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Software Version 04.03.18

Datafox accompanying booklet

Flexible data acquisition with method

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The software accompanying booklet is an addition to the current manuals. It describes new functionality available with this software release.

The following figure shows, for which devices the following section applies – if no additional information is present there.

The affected individual devices are marked using the ☒ symbol.

			 4.3/4.6	 2.8/3.5	 Universal	 Inloc	 Mobil Box	 IO-Box	 Oneloc			 EVO-PC
☒	☒	☒	☒	☒	☒	☒	☒	☒	☒			☒

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1. Introduction

We appreciate your interest in the extended functionality of the new software release.

We aim to provide a quick start into the functional enhancements of firmware version 04.03.18 by providing this document.

The most recent software accompanying booklet was associated to release 04.03.16 – you can access it through the Datafox Website → “Download” → “Downloads Datafox Software” → “Download – Software Master IV – Hardware Version 4“.

1.1. Overview

With this firmware release we extended the functionality provided by our device generation V4.

The most prominent feature is:

- [1 MultiTech Legic 42](#)
- [2 Multi Input für Eingaben](#)
- [3 U&Z-Daueröffnung per Toggle-Befehl](#)
- [4 KYO Inloc als Türmodul](#)
- [5 Mifare-Desfire EV2](#)
- [6 Buchung jederzeit möglich](#)
- [7 EVO 4.3 und 4.6 Näherungssensor](#)
- [8 EVO Intera II – Individuelle Einstellungen](#)
- [9 Große 2D Barcodes lesen](#)

2. Multi RFID reader for Mifare, Legic and 125-KHz RFID Tags

With the new firmware there is the possibility to use a multi-RFID reader.

This is able to read different RFID technologies.

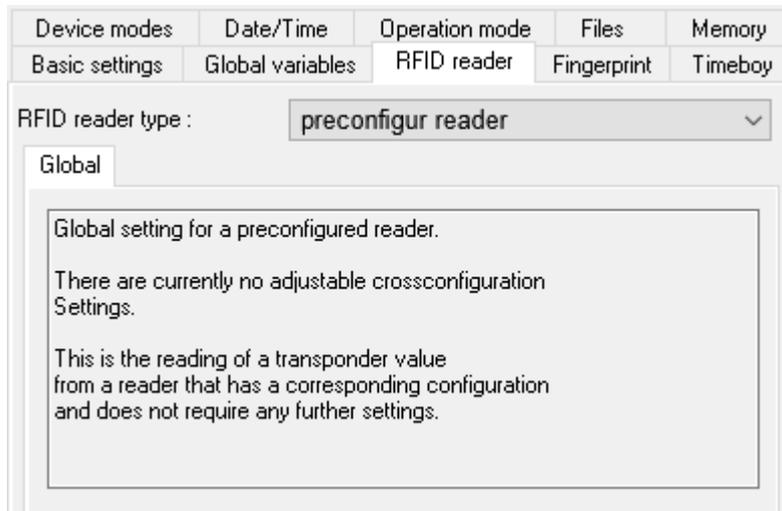
This means that our customers can use a wide variety of transponders in one system at the same time.

Parallel supported RFID technologies are:

- Legic Prime/Advant
- Mifare
 - Classic
 - Plus
 - Ultra light
 - Desfire EV1/EV2
- Hitag 1
- Hitag 2
- Unique (EM4102)

2.1. RFID setting in the DatafoxStudioIV Setup

The multi-RFID reader is a transponder reader that has been installed ready configured. It is therefore set up to read specific ID cards and supplies the read data that is received by the firmware. To be able to use the multi RFID reader, the type shown below must be set in the transponder menu of the setup. Further settings are not necessary.

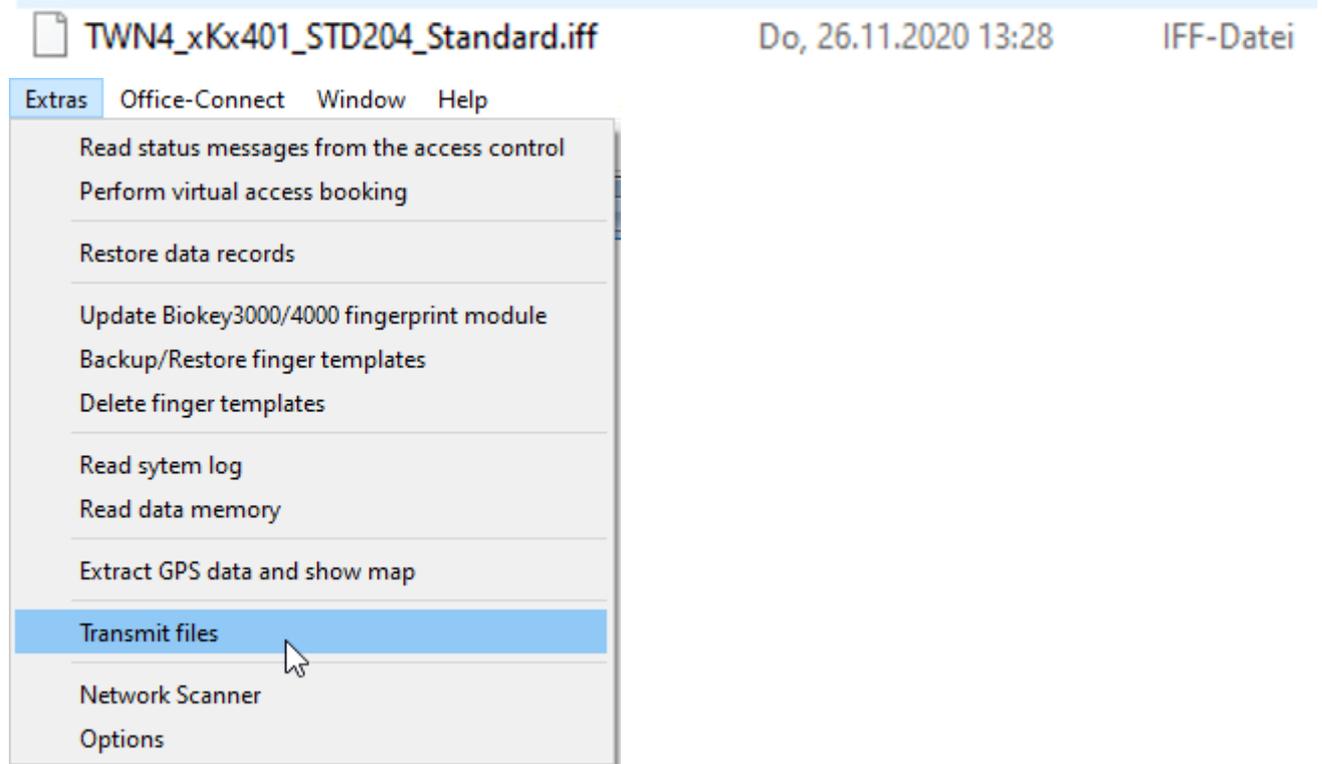


The setup/ preconfigur of the reader is done in the support at Datafox in consultation with the customer and their badges to be read.

2.2. reconfiguration of the multi-RFID reader (TWN4)

The steps for updating the configuration on the TWN4 are described below.

If the reader has to be reconfigured, this is again done in consultation with Datafox Support. They will then provide you with an ".iff" file that you can transfer using DatafoxStudioIV.



After the successful transfer of the IFF file, the device independently takes care of the update of the reader. The update process is shown on the display.



