Datafox GmbH • Dermbacher Straße 12-14 • D-36419 Geisa • www.datafox.de

Manual

DatafoxStudioIV

Flexible data collection with method

This figure shows which Datafox devices of each section below is valid.
If a function valid for all devices then is the chapter without this figure.
The specific device or devices for which this section applies are marked with ☒.

V4	V4	V4		EVO 2.8 / 3.5			ZK / IO Box V4	Mobil-Box V4	Docking V2	FDL V2	ZK-Knoten	EVO-IPC
☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒

Alternations

Alternation in this Dokument

Date	Chapter	Discription
15.03.2013	all	Revision the manual to new version 04.02.04.xx Please note that not all chapters are in English. We are working on it.
05.08.2013	6.3.4 / 5.7	Translate
23.09.2015	all	Update on version 04.03.05.XX
18.01.2017	all	Update on version 04.03.09.XX
05.02.2018	all	Update on version 04.03.10.XX

Alternations of the version

With the device generation IV a new versioning scheme has been introduced. According to this scheme the file name of the device firmware and the setup program (DatafoxStudioIV) is composed as follows:

Product name	XX. Device generation	YY. Compatibility (which versions can be used together)	ZZ. Version number (functional extension)	Build Troubleshooting (with a new version the Build number is reset)
z. B. AE-MasterIV	04.	02.	01.	04

The use of the manual depends on the version of the firmware and the DatafoxStudioIV or the DFComDLL. Gather from the following table which manual matches which version. For different combinations no support can be offered.

Firmware StudioIV and DLL validity

Firmware:	4.03.10.xx
Studio:	4.03.10.xx
Dll:	4.03.10.xx

The DatafoxStudioIV is backward compatible. This means that you can configure a device with a newer DatafoxStudioIV also older firmware, the device only supports the natural functions that are implemented in the older firmware version. Ie, relevant to the functions that are possible, is always the manual state that the firmware associated with the Setup equivalent. It is not possible to provide a centering firmware configured with a stand of DatafoxStudioIV to who is older than the firmware.
recommendation:
If possible, use always the current version of DatafoxStudioIV.
What features are supported in which software versions, is from the file:
Datafox MasterIV, SW version xxx.pdf list as shown.
The file is located on the Datafox DVD and for download on the homepage. Please also note the instructions in each chapter in the manual. The updates are available on our website under www.datafox.de download.

Inhalt

1. Software

DatafoxStudioIV is required for creating and modifying the device setups.Setups are saved device-specifically. Thus, switching the device type before opening a setup is not necessary. But it is possible to convert a setup from one device type to another. Mandatory, type-specific modifications are made automatically by DatafoxStudioIV.

1.1. System Requirements:

- PC with Microsoft Windows XP or higher
- at least 50 MB free hard disk space
- Office Word and Excel 2003 for Office-Connect

1.2. Installation

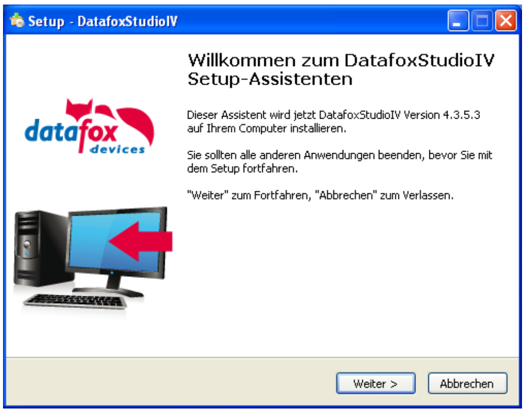
1.2.1. Installation of DatafoxStudioIV

			Mobil	ZK	MDE					ZK-Box	Mobil-Box	EVO-PC
☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒

If it is necessary to install DatafoxStudio due to user rights, an installation version is available. In order to perform a complete installation, you must possess the necessary user rights for the server/PC. If you do not possess these rights, contact your administrator. To start the installation, execute the application DatafoxStudioIVSetup.msi. The installation comprises the following 5 steps.

Step 1

Start installation, click on Next.



Setup - DatafoxStudioIV

Willkommen zum DatafoxStudioIV Setup-Assistenten

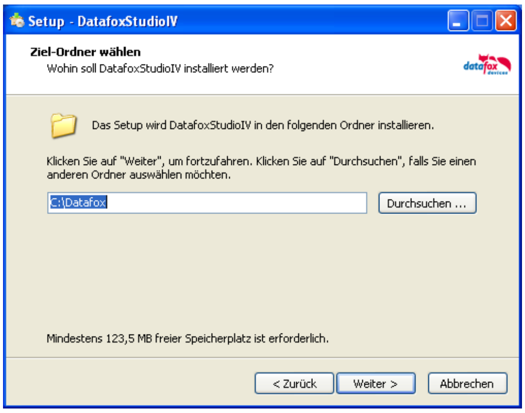
Dieser Assistent wird jetzt DatafoxStudioIV Version 4.3.5.3 auf Ihrem Computer installieren.

Sie sollten alle anderen Anwendungen beenden, bevor Sie mit dem Setup fortfahren.

"Weiter" zum Fortfahren, "Abbrechen" zum Verlassen.

Step 2

Specify the directory where to install DatafoxStudioIV.



Setup - DatafoxStudioIV

Ziel-Ordner wählen

Wohin soll DatafoxStudioIV installiert werden?

Das Setup wird DatafoxStudioIV in den folgenden Ordner installieren.

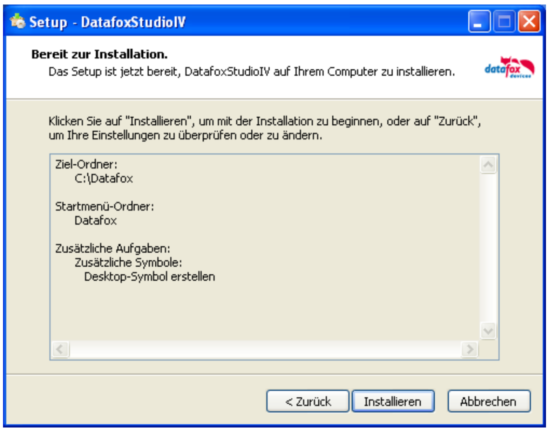
Klicken Sie auf "Weiter", um fortzufahren. Klicken Sie auf "Durchsuchen", falls Sie einen anderen Ordner auswählen möchten.

C:\Datafox

Mindestens 123,5 MB freier Speicherplatz ist erforderlich.

Step 3

Continue the installation by clicking on "Next".



Setup - DatafoxStudioIV

Bereit zur Installation.
Das Setup ist jetzt bereit, DatafoxStudioIV auf Ihrem Computer zu installieren.

Klicken Sie auf "Installieren", um mit der Installation zu beginnen, oder auf "Zurück", um Ihre Einstellungen zu überprüfen oder zu ändern.

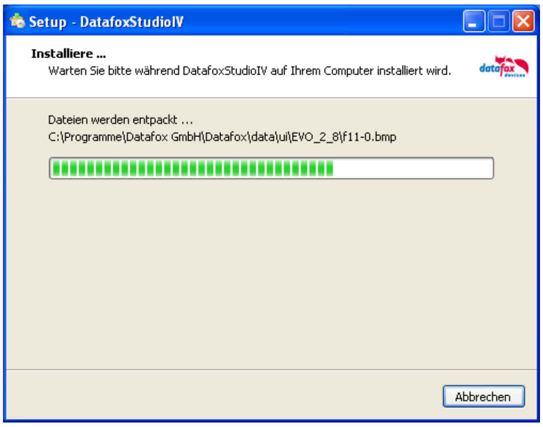
Ziel-Ordner:
C:\Datafox

Startmenü-Ordner:
Datafox

Zusätzliche Aufgaben:
Zusätzliche Symbole:
Desktop-Symbol erstellen

Step 4

DatafoxStudioIV is going to be installed.
The bar displays the installation progress.



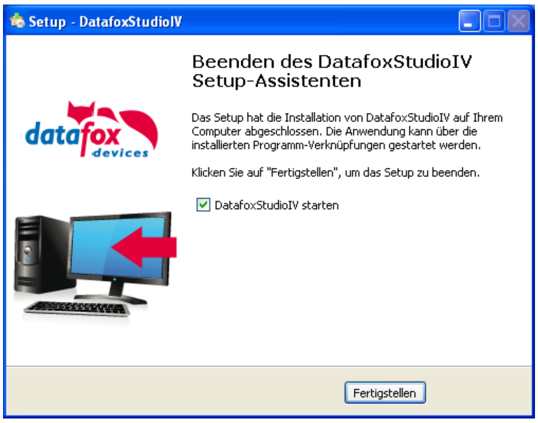
Setup - DatafoxStudioIV

Installiere ...
Warten Sie bitte während DatafoxStudioIV auf Ihrem Computer installiert wird.

Dateien werden entpackt ...
C:\Programme\Datafox GmbH\Datafox\data\ui\EVO_2_8\f11-0.bmp

Step 5

The installation is complete.
Close the dialog window.



Setup - DatafoxStudioIV

Beenden des DatafoxStudioIV Setup-Assistenten

Das Setup hat die Installation von DatafoxStudioIV auf Ihrem Computer abgeschlossen. Die Anwendung kann über die installierten Programm-Verknüpfungen gestartet werden.

Klicken Sie auf "Fertigstellen", um das Setup zu beenden.

☑ DatafoxStudioIV starten

1.2.2. Using DatafoxStudioIV.exe and DFComDLL.dll

An installation may be necessary if the resources required are not available at the PC.
The setup and communication program comprises only the files DatafoxStudioIV.exe and DFComDLL.dll. An installation is not necessary. You can directly execute the .exe file and work with it. Copy the files "DatafoxStudioIV.exe" and "DFComDLL.dll" to the desired directory and, if desired, create a shortcut to DatafoxStudioIV.exe in the program menu or on the desktop.

☞ **Note:**
It is recommended to always use the latest version of DatafoxStudioIV and the DFComDLL.dll.

2. Kompatibilität Compatibility

The compatibility must be observed urgently between:

- Datafox devices and the device firmware
- Device firmware and device setup
- Device firmware and communication DLL
- Communication DLL and DatafoxStudioIV
- DatafoxStudioIV and device setup

2.1. Firmware File Archive (*.dfz)

Description

Device files (*.hex) of the MasterIV devices are delivered in a common firmware file archive. It has the file extension DFZ (stands for Datafox Zip). Now simply the firmware file archives (*.dfz) are indicated instead of the device files (*.hex). This applies to the DatafoxStudioIV and the DLL. The indication of device files (*.hex) is still possible.

Function of the Archive

The transfer routine of the device file selects the right file from the firmware file archive on the basis of the hardware options available in the device. Thus, it is guaranteed that all hardware components available in the device are supported by the corresponding firmware.

Manual Selection of a File

If you do not want to integrate the archive in your installation, you have the possibility to add single device files from the archive to the installation.
The file format of the firmware file archive is ZIP. Hence, you can open the archive with every standard ZIP-program. Via the entry "Open With" in the context menu you can select an appropriate program for opening the file. If necessary, you can call up a program combined with this file format to open the file by renaming the file from DFZ to ZIP.
In the archive you find a file named "Inhalt.pdf"; it contains information which file (*.hex) of the archive matches your device. Extract the desired device file (*.hex) and rename it if necessary. A renaming of a file is possible at any time, because all information are in the file itself.
You can state the device file extracted before as device file in DatafoxStudioIV and at calling the DLL function. It is still tested if the file can be loaded into the chosen device before the transfer takes place.

2.2. Datafox Devices and Device Firmware

Each Datafox device has an electronic flat module. The module has specific hardware equipment concerning the options (e.g. mobile radio, WLAN, fingerprint,...). Due to technical conditions, different options are mutually exclusive. Currently, not all hardware options can be supported in one firmware file due to limited program memory. This means that each device with specific hardware options needs a proper firmware to support the hardware options by the software.

! **Caution:**
Hardware generation V 3 is supported from version 04.02.00.x onwards. The DatafoxStudioIV is compatible up to and including firmware version 04.01.x.y. Older versions 04.00.x.y are not supported any more.

2.3. Device Firmware and Device Setup

The firmware (operating system) of the device and the device setup (*.aes data file = application program) form a unit. By the device setup, the runtime behavior of the device (the firmware) is determined. This means the response of the device to input events by the user or the environment (e.g. digital inputs). In principle, only those functions of the device are executed that are supported by the firmware and defined via the setup. Prior to the productive commencement, you should therefore test each setup with the corresponding device or on a device with the same hardware options and firmware.

2.4. Device Firmware and Communications DLL

A firmware supports certain functions, dependent on the hardware options. The communication DLL is the interface between the firmware and the DatafoxStudioIV or your processing software. Therefore, the firmware must always have the same or a lower version number as the communication DLL.

☞ **Note:**
If your application uses a newer version of the DLL than the firmware does, you can only use functions that are supported by the firmware.
Otherwise, you will receive an error message (e.g. function not supported) which has to be analyzed.

2.5. Communications DLL and DatafoxStudioIV

☞ **Note:**
The DatafoxStudioIV and the communication DLL are developed and released as a bundle. Therefore, they have to be used as a bundle.
A newer version of DatafoxStudioIV does not work with an older DLL.

2.6. DatafoxStudioIV and Device Setup

With the DatafoxStudioIV, you create a device setup (application program) for the Datafox device. That means that in the setup only those functions were defined which were available in the DatafoxStudioIV version at the time of the setup creation. The DatafoxStudioIV you use for opening a device setup may thus only be newer but never older than the DatafoxStudioIV version you used to create the device setup.

☞ **Note:**
The updates are always available for download on our homepage www.datafox.de.

! **Caution:**
When new devices are delivered, the latest firmware is loaded on the devices. If you wish to work with an older firmware version, please perform a downgrade. Please observe the compatibility notes in the release notes of the respective firmware version.

The data file <Device name>, Software Versionen Stand <version number>.pdf shows which functions are supported by which software release.
You will find the file on the product CD. Please also follow the instructions given in the chapters of the manual.

2.7. Update / Downgrade

A firmware update or downgrade is a very sensitive process. Possibly, a reset of the main communication to RS232 may occur. In any case, consider the information regarding the compatibility in the software version list.

Firmware Update

!	**Caution:** Before starting a firmware update, please check on the basis of the software version list whether there are any version dependencies that must be observed.

For example: when changing from Version 04.00.xx to version 04.01.xx, at least version 04.00.23.769 or higher must be present in order to run the update to version 04.01.xx successfully.

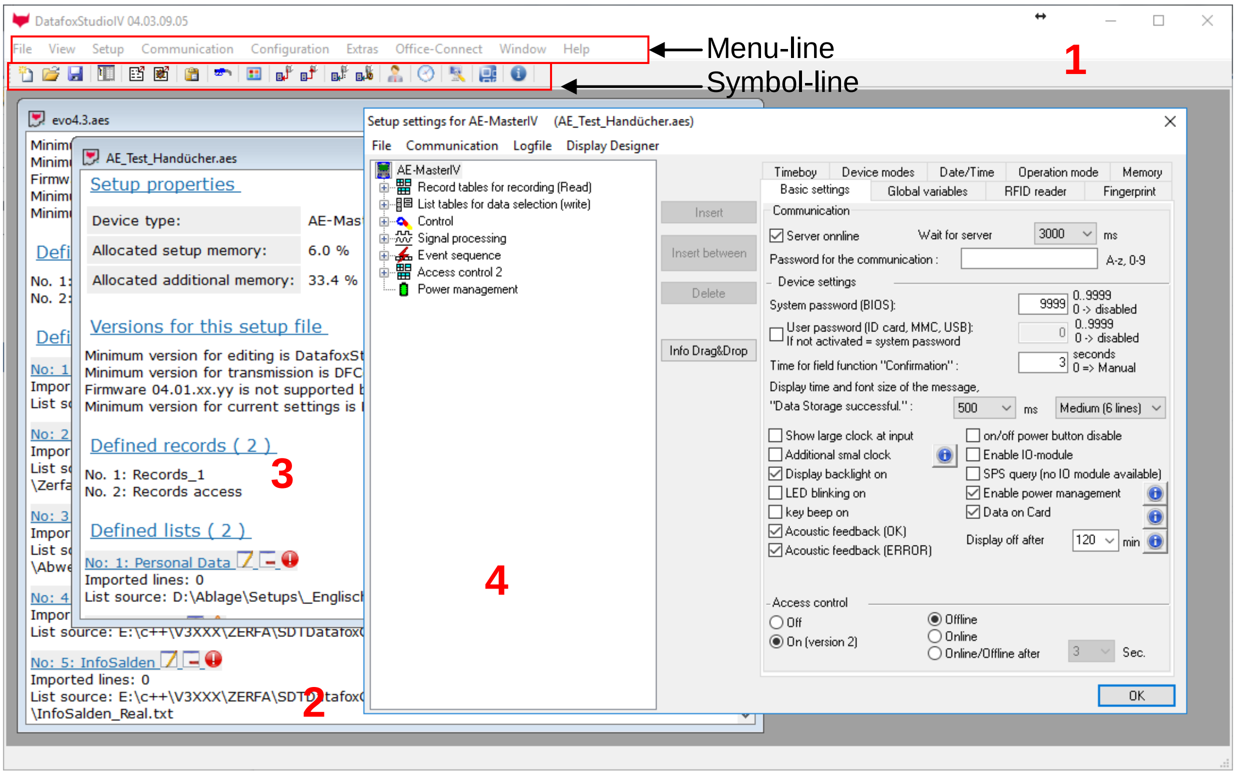
Firmware Downgrade

A firmware downgrade is not recommended.
We are constantly working towards improving the software/firmware; all functionalities are still included in new versions. New software always offers better functionalities and possible bugs are fixed.

!	**Caution:** When performing a firmware downgrade the firmware has to be transmitted to the device twice. This has technical reasons. Errors shown on the display of the device after the first transfer can be ignored.

3. User Interface

3.1. Arrangement of Windows



Menu-line
Symbol-line
1
2
3
4
DatafoxStudioIV 04.03.09.05
File View Setup Communication Configuration Extras Office-Connect Window Help
evo4.3.aes
AE_Test_Handücher.aes
Setup settings for AE-MasterIV (AE_Test_Handücher.aes)
File Communication Logfile Display Designer
Insert
Insert between
Delete
Info Drag&Drop
OK
Timeboy Device modes Date/Time Operation mode Memory
Basic settings Global variables RFID reader Fingerprint

Setup properties

Device type:	AE-Mas
Allocated setup memory:	6.0 %
Allocated additional memory:	33.4 %

Versions for this setup file

Minimum version for editing is DatafoxSt
Minimum version for transmission is DFC
Firmware 04.01.xx.yy is not supported b
Minimum version for current settings is

Defined records (2)

No. 1: Records_1
No. 2: Records access

Defined lists (2)

No: 1: Personal Data
Imported lines: 0
List source: D:\Ablage\Setups_Englisch

No: 5: InfoSalden
Imported lines: 0
List source: E:\c++\V3XXX\ZERFA\SDTDatafox
\InfoSalden_Real.txt

AE-MasterIV
- Record tables for recording (Read)
- List tables for data selection (write)
- Control
- Signal processing
- Event sequence
- Access control 2
- Power management

Communication
☑ Server onnline Wait for server 3000 ms
Password for the communication : A-z, 0-9

Device settings
System password (BIOS): 9999 0..9999 0 -> disabled
☐ User password (ID card, MMC, USB): If not activated = system password 0 0..9999 0 -> disabled
Time for field function "Confirmation" : 3 seconds 0 => Manual
Display time and font size of the message, "Data Storage successful." : 500 ms Medium (6 lines)

☐ Show large clock at input
☐ Additional smal clock
☑ Display backlight on
☐ LED blinking on
☐ key beep on
☑ Acoustic feedback (OK)
☑ Acoustic feedback (ERROR)
☐ on/off power button disable
☐ Enable IO-module
☐ SPS query (no IO module available)
☑ Enable power management
☑ Data on Card
Display off after 120 min

Access control
○ Off
● On (version 2)
● Offline
○ Online
○ Online/Offline after 3 Sec.

At DatafoxStudioIV, several windows (2 and 3) of a device setup can be opened simultaneously. But only one window can be edited. You can open a setup for editing (4) via menu entry "Setup ->Edit“ or the symbol .

The mask (4) can also be opened by double-clicking on the window.

For more information see chapter "Edit Setup".

3.2. Operation

After starting DatafoxStudioIV, an empty window with a menu and a toolbar is displayed. This menu provides all functions which can be executed on a device without a device setup. If you create or open a device setup, the menu is extended by functions for a device setup.

We recommend the following procedure when working with DatafoxStudioIV:

- Opening a setup (each setup is tied to a device type).
- Setting the communication interface to a device (how the device is accessible).
- Selecting the desired function via the menu or the toolbar (not all menu entries are also available in the toolbar).
- Configuring connection variables for transfer with http via LAN or GPRS (specifying additional parameters at the configuration file *.ini).
- Executing the function selected (editing data or transfer data via DFComDLL).

!	**Caution:** Before each communication with a device, make sure that you address the right device.

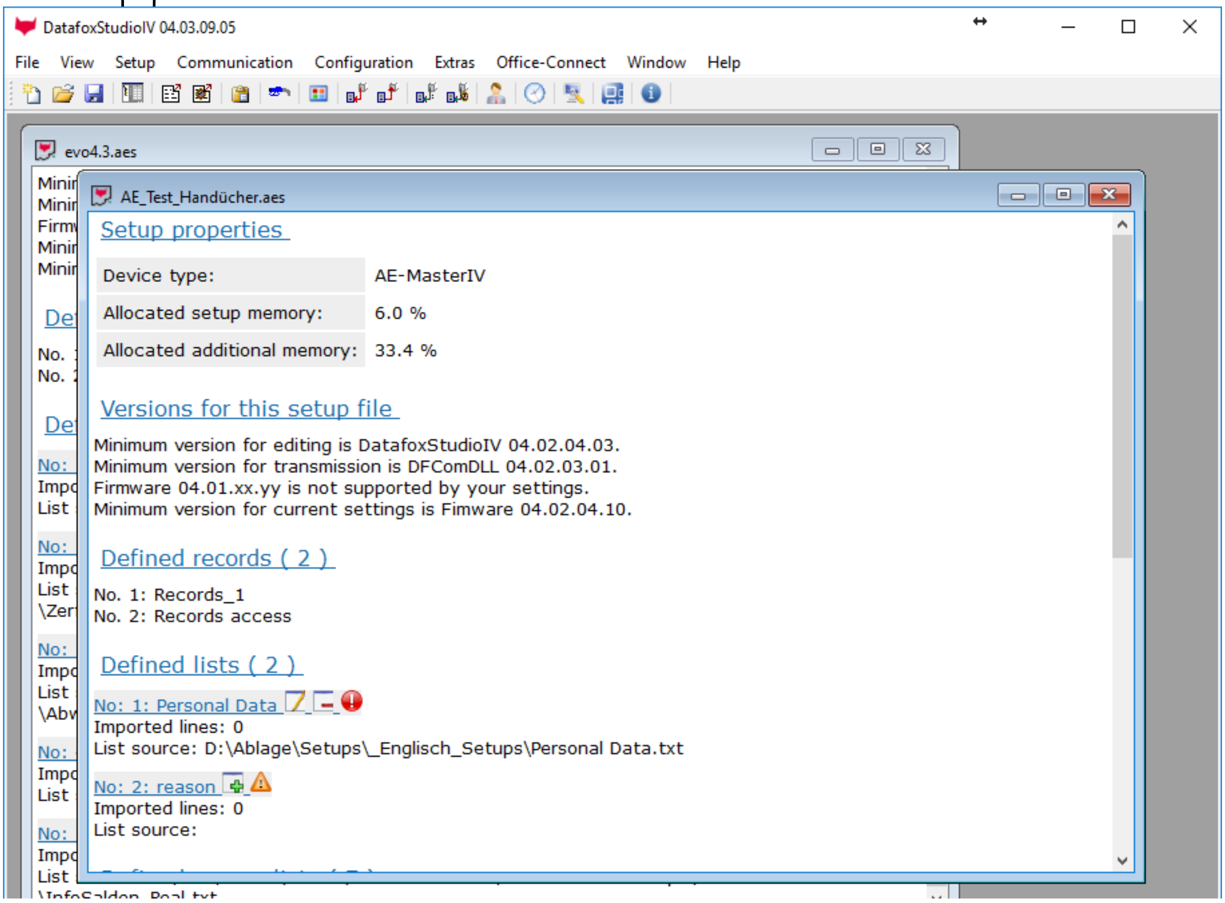
4. Functions in DatafoxStudioIV

4.1. Setup

4.1.1. Editing Setup

In order to edit a setup, a device setup must be open.
There are three possibilities to open a setup for editing.

1: Click Setup-Edit or
2: Click this symbol



Setup properties

Device type:	AE-MasterIV
Allocated setup memory:	6.0 %
Allocated additional memory:	33.4 %

Versions for this setup file

Minimum version for editing is DatafoxStudioIV 04.02.04.03.
Minimum version for transmission is DFComDLL 04.02.03.01.
Firmware 04.01.xx.yy is not supported by your settings.
Minimum version for current settings is Fimware 04.02.04.10.

Defined records (2)

No. 1: Records_1
No. 2: Records access

Defined lists (2)

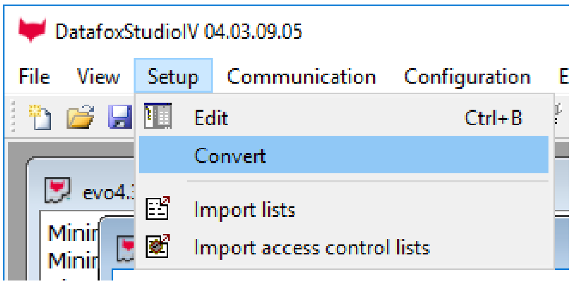
No: 1: Personal Data
Imported lines: 0
List source: D:\Ablage\Setups_Englisch_Setups\Personal Data.txt

No: 2: reason
Imported lines: 0
List source:

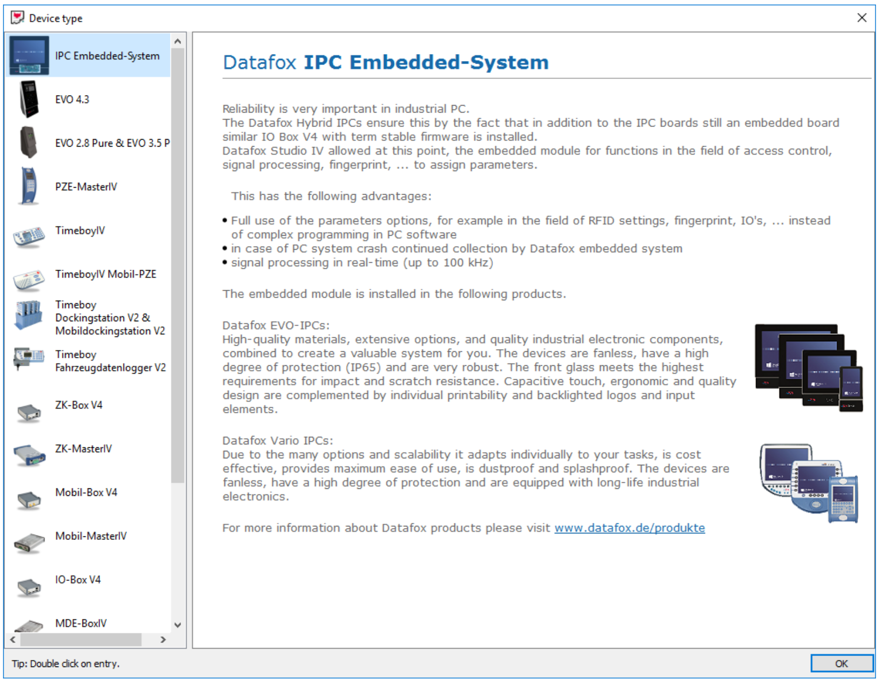
4.1.2. Converting

A setup which you have created for another device can be converted for a different device type via the function "Converting".
This function saves you time when developing device setups. Prerequisite is an opened device set-up.

Click the tab Setup-Convert. This window opens.



Here you can select for which Datafox device the setup is to be converted.



Datafox **IPC Embedded-System**

Reliability is very important in industrial PC.
The Datafox Hybrid IPCs ensure this by the fact that in addition to the IPC boards still an embedded board similar IO Box V4 with term stable firmware is installed.
Datafox Studio IV allowed at this point, the embedded module for functions in the field of access control, signal processing, fingerprint, ... to assign parameters.

This has the following advantages:

- Full use of the parameters options, for example in the field of RFID settings, fingerprint, IO's, ... instead of complex programming in PC software
- in case of PC system crash continued collection by Datafox embedded system
- signal processing in real-time (up to 100 kHz)

The embedded module is installed in the following products.

Datafox EVO-IPCs:
High-quality materials, extensive options, and quality industrial electronic components, combined to create a valuable system for you. The devices are fanless, have a high degree of protection (IP65) and are very robust. The front glass meets the highest requirements for impact and scratch resistance. Capacitive touch, ergonomic and quality design are complemented by individual printability and backlighted logos and input elements.

Datafox Vario IPCs:
Due to the many options and scalability it adapts individually to your tasks, is cost effective, provides maximum ease of use, is dustproof and splashproof. The devices are fanless, have a high degree of protection and are equipped with long-life industrial electronics.

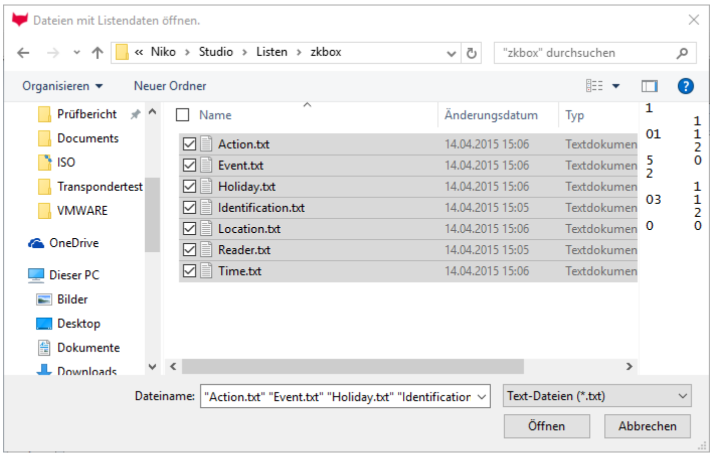
For more information about Datafox products please visit www.datafox.de/produkte

4.1.3. Importing lists

If lists are defined and used in a device setup, they can also be transferred to the Datafox device. For this purpose, it is necessary to import the lists into the setup.

Click the symbol 🗎 to import an existing list.
You can also open the import dialog via Setup – „Import Lists“.

Specify where the lists are saved and select the lists to be imported. Several lists can be imported simultaneously.



Dateien mit Listendaten öffnen.

« Niko › Studio › Listen › zkbox

	Name	Änderungsdatum	Typ
☑	Action.txt	14.04.2015 15:06	Textdokumen
☑	Event.txt	14.04.2015 15:06	Textdokumen
☑	Holiday.txt	14.04.2015 15:06	Textdokumen
☑	Identification.txt	14.04.2015 15:05	Textdokumen
☑	Location.txt	14.04.2015 15:06	Textdokumen
☑	Reader.txt	14.04.2015 15:05	Textdokumen
☑	Time.txt	14.04.2015 15:06	Textdokumen

Dateiname: "Action.txt" "Event.txt" "Holiday.txt" "Identificatior

Text-Dateien (*.txt)

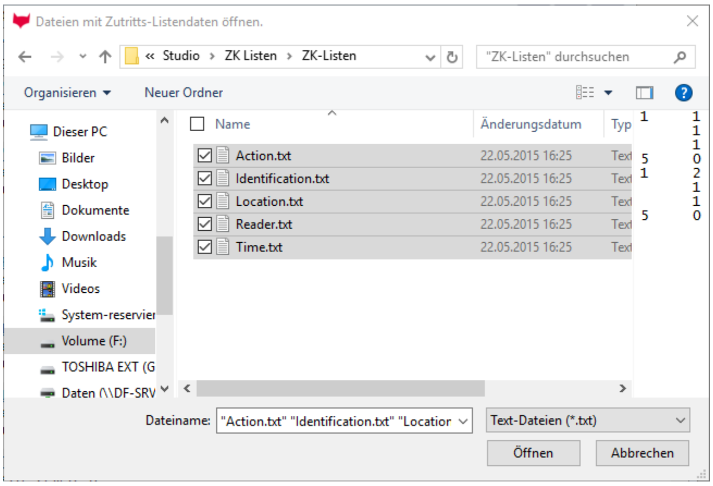
4.1.4. Importing Access Control Lists

If access control lists are defined and used in a device setup, they can also be transferred to the Datafox device. For this purpose, it is necessary to import the lists into the setup.

Click the symbol 🗎 to import an existing access control list.
You can also open the import dialog via Setup – „Import Access Control Lists“.

,

Specify where the lists are saved and select the lists to be imported. Several lists can be imported simultaneously.



Dateien mit Zutritts-Listendaten öffnen.

« Studio › ZK Listen › ZK-Listen

	Name	Änderungsdatum	Typ
☑	Action.txt	22.05.2015 16:25	Text
☑	Identification.txt	22.05.2015 16:25	Text
☑	Location.txt	22.05.2015 16:25	Text
☑	Reader.txt	22.05.2015 16:25	Text
☑	Time.txt	22.05.2015 16:25	Text

Dateiname: "Action.txt" "Identification.txt" "Locatior

Text-Dateien (*.txt)

4.2. Communication

This chapter describes all settings for transfers to a Datafox device.

4.2.1. Setup

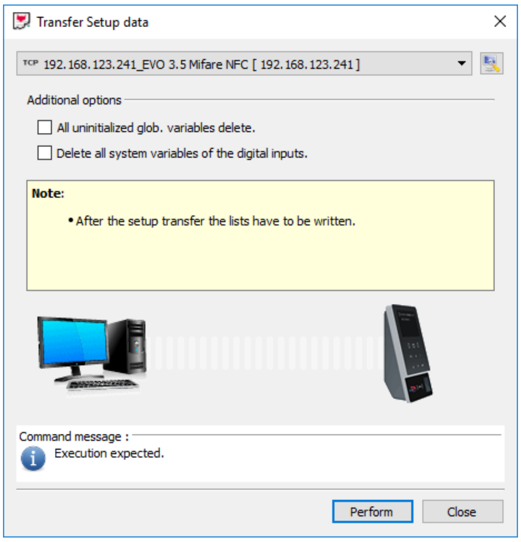
4.2.1.1. Transferring Setup to the Device

When you have created a setup, you can transfer it to the Datafox device as follows.

Click on this symbol or use the tab "Communication" – „Upload setup" in order to transfer the setup.

The following dialog window opens:

Click on “perform“ to transfer the Setup to the device.


Transfer Setup data

TCP 192.168.123.241_EVO 3.5 Mifare NFC [192.168.123.241]

Additional options

☐ All uninitialized glob. variables delete.

☐ Delete all system variables of the digital inputs.

Note:

- After the setup transfer the lists have to be written.

Command message :

Execution expected.

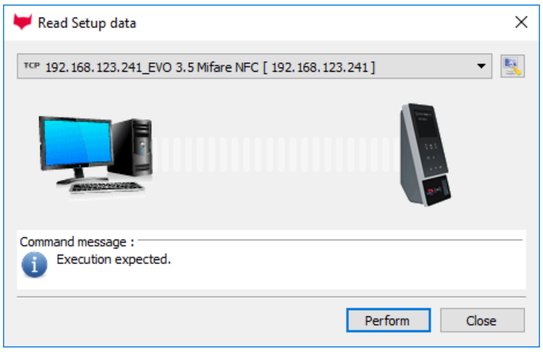
4.2.1.2. Reading Setup from the Device

It is possible to read a setup from a device.
If a saved setup is lost, this is a good possibility to recover the setup.

☞ **Note:**
First, open a new setup and save it under a name of your choice. The read setup is saved in the currently edited setup.

Click on this symbol or use the tab "Communication" – „Read setup" in order to transfer the setup.

Click on “perform“ to transfer the Setup to the device.


Read Setup data

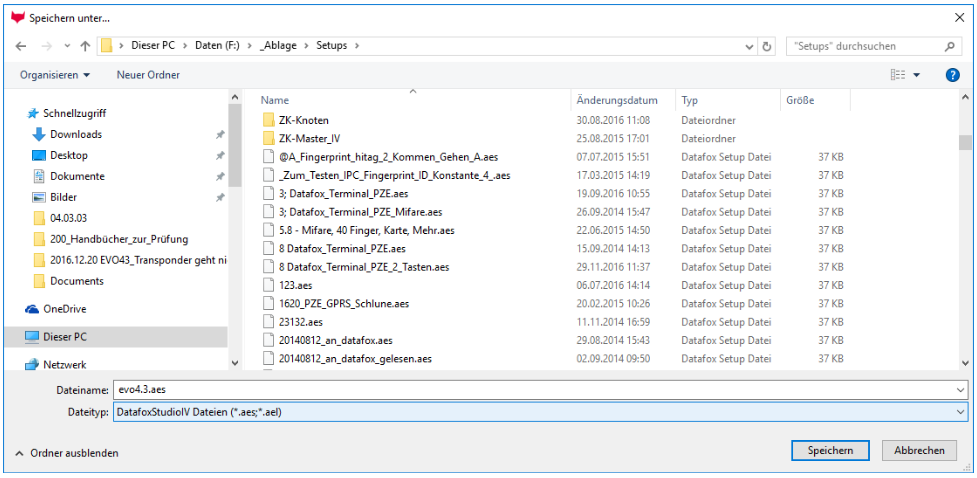
TCP 192.168.123.241_EVO 3.5 Mifare NFC [192.168.123.241]

Command message :

Execution expected.

Save setup:

You will be asked if you want to save your setup.



Speichern unter...

Dieser PC > Daten (F:) > _Ablage > Setups >

Name	Änderungsdatum	Typ	Größe
ZK-Knoten	30.08.2016 11:08	Dateiordner	
ZK-Master_IV	25.08.2015 17:01	Dateiordner	
@A_Fingerprint_hitag_2_Kommen_Gehen_A.aes	07.07.2015 15:51	Datafox Setup Datei	37 KB
_Zum_Testen_IPC_Fingerprint_ID_Konstante_4_.aes	17.03.2015 14:19	Datafox Setup Datei	37 KB
3; Datafox_Terminal_PZE.aes	19.09.2016 10:55	Datafox Setup Datei	37 KB
3; Datafox_Terminal_PZE_Mifare.aes	26.09.2014 15:47	Datafox Setup Datei	37 KB
5.8 - Mifare, 40 Finger, Karte, Mehr.aes	22.06.2015 14:50	Datafox Setup Datei	37 KB
8 Datafox_Terminal_PZE.aes	15.09.2014 14:13	Datafox Setup Datei	37 KB
8 Datafox_Terminal_PZE_2_Tasten.aes	29.11.2016 11:37	Datafox Setup Datei	37 KB
123.aes	06.07.2016 14:14	Datafox Setup Datei	37 KB
1620_PZE_GPRS_Schlune.aes	20.02.2015 10:26	Datafox Setup Datei	37 KB
23132.aes	11.11.2014 16:59	Datafox Setup Datei	37 KB
20140812_an_datafox.aes	29.08.2014 15:43	Datafox Setup Datei	37 KB
20140812_an_datafox_gelesen.aes	02.09.2014 09:50	Datafox Setup Datei	37 KB

Dateiname: evo4.3.aes

Dateityp: DatafoxStudioIV Dateien (*.aes;*.ael)

☞ **Note:**
With Windows 7 or higher you can not always save as a standard user in the "Programs" directory. Save to a different directory, such as “own files”.

4.2.2. Transfer Lists to the device

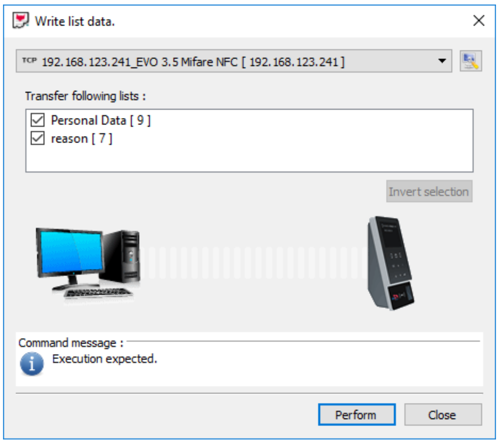
If lists are defined and imported into a device setup, they must be transferred to the device in order to use them there.

Click on this symbol or use the tab "Communication" – „Load lists" in order to transfer the lists to the device.

The following dialog window opens:

By activating the checkboxes you can specify which lists are to be transferred.

Click “perform” to start the transfer.



Write list data.

TCP 192.168.123.241_EVO 3.5 Mifare NFC [192.168.123.241]

Transfer following lists :

☑ Personal Data [9]
☑ reason [7]

Command message :
Execution expected.

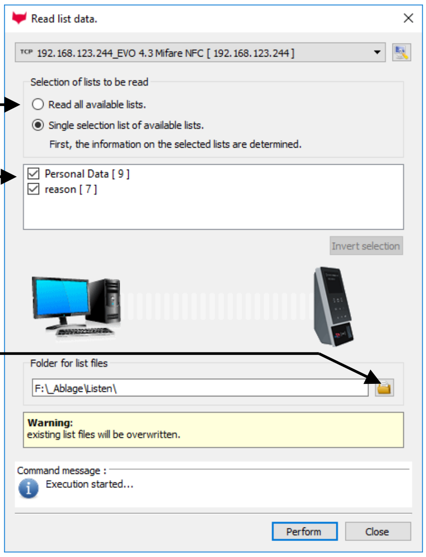
4.2.3. Read lists from device

Prerequisite is an accessible device with a device setup and available list data.
The dialog window opens via the tab "Communication" – "Read lists".

Specify whether all lists are to be read or if you want to select certain lists.

By activating the checkboxes you can specify which lists are to be read from the device.

Specify where the lists are to be stored.
! If lists with the same name are in this folder, they are overwritten.



Read list data.

TCP 192.168.123.244_EVO 4.3 Mifare NFC [192.168.123.244]

Selection of lists to be read

○ Read all available lists.

● Single selection list of available lists.

First, the information on the selected lists are determined.

☑ Personal Data [9]
☑ reason [7]

Folder for list files

F:_Ablage\Listen\

Warning:
existing list files will be overwritten.

Command message :
Execution started...

4.2.4. Loading Access Control Lists

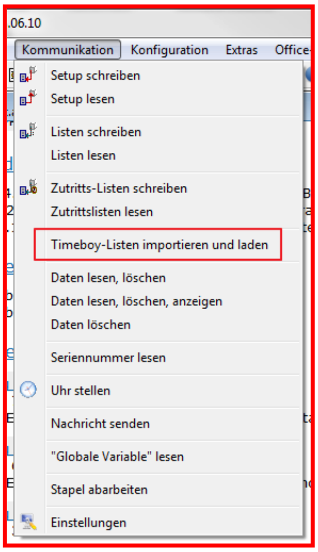
Prerequisite is an opened device setup where the function Access Control is activated. Proceed as described in the section "Write lists".

4.2.5. Reading Access Control Lists

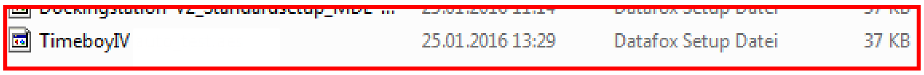
Prerequisite is an accessible device with a device setup where the function Access Control is activated. Proceed as described in the section "Read lists".

4.2.6. Timeboylisten importieren und laden

Import and load timeboylists



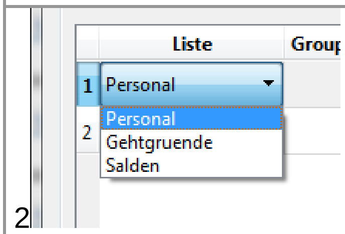
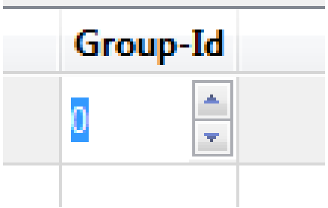
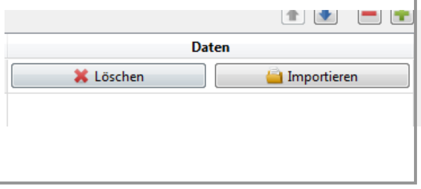
This function can be set under "Communication" => "Import and load timeboy lists"
Next, an entry is created in the lower table. These entries represent the lists in the Timeboy.
 A new configuration must be created in the next window. To do this, the setup, which is in the timeboys, must be available.



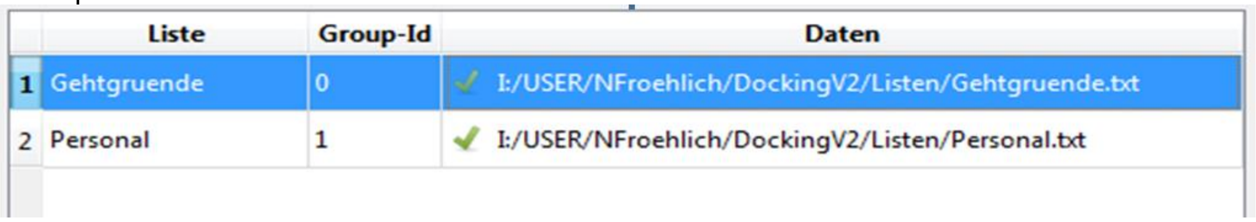
TimeboyIV 25.01.2016 13:29 Datafox Setup Datei 37 KB

Next, an entry is created in the lower table. These entries represent the lists in the Timeboy.

The table consists of the following entries:

List	Group-ID	Data
In the "List" column, all lists stored in the setup are offered for selection.	The "Group ID" is used to pass the lists to the devices that have been defined for it. Group-ID 0 = List for all devices Group-ID 1 = Only devices that have this group ID are assigned this list	When "data" the lists (files) are stored, which are intended to be passed.
 Liste Group 1 Personal 2 Personal Gehtgruende Salden 2		

Examples:



	Liste	Group-Id	Daten
1	Gehtgruende	0	✓ I:/USER/NFroehlich/DockingV2/Listen/Gehtgruende.txt
2	Personal	1	✓ I:/USER/NFroehlich/DockingV2/Listen/Personal.txt

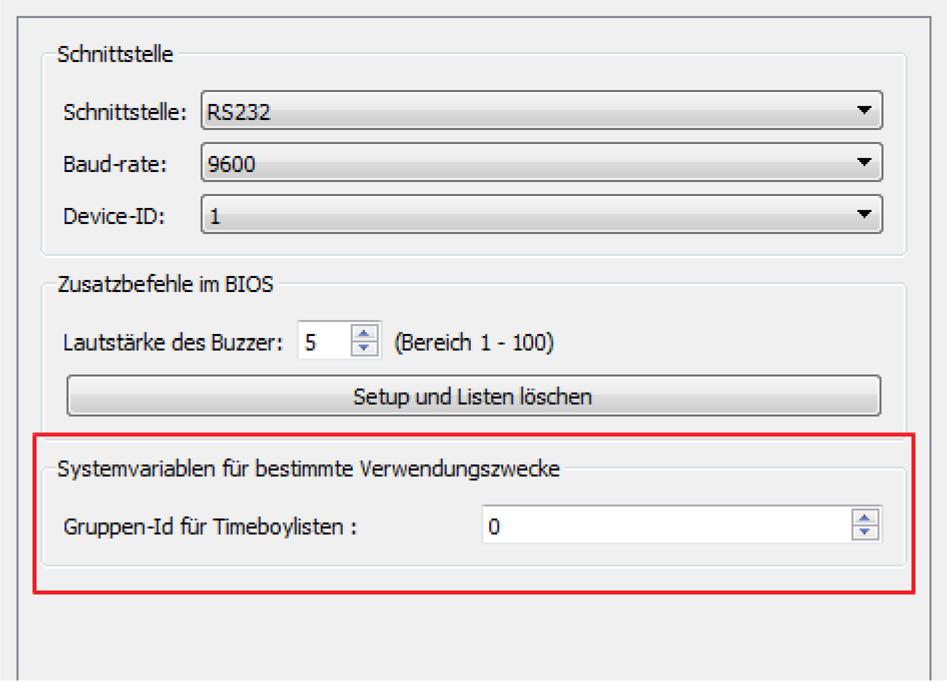
In this example, the "Reasons for leaving" list is applied to all devices in this docking. However, the "Personnel" list is only transferred to the devices that have group ID 1.
Thus devices with the ID 0, 2 and higher do not get this. After completion, the configuration must be installed in the docking station.

☞ **Note:**
The configuration hast o be transfered to the docking and not to the individual devices.
For this purpose, the "bus number of the first device to be addressed" must be set to 254.

4.2.6.1. Ändern der Group-ID:

Change the Group ID

The group ID must be changed in BIOS mode.
"Configuration" => "Device Configuration (BIOS)" => "Switch to BIOS Mode"



Schnittstelle

Schnittstelle: RS232

Baud-rate: 9600

Device-ID: 1

Zusatzbefehle im BIOS

Lautstärke des Buzzer: 5 (Bereich 1 - 100)

Systemvariablen für bestimmte Verwendungszwecke

Gruppen-Id für Timeboylisten : 0

4.2.7. Read, delete data

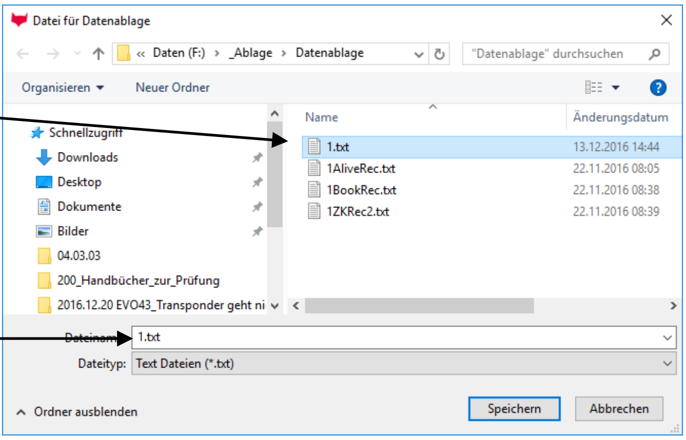
Prerequisite is an accessible device with a device setup. In the dialog for opening a file, select an existing text file (*.txt) or enter a new file name. Confirm your entries with "Save". In the following dialog, specify whether the data are to be read once or the device is to be polled. If required, specify the polling frequency. Start operation with "Perform".

4.2.8. Read, delete and view data

In order to read data records, they must be stored in the Datafox device.
Start this function via the tab "Communication" – "Read, delete, view data".
The following dialog window opens:

Select an existing text file where the data are to be saved.

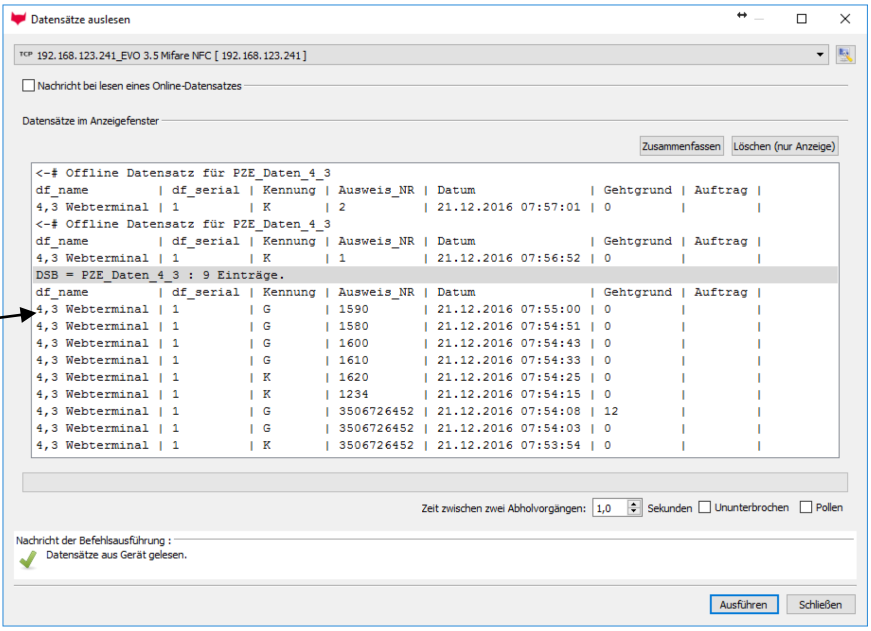
If you enter a new name, a new file is created below the directory given. Click “Open” to start the dialog window.
starten.



Name	Änderungsdatum
1.txt	13.12.2016 14:44
1AliveRec.txt	22.11.2016 08:05
1BookRec.txt	22.11.2016 08:38
1ZKRec2.txt	22.11.2016 08:39

Dateiname: 1.txt
Dateityp: Text Dateien (*.txt)

With the button summarize you can sort the data like here.



TCP 192.168.123.241_EVO 3.5 Mifare NFC [192.168.123.241]

☐ Nachricht bei lesen eines Online-Datensatzes

```
<-# Offline Datensatz für PZE_Daten_4_3
df_name          | df_serial | Kennung | Ausweis_NR | Datum               | Gehtgrund | Auftrag |
4,3 Webterminal | 1         | K       | 2          | 21.12.2016 07:57:01 | 0         |         |
<-# Offline Datensatz für PZE_Daten_4_3
df_name          | df_serial | Kennung | Ausweis_NR | Datum               | Gehtgrund | Auftrag |
4,3 Webterminal | 1         | K       | 1          | 21.12.2016 07:56:52 | 0         |         |
DSB = PZE_Daten_4_3 : 9 Einträge.
df_name          | df_serial | Kennung | Ausweis_NR | Datum               | Gehtgrund | Auftrag |
4,3 Webterminal | 1         | G       | 1590       | 21.12.2016 07:55:00 | 0         |         |
4,3 Webterminal | 1         | G       | 1580       | 21.12.2016 07:54:51 | 0         |         |
4,3 Webterminal | 1         | G       | 1600       | 21.12.2016 07:54:43 | 0         |         |
4,3 Webterminal | 1         | G       | 1610       | 21.12.2016 07:54:33 | 0         |         |
4,3 Webterminal | 1         | K       | 1620       | 21.12.2016 07:54:25 | 0         |         |
4,3 Webterminal | 1         | K       | 1234       | 21.12.2016 07:54:15 | 0         |         |
4,3 Webterminal | 1         | G       | 3506726452 | 21.12.2016 07:54:08 | 12        |         |
4,3 Webterminal | 1         | G       | 3506726452 | 21.12.2016 07:54:03 | 0         |         |
4,3 Webterminal | 1         | K       | 3506726452 | 21.12.2016 07:53:54 | 0         |         |
```

Zeit zwischen zwei Abholvorgängen: 1,0 Sekunden ☐ Ununterbrochen ☐ Pollen

Nachricht der Befehlsausführung :
✓ Datensätze aus Gerät gelesen.

4.2.9. Delete data

Prerequisite is an accessible device with a device setup which contains data records.

! **Caution:**
Before executing this function, make sure that you address the right device. Once the data are deleted, they cannot be restored.

4.2.10. Read serial number

Prerequisite is an accessible device. After successful execution of the function, the serial number of the device is displayed in a dialog window.

4.2.11. Set time

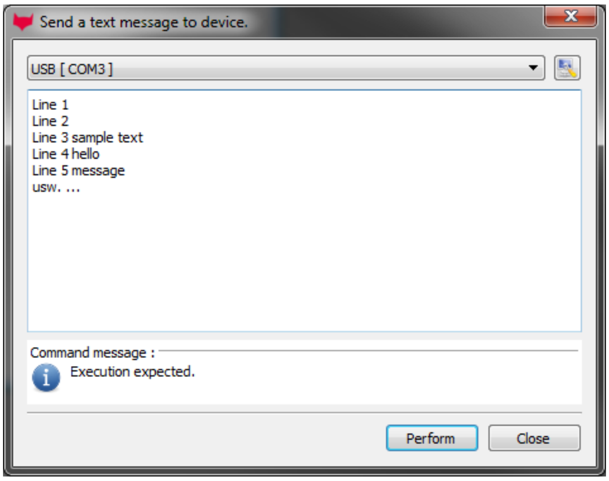
Prerequisite is an accessible device. After successful execution of the function, date and time of the device has been synchronized with the system time of the PC from which the function has been executed.

