

BioSync KBF-2SC Setup Guide

Setting up a KBF-2SC reader on a new installation is a three step process. Each of these steps is covered in its own document:

- [BioManager Software Installation](#) (p/n: 02301-001)
- [CNV Converter Setup](#) (p/n: 02303-001) - (used to connect to the BioSync via ethernet)
- [BioSync KBF-2SC Reader Setup](#) (p/n: 02304-022)

Note: The current version of the BioManager software is version 10 (at the time of writing). You can download the latest version from the Software Downloads section of the Kerisys website - <http://www.kerisys.com/pages/download/software/>

This guide explains the process of wiring the BioSync to the controller, connecting to the BioSync for the first time, configuring the reader then enrolling user's cards, fingerprints and PINs (when using a 3KP reader).



The KBF-2SC is a surface mount fingerprint reader with integrated Mifare reader (13.56MHz). It has a programmable Wiegand output (8 to 128 bits) making it compatible with any controller that conforms to the Wiegand standard. Offering storage of 9,500 fingerprints (or unlimited when using Finger on Card mode). The Mifare reader is compatible with Mifare Classic 1K & 4K, Ultralight, Desfire; Finger on Card (Classic and Desfire) Smart cards.

Notes:

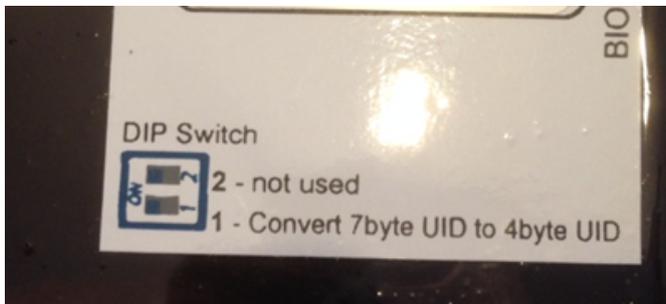
- When using the PXL controller the controller will process up to 31 Wiegand bits.
- When using an NXT RIM the controller will read up to 64 Wiegand bits

BioSync KBF-2SC Setup Guide

It also features a rugged SteelCoat protective coating, a multi-color LED bar to indicate access status (amber, red and green - externally controlled by the controller) and a tamper switch output that can trigger an event in the Doors.NET software.

If an attempt is made to open the reader casing the tamper output is activated (the tamper wires; gray and blue should be wired into an available input, such as on an NXT 4x4 module or an unassigned input on an NXT or MSC controller).

The KBF-2SC is a combination fingerprint and proximity (Mifare) card reader. It is configurable via a dip switch (located on the rear of the unit). You can use dip switch 1 to convert between a 7 byte UID (56 bit CSN) or a 4 byte UID (32 bit CSN). When switch 1 is in the ON position it is set to read a 32 bit Mifare CSN, OFF is for 56 bits.



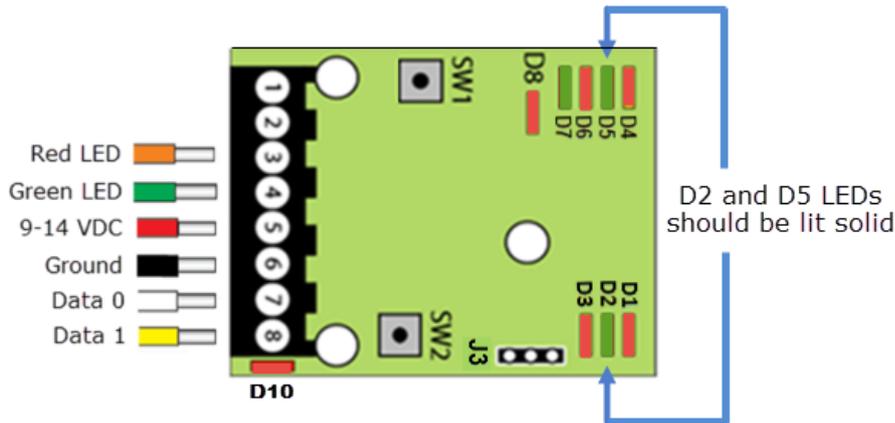
Set the Correct Card Type

1. Ensure the power is OFF at the reader.
2. Use a small flat-head screwdriver to set the correct card type on the dip switch.
3. Power ON the reader.

BioSync KBF-2SC Setup Guide

KBF-2SC Wiring to the Controller

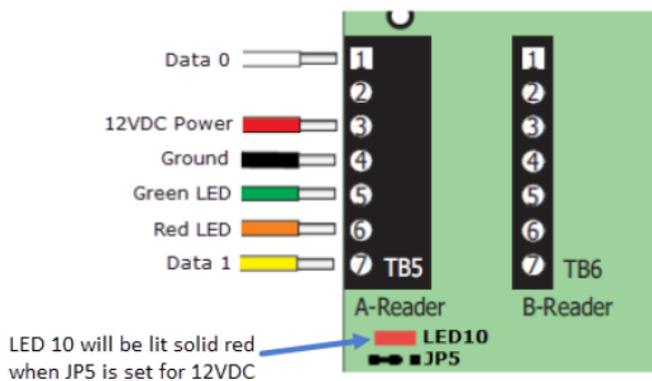
Wiring to the NXT RM3 (Reader Interface Module)



RM3 Notes:

- On the Reader Interface Module (RM3) - the J3 jumper should be set to pins 1 and 2. This will provide 12VDC to the BioSync reader and when correctly set the D10 LED should be solid red.
- If you are using a Wiegand-only R3M module, ensure the reader is using firmware version 03.03.10 - this will correctly set the BioSync LED mode.
- **IMPORTANT:** If you have an NXT 4x4 module connected on the same bus as the BioSync, you **MUST** use a separate power supply to power the BioSync.
- An NXT-RM3 is only supported on the NXT and MSC controllers.

