communication system of no extra cost to the user.

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Frequently asked questions

Where is the Bluetooth connectivity menu on my mobile phone screen?

This depends on the make and model although it is frequently found under the following headings:

- Bluetooth
- Config
- Configuration
- Connectivity
- ...

If I change my phone do I have to reregister in the receiver?

Depends on the working mode configured in the receiver. If the receiver works *with a list of authorised telephones*, it will be necessary to activate the telephone from the receiver; if it *works without a list of authorised telephones* this will not be necessary.

Does it work with PDA's Bluetooth?

YES.

The PDA can only be used to programme the receiver (if the programming software is installed, which is available from the fermax webpage) and to open the door. If it has been used previously to configure the reader, it will request the administrator code.

What happens if there are several phones near the receiver?

a) In PIN code request mode (with or without authorised phones list) **or with Confirmation:**

The receiver detects the nearby phones and alternates the PIN request between the detected phones, at 20-second intervals, to avoid asking the same telephone twice in a row.

b) Automatic Mode (with authorised phones list without PIN):

The receiver detects the nearby phones, and if there is more than one phone opens the door at 6-second intervals.

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What if my mobile takes longer than usual to be detected by the Bluetooth receiver?

Phones with old Bluetooth versions take longer to be detected than phones with the latest versions.

Does it work with Bluetooth hands-free car kits?

Yes, but how it works varies depending on the mobile phone model.

The latest mobile models with the latest bluetooth versions allow you to speak on the phone at the same time as opening the door.

How can I read my phone's Mac Bluetooth address?

For each phone you access from a different menu, but in general you have to go to connectivity options and select the Bluetooth device. This is a code of 12 digits or characters from A to F, separated in pairs by «:».

For example: 00 : 1C : C2: 38 : 5D : 6E

Another alternative is to use the operating system's utilities to detect Bluetooth devices (the computer must have a Bluetooth interface installed).

In Windows:

Go to My PC / My Bluetooth websites and select the «Search devices in my range» option. A list of devices appears. Click on the phone in question and with the right-hand button of the mouse select «Properties». It will show the phone's Mac address.

FermaxPC Application:

Another option is to use the FermaxPC application. The Class II-III option detects nearby phones and shows their Mac address and the conversion to wiegand or data/clock code.

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