4.2.12. Send message "direct to the display"

Prerequisite is an accessible device with display. Enter the message in the text field and confirm your entry with "perform". The display can show 23 message lines at most with max. 250 characters altogether.

Please see the different Devices types and the different display structure.
The text displayed not ever on the same place.

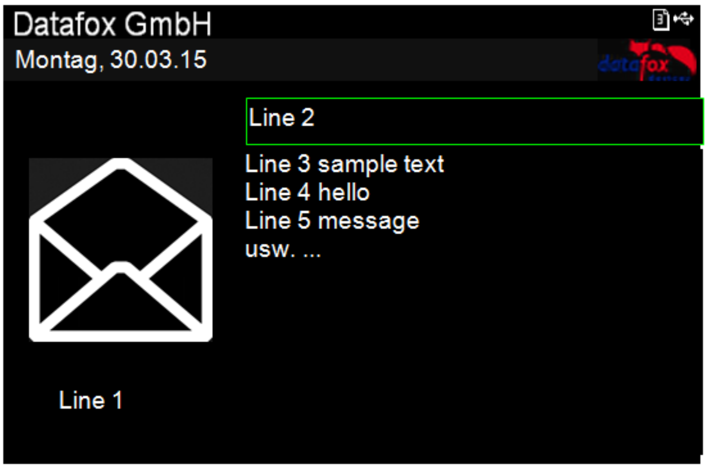
Please Note: See the correctly display in the examples.



Line 1
Line 2
Line 3 sample text
Line 4 hello
Line 5 message
usw. ...

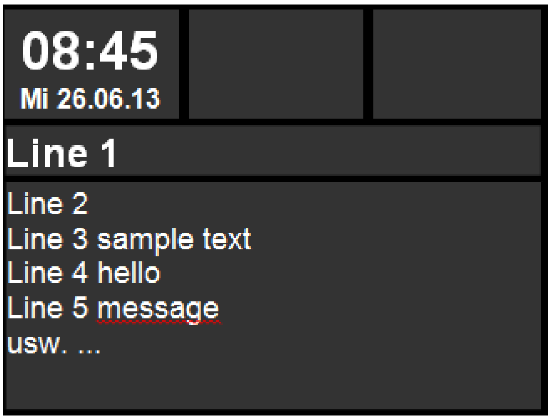
Command message :
Execution expected.

Display by the EVO 4.3



Line 2
Line 3 sample text
Line 4 hello
Line 5 message
usw. ...
Line 1

Display by the EVO 2.8 / 3.5

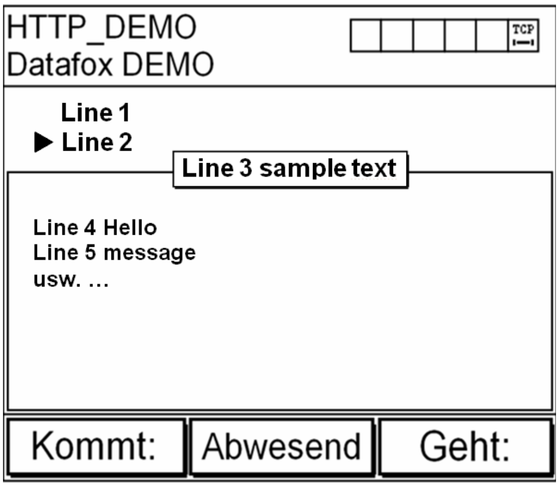


08:45
Mi 26.06.13

Line 1

Line 2
Line 3 sample text
Line 4 hello
Line 5 message
usw. ...

Display by the PZE-MasterIV



HTTP_DEMO
Datafox DEMO

Line 1
▶ Line 2
Line 3 sample text

Line 4 Hello
Line 5 message
usw. ...

☞ **Note:**
Because the font used is no proportional font, it is not possible to say how many characters can be shown per line.
Each character is displayed with an individual width.
For example, "iiiiii" needs less space than "mmmmm".
If you use this function via a server application, please test previously whether the text length is not exceeded on a line.
If the text is too long, the rest is truncated.

The following characters are supported: `0-9, A-Z, a-z, Leerzeichen, ! \" # $ % & ' ( ) * + , - . / : ; < = > ? @ [ ] ^_ ´ { | } Ä Ö Ü ä ö ü ß ~`

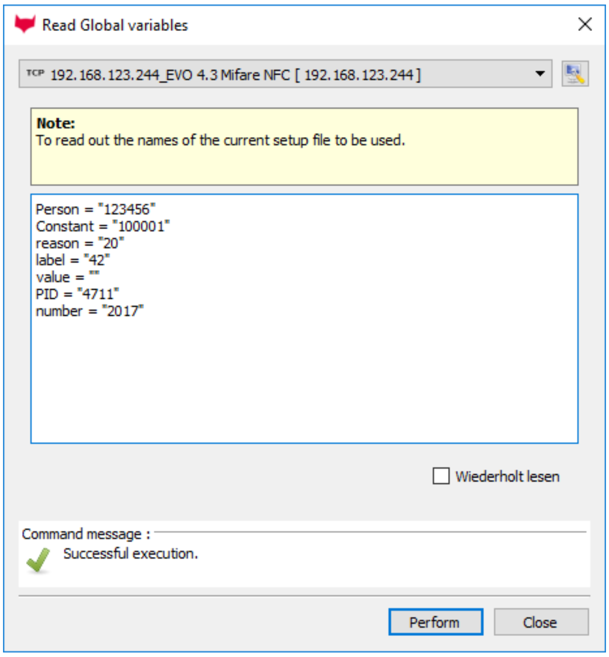
4.2.13. Reading Global Variables

If you use GVs in a device setup, it is possible to display them. In order to ensure that all global variables can be read, first read the setup of the device. Only this way you ensure that all available global variables are read.
Call this function via the tab "Communication" – "Read global variables".

Click “perform”
to read the value of the
global variables.

In this example 7
GVs are displayed.

These seven global
variables are defined
in the setup.



Note:
To read out the names of the current setup file to be used.

```
Person = "123456"
Constant = "100001"
reason = "20"
label = "42"
value = ""
PID = "4711"
number = "2017"
```

☐ Wiederholt lesen

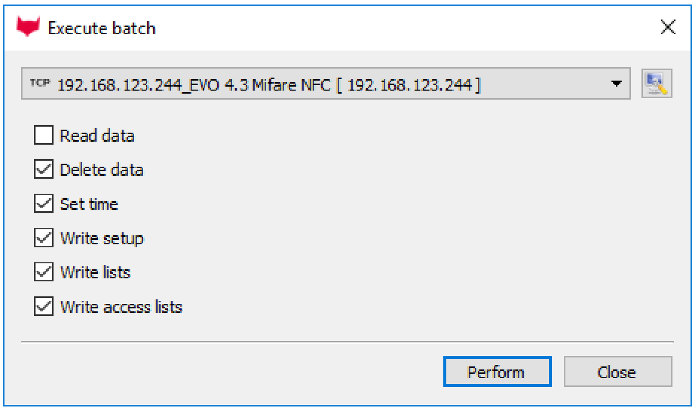
Command message :
✓ Successful execution.

4.2.14. Execute batch

Prerequisite is an accessible device. Activate the function you want to execute on the device.

☞ **Note:**
Note that the function "Load setup" is executed on the currently opened setup. If you also want to execute the function "Upload lists", you must ensure that all lists have been imported. Same applies for the option "Upload access lists".

By activating the checkboxes, you determine which functions are to be executed.

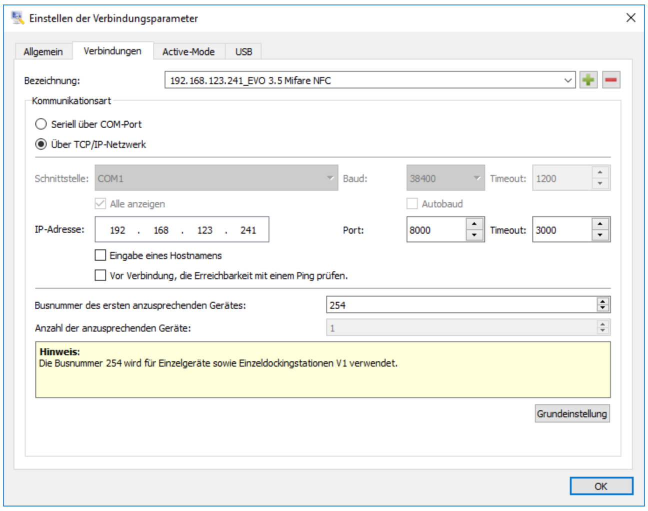


☐ Read data
☑ Delete data
☑ Set time
☑ Write setup
☑ Write lists
☑ Write access lists

4.2.15. Settings for the communication with Devices

Specify via which interface you want to communicate with a device. For this purpose, you have to know how the device is set. For information concerning the device configuration see the device BIOS. Depending on the interface selected (RS232, TCP/IP,...), further parameters are activated. Make all settings required and confirm your entries with “OK”.

For communication via key and Password, you find more information in the chapter „Verschlüsselung der Kommunikation mit MasterIV Geräten“.


Einstellen der Verbindungsparameter

Bezeichnung: 192.168.123.241_EVO 3.5 Mifare NFC

Kommunikationsart

○ Seriell über COM-Port

● Über TCP/IP-Netzwerk

Schnittstelle: COM1 Baud: 38400 Timeout: 1200

☑ Alle anzeigen

□ Autobaud

IP-Adresse: 192 . 168 . 123 . 241 Port: 8000 Timeout: 3000

□ Eingabe eines Hostnamens

□ Vor Verbindung, die Erreichbarkeit mit einem Ping prüfen.

Busnummer des ersten anzusprechenden Gerätes: 254

Anzahl der anzusprechenden Geräte: 1

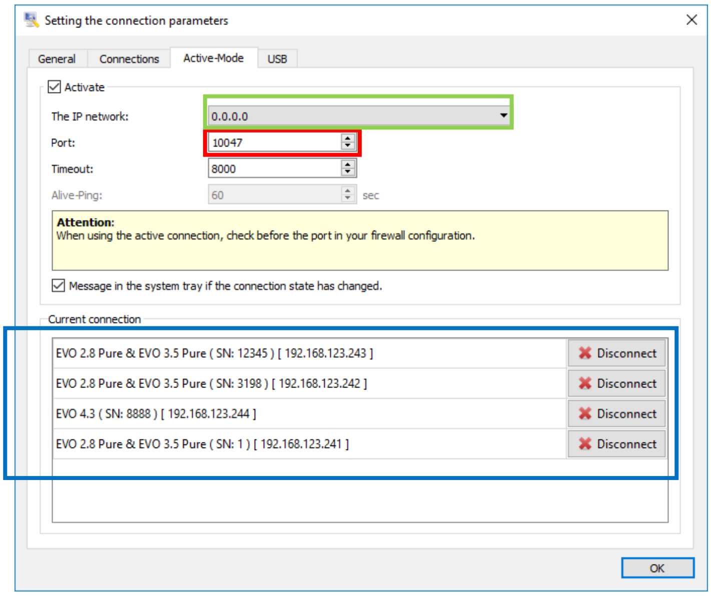
Hinweis:
Die Busnummer 254 wird für Einzelgeräte sowie Einzeldockingstationen V1 verwendet.

4.2.15.1. Active-Mode

If you have more than 1Network Card on your PC, then you can listen on one IP adress or with 0.0.0.0 listen on all IP-Adresses for incomming devices.

Coose the Port on witch incomming the devices
here in the example is listen on:
Port 10047

All conected devices can be seen in the window down.


Setting the connection parameters

☑ Activate

The IP network: 0.0.0.0

Port: 10047

Timeout: 8000

Alive-Ping: 60 sec

Attention:
When using the active connection, check before the port in your firewall configuration.

☑ Message in the system tray if the connection state has changed.

Current connection

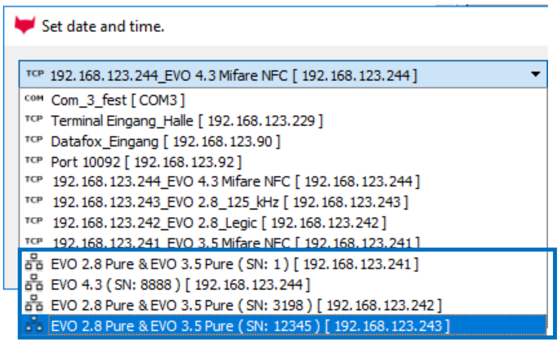
EVO 2.8 Pure & EVO 3.5 Pure (SN: 12345) [192.168.123.243] ✖ Disconnect

EVO 2.8 Pure & EVO 3.5 Pure (SN: 3198) [192.168.123.242] ✖ Disconnect

EVO 4.3 (SN: 8888) [192.168.123.244] ✖ Disconnect

EVO 2.8 Pure & EVO 3.5 Pure (SN: 1) [192.168.123.241] ✖ Disconnect

In the communication dropdown menu you can choose the device with witch you want to communicate.

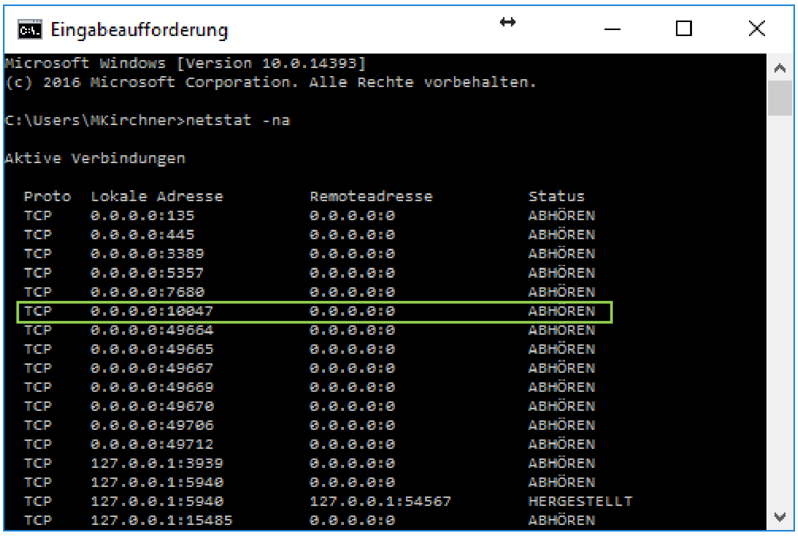

Set date and time.

TCP 192.168.123.244_EVO 4.3 Mifare NFC [192.168.123.244]

COM Com_3_fest [COM3]
TCP Terminal Eingang_Halle [192.168.123.229]
TCP Datafox_Eingang [192.168.123.90]
TCP Port 10092 [192.168.123.92]
TCP 192.168.123.244_EVO 4.3 Mifare NFC [192.168.123.244]
TCP 192.168.123.243_EVO 2.8_125_kHz [192.168.123.243]
TCP 192.168.123.242_EVO 2.8_Legic [192.168.123.242]
TCP 192.168.123.241_EVO 3.5 Mifare NFC [192.168.123.241]
EVO 2.8 Pure & EVO 3.5 Pure (SN: 1) [192.168.123.241]
EVO 4.3 (SN: 8888) [192.168.123.244]
EVO 2.8 Pure & EVO 3.5 Pure (SN: 3198) [192.168.123.242]
EVO 2.8 Pure & EVO 3.5 Pure (SN: 12345) [192.168.123.243]

Then you activate the “active mode”, the Port (here 10047) is opened to listen.

You can check this in the command mode:



```
Microsoft Windows [Version 10.0.14393]
(c) 2016 Microsoft Corporation. Alle Rechte vorbehalten.

C:\Users\MKirchner>netstat -na

Aktive Verbindungen

  Proto  Lokale Adresse         Remoteadresse          Status
  TCP    0.0.0.0:135            0.0.0.0:0              ABHÖREN
  TCP    0.0.0.0:445            0.0.0.0:0              ABHÖREN
  TCP    0.0.0.0:3389           0.0.0.0:0              ABHÖREN
  TCP    0.0.0.0:5357           0.0.0.0:0              ABHÖREN
  TCP    0.0.0.0:7680           0.0.0.0:0              ABHÖREN
  TCP    0.0.0.0:10047          0.0.0.0:0              ABHÖREN
  TCP    0.0.0.0:49664          0.0.0.0:0              ABHÖREN
  TCP    0.0.0.0:49665          0.0.0.0:0              ABHÖREN
  TCP    0.0.0.0:49667          0.0.0.0:0              ABHÖREN
  TCP    0.0.0.0:49669          0.0.0.0:0              ABHÖREN
  TCP    0.0.0.0:49670          0.0.0.0:0              ABHÖREN
  TCP    0.0.0.0:49706          0.0.0.0:0              ABHÖREN
  TCP    0.0.0.0:49712          0.0.0.0:0              ABHÖREN
  TCP    127.0.0.1:3939         0.0.0.0:0              ABHÖREN
  TCP    127.0.0.1:5940         0.0.0.0:0              ABHÖREN
  TCP    127.0.0.1:5940         127.0.0.1:54567        HERGESTELLT
  TCP    127.0.0.1:15485        0.0.0.0:0              ABHÖREN
```

☞

Note:
If you select the option "TCP/IP active connection", specify timeout and port. Confirm your entries with OK. With the confirmation (the dialog window is closed), the active connection on the PC is started. Now, a device can connect with the PC, provided that the device is configured for an active connection with the PC. Wait a few minutes before opening the dialog "Settings" again. Then, you can select the active channel and communicate with the device via this active channel.

The time the device needs to connect with the PC depends on the configuration of the active connection of the device. An influencing factor is the number of connection attempts and the timeout between these attempts.

Example:
A device tries connecting with a PC 3 times and then pauses for a minute. In the worst case, you must wait 1 minute before the active channel is shown in the Settings dialog window.

4.2.16. Encryption for communication with Datafox device

When using the Datafox communication DLL all data coming from the device or sent to the device may be transferred with an AES 128-bit encryption.

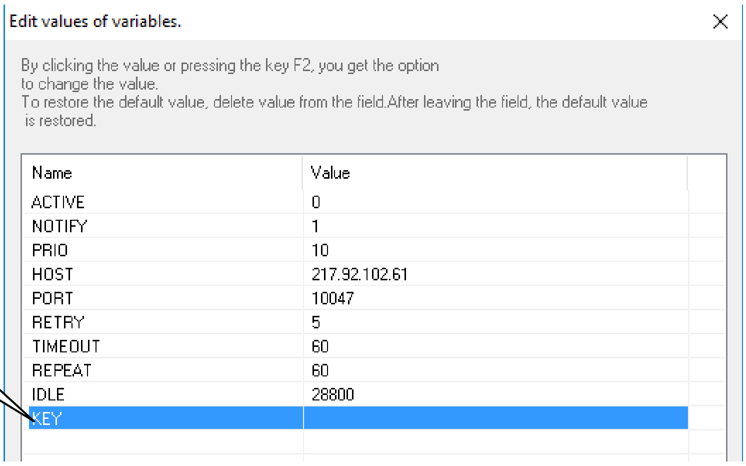
Thus, there are only 3 types of communication:

1. Unencrypted communication
2. Encrypt with Datafox-Key
3. Encrypt with user-Key

4.2.16.1. Create and save a communication key for the device

In the menu „Configuration“ -> “System variables active mode “open the configuration file to edit. For example: „active.ini“.

Click on the line “Key” to open a new window and to create a key.

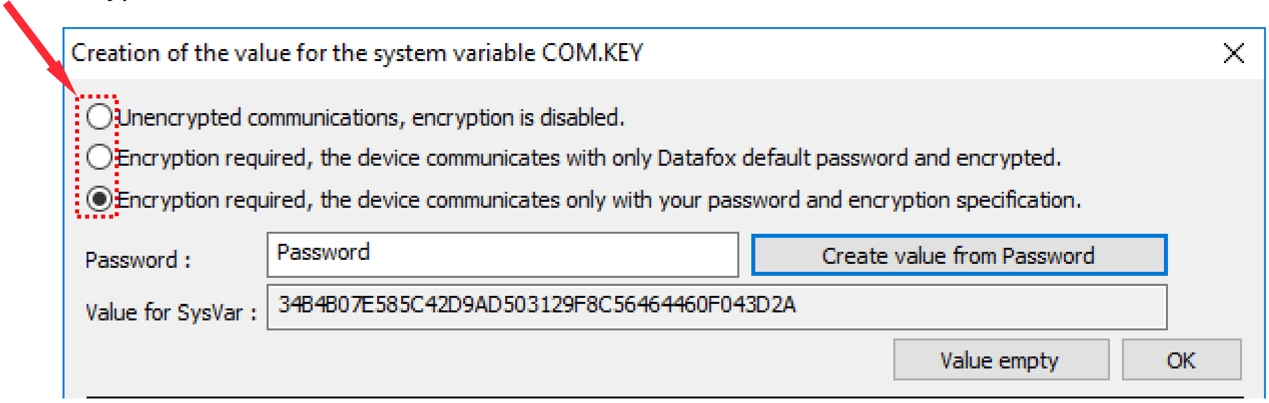


Edit values of variables.

By clicking the value or pressing the key F2, you get the option to change the value.
To restore the default value, delete value from the field.After leaving the field, the default value is restored.

Name	Value
ACTIVE	0
NOTIFY	1
PRIO	10
HOST	217.92.102.61
PORT	10047
RETRY	5
TIMEOUT	60
REPEAT	60
IDLE	28800
KEY	

Select the type of communication.



Creation of the value for the system variable COM.KEY

○ Unencrypted communications, encryption is disabled.
○ Encryption required, the device communicates with only Datafox default password and encrypted.
● Encryption required, the device communicates only with your password and encryption specification.

Password : Password

Value for SysVar : 34B4B07E585C42D9AD503129F8C56464460F043D2A

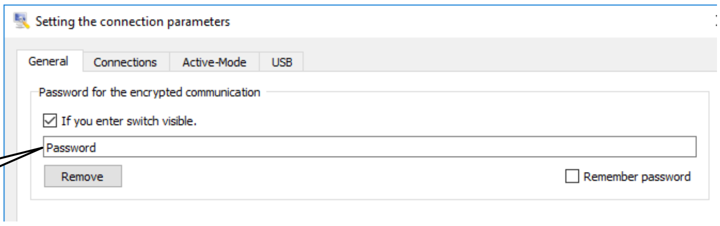
By clicking the button "Create value from password", a key for transfer is generated.

Click "OK" to take the key over.
Subsequently, you can save the settings and transfer them to the Datafox device.

4.2.16.2. Save the communication key in the StudioIV

Use a device a communication key, then need the DatafoxStudioIV the same key.
In the menu „Communication -> Settings“ can you edit the key for the Communication.

The password is using for all types of communication.



Setting the connection parameters

Password for the encrypted communication

☑ If you enter switch visible.

Password

□ Remember password

Enter your password here.

The plaintext input is only by the thirst input possible.
If you open the window new you see no the plaintext.

4.2.16.3. Transfer the communication key for DFComDLL

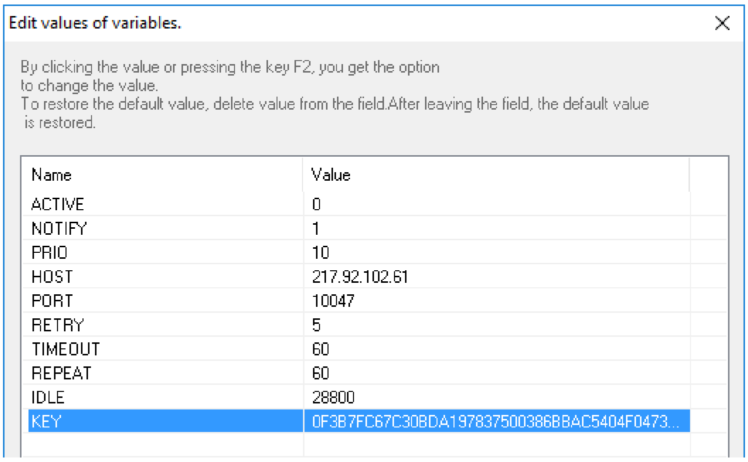
The key for the communication transferred to the DLL with the call “DFCSetCommunicatioPassword”. The key must be in plaintext (**123456**) and not the created key of the DatafoxStudioIV.

More information you find in the documentation of the DFComDLL.

4.2.16.4. Clear the communication key

If created a communication key and transferred to the device then clear this key as follows:

Click on “KEY” to edit.

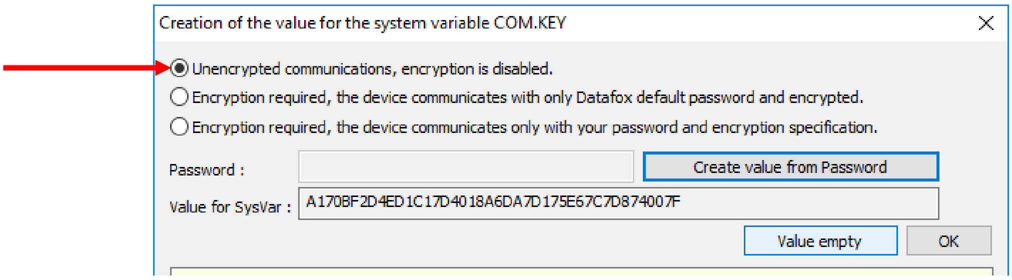


Edit values of variables.

By clicking the value or pressing the key F2, you get the option
to change the value.
To restore the default value, delete value from the field.After leaving the field, the default value
is restored.

Name	Value
ACTIVE	0
NOTIFY	1
PRIO	10
HOST	217.92.102.61
PORT	10047
RETRY	5
TIMEOUT	60
REPEAT	60
IDLE	28800
KEY	0F3B7FC67C30BDA197837500386BBAC5404F0473...

Switch to unencrypted communication.



Creation of the value for the system variable COM.KEY

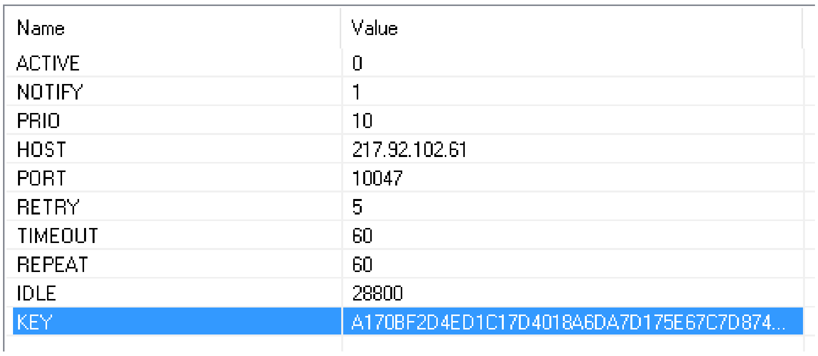
● Unencrypted communications, encryption is disabled.
○ Encryption required, the device communicates with only Datafox default password and encrypted.
○ Encryption required, the device communicates only with your password and encryption specification.

Password :

Value for SysVar : A170BF2D4ED1C17D4018A6DA7D175E67C7D874007F

Click on: “Value empty“.
Then click on: “Create value from Password“. The created Value from the empty Password is necessary to clear the old key in the device.

Save the file and transfer to the device.



Name	Value
ACTIVE	0
NOTIFY	1
PRIO	10
HOST	217.92.102.61
PORT	10047
RETRY	5
TIMEOUT	60
REPEAT	60
IDLE	28800
KEY	A170BF2D4ED1C17D4018A6DA7D175E67C7D874...

After this you can clear the created key from the .ini file.

4.3. Configuration

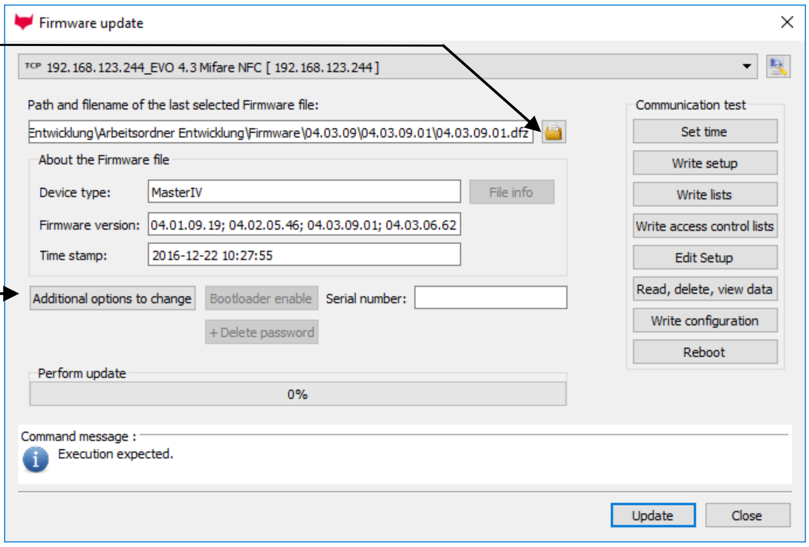
In this section, functions not involving a setup are described.

4.3.1. Transferring Firmware

The firmware is the operating system of the device. Sometimes it may be necessary to load a new firmware on the Datafox device. Reasons could be debugging, new functions of the firmware or compatibility. The latest firmware is available on our website at any time.

This is window opened via Menu – Configuration – Load Firmware or with click on the symbol .

Specify which firmware is to be loaded.
After selecting the proper file, the update is started by clicking the button "Update".



TCP 192.168.123.244_EVO 4.3 Mifare NFC [192.168.123.244]

Path and filename of the last selected Firmware file: Entwicklung\Arbeitsordner Entwicklung\Firmware\04.03.09\04.03.09.01\04.03.09.01.dfz

About the Firmware file

Device type: MasterIV

Firmware version: 04.01.09.19; 04.02.05.46; 04.03.09.01; 04.03.06.62

Time stamp: 2016-12-22 10:27:55

Serial number:

Perform update 0%

Command message :
Execution expected.

Before transferring the firmware, set the corresponding additional options. For more information see the next Abschnitt.

We recommend to work by the updates only with the -.dfz-files and not with some exist -.hex-files.

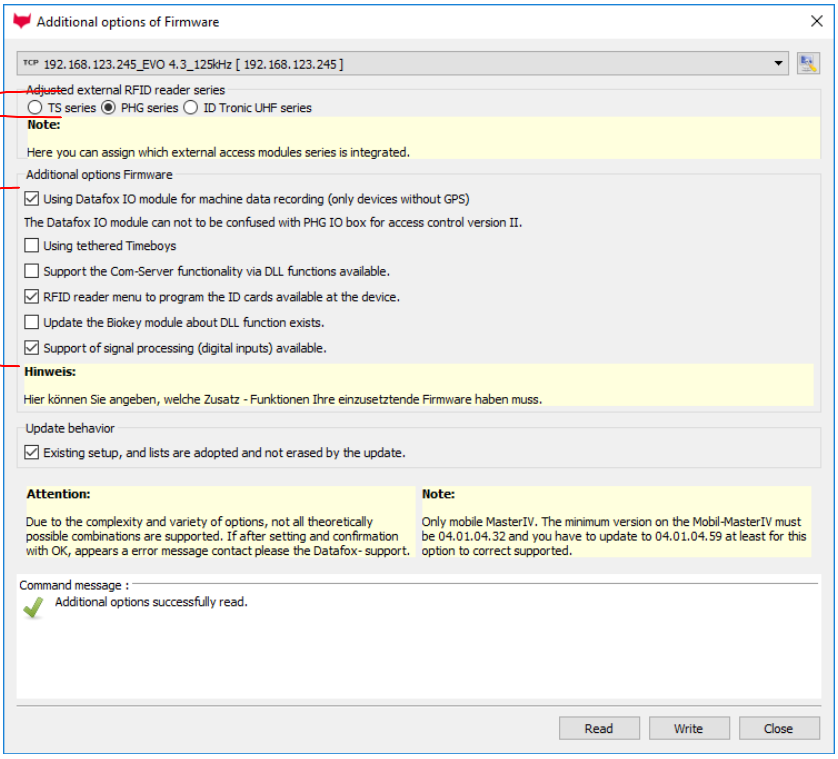
☞ **Note:**
Please observe the compatibility notes of the devices and the firmware in the respective manuals.

4.3.1.1. Changing Additional Options

Aufgrund der vielfältigen Möglichkeiten der Datafox-Geräte, ist es nicht möglich, alle Zusatzoptionen in einer Firmware einzubinden. Durch die zusätzliche Auswahl der Einstellungen wird vorgegeben, welche Firmware an das Gerät übertragen wird. Das Gerät sucht sich selbstständig aus dem Gerätedateiarchiv die passende Firmware aus und es wird eine automatische Kompatibilitätsprüfung durchgeführt.
Wird z.B. ein Wechsel der externen Leser vorgenommen, so muss dies in den Zusatzoptionen eingestellt werden und ein Firmwareupdate durchgeführt werden. Erst dann wird diese Leser auch von der Firmware unterstützt werden.

If external readers are used, specify the reader type here. Depending on the reader type, a corresponding firmware is selected from the archive.

Further additional options to be set for transferring a firmware dependent on this.



Additional options of Firmware

TCP 192.168.123.245_EVO 4.3_125kHz [192.168.123.245]

Adjusted external RFID reader series

○ TS series ● PHG series ○ ID Tronic UHF series

Note:

Here you can assign which external access modules series is integrated.

Additional options Firmware

☑ Using Datafox IO module for machine data recording (only devices without GPS)

The Datafox IO module can not to be confused with PHG IO box for access control version II.

□ Using tethered Timeboys

□ Support the Com-Server functionality via DLL functions available.

☑ RFID reader menu to program the ID cards available at the device.

□ Update the Biokey module about DLL function exists.

☑ Support of signal processing (digital inputs) available.

Hinweis:

Hier können Sie angeben, welche Zusatz - Funktionen Ihre einzusetztende Firmware haben muss.

Update behavior

☑ Existing setup, and lists are adopted and not erased by the update.

Attention:

Due to the complexity and variety of options, not all theoretically possible combinations are supported. If after setting and confirmation with OK, appears a error message contact please the Datafox- support.

Note:

Only mobile MasterIV. The minimum version on the Mobil-MasterIV must be 04.01.04.32 and you have to update to 04.01.04.59 at least for this option to correct supported.

Command message :

✓ Additional options successfully read.

☞ **Note:**
Before performing the firmware update, ensure that the additional options are properly set. In any case, all options which are not required should be deactivated.

If additional options are activated which are not mandatory, it may occur that no suitable firmware, which supports all activated options, is found in a DFZ archive.
.

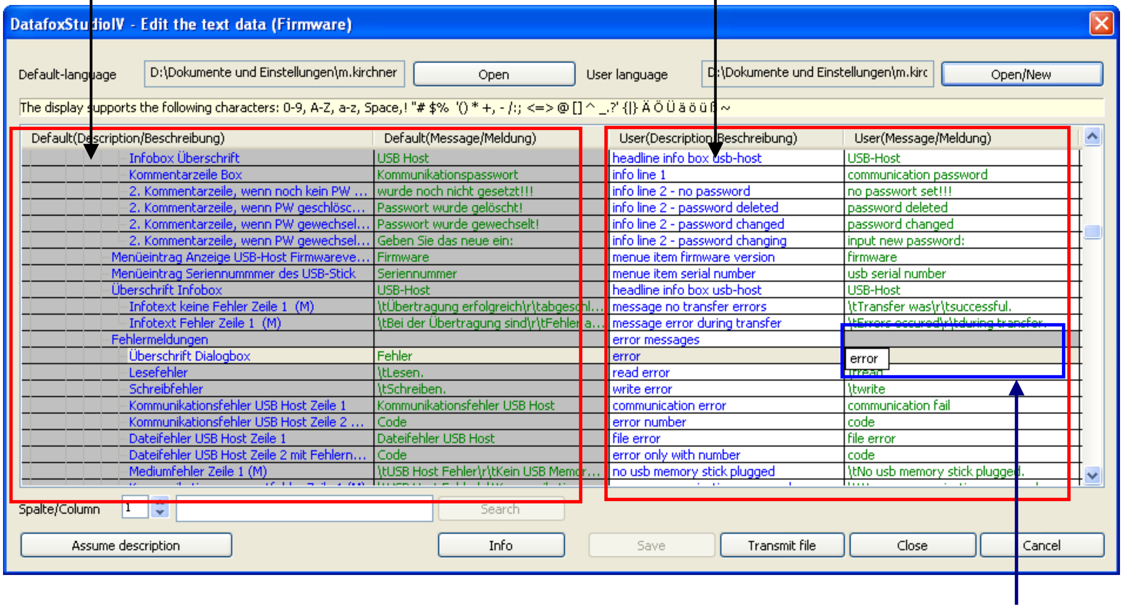
4.3.2. Language Table for Device, Device Texts

4.3.2.1. Editing File for Language Table

In order to ensure language compatibility, it is possible to edit the texts and messages displayed by the firmware.
Open the editing dialog via the menu
"Configuration – Language file for device (*.dfl) – Edit file for language table".

Open a device file archive (firmware)*.dfz. The default texts of the firmware with a description and the corresponding message are displayed.

Open or create a new language file for the firmware with the extension *.dfl. If you have created a new file, the right column of the list is empty.



Default-language D:\Dokumente und Einstellungen\m.kirchner

User language D:\Dokumente und Einstellungen\m.kirc

The display supports the following characters: 0-9, A-Z, a-z, Space,! "# $% '() * +, - /:; <=> @ [] ^ _.?' {|} Ä Ö Ü ä ö ü ß ~

Default(Description/Beschreibung)	Default(Message/Meldung)	User(Description/Beschreibung)	User(Message/Meldung)
Infobox Überschrift	USB Host	headline info box usb-host	USB-Host
Kommentarzeile Box	Kommunikationspasswort	info line 1	communication password
2. Kommentarzeile, wenn noch kein PW …	wurde noch nicht gesetzt!!!	info line 2 - no password	no passwort set!!!
2. Kommentarzeile, wenn PW geschlösc…	Passwort wurde gelöscht!	info line 2 - password deleted	password deleted
2. Kommentarzeile, wenn PW gewechsel…	Passwort wurde gewechselt!	info line 2 - password changed	password changed
2. Kommentarzeile, wenn PW gewechsel…	Geben Sie das neue ein:	info line 2 - password changing	input new password:
Menüeintrag Anzeige USB-Host Firmwareve…	Firmware	menue item firmware version	firmware
Menüeintrag Seriennummmer des USB-Stick	Seriennummer	menue item serial number	usb serial number
Überschrift Infobox	USB-Host	headline info box usb-host	USB-Host
Infotext keine Fehler Zeile 1 (M)	\tÜbertragung erfolgreich\r\tabgeschl…	message no transfer errors	\tTransfer was\r\tsuccessful.
Infotext Fehler Zeile 1 (M)	\tBei der Übertragung sind\r\tFehler a…	message error during transfer	\tErrors occured\r\tduring transfer.
Fehlermeldungen		error messages	
Überschrift Dialogbox	Fehler	error	error
Lesefehler	\tLesen.	read error	\tread
Schreibfehler	\tSchreiben.	write error	\twrite
Kommunikationsfehler USB Host Zeile 1	Kommunikationsfehler USB Host	communication error	communication fail
Kommunikationsfehler USB Host Zeile 2 …	Code	error number	code
Dateifehler USB Host Zeile 1	Dateifehler USB Host	file error	file error
Dateifehler USB Host Zeile 2 mit Fehlern…	Code	error only with number	code
Mediumfehler Zeile 1 (M)	\tUSB Host Fehler\r\tKein USB Memor…	no usb memory stick plugged	\tNo usb memory stick plugged.

Spalte/Column 1

Work within the lists with single mouse clicks only. NO double-clicks! Select a line from the list with a single click.

With another single click on the column User (Description/…) or User (Message/…) the cursor is displayed in this field.

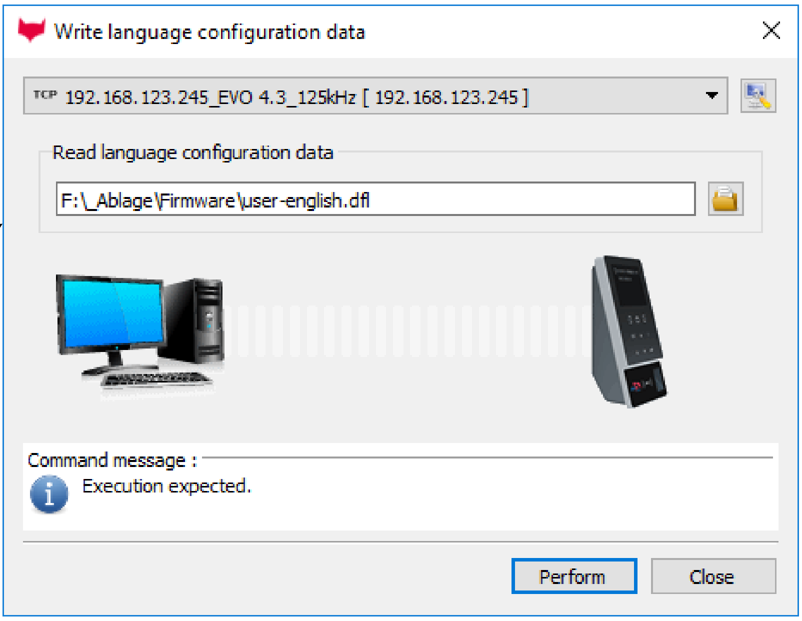
Now you can enter or edit the text. When you finish the entry, the description form the column Default (Description/…) is taken over and you can edit it as well.
You can find prepared .dfl-files on the Datafox DVD.

In order to transfer user text data, you first must save all changes. A full-text search for the list is available. Enter the text and choose the column you want to search for the text. By this way, you can edit texts quickly and efficiently.
DFL files can be found here:
< _Datafox DVD\MasterIV-Serie\Datafox Geräte\Datafox Software MasterIV-04.02.00_Release\Gerätedateiarchiv (Firmware)>

4.3.2.2. Transferring File for Language Table

Save the text data after editing.
Via the button "Transfer file" the text data is transferred to the connected device.
If an already edited DFL file is available, it can be transferred directly. Call the function via "Configuration – Language file for device (*.dfl) – Transfer file of language table". The following window opens.

Specify the location where the .dfl-file to be transferred is saved and click “Perform”.



TCP 192.168.123.245_EVO 4.3_125kHz [192.168.123.245]

Read language configuration data

F:_Ablage\Firmware\user-english.dfl

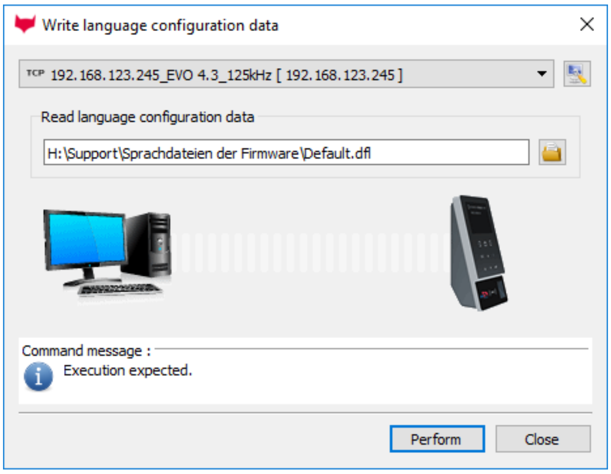
Command message :
Execution expected.

☞ **Note:**
Cyrillic and Chinese characters cannot be displayed.

Restoring Default Settings

If you want to restore the default settings for the language (German), there are 2 possibilities:

1. You transfer a DFL file with the respective German texts.
2. You transfer a default DFL (empty). In this case, the basic settings are restored.
   A Default.dfl can be found in each firmware DFZ file. Change the file extension from DFZ to ZIP and extract the file.



TCP 192.168.123.245_EVO 4.3_125kHz [192.168.123.245]

Read language configuration data

H:\Support\Sprachdateien der Firmware\Default.dfl

Command message :
Execution expected.

4.3.3. Color Selection for Devices with Color Display

4.3.3.1. Editing Color Data of Firmware

			Mobil	ZK	MDE					ZK-Box	Mobil-Box	EVO-PC
						☒						

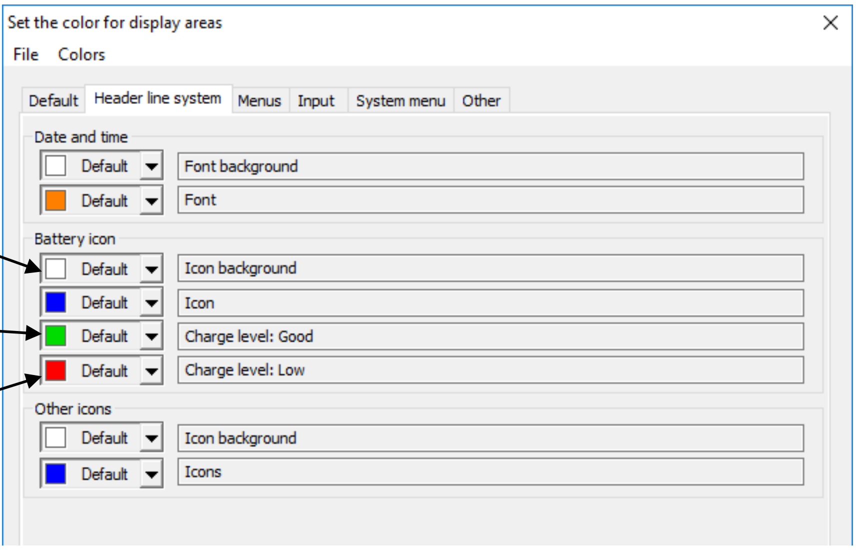
For color displays, the colors for background, fonts and symbols can be customized. This function is available via "Configuration – Color selection for devices with color display (*.dfc) – Edit file of color selection".

Via File you can open a DFC file or create a new one.

Selected color for the selection.

Set default color.

Valid area for displaying.



Set the color for display areas

Date and time

☐ Default ▾ Font background

🟧 Default ▾ Font

Battery icon

☐ Default ▾ Icon background

🟦 Default ▾ Icon

🟩 Default ▾ Charge level: Good

🟥 Default ▾ Charge level: Low

Other icons

☐ Default ▾ Icon background

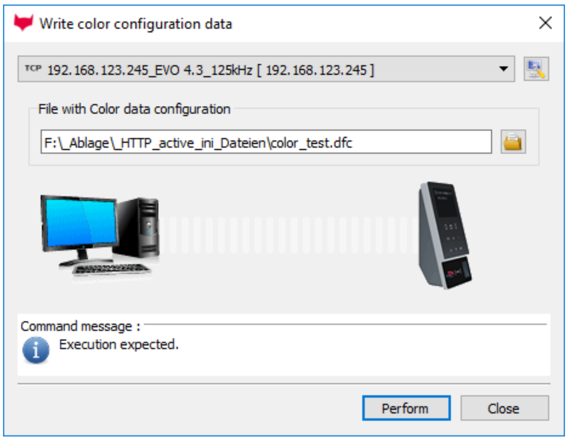
🟦 Default ▾ Icons

Create a new color scheme as DFC file for single areas of the display or load a color scheme from a DFC file for editing. Save all changes of the color scheme and close the dialog window.
If you have transferred a new color scheme to the device, it is retained after transferring a new setup.
Via "File" you can save the color scheme created and transfer it to the device.

4.3.3.2. Transferring Color Data of Firmware

This function is available via "Configuration – Color selection for devices with color display (*.dfc) – Transfer file of color selection".

Specify the location where the DFC file to be transferred is saved and click “Perform” to transfer the new color selection.



Write color configuration data

TCP 192.168.123.245_EVO 4.3_125kHz [192.168.123.245]

File with Color data configuration

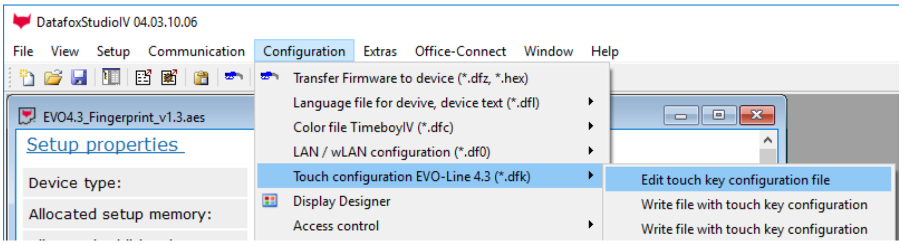
F:_Ablage_HTTP_active_ini_Dateien\color_test.dfc

Command message :

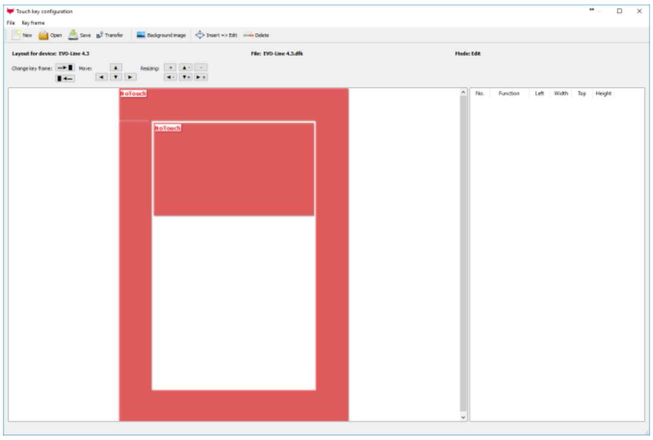
Execution expected.

4.3.4. Configuration of the touch

You access the menu via:


DatafoxStudioIV 04.03.10.06
File
View
Setup
Communication
Configuration
Extras
Office-Connect
Window
Help
EVO4.3_Fingerprint_v1.3.aes
Setup properties
Device type:
Allocated setup memory:
Transfer Firmware to device (*.dfz, *.hex)
Language file for devive, device text (*.dfl)
Color file TimeboyIV (*.dfc)
LAN / wLAN configuration (*.df0)
Touch configuration EVO-Line 4.3 (*.dfk)
Display Designer
Access control
Edit touch key configuration file
Write file with touch key configuration
Write file with touch key configuration

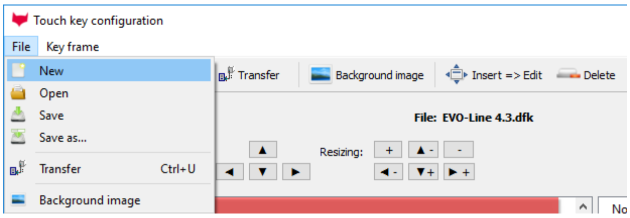
Via "File New", you can create a new touch configuration.



Layout for device: EVO-Line 4.3

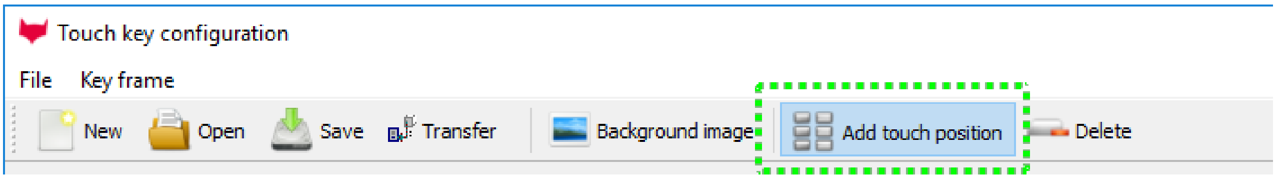
File: EVO-Line 4.3.dfk

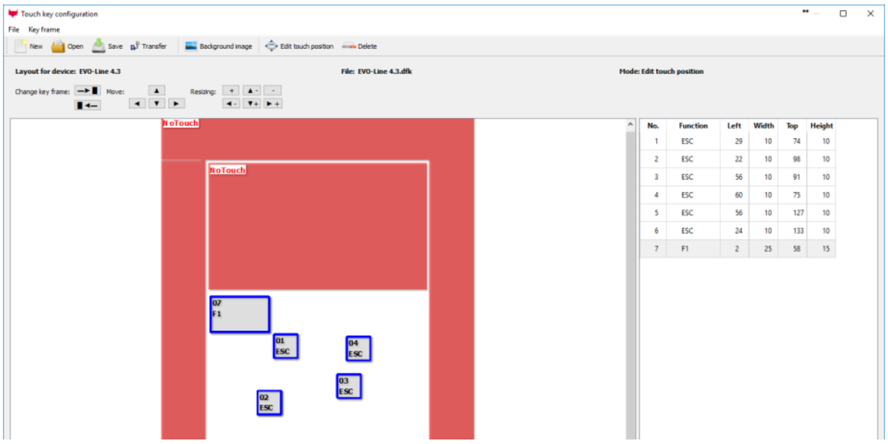
Mode: Edit



File: EVO-Line 4.3.dfk

Select "Add Touch Position" to create individual keys. With each click in the area that is allowed for keys, another key is added





Layout for device: EVO-Line 4.3

File: EVO-Line 4.3.dfk

Mode: Edit touch position

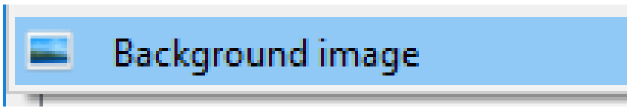
No.	Function	Left	Width	Top	Height
1	ESC	29	10	74	10
2	ESC	22	10	98	10
3	ESC	56	10	91	10
4	ESC	60	10	75	10
5	ESC	56	10	127	10
6	ESC	24	10	133	10
7	F1	2	25	58	15

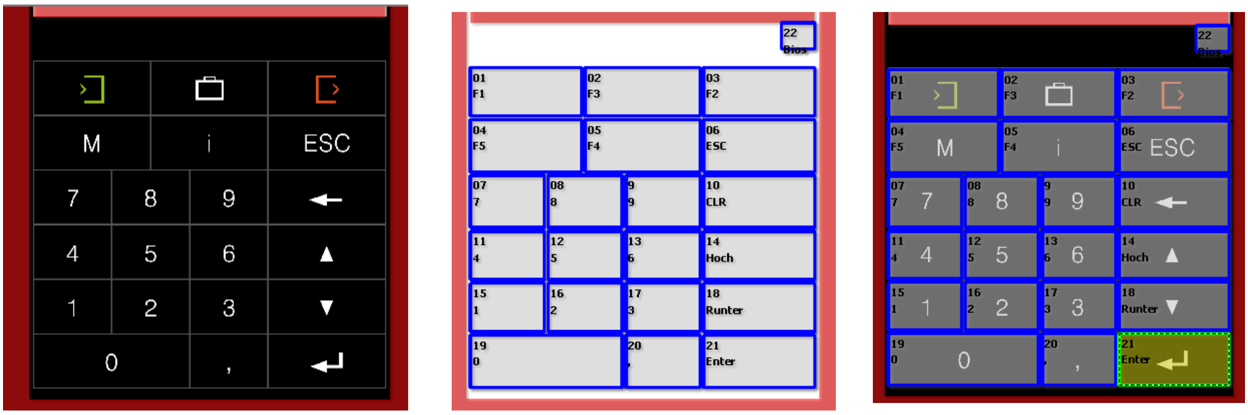
Note:

The size and position of the keys can be perfectly aligned based on the position in the table.

4.3.4.1. Key-picture adn key pad

To ensure that the keyboard layout matches the configuration of the touch screen exactly, you can display the print image.