Wiring to the PXL-500W Controller

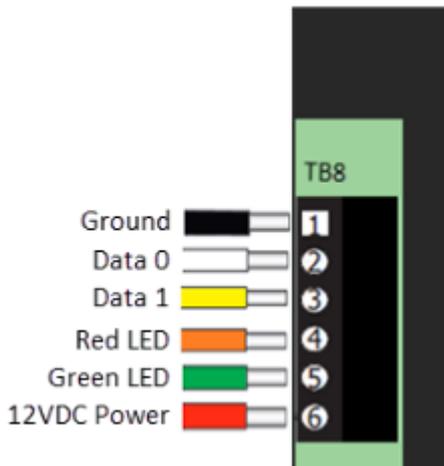


BioSync KBF-2SC Setup Guide

PXL Notes:

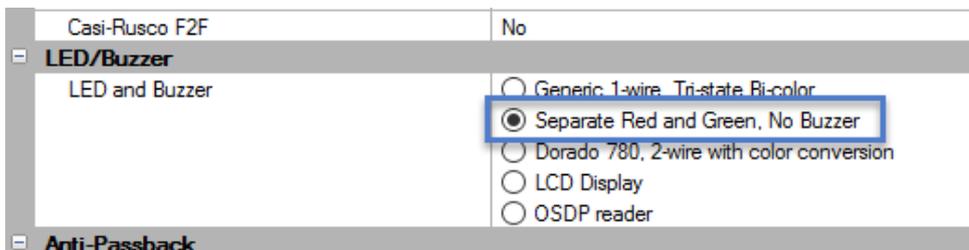
- On the PXL-500W controller, the JP5 jumper should be set to pins 1 and 2 - this will provide 12VDC to the BioSync and on the PXL-500W LED10 will be solid red.

Wiring to an SCP Controller (i.e EP-1502)



SCP Controller Notes

- BioSync readers have two LED lines but the SCP controllers only have one LED pin-out. This is overcome by wiring the Red LED wire into the buzzer pin-out (pin 4) and in Doors.NET you have to set the BioSync reader as being a Dual LED reader type.
 - In Doors.NET go to Setup >> Hardware Setup >> All.
 - Locate and highlight the BioSync reader in the hardware tree.
 - Ensure [Advanced View](#) is enabled for the reader properties.
 - Locate **LED/Buzzer**.
 - Set the reader for **Separate Red and Green, No Buzzer**.





BioSync KBF-2SC Setup Guide

Note: This will set the controller to use the buzzer for controlling the second LED line and because of this the reader does not generate any sound when the door is forced or held open.

- When using BioSync readers with SCP controllers you have to use custom LED Modes to define the LED behavior for the various reader modes (i.e - access granted, access denied, locked, unlocked, lockdown, etc). Setting up and using [Custom LED Modes](#) is covered in a separate section and available as a standalone document (p/n: 02315-001).

General Notes

- The shield wire connects with the black (Ground) wire at the controller. At the reader side they are kept separate to prevent a ground loop.
- The BioSync readers can be connected to virtually any controller that conforms to Wiegand format standards (standard 26-bit or a custom Wiegand format).
- The maximum reader cable run distance for the BioSync readers is 500ft/150m (as per industry standard specifications) - but ensure there is sufficient power at the end of the cable run.
- Typically the BioSync readers will be powered from the controller, so ensure the controller power supply outputs enough current for the controller and all of the connected devices.
- When using a separate power supply for the BioSync, connect the Ground for both devices to ensure correct transfer of the Wiegand signal.
- When you have connected the reader to the controller and applied power, the BioSync LED bar should flash amber and the reader will beep twice.

BioSync KBF-2SC Setup Guide

Add the KBF-2SC to BioManager

The next section assumes that you have already installed the BioManager software and setup the CNV converter as a portal, only then will you be able to add the BioSync reader to the BioManager software.

Log Into the BioManager Software

1. Double-click the BioManager Client icon located on the desktop.

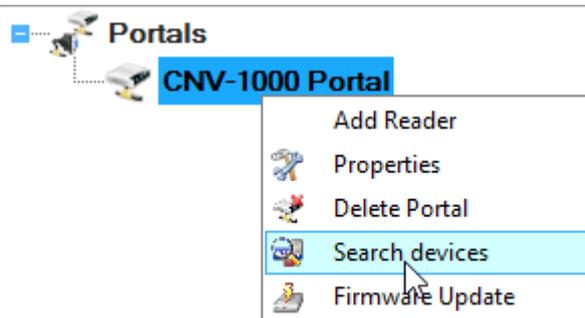


2. If using BioManager for the first time you will be automatically logged into the client, otherwise you may be prompted for a user name and password.
3. On the left of the screen you should see a portal. An existing system will also have BioSync readers listed.

