



DESFIRE SECURITY PROGRAMMER SOFTWARE

DISTRIBUTOR AND INSTALLER MANUAL



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DESFIRE SECURITY PROGRAMMER SOFTWARE

1. INTRODUCTION

This document describes the operation of the DSP (Desfire Security Programmer) software used to configure and encrypt FERMAX Desfire products.

The DSP software has two different operating profiles, one for the distributor and one for the installer. Depending on whether or not it detects a DSP distributor certificate, it will start in distributor mode or installer mode.

You will need to use the Desfire desktop programmer accessory both in distributor and in installer mode to encrypt DESFIRE FERMAX readers and proximity cards.

The distributor must encrypt each reader sold with a distributor code and, optionally, an installer code. This prevents an installer from encrypting an unprotected installation and blocking previously registered identifiers.

The distributor or installer must encrypt each card sold to the end user. This card will contain the distributor and installer code information. Only end user cards with this encryption can be registered in DESFIRE readers.

2. DSP SOFTWARE INSTALLATION

Run the Desfire Security Programmer Setup .exe software and follow the installation procedure.

The DSP installation software does not include a distributor certificate. The customer must request this distributor certificate from FERMAX.

The certificates are stored in the folder: C:\Program Files\FERMAX\Desfire Security

It is recommended to run the DSP software as a Windows Administrator.

2.1. Installation of the desktop programmer ref. F04534.

The desktop programmer connects to the PC via a USB port. It is detected by the PC as a virtual serial port and is identified as Silicon Labs CP210x USB to UART Bridge (COM10).



For the desktop programmer to be recognised by the PC, you will need to install its driver, which can be downloaded from the following link:

<https://www.silabs.com/products/development-tools/software/usb-to-uart-bridge-vcv-drivers>

It takes a few seconds to write and read cards.

3.3 LOGIN

3.1. Login

Every time you run the software you will be prompted for user and password. By default: user = system | password = fermax.

If this is the first time we run the software, after entering user and password we should be shown a form to “Change password”.

- New password
- Repeat new password
- Buttons: Next | Skip

When clicking Next, the form will check that New password and Repeat new password match. If not, display a red message “Passwords entered do not match” and do not perform password change by default.

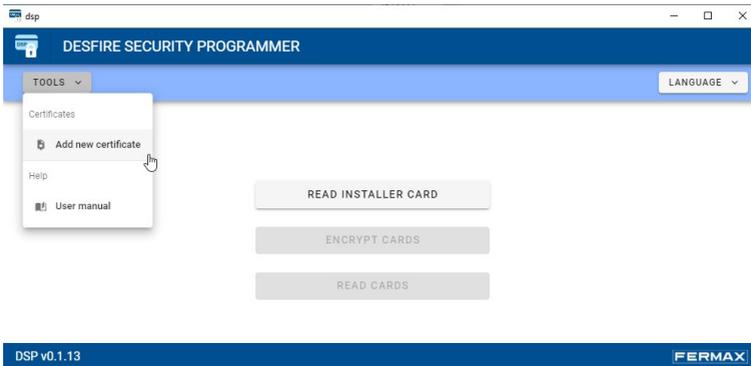
If you press Skip, no action will be taken and the password will be set as “fermax”.

3.2. Forgotten password

In case of forgetting the password, the distributor must request technical support to Fermax.

4. ADD DISTRIBUTOR CERTIFICATE

When initialising the DSP software, click: Tools → Add new certificate
 Now select the certificate file provided by FERMAX.



After adding the certificate, in the top navigation bar you will see your distributor name and the validity date of this certificate.

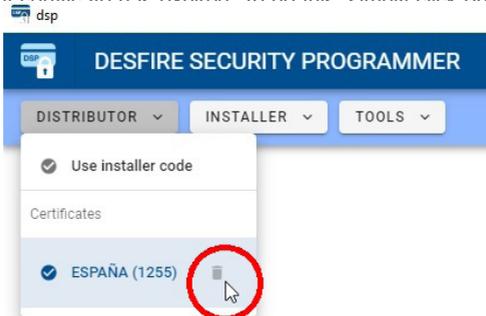


After adding the distributor certificate, the *DESFIRE SECURITY PROGRAMMER* PC software will allow you to encrypt a card to use for DESFIRE reader encryption.

The reader encryption cards will be used to transmit encryption to DESFIRE readers. A separate reader encryption card must be created for each installer.

4.1. Remove distributor certificate

It is possible to delete a certificate because it will no longer be used, a new certificate has been received, or the current certificate has expired. To do this, simply click on the trash can next to the certificate.