Caution:

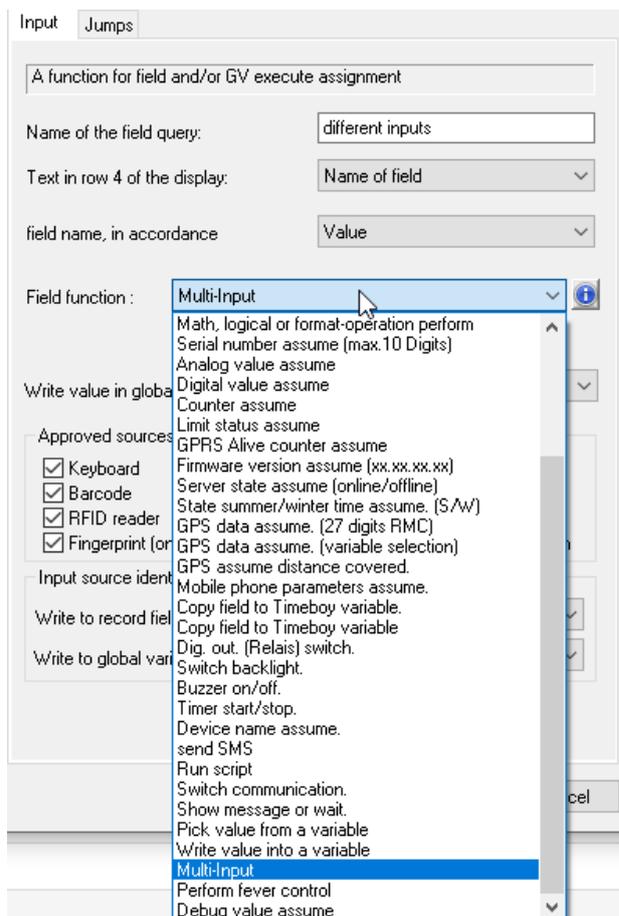
If the update of the reader cannot be started, a warm start of the MasterIV device should be performed. After this, it should be possible to perform the update again.

3. New Field-Function „Multi-Input“

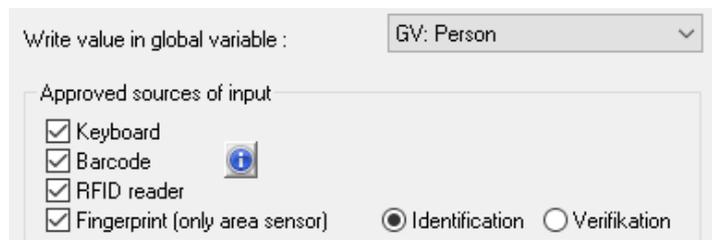
This field function enables the user to perform inputs by means of different sources / procedures at one terminal - without selecting the input method beforehand, e.g. by pressing ESC.

3.1. Activation of the new function

Please select the field function "Multi-Input". This is available for input sequence for operation.



Then the permitted input sources are activated with the help of the selection boxes. In the following case, the keyboard, transponder reader and fingerprint module are active. The fingerprint module operates in "Identification mode".



The data record field into which the read-in data is stored is selected under "Field designation, corresponding to". Also whether the data should be copied into a global variable at the same time.

Name of the field query:	<input type="text" value="different inputs"/>
Text in row 4 of the display:	<input type="text" value="Name of field"/>
field name, in accordance	<input type="text" value="Value"/>
Field function :	<input type="text" value="Multi-Input"/> 
Write value in global variable :	<input type="text" value="GV: Person"/>

Finally, it is still possible to save the identifier of the data source (keyboard, barcode, transponder or fingerprint) in another record field / global variable.

Input source identifier	
Write to record field :	<input type="text" value="Value"/>
Write to global variable :	<input type="text" value="GV: label"/>

The four different numerical values for the respective input source are:

„1“: Input via keyboard

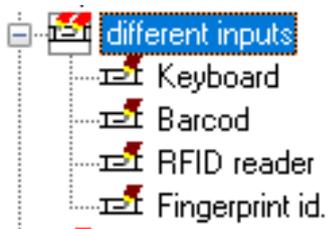
„2“: Barcodescan

„4“: RFID

„8“: PID (personal ID) of Fingerprint-Moduls

3.2. Configuration of the individual input sources

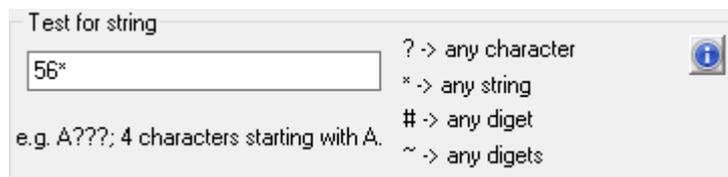
Only the activated sources are shown in the setup tree, barcode is missing in the picture because this input option has not been activated.



The possible settings, depending on the source, are described below.

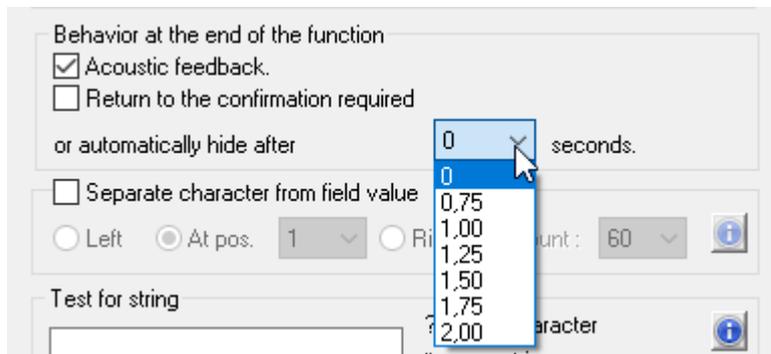
3.2.1. Keyboard

After selecting the “Keyboard” entry in the setup tree, the “Check for character string” can also be activated for input via the keyboard by entering a test string. In the following example, each character string entered must begin with the digits “56”, which can be followed by any number of further digits.



3.2.2. Barcode

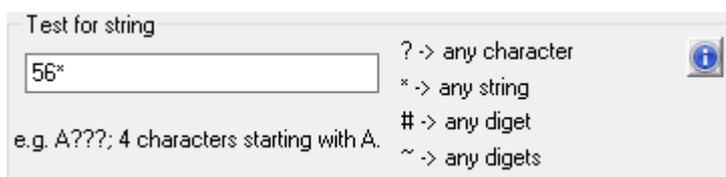
If the selection box "Acoustic confirmation" is activated, a recognized scan is acknowledged with a signal tone. When the selection box "Return required for confirmation" is activated, the read-in value is shown on the display and the user must either confirm it with the "ENTER" key or reject it with the "ESC" key. If the selection box is not activated, it is possible to briefly display the entered value. If a display is not required, the display duration must be set to "0".



It is also possible to cut the read-in value. After activating the selection box "Cut characters from the field value", you must firstly determine whether you want to start from the left, right or a fixed position and secondly how many characters are to be cut out.

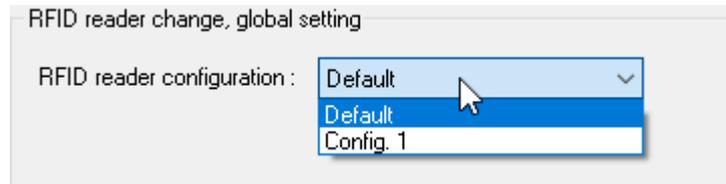


As already described in Section 3.2.1, it is also possible to check the imported data.