Scan for the BioSync

When using the CNV-1000 converter you can use the scan facility. Scanning will automatically detect the BioSync and therefore you do not initially have to know the device ID/serial number - this is the quickest and easiest method of adding the BioSync readers.

1. From within the BioManager software, right-click on the communication portal.
2. Select **Search devices**.



BioSync KBF-2SC Setup Guide

3. A 15-second timer will begin to count down.
4. The detected BioSync reader(s) will show in the search window.
5. Select the reader(s).
6. Click the ADD READER button.

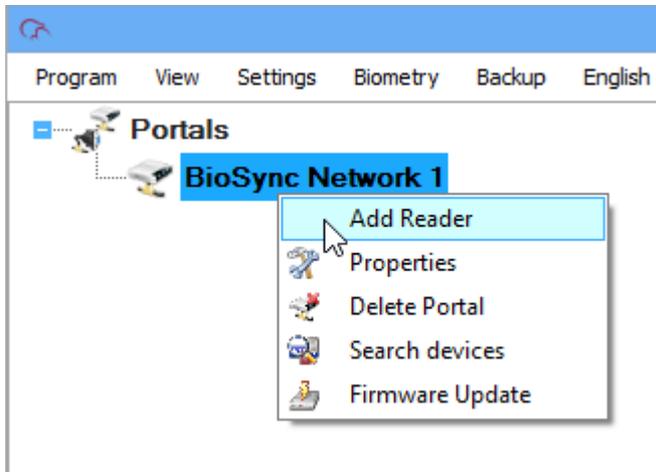
Manual Add

The manual add option is useful if the hardware has not yet been installed but you want to begin setting up the system in advance.

1. Open the BioManager software via the client icon on the desktop.



2. Right-click on the Portal which should already be listed and select **Add Reader**.



3. The Add Reader window will appear.
4. Enter a description for the KBF-2SC.
5. Select the **exact** model (KBF-2SC) from the **Type** drop-down list.
6. Select the Wiegand output type - typically for the KBF-2SC this should be left at the default setting of **Wiegand26**.

BioSync KBF-2SC Setup Guide

Portals\BioSync Network 1\BioSync 2SC

Name	BioSync 2SC
Type	KBF-2SC
Wiegand type	Wiegand26

NOTE: Later in this guide there are details about how to add a new Mifare card format, for example; the 32-bit Card Serial Number (CSN).

- On the reverse of the KBF-2SC you will see a white label which displays a wiring diagram and the unique device ID/serial number - you should make a note of this 9-digit number.



- On the reader setup page enter the device ID/serial number.

Wiegand type	Wiegand26
Wiegand output	
Serial	16-01-21-030
<input checked="" type="checkbox"/> Buzzer	
Finger Acceptance Flexibility	Automatic Secure
Sensitivity (0 = lowest)	7

Go to the "Biometric Reader" Card or Finger

- For now, all other settings can be left at their default values.
- Click the Save & Exit button.

BioSync KBF-2SC Setup Guide



11. In the live events grid you should see an online message for the reader.

Biomanager Client - Access - 1.0.8.0

Time	Portal	Controller	Reader	Door	Event
31/08/2016 14:24:59	BioSync Network 1		BioSync 2SC		Device online

NOTE: At any time you can check if a reader is online via a right-click on the reader >> **Check Version**. In the event window you should see the online message.

12. You are now ready to start adding users and fingerprints.

BioSync KBF-2SC Setup Guide

Adding and Defining a New Wiegand Format

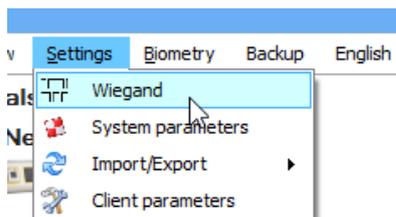
The KBF-2SC features an adjustable Wiegand protocol, allowing you to add a custom Wiegand format (from 8-128 bits in length). There are two default formats (standard 26-bit and standard 34-bit) and 3 custom formats. The next section covers the subject of using one of the custom formats set to the 32 bit Mifare CSN (where are all the bits are used for the unique card number).