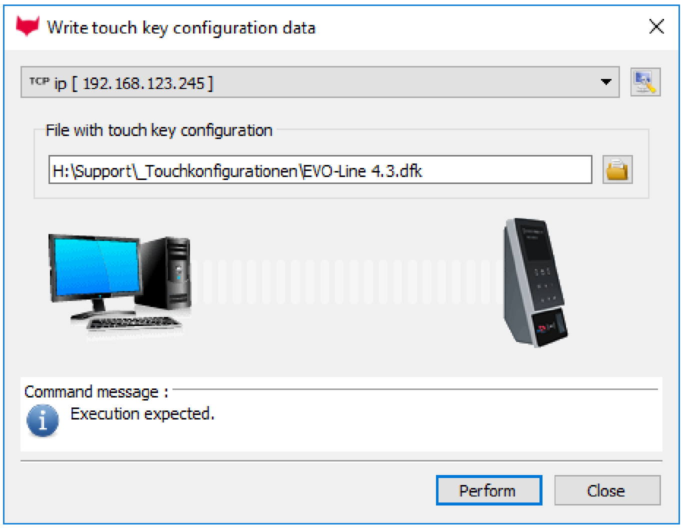


Note:
The background image must be in JPEG format with the dimensions 133,4mm X 194,4mm and a resolution of 300dpi.

Note:
Various pictures and preconfigurations can be found on the product DVD and on our homepage.

4.3.4.2. Transfer the touchconfiguration

The created configuration for the touch screen is saved in a ". dfk" file. You can enter these here and transfer them to the terminal.


Write touch key configuration data

TCP ip [192.168.123.245]

File with touch key configuration

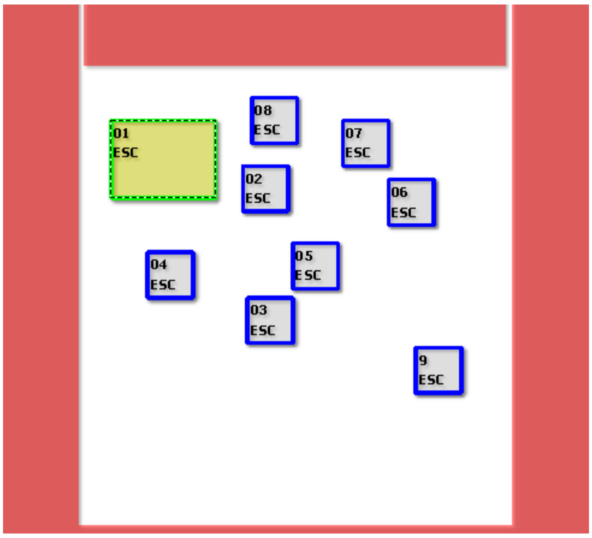
H:\Support_Touchkonfigurationen\EVO-Line 4.3.dfk

Command message :

Execution expected.

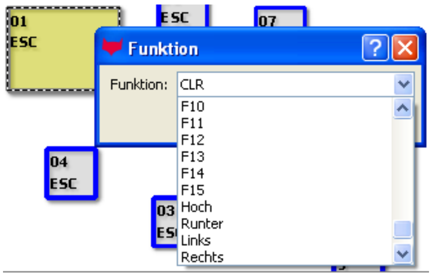
4.3.4.3. Create an cange the keys

Change / define function:



Mark the key to be edited with a click.
It then changes colour.

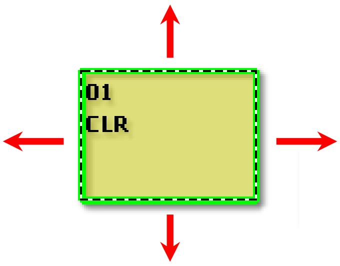
With a right click on the button, you can select the function of the button.


Funktion

Funktion: CLR

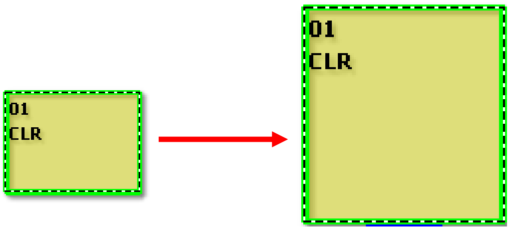
Move key:

Move,
you can press the key with the
Arrow keys on your keyboard.
← → ↑ ↓



change the key size:

larger sideways:	Shift+arrow right (→)
greater height:	Shift+arrow down (↓)
larger than two pages: plus button (+)	
smaller sideways:	Shift+arrow left (←)
small height:	Shift+arrow up (↑)
small two pages:	minus key (-)

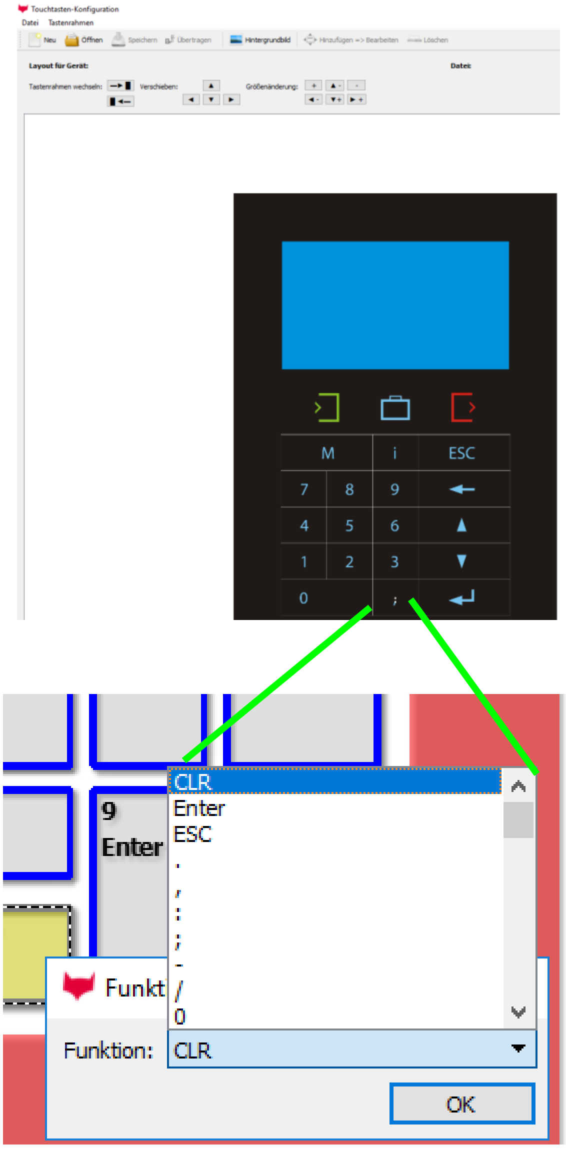


4.3.4.4. Available character set in the touch field

The availability of the characters for the touch layout has been extended:

:
;
-
/
“
%
(
)
*
+
<
>
_

and letters A-Z



This means that special characters and letters can also be entered with the touch screen.

4.3.5. Displaydesigner

scope of application:

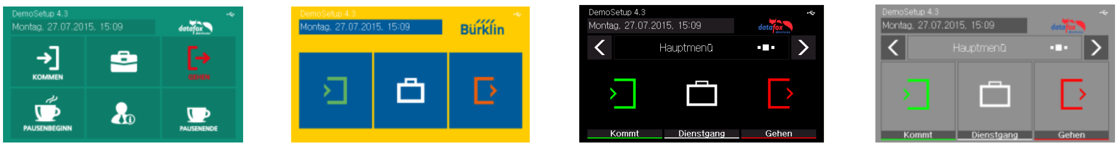
V4	V4	V4		EVO 2.8 / 3.5			ZK / IO Box V4	Mobil-Box V4	Docking V2	FDL V2	EVO-IPC	ZK-Plus	ZK-Knoten
☒	☒	☒	☒	☒								☒	

For the devices AE-MasterIV V4, PZE-MasterIV V4 and PZE-MasterIV Basic V4 is the Designer only usable for color display.

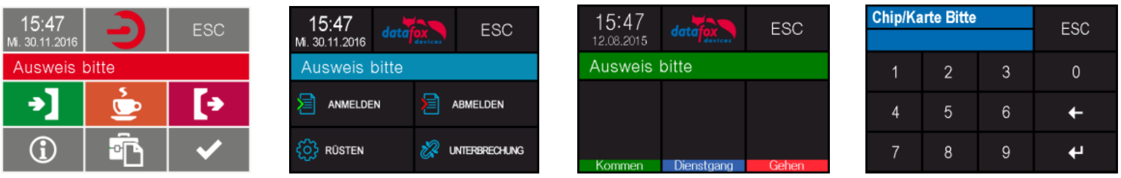
With the Display-Designer, Datafox offers the possibility for partners and users to customize the display according to your requirements. But due to the necessary operating sequences, this cannot be a completely free design, but things like headlines, menu structures and footers have to be guaranteed. The aim of the display designer is to enable the feasible settings with minimal effort.
Wir freuen uns auf viele Anwender und empfehlen:

Create an individual Display-Design for your Company:

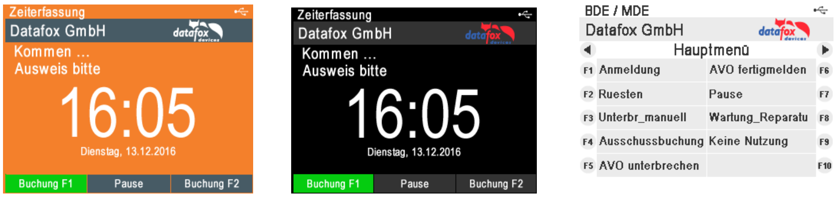
Example picture for EVO 4.3



Example picture for EVO 2.8 / 3.5

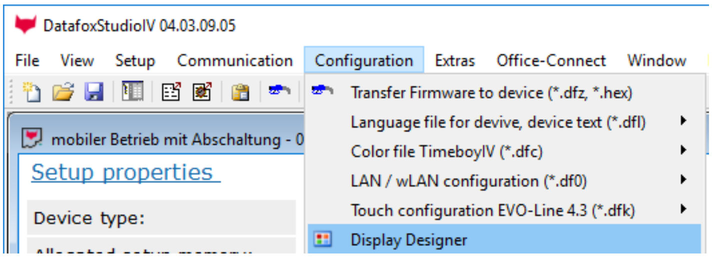


Example picture for PZE-/ AE- Master V4 with color display

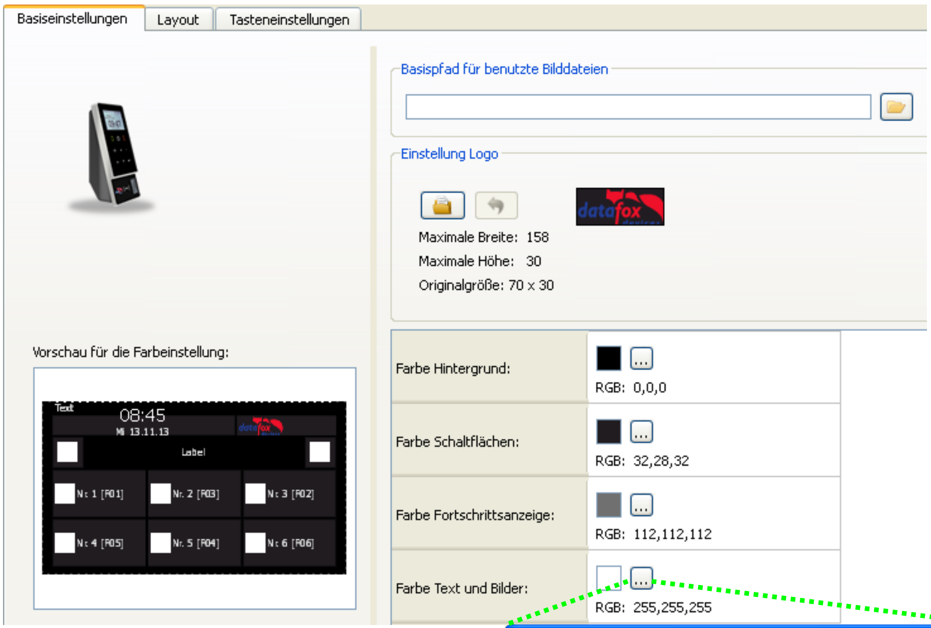


To create an individual ad for your device, you need at least that DatafoxStudioIV 04.03.09.05.

The display designer can be open via the Configuration menu or directly from the setup edit mask.


DatafoxStudioIV 04.03.09.05
File
View
Setup
Communication
Configuration
Extras
Office-Connect
Window
mobiler Betrieb mit Abschaltung - 0
Setup properties
Device type:
Transfer Firmware to device (*.dfz, *.hex)
Language file for devive, device text (*.dfl)
Color file TimeboyIV (*.dfc)
LAN / wLAN configuration (*.df0)
Touch configuration EVO-Line 4.3 (*.dfk)
Display Designer

4.3.5.1. Color Setting for the Display

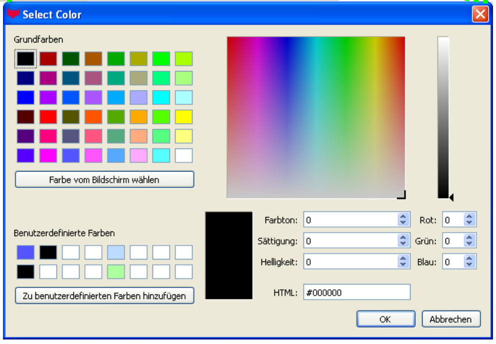


Basispfad für benutzte Bilddateien

Einstellung Logo

Maximale Breite: 158
Maximale Höhe: 30
Originalgröße: 70 x 30

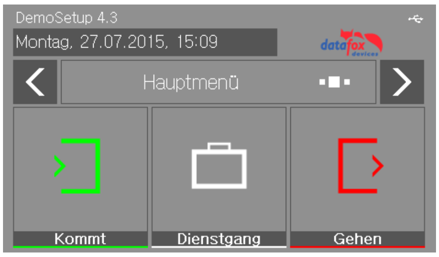
Farbe Hintergrund:	RGB: 0,0,0
Farbe Schaltflächen:	RGB: 32,28,32
Farbe Fortschrittsanzeige:	RGB: 112,112,112
Farbe Text und Bilder:	RGB: 255,255,255



Select Color
Grundfarben
Farbe vom Bildschirm wählen
Benutzerdefinierte Farben
Zu benutzerdefinierten Farben hinzufügen
OK
Abbrechen

Farbton: 0
Sättigung: 0
Helligkeit: 0
Rot: 0
Grün: 0
Blau: 0
HTML: #000000

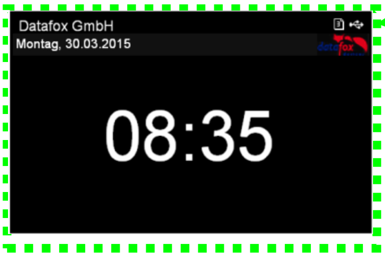
Example Picture:

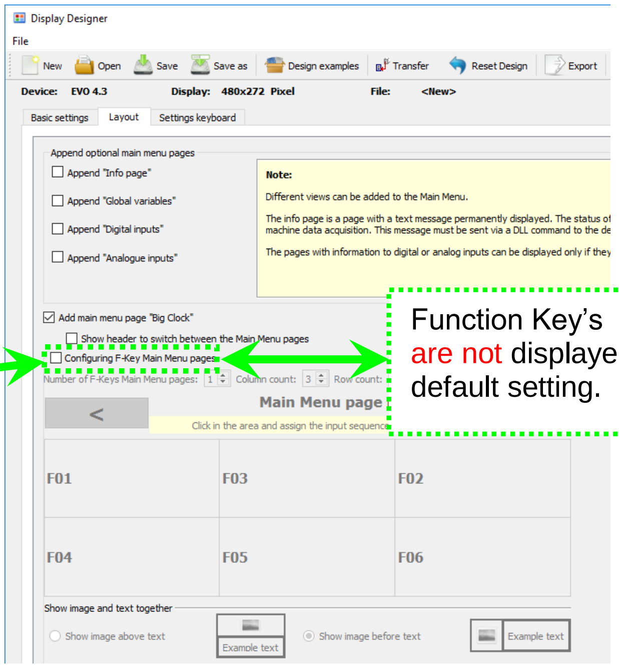


4.3.5.2. Default Setting

The device is delivery in the default „PZE“-design.

This design is also set as default when you first create a new theme in Display Designer.





Device: EVO 4.3 Display: 480x272 Pixel File: <New>

Append optional main menu pages

☐ Append "Info page"

☐ Append "Global variables"

☐ Append "Digital inputs"

☐ Append "Analogue inputs"

Note:

Different views can be added to the Main Menu.

The info page is a page with a text message permanently displayed. The status of machine data acquisition. This message must be sent via a DLL command to the de

The pages with information to digital or analog inputs can be displayed only if they

☑ Add main menu page "Big Clock"

☐ Show header to switch between the Main Menu pages

☐ Configuring F-Key Main Menu pages

Number of F-Keys Main Menu pages: 1 Column count: 3 Row count:

Click in the area and assign the input sequence

Show image and text together

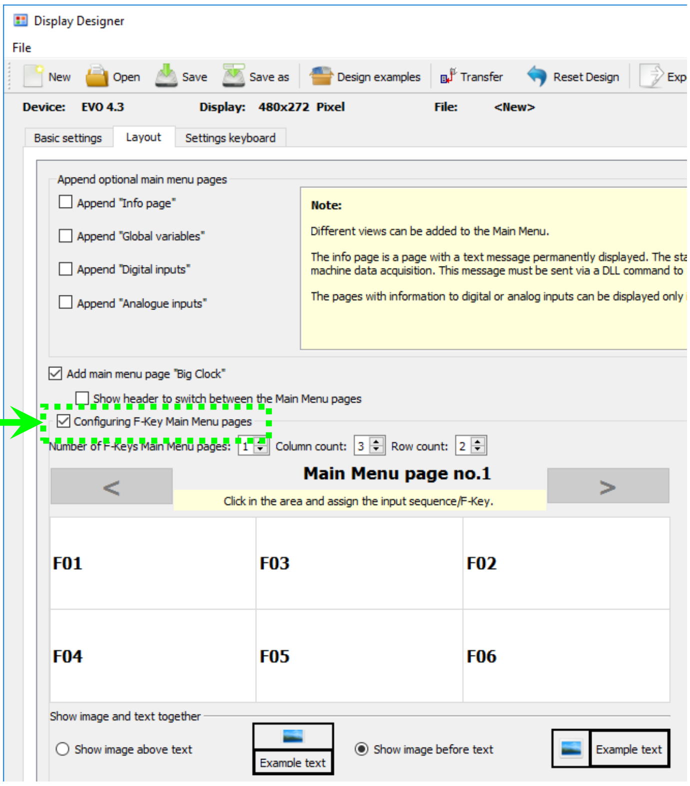
○ Show image above text

○ Show image before text

Function Key’s are not displayed in the default setting.

4.3.5.3. Display function buttons on the EVO 4.3 / 2.8 display

By showing the function buttons from the setup, the number of buttons displayed in the display can be adjusted.



Display Designer

File

New | Open | Save | Save as | Design examples | Transfer | Reset Design | Exp

Device: EVO 4.3 **Display:** 480x272 Pixel **File:** <New>

Basic settings | Layout | Settings keyboard

Append optional main menu pages

□ Append "Info page"

□ Append "Global variables"

□ Append "Digital inputs"

□ Append "Analogue inputs"

Note:

Different views can be added to the Main Menu.

The info page is a page with a text message permanently displayed. The sta
machine data acquisition. This message must be sent via a DLL command to

The pages with information to digital or analog inputs can be displayed only

☑ Add main menu page "Big Clock"

□ Show header to switch between the Main Menu pages

☑ Configuring F-Key Main Menu pages

Number of F-Keys Main Menu pages: 1 Column count: 3 Row count: 2

Main Menu page no.1

Click in the area and assign the input sequence/F-Key.

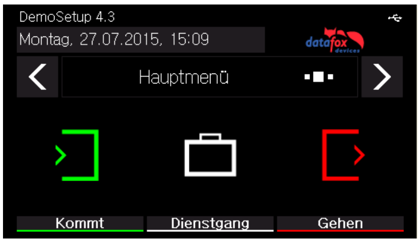
F01	F03	F02
F04	F05	F06

Show image and text together

○ Show image above text — Example text

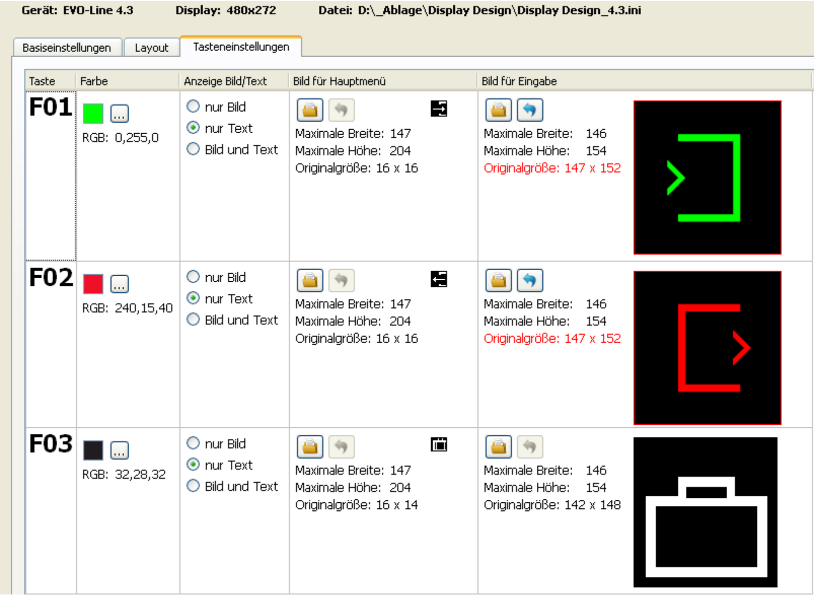
● Show image before text — Example text

Example:



4.3.5.4. Upload images for function buttons of EVO 4.3 / 2.8

Under this menu item "Key settings" you can import the image file for each function key.

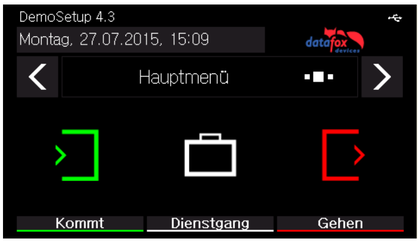


Gerät: EVO-Line 4.3 **Display:** 480x272 **Datei:** D:_Ablage\Display Design\Display Design_4.3.ini

Basiseinstellungen | Layout | Tasteneinstellungen

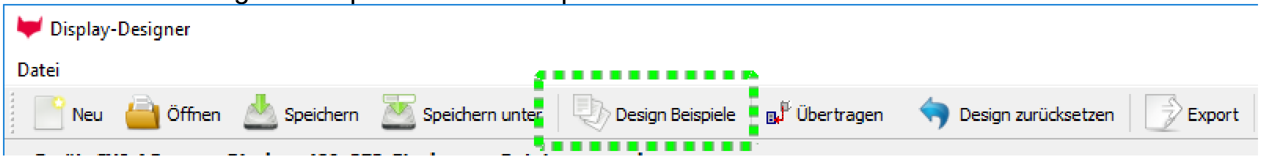
Taste	Farbe	Anzeige Bild/Text	Bild für Hauptmenü	Bild für Eingabe
F01	🟩 ... RGB: 0,255,0	○ nur Bild ● nur Text ○ Bild und Text	Maximale Breite: 147 Maximale Höhe: 204 Originalgröße: 16 x 16	Maximale Breite: 146 Maximale Höhe: 154 Originalgröße: 147 x 152
F02	🟥 ... RGB: 240,15,40	○ nur Bild ● nur Text ○ Bild und Text	Maximale Breite: 147 Maximale Höhe: 204 Originalgröße: 16 x 16	Maximale Breite: 146 Maximale Höhe: 154 Originalgröße: 147 x 152
F03	■ ... RGB: 32,28,32	○ nur Bild ● nur Text ○ Bild und Text	Maximale Breite: 147 Maximale Höhe: 204 Originalgröße: 16 x 14	Maximale Breite: 146 Maximale Höhe: 154 Originalgröße: 142 x 148

Sample picture for the key figures:

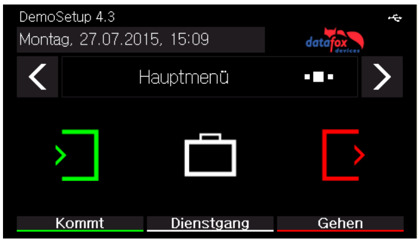


4.3.5.5. Design examples in the designer

With the installation of the DatafoxStudioIV you get several design examples for the devices. Click on the "Design Examples" button to open them.

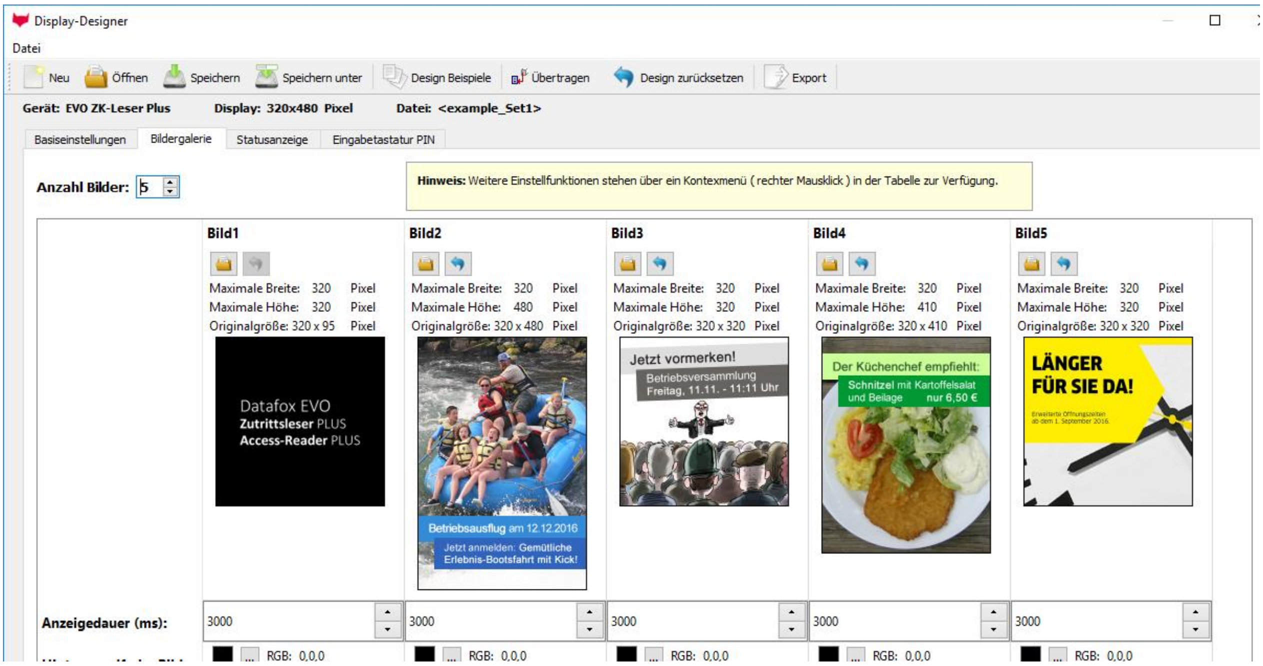


Datafox gradually extends the examples.
If you have any suggestions or wishes, please let us know.



4.3.5.6. Individuelle Bildergalerie für EVO-ZK-plus Leser.

Der Datafox ZK-Plus Leser ist nicht nur in der Lage, ZK-Funktionen zu erfüllen, sondern er kann auch mit der Bildergalerie Infos weitergeben.
Das kann z.B. der nächste Betriebsausflug sein, allgemeine MA-Infos oder eben eine Vorstellung Ihres Unternehmens.


Display-Designer
Datei
Neu
Öffnen
Speichern
Speichern unter
Design Beispiele
Übertragen
Design zurücksetzen
Export
Basiseinstellungen
Bildergalerie
Statusanzeige
Eingabetastatur PIN
Datafox EVO
Zutrittsleser PLUS
Access-Reader PLUS
Betriebsausflug am 12.12.2016
Jetzt anmelden: Gemütliche Erlebnis-Bootsfahrt mit Kick!
Jetzt vormerken!
Betriebsversammlung Freitag, 11.11. - 11:11 Uhr
Der Küchenchef empfiehlt:
Schnitzel mit Kartoffelsalat und Beilage nur 6,50 €
LÄNGER FÜR SIE DA!
Erweiterte Öffnungszeiten ab dem 1. September 2016.

Gerät: EVO ZK-Leser Plus Display: 320x480 Pixel Datei: <example_Set1>

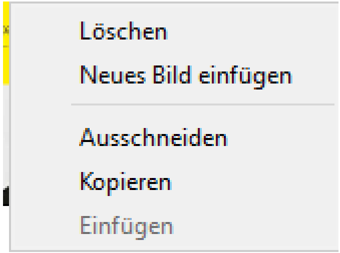
Anzahl Bilder: 5

Hinweis: Weitere Einstellfunktionen stehen über ein Kontexmenü (rechter Mausklick) in der Tabelle zur Verfügung.

	Bild1	Bild2	Bild3	Bild4	Bild5
	Maximale Breite: 320 Pixel Maximale Höhe: 320 Pixel Originalgröße: 320 x 95 Pixel	Maximale Breite: 320 Pixel Maximale Höhe: 480 Pixel Originalgröße: 320 x 480 Pixel	Maximale Breite: 320 Pixel Maximale Höhe: 320 Pixel Originalgröße: 320 x 320 Pixel	Maximale Breite: 320 Pixel Maximale Höhe: 410 Pixel Originalgröße: 320 x 410 Pixel	Maximale Breite: 320 Pixel Maximale Höhe: 320 Pixel Originalgröße: 320 x 320 Pixel
Anzeigedauer (ms):	3000	3000	3000	3000	3000
	■ ... RGB: 0,0,0	■ ... RGB: 0,0,0	■ ... RGB: 0,0,0	■ ... RGB: 0,0,0	■ ... RGB: 0,0,0

Hierbei können Sie für jedes Bild Vorder-und Hintergrundfarben einstellen sowie die Anzeigezeit.

Rechter Mausklick über dem jeweiligen Bild ermöglicht leichtes Ändern der Konfiguration.



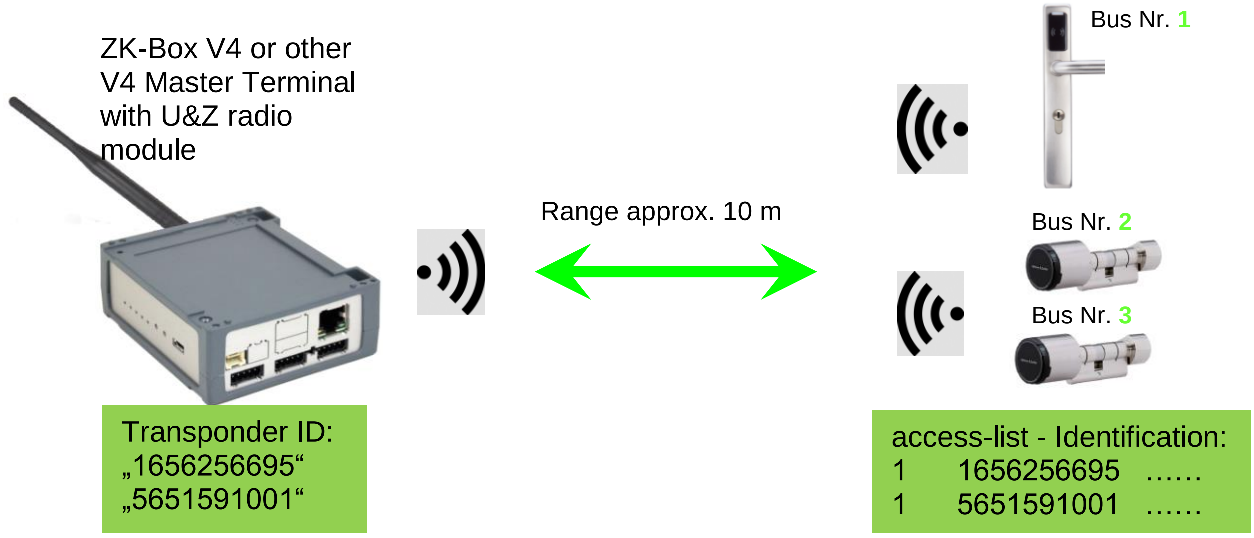
4.3.6. Funkcionfor access control U&Z (locking cylinders)

4.3.6.1. Design example

The radio locking cylinders are set up and integrated via the standard Datafox access control system. The PHG crypt protocol is used. All data is thus securely encrypted.

Functionality:
The electronic locking systems read an RFID chip / card and transmit the read information to Datafox access control. The Datafox access control then decides on the basis of the access logic whether the door is opened or not.

Design example with integrated radio module in the ZK-Box V4.



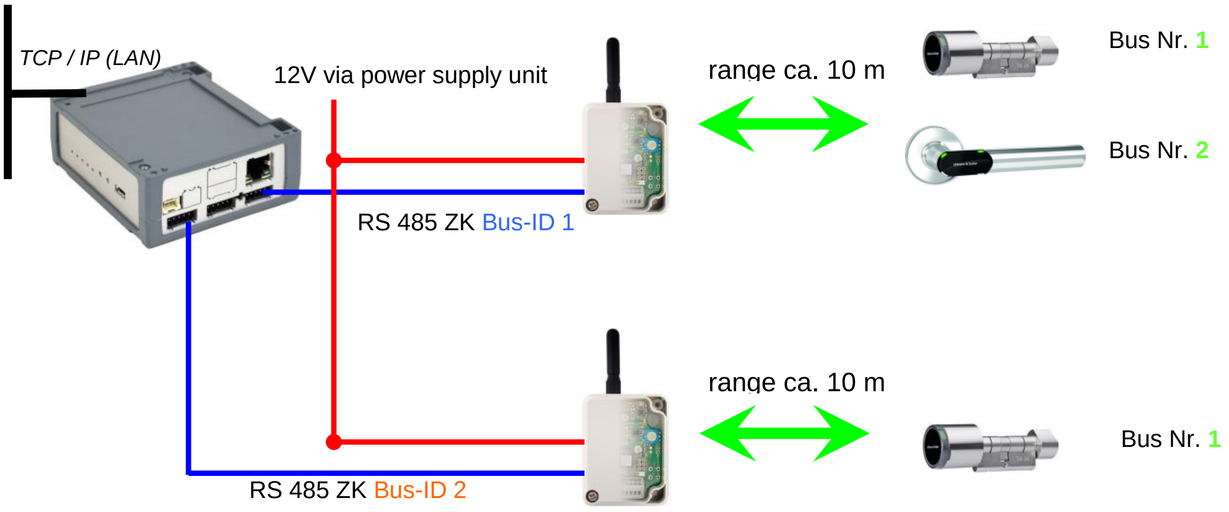
Entsprechende Reader Tabelle, Beispiel:

ID	ZM / Bus-ID	TM (Busadresse)	RefLocation	RefAction	PinGeneral	Description-text
1	1	010	1	1	0	Reader - RS485 module slot 1 = Bus ID 1
2	1	020	2	2	0	Reader - RS485 module slot 3 = Bus ID 1
3	1	030	3	3	0	Reader - RS485 module slot 7 = Bus ID 2

☞ **Note:**
The transponders are read by the cylinder and the ID is transferred to the ZK-Box. It then decides whether the ID access is granted and sends a corresponding signal to the cylinder.

☞ **Note:**
Only one radio lock cylinder can be used at a time!
From booking to termination of the radio connection we need approx. 2 seconds for a rejection. With an opening approx. 1 second.
If ID cards are held on two or more doors at exactly the same time, the first locking cylinder has the connection with the FSM for approx. 2 seconds. If a radio lock cylinder does not receive a radio connection after 1 second, it performs an offline check. If no ID cards have been deposited, they will no longer respond to the ID card. The badge is then stored in the reader and the system no longer reacts to this badge (repeat posting block) until another badge is available.

Construction example ZK-Box V4 with two external radio modules.

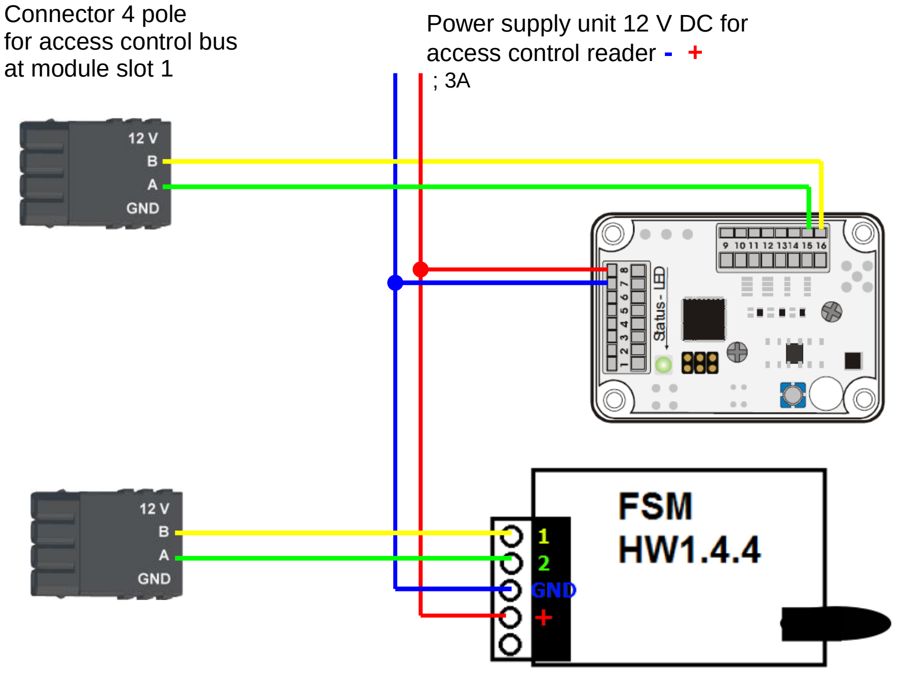


Corresponding reader table, example:

ID	ZM / Bus-ID	TM (Bus-address)	RefLocation	RefAction	PinGeneral	Description-text
1	1	010	1	1	0	reader RS485 module slot 1 = Bus ID 1
2	1	020	2	2	0	Reader RS485 module slot 3 = Bus ID 1
3	2	010	3	3	0	reader RS485 module slot 7 = Bus ID 2
4	1	320	0	1	0	ZK-Box V4 (Master-device)

Wiring diagram for one of the 1 bus connections with EVO reader:

(in this case, the same structure applies per access control string or ZM / Bus-ID)



FSM HW 1.3.1

Nr.	function
15	A – RS 485
16	B – RS 485
operating voltage	
8	12- 20 V + / ~
7	0 V - / ~

Nr.	function
1	B – RS 485
2	A – RS 485
operating voltage	
GND	0 V + / ~
VCC	12- 20 V - / ~

4.3.6.2. First start with locking cylinders

The scope of delivery always includes a service card.
To install the cylinders, you also need a disassembly card.
These have not yet been created in their as-delivered state.

Hold the service key in front of the knob module. (A)
An optical/acoustic signal indicates that the
programming mode is active (possibly before this step, the wake-up function of the knob module may required by turning it)

Teaching:
1) the first card that is held = battery exchange card
2) the second card becomes the = disassembly card

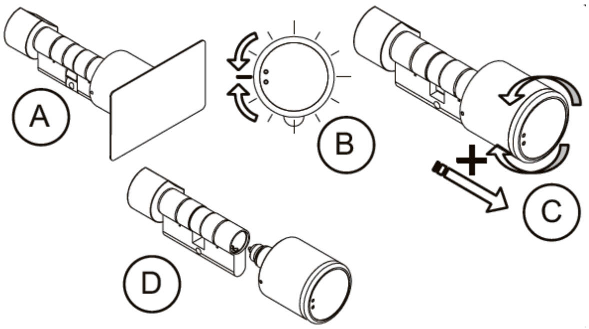
4.3.6.3. Montage und Demontage der Zylinder

1) Hold the disassembly card in front of the knob module (A)
(possibly the knob module may need to be woken up by turning the knob before this step).

2) Knob module enters disassembly mode.

3) Turn the knob module until the emergency power contacts are in the 9 o' clock position.(B)

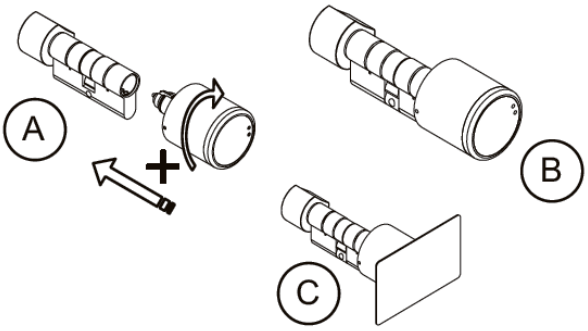
4) Remove the knob by slightly turning it back and forth and pulling it lightly at the same time.(C+D)



1) Carry out steps 1 and 2 as described in the point above (not necessary if the knob module is still in disassembly mode).

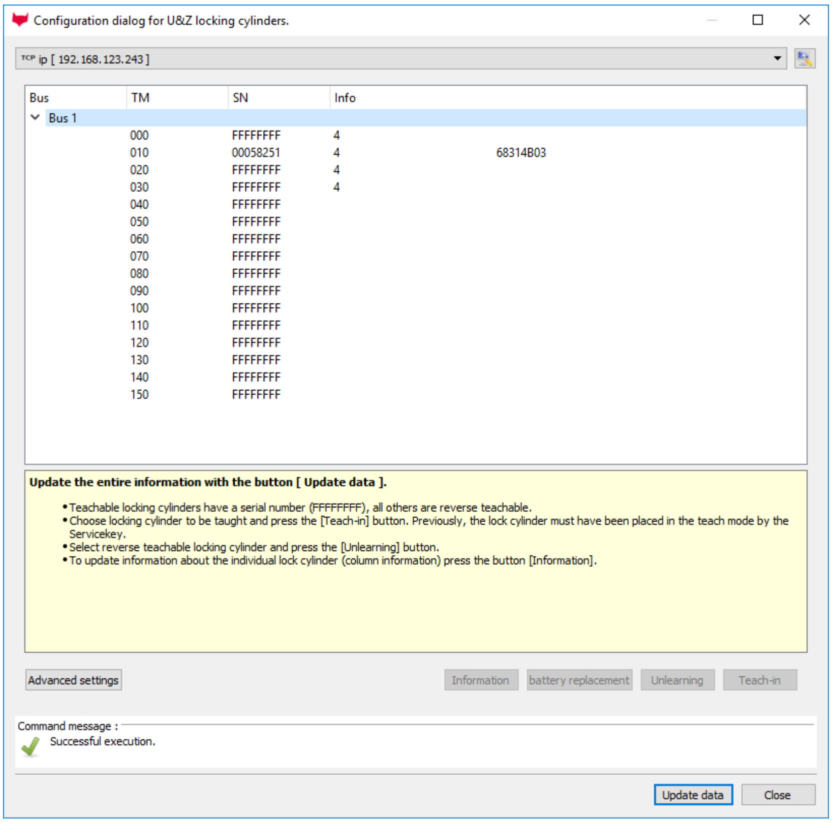
2nd) The knob module is mounted in the cylinder housing by inserting and simultaneously rotating it.(A+B)

3) To reset the disassembly mode, hold the disassembly card or an authorised transponder in front of the knob module.(C)



4.3.6.4. Set up the wireless network for cylinder

For setup, DatafoxStudioIV can be used in conjunction with the service key card. To do this, select "Configuration->Access control->Configure U&Z locking cylinder" in DatafoxStudioIV. With "Update data" the current configuration is read from the FSM.



Configuration dialog for U&Z locking cylinders.

TCP ip [192.168.123.243]

Bus	TM	SN	Info	
Bus 1				
	000	FFFFFFFF	4	
	010	00058251	4	68314B03
	020	FFFFFFFF	4	
	030	FFFFFFFF	4	
	040	FFFFFFFF		
	050	FFFFFFFF		
	060	FFFFFFFF		
	070	FFFFFFFF		
	080	FFFFFFFF		
	090	FFFFFFFF		
	100	FFFFFFFF		
	110	FFFFFFFF		
	120	FFFFFFFF		
	130	FFFFFFFF		
	140	FFFFFFFF		
	150	FFFFFFFF		

Update the entire information with the button [Update data].

- Teachable locking cylinders have a serial number (FFFFFFFF), all others are reverse teachable.
- Choose locking cylinder to be taught and press the [Teach-in] button. Previously, the lock cylinder must have been placed in the teach mode by the Servicekey.
- Select reverse teachable locking cylinder and press the [Unlearning] button.
- To update information about the individual lock cylinder (column information) press the button [Information].

Command message :
✓ Successful execution.

Steps of teaching-in the cylinders:

1. hold service key to cylinder

(Service = 20 seconds active (activate cylinder by turning it briefly!))

2. Refresh data in DatafoxStudioIV!

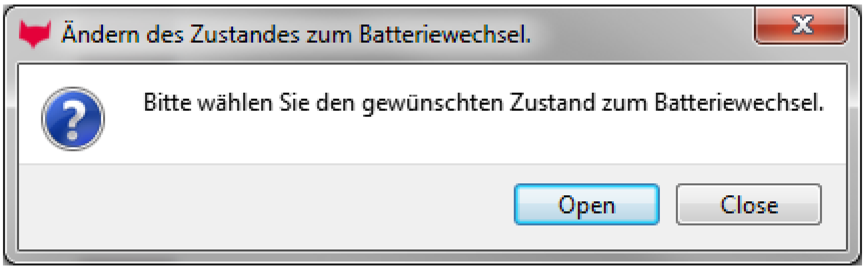
Free addresses are displayed with FFFFFFFFFF, the serial number of the radio lock cylinder and the status of the modules are displayed for the assigned addresses, as in the dialogue Status of the access modules.

The "Configuration dialog for U&Z locking cylinders" dialog allows different things to be done.

Advanced settings:

- Setting the ZK-Master ID for the device
- KnobActiveTime: Time that the cylinder tries to reach the FSM after activation until it goes back to standby.
- Update information on individual locking cylinders (column "Info")
- Changing the battery puts the radio lock cylinder into a mode that allows the cover to be removed and the battery to be changed. To do this, brief communication with the FSM is required. This is achieved by turning the knob or holding a transponder in front of it.
- Teach out: The cylinder is removed from the FSM and can be taught in to another FSM.
- Teach-in: To connect a radio lock cylinder to the FSM (the radio lock cylinder then only communicates with this FSM)

4.3.6.5. Battery state and live time



Ändern des Zustandes zum Batteriewechsel.

Bitte wählen Sie den gewünschten Zustand zum Batteriewechsel.

With "Open" the command to open is sent to the FSM. This stops the command until a radio connection is established. This can be achieved by turning or holding a transponder in front of it. The locking pins of the hood are then unlocked.

With "Close" the command for locking the hood bolts is sent back to the FSM. However, the lock is only established after a good entry / opening.

The three phases of battery management

Phase 1

If an authorized ID card is held in front of the knob module, the locking authorisation is granted in accordance with the programming. However, the door opening is accompanied by 5x red flashing (LED) and 5 short acoustic signals at the same time.

Phase 2

If an authorized ID card is held in front of the knob module, the locking authorisation is only granted after approx. 5 seconds according to the programming. During these 5 seconds the LED flashes green. The door opening is accompanied by 5x red flashing (LED) and 5 short acoustic signals.

Phase 3

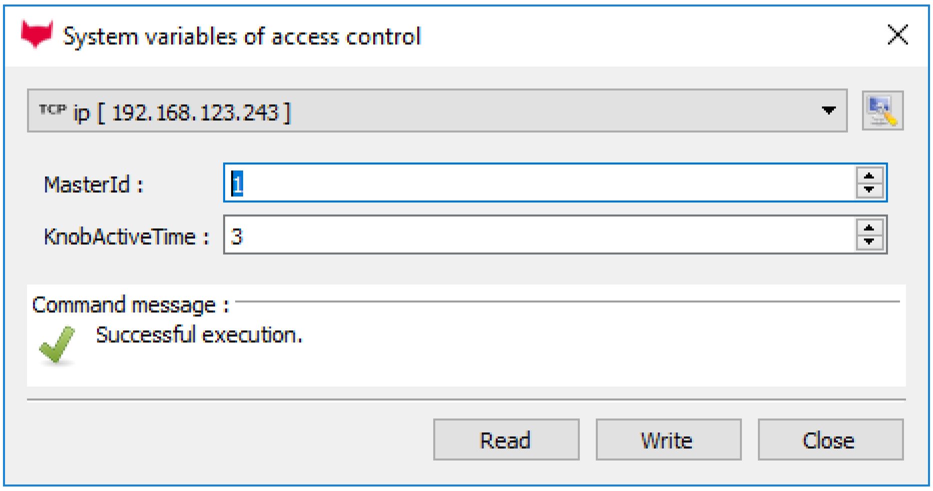
The knob module no longer responds to authorized ID cards. Replace the battery immediately. This is now only possible using the service key and the service device or the battery replacement card.

Please also note the corresponding status messages from the access control system:

display	Assigned status message
0	Module detected, everything's OK.
12	Battery status of the radio lock cylinders in phase 0 (full)
13	Battery status of the radio lock cylinders in phase 1
14	Battery status of the radio lock cylinders in phase 2
15	Battery status of the radio lock cylinders in phase 3 (empty)
16	Radio lock cylinder set to battery change mode

4.3.6.6. change the access control master ID and nob Active Time

To change the access control master ID, the "Configuration dialog for U&Z locking cylinders" dialog must be used. It contains "Advanced settings" and with a click on it this dialog opens.



System variables of access control

TCP ip [192.168.123.243]

MasterId : 1

KnobActiveTime : 3

Command message :

Successful execution.

Master ID can be set in the range from 1 to 9999. If a device has more than one access control bus, the access control master ID is the ID of the first bus. The second bus access-control-Master ID + 1 etc.

The Knob Active Time is for presetting how long a radio lock cylinder maintains radio communication with the FSM when activated. When a transponder booking is made, the access control master automatically closes the connection after signaling and opening. If the Knob Active Time is less than required for the transponder booking, the radio lock cylinder switches off and an opening fails. This happens at e. g. Knob Active Time = 1 (1s). If someone turns the knob of the radio lock cylinder, the radio connection to the FSM is established and the connection remains active as long as the Knob Active Time is active. Useful values are between 2 and 10 seconds. By default, this time is set to 3 seconds.

4.3.6.7. Optische und akustische Signale des U&Z Schließzylinders

function	sounds	Optical signals
sleep mode		
Start programming mode	**- - - O**	🟢
badge trained	**O O**	🟢
Badge deleted	**- - - - - -**	⭕
warning signal Delete all badges	**O O O O O** **15 sek.**	🟩
End of programming mode	**O - - -**	⭕
After wake-up - Read mode		🔴
Badge not authorized	**- - -**	⭕
badge authorized	**O**	🟢
After battery change	**- - -**	🟢⭕
No radio link (out of range)	No sound	🔴 **long** 🔴 **short** 🔴 **short**

⭕ = red lights up 🔴= red flashing

🟢 = green lights up 🟩= green flashing

- = long low tone

O = short beep

4.3.6.8. Unterstützte Transponderverfahren und Einschränkungen

Transponder for 125kHz

Supported is
- read Unique
- read Hitag1
- read Hitag2 only serial number

Not supported is
- reading of Hitag2 segments
- reading of Titan, Q5 und ATA5577

Mifare Classic

Supported is
- read UID
- read Sector/Block

Not supported is
- Autologin (for reading all passwords)

Mifare Plus

Supported is only Security Level 1
- read UID
- read Sektor/Block

Not supported is
- Autologin (Use the default passwords for reading)
- Random UID (Read true UID at Random UID badges)

Mifare Desfire

Supported is
- read UID
- Read file (max. 220Byte)

Not supported is
- Random UID (Read true UID at Random UID badges)

Legic Prime and Legic Advant

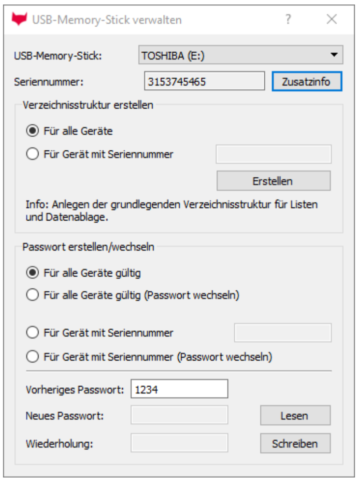
currently no restrictions are known.

4.3.7. Configuring USB Stick

4.3.7.1. USB Host at Master IV

- Creating directory structures
- Setting password protection
- Providing serial number allocation
- Transferring data and lists
- Updating at USB-Host

Data-Records



USB-Memory-Stick verwalten

USB-Memory-Stick: TOSHIBA (E:)

Seriennummer: 3153745465

Verzeichnisstruktur erstellen

● Für alle Geräte

○ Für Gerät mit Seriennummer

Info: Anlegen der grundlegenden Verzeichnisstruktur für Listen und Datenablage.

Passwort erstellen/wechseln

● Für alle Geräte gültig

○ Für alle Geräte gültig (Passwort wechseln)

○ Für Gerät mit Seriennummer

○ Für Gerät mit Seriennummer (Passwort wechseln)

Vorheriges Passwort: 1234

Neues Passwort:

Wiederholung:

ASCII - files

Lists for master data and access control

4.3.7.2. Creating Directory Structure and Password at USB Stick

Call this function via the tab "Configuration – Configure USB flash drive". In order to guarantee the data transfer between the terminal and the USB stick, you first have to create a directory structure on the USB stick.
In the steps 1 to 5 the data structure and the password are stored on the USB stick. With it all USB terminals are controlled, irrespective of their serial number.

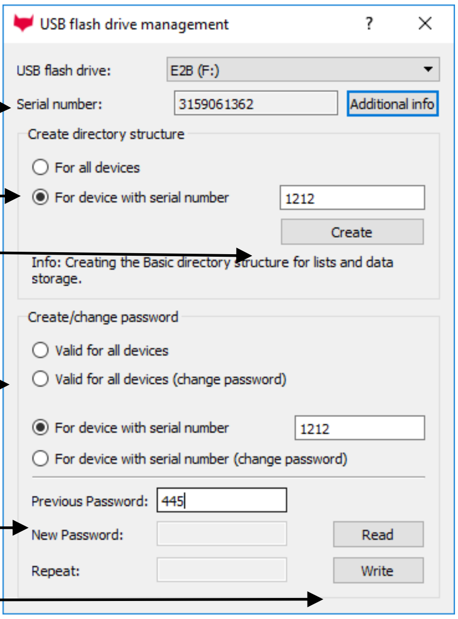
1. Select the drive which was assigned to the USB stick.

2. Create directory structure for all devices independent from serial number.

3. Create password which is valid for all devices. The correct password is the basis for data transfer between terminal and USB stick. Thus, it is prevented that every USB stick with the set data structure can read data from the device.

4. Create a password, E.g. 1234

5. Write the password to USB-Stick



USB flash drive management

USB flash drive: E2B (F:)

Serial number: 3159061362

Create directory structure

○ For all devices

● For device with serial number 1212

Info: Creating the Basic directory structure for lists and data storage.

Create/change password

○ Valid for all devices

○ Valid for all devices (change password)

● For device with serial number 1212

○ For device with serial number (change password)

Previous Password: 445

New Password:

Repeat:

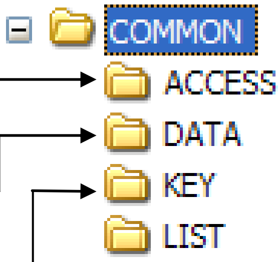
A new directory structure COMMON is created on the USB stick and used as storage for the transfer data.

The Access-folder contains access control lists which are to be transferred to the terminal. Lists have to be save das TXT files.

The Data-folder contains the data records as TXT files which are written on the USB stick by the terminal. Lists have to be save das TXT files.

The folder Key contains the key as DAT file enabling communication between terminal and USB stick. If no password has been created, the folder stays empty. Lists have to be saved as TXT files.

In the List-folder all lists which are to be transferred to the terminal are saved as TXT files.



The storage structure COMMON on the USB stick is used by all terminals, that support main communication via USB. All TXT files which are filed on the USB stick must correspond to the list descriptions in the setup concerning designation*, field size and format. Use a tabulator as field separator and CR + LF at the end of line.
*The designations of the text files (lists or data) can only be selected in the format 8 dot 3. That means, that each text file has to be unique on the basis of its first 8 digits. If the list descriptions are not unique within the first 8 digits, a termination of the communication may occur and no lists are transferred to the terminal.