3.2.3. RFID-reader

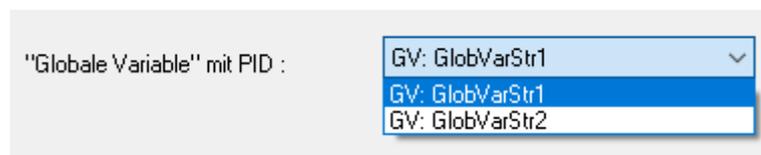
The same setting options are available for the transponder as are also described in section 3.2.2. In addition, depending on the selected transponder method, the transponder configuration can be adapted or selected here.



3.2.4. Fingerprint

The same setting options that are already described in detail in section 3.2.2 are also available for the fingerprint module.

For the "verification" procedure, the personnel number to be checked (PID) is also required. This is selected on the "Input" tab page via a global variable.



4. U&Z permanent opening of a door (variant 2 - classic mode)

The U&Z locking system is a visually appealing and flexible solution for door opening control. The wireless connection of the doors also has the advantage that fewer structural measures are required when retrofitting than when each door is connected individually with a cable will.

Disadvantages of a wireless solution include the need for a decentralized energy supply - batteries are typically required here. Another challenge is the permanent opening of doors - the possibilities are shown below.

4.1. Explanation of terms

Coupling:

- The door handle / rotary knob are coupled with the mechanical locking mechanism. The door can then be opened or locked manually.

Uncoupling:

- The coupling is disconnected again. Pressing the latch or turning the knob have no effect on the lock.

4.2. Brief description of the function

The new variant 2 now makes it possible to permanently couple the door handle or the lock cylinder. The operation of the fitting in the permanently open and thus coupled state is comparable to a normal door handle.

Advantages:

- This minimizes mechanical wear and tear and power consumption.
- The "previously necessary operation / movement" to wake up the cylinder / latch and wait for the release is no longer necessary. In the permanently locked state, access is always possible immediately.

Disadvantage:

- Since there is no permanent radio connection between the controller and the cylinder / handle, it cannot simply be withdrawn at the "end" of the permanent opening. This can only take place when the cylinder / pawl is moved the next time, as a radio connection to the controller is then established again. This variant should therefore only be used on interior doors! be opened or locked. Uncoupling: The coupling is disconnected again. Pressing the latch or turning the knob have no effect on the lock.

A detailed description of the setup can be found in the current KYO Inloc manual in the chapter

5.7.18. Office mode implementation (Variant 2 – Classic Method)

https://www.datafox.de/downloads-datafox-kyo-inloc.de.html?file=files/Datafox_Devices/Downloads_Geraete_Zubehoer/320_ZK-Box-V4/Datafox%20access%20control-Box%20V4%20Manual%20V04.03.17%202021.05.31%20-EN.pdf

5. KYO Inloc as a door module

The KYO Inloc can now be used as a door module, just like the KYO Oneloc. The KYO Inloc has the advantage that it can be equipped with several inputs or outputs, depending on the customer's wishes.

requirements

In order to be able to use the KYO Inloc as a door module, firmware greater than or equal to 04.03.18 must be installed on both the controller and the door module. An RS485 module for the main communication must be installed on the hardware. This is used for communication with the access controller. An RS485 ZK module can also be installed. This can be used to connect a stitch reader. Different modules can be used for the module. Relays / digital outputs as well as digital and analog inputs.



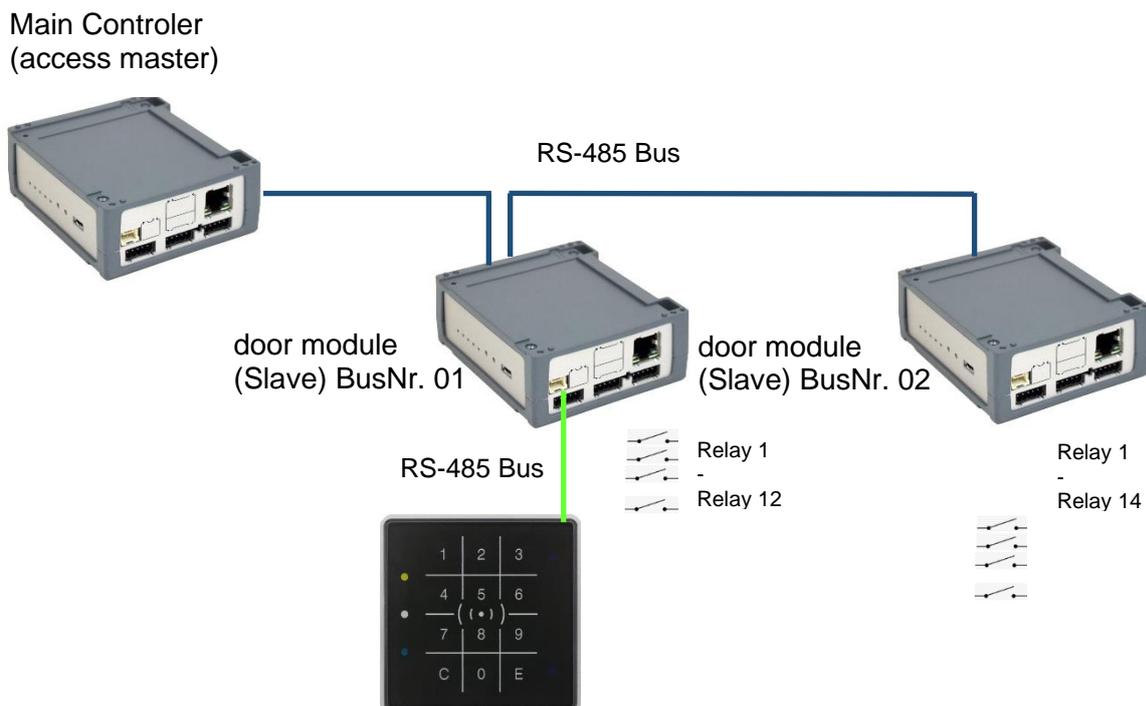
caution:

Analog inputs are not supported in the access control.