Add the 32 bit Mifare Card Serial Number (CSN)

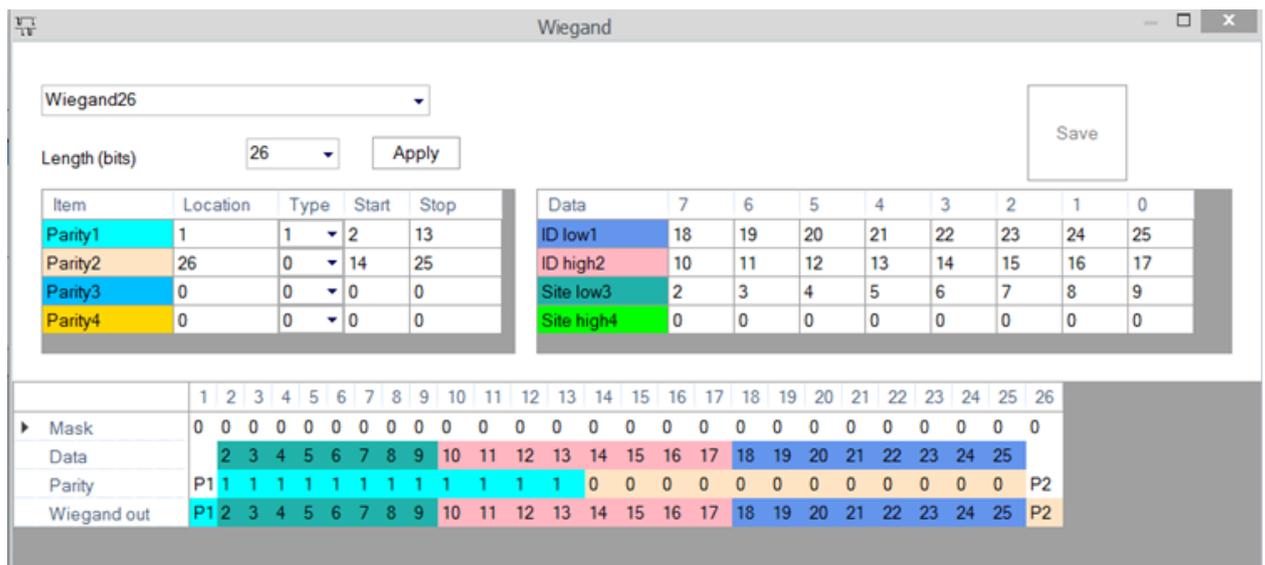
NOTE: If using 32-bit Mifare CSN this format is already added to the Wiegand library effective from version 10 of the BioManager software.

The following process can be used for adding any new Wiegand format to BioManager format library.

1. To setup a new custom Wiegand format select the Wiegand menu from Settings.

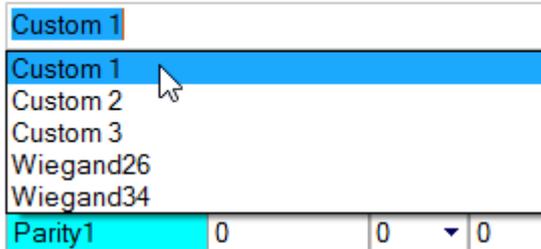


2. The Wiegand setup window will appear.

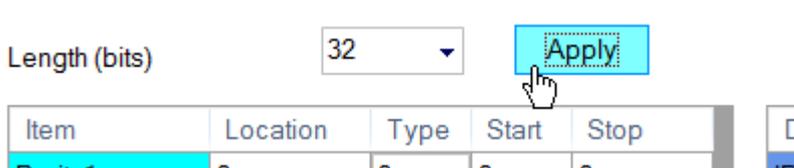


BioSync KBF-2SC Setup Guide

- From the drop-down list in the upper-left, select one of the custom formats.



- Set the Wiegand parameters.
- For the 32-bit Mifare CSN, select 32 from the Length (bits) drop-down list.
- Click the APPLY button.

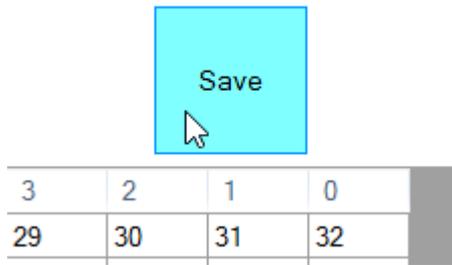


- Enter the number 1 in place of the zero in cell #1. Cell #2 will be #2, cell #3 will be #3, etc
- This continues all the way up to #32.
- Your Wiegand data grid should then resemble the image below.

Data	7	6	5	4	3	2	1	0
ID low1	25	26	27	28	29	30	31	32
ID high2	17	18	19	20	21	22	23	24
Site low3	9	10	11	12	13	14	15	16
Site high4	1	2	3	4	5	6	7	8

- This instructs the reader to process all 32 bits as the card number.
- When you have finished, press the SAVE button.

BioSync KBF-2SC Setup Guide



12. The custom format is now setup and ready to assign to the reader (via right click on the reader >> **Properties** >> **Wiegand Type**)

Enrolling 32 bit Mifare (CSN) Credentials

The following section explains how to add a 32-bit Mifare Card Serial Number (CSN). However, because the unique number is not printed on the card you first need to find out what the number is.

Detecting the Mifare Card Serial Number (CSN)

1. Once the custom format has been assigned to the reader you should also set the Entry mode to Card or Finger.



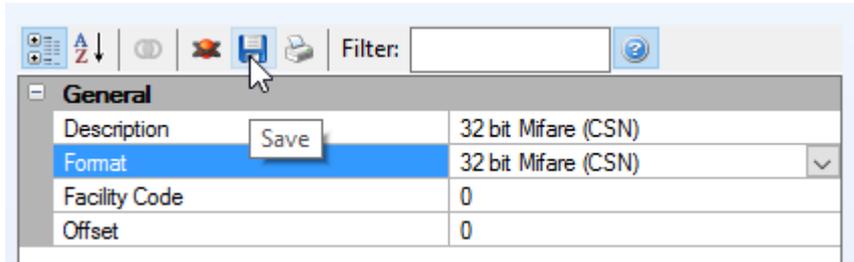
2. Press the SAVE & EXIT button.