If you want to transfer data and lists terminal oriented, you have to create an additional data structure in the following steps. The selection is based on the serial number of the terminal.

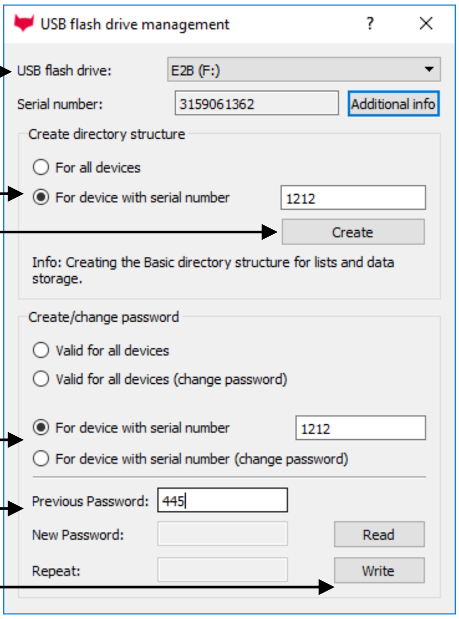
6. Select the drive which was assigned to the USB stick.

7. Create directory structure for a terminal with the corresponding serial number.

8. Create password which is only valid for the terminal with the serial number provided (e.g. 1212). The correct password is the basis for data transfer between terminal and USB stick. Thus, it is prevented that every USB stick with the set data structure can read data from the device.auslesen kann.

9. Provide password, which is to be set only for this terminal, e.g. 445.

10. Set password on USB



USB flash drive management

USB flash drive: E2B (F:)

Serial number: 3159061362

Create directory structure

○ For all devices

● For device with serial number: 1212

Info: Creating the Basic directory structure for lists and data storage.

Create/change password

○ Valid for all devices

○ Valid for all devices (change password)

● For device with serial number: 1212

○ For device with serial number (change password)

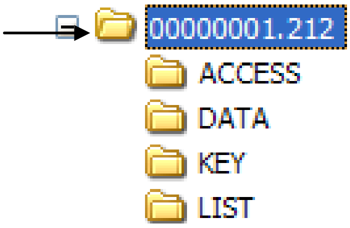
Previous Password: 445

New Password:

Repeat:

Auf dem USB – Stick wurde nun eine zusätzliche Verzeichnisstruktur nur für das Terminal mit der Seriennummer 1212 angelegt.

Alle Listen und Daten können nur von dem Terminal mit der Seriennummer 1212 gelesen bzw. geschrieben werden.
Der hinterlegte Key ist nur für dieses Terminal gültig.



When communicating with the terminal (1212), the terminal only accesses the directory structure created for that purpose. Thus, no transfer with the general directory COMMON takes place. An own directory structure can be created for each terminal.
When plugging the USB stick in the terminal for the first time, the setting and the password set are written on the terminal. From this moment on, communication is only possible, if the correct password was entered.

Note:
The USB stick should only be used for communication and data transfer of terminal and PC. Data and folder structures which are not related to the data transfer might cause negative effects concerning the writing of data on the USB stick. A termination of communication with the USB stick may occur and data records may be damaged.

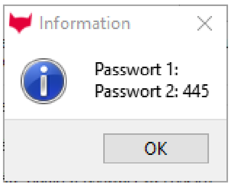
4.3.7.3. Changing Password for Communication

In order to change an already existing password on the USB stick and on the terminal, you have to use the same application, you already used for creating the directory structure.

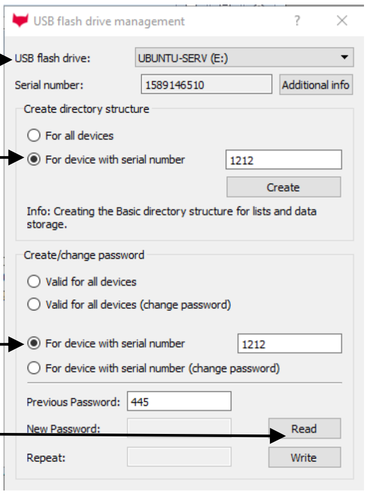
Select the drive which was assigned to the USB stick.

Create directory structure for all devices independent from serial number.

Read the current password from the directory key of the USB stick.


Information

Passwort 1:
Passwort 2: 445


USB flash drive management

USB flash drive: UBUNTU-SERV (E:)
Serial number: 1589146510

Create directory structure
○ For all devices
● For device with serial number 1212

Info: Creating the Basic directory structure for lists and data storage.

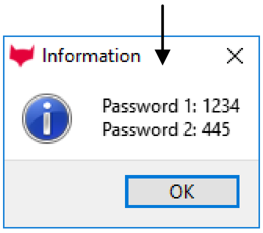
Create/change password
○ Valid for all devices
○ Valid for all devices (change password)
● For device with serial number 1212
○ For device with serial number (change password)

Previous Password: 445
New Password:
Repeat:

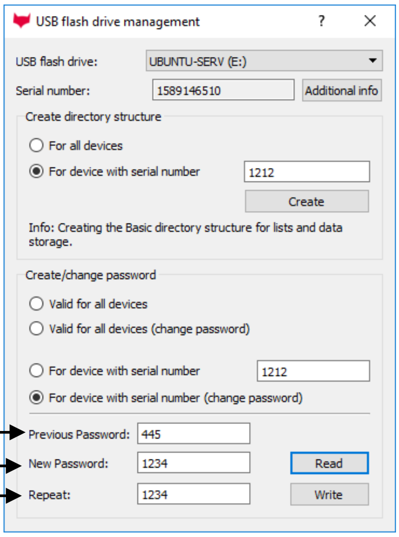
Provide the previous password which has been read from the USB stick.

Provide and set the new password which is to be used for the communication between USB stick and terminal in future.

In order to check the changed password on the USB stick click „Read“.


Information

Password 1: 1234
Password 2: 445


USB flash drive management

USB flash drive: UBUNTU-SERV (E:)
Serial number: 1589146510

Create directory structure
○ For all devices
● For device with serial number 1212

Info: Creating the Basic directory structure for lists and data storage.

Create/change password
○ Valid for all devices
○ Valid for all devices (change password)
○ For device with serial number 1212
● For device with serial number (change password)

Previous Password: 445
New Password: 1234
Repeat: 1234

The new password is changed on the terminal during the next communication. Until then, both passwords are stored on the USB stick.

If you cannot access to the password set due to loss of the USB stick or your records, the password can be deleted on the terminal.
Press the keys "ESC" and "F2" at the terminal. You are now in the USB host bios menu. Changing the password is possible via the menu entry "Change communication password". The previous, unknown communication password is required. Because in this case it is unknown to you, enter "****". The entry field for the new password remains empty. This way, the communication password is not overwritten but deleted.
During the next communication with the USB stick the communication password stored there is transferred to the terminal. Thus, the new password for the terminal has been taken over.

You receive the **** password from your sales partner specifying your serial number.

4.3.7.4. Transfer from Master IV to USB Stick

The BIOS of the Master IV terminal has to be set as main communication interface USB host.
In order to do this, press both arrow keys ▲▼ at the same time. You are now in the menu BIOS. Select "System menu BIOS". In the following submenu select the entry "communication" and confirm your selection with "Enter". You are then asked whether you want to cancel communication to make settings. Confirm with "Enter". The current main communication is displayed as "Interface". In order to change it, make a selection with "Enter". Select "USB host" in order to permit communication with a USB stick. After changing the settings in the BIOS, disconnect the terminal from voltage for a short moment, so that all settings can be taken over after a restart.

Auto-start of communication:
In order to transfer data from Master IV terminal to a USB stick, the stick with the created data structure must only be plugged into the USB port. The transfer of data and list starts automatically. The state of communication is displayed in form of a bargraph. After successful communication the operation of the terminal is restarted. The USB stick can be unplugged and you can start data recording at the terminal again.

Manual start of communication:
In order to enable a manual start of communication, the USB stick must be plugged into the USB port of the terminal. Press the keys "ESC" and "F2" or you open the bios menu -> usersettings to start the USB host bios menu. In this menu, only single actions can be executed like only writing data on the USB stick or only transferring lists from the USB stick to the terminal. After confirming, the transfer is started and the status displayed.

Start manual data backup:
All data records which have been created on the terminal since the last writing of the setup, can be transferred to the USB stick by a data backup. Via the backup function, also data records which have been read from the terminal with the USB stick are written as not yet read data records. Thus, data can be reproduced even in cases of data loss during processing or loss of the USB stick. In order to enable a manual start of communication, the USB stick must be plugged into the USB port of the terminal. Press the keys "ESC" and "F2" to start the USB host bios menu. Start the data backup. After confirming, the transfer is started and the status displayed.

4.3.7.5. Update des USB-Host

The Firmware who transfer the data to USB-Stick is a part off the Device-Firmware.
With an update from the Device-Firmware you get ever the newest software to write data on a USB-Stick.

4.3.7.6. Error messages of the USB host

Error message	meaning	description
USB_ERR_READ	Error reading	
USB_ERR_WRITE	Error writing	
USB_ERR_COMMUNICATION	Communication error, no response from the USB host	Stick is not compatible or not correct contacted
USB_ERR_CHANGE_DIR	Failed to change directory	
USB_ERR_CHECK_INSERTED	Error checking on USB stick	
USB_ERR_FIND_DIR	Error while searching a directory	No structure on the stick.
USB_ERR_MAKE_DIR	Error creating a directory	
USB_ERR_FOPEN_GET_HANDLE	Failed to negotiate handle	
USB_ERR_FOPEN_NO_DIR	when opening a file, the directory did not exist	
USB_ERR_INVALID_PATH	The path is invalid Error	
USB_ERR_FILE_IS_OPEN	File already open error	
USB_ERR_OPEN_FILE	Error opening file	
USB_ERR_CLOSE_FILE	Error closing the file	
USB_ERR_HANDLE	Error closing the file handle wrong	
USB_ERR_INVALID_HDL	Error checking the handles, handle out of range	
USB_ERR_NOT_OPEN	Error checking the handles that file is not open	
USB_ERR_READ_ONLY	Error file is write-protected	
USB_ERR_LIST_TABLE_CNT	Error no correct records description	
USB_ERR_UPGRADE	Fehler beim Firmwareupdate	
USB_ERR_NO_DEVICE	Error no connected stick	
USB_ERR_WRONG_PASSWORD	False communication password	
USB_ERR_NO_LIST	Error no list	Use only one tab between the list fields.

☞

Note:

Hardwaregeneration V3:
The used USB - stick should have a maximum of 4 GB. Stick's are recommended with 1-2 GB.
The stick must be formatted to FAT (16).

Hardwaregeneration V4:
The used USB - stick should have a maximum of 32 GB. Stick's.
The stick must be formatted to FAT (32).

4.3.8. Systemvariablen der Signalverarbeitung

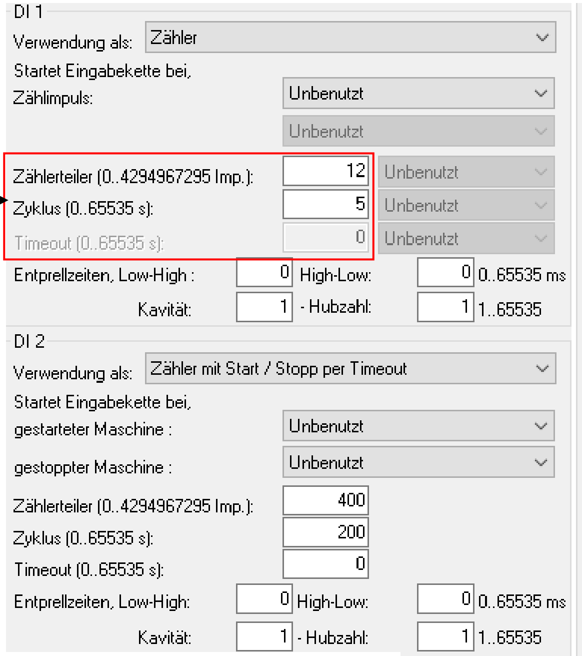
Grundlagen:

Systemvariablen sind ähnlich den globalen Variablen. Die Werte der Variablen kann auf verschiedene Weise geändert werden. Sie Verhalten sich wie globale Variablen.
Der Verwendung dieser Variablen muss eine besondere Aufmerksamkeit gewidmet werden, damit es bei der Nutzung dieser Variablen nicht zu Fehlern kommt.

Die Variablen werden im Setup unter „Signalverarbeitung“ eingestellt.

Hier wird z.B. der Digitale Eingang E1 und E2 verwendet.

Diese Variablen lassen sich mit der Funktion bearbeiten. (nächste Seite) In *Bild 2* sehen Sie die Funktion, mit der Sie diese Variablen ändern bzw. außer Kraft setzen können.



DI 1
Verwendung als: Zähler
Startet Eingabekette bei, Zählimpuls: Unbenutzt
Unbenutzt
Zählerteiler (0..4294967295 Imp.): 12 Unbenutzt
Zyklus (0..65535 s): 5 Unbenutzt
Timeout (0..65535 s): 0 Unbenutzt
Entprellzeiten, Low-High : 0 High-Low: 0 0..65535 ms
Kavität: 1 - Hubzahl: 1 1..65535

DI 2
Verwendung als: Zähler mit Start / Stopp per Timeout
Startet Eingabekette bei, gestarteter Maschine : Unbenutzt
gestoppter Maschine : Unbenutzt
Zählerteiler (0..4294967295 Imp.): 400
Zyklus (0..65535 s): 200
Timeout (0..65535 s): 0
Entprellzeiten, Low-High: 0 High-Low: 0 0..65535 ms
Kavität: 1 - Hubzahl: 1 1..65535

Bild 1

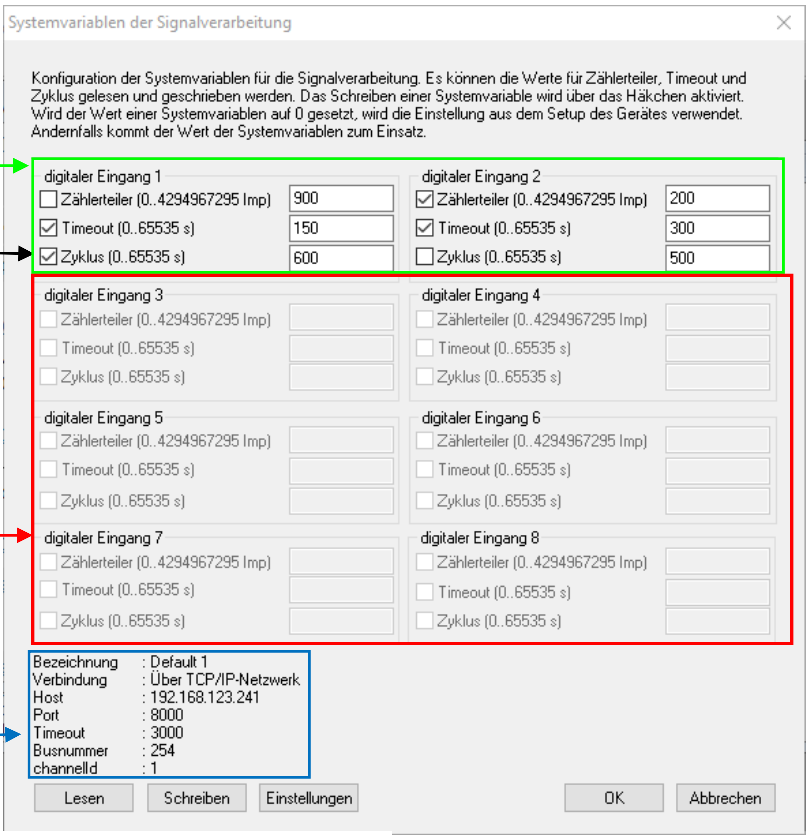
Beschreibung der Bearbeitung der Systemvariablen der Signalverarbeitung:
Über den Reiter „Konfiguration – Systemvariablen Signalverarbeitung“ haben Sie Zugriff auf die Variablen der Signalverarbeitung.
Über diese Funktion wird das Verhalten eines Terminals mit Hilfe der Systemvariablen der Signalverarbeitung gesteuert.

Durch das Setup freigegebene Systemvariablen.

Mit dem Setzen des Häkchens legen Sie fest, welche Variablen geschrieben werden sollen.

Durch das Setup gesperrte Systemvariablen.

Nach dem Klick auf lesen, werden Ihnen die verwendeten Systemvariablen angezeigt.



Systemvariablen der Signalverarbeitung

Konfiguration der Systemvariablen für die Signalverarbeitung. Es können die Werte für Zählerteiler, Timeout und Zyklus gelesen und geschrieben werden. Das Schreiben einer Systemvariable wird über das Häkchen aktiviert. Wird der Wert einer Systemvariablen auf 0 gesetzt, wird die Einstellung aus dem Setup des Gerätes verwendet. Andernfalls kommt der Wert der Systemvariablen zum Einsatz.

digitaler Eingang 1
- □ Zählerteiler (0..4294967295 Imp) 900
- ☑ Timeout (0..65535 s) 150
- ☑ Zyklus (0..65535 s) 600

digitaler Eingang 2
- ☑ Zählerteiler (0..4294967295 Imp) 200
- ☑ Timeout (0..65535 s) 300
- □ Zyklus (0..65535 s) 500

digitaler Eingang 3
- □ Zählerteiler (0..4294967295 Imp)
- □ Timeout (0..65535 s)
- □ Zyklus (0..65535 s)

digitaler Eingang 4
- □ Zählerteiler (0..4294967295 Imp)
- □ Timeout (0..65535 s)
- □ Zyklus (0..65535 s)

digitaler Eingang 5
- □ Zählerteiler (0..4294967295 Imp)
- □ Timeout (0..65535 s)
- □ Zyklus (0..65535 s)

digitaler Eingang 6
- □ Zählerteiler (0..4294967295 Imp)
- □ Timeout (0..65535 s)
- □ Zyklus (0..65535 s)

digitaler Eingang 7
- □ Zählerteiler (0..4294967295 Imp)
- □ Timeout (0..65535 s)
- □ Zyklus (0..65535 s)

digitaler Eingang 8
- □ Zählerteiler (0..4294967295 Imp)
- □ Timeout (0..65535 s)
- □ Zyklus (0..65535 s)

```
Bezeichnung   : Default 1
Verbindung    : Über TCP/IP-Netzwerk
Host          : 192.168.123.241
Port          : 8000
Timeout       : 3000
Busnummer     : 254
channelId     : 1
```

Bild 2

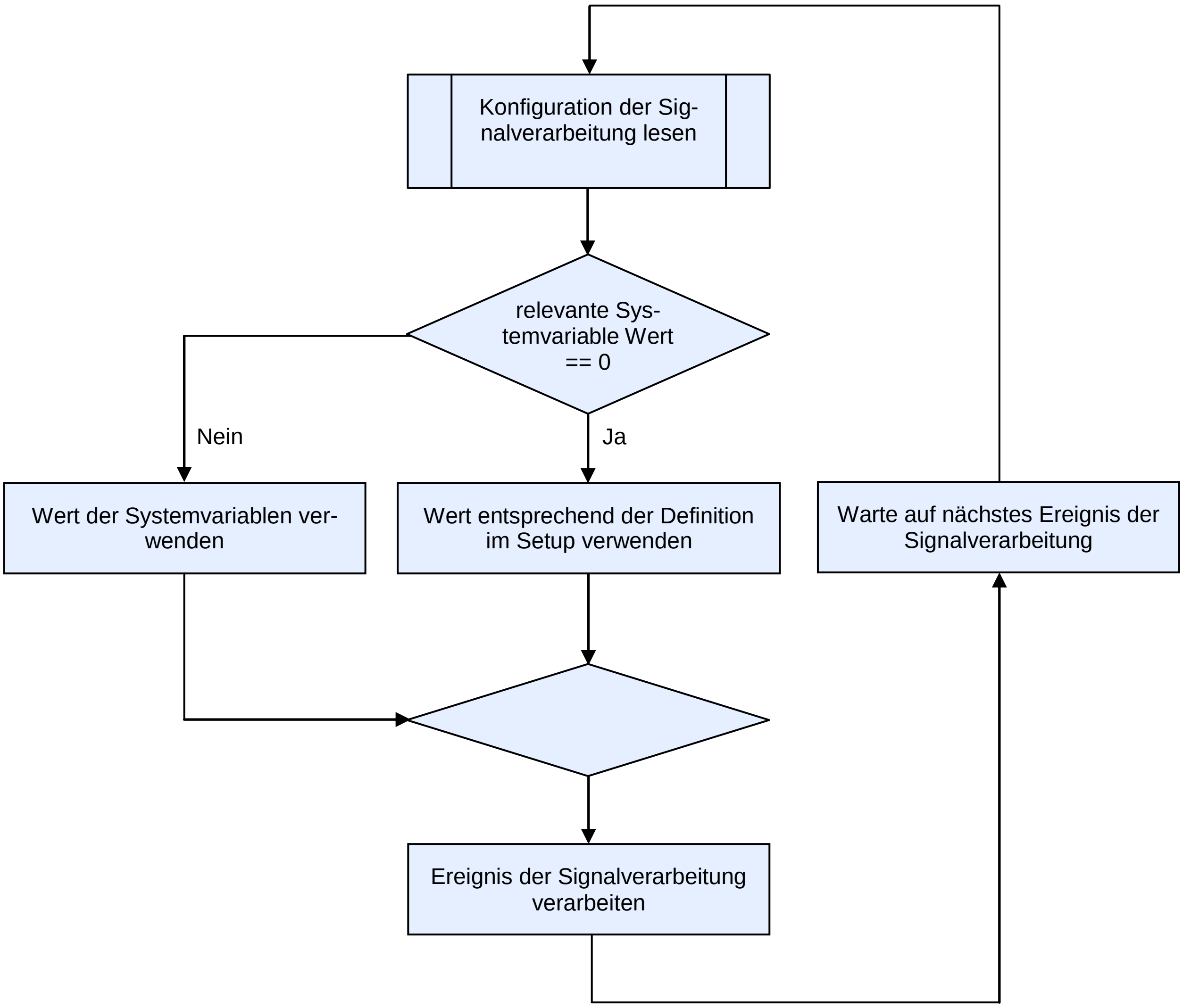
Befindet sich das Setup im Gerät, können Sie die Systemvariablen auslesen. Es werden nur die Systemvariablen im Dialog aktiviert, die über das Setup auch definiert und verwendet werden.

Wenn nach dem Lesen keine Systemvariable aktiviert wird, prüfen Sie die Einstellungen des Setups.

Hinweis:
Werden die Systemvariablen mit dieser Funktion geändert, so werden auch diese zur Laufzeit des Gerätes verwendet. Die im Setup eingestellten Werte (siehe *Bild1*)der Systemvariablen werden dann nicht berücksichtigt.

Möchten Sie sicherstellen, dass für alle aktiven Systemvariablen der Signalverarbeitung die im Setup definierten Werte verwendet werden, setzen Sie in diesem Dialog alle Werte auf Null und schreiben Sie diese Null-Werte in das Gerät.

Dabei arbeitet die Firmware nach folgendem Ablaufschema:


Konfiguration der Signalverarbeitung lesen
relevante Systemvariable Wert == 0
Nein
Ja
Wert der Systemvariablen verwenden
Wert entsprechend der Definition im Setup verwenden
Warte auf nächstes Ereignis der Signalverarbeitung
Ereignis der Signalverarbeitung verarbeiten

4.3.9. System Variables HTTP / GPRS

4.3.9.1. Sending Data Records with HTTP via Mobile Communications

 V4	 V4	 V4		 EVO 2.8 / 3.5			 ZK / IO Box V4	 Mobil-Box V4	 Docking V2	 FDL V2	 ZK-Knoten	 EVO-IPC
☒	☒	☒	☒	☒			☒	☒	☒	☒		

The Datafox device is able to send booking data promptly to a web server via GPRS. For this purpose, it is necessary to configure the device for this communication type. When data is created in the device, firstly a TCP/IP connection is established and then the following character string is sent:

Plaintext request
getdatagv.php?table=BB&bTYP=Manu&bLOG=Log&bDAT=2011-05-24_08:30:12&bPER=Per&checksum=2120
Plaintext response
status=ok&checksum=2120 status=ok&checksum=2120

- GET example/getdata.php? is the prefix of the HTTP data and specifies the path on the webserver where the corresponding php-script for processing the TTP data is to be found.
- table is a data record description from the setup (the table from which data are to be transferred).
- checksum serves for error detection during data transfer.

You should enter only a few characters for the tables and field names in order to keep the transfer volume low.
The 2120 (checksum) is the sum of all ASCII values of the transferred parameter values (only of the values, not of the filed name; that means everything that is written between = and &). The webserver has to send back the following answer within HTTPTIMEOUT:

1.) In case of success (checksum correct): status=ok&checksum=pruefsumme.
Then the data record is deleted in the device.

2.) In case of an error (checksum incorrect): status=error&checksum=pruefsumme.
Then the last data record is sent again.

> **!**
>
> **Caution:**
> If the server does not accept the data record (incorrect checksum, etc.), the device tries to send the data record again. As long as this is not successful, the device can send no more data records.
> After several unsuccessful attempts you should assume a problematic data record and save it separately on the server for review.
> It also causes higher data volume and possibly higher costs.

4.3.9.2. HTTP response, and optional parameters

As fixed parameters to be specified:
“**status=ok&checksum=xxxx**\r\n“ or “**status=error&checksum=xxxx**\r\n “

allowed optional parameters:
“**&time=**“ give the actually time from server back

example: status=ok&checksum=3142&time=2010-10-28_12%3A18%3A24\r\n

The time can be synchronized at each response as the device only takes over the time sent if it deviates by 10 seconds. This only applies for the HTTP response, for the DLL command DFCSetTime.

“**&beep=?**“ for signal beep

- 0 = no beep
- 1 = „OK“ Beep
- 2 = ERROR Beep
- 3 = 1 x long
- 4 = 1 x short 1x long
- 5 = 2 x short
- 6 = 2 x long
- 7 = 3 x short
- 8 = 3 x long
- 9 = 1 x short - long - short
- 10 = 1 x long – short - long
- 11= SMS

“**&service=1**“
Call for service connection
More information gives the „Active Mode“ and *.ini file.
Some options are possible: give back, host and port.
The service connection is not established until data is no longer stored in the device.

“**&service=2**“ Achtung ! ist erst ab der Hardware V4 mit TCI/IP mit FW 04.03.08.XX möglich.
Achtung ! ist erst ab der Hardware V4 mit GPRS(Mobilfunk) mit FW 04.03.06.XX möglich.

Bei der Übertragung von Daten über das "HTTP" -Protokoll wurde bisher nur eine Dienstverbindung durchgeführt, wenn keine Daten im Gerät verfügbar sind.
Die Serviceverbindung wird sofort mit Parameter = 2 (Service = 2) eingeleitet.
Examples:

a) **service=X**\r\n
b) **service=X&host=www.datafox.de**\r\n
c) **service=X&host=123.123.123.123\r\n**
d) **service=X&host=www.datafox.de&port=4711**\r\n

Example a) connection „Active-Mode“ to server via in the device (in “active.ini”) registered server.
at b) and c) conection to server with „IP 123.123.123.123 and the port from in the device (in “active.ini”) registered server-port.

In the last example, make a connection to the Datafox-Server on the Port 4711.

☞ **Note:**
We recommend to use for the standard “Service=1“.
"Service = 2" should only be used in special cases. There may be data on the device that will be deleted when a setup is transferred.

Set of global variabel via Response

It is possible to change the response of the setup and global variables to be set. For example, the setup is the first global variable with the name, id 'created, you can address this via the following statement:

- to call with ID: **&setup.1=1234**
- to call with name: **&setup.”id”=1234**

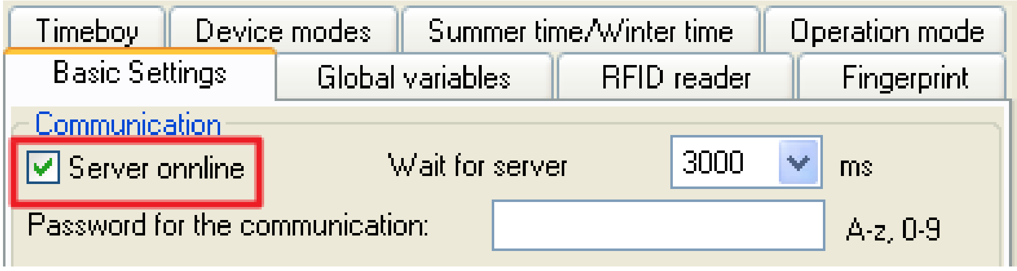
Example Answer (plain text): status=ok&checksum=2027&setup.id=1234\r\n

Start a input sequence in the signal processing

&ek=Name (Name of sequence) \r\n.

In this case, the name must match the name input sequence completely, otherwise it will not run. Now a device receives this text, the input string is executed.

The following parameters are only possible with the option „Server online“



☑ Server onnline

Wait for server: 3000 ms

Password for the communication: A-z, 0-9

“**&message=**“ show the message on the display (only online)

Example: status=ok&checksum=3142&message=Hallo\rMessage from\rDatafox&delay=5\r\n

“**&delay=**“ the time, How long the message is to be displayed (Value in Seconds).

Specify as fixed parameters:
“status=ok&checksum=“ or “status=error&checksum=“

Parameterization of Configuration File "GPRS/HTTP".ini

Open the configuration file (e.g. GPRS.ini) for editing.
Make all settings for transferring data with HTTP via GPRS.

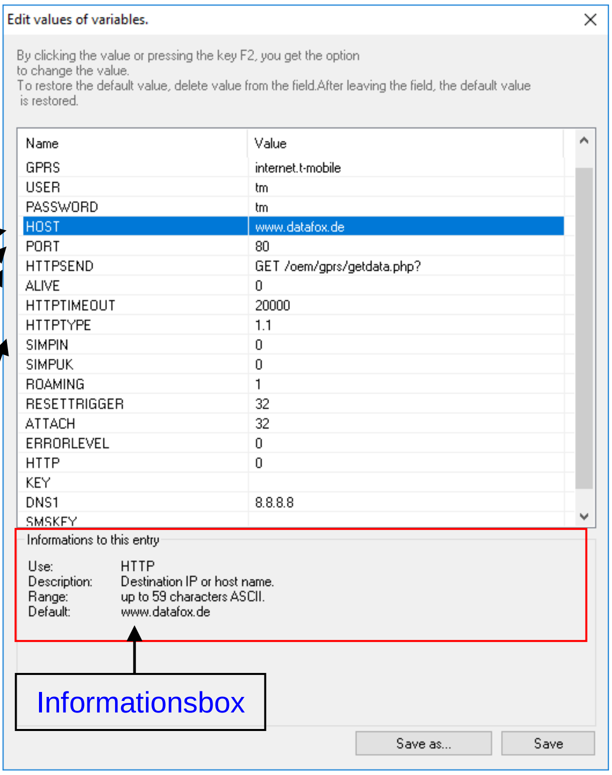
You can find .ini-files for certain providers on the Datafox DVD under:
<DVD\\MasterIV-Serie\Datafox Geräte\Datafox Software MasterIV-04.02.02_Release\Kommunikationsmodul http>

HOST: IP address or host name at which the server is accessible.

PORT: on the server.

HTTPSEND: GET-request with correspinding php-script

SIMPIN and SIMPUK are only temporarily saved in the .ini and deleted after closing the transfer dialog. However, the PIN is stored in the device. If you replace the SIM card you must transfer the PIN again only if it has changed.



Edit values of variables.

By clicking the value or pressing the key F2, you get the option to change the value.
To restore the default value, delete value from the field.After leaving the field, the default value is restored.

Name	Value
GPRS	internet.t-mobile
USER	tm
PASSWORD	tm
HOST	www.datafox.de
PORT	80
HTTPSEND	GET /oem/gprs/getdata.php?
ALIVE	0
HTTPTIMEOUT	20000
HTTPTYPE	1.1
SIMPIN	0
SIMPUK	0
ROAMING	1
RESETTRIGGER	32
ATTACH	32
ERRORLEVEL	0
HTTP	0
KEY	
DNS1	8.8.8.8
SMSKEY	

Informations to this entry
Use: HTTP
Description: Destination IP or host name.
Range: up to 59 characters ASCII.
Default: www.datafox.de

The information box shows hints for the currently selected line.
By clicking on a line, it can be edited.

☞ **Note:**
We recommend using T-Mobile and Vodafone as providers for mobile communication in Germany. Experience shows that for other providers you must expect more frequent dial-ups, delayed data transfer and possibly higher costs.

☞ **Note:**
12 communication errors per 15 minutes are tolerated. Then the devices makes a transmission pause of up to 15 minutes. After the pause, the device attempts to send the data again. Thus, unnecessary transmission costs are prevented, in case the server is unavailable or the radio connection is too bad.

! **Caution:**
Depending on the provider the prevention of roaming (mobile communication via third-party networks) can pose difficulties. Please check this behavior for your application. If possible, roaming should be deactivated for the SIM card.

In case of connection problems, the error analysis can be facilitated by an "Alive data record". The Alive data record helps you determine whether the device was online or offline, e.g. in case of power blackouts. On the basis of the Alive counter in the Alive data record, you can also determine whether the web server was permanently reachable. With each failed attempt to send data the Alive counter is increased. If no data reach the server and the Alive counter in the Alive data record has the value 1, the device has been removed from the power supply.

For more information on the Alive data record see the manual "DatafoxStudioIV".

! **Caution:**
Alive data are temporary data. If the Alive data record cannot be sent (e.g. server is not reachable), it will be deleted and the Alive counter will be increased by one. The function "‘Alive"’ is activated via the Alive parameter in the GPRS.ini. Additionally to the activation, the GPRS chain has to be available in the signal processing. Take care that this function does not create unintentional data (traffic).

URL-Codierung

All data are sent via HTTP 1.1 protocol and received must be URL-Encoded.

Characters without URL-Code are:
letters A-Z, a-z, numbers 0-9 und - _ . ~.

All other characters displayed are follows: %ASCII code.
Example: colon**:** %3A

4.3.9.3. Sending Data Records with HTTP via LAN / WLAN

 V4	 V4	 V4		 EVO 2.8 / 3.5			 ZK / IO Box V4	 Mobil- Box V4	 Docking V2	 FDL V2	 EVO-IPC	 ZK- Plus	 ZK- Knoten
☒	☒	☒	☒	☒			☒		☒		☒		☒

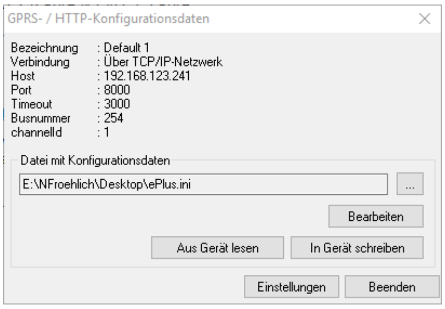
Subsequently, the term LAN is also used for WLAN.

Until now, it has been possible to send the data records created in the device to a webserver with HTTP via the cellular network GPRS. This functionality has been expanded to LAN.

Activation via DatafoxStudioIV

The connection parameters can be set via the menu entry Configuration "System variables GPRS / HTTP.

Here, the configuration file (GPRS.ini) can be opened, edited, read from and written into the Datafox device. You can make all settings for sending the data with HTTP.



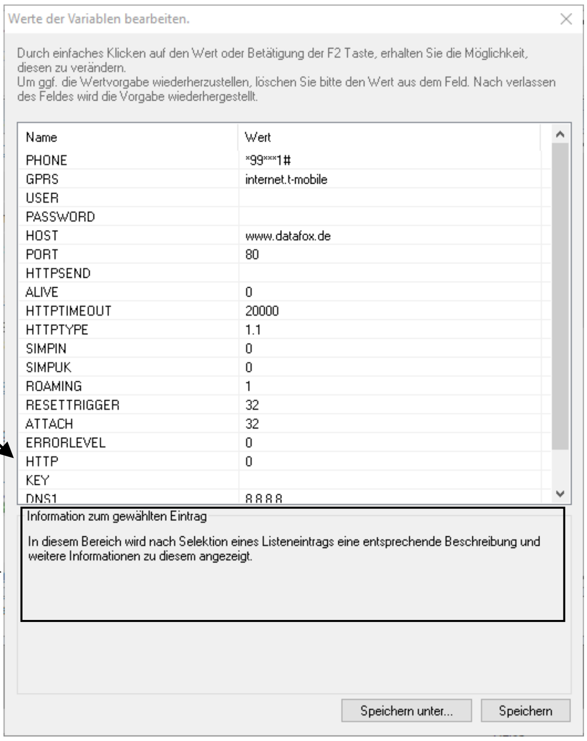
GPRS- / HTTP-Konfigurationsdaten

Bezeichnung	: Default 1
Verbindung	: Über TCP/IP-Netzwerk
Host	: 192.168.123.241
Port	: 8000
Timeout	: 3000
Busnummer	: 254
channelId	: 1

Datei mit Konfigurationsdaten

E:\NFroehlich\Desktop\ePlus.ini

This file contains the settings for connection via GPRS (cellular network) and via LAN. The information box shows which settings have to be made for HTTP and which settings are required for GPRS only.
Under HTTP, you can activate the data transfer via http/LAN.
For more information see the information box.



Werte der Variablen bearbeiten.

Durch einfaches Klicken auf den Wert oder Betätigung der F2 Taste, erhalten Sie die Möglichkeit, diesen zu verändern.
Um ggf. die Wertvorgabe wiederherzustellen, löschen Sie bitte den Wert aus dem Feld. Nach verlassen des Feldes wird die Vorgabe wiederhergestellt.

Name	Wert
PHONE	*99***1#
GPRS	internet.t-mobile
USER	
PASSWORD	
HOST	www.datafox.de
PORT	80
HTTPSEND	
ALIVE	0
HTTPTIMEOUT	20000
HTTPTYPE	1.1
SIMPIN	0
SIMPUK	0
ROAMING	1
RESETTRIGGER	32
ATTACH	32
ERRORLEVEL	0
HTTP	0
KEY	
DNS1	8.8.8.8

Information zum gewählten Eintrag

In diesem Bereich wird nach Selektion eines Listeneintrags eine entsprechende Beschreibung und weitere Informationen zu diesem angezeigt.

Informationsbox

! **Caution:**
Not all firewalls allow data transfer via HTTP. Problems could arise with Cisco-Firewall V5.0.

Activation via BIOS Menu at the Device

In each device with a TCP/IP interface, you can activate HTTP in the BIOS menu of the device under Communication. For this purpose, the entry "http" must be set to "YES".
Prerequisite for sending data with HTTP via LAN are the proper settings of the parameters in the .ini file and the communication must be set on TCP/IP.

☞ **Note:**
If you have activated the transfer of data records via HTTP/LAN, a connection from the network cannot be accepted any more (e.g. for transferring a setup). For resetting, please use the BIOS mode via the Datafox Studio or the BIOS menu at the device.

Activation of BIOS Mode at Datafox Studio

Via the setting Gerätekonfiguration(Bios) at the Datafox Studio, you can access the BIOS of the device. Turn off the device and press "Switch to BIOS mode".
Then, turn the device on. While booting, the device queries the serial interface and switches communication to it. Here, you can call and edit the "GPRS.ini" via the button GPRS/HTTP. Reset the HTTP settings to "0" and transfer them to the device.

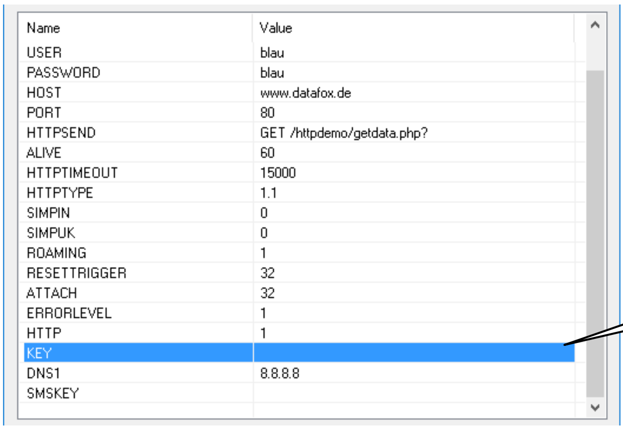
4.3.9.4. Encryption of Data Fields for HTTP (GPRS) Sending

If data records are sent via HTTP, field content can be transferred encrypted. The data fields of the data record are encrypted with a RC4 encryption. The encrypted characters are transferred as field content in hexadecimal format.

This document describes how to use extensions, encryption of data and the setting of global variables.

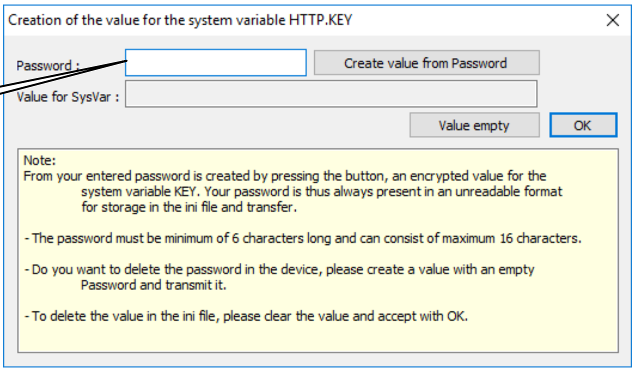
Activating Encryption via DatafoxStudioIV

Open the configuration file (e.g. GPRS.ini) for editing via the menu entry Configuration "GPRS / HTTP - Configuration".



Name	Value
USER	blau
PASSWORD	blau
HOST	www.datafox.de
PORT	80
HTTPSEND	GET /httpdemo/getdata.php?
ALIVE	60
HTTPTIMEOUT	15000
HTTPTYPE	1.1
SIMPIN	0
SIMPUK	0
ROAMING	1
RESETTRIGGER	32
ATTACH	32
ERRORLEVEL	1
HTTP	1
KEY	
DNS1	8.8.8.8
SMSKEY	

By clicking on the line KEY, the window for creating the key opens.



Creation of the value for the system variable HTTP.KEY

Password :

Value for SysVar :

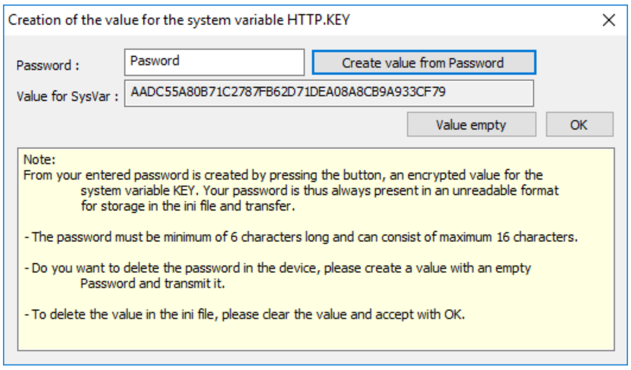
Note:
From your entered password is created by pressing the button, an encrypted value for the system variable KEY. Your password is thus always present in an unreadable format for storage in the ini file and transfer.

- The password must be minimum of 6 characters long and can consist of maximum 16 characters.

- Do you want to delete the password in the device, please create a value with an empty Password and transmit it.

- To delete the value in the ini file, please clear the value and accept with OK.

Enter your password here.



Creation of the value for the system variable HTTP.KEY

Password : Pasword

Value for SysVar : AADC55A80B71C2787FB62D71DEA08A8CB9A933CF79

Note:
From your entered password is created by pressing the button, an encrypted value for the system variable KEY. Your password is thus always present in an unreadable format for storage in the ini file and transfer.

- The password must be minimum of 6 characters long and can consist of maximum 16 characters.

- Do you want to delete the password in the device, please create a value with an empty Password and transmit it.

- To delete the value in the ini file, please clear the value and accept with OK.

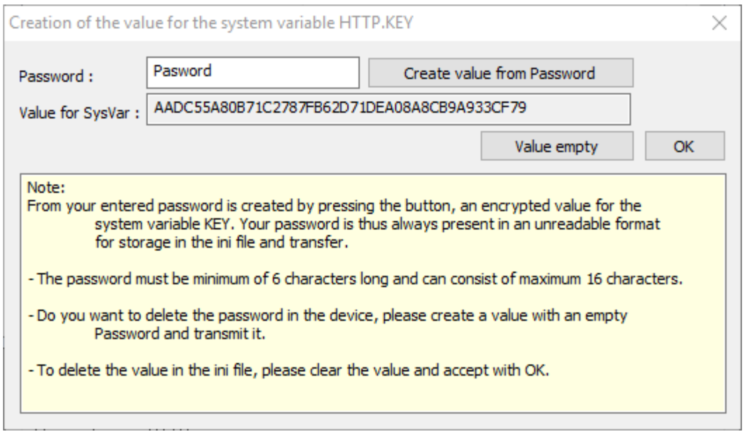
By clicking the button "Create value from password", a key for transfer is generated.

Click "OK" to take the key over.
Subsequently, you can save the settings and transfer them to the Datafox device.

Disable encryption

To deactivate the key which has been transferred to the device, it is necessary to create an empty password field with the button "Clear value" and to transfer this empty key to the device.

Click on „Value empty“



Creation of the value for the system variable HTTP.KEY

Password : Pasword

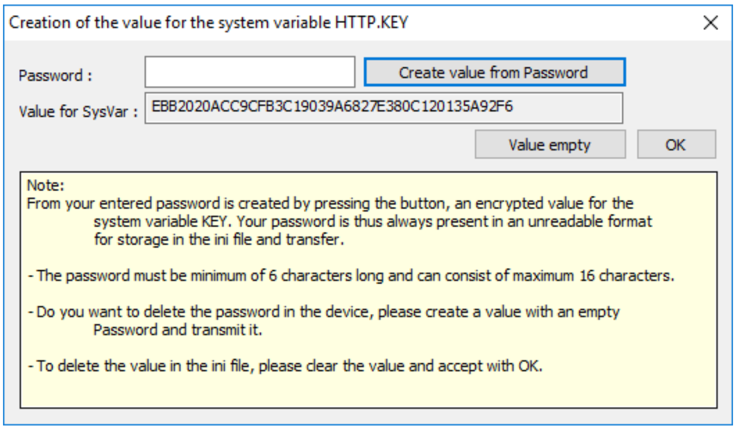
Value for SysVar : AADC55A80B71C2787FB62D71DEA08A8CB9A933CF79

Note:
From your entered password is created by pressing the button, an encrypted value for the system variable KEY. Your password is thus always present in an unreadable format for storage in the ini file and transfer.

- The password must be minimum of 6 characters long and can consist of maximum 16 characters.

- Do you want to delete the password in the device, please create a value with an empty Password and transmit it.

- To delete the value in the ini file, please clear the value and accept with OK.



Creation of the value for the system variable HTTP.KEY

Password :

Value for SysVar : EBB2020ACC9CFB3C19039A6827E380C120135A92F6

Note:
From your entered password is created by pressing the button, an encrypted value for the system variable KEY. Your password is thus always present in an unreadable format for storage in the ini file and transfer.

- The password must be minimum of 6 characters long and can consist of maximum 16 characters.

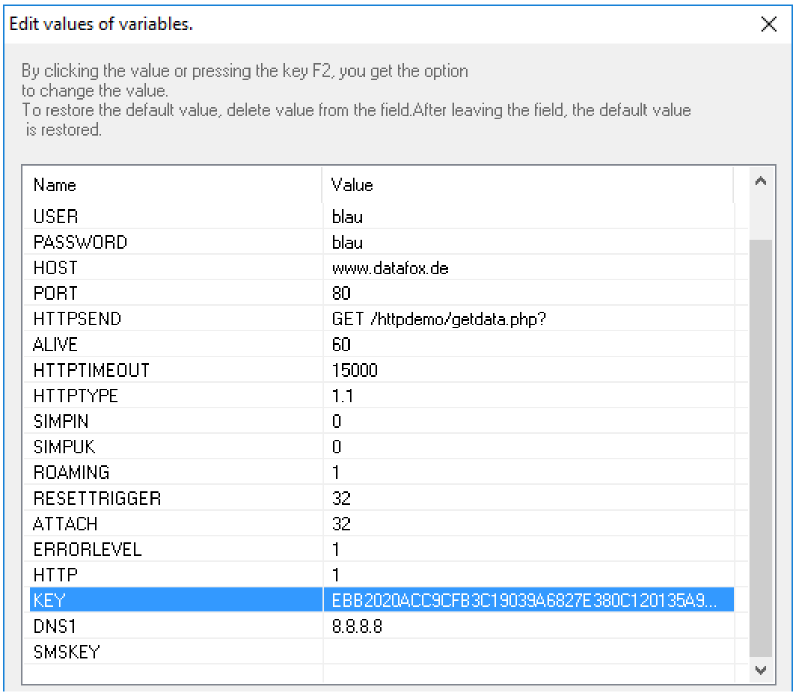
- Do you want to delete the password in the device, please create a value with an empty Password and transmit it.

- To delete the value in the ini file, please clear the value and accept with OK.

Click on "Create value from Password“.

and then on „OK“

Save this file with the new key.



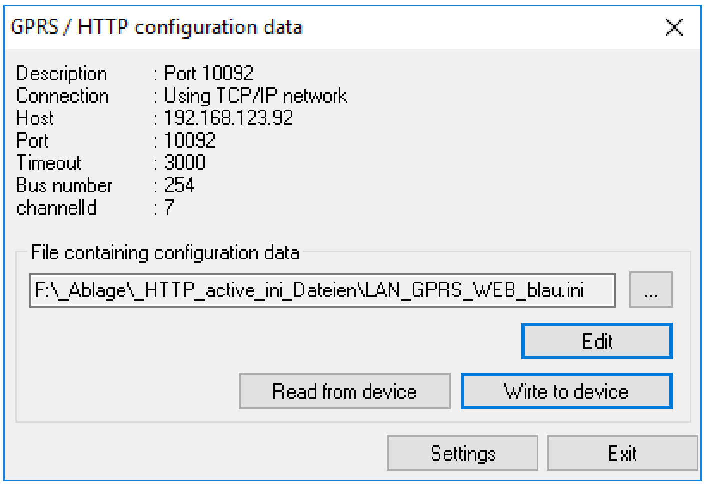
Edit values of variables.

By clicking the value or pressing the key F2, you get the option to change the value.
To restore the default value, delete value from the field.After leaving the field, the default value is restored.

Name	Value
USER	blau
PASSWORD	blau
HOST	www.datafox.de
PORT	80
HTTPSEND	GET /httpdemo/getdata.php?
ALIVE	60
HTTPTIMEOUT	15000
HTTPTYPE	1.1
SIMPIN	0
SIMPUK	0
ROAMING	1
RESETTRIGGER	32
ATTACH	32
ERRORLEVEL	1
HTTP	1
KEY	EBB2020ACC9CFB3C19039A6827E380C120135A9...
DNS1	8.8.8.8
SMSKEY	

Klick on “Write to device“

Now the key in the device is deleted.



GPRS / HTTP configuration data

Description : Port 10092
Connection : Using TCP/IP network
Host : 192.168.123.92
Port : 10092
Timeout : 3000
Bus number : 254
channelId : 7

File containing configuration data

F:_Ablage_HTTP_active_ini_Dateien\LAN_GPRS_WEB_blau.ini

The records are then sent now unencrypted.
After them you can clear the key from the file.

Deactivating Encryption

In order to deactivate the key transferred to the device, you must create an empty password field be clicking the button "Empty value" and transfer the empty key to the device.
The data records are sent unencrypted, then.

Illustration of the GET Request

in plaintext (unencrypted) and encrypted:

Plaintext request
getdatagv.php?table=BB&bTYP=Manu&bLOG=Log&bDAT=2011-05-24_08:30:12&bPER=Per&checksum=2120
Plaintext response
status=ok&checksum=2120 status=ok&checksum=2120
Encrypted request
getdatagv.php?dfcb=1000&table=e977&bTYP=14dce883&bLOG=4d7876&…&checksum=c01de865&dfce=019c1bd2
Encrypted response
dfcb=1000&status=2b97&checksum=1726950d&…&setup_2=a449fd9c&setup_blue=a9375c8d0672&dfce=b99239f3

Detection of an Encryption

In order to detect whether the data fields are sent encrypted, the beginning of the encryption is marked with 'dfcb' (Datafox Crypt Begin) and the end is marked with 'dfce' (Datafox Crypt End). 'dfcb' is the first field of the GET request and 'dfce' the last field.

The value of the field 'dfcb' is transferred in plaintext and is the 'public key'. It is a random number between 1000 and 9999. Combined with the user password, the value must be used for encryption and decryption.

Encryption of data thus is achieved by "private key + public key" as password key.

In the response, the field 'dfcb' must be returned exactly. This ensures that decryption has been successful and the response matches the request.

The value of the field 'dfce' is the same as 'dfcb' but it is transferred encrypted. During encryption it can be ensured that the key used is correct. The value of 'dfce' must equal the value of 'dfcb' after encryption.

If problems occur during encryption, the response 'dfc=error' must be sent. Additionally, information must be entered in the fields 'dfcb' and 'dfce'.

The following errors must be considered by the evaluating script:
'dfcb' is not a number or is outside the value range of 1000 to 9999 • Response: dfc=error&dfcb=range&dfce=unknown/missing o Range means that the value is outside the value range. o Unknown means not determined but available. o Missing means not specified in the request.
'dfcb' without closing 'dfce' • Response: dfc=error&dfcb=1000&dfce=missing
'dfce' is not a number or is outside the value range of 1000 to 9999 • Response: dfc=error&dfcb=1000&dfce=range
'dfce' without incipient 'dfcb' • Response: dfc=error&dfcb=missing&dfce=unknown
‚dfce’ does not equal ‚dfcb’ • Response: dfc=error&dfcb=1000&dfce=different o Different means that 'dcfe' is different from 'dfcb' after decryption.

Response of the Web Server

The field content of the request is deciphered successively using the RC4 stream cipher. The field content of the response is regarded as part of the overall data stream and is ciphered again with the current status of the stream cipher after decryption. Only exception is the first field value of 'dfcb'. It is sent back exactly like in the request.

To the response, 'dfce' must be added as last encrypted field. The value of 'dfce' must equal the value of 'dfcb'.

Activation via Script

The script must use the known "plaintext" password, not the encrypted one generated at the Studio. See the example-php at the product DVD: "dfanalyser.php“.

For further information see the DLL description on the product DVD under: DVD\\MasterIV-Serie\Datafox Geräte\Datafox Software MasterIV-04.02.04_Release\Kommunikationsmodul DFComDLL 04.02.04 (Windows, Linux)

4.3.10. System Variables Active Connection & Configuration

Active connection means that the Datafox device establishes a connection to a PC/server via TCP/IP or GPRS independently, logs on and that the data are received by the application involving the DFCom.dll or maintenance is performed by the application.

If you have not programed an own application, the active connection must always be deactivated so that the device cannot accept a connection.

In the DFCom.dll and the device, certain parameters must be activated in order to establish an active connection. For more information see chapter "**Configuration of an Active Connection**".

This function is available if main communication is TCP/IP, WLAN or GPRS (from GSM module [mobile communications modem] MC55 onwards). The connection is always bidirectional full duplex. The communication is based on the Datafox protocol of the MasterIV series.

4.3.10.1. Description

The concept for an active connection encompasses the realization of an initialization of the TCP/IP connection between the device software (firmware) and the DLL software. The connection is always initialized by the firmware. The connection negotiation is performed via appropriate commands with the DLL.

☞ **Note:**
For most providers, establishing a (TCP/IP) connection "from outside" is not possible. Therefore, the connection must be established by the firmware. Either the connection attempts are blocked directly by the provider or the IP address determined for the PC is not the "real" one of the device.

A connection can be established in TCP/IP networks (also GPRS). Because the devices do not permit several connections, no connection must be established at first, in order to initiate a connection establishment.

The establishment of a connection (request to the DFComDLL) is negotiated as follows:
The DLL receives the connection request at a listen-socket. The connection management checks whether a channel object can be created. When a channel object has been created, the connection is established and remains active for further usage.