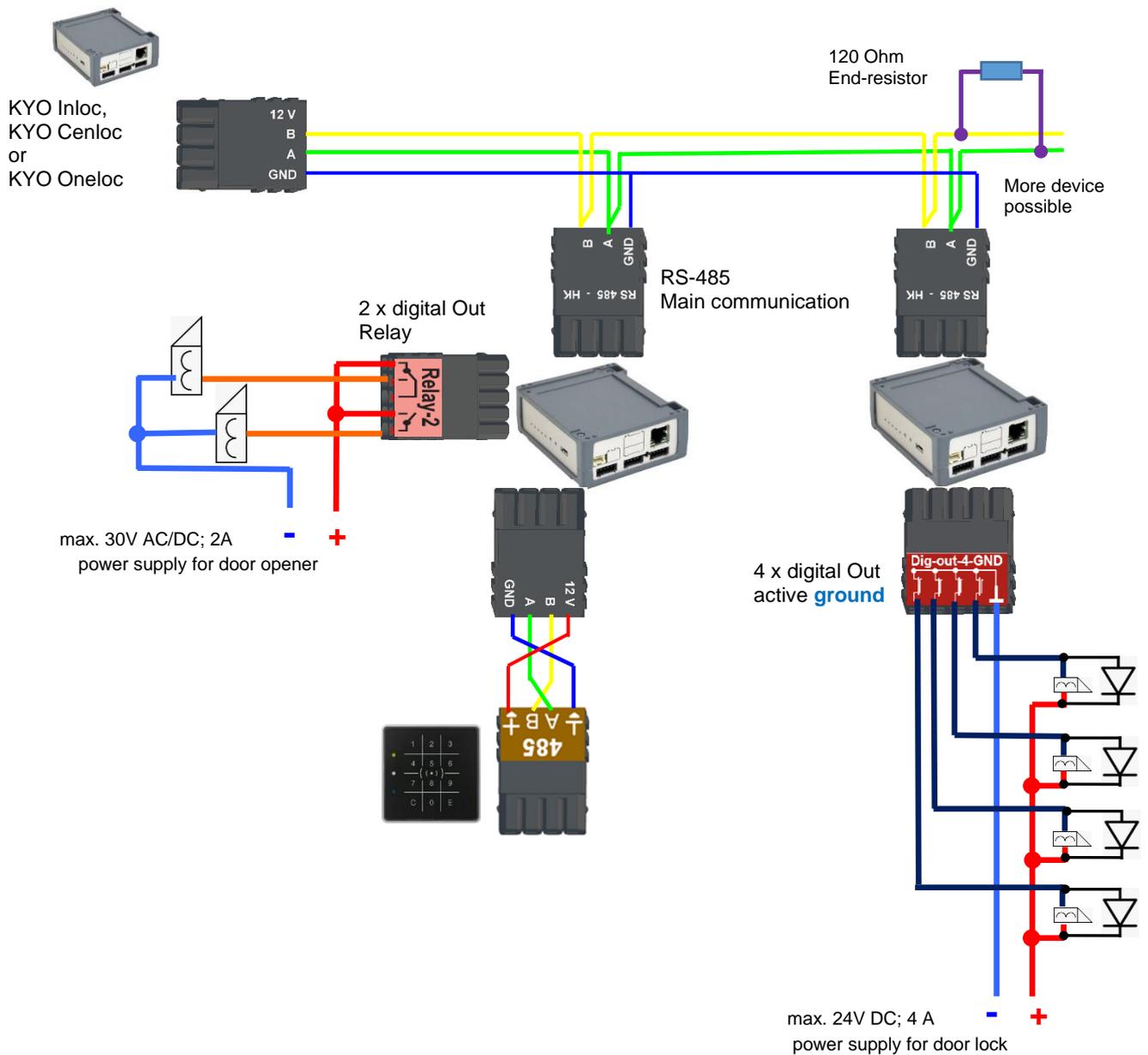
5.1. System structure and wiring

Example and cable plan:

Of course, the most varied of variants can be used. We have limited the overall structure to **128 relays** or digital outputs. At least **one RS485 connection for access control** must be available on the access controller, to which the door modules are connected. In order to use the KYO Inloc as a door module, it must also have **an RS-485 main communication port**.



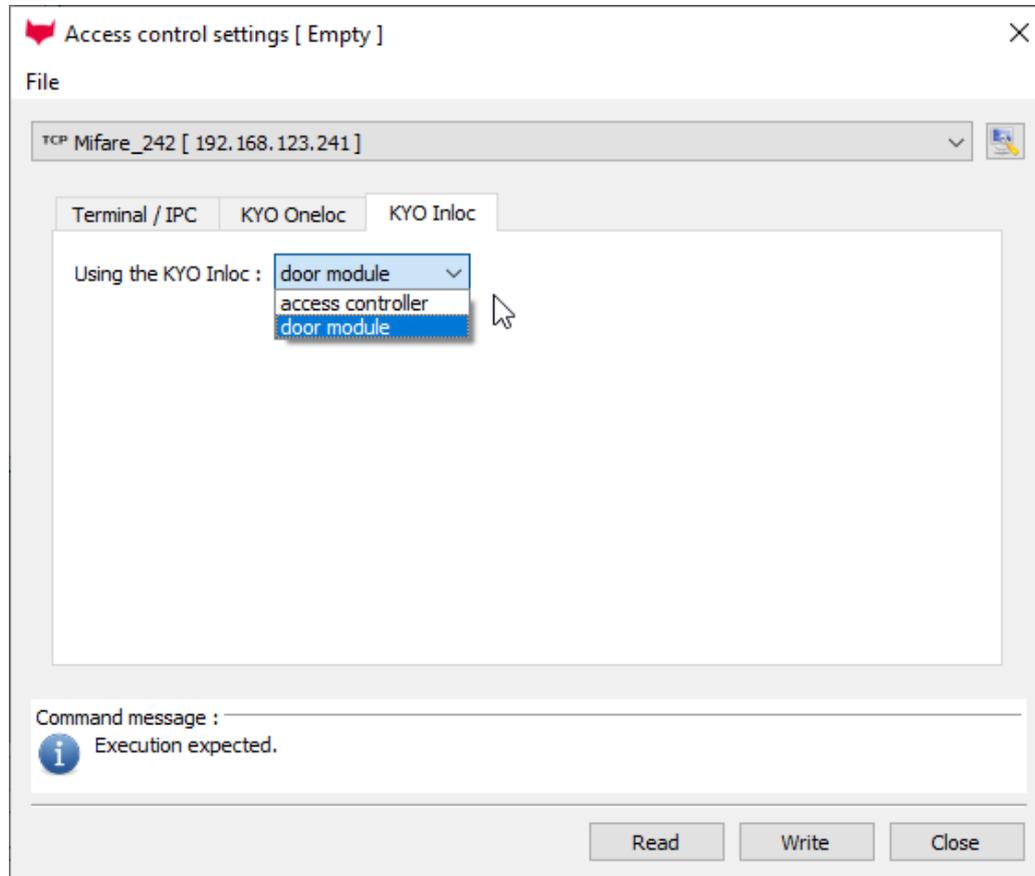
5.2. Wiring plan (example)



5.3. Configuration via DatafoxStudioIV

Via the menu [Configuration -> Access Control] you reach the dialogue [Access Control Settings]. Select the tab [KYO Inloc] in order to adjust the settings for use accordingly.

Via the [File] menu, you can create a [New] configuration, [Open] an existing one or [Save] an edited one.



6. Mifare-Desfire EV2

From firmware 04.03.18 the Mifare-Desfire EV2 transponder process is fully supported. Since the settings for EV1 and EV2 in the DatafoxStudioIV transponder menu do not differ, nothing needs to be taken into account or adjusted here.

7. **Booking possible at any time**

In order to accelerate the booking process with many bookings in a row, a new mode “can book at any time” has been integrated into the firmware. If the mode is activated, the terminal immediately jumps to the next transponder or fingerprint input field in the background for the functions list display (e.g. balances, etc.), SendMessage and display text. A subsequent person can book again immediately without pressing a button. The last display is automatically terminated with the following booking.