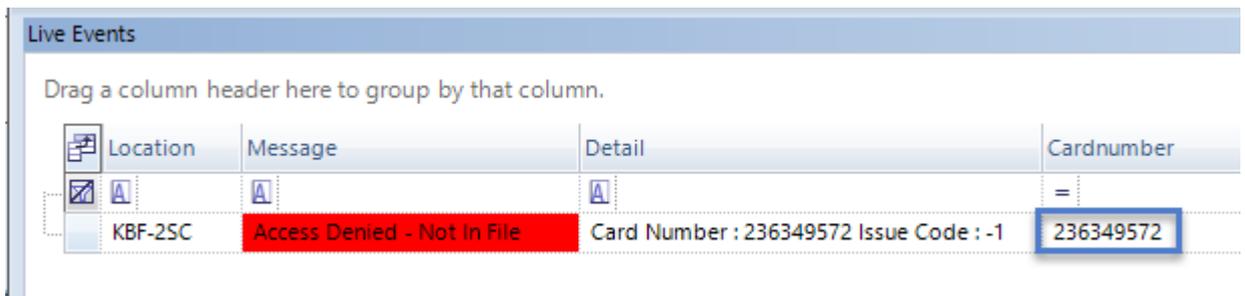
3. Next, in Doors.NET go to Setup >> Credential Types.
4. Right-click and remove each of the existing active formats.
5. Click the Add Active Format button.
6. The format properties will be on the right.

BioSync KBF-2SC Setup Guide

7. Add a description for the 32 bit Mifare CSN format.
8. Select 32 bit Mifare (CSN) from the format drop-down list.
9. Then save.



10. This will now be the only active format for the controller.
11. If you present the Mifare card to the reader, Live Events should give you the unique Mifare number.



12. Keep a note of this number as it will be used for enrollment.

Enrolling the Credential Into BioManager

1. Double-click the Users icon.
2. Click NEW USER button.



3. Enter a new user name.
4. In the User IDs (Card numbers) field enter the Mifare CSN number (the number that appeared in Live Events).

BioSync KBF-2SC Setup Guide

User name	Mifare Card		
User ID's (Card numbers)	236349572	Access Code	0
Site code	3606	User code	26756
Wiegand 26 ID	1468548	Site code	22
		User code	26756

5. Click the SAVE NEW button and the number will be sent to the BioSync.

Enrolling Fingerprints

Now that the credential has been enrolled, you are ready to enroll user fingerprints. The fingerprint is associated with the enrolled User ID number, this means if the reader is in Fingerprint-Only mode the same card number will be transmitted when the fingerprint is verified (the same as with all other reader modes) - There is not a separate enrolled number associated with the fingerprint.

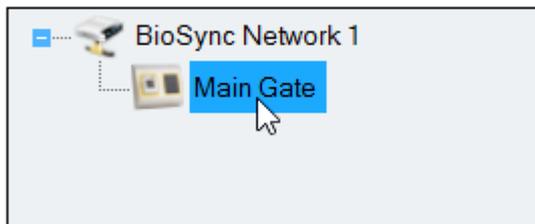
Note: If you have users which will only use fingerprint enrollment you would have to enroll a number that will be transmitted when the fingerprint is verified.

1. Open an existing user record (which has a card/tag enrolled).
2. Click the Edit button.



3. In the fingerprint enrollment section, click on the BioSync reader that will be used for enrollment.

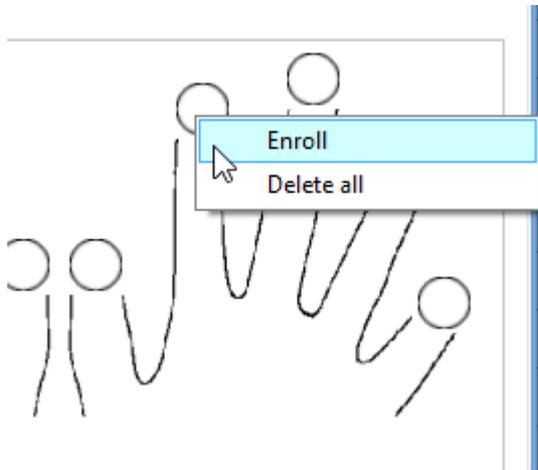
Select reader to Enroll,
Send or Delete user