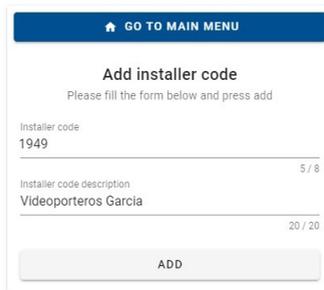
5. REGISTER INSTALLERS

The distributor must register an installer code for each of its installers. As a result, each installer will be able to create their own access control installations without any other installer being able to interfere with them.

To do this, click: *Distributor* → *Use installer code*

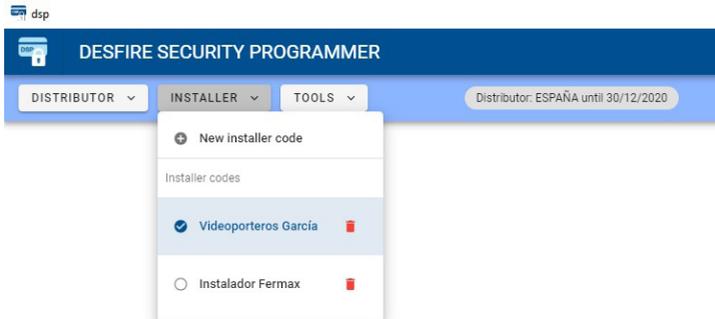


A pop-up window will appear where you can register installers.



The installer code must be a number with a maximum of 8 digits. The installer code description can be alphanumeric with a maximum of 20 characters.

You can create and delete as many installers as you want.



The selected installer will be indicated in the top navigation bar.



From any section of the DSP software, you will have the option to return to the main menu by clicking on the following icon:



6. READER ENCRYPTION

6.1. Introduction

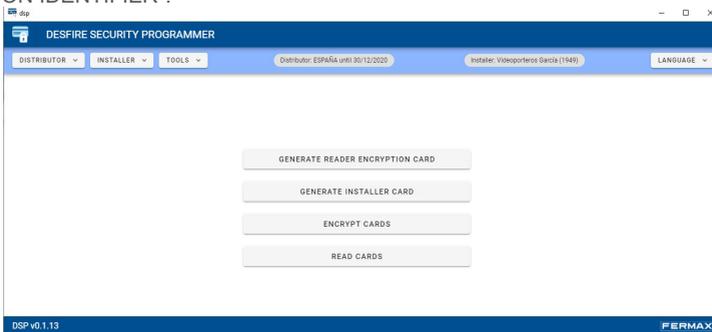
DESFIRE FERMAX proximity readers must be encrypted before being put into use. The transmission of this encryption to the readers is done by means of proximity cards that record this information in the internal memory of the readers.

For each of its installers, the distributor must create a reader encryption card with the distributor code and the relevant installer code.

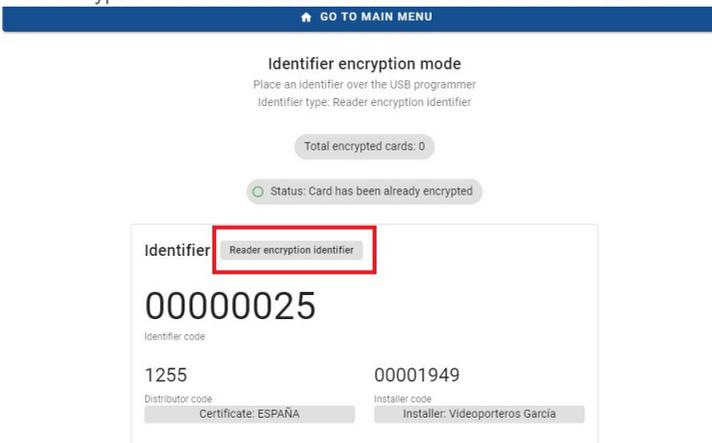
6.2. Creation of reader encryption cards

To create reader encryption cards, you will need to connect the DESFIRE desktop programmer ref. 4534 to a USB port on your PC and run the DSP software.

In the DSP software, we will select the desired installer and click on "GENERATE READER ENCRYPTION IDENTIFIER".



Immediately, we will need to present a DESFIRE FERMAX card to the DESFIRE desktop reader. This card will be encrypted with the details of the selected distributor and installer.



After recording the encryption of the DESFIRE proximity card, the desktop programmer will generate a confirmation tone:



6.3. Transfer encryption to DESFIRE proximity readers.

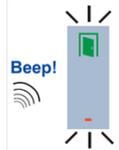
After executing the previous point in the manual, you will need to transmit this encryption to the DESFIRE proximity readers.