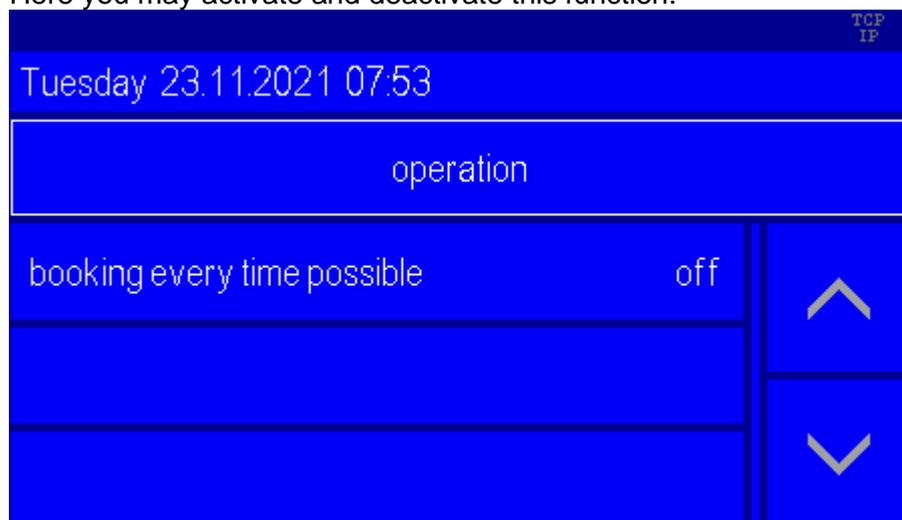
7.1. Activation of this function

Since the mode is very special and the setup has to be adapted accordingly, it can be activated via the device's own BIOS:

7.1.1. BIOS-Menu

In the systemmenu -> user settings -> operation you will find the menu "booking every time possible".

Here you may activate and deactivate this function:



7.1.2. System-variable

Via the DFCom.dll it is possible to set this function.

Use the method "[DFCSetGlobVar](#)"

The new system-variable is: *service.alwaysbooking*. (1 or 0)

7.2. working

If a list display, a text message or a *SendMessage* is displayed while the input chains are being processed, the terminal continues the input chain in the background until it reaches the next field Normal or Fingerprint. While the respective input medium is activated, the previous field is still displayed. Only after the specified display duration has expired or immediately when a new ID card is presented or a finger is scanned, the previous display is ended and the configured sequence of steps continues.



note:

If the mode is activated, the message "Data record saving OK" is no longer displayed, even if it is activated by the setup.



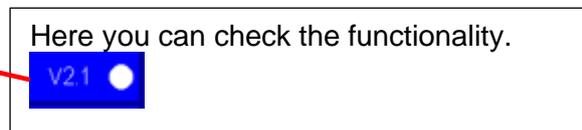
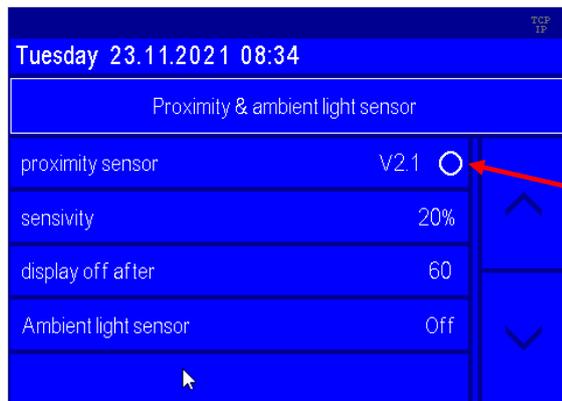
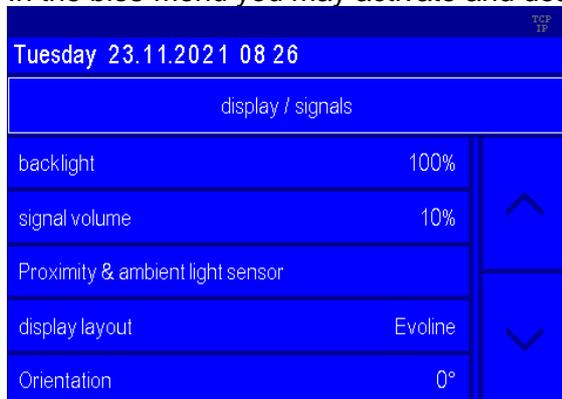
note:

One of the two PZE modes should be activated as the operating mode, otherwise the device will not automatically start the next input chain from the basic position.

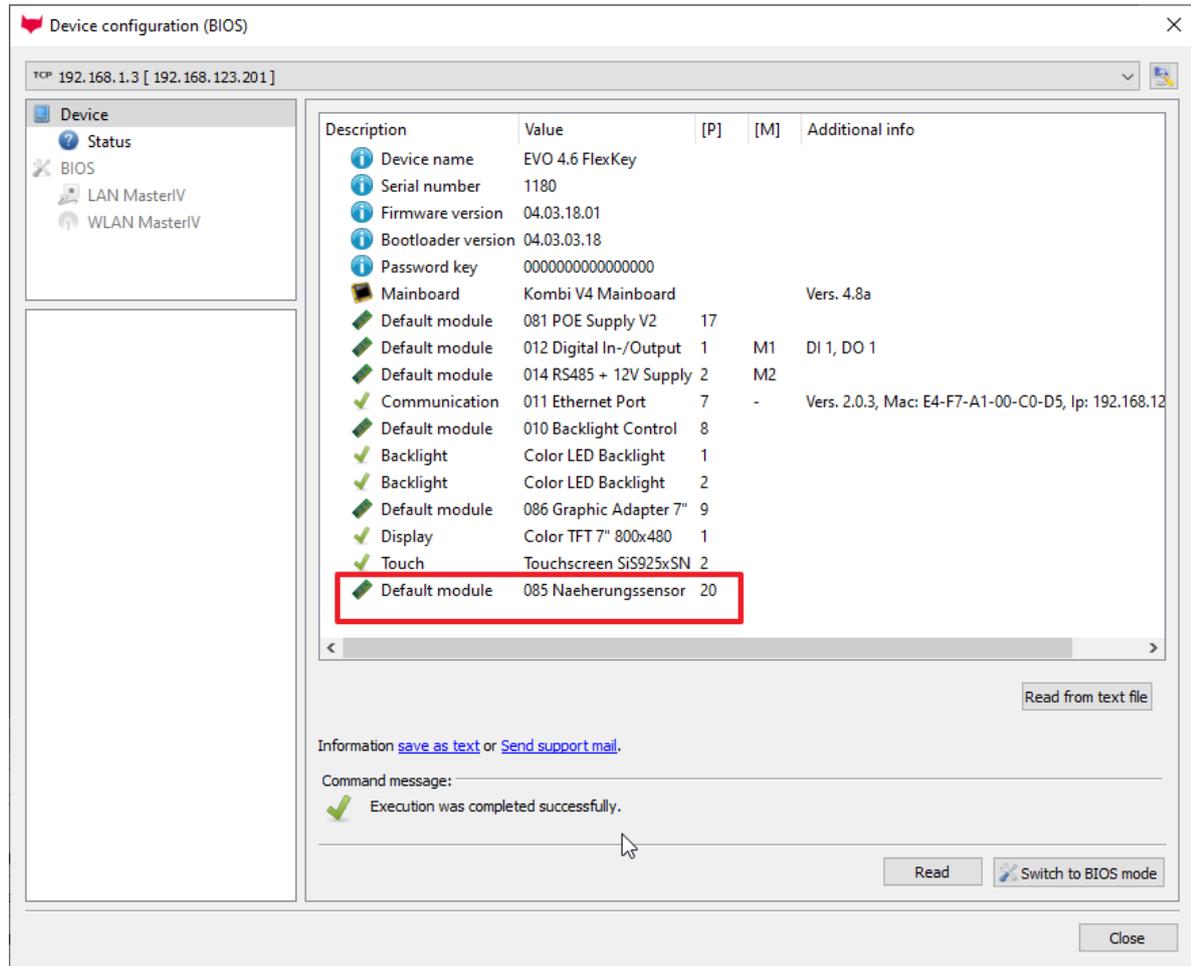
8. EVO 4.3 and EVO 4.6 FlexKey proximity sensor

A proximity sensor is now always installed as standard for the EVO 4.3 and EVO 4.6 FlexKey devices.