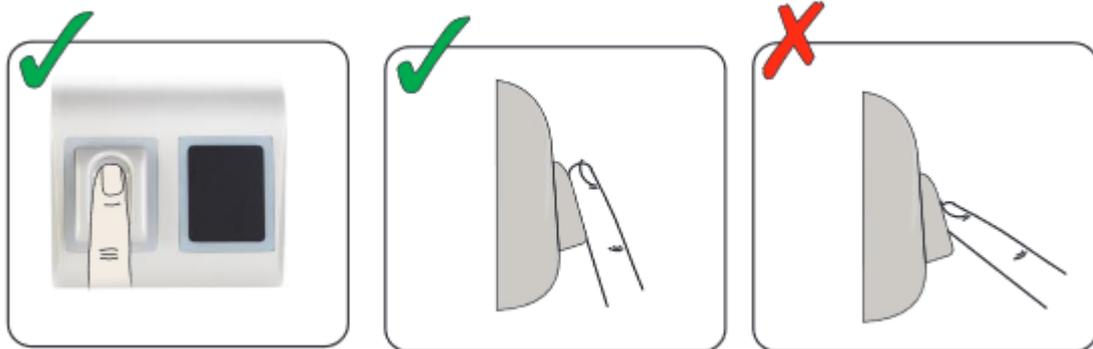
4. On the hands diagram of two hands right-click the small circle that corresponds to the finger you will be enrolling (for example; your right-index finger).

BioSync KBF-2SC Setup Guide

5. Select **Enroll**.

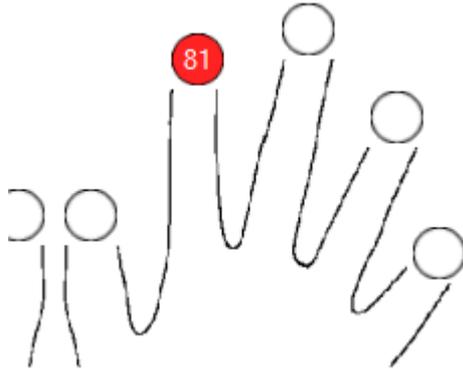


6. Place the finger on the sensor of the BioSync.



7. Leave the finger on the sensor for approx 2 seconds and you will hear a beep and see a momentary red LED .
8. In BioManager the small circle on the diagram will be red and there will be a number which indicates the verification % of the fingerprint.

BioSync KBF-2SC Setup Guide



9. Ensure the percentage is 75% or greater, then click the SAVE button.

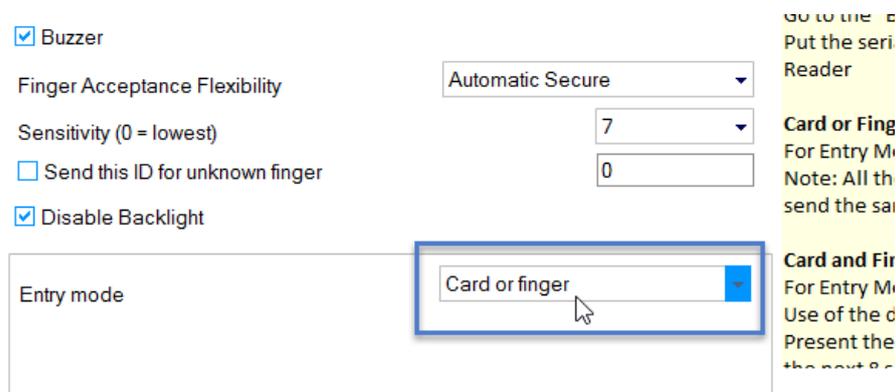


10. The fingerprint will now be assigned to the user record and you will be able to use the BioSync in all three reader modes.

Changing the BioSync Reader Mode

The following steps explain how to change the user authentication operating mode of the reader.

1. In the BioManager software in the upper-left pane, right-click on the BioSync reader and select **Properties**.
2. From the BioSync reader properties window, locate **Entry Mode**.



The available entry modes are:

- **Finger** - You will only need your enrolled fingerprint to gain access

BioSync KBF-2SC Setup Guide

- **Card or Finger** - You can use either your enrolled card or your enrolled finger to gain access
- **Card AND Finger** - You will need to use your enrolled card and then present your enrolled finger to gain access.



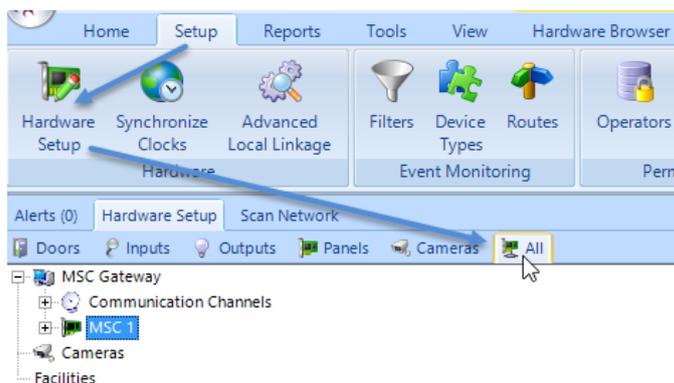
3. Make your selection then click the **Save and Exit** button.

Enrolling the Users into Doors.NET

The same users now need to be added to Doors.NET because so far, the users only exist on the BioSync reader, (not at the controller). In this example the BioSync reader is wired into an NXT-MSK controller but the same setup procedure applies to all controller types. It details the manual enrollment of a 26-bit Wiegand card, but any other enrollment method can also be used.