! **Caution:**
The "active connection" must be set to "Yes" in the BIOS menu of the device.
If you do not have an own application allowing an active connection, the "active connection" must be set to "No" in the BIOS menu.

4.3.10.2. Configuration of an Active Connection

An active connection requires the following parameters to be set in the device or the application (DFComDLL.dll).

- com.active (0 = deactivated, 1 = activated) Switching the active connection on/off.
- com.notify (0 = deactivated, 1 = activated) Switching the active data record message on/off.
- com.prio (0 = highest, 65535 = lowest) Priority of the event messages in the queue.
- com.host (0.0.0.0 means all) Host to which a connection is to be established.
- com.port Port to which a connection is to be established.
- com.retry Number of the attempts for establishing a connection.
- com.timeout Timeout after the set number of connection attempts has failed.
- com.repeat Timeout until a new notification is sent if existing data records have not been retrieved after a success notification.
- com.alive Timeout when the terminal closes an existing communication channel (connection terminated) if no communication takes place. If a communication channel is not to be closed, the DLL must send a "ping" to the device cyclically. The DLL passes the value to the device at connection acceptance.
- The bus address of the DLL (for call from DFCComOpenIV) is predefined with 31. The number of simultaneously existing connections is limited to 50 connections per DLL instance.

The following value ranges and default values have to be observed:

Description	Name of system variable	Value range	Default value
Activation	com.active	[0, 1]	0
Active data record message	com.notify	[0, 1]	1
Priority	com.prio	[0, …, 65535]	0
Host	com.host	[IP address]	0.0.0.0
Port	com.port	[0, …, 65535]	8000
Connection establishment	com.retry	[0, …, 65535]	3
Communication timeout	com.timeout	[0, …, 4294967295]	900
Message repetition	com.repeat	[0, …, 4294967295]	60
Connection check	com.alive	[0, …, 4294967295]	0

Paramters and default values for configuring an active connection

The parameters required for configuring a device for an active connection are provided in the .ini file. The .ini file contains both the parameters for active connection and parameters for a GPRS/GSM connection. The file is structured as follows:

```
; This area is for GPRS/GSM connection and is not discussed in detail here.
[MODEM_MC35i]
…
```

1) This area is for the active connection
Activates (1) or deactivates (0) the active connection (GPRS via TCP/IP)
ACTIVE=1

2) Activates (1) or deactivates (0) active notifications to a server about created data.
NOTIFY=0

3) Determines the priority according to which notifications from a terminal are processed at the server.
PRIO=0

4) fixed IP address of the server
HOST=192.168.123.169

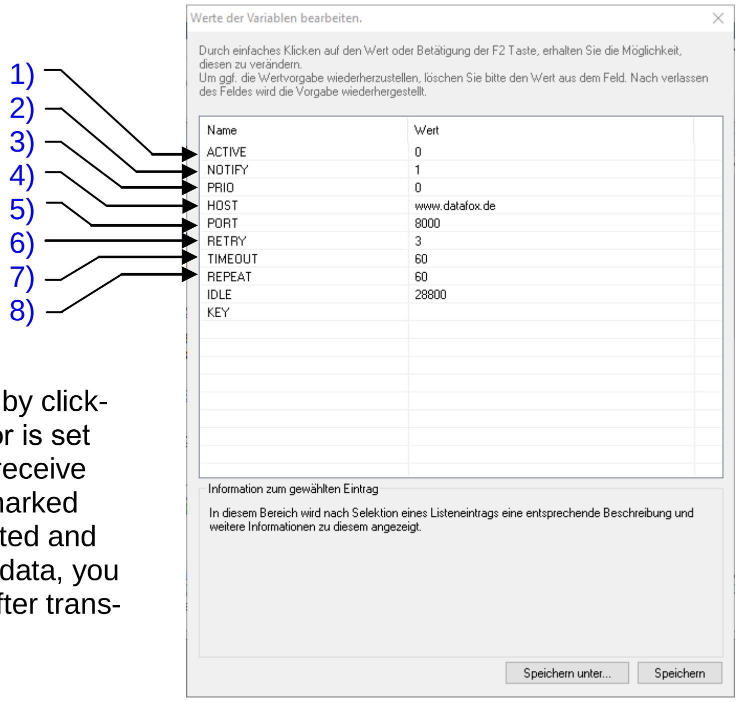
5) port where the server receives requests.
PORT=9001

6) number of attempts for establishing a connection before a break is taken for the duration
; of the timeout
RETRY=3

7) Duration of timeout after several failures (RETRY) to establish a connection.
TIMEOUT=60

8) Time span after which a sent data record which has not been retrieved from the server
; is sent again.
REPEAT=60

When reading data from a device, you must specify whether to overwrite the current .ini file or to write the data into a new or different .ini file.
When the configuration of the active connection has been read from the device successfully, you can select whether to edit the data or save them in the provided .ini file.



Durch einfaches Klicken auf den Wert oder Betätigung der F2 Taste, erhalten Sie die Möglichkeit, diesen zu verändern.
Um ggf. die Wertvorgabe wiederherzustellen, löschen Sie bitte den Wert aus dem Feld. Nach verlassen des Feldes wird die Vorgabe wiederhergestellt.

Name	Wert
ACTIVE	0
NOTIFY	1
PRIO	0
HOST	www.datafox.de
PORT	8000
RETRY	3
TIMEOUT	60
REPEAT	60
IDLE	28800
KEY	

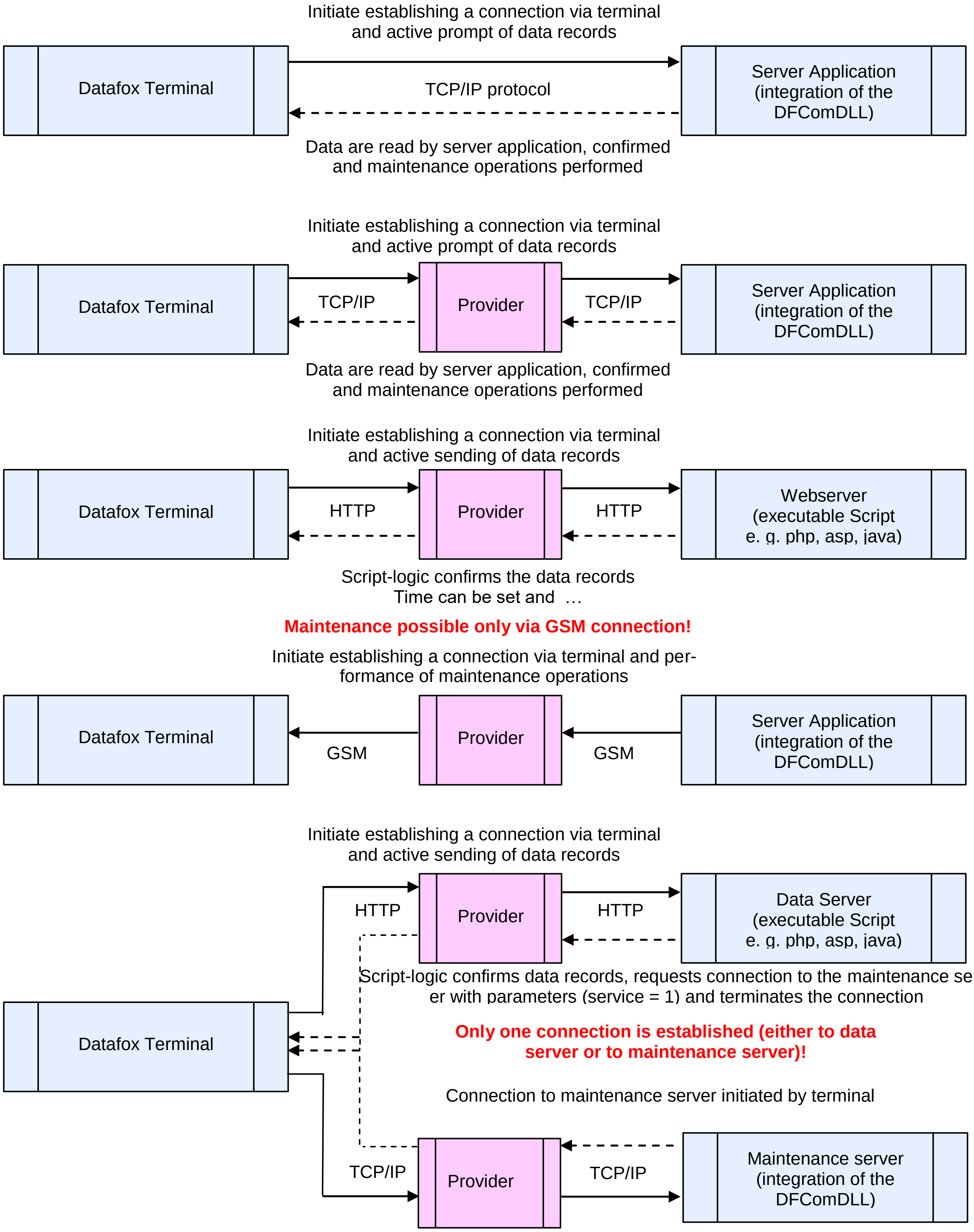
Information zum gewählten Eintrag

In diesem Bereich wird nach Selektion eines Listeneintrags eine entsprechende Beschreibung und weitere Informationen zu diesem angezeigt.

Mark the line you want to edit and by clicking in the column “value” the cursor is set for entering data. In addition, you receive information about the parameter marked concerning the value range permitted and the default value. After saving the data, you must write them into the device. After transfer you receive a status message.

4.3.10.3. Maintenance via Active Connection

The following overview shows the procedures for the active connection and the possibilities for maintaining of the terminals.



Initiate establishing a connection via terminal and active prompt of data records

Data are read by server application, confirmed and maintenance operations performed

Initiate establishing a connection via terminal and active prompt of data records

Data are read by server application, confirmed and maintenance operations performed

Initiate establishing a connection via terminal and active sending of data records

Script-logic confirms the data records
Time can be set and …

Maintenance possible only via GSM connection!

Initiate establishing a connection via terminal and performance of maintenance operations

Initiate establishing a connection via terminal and active sending of data records

Script-logic confirms data records, requests connection to the maintenance server with parameters (service = 1) and terminates the connection

Only one connection is established (either to data server or to maintenance server)!

Connection to maintenance server initiated by terminal

Datafox Terminal
TCP/IP protocol
Server Application (integration of the DFComDLL)
Datafox Terminal
TCP/IP
Provider
TCP/IP
Server Application (integration of the DFComDLL)
Datafox Terminal
HTTP
Provider
HTTP
Webserver (executable Script e. g. php, asp, java)
Datafox Terminal
GSM
Provider
GSM
Server Application (integration of the DFComDLL)
HTTP
Provider
HTTP
Data Server (executable Script e. g. php, asp, java)
Datafox Terminal
TCP/IP
Provider
TCP/IP
Maintenance server (integration of the DFComDLL)

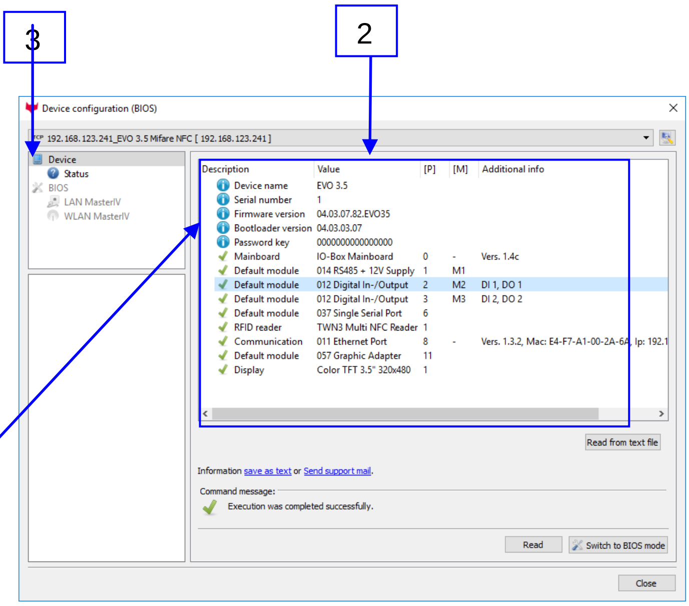
4.3.11. Device Configuration BIOS

This function is important for devices without display. All settings concerning the communication with the device can be made via this function.
Prerequisite is that a connection to the device is established.

Further information provided here are:

1. Set type of communication
2. Device information
3. Device status

Zu1: Die eingestellte Kommunikationsart lässt sich im Bios-Menü einsehen und ändern.



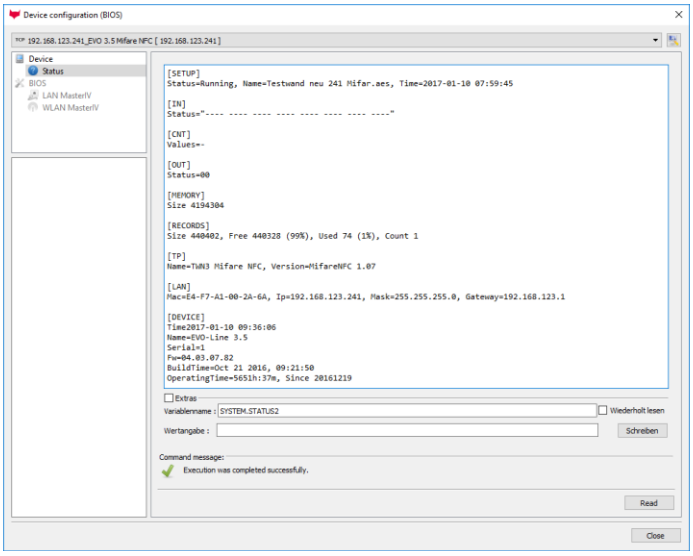
Description	Value	[P]	[M]	Additional info
Device name	EVO 3.5			
Serial number	1			
Firmware version	04.03.07.82.EVO35			
Bootloader version	04.03.03.07			
Password key	0000000000000000			
✓ Mainboard	IO-Box Mainboard	0	-	Vers. 1.4c
✓ Default module	014 RS485 + 12V Supply	1	M1	
✓ Default module	012 Digital In-/Output	2	M2	DI 1, DO 1
✓ Default module	012 Digital In-/Output	3	M3	DI 2, DO 2
✓ Default module	037 Single Serial Port	6		
✓ RFID reader	TWN3 Multi NFC Reader	1		
✓ Communication	011 Ethernet Port	8	-	Vers. 1.3.2, Mac: E4-F7-A1-00-2A-6A, Ip: 192.1
✓ Default module	057 Graphic Adapter	11		
✓ Display	Color TFT 3.5" 320x480	1		

Information save as text or Send support mail.

Command message:
✓ Execution was completed successfully.

Zu2:
Der Registerreiter „Geräteinformationen“ gibt Aufschluss darüber, mit welchen Modulen das Gerät ausgestattet ist und welche Gerätefunktionen unterstützt werden.
An dieser Stelle kann auch das Kommunikationspasswort zurückgesetzt werden.

3:
The tab page „status“ shows information concerning the current device status. If some time has passed, the current status can be read again.


Device configuration (BIOS)
TCP 192.168.123.241_EVO 3.5 Mifare NFC [192.168.123.241]
Device
Status
BIOS
LAN MasterIV
WLAN MasterIV

```
[SETUP]
Status=Running, Name=Testwand neu 241 Mifar.aes, Time=2017-01-10 07:59:45

[IN]
Status="---- ---- ---- ---- ---- ---- ---- ----"

[CNT]
Values=-

[OUT]
Status=00

[MEMORY]
Size 4194304

[RECORDS]
Size 440402, Free 440328 (99%), Used 74 (1%), Count 1

[TP]
Name=TWN3 Mifare NFC, Version=MifareNFC 1.07

[LAN]
Mac=E4-F7-A1-00-2A-6A, Ip=192.168.123.241, Mask=255.255.255.0, Gateway=192.168.123.1

[DEVICE]
Time2017-01-10 09:36:06
Name=EVO-Line 3.5
Serial=1
Fw=04.03.07.82
BuildTime=Oct 21 2016, 09:21:50
OperatingTime=5651h:37m, Since 20161219
```

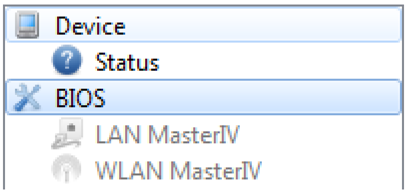
□ Extras
Variablenname : SYSTEM.STATUS2 □ Wiederholt lesen
Wertangabe :

Command message:
✓ Execution was completed successfully.

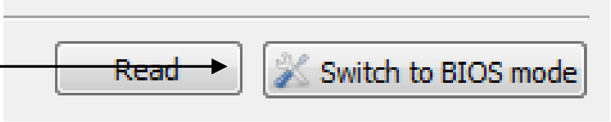
4.3.11.1. Accessing Device BIOS

If the communication type is set properly, you can switch to the BIOS mode of the device.

Step 2:
If the BIOS has been activated successfully, click on BIOS to call the settings dialog for BIOS parameters.

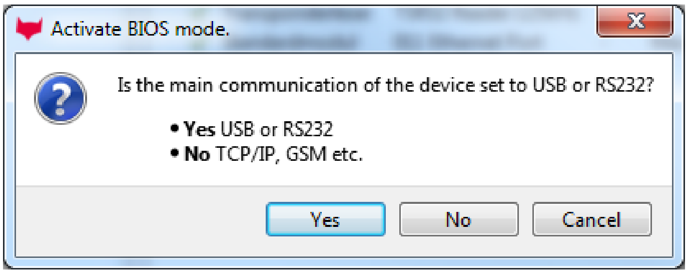


Step 1:
Here, you start switching to BIOS mode.



Wenn das Gerät auf USB oder RS232 steht muss hier „Ja“ angewählt werden.

Falls das Gerät auf TCP/IP, GSM etc. steht „Nein“ anwählen.



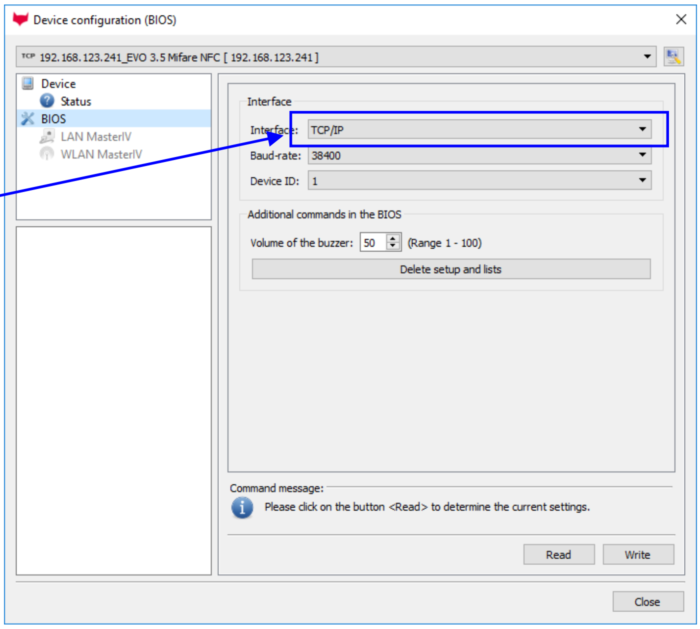
Is the main communication of the device set to USB or RS232?

- **Yes** USB or RS232
- **No** TCP/IP, GSM etc.

☞ **Note:**
If the device does not switch to BIOS mode, another main communication (e.g. GPRS or WLAN) is set for the device.
Turn off the device and press "Switch to BIOS mode".
Then, turn the device on. While booting, the device queries the serial interface and switches communication to it.
This is especially important for switching the main communication for devices without display.

If the BIOS is activated successfully and you have switched to BIOS mode, the following settings are available:

1. Setting main communication (interface, baud rate, deviceID).
2. Configuring system variables (GPRS / HTTP and active connection). For more information see chapter HTTP about LAN and GPRS and chapter Active Connection.
3. Setting volume of buzzer.
4. Deleting setup and lists from a device (only possible via RS232).
5. Resetting communication password of USB host.
6. Resetting WLAN configuration.



TCP 192.168.123.241_EVO 3.5 Mifare NFC [192.168.123.241]

Interface: TCP/IP

Baud-rate: 38400

Device ID: 1

Volume of the buzzer: 50 (Range 1 - 100)

Command message:

Please click on the button <Read> to determine the current settings.

Under Interface,
the main communication of
the device can be set.

If the main communication
is changed, the device
must be restarted in order
to take over the settings.

If you want to change WLAN communication for a device with WLAN module, you must set the main communication RS232 at first. Confirm the changes and switch to BIOS mode again. Only now, the tab page "WLAN" is shown. We recommend proceeding step by step.

- If problems occurred during WLAN configuration, you can execute the function "Set factory default" on the tab page "Values". The progress of the function is displayed.
- Switch to the tab page "TCP/IP". The TCP/IP settings are read (see figure TCP/IP settings). Change the values according to your requirements and write the changed values back to the device.
- Switch to the tab page "WLAN". The WLAN settings are read (see figure WLAN settings). Change the values according to your requirements and write the changed values back to the device.

If you have switched between the tab pages just once, the current values for TCP/IP and WLAN are not read again automatically. In this case, you can run the process via the corresponding tab page manually.

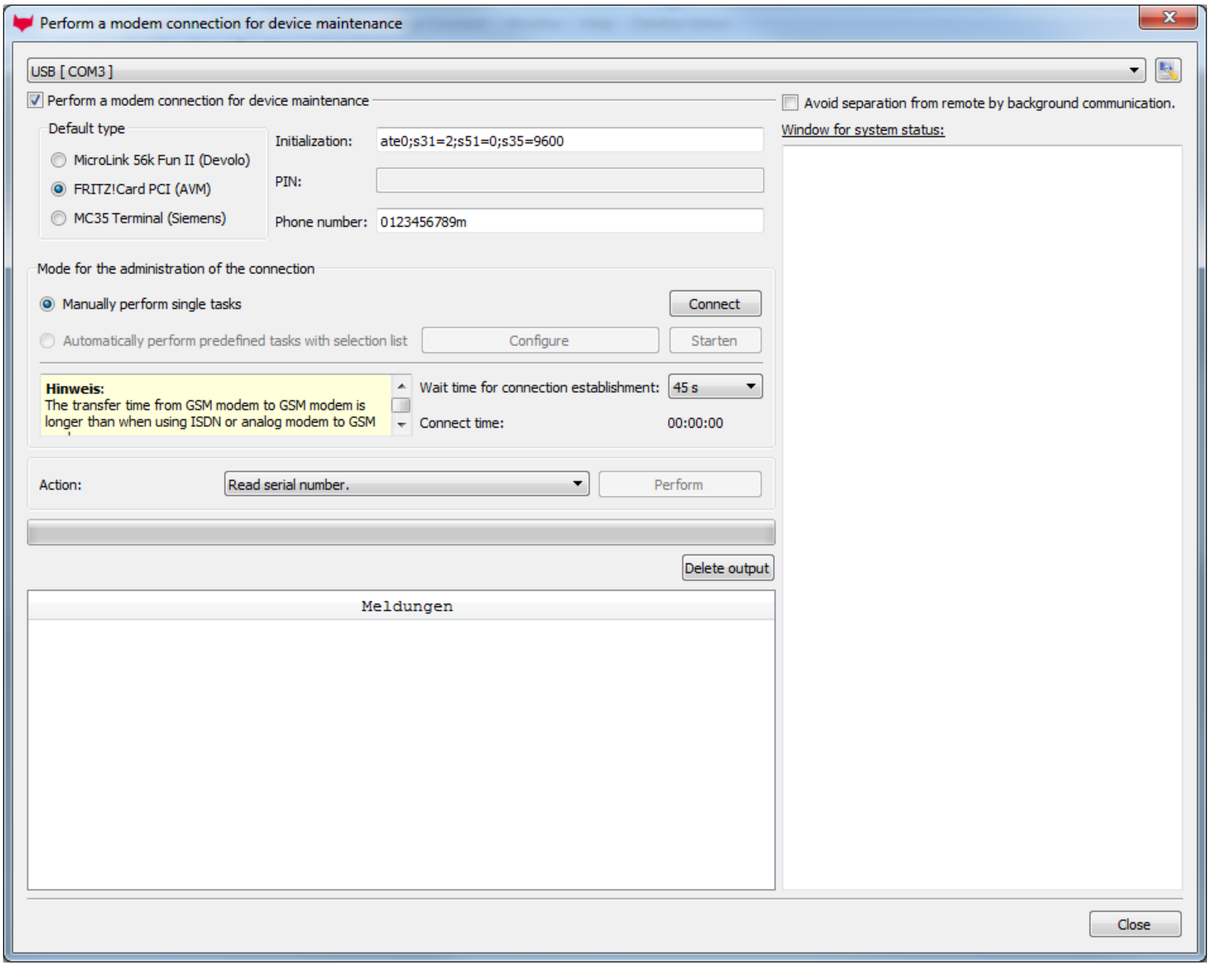
4.4. Extras

This section contains advanced functions which are rarely used and require special knowledge.

4.4.1. Device Maintenance via Modem Connection (GSM)

A device using mobile communication can be maintained in different ways. One way is the device maintenance via modem connection. Another way is the implementation of the DFComDLL into a processing software which executes the functions from the DFComDLL for maintenance.

When maintaining via modem connection, note that an existing connection is terminated automatically after ca. 1 minute if no communication with the device takes places. First, a communication channel to the device must be established. For this purpose, select the modem type (analog, ISDN or cellular). If you use a different modem than the default type given, enter the AT commands for the initialization of the modem. Enter the calling number and, if necessary, the PIN for a SIM card. After establishing the connection, you can select and execute an action from the combo box. If a firmware, setup or other data are to be transferred to the device, first select the corresponding files and directories before executing the desired action. The status of the executed action is displayed at the dialog window. Additionally, the option "Determine system status cyclically" can be activated. By this option, an existing communication channel is kept open.



USB [COM3]

☑ Perform a modem connection for device maintenance

□ Avoid separation from remote by background communication.

Window for system status:

Default type

○ MicroLink 56k Fun II (Devolo)

● FRITZ!Card PCI (AVM)

○ MC35 Terminal (Siemens)

Initialization: ate0;s31=2;s51=0;s35=9600

PIN:

Phone number: 0123456789m

Mode for the administration of the connection

● Manually perform single tasks

○ Automatically perform predefined tasks with selection list

Hinweis:
The transfer time from GSM modem to GSM modem is longer than when using ISDN or analog modem to GSM

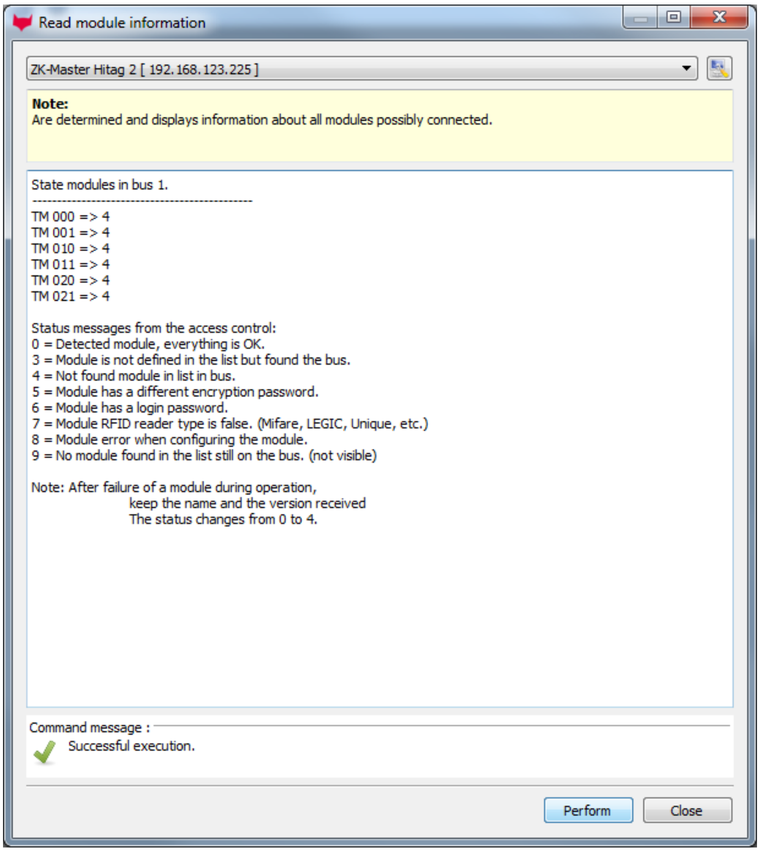
Wait time for connection establishment: 45 s

Connect time: 00:00:00

Action: Read serial number.

4.4.2. Retrieving Statuses of Access Modules

For commissioning an access control or for error analysis, status information of the access modules can be retrieved in a system. After executing the function, all modules found in the bus according to configuration are displayed. The status of a module corresponds to the value from the list. The first column shows all possible modules. TM 000 corresponds to a module at the RS485 bus with the bus-no. 0, TM 001 corresponds to a module which is connected to the module at the RS485 bus with the bus-no. 0 via RS232. This means, that 000, 010, 020, ..., 070 are all modules at the RS485 bus. All modules with the label 001, 011, 021, ..., 071 are modules connected to the corresponding module at the RS485 bus via RS232. 000 and 001, 010 and 011, 020 and 021, ..., 070 and 071 each form a module pair. The second column shows the module type. R means a reader, TM a door module (with relay for door control) and LTM a reader with door module function. The third column shows the firmware version of the corresponding module from the RS485 bus.



Note:
Are determined and displays information about all modules possibly connected.

```
State modules in bus 1.
----------------------------------------------
TM 000 => 4
TM 001 => 4
TM 010 => 4
TM 011 => 4
TM 020 => 4
TM 021 => 4

Status messages from the access control:
0 = Detected module, everything is OK.
3 = Module is not defined in the list but found the bus.
4 = Not found module in list in bus.
5 = Module has a different encryption password.
6 = Module has a login password.
7 = Module RFID reader type is false. (Mifare, LEGIC, Unique, etc.)
8 = Module error when configuring the module.
9 = No module found in the list still on the bus. (not visible)

Note: After failure of a module during operation,
              keep the name and the version received
              The status changes from 0 to 4.
```

Command message :
✓ Successful execution.

4.4.3. Recovering Data Records

If it is necessary to read the data records again, this function helps you to reset the record pointer to the last valid data record. Valid data records are available at the device only if no firmware update has been run, no setup has been transferred or the function to delete all data has not yet been executed.

After executing this function, all valid data records can be read from the device again.

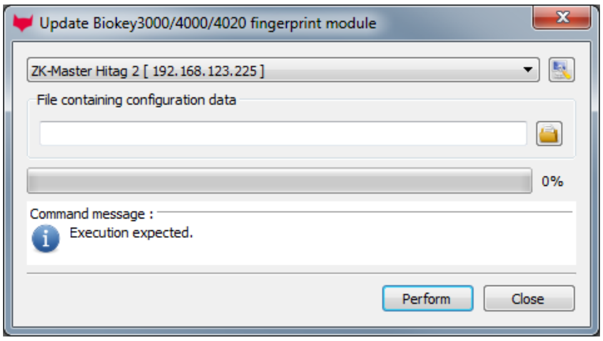
4.4.4. Update Biokey3000/4000/4020 Fingerprint Module

The Biokey firmware update is executed via the main communication or via DLL (see DLL documentation). For this purpose, the firmware file with the format *.up3 for Biokey 3000 and *.up4 for Biokey 4000 is stored temporarily in the flash of the PZE-Master and checked. Then, the update is run within the device. There are some device configurations where this function is not contained by default. In such a case, proceed as follows: Ensure that the device firmware (*.dfz), device setup (*.aes) and the lists required are available. Then, you must transfer the firmware (PZEBio-KeyUpdate.hex or AEBio-KeyUpdate.hex) to the device which provides the function for the Biokey firmware update only for hardware 2.0 and 2.1. Subsequently, you execute the Biokey firmware update as described below. After successful execution, you must restore the device with the original firmware (not Biokey), setup and lists.

Prerequisites:

- DatafoxStudioIV version 04.02.00.xx or higher
- Firmware version 04.01.05.11 or higher

Select the firmware file to be transferred (Biokey3000_vXXX_datafox.up3 or Bio-key4000_vXXX_datafox.up4). The XXX stands for the firmware version. Biokey4020_vXXX_datafox.up5). The XXX stands for the firmware version.


Update Biokey3000/4000/4020 fingerprint module

ZK-Master Hitag 2 [192.168.123.225]

File containing configuration data

0%

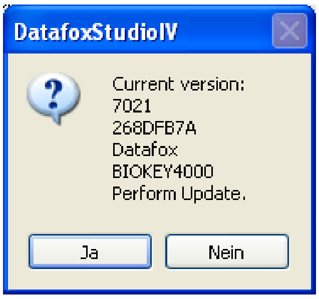
Command message :

Execution expected.

!

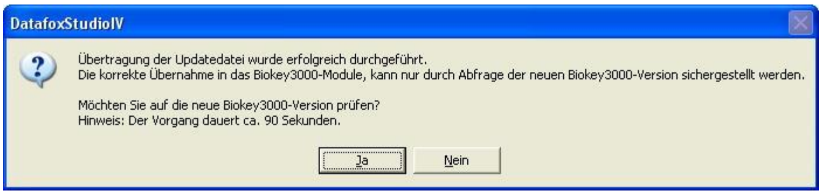
Caution:
Observe that only approved firmware files are loaded, otherwise operation failure of the Biokey3000 and Biokey4000 module may occur.

Before executing the update, the current version of the module is checked. Now you can decide whether to run the update or not.


DatafoxStudioIV

Current version:
7021
268DFB7A
Datafox
BIOKEY4000
Perform Update.

After transfer to the terminal, the new firmware is directly transferred into the Biokey3000 / Biokey4000.

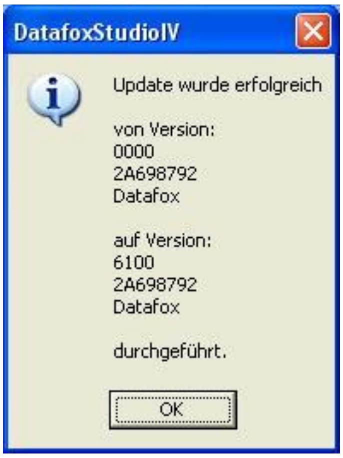


Übertragung der Updatedatei wurde erfolgreich durchgeführt.
Die korrekte Übernahme in das Biokey3000-Module, kann nur durch Abfrage der neuen Biokey3000-Version sichergestellt werden.

Möchten Sie auf die neue Biokey3000-Version prüfen?
Hinweis: Der Vorgang dauert ca. 90 Sekunden.

By clicking “Yes” you can display an additional message after checking the update and by clicking “No” you can finish the update without getting a final message.

After finishing the firmware update, this message is shown if you have clicked “Yes” in the former dialog window. Keep to this procedure also when updating via modem connection. The only difference is that you do not start the process via the menu but the modem dialog.



Update wurde erfolgreich

von Version:
0000
2A698792
Datafox

auf Version:
6100
2A698792
Datafox

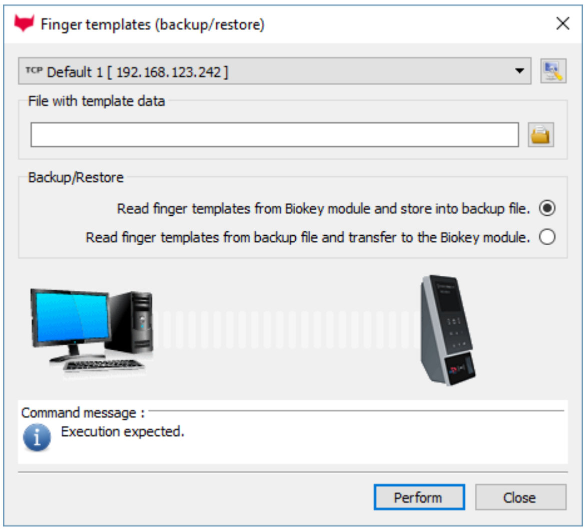
durchgeführt.

! **Caution:**
From Biokey3000 version 6100 onwards, the parameters for image quality must be reduced from ca. 70 to ca. 40 in the basic settings of the setup.

4.4.5. Backup/Restore of Fingertemplates

DatafoxStudioIV provides a backup and restore function for the BioKey3000 module. With this function, it is possible to create a complete backup of all finger templates from a BioKey terminal and to transfer it to a new terminal.

In order to execute the function, you must provide a backup-file. It can be a not yet existing file in order to create a new backup or you provide an existing file in order to transfer an existing backup to a new terminal.



TCP Default 1 [192.168.123.242]

File with template data

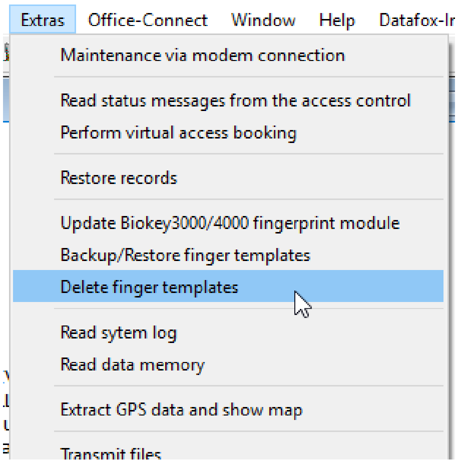
Backup/Restore

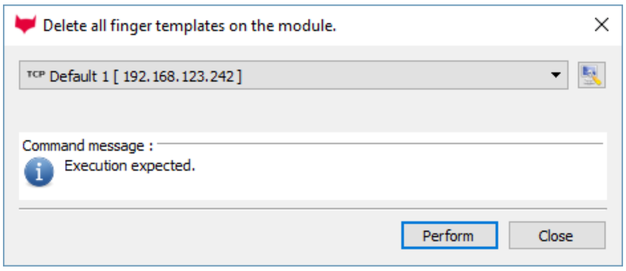
Read finger templates from Biokey module and store into backup file. ●
Read finger templates from backup file and transfer to the Biokey module. ○

Command message :
Execution expected.

4.4.6. Delete Finger Templates

In the menu „Extras“, you find the possibility to clear all finger templates in the Biokey-Modul.


Extras
Office-Connect
Window
Help
Datafox-Ir
Maintenance via modem connection
Read status messages from the access control
Perform virtual access booking
Restore records
Update Biokey3000/4000 fingerprint module
Backup/Restore finger templates
Delete finger templates
Read sytem log
Read data memory
Extract GPS data and show map
Transmit files


Delete all finger templates on the module.

TCP Default 1 [192.168.123.242]

Command message :

Execution expected.

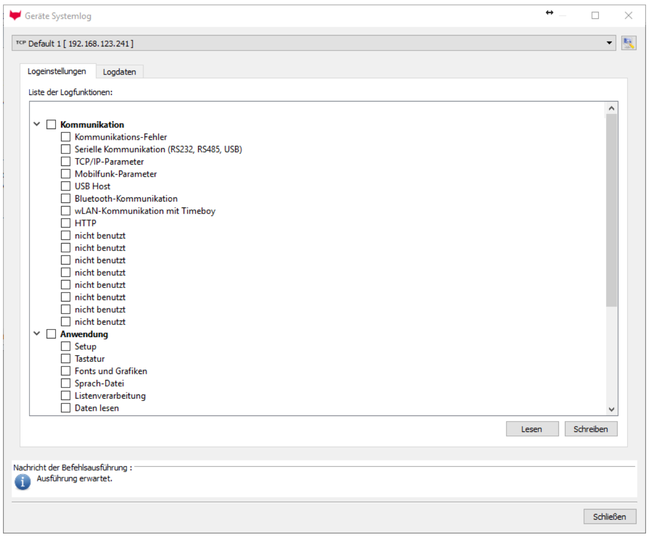
Often, users had the problem that the Biokey module had still stored fingers whose ID was not known or had left the module and tests still on the module. This often led to problems during use.

☞ **Note:**
Before you use the terminal in real-time operation it is necessary delete all old templates.

! **Achtung:**
With the function “Delete Templates“ are delete all Templates irrevocably.

4.4.7. Reading System Logs

In case of undefined behavior of the device, you can read the system logs and analyze them. When executing this function, the following dialog window opens. Via the button "Read/Save" the current system log of a device is read. The file name proposed is a unique file name due to its timestamp and should not be altered. Only this way, you ensure that the file can be read and analyzed by a different application of this dialog. In order to ensure that all system logs are available for an analysis, you must activate the option "Run restore automatically before reading". Via the checkboxes Info, Event, Error and Function you can apply a filter to the data and analyze the data systematically.

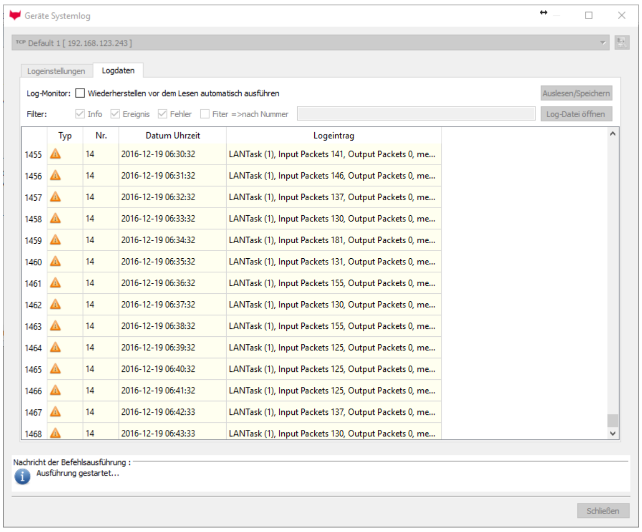


Liste der Logfunktionen:

- □ **Kommunikation**
  - □ Kommunikations-Fehler
  - □ Serielle Kommunikation (RS232, RS485, USB)
  - □ TCP/IP-Parameter
  - □ Mobilfunk-Parameter
  - □ USB Host
  - □ Bluetooth-Kommunikation
  - □ wLAN-Kommunikation mit Timeboy
  - □ HTTP
  - □ nicht benutzt
  - □ nicht benutzt
  - □ nicht benutzt
  - □ nicht benutzt
  - □ nicht benutzt
  - □ nicht benutzt
  - □ nicht benutzt
  - □ nicht benutzt
- □ **Anwendung**
  - □ Setup
  - □ Tastatur
  - □ Fonts und Grafiken
  - □ Sprach-Datei
  - □ Listenverarbeitung
  - □ Daten lesen

Nachricht der Befehlsausführung :
Ausführung erwartet.

Um mehr Informationen zu erhalten, können hier weitere Log-Parameter aktiviert werden.
Nach der Aktivierung werden mehr Details in den Logspeicher geschrieben.
Nutzen Sie nicht mehr wie 3 zusätzliche Log-Parameter.



Log-Monitor: □ Wiederherstellen vor dem Lesen automatisch ausführen

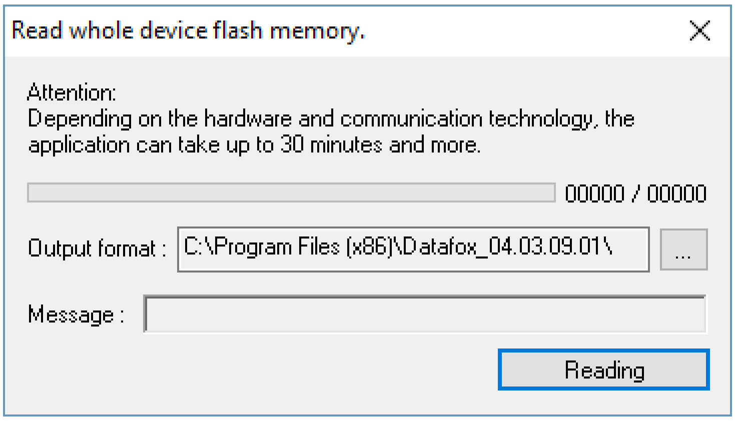
Filter: ☑ Info ☑ Ereignis ☑ Fehler □ Fiter =>nach Nummer

	Typ	Nr.	Datum Uhrzeit	Logeintrag
1455	⚠	14	2016-12-19 06:30:32	LANTask (1), Input Packets 141, Output Packets 0, me...
1456	⚠	14	2016-12-19 06:31:32	LANTask (1), Input Packets 146, Output Packets 0, me...
1457	⚠	14	2016-12-19 06:32:32	LANTask (1), Input Packets 137, Output Packets 0, me...
1458	⚠	14	2016-12-19 06:33:32	LANTask (1), Input Packets 130, Output Packets 0, me...
1459	⚠	14	2016-12-19 06:34:32	LANTask (1), Input Packets 181, Output Packets 0, me...
1460	⚠	14	2016-12-19 06:35:32	LANTask (1), Input Packets 131, Output Packets 0, me...
1461	⚠	14	2016-12-19 06:36:32	LANTask (1), Input Packets 155, Output Packets 0, me...
1462	⚠	14	2016-12-19 06:37:32	LANTask (1), Input Packets 130, Output Packets 0, me...
1463	⚠	14	2016-12-19 06:38:32	LANTask (1), Input Packets 155, Output Packets 0, me...
1464	⚠	14	2016-12-19 06:39:32	LANTask (1), Input Packets 125, Output Packets 0, me...
1465	⚠	14	2016-12-19 06:40:32	LANTask (1), Input Packets 125, Output Packets 0, me...
1466	⚠	14	2016-12-19 06:41:32	LANTask (1), Input Packets 125, Output Packets 0, me...
1467	⚠	14	2016-12-19 06:42:33	LANTask (1), Input Packets 137, Output Packets 0, me...
1468	⚠	14	2016-12-19 06:43:33	LANTask (1), Input Packets 130, Output Packets 0, me...

Nachricht der Befehlsausführung :
Ausführung gestartet...

4.4.8. Reading Memory

In order to offer qualitative support in case of unexpected device behavior, it is possible to read the entire memory via the menu item "Extras". Please use this functionality if detailed information about memory data is required for support.



Attention:
Depending on the hardware and communication technology, the application can take up to 30 minutes and more.

00000 / 00000

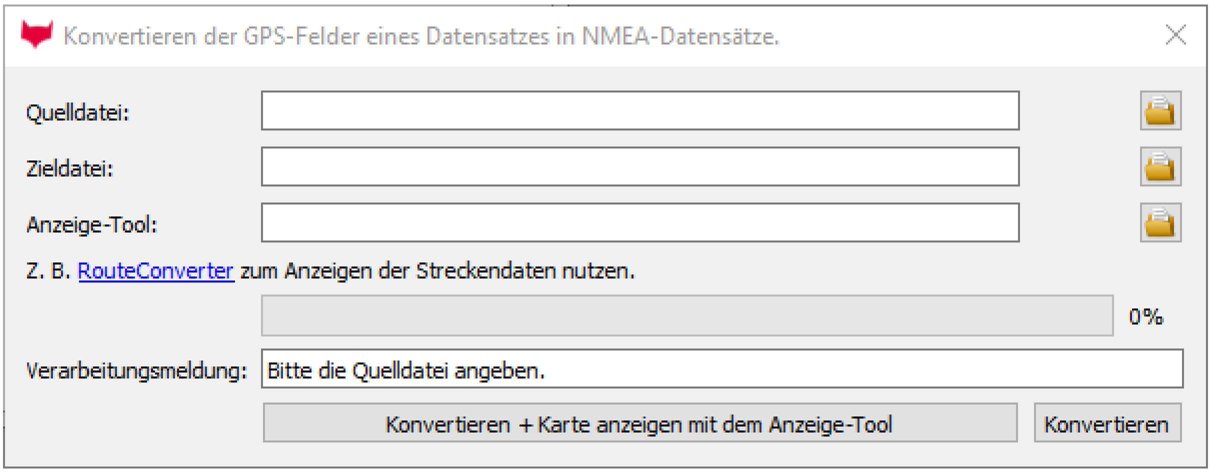
Output format : C:\Program Files (x86)\Datafox_04.03.09.01\

Message :

4.4.9. GPS - Extrahieren und in Karte anzeigen

Mit diesem Tool ist es möglich Anzeigedaten für die Kartendarstellung einer Wegstrecke zu erzeugen.
Es werden Dateien mit der Endung „.nmea“ erzeugt. Viele auf dem Markt erhältlichen Kartenanzeigetools verwenden dieses Format. Das Anzeigetool kann hier durch die Pfadangabe dierekt verlinkt werden.

Das Konvertierungstool erkennt automatisch, wenn in den Datensätzen GPS - Daten enthalten sind.


Konvertieren der GPS-Felder eines Datensatzes in NMEA-Datensätze.

Quelldatei:

Zieldatei:

Anzeige-Tool:

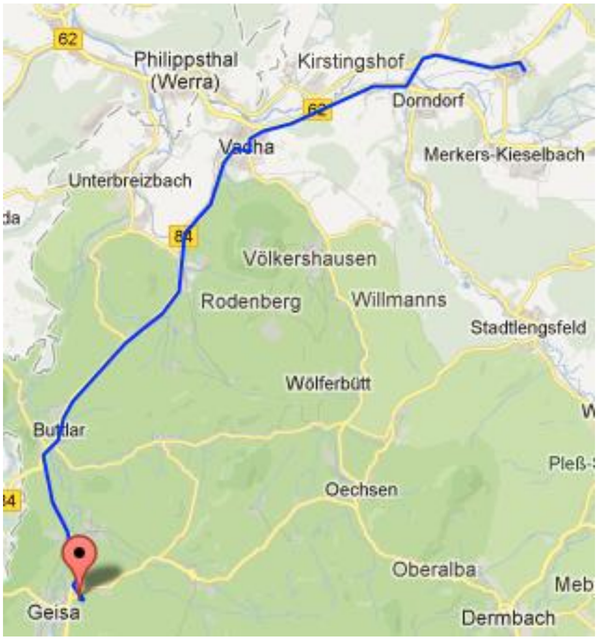
Z. B. RouteConverter zum Anzeigen der Streckendaten nutzen.

0%

Verarbeitungsmeldung: Bitte die Quelldatei angeben.

Die Quelldatei muss eine .txt –Datei sein.
Als Anzeigetool der Wegstrecke können Sie z.B. den „RouteConverter“ verwenden.

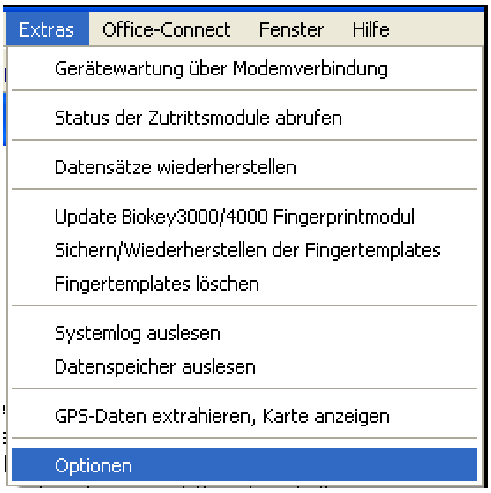
Eine Wegstrecke könnte dann wie folgt aussehen:



4.4.10. Optionen

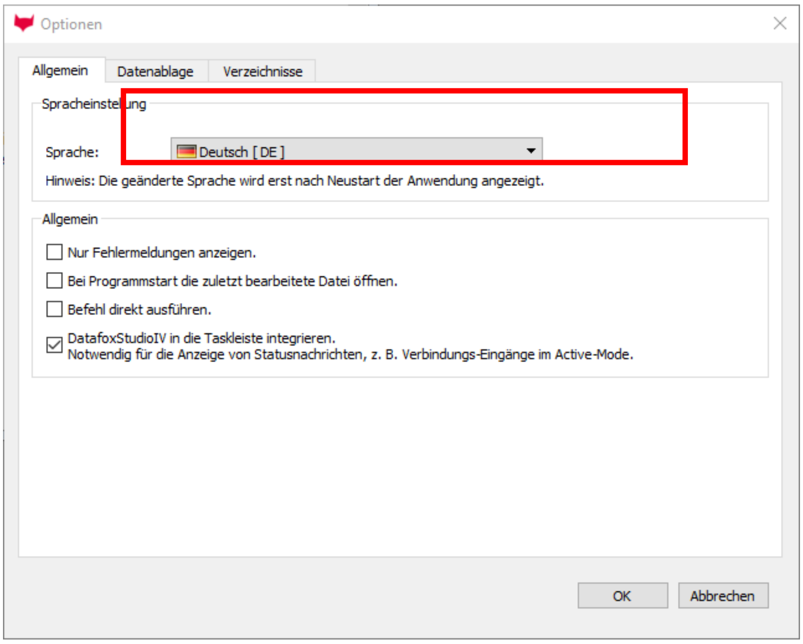
Unter dem Menüpunkt „Extras“ -> Optionen können nun folgende Einstellungen vorgenommen werden:

- Sprache: Deutsch / Englisch
- Datenablage
- Pfadangaben für
  - Setup
  - Listenordner
  - Log-Dateien
  - Firmware
  - Vorlagen Office-Connect


Extras
Office-Connect
Fenster
Hilfe
Gerätewartung über Modemverbindung
Status der Zutrittsmodule abrufen
Datensätze wiederherstellen
Update Biokey3000/4000 Fingerprintmodul
Sichern/Wiederherstellen der Fingertemplates
Fingertemplates löschen
Systemlog auslesen
Datenspeicher auslesen
GPS-Daten extrahieren, Karte anzeigen
Optionen

4.4.10.1. Allgemein

Das Umstellen der Sprache erfolgt unter dem Menüpunkt Optionen-> Allgemein.



Sprache: Deutsch [DE]

Hinweis: Die geänderte Sprache wird erst nach Neustart der Anwendung angezeigt.

Allgemein

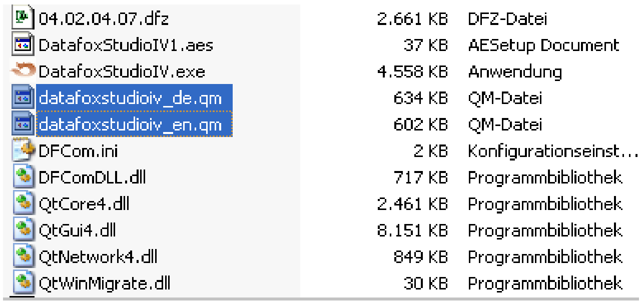
☐ Nur Fehlermeldungen anzeigen.

☐ Bei Programmstart die zuletzt bearbeitete Datei öffnen.

☐ Befehl direkt ausführen.

☑ DatafoxStudioIV in die Taskleiste integrieren.
Notwendig für die Anzeige von Statusnachrichten, z. B. Verbindungs-Eingänge im Active-Mode.

Die Sprachdateien werden in Form einer .qm-Datei zur Verfügung gestellt.



04.02.04.07.dfz	2.661 KB	DFZ-Datei
DatafoxStudioIV1.aes	37 KB	AESetup Document
DatafoxStudioIV.exe	4.558 KB	Anwendung
datafoxstudioiv_de.qm	634 KB	QM-Datei
datafoxstudioiv_en.qm	602 KB	QM-Datei
DFCom.ini	2 KB	Konfigurationseinst…
DFComDLL.dll	717 KB	Programmbibliothek
QtCore4.dll	2.461 KB	Programmbibliothek
QtGui4.dll	8.151 KB	Programmbibliothek
QtNetwork4.dll	849 KB	Programmbibliothek
QtWinMigrate.dll	30 KB	Programmbibliothek

Hinweis:
Nach dem Umstellen der Sprache muss das DatafoxStudioIV neu gestartet werden.