In the bios-menu you may activate and deactivate the sensor:



You can also see via the DatafoxStudioIV whether a proximity sensor is built into the device:



Device configuration (BIOS)

TCP 192.168.1.3 [192.168.123.201]

Device

- Status
- BIOS
- LAN MasterIV
- WLAN MasterIV

Description	Value	[P]	[M]	Additional info
Device name	EVO 4.6 FlexKey			
Serial number	1180			
Firmware version	04.03.18.01			
Bootloader version	04.03.03.18			
Password key	0000000000000000			
Mainboard	Kombi V4 Mainboard			Vers. 4.8a
Default module	081 POE Supply V2	17		
Default module	012 Digital In-/Output	1	M1	DI 1, DO 1
Default module	014 RS485 + 12V Supply	2	M2	
Communication	011 Ethernet Port	7	-	Vers. 2.0.3, Mac: E4-F7-A1-00-C0-D5, Ip: 192.168.12
Default module	010 Backlight Control	8		
Backlight	Color LED Backlight	1		
Backlight	Color LED Backlight	2		
Default module	086 Graphic Adapter 7"	9		
Display	Color TFT 7" 800x480	1		
Touch	Touchscreen SiS925xSN	2		
Default module	085 Naeherungssensor	20		

Read from text file

Information [save as text](#) or [Send support mail](#).

Command message:

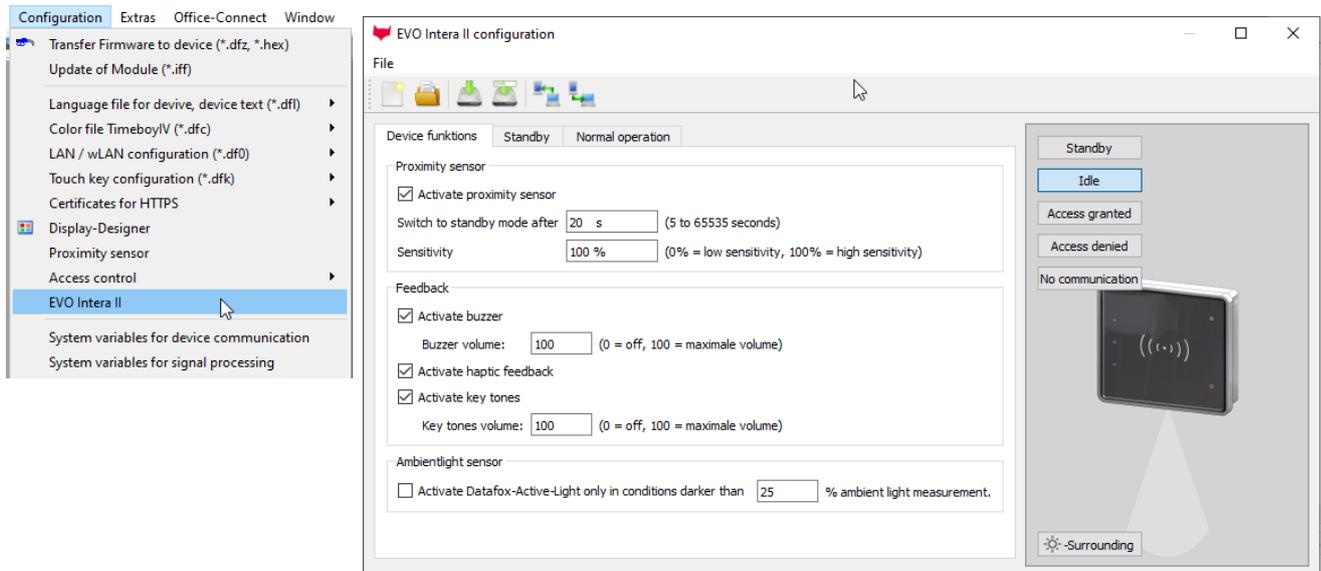
✓ Execution was completed successfully.

Read Switch to BIOS mode

Close

9. EVO Intera II, Individual settings

The mask for setting the EVO Intera II configuration can be accessed in the Datafox Studio via the configuration menu:



The mask allows setting / adapting the behavior of the EVO Intera II. These settings are divided into 3 areas:

- Configuration of the device sensors and actuators (device functions tab))
- Configuration of the standby configuration (sub-configuration of the proximity sensor)
- Configuration of normal operation (Standard Operation tab)

In addition, a preview of the reader signaling is shown based on a selected operating status.

9.1. Functionality of the EVO Intera II

The EVO Intera II is an RFID reader for use in access control. As such, it is designed for operation on an RS485 bus and uses the phg_crypt communication protocol, which is used as a de facto standard in large parts of the industry.

The reader differs from many competing products in terms of its features:

- It can project indirect lighting
- It has sensors for ambient light and proximity detection.
- It can be used as a pin reader and then generate haptic feedback in addition to the acoustic feedback.

The EVO Intera II also has three programmable LEDs on the left. Functions can be assigned to these LEDs, such as signaling an ID in the field of the RFID reader or a person nearby. There are also other functions such as permanently on / off or switched by the access controller.

The Datafox Studio dialog described in this chapter is used to set up these features. The configuration is transferred via the USB interface of the reader.

9.1.1. Global function

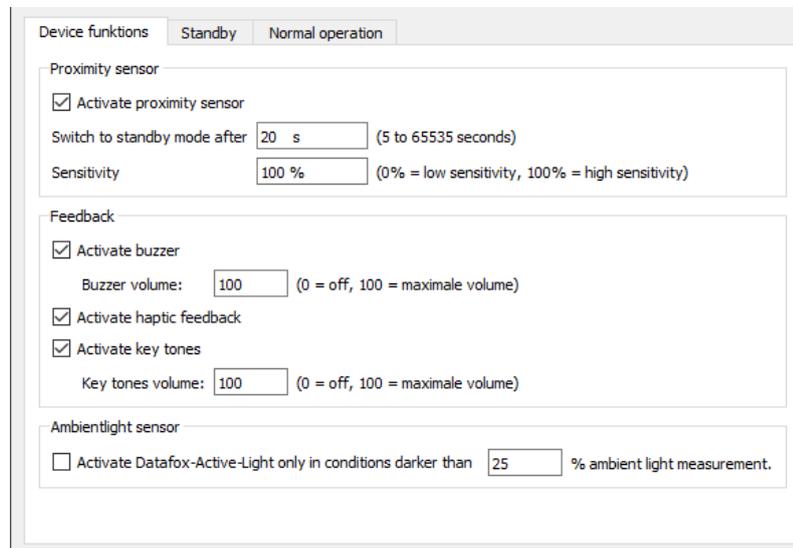


From left to right, the mask offers functions for

- Creation of a new standard configuration
- Reading in a configuration file
- Save the configuration file
- Save the configuration file under a new name
- Transfer of the configuration file to an EVO Intera II
- Reading the configuration file from an EVO Intera II

These actions are also available from the File menu.

9.1.2. Einstellung der Gerätefunktionen



The EVO Intera II has a proximity sensor - if this is activated, the standby lighting can be set. The standby mode is activated if no person is detected in the vicinity of the reader for an adjustable period of time (20 seconds as standard).

Depending on the structural situation, it may be necessary to limit the sensitivity of the proximity sensor, for example if it is used in narrow aisles and the opposite wall is supposedly recognized as a person nearby.