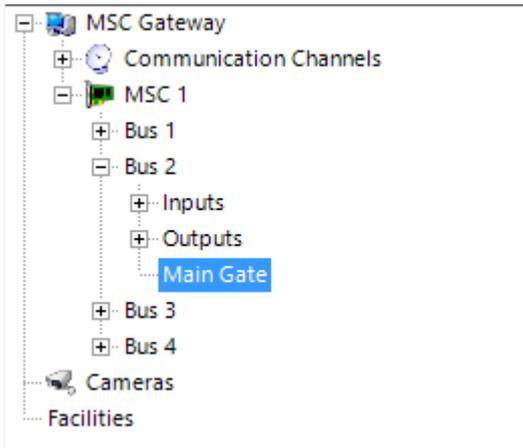
Set the Reader Manufacturer Model

1. From within Doors.NET go to Setup >> Hardware Setup >> All.

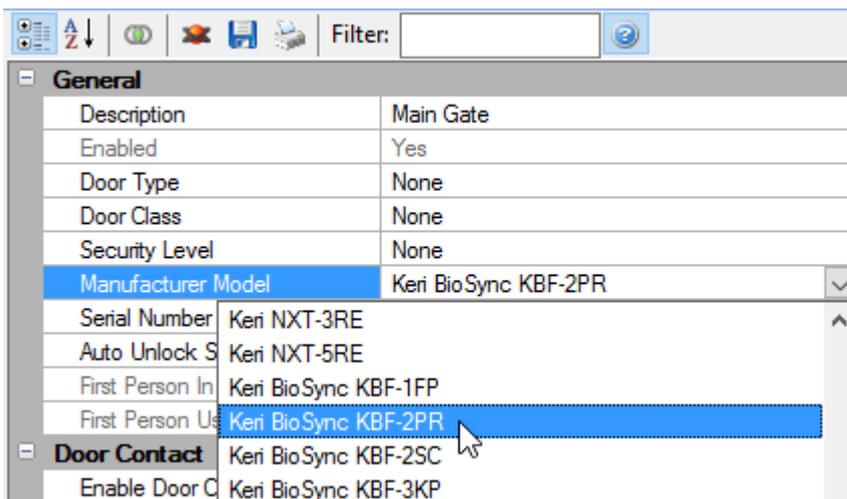


2. Locate the bus which the BioSync reader is on and select the BioSync reader.

BioSync KBF-2SC Setup Guide



3. The reader properties will appear on the right.
4. Locate **Manufacturer Model** and select **Keri BioSync KBF-2PR** from the drop-down list.



5. Save the reader settings .
6. Close the hardware page.

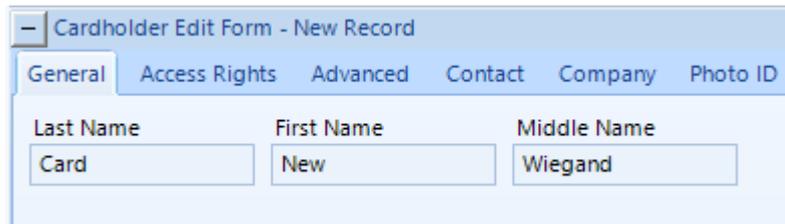
BioSync KBF-2SC Setup Guide

Manually Enroll the Cardholder

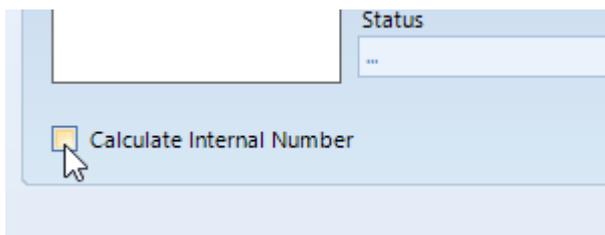
1. Go to Home >> Cardholders.
2. Click the **Add** icon.



3. Enter a first name and last name for the new cardholder (middle name is optional).

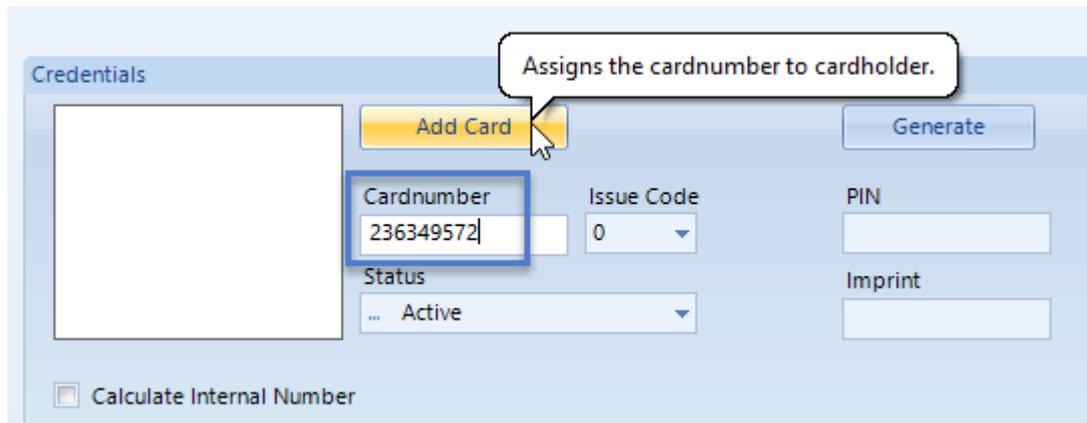
A screenshot of the 'Cardholder Edit Form - New Record'. The 'General' tab is active. There are three text input fields: 'Last Name' containing 'Card', 'First Name' containing 'New', and 'Middle Name' containing 'Wiegand'. Other tabs include 'Access Rights', 'Advanced', 'Contact', 'Company', and 'Photo ID'.