4.4.10.2. Configuring Data Storage

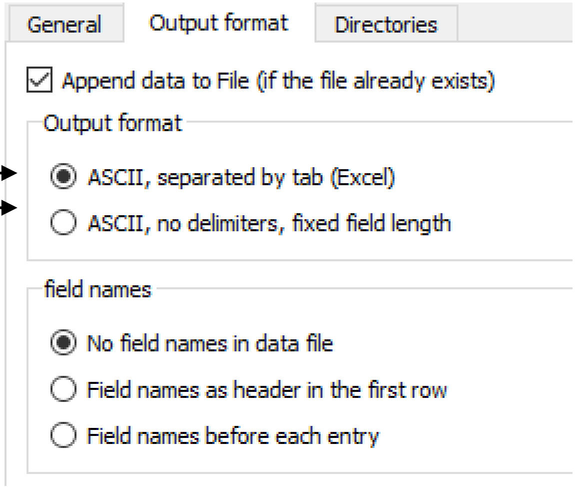
Data which are read from a Datafox device can be stored according to certain specifications.

Specify whether an existing file is to be overwritten or the data are to be appended.

Determine the output format.

See example 1

See example 2



☑ Append data to File (if the file already exists)

Output format

● ASCII, separated by tab (Excel)

○ ASCII, no delimiters, fixed field length

field names

● No field names in data file

○ Field names as header in the first row

○ Field names before each entry

> **!** **Caution:**
> If you want to save the data of several devices in one file, you must activate the option "Append data to file". Otherwise, already existing data are overwritten.

Example 1 (separated with TAB(→))

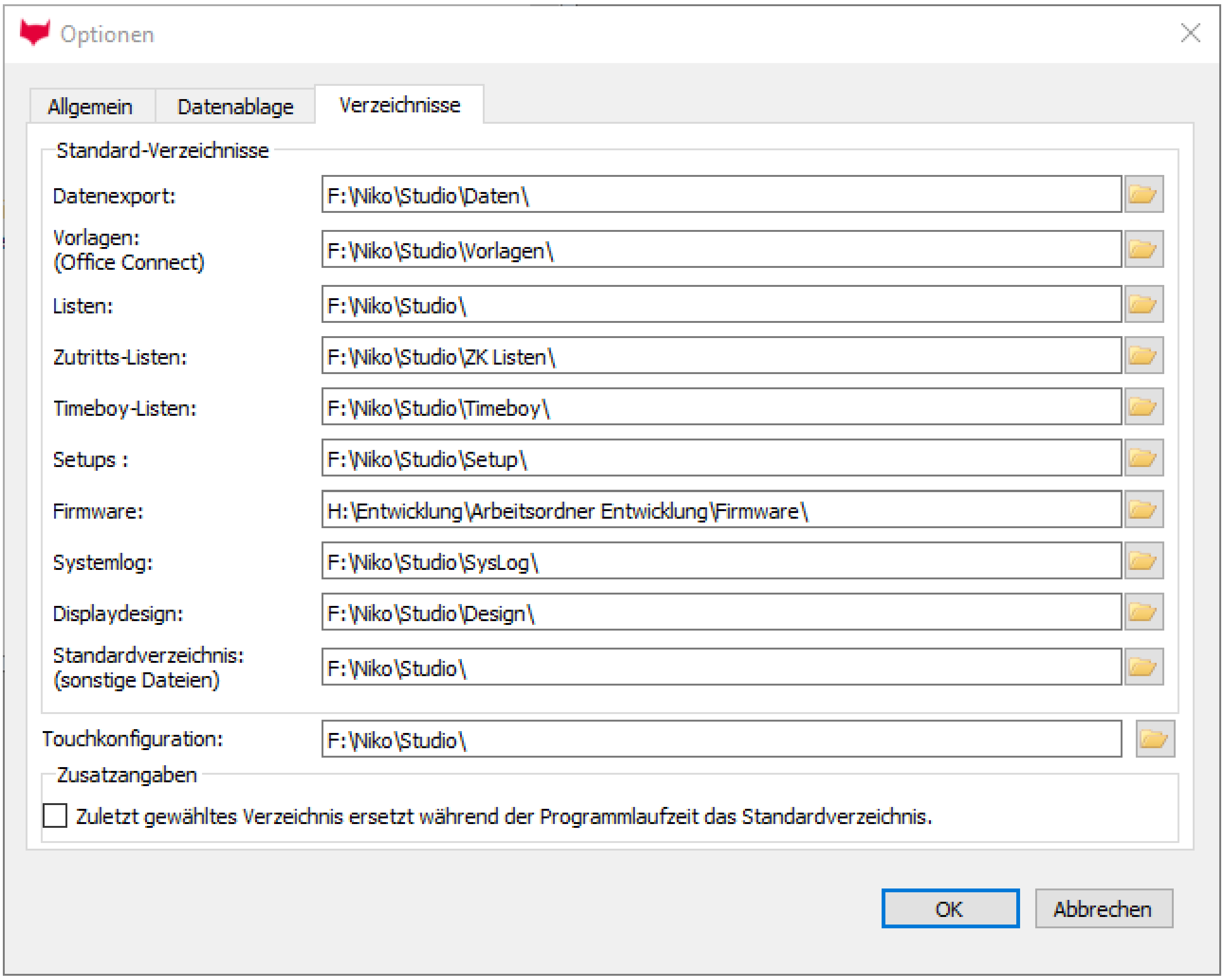
Data record	Date Time		ID		Name		Label	
	2011-09-16 15:38:03	→	00044591	→	JohnPublic	→	103	↵

Example 2 (the value is preceded by space characters depending on the data field length)

Data record	Date Time	ID	Name	Label
	2011-09-16 15:38:03	00044591	JohnPublic	103↵
	2011-09-16 15:39:07	00044598	JanePublic	109↵

4.4.10.3. Path specification for data storage / setup / firmware / etc

In this dialog, default path (default) can be stored. This is advantageous if, for example, you are using a network drive for the data or project storage.
This eliminates the need to click through the Explorer window.



Standard-Verzeichnisse

Datenexport: F:\Niko\Studio\Daten\

Vorlagen: (Office Connect) F:\Niko\Studio\Vorlagen\

Listen: F:\Niko\Studio\

Zutritts-Listen: F:\Niko\Studio\ZK Listen\

Timeboy-Listen: F:\Niko\Studio\Timeboy\

Setups : F:\Niko\Studio\Setup\

Firmware: H:\Entwicklung\Arbeitsordner Entwicklung\Firmware\

Systemlog: F:\Niko\Studio\SysLog\

Displaydesign: F:\Niko\Studio\Design\

Standardverzeichnis: (sonstige Dateien) F:\Niko\Studio\

Touchkonfiguration: F:\Niko\Studio\

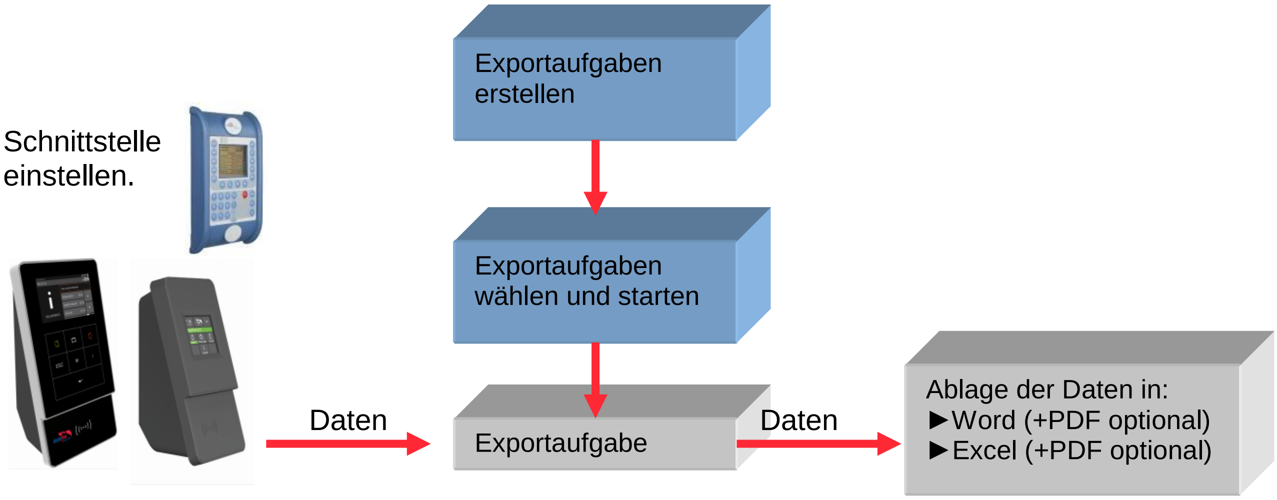
Zusatzangaben

☐ Zuletzt gewähltes Verzeichnis ersetzt während der Programmlaufzeit das Standardverzeichnis.

4.5. Office Connect

4.5.1. Allgemeine Informationen

Office Connect stellt eine einfache Möglichkeit dar, die Daten aus Ihren Datafox MasterIV Geräten für die Einsichtnahme oder die Weiterverarbeitung bereitzustellen. Unterstützt werden die Ausgaben in die üblichen Office-Formate XLS und DOC. Zusätzlich kann eine Protokolldatei im PDF-Format zu jedem Export angelegt werden. Um die Einstellungen der Ausgaben zu speichern, legen Sie Exportaufgaben an. Sie stellen dann nur die Verbindungsparameter zu einen Gerät ein, wählen die Exportaufgabe und starten den Export. Diese legt die Daten aus dem eingestellten MasterIV Gerät in der zuvor gewählten Datei (Word, Excel, PDF) ab.

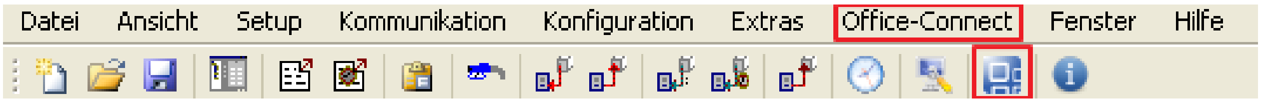


!

Achtung:
Die Einstellung der Schnittstelle zu dem jeweiligen Gerät muss vor dem Starten einer Exportaufgabe vorgenommen werden.
Die Exportaufgabe bezieht sich nur auf die Art der Ablage der Daten und nicht auf ein bestimmtes Gerät.

4.5.2. Bedienung

Um die Anwendung “Office Connect” zu starten, klicken Sie auf “Office-Connect” oder auf dieses Symbol .



☞ **Hinweis:**
Für Office-Connect wird eine Mindestversion von Word / Excel 2003 vorausgesetzt.

4.5.2.1. Exportaufgaben erstellen

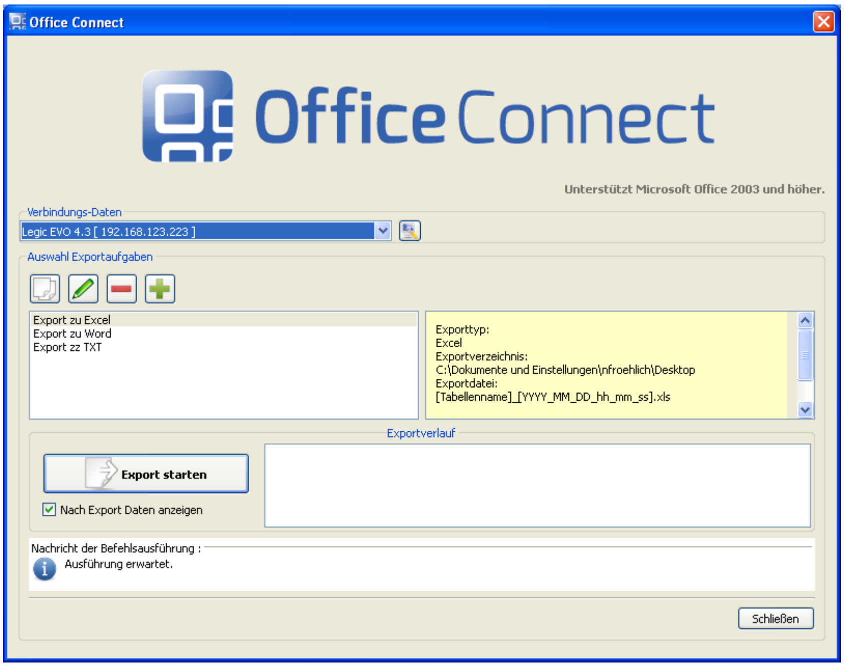
Eine Exportaufgabe enthält alle Einstellungen für einen Export der Daten von den Datafox MasterIV Geräten.
Das Erstellen und Ändern der Exportaufgaben erfolgt mit Hilfe eines Assistenten.
Die Einstellungen im Assistenten sind weitestgehend selbsterklärend.

✎ Exportaufgabe Bearbeiten

❐ Exportaufgabe kopieren

➕ Neue Exportaufgabe erstellen

➖ Exportaufgabe löschen



Legic EVO 4.3 [192.168.123.223]

Export zu Excel
Export zu Word
Export zz TXT

Exporttyp:
Excel
Exportverzeichnis:
C:\Dokumente und Einstellungen\nfroehlich\Desktop
Exportdatei:
[Tabellenname]_[YYYY_MM_DD_hh_mm_ss].xls

☑ Nach Export Daten anzeigen

Nachricht der Befehlsausführung :
Ausführung erwartet.

Mit einem Klick auf den Button starten Sie den jeweiligen Assistenten.

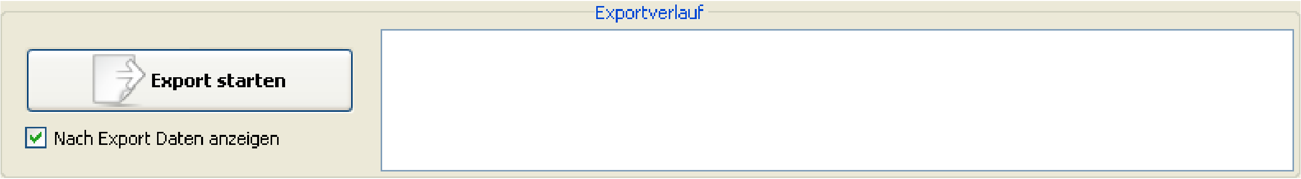
Im Assistenten können Sie eine Exportvorlage heranziehen. Auf der Produkt-DVD finden Sie entsprechende Vorlagen.
Sie können nach dem ersten Export die Datei bearbeiten und Formatierungen ändern. Wenn dann ein erneuter Export (mit Option Daten anhängen) gestartet wird, werden diese Formatierungen beibehalten. (Spaltenbreite; Textformatierungen; Randeinstellungen usw.)

☞ **Hinweis:**
Sie können in der Dokumentenvorlage bei Exporten vom Typ Word einen Textmarker mit der Bezeichnung „**insert**“ setzen, um zu bestimmen, an welcher Stelle die Daten in dem Dokument gespeichert werden sollen.

4.5.2.2. Export starten

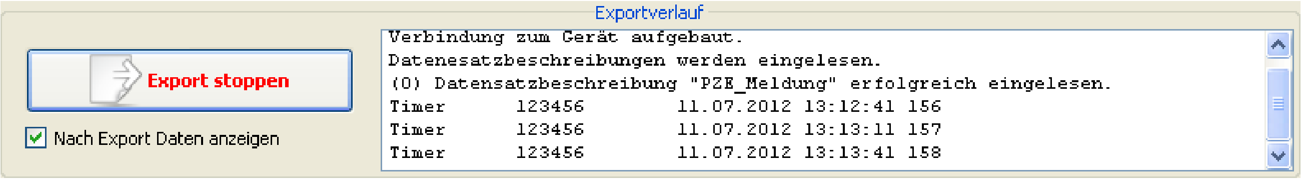
Um einen Export durchzuführen, müssen Sie zuerst die Verbindung zu einem Datafox Gerät herstellen. Sie kennen diesen Dialog aus dem Menü ->Kommunikation ->Einstellungen.

Mit der Schaltfläche „Export starten“ starten Sie eine Exportaufgabe, die Sie im folgenden Dialog aus der Liste auswählen.



Wählen Sie zusätzlich die Option ☑ Nach Export Daten anzeigen wird die Exportdatei nach dem Export der Daten geöffnet.

Den Verlauf des Exports können Sie im Feld „Exportverlauf“ anschauen.



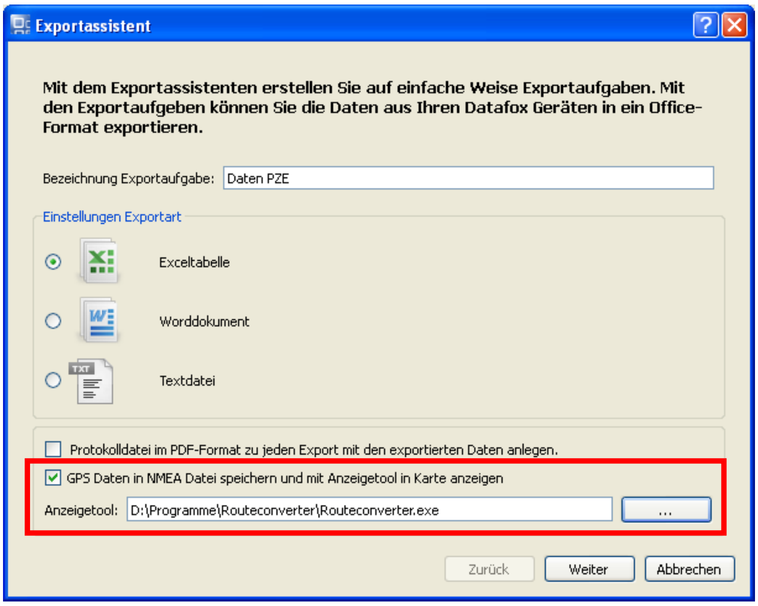
```
Verbindung zum Gerät aufgebaut.
Datenesatzbeschreibungen werden eingelesen.
(0) Datensatzbeschreibung "PZE_Meldung" erfolgreich eingelesen.
Timer      123456       11.07.2012 13:12:41 156
Timer      123456       11.07.2012 13:13:11 157
Timer      123456       11.07.2012 13:13:41 158
```

Sie können einen laufenden Export zu jeder Zeit stoppen mit der Schaltfläche „Export stoppen“. Alle Daten, die zu diesem Zeitpunkt bereits exportiert wurden, werden in der Exportdatei gespeichert und der Export wird beendet.

4.5.2.3. GPS-Daten extrahieren und Anzeigen

Sind in Datensätzen GPS-Daten enthalten, kann daraus automatisch eine NMEA-Datei erzeugt werden.

Aktiviert wird dies, mit dem Setzen dieses Häkchens.



Mit dem Exportassistenten erstellen Sie auf einfache Weise Exportaufgaben. Mit den Exportaufgeben können Sie die Daten aus Ihren Datafox Geräten in ein Office-Format exportieren.

Bezeichnung Exportaufgabe: Daten PZE

Einstellungen Exportart

● Exceltabelle
○ Worddokument
○ Textdatei

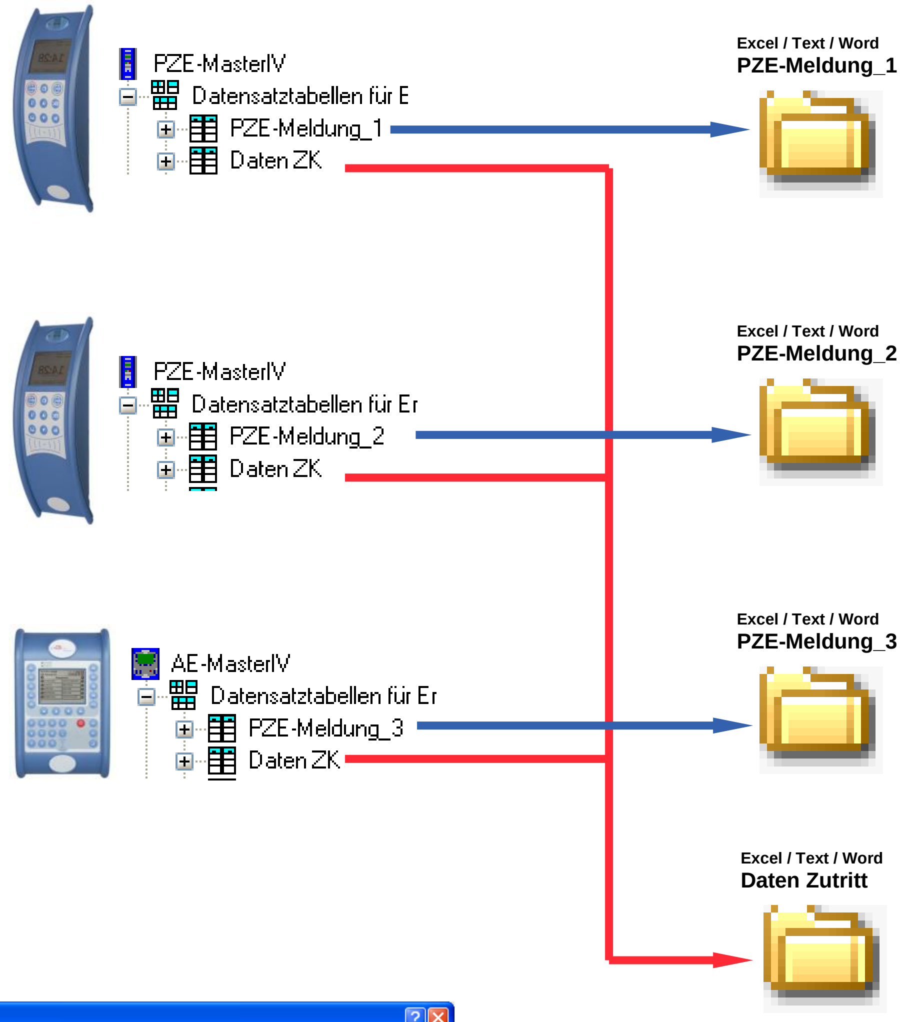
□ Protokolldatei im PDF-Format zu jeden Export mit den exportierten Daten anlegen.
☑ GPS Daten in NMEA Datei speichern und mit Anzeigetool in Karte anzeigen
Anzeigetool: D:\Programme\Routeconverter\Routeconverter.exe

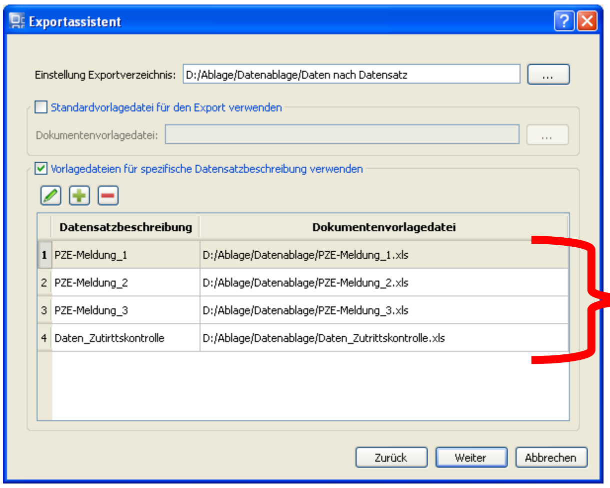
4.5.2.4. Erweiterung für Office-Connect

Bei der Ablage der Daten haben Sie nun die Möglichkeit für jede Datensatzbeschreibung in einem Gerät eine eigene Vorlage zu erstellen bzw. zu wählen.

So können z.B. gleiche Datensätze der selben Datensatzbeschreibung aus verschieden Geräten in einer Datei gespeichert werden.

Beispiel:





Einstellung Exportverzeichnis: D:/Ablage/Datenablage/Daten nach Datensatz

□ Standardvorlagedatei für den Export verwenden

Dokumentenvorlagedatei:

☑ Vorlagedateien für spezifische Datensatzbeschreibung verwenden

	Datensatzbeschreibung	Dokumentenvorlagedatei
1	PZE-Meldung_1	D:/Ablage/Datenablage/PZE-Meldung_1.xls
2	PZE-Meldung_2	D:/Ablage/Datenablage/PZE-Meldung_2.xls
3	PZE-Meldung_3	D:/Ablage/Datenablage/PZE-Meldung_3.xls
4	Daten_Zutirttskontrolle	D:/Ablage/Datenablage/Daten_Zutrittskontrolle.xls

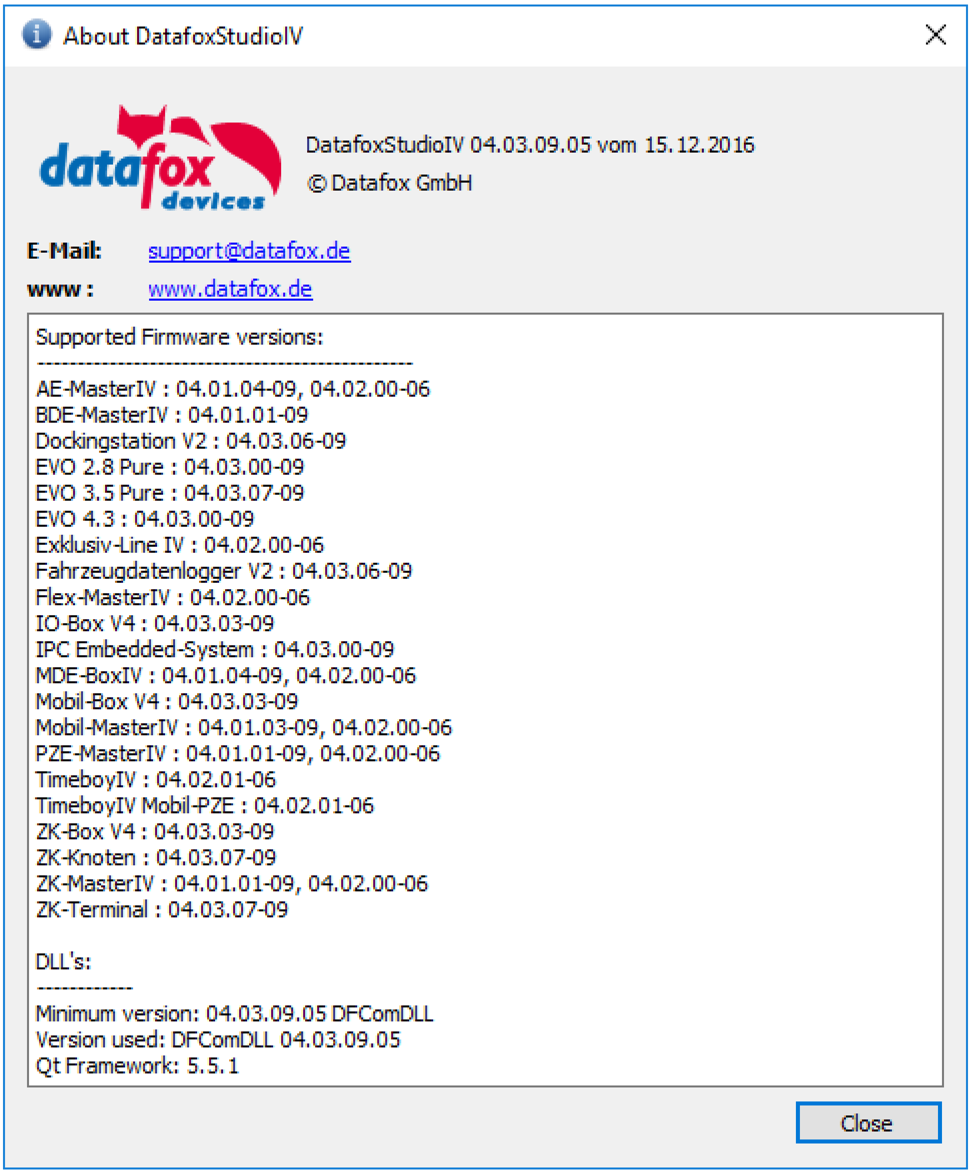
Auf diese Art können in einer Exportaufgabe verschiedene Zuordnungen erreicht werden.

Wird für einen Datensatz keine Vorlage gefunden, wird die Standardvorlage (wenn angegeben) genutzt.
Ist keine Standardvorlage angeben, werden die Daten einfach in ein leeres Dokument geschrieben.

4.6. Help

4.6.1. Information about DatafoxStudioIV

The information dialog window of DatafoxStudioIV shows the software version of DatafoxStudioIV. The build no. is not shown, but the build date. Also the supported firmware and DLL versions are listed.



DatafoxStudioIV 04.03.09.05 vom 15.12.2016

© Datafox GmbH

E-Mail: support@datafox.de

www : www.datafox.de

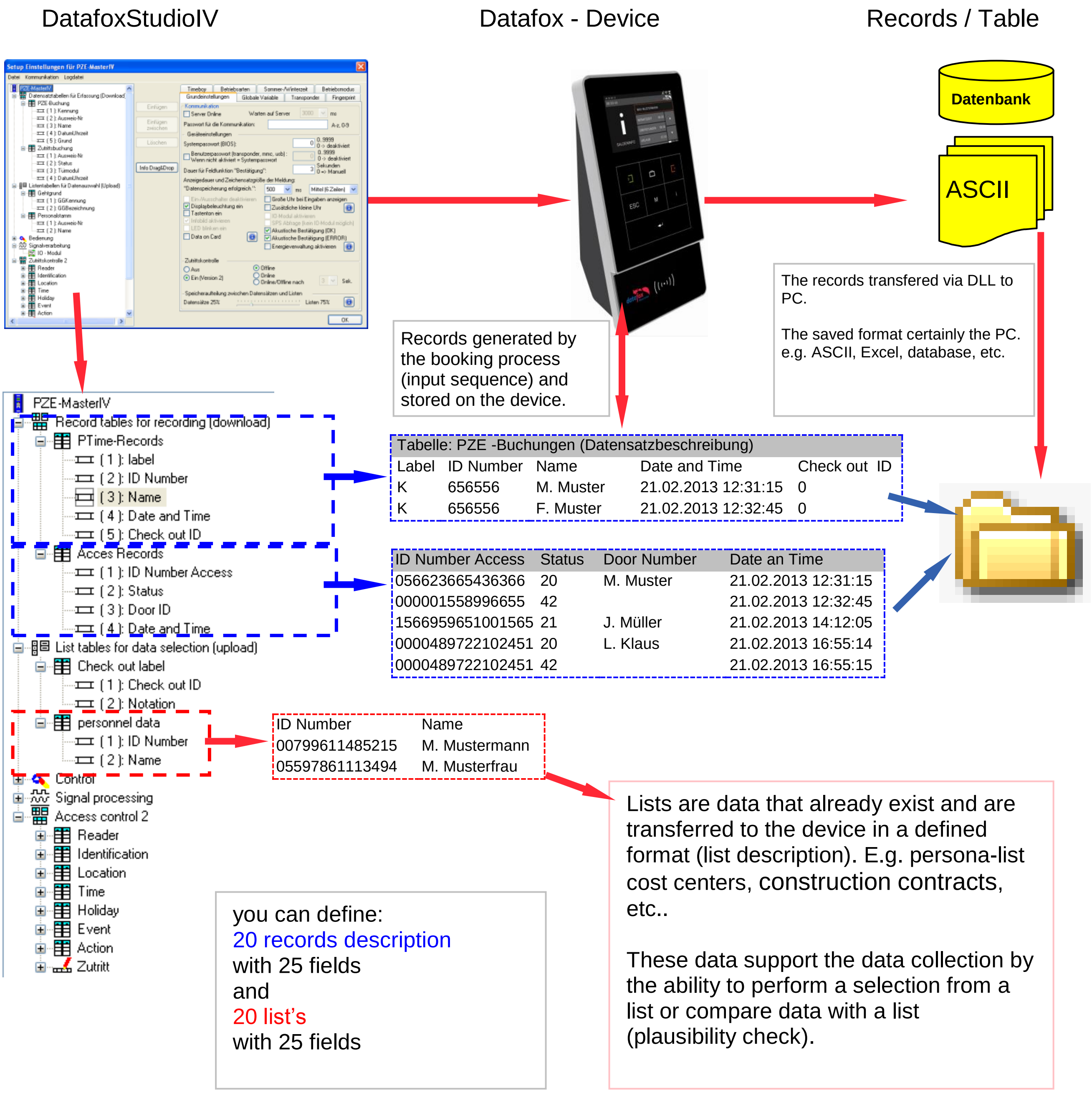
```
Supported Firmware versions:
-----------------------------------------------
AE-MasterIV : 04.01.04-09, 04.02.00-06
BDE-MasterIV : 04.01.01-09
Dockingstation V2 : 04.03.06-09
EVO 2.8 Pure : 04.03.00-09
EVO 3.5 Pure : 04.03.07-09
EVO 4.3 : 04.03.00-09
Exklusiv-Line IV : 04.02.00-06
Fahrzeugdatenlogger V2 : 04.03.06-09
Flex-MasterIV : 04.02.00-06
IO-Box V4 : 04.03.03-09
IPC Embedded-System : 04.03.00-09
MDE-BoxIV : 04.01.04-09, 04.02.00-06
Mobil-Box V4 : 04.03.03-09
Mobil-MasterIV : 04.01.03-09, 04.02.00-06
PZE-MasterIV : 04.01.01-09, 04.02.00-06
TimeboyIV : 04.02.01-06
TimeboyIV Mobil-PZE : 04.02.01-06
ZK-Box V4 : 04.03.03-09
ZK-Knoten : 04.03.07-09
ZK-MasterIV : 04.01.01-09, 04.02.00-06
ZK-Terminal : 04.03.07-09

DLL's:
------------
Minimum version: 04.03.09.05 DFComDLL
Version used: DFComDLL 04.03.09.05
Qt Framework: 5.5.1
```

5. Setup Structure

Before turning the PC on and creating the device setup, you should plan the data recording procedure and thus the setup structure. For this purpose, only a few steps are necessary. If you are well prepared, creating the setup can be done very quickly.

The figure shows the dependencies between parameterization and results data. Further support in form of working models can be found on the Datafox CD.



PZE-MasterIV
- Record tables for recording (download)
  - PTime-Records
    - [1]: label
    - [2]: ID Number
    - [3]: Name
    - [4]: Date and Time
    - [5]: Check out ID
  - Acces Records
    - [1]: ID Number Access
    - [2]: Status
    - [3]: Door ID
    - [4]: Date and Time
- List tables for data selection (upload)
  - Check out label
    - [1]: Check out ID
    - [2]: Notation
  - personnel data
    - [1]: ID Number
    - [2]: Name
- Control
- Signal processing
- Access control 2
  - Reader
  - Identification
  - Location
  - Time
  - Holiday
  - Event
  - Action
  - Zutritt

Records generated by the booking process (input sequence) and stored on the device.

The records transfered via DLL to PC.

The saved format certainly the PC. e.g. ASCII, Excel, database, etc.

Tabelle: PZE -Buchungen (Datensatzbeschreibung)

Label	ID Number	Name	Date and Time	Check out ID
K	656556	M. Muster	21.02.2013 12:31:15	0
K	656556	F. Muster	21.02.2013 12:32:45	0

ID Number Access	Status	Door Number	Date an Time
056623665436366	20	M. Muster	21.02.2013 12:31:15
000001558996655	42		21.02.2013 12:32:45
1566959651001565	21	J. Müller	21.02.2013 14:12:05
0000489722102451	20	L. Klaus	21.02.2013 16:55:14
0000489722102451	42		21.02.2013 16:55:15

ID Number	Name
00799611485215	M. Mustermann
05597861113494	M. Musterfrau

Lists are data that already exist and are transferred to the device in a defined format (list description). E.g. persona-list cost centers, construction contracts, etc..

These data support the data collection by the ability to perform a selection from a list or compare data with a list (plausibility check).

you can define:
20 records description
with 25 fields
and
20 list's
with 25 fields

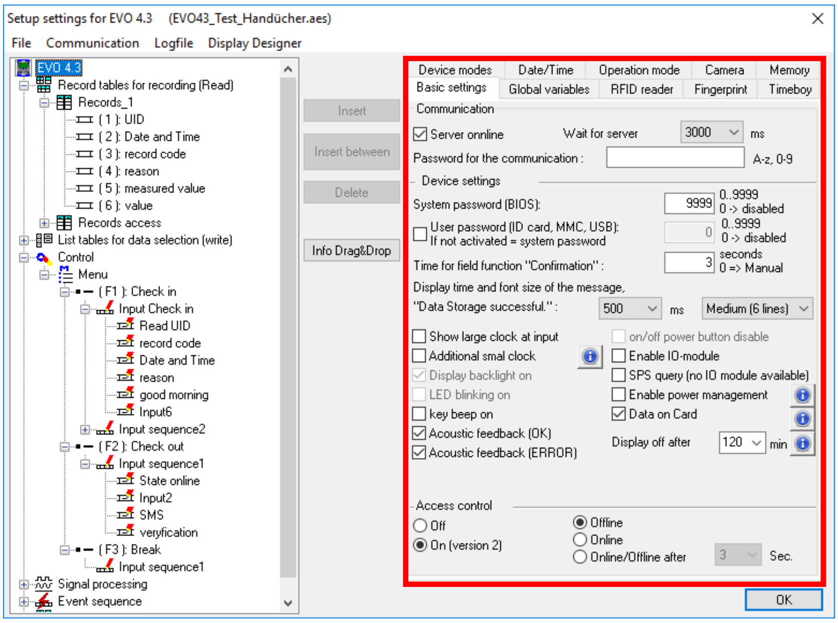
Planning Steps for Creating a Setup

- ► Define all tables for the data records to be recorded:
  - o Field sequence, field name, field format
- ► Set the method of data recording for each field of a data record via the operation (input sequence fields):
  - o Bar code, transponder, list, input via keys, constants, global variables, etc. Combinations are possible.
- ► If lists are to be used, they must be defined analogous to the data record descriptions:
  - o Field sequence, field name, field format
- ► The most important step is planning the recording procedure (input sequences of operation). The following questions should be considered, among others:
  - o Which is the easiest sequence to enter the fields?
  - o Are loops and jump labels necessary?
  - o Are global variables necessary?
  - o Are dependent lists necessary? For example projects with special activities. After selecting the project, only the corresponding activities are available for selection.
  - o Turns the devices off automatically after entering a data record?

The setup must be created in the mask displayed here.
All settings which can be made in the areas marked red are explained in the following chapters.

By clicking on a line in the tree structure, the corresponding editing area is displayed.

Via the button “Insert” the tree structure can be expanded.



Communication

☑ Server onnline   Wait for server 3000 ms

Password for the communication : A-z, 0-9

Device settings

System password (BIOS): 9999 0..9999 0 -> disabled

□ User password (ID card, MMC, USB): If not activated = system password 0 0..9999 0 -> disabled

Time for field function "Confirmation" : 3 seconds 0 => Manual

Display time and font size of the message, "Data Storage successful." : 500 ms Medium (6 lines)

□ Show large clock at input
□ Additional smal clock
☑ Display backlight on
□ LED blinking on
□ key beep on
☑ Acoustic feedback (OK)
☑ Acoustic feedback (ERROR)
□ on/off power button disable
□ Enable IO-module
□ SPS query (no IO module available)
□ Enable power management
☑ Data on Card
Display off after 120 min

Access control

○ Off
● On (version 2)
● Offline
○ Online
○ Online/Offline after 3 Sec.

5.1. Global Settings

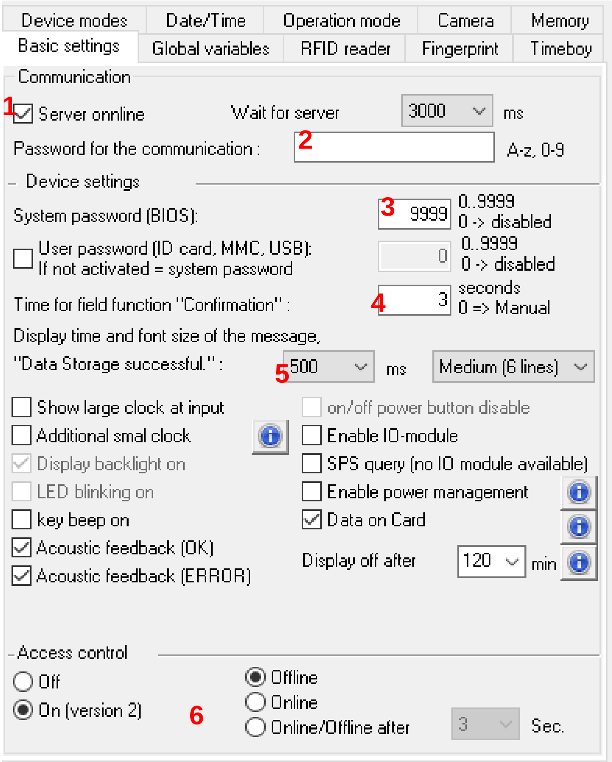
All settings made here, apply for the whole setup. Exceptions are some transponder settings and "Server online" which can partially be changed in the input sequences.

5.1.1. Basic Setting

(1) Server online:
Activate the option “Server online” in order to operate the device in dialog mode with a server. Specify the time in milliseconds the device is to wait for a server response. This time is also the indicator when the status of a created data record switches from online to offline.

(2) Passwort für Kommunikation:
You can use a communication password for the device. If it is set, it is requested for each communication. The Studio stores the password temporarily so that you do not have to enter is for each communication. A password is especially important if you want to protect your intellectual property (e.g. unauthorized reading of the setup).

(3) System password (BIOS):
Access to the BIOS menu at the device can be protected by a password so that unauthorized persons are not able to change the settings of the device.
Passwords can be set for the settings and system menu. Thus, a differentiation between user and administrator is possible.



Communication

☑ Server onnline — Wait for server: 3000 ms

Password for the communication : (empty) A-z, 0-9

Device settings

System password (BIOS): 9999 — 0..9999, 0 -> disabled

□ User password (ID card, MMC, USB): If not activated = system password — 0 — 0..9999, 0 -> disabled

Time for field function "Confirmation" : 3 — seconds, 0 => Manual

Display time and font size of the message, "Data Storage successful." : 500 ms — Medium (6 lines)

- □ Show large clock at input
- □ Additional smal clock
- ☑ Display backlight on
- □ LED blinking on
- □ key beep on
- ☑ Acoustic feedback (OK)
- ☑ Acoustic feedback (ERROR)
- □ on/off power button disable
- □ Enable IO-module
- □ SPS query (no IO module available)
- □ Enable power management
- ☑ Data on Card
- Display off after 120 min

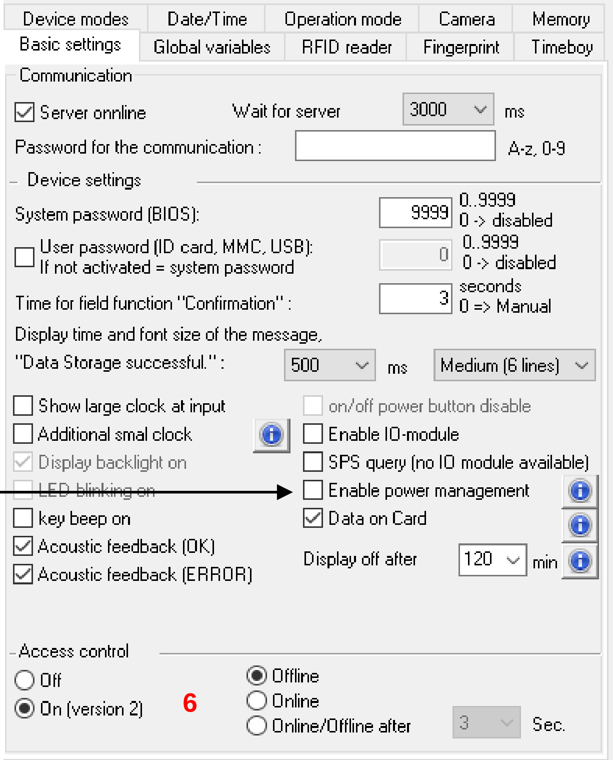
Access control

○ Off
● On (version 2)

● Offline
○ Online
○ Online/Offline after 3 Sec.

(4) Time for field function “Confirmation”:
Determine how long a query text is displayed. That means, during the time given, the user can confirm the query text with ENTER or cancel it with ESC.
If the user does not react during the time given, this is interpreted as ENTER.
If a 0 is set in this field, the terminal waits until an input is made.

(5) Data storage successful:
Determine at which position and in which size the message „Data storage successful“ is displayed.



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

Communication

☑ Server onnline — Wait for server: 3000 ms

Password for the communication : A-z, 0-9

Device settings

System password (BIOS): 9999 — 0..9999, 0 -> disabled

□ User password (ID card, MMC, USB): If not activated = system password — 0 — 0..9999, 0 -> disabled

Time for field function "Confirmation" : 3 — seconds, 0 => Manual

Display time and font size of the message, "Data Storage successful." : 500 ms — Medium (6 lines)

□ Show large clock at input
□ Additional smal clock
☑ Display backlight on
□ LED blinking on
□ key beep on
☑ Acoustic feedback (OK)
☑ Acoustic feedback (ERROR)

□ on/off power button disable
□ Enable IO-module
□ SPS query (no IO module available)
□ Enable power management
☑ Data on Card
Display off after 120 min

Access control

○ Off
● On (version 2)

● Offline
○ Online
○ Online/Offline after 3 Sec.

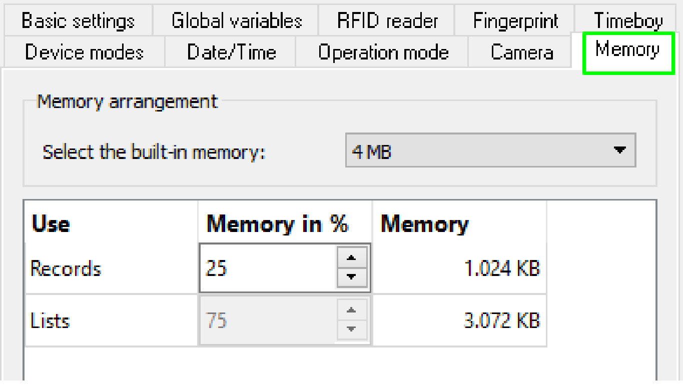
This area should be self-explanatory.

The device manuals contain a separate chapter concerning power management ("Power Management").

If you want to manage an access control via the device, you must activate it here.

(6) Access control:
If you have activated access control here, you can choose between three operation modes.
Offline means that only the access configurations (lists) on the device are used to verify a record (access authorization).
Online means that a record is read by a server application for verifying access authorization. Then, the server application performs the necessary steps (e.g. opening the door). This means that in this operation mode of access control, no configuration data for access control are needed to be available on the device.
Online/ offline after n seconds means that initially a record remains at the device. If the record is not read by the server application, the device performs the verification of access authorization. This means that in this operation mode of access control, the configuration data for access control must to be available on the device as well.

Storage arrangement:
Determine how much storage the firmware uses for booking data (data records) and for master data (lists). If you want to ensure that the device is able to create and save data in case of a longer server breakdown without the data being read, it is recommended to increase the memory share for data records.
If you work with large lists, e.g. for access control, it is necessary increase the memory share for lists and read data from the device more often.



Memory arrangement

Select the built-in memory: 4 MB

Use	Memory in %	Memory
Records	25	1.024 KB
Lists	75	3.072 KB

5.1.2. Global Variables

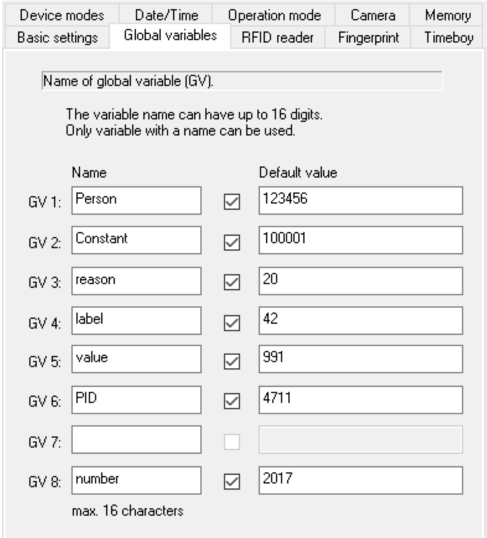
Global variables can be changed everywhere in the setup, via DatafoxStudioIV or by an application via the DLL.
Ensure that you do not accidentally use GV twice at the wrong place.

You can define up to eight global variables.
It is recommended to provide default values in order to restore a defined state after a restart of the device.
Default values can be modified during the term.
The changing of the variables can be doing through:

1- Setup:
- Control
- Signal processing
- Access

2- DFComDLL
- DFCSetGlobVar

3- http-via Server Response
- &Name=Mustermann



Name of global variable (GV).

The variable name can have up to 16 digits.
Only variable with a name can be used.

	Name		Default value
GV 1:	Person	☑	123456
GV 2:	Constant	☑	100001
GV 3:	reason	☑	20
GV 4:	label	☑	42
GV 5:	value	☑	991
GV 6:	PID	☑	4711
GV 7:		□	
GV 8:	number	☑	2017

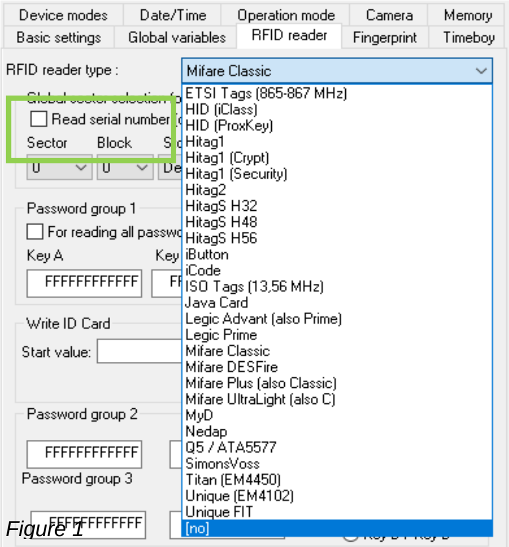
max. 16 characters

5.1.3. Transponder (RFID)

Depending on the transponder type selected, an input formula is displayed where the settings for the transponder type are made.

For the most important transponders and their settings see the chapter „Transponder Methods“.

For certain transponders the settings can be modified via input sequences (*Figure 2*).
Global settings are overridden (*Figure 1*).



RFID reader type : Mifare Classic

□ Read serial number
Sector 0 Block 0

□ For reading all passw
Key A FFFFFFFFFFFF

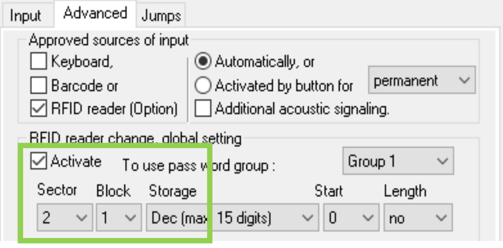
Start value:

FFFFFFFFFFFF

FFFFFFFFFFFF

ETSI Tags (865-867 MHz)
HID (iClass)
HID (ProxKey)
Hitag1
Hitag1 (Crypt)
Hitag1 (Security)
Hitag2
HitagS H32
HitagS H48
HitagS H56
iButton
iCode
ISO Tags (13,56 MHz)
Java Card
Legic Advant (also Prime)
Legic Prime
Mifare Classic
Mifare DESFire
Mifare Plus (also Classic)
Mifare UltraLight (also C)
MyD
Nedap
Q5 / ATA5577
SimonsVoss
Titan (EM4450)
Unique (EM4102)
Unique FIT
[no]

Figure 1



□ Keyboard,
□ Barcode or
☑ RFID reader (Option)

● Automatically, or
○ Activated by button for permanent
□ Additional acoustic signaling.

☑ Activate   To use pass word group : Group 1

Sector	Block	Storage	Start	Length
2	1	Dec (max 15 digits)	0	no

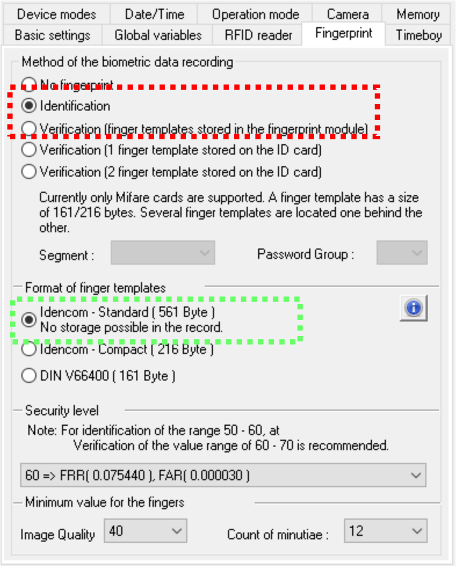
Figure 2

5.1.4. Fingerprint

	 3.5 Pure	 2.8 Pure	 V4	 V4	 V4			 ZK / IO Box V4	 Mobil- Box V4	 Docking V2	 FDL V2	 EVO-IPC
☒	☒	☒	☒	☒	☒							☒

Activate the method you want to use for validating a record (fingerscan).

We recommand the format: Standard (561 Byte)



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

Method of the biometric data recording

○ No fingerprint
● Identification
○ Verification (finger templates stored in the fingerprint module)
○ Verification (1 finger template stored on the ID card)
○ Verification (2 finger template stored on the ID card)

Currently only Mifare cards are supported. A finger template has a size of 161/216 bytes. Several finger templates are located one behind the other.

Segment : | Password Group :

Format of finger templates

● Idencom - Standard (561 Byte)
No storage possible in the record.
○ Idencom - Compact (216 Byte)
○ DIN V66400 (161 Byte)

Security level

Note: For identification of the range 50 - 60, at
Verification of the value range of 60 - 70 is recommended.

60 => FRR(0.075440), FAR(0.000030)

Minimum value for the fingers

Image Quality 40 | Count of minutiae : 12

- ► Identification
  - ○ The finger characteristics are recorded via the BIO-Key module. Then the data pool is checked for matches. If a match is found, the PID of the person is returned, otherwise an error.
- ► Verification
  - ○ An employee identifies himself via a transponder. The PID (employee number) is read from the ID card. Then the employee has to run his finger over the scanner of the BIO-Key module. In the data pool of the BIO-Key module all primary keys (combination of PID and template) with this PID are determined (up to ten assignments are possible) and checked for matches with the scanned finger characteristics.
  - ○ The transponder type additionally supports saving the finger templates on the ID card so that both options are available for this transponder type.
- ► Segment and password group
  - ○ Determine in which segment and with which password group (depending on transponder type) the finger templates are saved on the ID card.
- ► Format of the finger templates
  - ○ We recommend using the Idencom-Compact format because it contains more information and thus enables higher accuracy.
- ► Security level
  - ○ For the recommended settings for this parameter see the dialog. It is a combination of the "False Rejection Rate" = FRR and the "False Acceptance Rate" = FAR.
- ► Minimum values for finger acceptance
  - ○ The minimum image quality specifies in percent the size of the scanned picture, which can be used for determining the finger information.
  - ○ The minimum number of minutia defines the number of finger information which must be determined from a scanned picture.

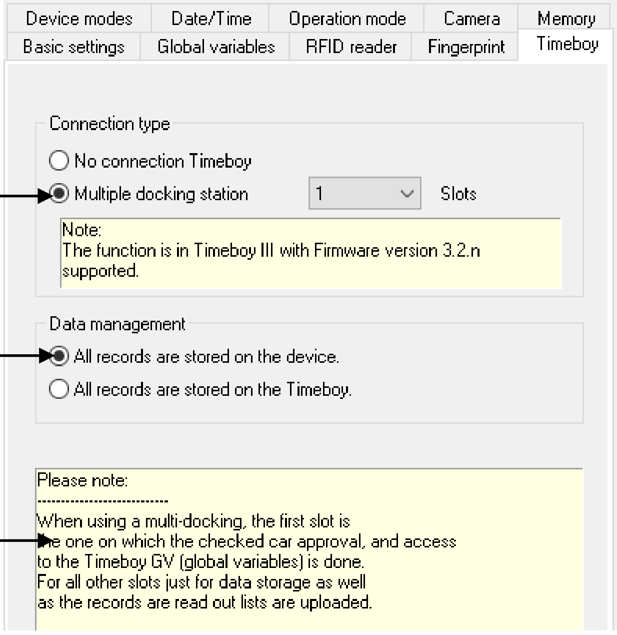
! **Caution:**
The PID must not exceed the decimal value of 4294967295 (2^{32}-1).
We recommend working with a 9-place PID.

5.1.5. Timeboy

When connecting a Timeboy docking station, you must specify how many slots the docking station has.

You determine which device is the data sink and responsible for transfer of data (Timeboy or MasterIV).

For a multiple docking station observe the information given in this dialog field.