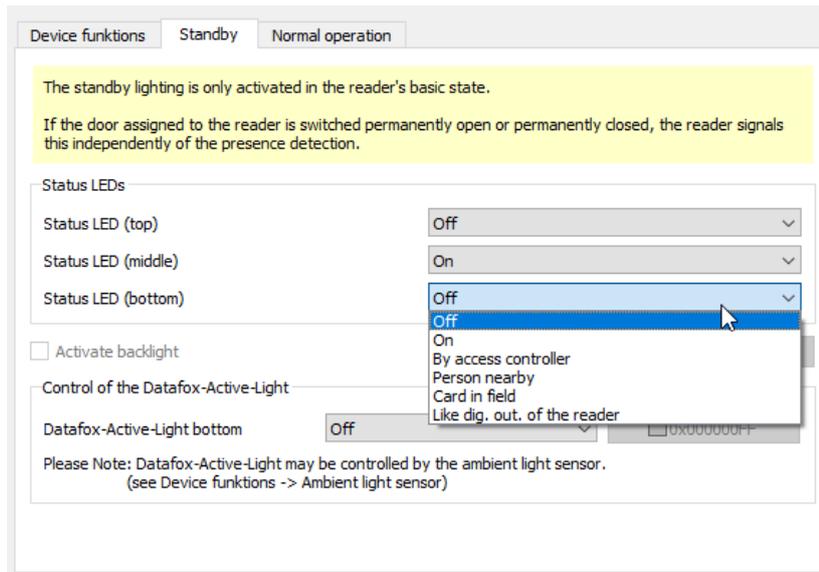
As feedback are next to the

- Buzzer for access events still
- Haptic and sound feedback ready for PIN readers.

You can set the maximum volume for all acoustic feedback so that the reader can also be adapted to quiet office environments.

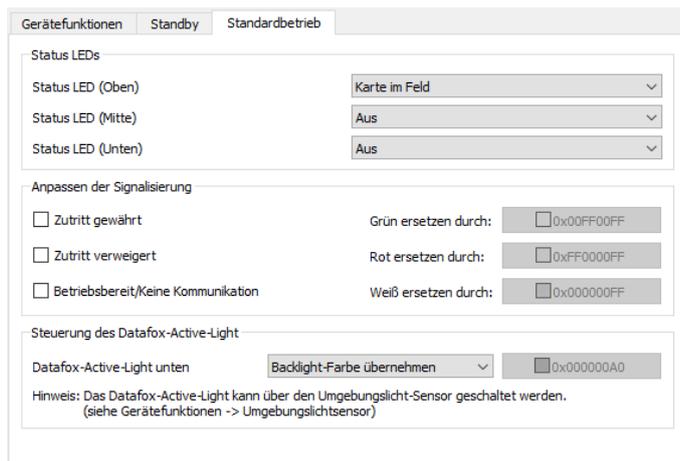
The reader can adjust its brightness - e.g. in order not to shine too brightly at night - to the brightness of the surroundings. If this function is desired, activate the ambient light sensor.

9.1.3. Settings for standby



The standby mode of the EVO Intera II is activated if the proximity sensor has not detected a person in the vicinity for an adjustable period. In this operating mode, the 3 LEDs can be assigned functions that differ from the normal operating mode. In addition, the Datafox Active Light can be switched if it is built into the reader.

9.1.4. Setting for standard operation

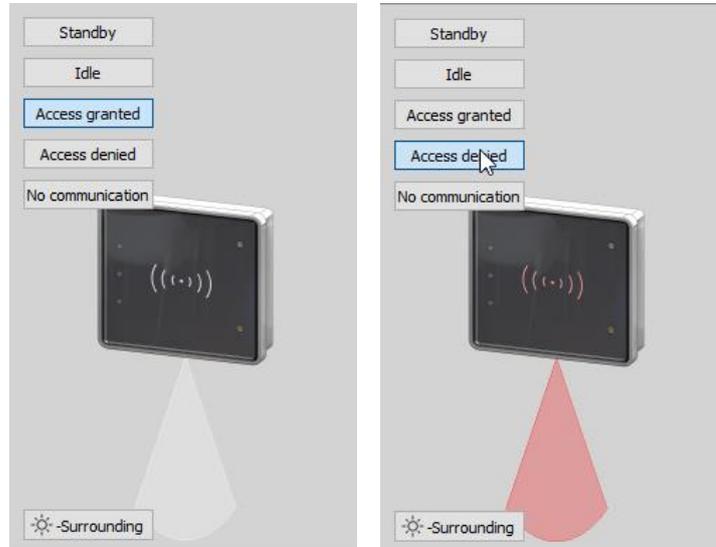


In standard operation, the EVO Intera II fulfills the normal functions of an access reader - the reader is controlled via the access bus by an access controller. In the simplest case, the reader transmits the read RFID data to the access controller and is then switched to access granted ("green") or access denied ("red"). If no access signaling is active, the reader normally lights up white.

In addition to assigning functions to the three programmable LEDs, you can adjust the colors used for green, red and white. You can also - if built into the device - set the color and brightness of the Datafox Active-Light.

9.1.5. Preview of reader behavior

An EVO Intera II is shown on the right-hand side of the configuration mask. This changes - based on the currently loaded configuration - its appearance. Use one of the five buttons to select the operating status to be displayed.

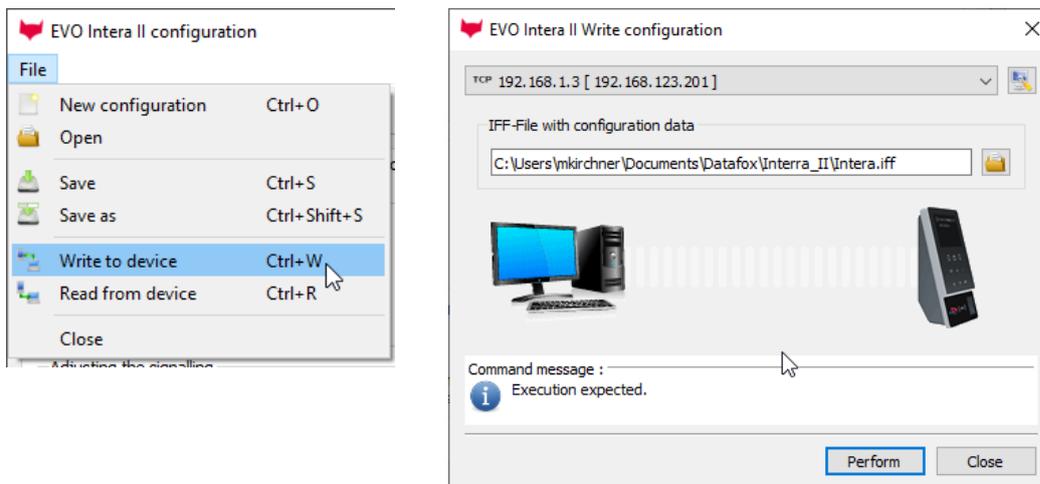


„Zutritt gewährt“ und „Zutritt verweigert“ mit Datafox Active-Light im Modus „Backlight-Farbe übernehmen“

You can use the button at the bottom left in the preview area to explicitly switch the reader to day or night operating mode.

9.1.6. Transfer to the device

To transfer to or from a reader, please connect it to your PC via USB. After pressing one of the buttons for transfer, you will see the file transfer dialog of the Datafox Studio:



Here you can select the configuration file to be transferred - the version opened in the editor is the standard assignment of the transfer dialog via the transfer button to the device. By pressing the "Execute" button, the configuration file is transmitted to the reader (or read from there).