4. Ensure **Calculate Internal Number** is deselected.

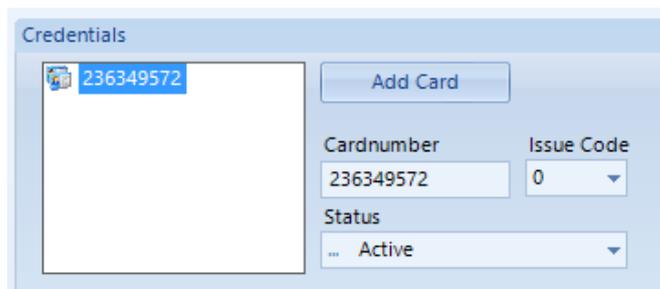
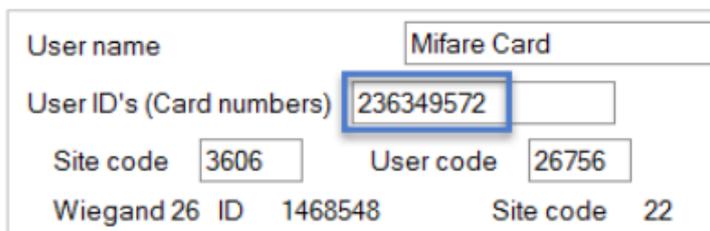


5. In the Cardnumber field enter the long, unique Mifare CSN.
6. Set the status to **Active**.
7. Click the **Add Card** button.

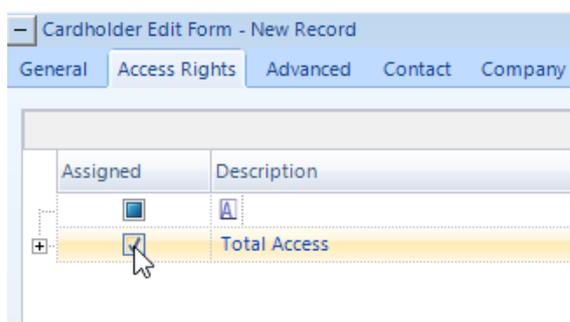
BioSync KBF-2SC Setup Guide



- A unique card number will appear in the Credentials list. This number should exactly match the unique number (User ID) in BioManager.

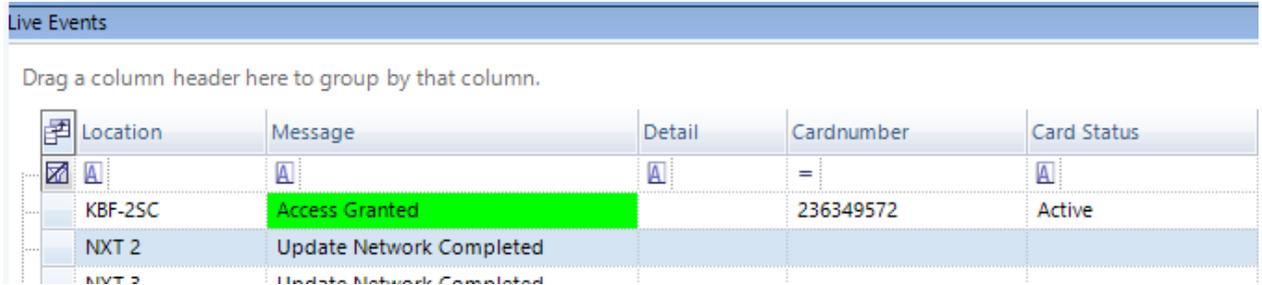
- Go to the Access Rights tab and assign an access group to the new cardholder (i.e Total Access).



Assigned	Description
<input checked="" type="checkbox"/>	Total Access

BioSync KBF-2SC Setup Guide

10. Save the new record .
11. If you now gain access at the BioSync reader the reader's LED should go green and you should see an access granted event in the Live Events grid.



Live Events

Drag a column header here to group by that column.

<input type="checkbox"/>	Location	Message	Detail	Cardnumber	Card Status
<input checked="" type="checkbox"/>	A	A	A	=	A
	KBF-2SC	Access Granted		236349572	Active
	NXT 2	Update Network Completed			
	NXT 3	Update Network Completed			

12. As previously mentioned, the fingerprint is associated with the User ID/Credential number so even if the BioSync is set to Finger/Finger or Card modes, and you only present the enrolled finger, the same name and card number will appear in Live Events.