Connection type

○ No connection Timeboy

● Multiple docking station 1 Slots

Note:
The function is in Timeboy III with Firmware version 3.2.n supported.

Data management

● All records are stored on the device.

○ All records are stored on the Timeboy.

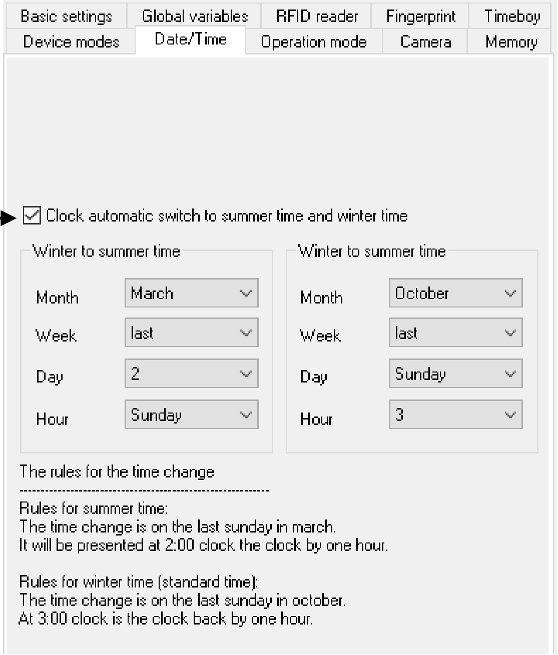
Please note:

When using a multi-docking, the first slot is the one on which the checked car approval, and access to the Timeboy GV (global variables) is done.
For all other slots just for data storage as well as the records are read out lists are uploaded.

5.1.6. Summer-/Wintertime

If the device is used in a different time zone where a different time model is used for changeover from summer and winter times, the settings can be changed here.

Here, you can activate the automatic changeover.



☑ Clock automatic switch to summer time and winter time

Winter to summer time		Winter to summer time	
Month	March	Month	October
Week	last	Week	last
Day	2	Day	Sunday
Hour	Sunday	Hour	3

The rules for the time change

Rules for summer time:
The time change is on the last sunday in march.
It will be presented at 2:00 clock the clock by one hour.

Rules for winter time (standard time):
The time change is on the last sunday in october.
At 3:00 clock is the clock back by one hour.

Month	:	The month is set when the changeover takes place.
Week	:	Concerns the week of the previously set month.
Day	:	Day of the previously set week.
Hour	:	Hour at which the clock is set forward or back.

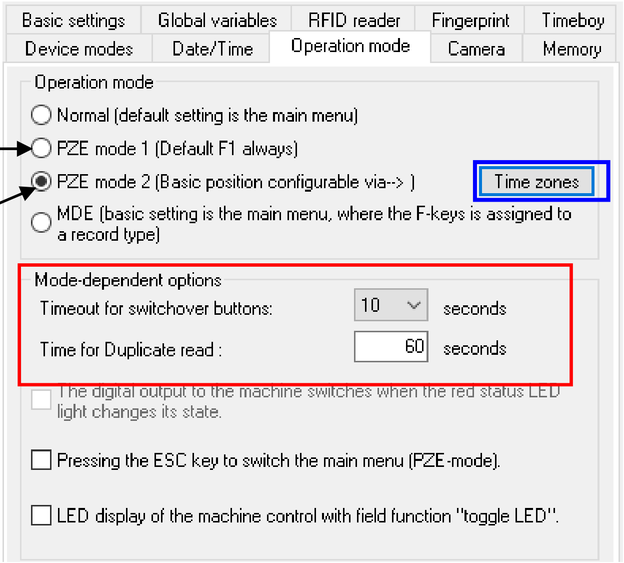
5.1.7. Operation Mode

The operation mode controls the behavior for keyboard switching. With a coming input sequence below the F1 key and a going input sequence below the F2 key, you directly switch to main menu after recording at a device with operation mode "normal".

In PZE mode 1 the F1-key (coming) is always activated, i.e. it is not necessary to press the F1-key. Only the transponder must be hold up.

In PZE mode 2, the key preselection can be defined via a time model.

The time for duplicate read only concerns two successive records. If card A is read and the time for duplicate read is set to 60 seconds, card A can be read again within this 60 seconds if a card B has been read in between.



Operation mode

○ Normal (default setting is the main menu)

○ PZE mode 1 (Default F1 always)

● PZE mode 2 (Basic position configurable via-->) Time zones

○ MDE (basic setting is the main menu, where the F-keys is assigned to a record type)

Mode-dependent options

Timeout for switchover buttons: 10 seconds

Time for Duplicate read : 60 seconds

□ The digital output to the machine switches when the red status LED light changes its state.

□ Pressing the ESC key to switch the main menu (PZE-mode).

□ LED display of the machine control with field function "toggle LED".

Determine how the optical signaling of the LED should work and how the terminal behaves when pressing the ESC key at PZE mode.

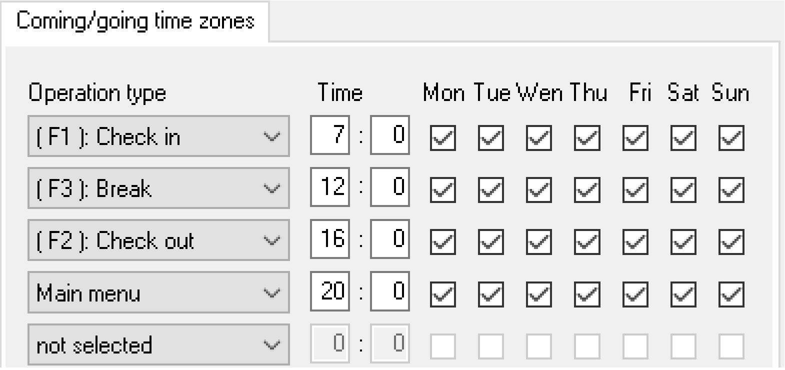
PZE – Mode 2 – Starting the input sequences via a time model.

F1-key, active starting 7:00 am.

F3-key, active starting 12:00 am.

F2-key, active starting 4:00 pm.

Starting 8:00 pm no preselection of function keys.


Coming/going time zones

Operation type	Time	Mon	Tue	Wen	Thu	Fri	Sat	Sun
(F1): Check in	7 : 0	☑	☑	☑	☑	☑	☑	☑
(F3): Break	12 : 0	☑	☑	☑	☑	☑	☑	☑
(F2): Check out	16 : 0	☑	☑	☑	☑	☑	☑	☑
Main menu	20 : 0	☑	☑	☑	☑	☑	☑	☑
not selected	0 : 0	□	□	□	□	□	□	□

5.1.8. Operating Type

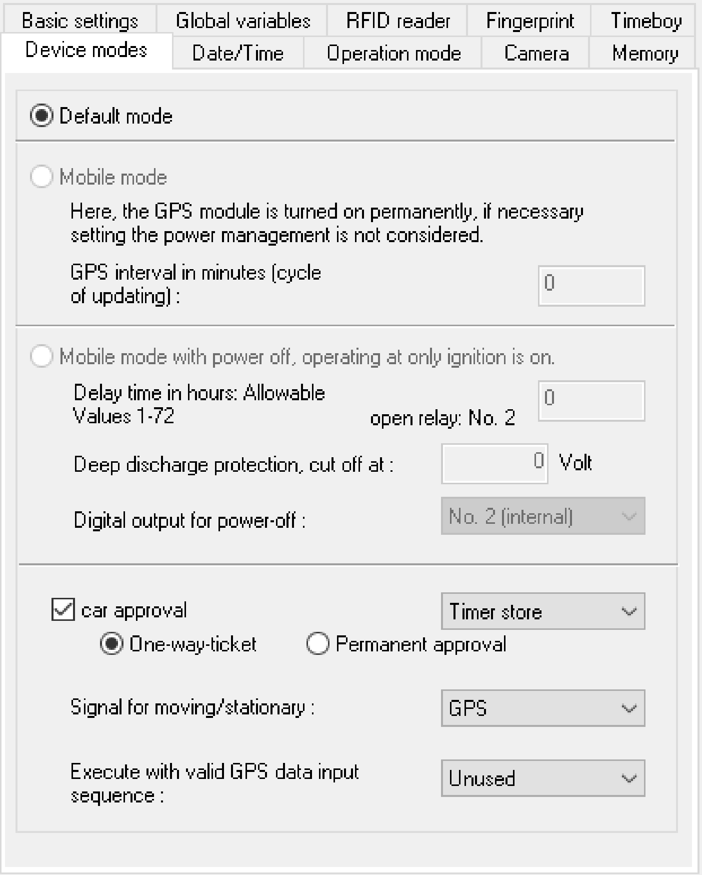
The operating type can only be set for mobile devices. The main purpose is to minimize the energy consumption of the device in order to avoid unnecessarily draining the vehicle battery, for example. In this case you should select the operation type "Mobile operation with power off, operation only if ignition is on!" This way you ensure that the device is not unnecessarily draining the vehicle battery.

The options shown here serve for the operation for commissioning a system (e.g. a vehicle via an explicit car approval).

Determine which digital input is used for detecting start/stop.
Specify in hours the turn-off delay after which the device is turned off.

The deep discharge protection ensures that the vehicle battery cannot be deeply discharged by the device. Specify the lowest voltage value of the vehicle battery at which the device should turn off. Also specify the digital output via which the voltage supply is switched.

If you want to create a GPS data record cyclically, e.g. for theft protection, specify an input sequence for creating a GPS data record. This input sequence is executed cyclically every 10 minutes provided that valid GPS coordinates could be determined.



● Default mode

○ Mobile mode

Here, the GPS module is turned on permanently, if necessary setting the power management is not considered.

GPS interval in minutes (cycle of updating) : 0

○ Mobile mode with power off, operating at only ignition is on.

Delay time in hours: Allowable Values 1-72 — open relay: No. 2 — 0

Deep discharge protection, cut off at : 0 Volt

Digital output for power-off : No. 2 (internal)

☑ car approval — Timer store

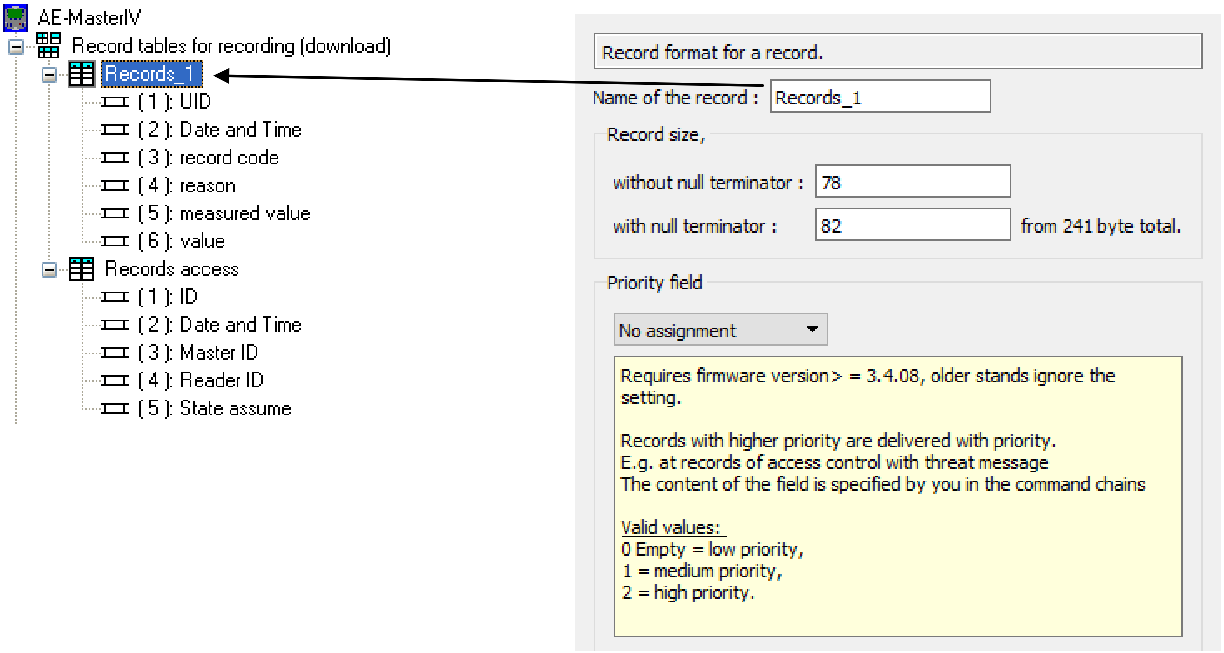
● One-way-ticket ○ Permanent approval

Signal for moving/stationary : GPS

Execute with valid GPS data input sequence : Unused

5.2. Definition of Data Structures

With defining the data record structures you determine which data are stored in a data record. You determine the sequence of information in the data record, the data type of the single fields and the length of information in a field.



AE-MasterIV
- Record tables for recording (download)
  - Records_1
    - (1): UID
    - (2): Date and Time
    - (3): record code
    - (4): reason
    - (5): measured value
    - (6): value
  - Records access
    - (1): ID
    - (2): Date and Time
    - (3): Master ID
    - (4): Reader ID
    - (5): State assume

Record format for a record.

Name of the record : Records_1

Record size,

without null terminator : 78

with null terminator : 82 from 241 byte total.

Priority field

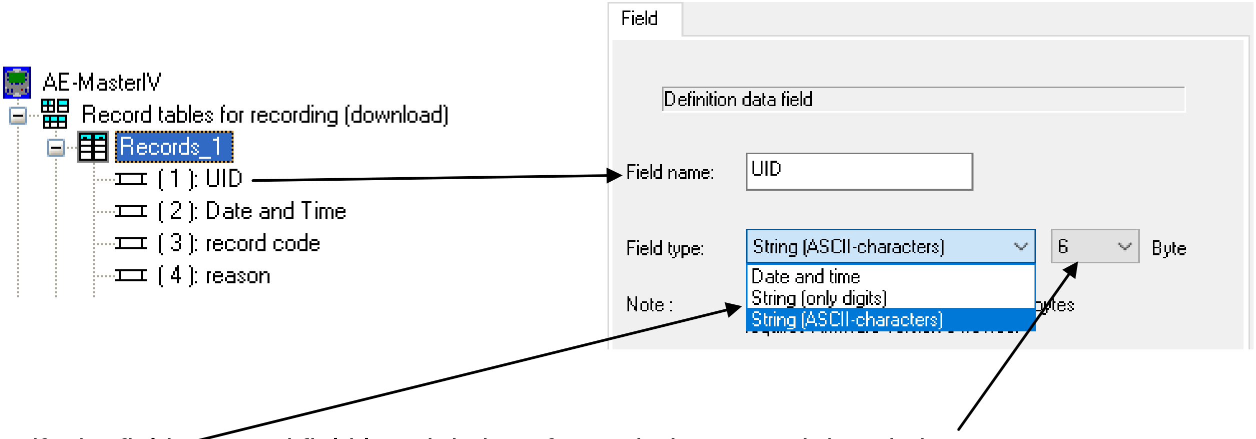
No assignment

Requires firmware version> = 3.4.08, older stands ignore the setting.

Records with higher priority are delivered with priority.
E.g. at records of access control with threat message
The content of the field is specified by you in the command chains

Valid values:
0 Empty = low priority,
1 = medium priority,
2 = high priority.

Specify a unique name for each data record description (table). It facilitates the association of a data record description to a booking procedure.



Field

AE-MasterIV
- Record tables for recording (download)
  - Records_1
    - (1): UID
    - (2): Date and Time
    - (3): record code
    - (4): reason

Definition data field

Field name: UID

Field type: String (ASCII-characters) 6 Byte

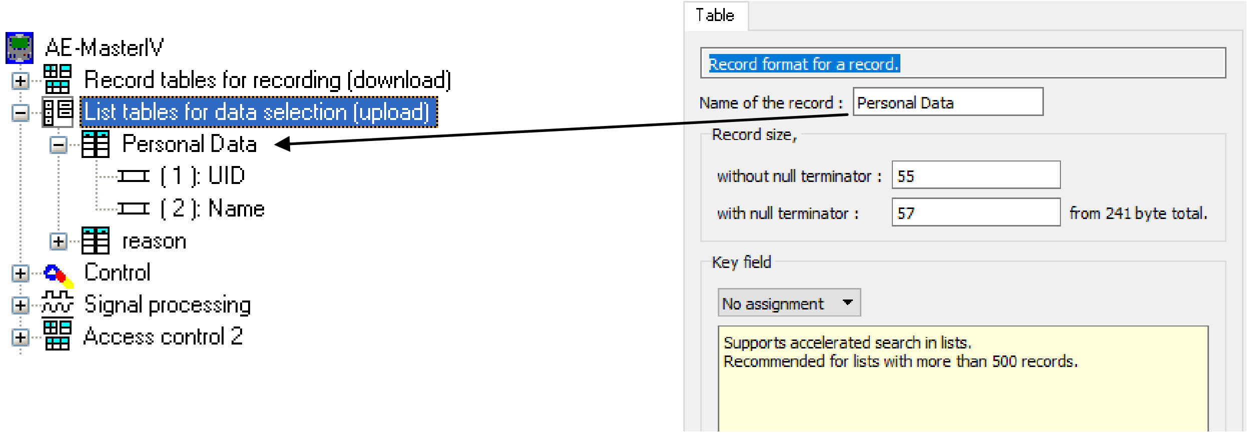
Note :

Date and time
String (only digits)
String (ASCII-characters)

Specify the field type and field length in byte for each data record description.

5.3. Definition of Master Data Structure

The master data provide information and data required by the device.
For example: Association of transponder number to a name.
These data are provided in form of lists in a text file. The lists can be created with a simple test editor.
If you create, for example, a staff list with an editor as *.txt (ASCII file), you seperate the columns defined, ID card no., name and verification by a tab.



Name of the record : Personal Data

without null terminator : 55

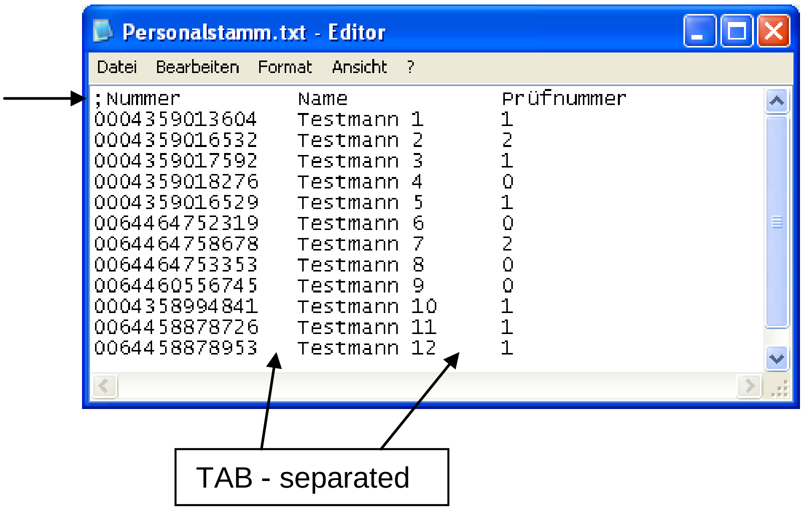
with null terminator : 57 from 241 byte total.

Key field: No assignment

Supports accelerated search in lists.
Recommended for lists with more than 500 records.

Specify a unique name for each list description (table) and each list field. This facilitates selecting the list during a booking procedure at list selection or writing a list field.

If a line starts with a semicolon, comments can entered at this place. This helps to structure the text file clearly.



```
;Nummer       Name          Prüfnummer
0004359013604 Testmann 1    1
0004359016532 Testmann 2    2
0004359017592 Testmann 3    1
0004359018276 Testmann 4    0
0004359016529 Testmann 5    1
0064464752319 Testmann 6    0
0064464758678 Testmann 7    2
0064464753353 Testmann 8    0
0064460556745 Testmann 9    0
0004358994841 Testmann 10   1
0064458878726 Testmann 11   1
0064458878953 Testmann 12   1
```

TAB - separated

If you use a list with more than 500 data records, we recommend specifying a key field for sorting the list. This leads to a faster list selection (search in a long list).

5.4. Recording Procedures of Operation

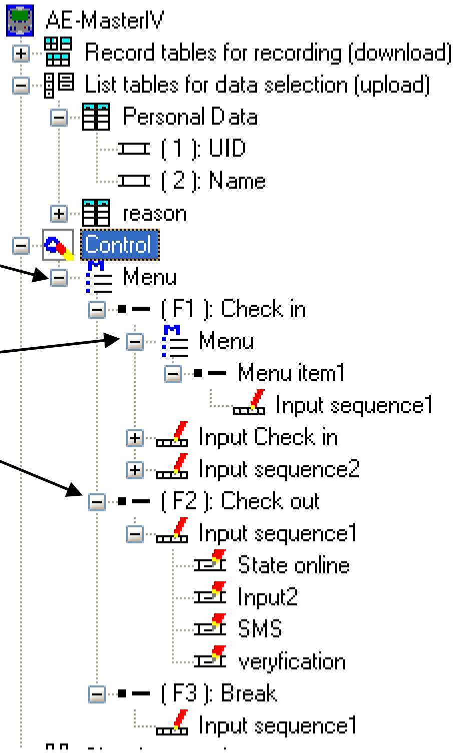
Recording procedures are the engine of a setup. If no recording procedures are defined, nothing is going to happen. Recording procedures are generally referred to as input sequences in the context of a device setup.

Structure of Operation

The central entry point is always the main menu. Below the main menu are the menu entries.

Below a menu entry a submenu can be created or an input sequence be defined.

Below the main menu are the menu entries. In this first structure level, the menu entries can be assigned to the function keys of the keyboard.



In the entire structure of operation, three menu levels with respective menu entries and input sequences are possible.

Starting an Input Sequence

Input sequences of operation are generally started by a keyboard event. For example, the user presses the F1 key (coming) and the first input sequence below the F1 key is started. Also several input sequences can be defined below an F key. At this variant, the number of entry points is restricted by the number of freely configurable F keys on the keyboard of the device type.

Another possibility for starting an input sequence is the operation mode. You can determine via the operation mode "PZE Mode 1" that the device in basic status always waits for an input in the first input sequence below the F1 key.

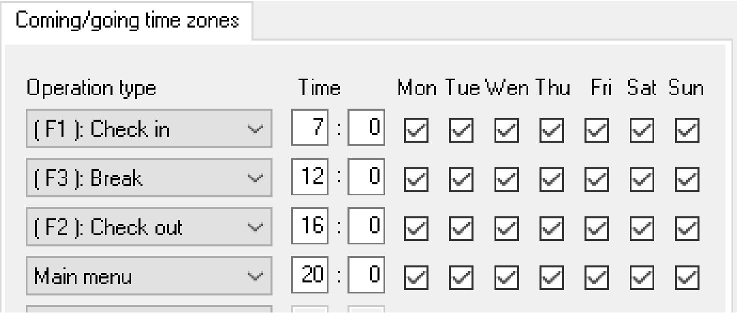
The third possibility for starting an input sequence is via time zones. The operation mode "PZE Mode 2" must be activated. You can determine with up to 15 time models when the device is to await an input in which input sequence. This offers the possibility to start input sequences which are not assigned to a physical F-key of the keyboard. An example for a PZE-MasterIV with its five physical F-keys would be an F6 chain for an Alive data record.

F1-key, active starting 7:00 am.

F3-key, active starting 12:00 am.

F2-key, active starting 4:00 pm.

Starting 8:00 pm no preselection of function keys.

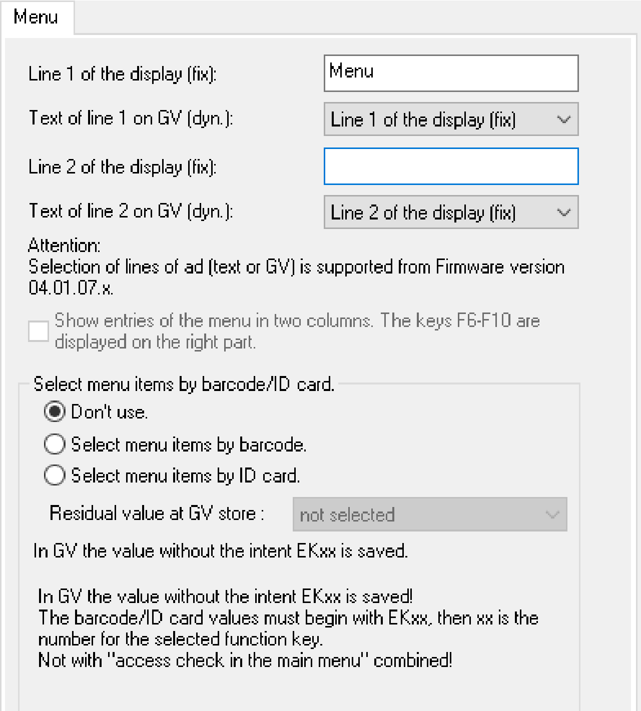


Coming/going time zones

Operation type	Time		Mon	Tue	Wen	Thu	Fri	Sat	Sun
(F1): Check in	7	0	☑	☑	☑	☑	☑	☑	☑
(F3): Break	12	0	☑	☑	☑	☑	☑	☑	☑
(F2): Check out	16	0	☑	☑	☑	☑	☑	☑	☑
Main menu	20	0	☑	☑	☑	☑	☑	☑	☑

These mechanisms only work for input sequences in the first structure level as entry point directly below a menu entry.

The forth possibility to start an input sequence directly from the main menu is a read barcode or transponder. In this case the value read must start with EKxx. The xx stands for the number of the function key selected from the operation structure.



Menu

Line 1 of the display (fix): Menu

Text of line 1 on GV (dyn.): Line 1 of the display (fix)

Line 2 of the display (fix):

Text of line 2 on GV (dyn.): Line 2 of the display (fix)

Attention:
Selection of lines of ad (text or GV) is supported from Firmware version 04.01.07.x.

□ Show entries of the menu in two columns. The keys F6-F10 are displayed on the right part.

Select menu items by barcode/ID card.

● Don't use.

○ Select menu items by barcode.

○ Select menu items by ID card.

Residual value at GV store : not selected

In GV the value without the intent EKxx is saved.

In GV the value without the intent EKxx is saved!
The barcode/ID card values must begin with EKxx, then xx is the number for the selected function key.
Not with "access check in the main menu" combined!

5.4.1. Configuring an Input Sequence

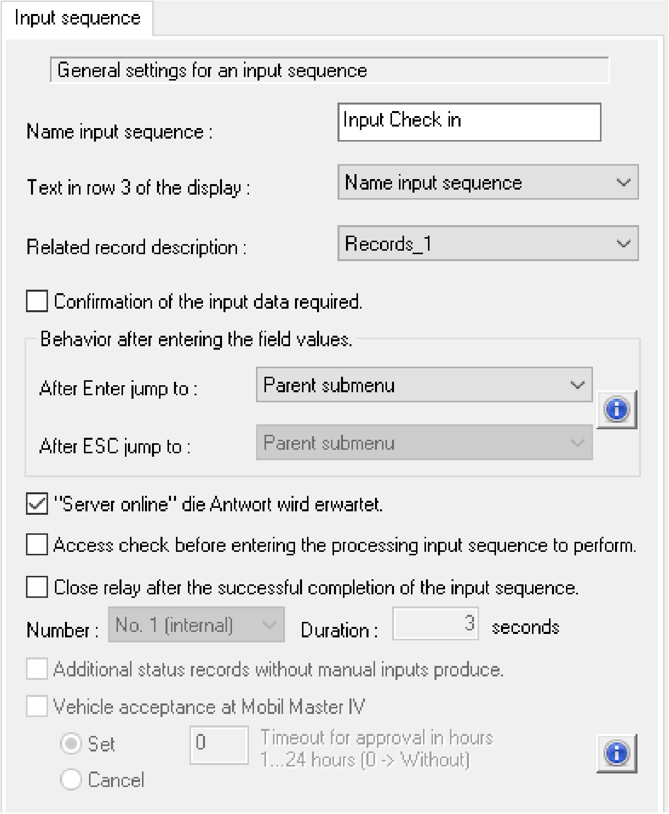
An input sequence contains parameters influencing the execution of the input sequence and the behavior of the device after the input sequence is completed.

By allocating a data record description you determine in which structure and format the entered data are to be saved.

Determine whether the user has to confirm the entered data before the input sequence is completed. If you activate this option, you must also specify where to branch if the input is cancelled with ESC. You also must determine where to branch if the input sequence is (successful) completed with ENTER.

Further attributes of the input sequence are the execution of two functions. The function "Access check before processing the input sequence" only refers to the internal transponder reader of the device. That means that the first expected event is a transponder. After successful access check, the input sequence is started and a transponder expected again, provided that a transponder is to be processed within this input sequence. In order to avoid reading the transponder twice, you can use the field function "Perform access check with GV".
The second function as attribute of the input sequence is "Close rely after successful completion of the input sequence". This function can only be executed for one of the internal relays for a duration of n seconds.

After defining the attributes of the input sequence, you must determine the single processing steps, i.e. in which sequence are which data to be created (entered), edited or verified. Each processing step is described in one or several input sequence fields. For a detailed description of the single field functions see section "Functions in the Device Setup".



Name input sequence : Input Check in

Text in row 3 of the display : Name input sequence

Related record description : Records_1

□ Confirmation of the input data required.

Behavior after entering the field values.

After Enter jump to : Parent submenu

After ESC jump to : Parent submenu

☑ "Server online" die Antwort wird erwartet.

□ Access check before entering the processing input sequence to perform.

□ Close relay after the successful completion of the input sequence.

Number : No. 1 (internal) Duration : 3 seconds

□ Additional status records without manual inputs produce.

□ Vehicle acceptance at Mobil Master IV

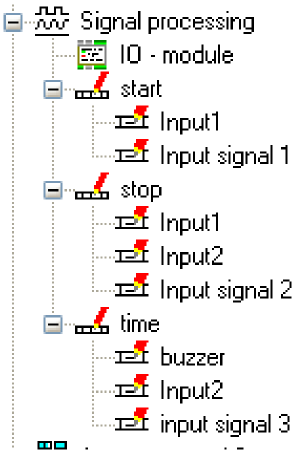
● Set 0 Timeout for approval in hours 1...24 hours (0 -> Without)

○ Cancel

5.5. Recording Procedures of Signal Processing

In the section Recording Procedures of Operation, it has been described how input sequences (recording procedures) can be started by the user by pressing a key.

In signal processing, this is performed automatically. As the name implies, signal processing plays a crucial role. Signals can act upon the digital and analog inputs of a device. Such external signals automatically trigger input sequences. Another kind of signals are internal signals in the form of timer events. A further kind of signals are GPS coordinates via the internal module.



5.5.1. Structure of Signal Processing

As stated before, for signal processing exist several possibilities to detect signals and use the information (data) of these signals for starting an input sequence. At this process the data of the signals are saved within the started input sequences in the data records.

5.5.2. Digital Inputs

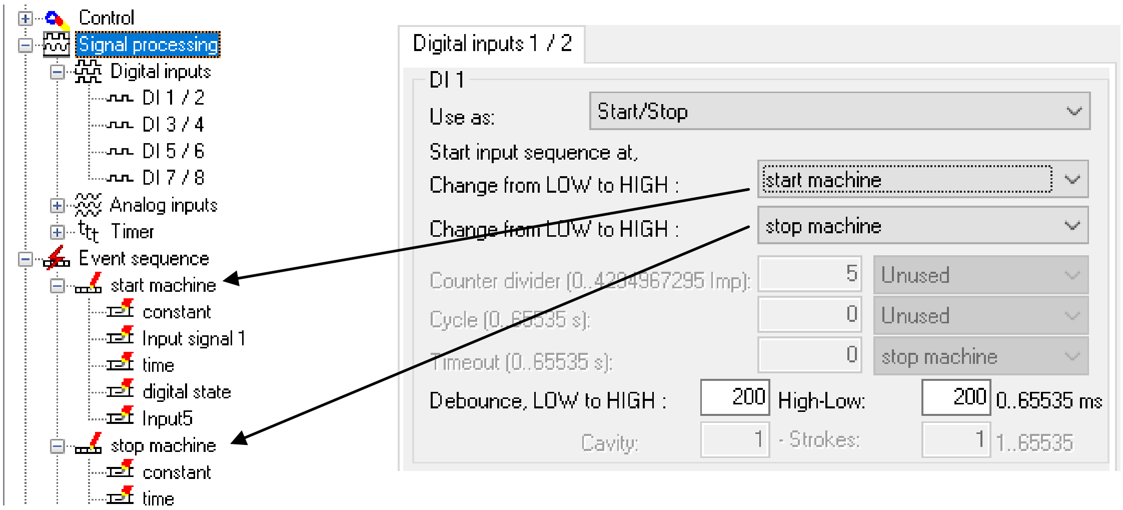
! **Caution:**
If digital inputs are used in signal processing, these digital inputs are no longer available for access control.
For example: the status messages of the access control for the digital input "door open" etc. are no longer generated. An event in the access control can no longer be generated for this input.

Digital inputs are used to process two-valued information (logic 0 and logic 1). A voltage of 0 – 1.5 V at the first digital input corresponds to a value of logic 0. A voltage of 3.5 – 30 V corresponds to a value of logic 1.

Application of the Digital Inputs

► **Start/Stop**

- The input sequence "Start machine 1" is executed at a starting event (in this case switch from LOW to HIGH).
- When switching from HIGH to LOW the input sequence "Stop machine 1" is started.

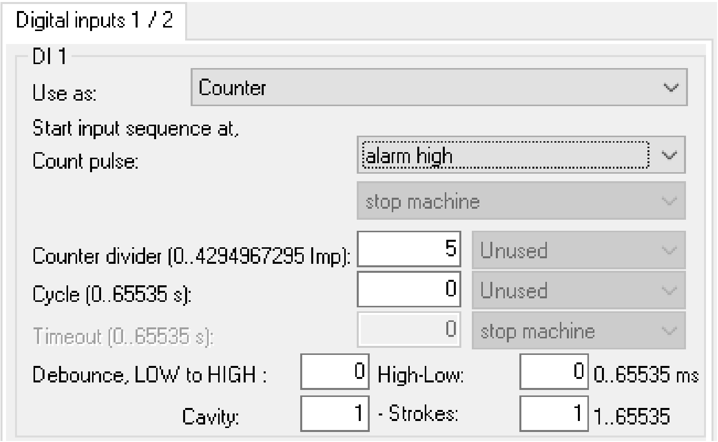


Use as: Start/Stop
Start input sequence at,
Change from LOW to HIGH : start machine
Change from LOW to HIGH : stop machine
Counter divider (0..4294967295 Imp): 5 Unused
Cycle (0..65535 s): 0 Unused
Timeout (0..65535 s): 0 stop machine
Debounce, LOW to HIGH : 200 High-Low: 200 0..65535 ms
Cavity: 1 - Strokes: 1 1..65535

► **Counter (a valid signal at the digital input is logged)**

An input sequence “impulse counter” is started after reaching the value set in the counter divider.

If a cycle time is set, the input sequence is started after this time. 0 = no cycle.



Use as: Counter
Start input sequence at,
Count pulse: alarm high
stop machine
Counter divider (0..4294967295 Imp): 5 Unused
Cycle (0..65535 s): 0 Unused
Timeout (0..65535 s): 0 stop machine
Debounce, LOW to HIGH : 0 High-Low: 0 0..65535 ms
Cavity: 1 - Strokes: 1 1..65535

Debouncing times define a duration during which a signal level must act steadily upon a digital input in order that this signal level is interpreted as valid impulse.

If the debouncing time is set to zero, the input reacts on every impulse. The sampling rate for this is at 5 kHz. (See technical appendix of the devices.)

Cavity determines how many tasks are necessary for producing a part.
The **number of strokes** determines how many tasks can be executed simultaneously.

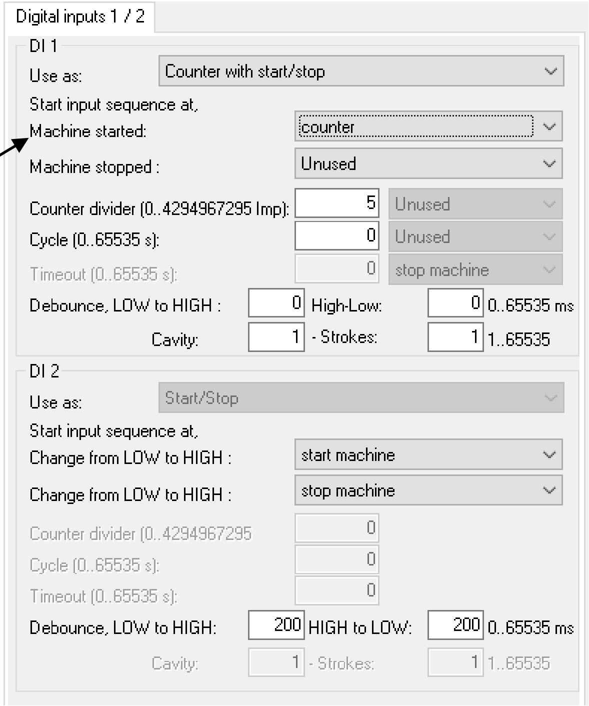
Counter with Start/Stop

This function combines the two preceding ones. E1 and E2 are kind of interlinked.

Only after the machine is started, the impulses at E1 are analyzed.

An input sequence is started when:

- The machine is turned ON.
- The machine is tunred OFF.
- The value of the counter divider is reached.
- The cycle time is expired.



Digital inputs 1 / 2

DI 1

Use as: Counter with start/stop

Start input sequence at,

Machine started: counter

Machine stopped : Unused

Counter divider (0..4294967295 Imp): 5 Unused

Cycle (0..65535 s): 0 Unused

Timeout (0..65535 s): 0 stop machine

Debounce, LOW to HIGH : 0 High-Low: 0 0..65535 ms

Cavity: 1 - Strokes: 1 1..65535

DI 2

Use as: Start/Stop

Start input sequence at,

Change from LOW to HIGH : start machine

Change from LOW to HIGH : stop machine

Counter divider (0..4294967295 0

Cycle (0..65535 s): 0

Timeout (0..65535 s): 0

Debounce, LOW to HIGH: 200 HIGH to LOW: 200 0..65535 ms

Cavity: 1 - Strokes: 1 1..65535

► **Counter with Start/Stop per Timeout**

The counter for produced parts is at the same time the signal for a running machine. In order to detect an interruption or shutdown of the machine, the timeout is monitored. If the timeout has expired but no counting impulse has been registered, an interruption data record is created. The timeout is reset at each impulse.

► **Counter with Start/Stop and 1. Pulse per Timeout**

The input sequence allocated to the 1. impulse and counting impulse is executed at the first impulse (switching from Low to High) and afterwards executed according to the counter/divider. The counter/divider determines how many impulses are necessary for triggering the allocated input sequence. At 0 the input sequence is not executed. If no new impulse is detected after the last, impulse within the duration of the timeout the input sequence for the timeout is executed. A following impulse then executes the input sequence for the 1. impulse.

!

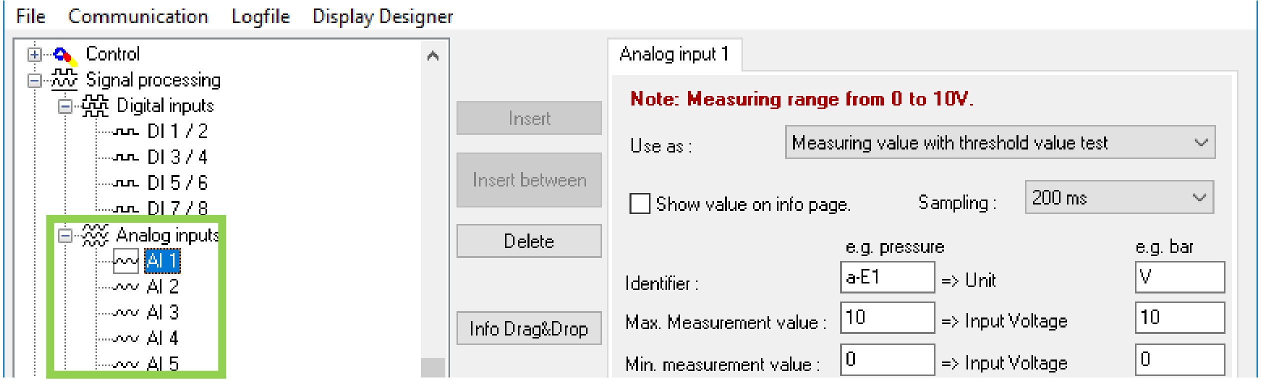
Caution: Setting the debouncing times is a task for the installer and therefore lies within their responsibility.

General Notices for Debouncing:
Normally, bouncing only occurs at mechanical contacts. Digital signals do not bounce and thus do not lead to miscounts even without debouncing. Mechanical contacts are not designed for several switchings per second so that you should expect significantly longer debouncing times.
In order to debounce short and fast signals, a solution via hardware is necessary, e.g. by parallel connection of a capacitor.

5.5.3. Analog Inputs

The analog inputs are used for time and value-continuous signals. The measurement range of an analog input is 0 – 10 V.

Here are up to 32 analog inputs possible:



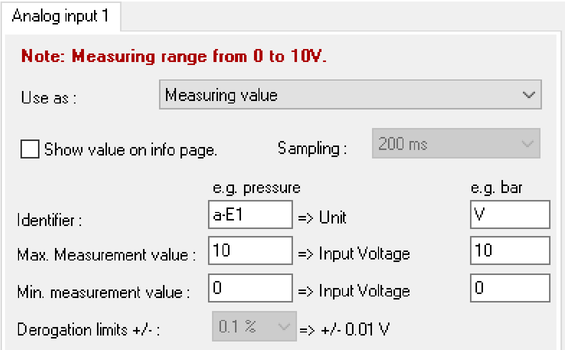
Note: Measuring range from 0 to 10V.

Use as : Measuring value with threshold value test

☐ Show value on info page. Sampling : 200 ms

	e.g. pressure		e.g. bar
Identifier :	a-E1	=> Unit	V
Max. Measurement value :	10	=> Input Voltage	10
Min. measurement value :	0	=> Input Voltage	0

When using **measuring value** you must specify the identifiers, the physical quantity to be measured or the measuring process as well as the respective units, e.g. liter or fuel level in l.
You also must specify the voltage range of the encoder connected as minimum and maximum input voltage. Furthermore, specify the measurement range of the encoder according to the manufacturer as min./max. measurement value.



Note: Measuring range from 0 to 10V.

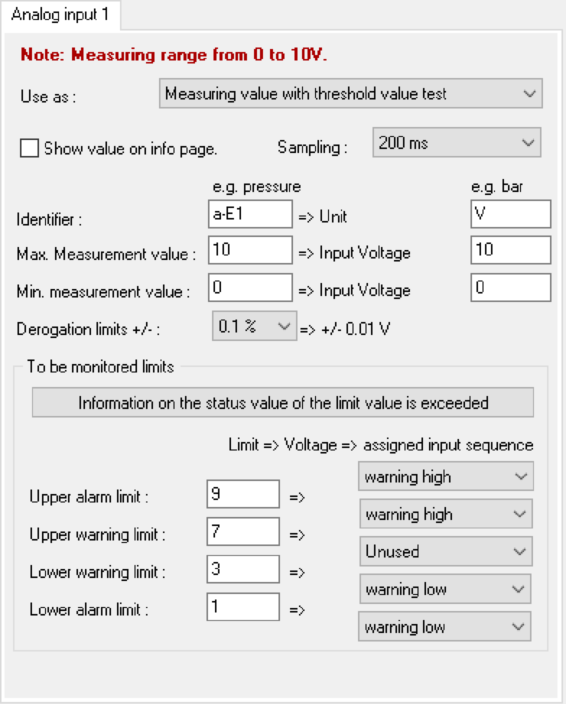
Use as : Measuring value

☐ Show value on info page. Sampling : 200 ms

	e.g. pressure		e.g. bar
Identifier :	a-E1	=> Unit	V
Max. Measurement value :	10	=> Input Voltage	10
Min. measurement value :	0	=> Input Voltage	0
Derogation limits +/- :	0.1 %	=> +/- 0.01 V	

When using **measuring value with threshold value test**, you must additionally specify the threshold values (limits). This encompasses 5 zones: Starting from below, the lower alarm limit, the lower warning limit, the NORMAL zone, the upper warning limit and the upper alarm limit.

If a warning or alarm limit is reached, the corresponding input sequence is started.



Note: Measuring range from 0 to 10V.

Use as : Measuring value with threshold value test

☐ Show value on info page. Sampling : 200 ms

	e.g. pressure		e.g. bar
Identifier :	a-E1	=> Unit	V
Max. Measurement value :	10	=> Input Voltage	10
Min. measurement value :	0	=> Input Voltage	0
Derogation limits +/- :	0.1 %	=> +/- 0.01 V	

To be monitored limits

Information on the status value of the limit value is exceeded

Limit => Voltage => assigned input sequence			
			warning high
Upper alarm limit :	9	=>	warning high
Upper warning limit :	7	=>	Unused
Lower warning limit :	3	=>	warning low
Lower alarm limit :	1	=>	warning low

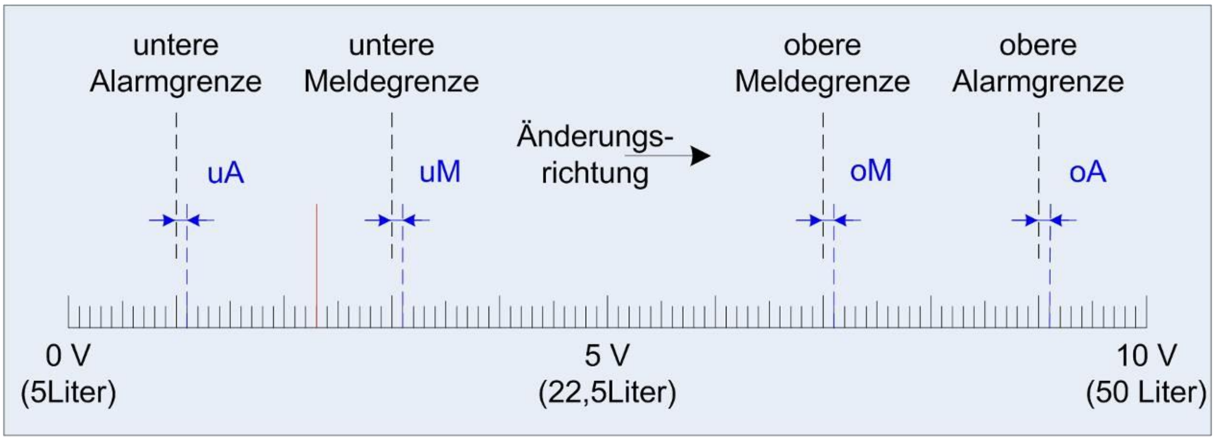
Example:
In order to illustrate the effect of the limit deviation, we assume the following scenario. The fuel level is to be monitored; the encoder works within a voltage range of 0 to 10 volts and has a measurement range of 5 to 50 liters.

10 V = 50 Liter = 100 %

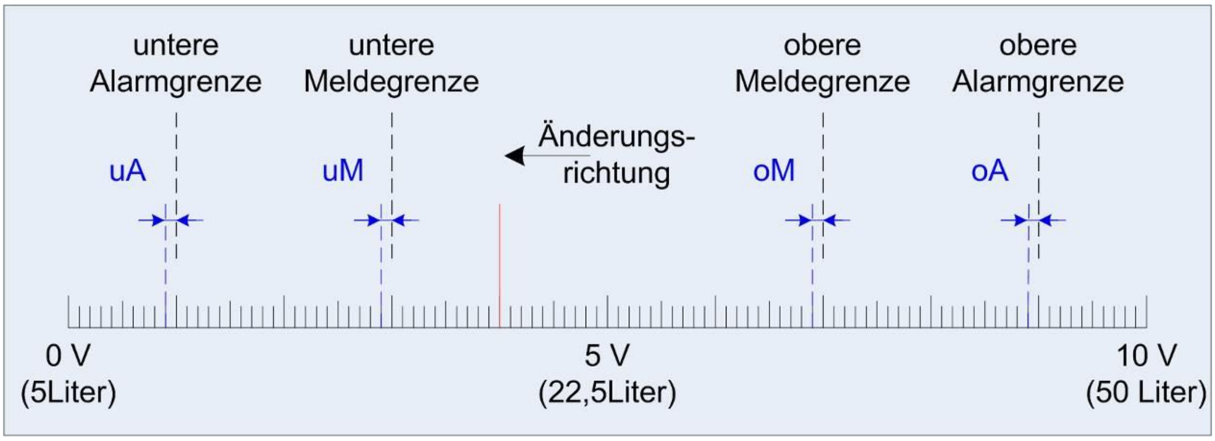
↕ 45 Liter = 100% Grenzwertabweichung von 1% = 0,45 Liter (0,1 V)

0 V = 5 Liter = 0 %

The direction of the change in the following figures shows whether the threshold value is exceeded or falls below it. In the following figure for a change of the fuel level towards the normal value, the voltage level of the encoder must increase to 3.1 V (13.95 liters) - i.e. exceed the set threshold value for the lower warning limit by 0.1 V (0.45 liters) - in order to create a data record for the normal zone.

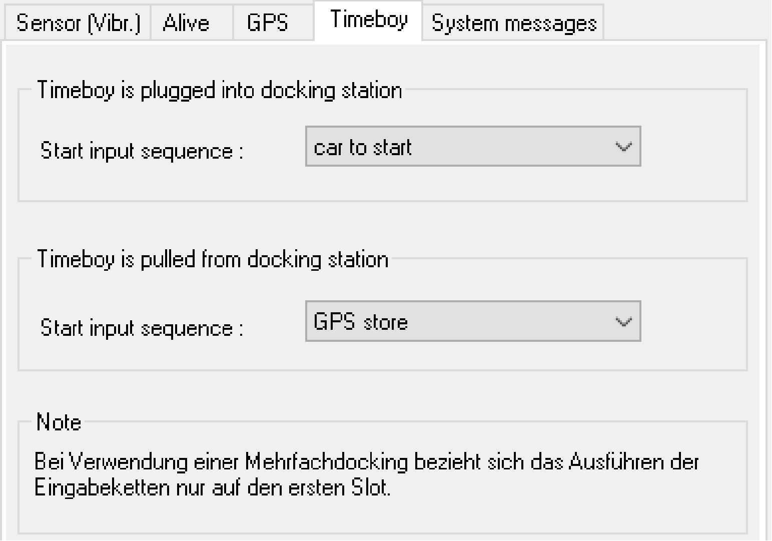


For a change of the fuel level below the lower warning limit, the voltage level of the encoder must decrease to 2.9 V (13.05 liters) - i.e. falls below the set threshold value for the lower warning limit by 0.1 V (0.45 liters) - in order to create a data record for the lower warning limit.



5.5.4. Timeboy Events

Two events are possible if a Timeboy is to be connected to a device, e.g. in order to read the data from the Timeboy and sent them to a central processing server via the device. Firstly, the plug-event when the Timeboy is plugged into the docking station connected to the device. Secondly, the pull-event when the Timeboy is pulled out from the docking station connected to the device. To each of these events, an input sequence can allocated which is executed automatically when the event occurs.



Timeboy is plugged into docking station

Start input sequence : car to start

Timeboy is pulled from docking station

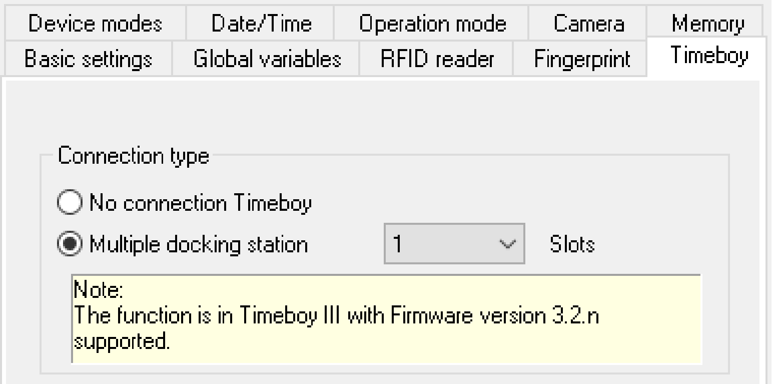
Start input sequence : GPS store

Note

Bei Verwendung einer Mehrfachdocking bezieht sich das Ausführen der Eingabeketten nur auf den ersten Slot.

If the area is grayed out, the Timeboy connection must be activated in the global settings first.

See chapter "Global Settings – Timeboy".



Connection type

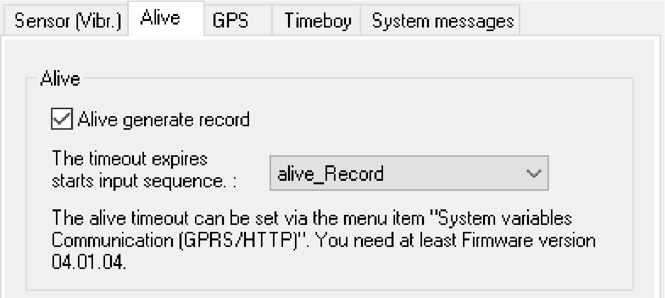
○ No connection Timeboy

● Multiple docking station 1 Slots

Note:
The function is in Timeboy III with Firmware version 3.2.n supported.

5.5.5. GPRS-Alive

If, for example, a stationary terminal is installed autarchically far from any infrastructure (except mobile communications) and the terminal is difficult to access for a service engineer, you can make the device create an Alive data record cyclically. After creation, the Alive data record is immediately sent to a server. The Alive counter gives you information on how many Alive data records could not be sent. The Alive counter is reset to 0 only if the data record has successfully been sent. Otherwise, it is increased by 1 for each unsuccessful attempt and the unsent data record is deleted.

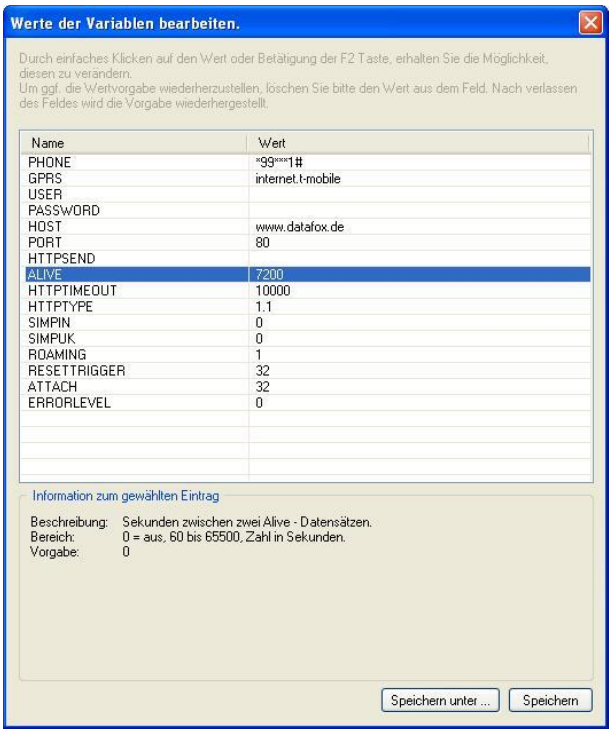


☑ Alive generate record

The timeout expires starts input sequence. : alive_Record

The alive timeout can be set via the menu item "System variables Communication (GPRS/HTTP)". You need at least Firmware version 04.01.04.

In both cases (Alive data record via operation or signal processing) the Alive parameter must be configured in the GPRS.ini. You must specify a value higher than 60 seconds. When configuring the parameter, keep in mind that sending Alive data causes costs. Therefore, we recommend setting the value not to low.



Durch einfaches Klicken auf den Wert oder Betätigung der F2 Taste, erhalten Sie die Möglichkeit, diesen zu verändern.
Um ggf. die Wertvorgabe wiederherzustellen, löschen Sie bitte den Wert aus dem Feld. Nach verlassen des Feldes wird die Vorgabe wiederhergestellt.