To do this, enable encryption mode in the DESFIRE reader. This mode is activated by setting switches 6, 7 and 8 of dip-switch SW1 to the following position:

SW1	6	7	8
	OFF	OFF	ON

Fig. Configuration of DESFIRE proximity reader SW1, activating encryption mode

As a consequence, when the reader is powered up a confirmation "Beep" tone will be heard. While the reader remains in this state, the "door open" and "-" LEDs will flash.



Then, simply present the desired card containing the encryption of the desired distributor and installer to the DESFIRE proximity reader (this card was created in section 5.2). The reader will beep 3 times to confirm. If the reader is already encrypted with another distributor code, it will emit a unique tone (muok) indicating that re-encryption using a different distributor code is not possible.

To finish the process, disconnect the power supply of the DESFIRE proximity reader, disable the reader's encryption mode and enable reading mode. This mode is activated by setting switches 6, 7 and 8 of dip-switch SW1 to the following position.

SW1	6	7	8
	ON	ON	ON

Fig. Configuration of DESFIRE proximity reader SW1, activating reading mode

7. INSTALLER CARDS

7.1. Introduction

You will need to encrypt the proximity cards that will be used by end users. These cards will be encrypted with the distributor and installer code to allow them to be registered in proximity readers with the same encryption.

To transfer this encryption to the end user cards, you will need to create an INSTALLER card with the distributor and installer encryption.

It will not be possible to register end user proximity cards with DESFIRE proximity readers that have not been encrypted with the same distributor and installer code.

7.2. Installer card creation

The distributor must create installer cards for each of its installers. Each of these cards will have the relevant installer's encryption and will be used by the installers themselves to encrypt the proximity cards intended for end users, so that no other installer can supply proximity cards to the end users of the installations managed by that installer.

To create INSTALLER cards, you will need to connect the DESFIRE desktop programmer ref. F04534 to a USB port on your PC and run the DSP software.

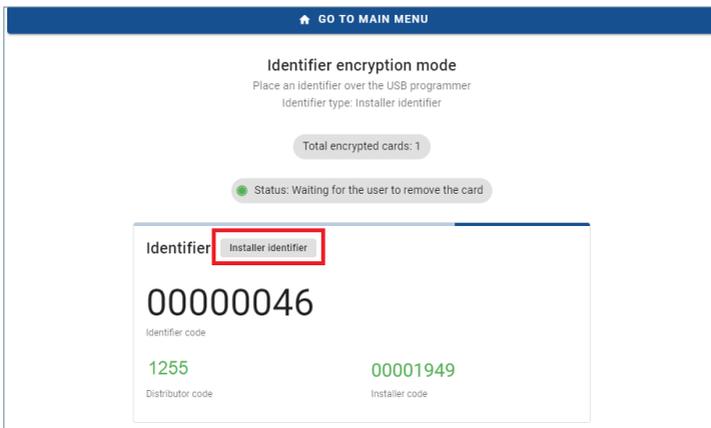
In the DSP software, select the desired installer in the INSTALLER menu.



Then click on "GENERATE INSTALLER ID".



Finally, present the DESFIRE FERMAX proximity card you wish to encrypt to the DESFIRE desktop reader. This card will be encrypted as an INSTALLER card with the codes of the distributor and installer.



8. END USER CARD ENCRYPTION

8.1. End user card encryption with DSP software in distributor mode

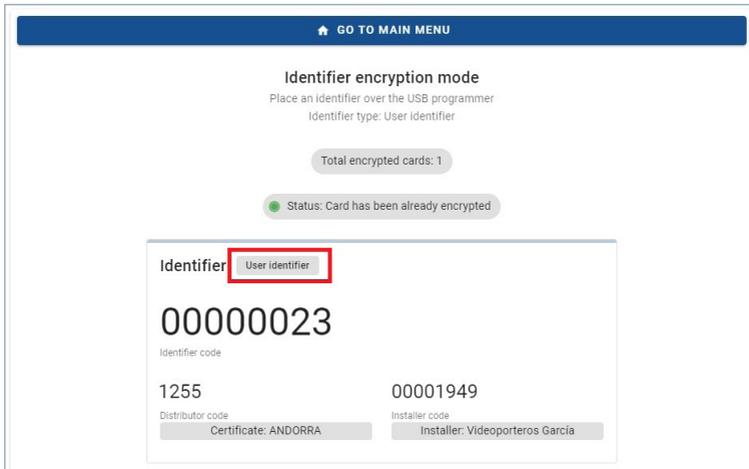
The distributor has the ability to encrypt the proximity cards that will be used by the end users managed by a given installer. This encryption ensures that no other installer can supply proximity cards to the end users of the installations managed by that installer.