10. Read large 2D barcodes

In order to be able to record larger barcode data, such as the current Corona vaccination certificate, an option and a new field function "Read long barcode" have been added. These allow barcodes with a size of up to 1000 characters to be read and saved in the device as a data file. The data is saved in the same way as when saving signatures or camera images.

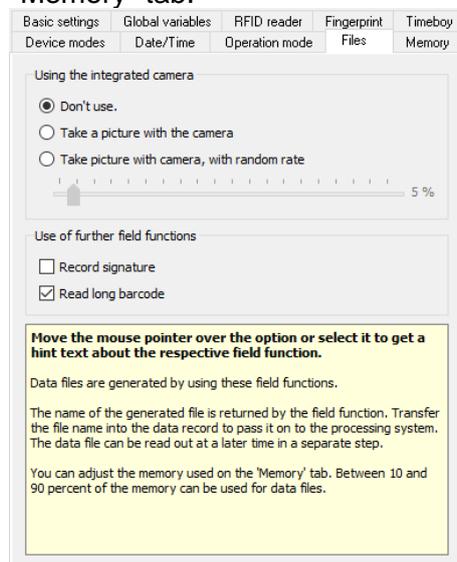
10.1. Barcode options in Datafox devices

Up to now, barcodes with a maximum length of 40 characters could be processed as required. The barcode data is transferred to the data record. Barcodes with up to 256 characters can also be read if the length for saving is reduced to a maximum of 40 characters by cutting. These two methods can be used with both an internal and an externally connected barcode reader. In order to save even longer barcodes, the same procedure is used as for camera images or the signature on the display. The data content of the barcode is saved in a data file in the device and the file name of this file is then saved in the data record. This new method only works with the internally built-in 2D scanner!

Int.	Ext.	Method	Length of Barcode		
			read	store	target
X	X	Normal, Multi-Input, Access Control	40	40	dataset
X	X	Normal, Multi-Input (only with cutting out)	256	40	dataset
X	-	Read long Barcode	1000	1000	file

10.2. Set the option and field function "Read long barcode"

The field function assumes that the option for reading long barcodes is activated. This can be set on the "Files" tab in the setup. The field functions for camera images and signatures are currently managed there. The field function is activated by ticking the "Read long barcode" box. When using these options for camera images, signatures and "Read long barcode", a separate memory is created in the device for storing the data files. The size of this memory to be used can be specified on the "Memory" tab.



Basic settings | Global variables | RFID reader | Fingerprint | Timeboy
 Device modes | Date/Time | Operation mode | Files | Memory

Using the integrated camera

Don't use.
 Take a picture with the camera
 Take picture with camera, with random rate
 5 %

Use of further field functions

Record signature
 Read long barcode

Move the mouse pointer over the option or select it to get a hint text about the respective field function.

Data files are generated by using these field functions.

The name of the generated file is returned by the field function. Transfer the file name into the data record to pass it on to the processing system. The data file can be read out at a later time in a separate step.

You can adjust the memory used on the 'Memory' tab. Between 10 and 90 percent of the memory can be used for data files.

After activating the option to read long barcodes, the field function "Read long barcodes" can then be selected in the input chain fields.

This function writes the file name in a data record field and / or a global variable. In a separate step, the associated data file can then be read from the circular buffer of the data files via the file name.

Input Jumps

A function for field and/or GV execute assignment

Name of the field query:

Text in row 4 of the display:

field name, in accordance:

Field function :

Write filename in global variable

Die Einstellung zur Grundeinstellung

The field function amounts of data, s

Read long barcode

Counter assume

Limit status assume

GPRS Alive counter assume

Firmware version assume (xx.xx.xx.xx)

Server state assume (online/offline)

State summer/winter time assume. (S/W)

GPS data assume. (27 digits RMC)

GPS data assume. (variable selection)

GPS assume distance covered.

Mobile phone parameters assume.

Copy field to Timeboy variable.

Copy field to Timeboy variable

Dig. out. (Relais) switch.

Switch backlight.

Buzzer on/off.

Fingerprint: fingerprint administration

Fingerprint: Perform identification.

Fingerprint: Perform verification.

Timer start/stop.

Device name assume.

send SMS

Run script

Switch communication.

Show message or wait.

Pick value from a variable

Write value into a variable

Multi-Input

Perform fever control

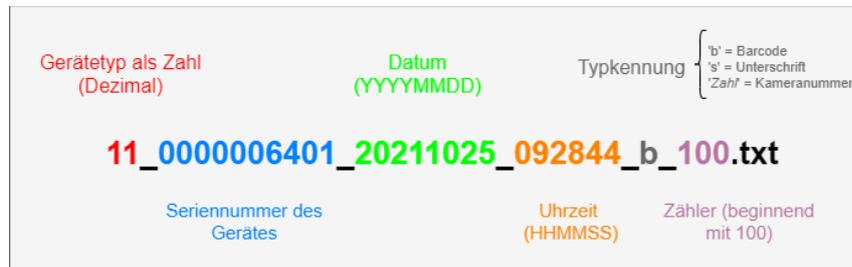
Read long barcode

Debug value assume

Cancel

10.3. Read the barcode files from the device

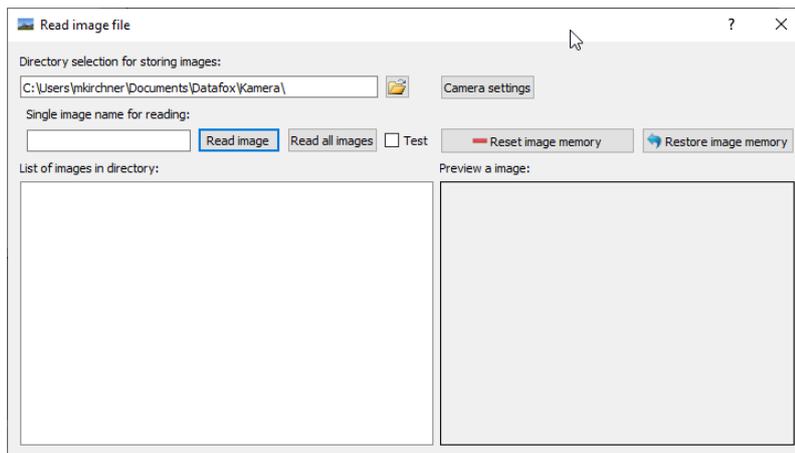
After a barcode has been read and saved internally, the data can be read out using the saved file name. The file name follows the well-known scheme, which is also used for the signatures and camera images.



These file names have a fixed length of 40 characters. The corresponding data record field must accordingly be able to store 40 characters. A 'b' for barcode is used here as an identifier. The file is a normal text file.

```
DSB = Barcode : 3 Einträge.
Name | DU |
11_0000006401_20211026_152124_b_100.txt | 26.10.2021 15:21:27 |
11_0000006401_20211026_151739_b_100.txt | 26.10.2021 15:17:54 |
11_0000006401_20211026_151308_b_100.txt | 26.10.2021 15:13:27 |
```

The file can now be read from the ring buffer using the file name saved in the data record. This is via the studio through the menu item "Communication" -> "Read files from image memory" is possible. In addition, all files can also be read from the image memory.



To access the data files via the DFCom, please use the interface function [DFCFileDownload](#) by specifying the file name. You can find more detailed information about this under Reading out data files (camera images, signature images, barcode data, etc.)

10.3.1. Details for this functions

The function is currently only available for the following devices:

- EVO 2.8 Pure
- EVO 3.5 Pure
- EVO 4.3
- EVO 4.6-Flexkey
- EVO 5.0