To perform this encryption, you will need to connect the DESFIRE desktop programmer ref. F04534 to a USB port on your PC and run the DSP software.

In the DSP software, click on "ENCRYPT IDENTIFIER".



Then, present all the DESFIRE FERMAX cards you wish to encrypt to the DESFIRE desktop programmer ref. F04534. These cards will be encrypted with the distributor and installer codes and can only be registered in proximity readers configured with the same distributor and installer codes.

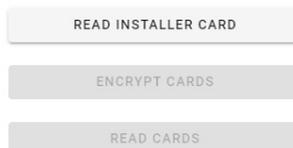


8.2. End user card encryption with DSP software in installer mode

The installer has the ability to encrypt the proximity cards that will be used by end users in the installations that installer manages. This encryption ensures that no other installer can supply proximity cards to the end users of the installations managed by that installer.

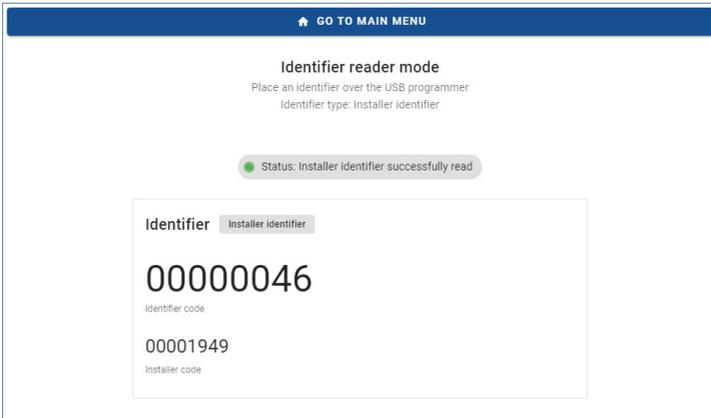
To perform this encryption, you will need to connect the DESFIRE desktop programmer ref. F04534 to a USB port on your PC and run the DSP software.

In the DSP software, click on "READ INSTALLER ID"



Next, present the INSTALLER card given to you by your DISTRIBUTOR to the desktop programmer. Immediately, the DSP software will read the encryption recorded on the INSTALLER card.

The DSP software will import this encryption, so that it can later be used to encrypt end user cards with the relevant installer code. On the next screen, you will see that the DSP software has detected the presented INSTALLER card and recognised the installer number.



As a result, the installer code will appear in the top navigation bar of the DSP software.

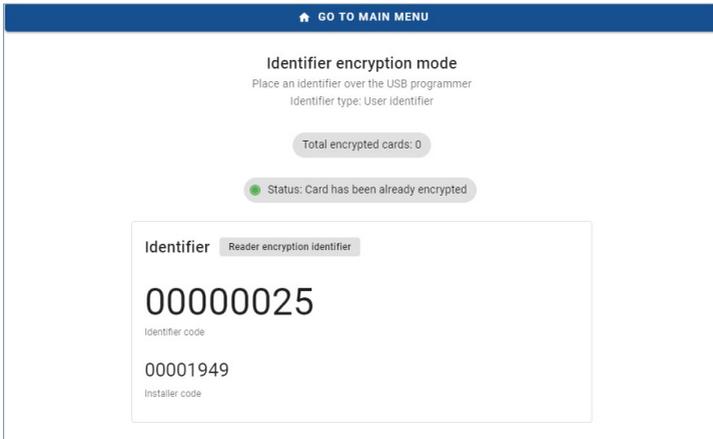


Similarly, the DSP software enables the options to *encrypt identifiers* and *read identifiers*.



To encrypt the proximity cards with our installer code, simply click "ENCRYPT IDENTIFIER".

Then, present all the DESFIRE FERMAX cards you wish to encrypt to the DESFIRE desktop programmer ref. F04534. These cards will be encrypted with the installer code and can only be registered in proximity readers configured with the same distributor and installer codes.



9. COMMUNICATION ERROR BETWEEN DESKTOP PROGRAMMER REF. F04534 AND DSP SOFTWARE

If the software does not detect the desktop reader ref. 04534 during the communication process, the following warning message will appear on the screen. In this situation, we recommend that you review the correct installation of the desktop reader drivers.





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