Name	Wert
PHONE	*99***1#
GPRS	internet.t-mobile
USER	
PASSWORD	
HOST	www.datafox.de
PORT	80
HTTPSEND	
ALIVE	7200
HTTPTIMEOUT	10000
HTTPTYPE	1.1
SIMPIN	0
SIMPUK	0
ROAMING	1
RESETTRIGGER	32
ATTACH	32
ERRORLEVEL	0

Information zum gewählten Eintrag

Beschreibung: Sekunden zwischen zwei Alive - Datensätzen.
Bereich: 0 = aus, 60 bis 65500, Zahl in Sekunden.
Vorgabe: 0

!

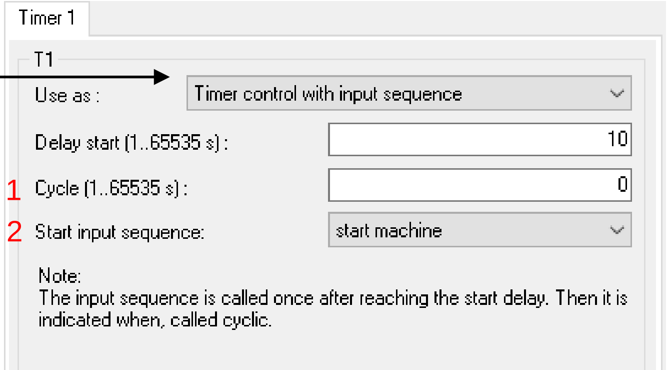
Caution:
Alive data are temporary data. If the Alive data record cannot be sent (e.g. server is not reachable), it will be deleted and the Alive counter will be increased by one. The function "‘Alive"’ is activated via the Alive parameter in the GPRS.ini. Additionally to the activation, the GPRS chain has to be available in the signal processing. Take care that this function does not create unintentional data (traffic).

5.5.6. Timer Events

Es stehen 2 Timer zur Verfügung.
The timer event of signal processing can be used for a single or cyclical execution of an input sequence. The timer can be started wither via an input sequence or automatically after starting the device.

Start and stop timer by the field function "Start/stop timer" in an input sequence.

If the timer is restarted in an input sequence, it is reset to zero, i.e. the set time starts again.



Timer 1

T1

Use as : Timer control with input sequence

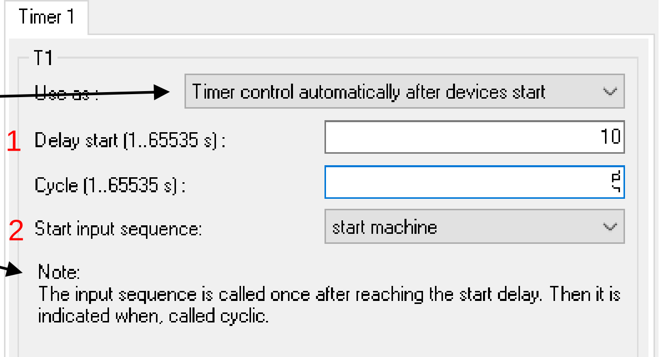
Delay start (1..65535 s) : 10

1 Cycle (1..65535 s) : 0

2 Start input sequence: start machine

Note:
The input sequence is called once after reaching the start delay. Then it is indicated when, called cyclic.

Start timer automatically after starting the device.
See Note:



Timer 1

T1

Use as : Timer control automatically after devices start

1 Delay start (1..65535 s) : 10

Cycle (1..65535 s) :

2 Start input sequence: start machine

Note:
The input sequence is called once after reaching the start delay. Then it is indicated when, called cyclic.

1) The starting delay specifies after which delay time the timer event is triggered after the timer has been started.

2) A cycle value of 0 determines that the timer event is executed once after starting the timer. If the timer event is to be executed again, the timer must be restarted.

By triggering the timer event, the corresponding input sequence is triggered.

5.5.7. GPS Events

The processing of GPS data has been extended for the devices AE-, Mobil- and PZE-MasterIV. Now input sequences for the following events can be started on the GPS page at signal processing in the setup: Start, stop, cycle, change of direction and moving.

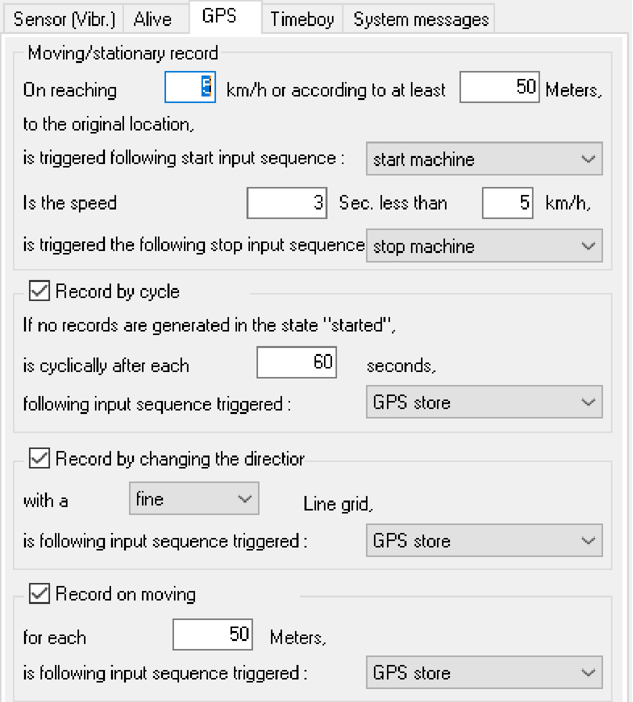
The input sequence “Start” is started when reaching a velocity of 5 km/h or after driving 50m, depending on which event occurs first.

The input sequence “Stop” is started if the velocity falls below 5 km/h for 3 seconds.

A data record is created every 60 seconds.

Depending on the settings (fine, medium, coarse) a data record can be created. The following table provides an overview of the settings.

Creating data record depending on distance.



Moving/stationary record

On reaching 5 km/h or according to at least 50 Meters,

to the original location,

is triggered following start input sequence : start machine

Is the speed 3 Sec. less than 5 km/h,

is triggered the following stop input sequence stop machine

☑ Record by cycle

If no records are generated in the state "started",

is cyclically after each 60 seconds,

following input sequence triggered : GPS store

☑ Record by changing the director

with a fine Line grid,

is following input sequence triggered : GPS store

☑ Record on moving

for each 50 Meters,

is following input sequence triggered : GPS store

Settings Overview for Change of Direction

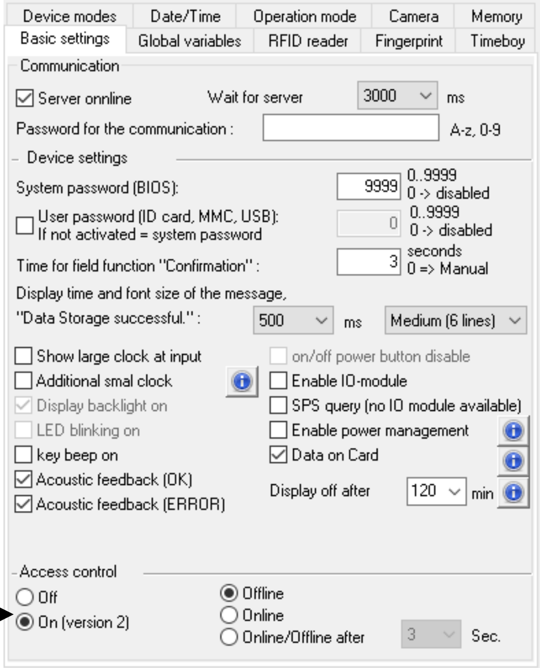
		Change of direction by				
Settings	Creation of data record	90°	45°	22.5°	11.25°	≈6°
coarse	after sec.	6	12	24	48	96
medium	after sec.	3	6	12	12	24
fine	after sec.	1	2	4	8	16

The input sequence assigned under change of direction is executed in case of a change of direction of the GPS coordinates. Depending on the resolution selected, more or less data records are created. The data density also depends on the distance travelled. For a winding road more data are created than for a long, straight motorway.

5.6. Recording Procedure of Access Control

Access control has a special status. It belongs - like signal processing - to the automatized processes. Access logistics, i.e. which person is granted or denied access when and where, is defined via seven lists. The following lists are required: Reader, Identification, Location, Time, Holiday, Event and Action. They are simple ASCII (*.txt) lists, which are loaded into the device and processed when a booking is performed at an access module.

In order to use this functionality of the access control, it must be activated in the setup. An exception is the ZK-Master because access control is always activated for it.



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

Communication

☑ Server onnline   Wait for server 3000 ms

Password for the communication : A-z, 0-9

Device settings

System password (BIOS): 9999 0..9999 0 -> disabled

□ User password (ID card, MMC, USB): If not activated = system password 0 0..9999 0 -> disabled

Time for field function "Confirmation" : 3 seconds 0 => Manual

Display time and font size of the message, "Data Storage successful." : 500 ms Medium (6 lines)

□ Show large clock at input
□ Additional smal clock
☑ Display backlight on
□ LED blinking on
□ key beep on
☑ Acoustic feedback (OK)
☑ Acoustic feedback (ERROR)

□ on/off power button disable
□ Enable IO-module
□ SPS query (no IO module available)
□ Enable power management
☑ Data on Card
Display off after 120 min

Access control

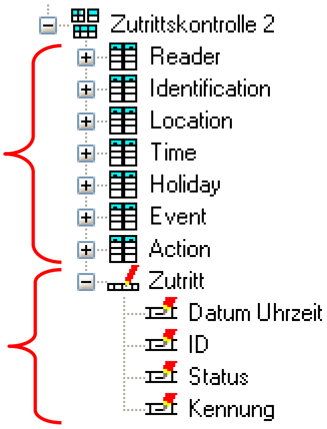
○ Off
● On (version 2)

● Offline
○ Online
○ Online/Offline after 3 Sec.

Because the ZK-MasterIV has neither keyboard nor display, an operation in form of direct user input is not possible. The input sequences created for access control verifies whether a person is authorized for access or not. Interaction with the user is restricted on holding the ID card to a reader of the system. Depending on the verification result, a relay or open-collector is switched or not. A data record with a status message is created. Thus, it is possible to track which person tried to access an area.

The lists of the access control are predefined. This concerns structure and name.

An input sequence of access recording is always executed in the background if a record is done at an access reader.

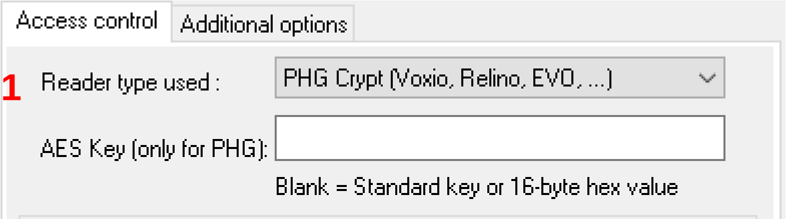


Zutrittskontrolle 2
Reader
Identification
Location
Time
Holiday
Event
Action
Zutritt
Datum Uhrzeit
ID
Status
Kennung

All functions available for the input in an input sequence are described in the following chapter.

5.6.1. Access control settings

Click on „Access control 2 “ to show this side.

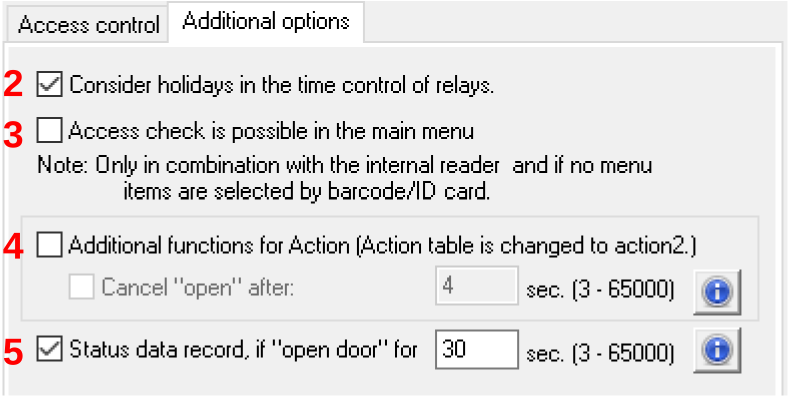


Access control | Additional options

1 Reader type used : PHG Crypt (Voxio, Relino, EVO, ...)

AES Key (only for PHG):

Blank = Standard key or 16-byte hex value



Access control | Additional options

2 ☑ Consider holidays in the time control of relays.

3 □ Access check is possible in the main menu

Note: Only in combination with the internal reader and if no menu items are selected by barcode/ID card.

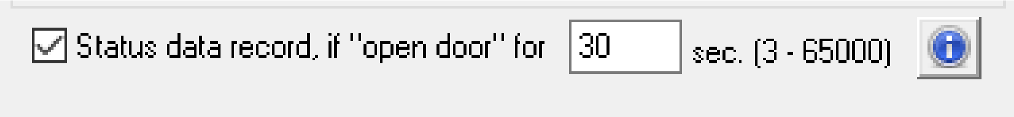
4 □ Additional functions for Action (Action table is changed to action2.)

□ Cancel "open" after: 4 sec. (3 - 65000)

5 ☑ Status data record, if "open door" for 30 sec. (3 - 65000)

1. Here you can set the type of reader used.
   a. Access control reader TS series (Datafox reader series LTM 33 ...)
   b. PHG-access reader and EVO-access reader series
2. In the "Action" / "Action2" table, you have the option of switching relays in a timed manner. If this "check mark" is set, the circuits are not executed on holidays. Another time model is then valid on that day.
3. If your device (PZE-, AE-master) is always in the main menu, an access control with the internal reader can be carried out. The input chain of the access control is then executed.
4. A description can be found in the respective device manuals under the chapter "Functional extension for access control II“
5. The connected readers have digital inputs for door monitoring. If a door is open for the time set here, a data record is generated. This then contains status 80, 81, 82 or 83, depending on which digital input is responding.
   See procedure on the following page .

5.6.1.1. Access control, Door control / alarm

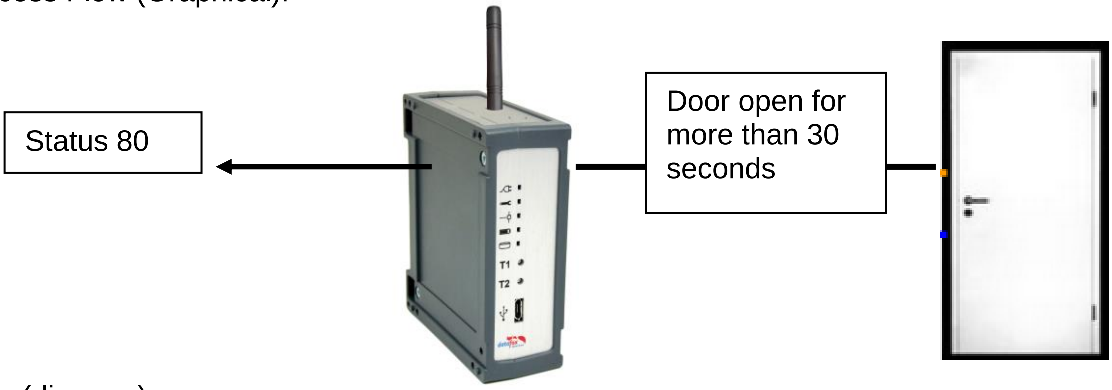


☑ Status data record, if "open door" for 30 sec. (3 - 65000)

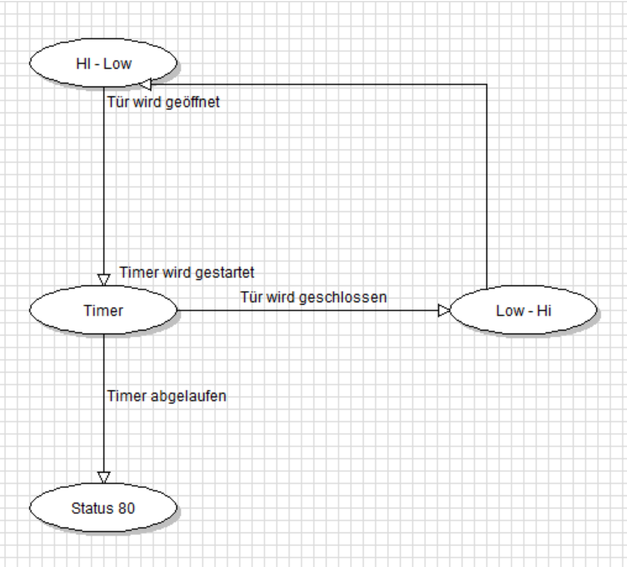
With the function "Status data set when door open", a data record can be sent if the door remains open for longer than a specified time. This is the record with the status of e.g. “80”.
The status value always corresponds to a specific digital input.

display	Assigned status message
80	Alarm input 1
81	Alarm input 2
82	Alarm input 3
83	Alarm input 4
84	Alarm input 5
85	Alarm input 6
220#	Alarm input 7
221#	Alarm input 8
_______	_____ Continuous up to:
245#	Alarm input 32

Process Flow (Graphical):



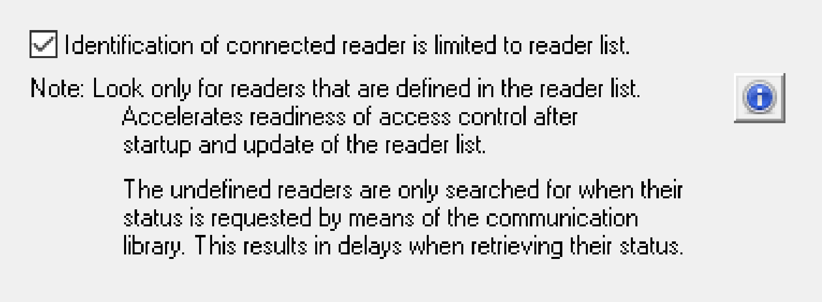
Flow (diagram):



5.6.1.2. Access control, fast start

Datafox devices, if they have connected access readers, always scan all possible reader numbers. In a normal bus that would be up to 16 readers.
This is done so that under Extras => Get status of the access modules, readers can be listed which are not stored in the Reader list.

This search can be switched off in the setup of the device, whereby only devices that are in the list are queried. This can lead to a faster start of the access control.



☑ Identification of connected reader is limited to reader list.

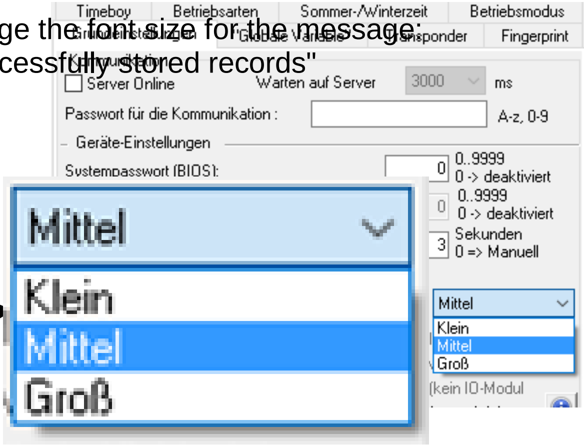
Note: Look only for readers that are defined in the reader list.
Accelerates readiness of access control after startup and update of the reader list.

The undefined readers are only searched for when their status is requested by means of the communication library. This results in delays when retrieving their status.

5.7. Change font size

Three font sizes are offered for the message "Data storage successful" and when lists are displayed.

Change the font size for the message: „"Successfully stored records"



Timeboy | Betriebsarten | Sommer-/Winterzeit | Betriebsmodus
Grundeinstellungen | Globale Variable | Transponder | Fingerprint

Kommunikation

□ Server Online   Warten auf Server 3000 ms

Passwort für die Kommunikation : A-z, 0-9

Geräte-Einstellungen

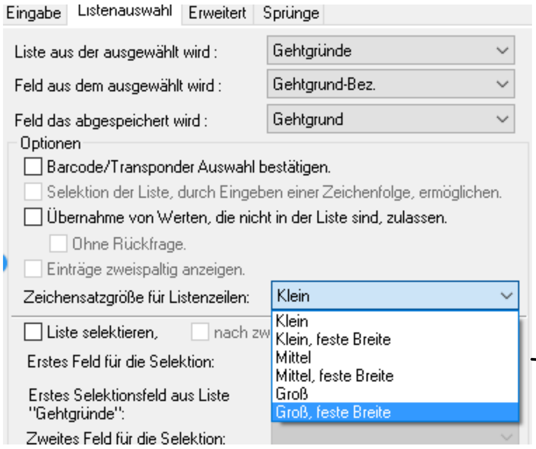
Systempasswort (BIOS): 0 0..9999 0 -> deaktiviert

0 0..9999 0 -> deaktiviert

3 Sekunden 0 => Manuell

Mittel
Klein
Mittel
Groß

(kein IO-Modul



Eingabe | Listenauswahl | Erweitert | Sprünge

Liste aus der ausgewählt wird : Gehtgründe

Feld aus dem ausgewählt wird : Gehtgrund-Bez.

Feld das abgespeichert wird : Gehtgrund

Optionen

□ Barcode/Transponder Auswahl bestätigen.

□ Selektion der Liste, durch Eingeben einer Zeichenfolge, ermöglichen.

□ Übernahme von Werten, die nicht in der Liste sind, zulassen.

□ Ohne Rückfrage.

□ Einträge zweispaltig anzeigen.

Zeichensatzgröße für Listenzeilen: Klein

Klein
Klein, feste Breite
Mittel
Mittel, feste Breite
Groß
Groß, feste Breite

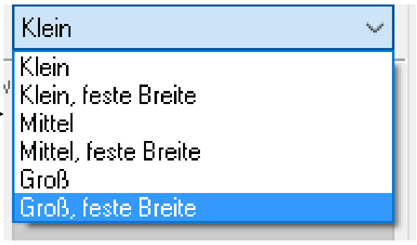
□ Liste selektieren, □ nach zw

Erstes Feld für die Selektion:

Erstes Selektionsfeld aus Liste "Gehtgründe":

Zweites Feld für die Selektion:

Change the font size for the display of a list.



Klein
Klein
Klein, feste Breite
Mittel
Mittel, feste Breite
Groß
Groß, feste Breite

The font size "large", 23 pixels is similar to a Word font size of 14.

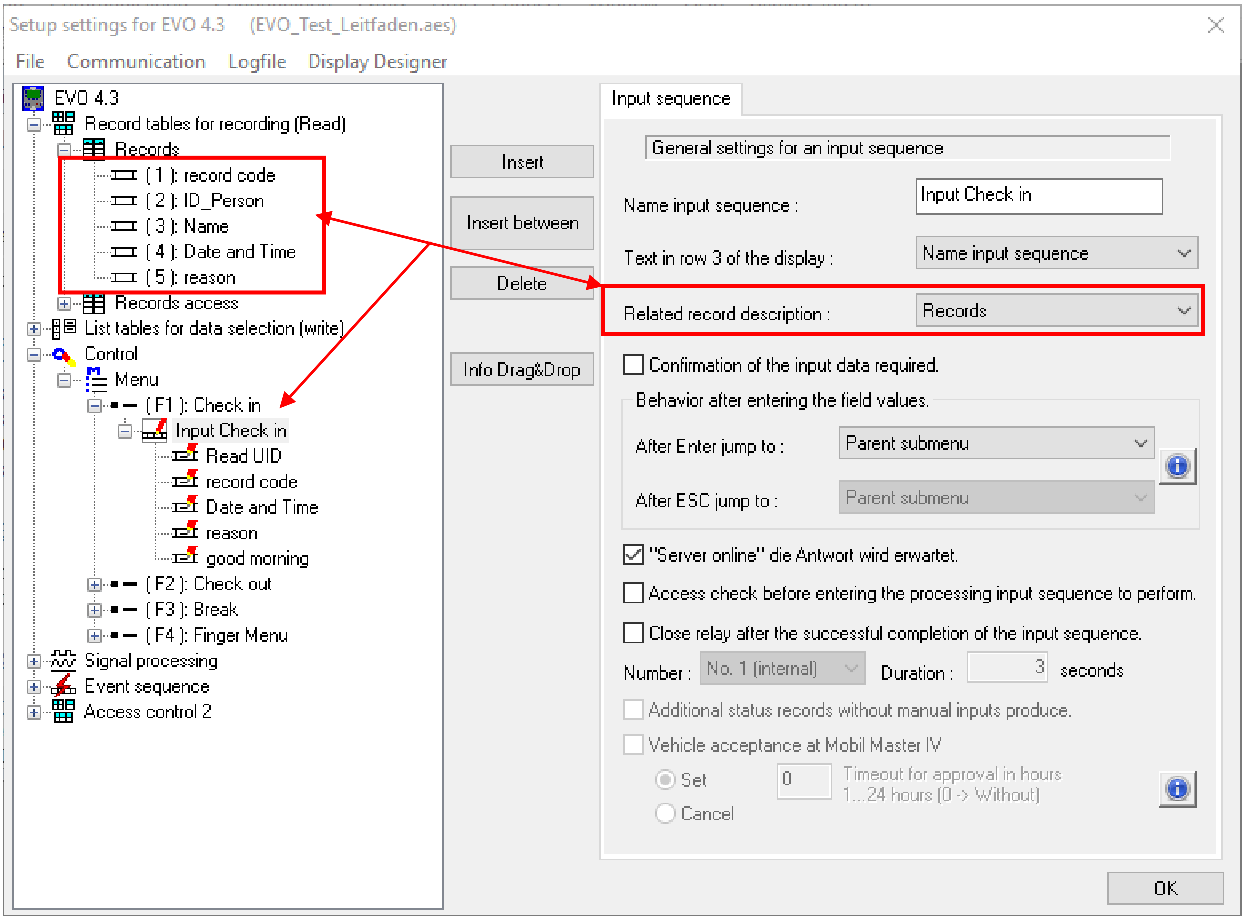
With the font size "large", the header lines are also displayed. Thus, they are also clearly readable.

5.8. Input field-functions in the device setup

As we have noted, a posting procedure in the form of a command chain for generating data be defined as required. In such an input string (booking process) the data are generated (information in the fields of a record) in the input string fields through the execution of field functions or edited. Each input string field you can assign it a field function and configure.

Basics:

The main purpose of the device is to collect data. So the collected data is also stored, the input string a record associated with it.



EVO 4.3
- Record tables for recording (Read)
  - Records
    - (1): record code
    - (2): ID_Person
    - (3): Name
    - (4): Date and Time
    - (5): reason
  - Records access
- List tables for data selection (write)
- Control
  - Menu
    - (F1): Check in
      - Input Check in
        - Read UID
        - record code
        - Date and Time
        - reason
        - good morning
    - (F2): Check out
    - (F3): Break
    - (F4): Finger Menu
- Signal processing
- Event sequence
- Access control 2

General settings for an input sequence

Name input sequence : Input Check in

Text in row 3 of the display : Name input sequence

Related record description : Records

□ Confirmation of the input data required.

Behavior after entering the field values.

After Enter jump to : Parent submenu

After ESC jump to : Parent submenu

☑ "Server online" die Antwort wird erwartet.

□ Access check before entering the processing input sequence to perform.

□ Close relay after the successful completion of the input sequence.

Number : No. 1 (internal) Duration : 3 seconds

□ Additional status records without manual inputs produce.

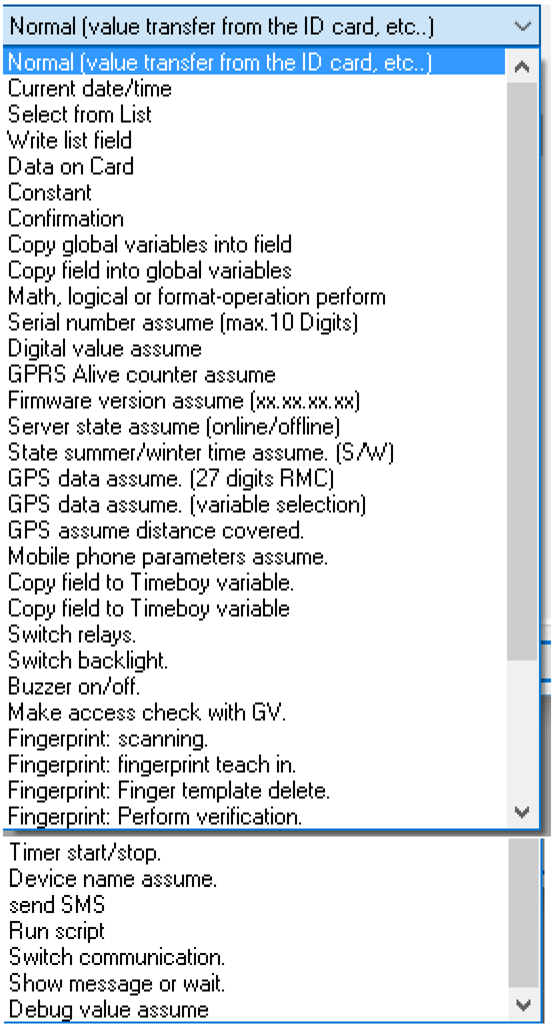
□ Vehicle acceptance at Mobil Master IV

● Set 0 Timeout for approval in hours 1...24 hours (0 -> Without)

○ Cancel

Then processed the input sequence, saved the device the records in the related record description. If the Data to be saved, you see this in the Display with the displayed text „Data Storage successful“.

This Input field-functions you can use:



Normal (value transfer from the ID card, etc..)

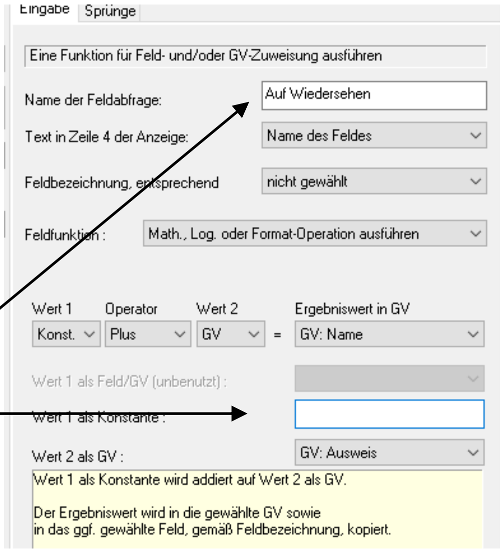
Normal (value transfer from the ID card, etc..)
Current date/time
Select from List
Write list field
Data on Card
Constant
Confirmation
Copy global variables into field
Copy field into global variables
Math, logical or format-operation perform
Serial number assume (max.10 Digits)
Digital value assume
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
Switch relays.
Switch backlight.
Buzzer on/off.
Make access check with GV.
Fingerprint: scanning.
Fingerprint: fingerprint teach in.
Fingerprint: Finger template delete.
Fingerprint: Perform verification.
Timer start/stop.
Device name assume.
send SMS
Run script
Switch communication.
Show message or wait.
Debug value assume

Depending on the chosen Input field-functions switch on/off,

different tab page

choosing boxes,

input boxes.



Eingabe | Sprünge

Eine Funktion für Feld- und/oder GV-Zuweisung ausführen

Name der Feldabfrage: Auf Wiedersehen

Text in Zeile 4 der Anzeige: Name des Feldes

Feldbezeichnung, entsprechend: nicht gewählt

Feldfunktion: Math., Log. oder Format-Operation ausführen

Wert 1	Operator	Wert 2		Ergebniswert in GV
Konst.	Plus	GV	=	GV: Name

Wert 1 als Feld/GV (unbenutzt):

Wert 1 als Konstante:

Wert 2 als GV: GV: Ausweis

Wert 1 als Konstante wird addiert auf Wert 2 als GV.

Der Ergebniswert wird in die gewählte GV sowie
in das ggf. gewählte Feld, gemäß Feldbezeichnung, kopiert.

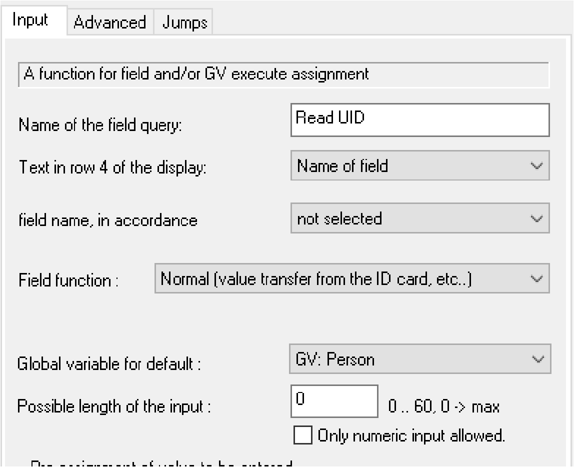
More information you see at the following sites.

5.8.1. Normal (value transfer from ID card, barcode etc…)

This function can use to, read an RFID-chip, read a barcode or gives an input via Keys.

You choose a field from the records, to save the value.

The value can also save in a GV.
So you can use the value later in the set-up.



A function for field and/or GV execute assignment

Name of the field query:	Read UID
Text in row 4 of the display:	Name of field
field name, in accordance	not selected
Field function :	Normal (value transfer from the ID card, etc..)
Global variable for default :	GV: Person
Possible length of the input :	0 0 .. 60, 0 -> max

□ Only numeric input allowed.

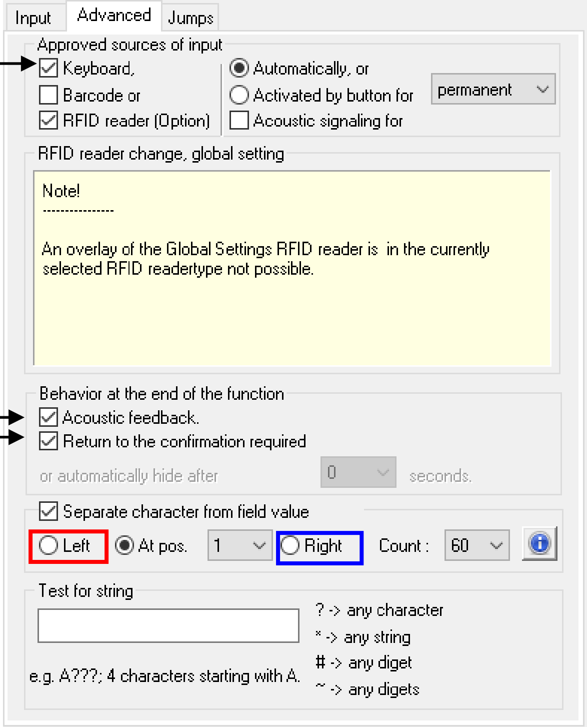
Pre-assignment of value to be entered

Choose, how you want the input.

In each input field, can you choose other settings. You can select different Segments or UID. If you have set the checkmark, are not active the global Transponder settings.

Here you can activate an acoustic feedback after the successful reading.
Activate a necessary confirmation with pressed return for an Input.

- at the position (**Left**) and max. 60 characters
- from the position X and quantity of characters, from begin the value.
- from the end off value (**Right**) and quantity of characters



Approved sources of input

☑ Keyboard,
□ Barcode or
☑ RFID reader (Option)

● Automatically, or
○ Activated by button for
□ Acoustic signaling for

permanent

RFID reader change, global setting

Note!

An overlay of the Global Settings RFID reader is in the currently selected RFID readertype not possible.

Behavior at the end of the function

☑ Acoustic feedback.
☑ Return to the confirmation required

or automatically hide after 0 seconds.

☑ Separate character from field value

○ Left ● At pos. 1 ○ Right Count : 60

Test for string

e.g. A???; 4 characters starting with A.

? -> any character
* -> any string
-> any diget
~ -> any digets

Example to check an input value to confirm value:

*123	- check of the number “123” on a flexible place (* = any length of characters).
???	- read exact 3 any characters.
##	- read exact 2 any digit.
F*99	- the first character must be an “F” and folder on a flexible place a 99.
?*	- read at the minimum 1 character and then flexible, but 1 more is minimum

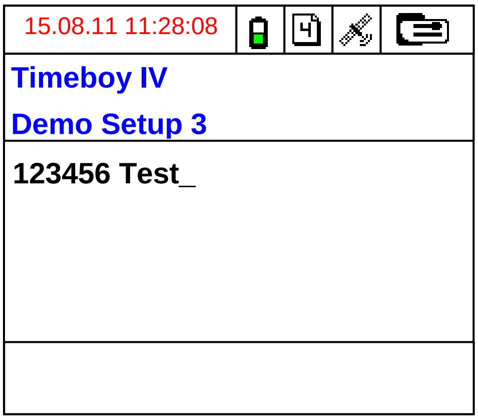
! For the tab page „jumps“, you find a discription in the chapter „Extended Jump Function in Input Sequences“.

5.8.1.1. Default value are displayed before an input value

Most helpful is this function, if you control or change the value from GV.
With this function is possible to display a default input value. The default value can read from record-field or from GV.

Here displayed the value from the GV. This value can be changed now.

Display example of TimeboyIV, to change the value from GV:

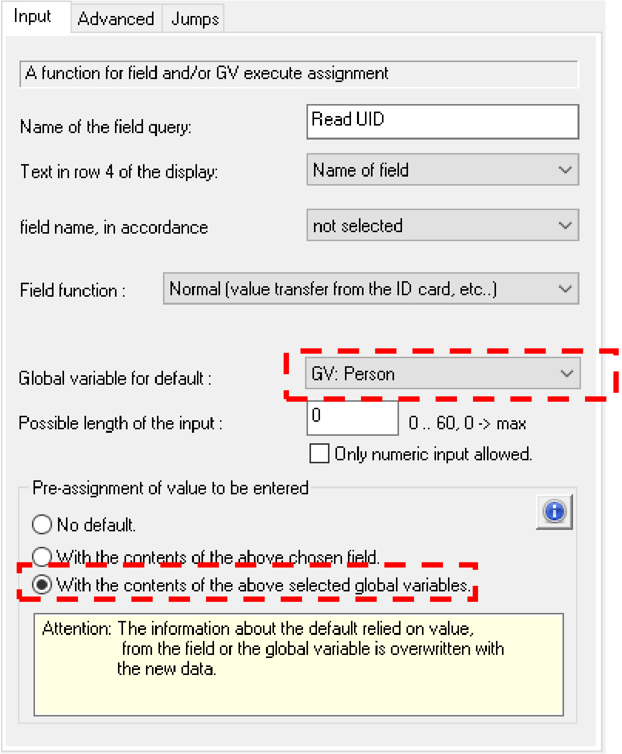


15.08.11 11:28:08

Timeboy IV

Demo Setup 3

123456 Test_



A function for field and/or GV execute assignment

Name of the field query: Read UID

Text in row 4 of the display: Name of field

field name, in accordance: not selected

Field function : Normal (value transfer from the ID card, etc..)

Global variable for default : GV: Person

Possible length of the input : 0 0 .. 60, 0 -> max

□ Only numeric input allowed.

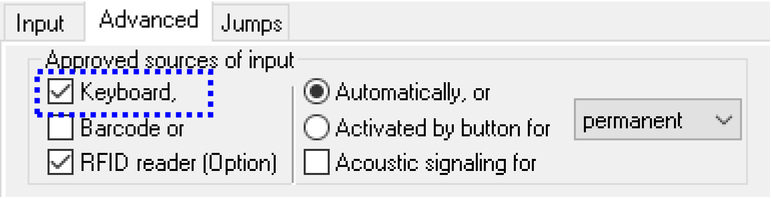
Pre-assignment of value to be entered

○ No default.

○ With the contents of the above chosen field.

● With the contents of the above selected global variables.

Attention: The information about the default relied on value, from the field or the global variable is overwritten with the new data.



Approved sources of input

☑ Keyboard,

□ Barcode or

☑ RFID reader (Option)

● Automatically, or

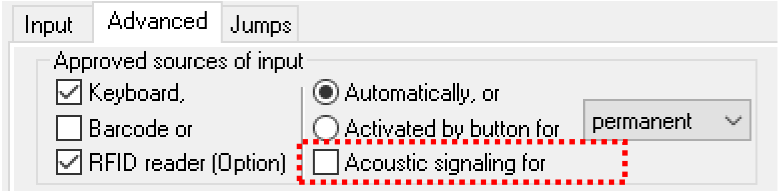
○ Activated by button for permanent

□ Acoustic signaling for

If you reading a transponder, to overwrite the value.
When using the keyboard example a Datafox TimeboyIV or AE-MasterIV can change this default value.
The same applies if the default is derived from the data field. So the data record may subsequently be tested gradually correct inputs

5.8.1.2. The transponder signalling readiness

Under the "Advanced" tab, you have the opportunity to provide an acoustic signal when a value is to be read. You can choose how long the signalling is active.



Approved sources of input

☑ Keyboard,

□ Barcode or

☑ RFID reader (Option)

● Automatically, or

○ Activated by button for permanent

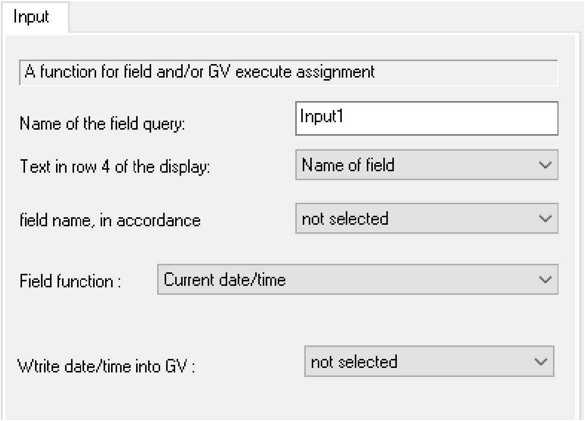
□ Acoustic signaling for

5.8.2. Current Date / Time

This field function provides the current date / time available. The values to be taken from the clock of the device

The data field in which the date will be stored, as a field type date and time to be defined.

If you save the date and time in a global Variable, get the Value in seconds since 01.01.2000 00:00 to date. The second's value can then be used for calculations and comparisons.



Input

A function for field and/or GV execute assignment

Name of the field query: Input1

Text in row 4 of the display: Name of field

field name, in accordance: not selected

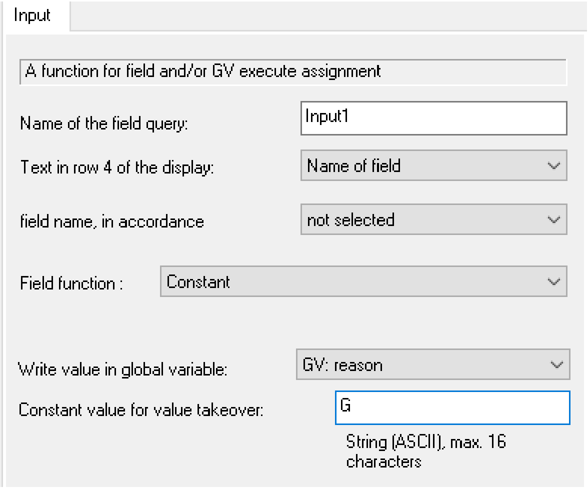
Field function : Current date/time

Wtrite date/time into GV : not selected

5.8.3. Constant

Assigned to the corresponding data field from the data set description

Input value for the constant.



Input

A function for field and/or GV execute assignment

Name of the field query: Input1

Text in row 4 of the display: Name of field

field name, in accordance: not selected

Field function : Constant

Write value in global variable: GV: reason

Constant value for value takeover: G

String (ASCII), max. 16 characters

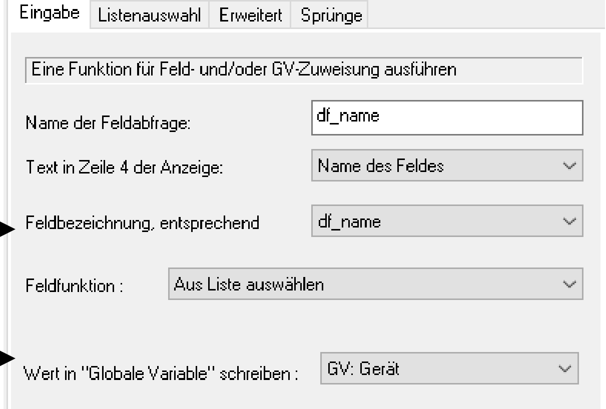
This function can also be used to in order to change the value of a global variable. It is not absolutely necessary, to assign the value of a record field and store.

5.8.4. Select from a list

Through lists the device or the user with additional information is made available to. This can e.g. be a list of reasons goes, from which the user can select the reason for the work stoppage. Similarly, a list, e.g. HR master, a transponder number are assigned to the appropriate name.

Enter the appropriate field of the record in which the value read from the list to be saved.

In addition, this can also be stored in a GV.



Eine Funktion für Feld- und/oder GV-Zuweisung ausführen

Name der Feldabfrage: df_name

Text in Zeile 4 der Anzeige: Name des Feldes

Feldbezeichnung, entsprechend: df_name

Feldfunktion : Aus Liste auswählen

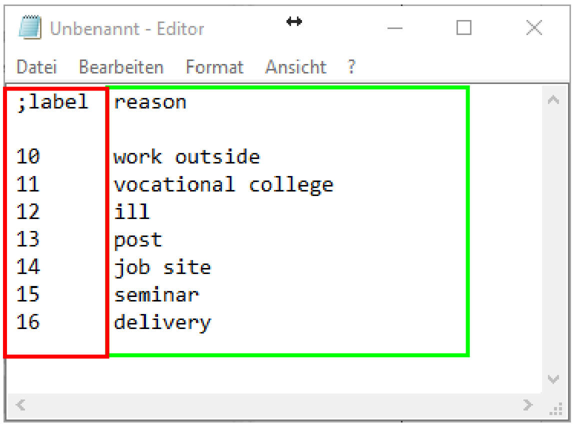
Wert in "Globale Variable" schreiben : GV: Gerät

5.8.4.1. Choose from a list

An example of the selection list will be shown. We take here a list of reason to check out.

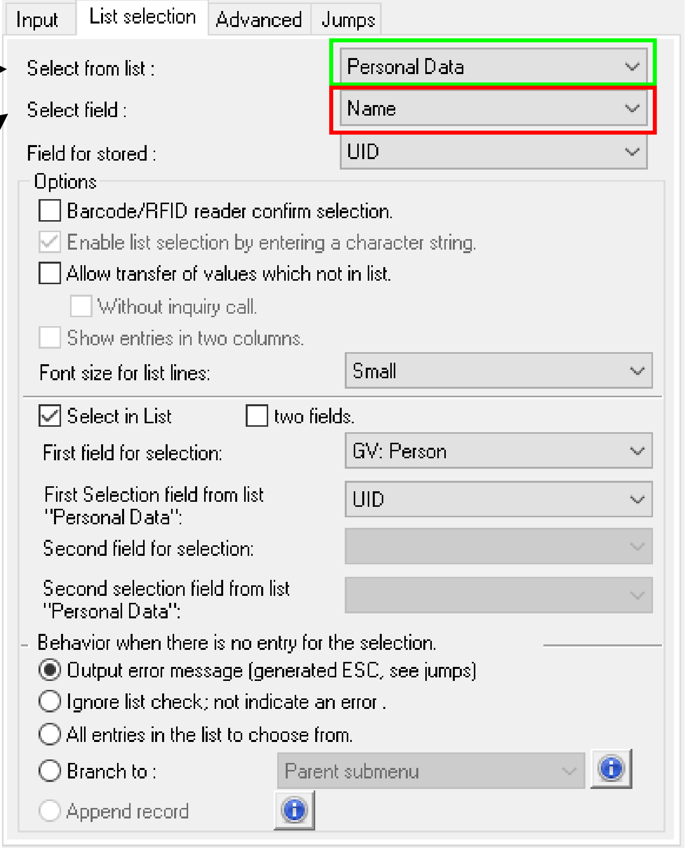
Specify here which column (field) the list on the unit's display to display.

Enter here, from which column of the list, the data to be included in the record.



```
;label  reason

10      work outside
11      vocational college
12      ill
13      post
14      job site
15      seminar
16      delivery
```



Select from list : Personal Data

Select field : Name

Field for stored : UID

Options

□ Barcode/RFID reader confirm selection.

☑ Enable list selection by entering a character string.

□ Allow transfer of values which not in list.

□ Without inquiry call.

□ Show entries in two columns.

Font size for list lines: Small

☑ Select in List □ two fields.

First field for selection: GV: Person

First Selection field from list "Personal Data": UID

Second field for selection:

Second selection field from list "Personal Data":

Behavior when there is no entry for the selection.

● Output error message (generated ESC, see jumps)

○ Ignore list check; not indicate an error .

○ All entries in the list to choose from.

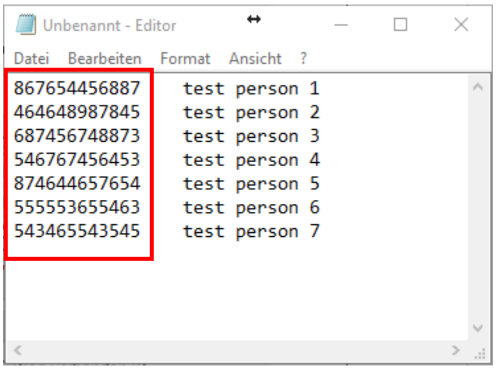
○ Branch to : Parent submenu

○ Append record

Choose the user mow “post” to save the value 13 in the records and/or in the global variables.

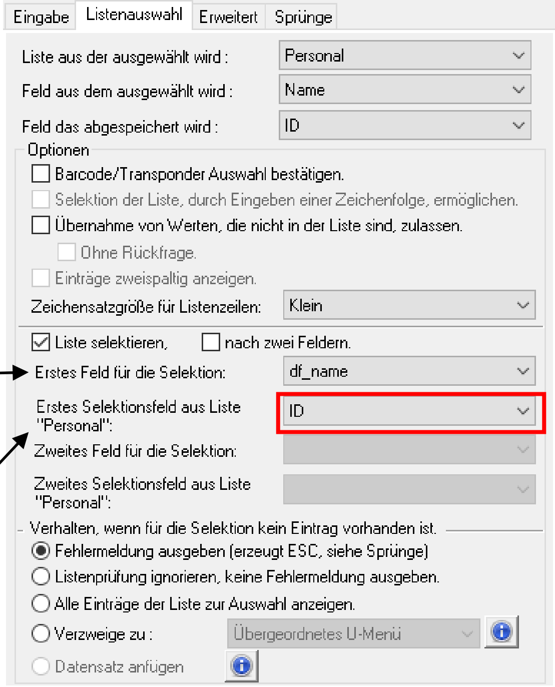
5.8.4.2. List selection

Here is to show the example of a personnel list will be selected and displayed as a read transponder number, the corresponding name from a list.


Unbenannt - Editor

Datei Bearbeiten Format Ansicht ?

```
867654456887   test person 1
464648987845   test person 2
687456748873   test person 3
546767456453   test person 4
874644657654   test person 5
555553655463   test person 6
543465543545   test person 7
```


Eingabe | Listenauswahl | Erweitert | Sprünge

Liste aus der ausgewählt wird : Personal

Feld aus dem ausgewählt wird : Name

Feld das abgespeichert wird : ID

Optionen

☐ Barcode/Transponder Auswahl bestätigen.

☐ Selektion der Liste, durch Eingeben einer Zeichenfolge, ermöglichen.

☐ Übernahme von Werten, die nicht in der Liste sind, zulassen.

☐ Ohne Rückfrage.

☐ Einträge zweispaltig anzeigen.

Zeichensatzgröße für Listenzeilen: Klein

☑ Liste selektieren, ☐ nach zwei Feldern.

Erstes Feld für die Selektion: df_name

Erstes Selektionsfeld aus Liste "Personal": ID

Zweites Feld für die Selektion:

Zweites Selektionsfeld aus Liste "Personal":

Verhalten, wenn für die Selektion kein Eintrag vorhanden ist.

● Fehlermeldung ausgeben (erzeugt ESC, siehe Sprünge)

○ Listenprüfung ignorieren, keine Fehlermeldung ausgeben.

○ Alle Einträge der Liste zur Auswahl anzeigen.

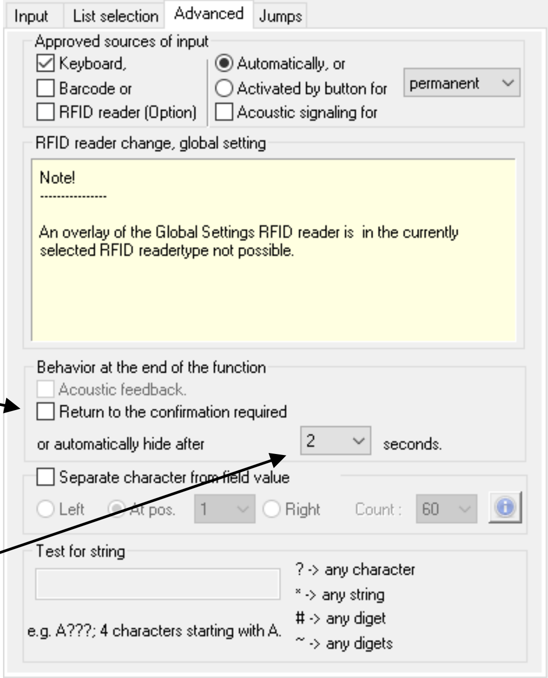
○ Verzweige zu : Übergeordnetes U-Menü

○ Datensatz anfügen

Enter here to search for what number. The number may be from a record field of the current record or from a GV.

Specify here which column of the list "Personal Data" the above number to search for.

Setting on the register „Advanced“.


Input | List selection | Advanced | Jumps

Approved sources of input

☑ Keyboard, ● Automatically, or

☐ Barcode or ○ Activated by button for permanent

☐ RFID reader (Option) ☐ Acoustic signaling for

RFID reader change, global setting

Note!

An overlay of the Global Settings RFID reader is in the currently selected RFID readertype not possible.

Behavior at the end of the function

☐ Acoustic feedback.

☐ Return to the confirmation required

or automatically hide after 2 seconds.

☐ Separate character from field value

○ Left ● At pos. 1 ○ Right Count : 60

Test for string

e.g. A???; 4 characters starting with A.

? -> any character
* -> any string
-> any diget
~ -> any digets

If you use this checkmark then must press the user “enter” to confirm the input.

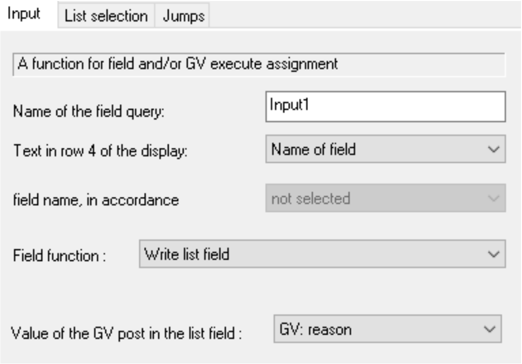
The second option is to display the selected names for a certain time.

If the time is set to 0, the selection is automatic (no indication on the display).

5.8.5. Write in a list

The entries in a list in the player can be changed with this function.
Prerequisite for this is created in the setup list table with the appropriate fields.
The list, in which the data is to be written, must have been transferred to the device.

The value to written in the list, can you take from a GV.



Input | List selection | Jumps

A function for field and/or GV execute assignment

Name of the field query: Input1

Text in row 4 of the display: Name of field

field name, in accordance: not selected

Field function : Write list field

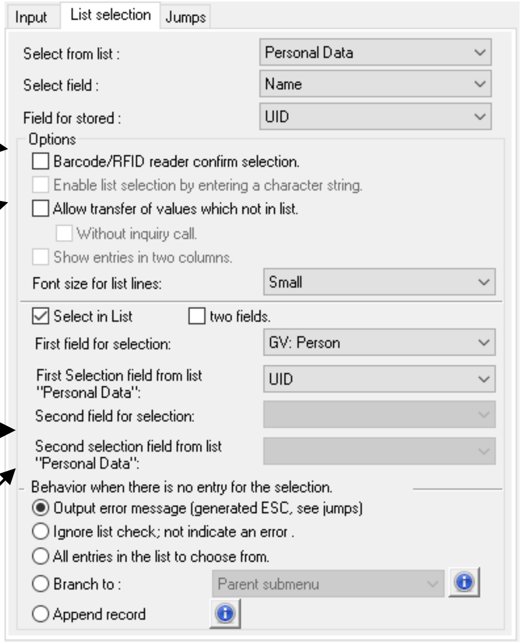
Value of the GV post in the list field : GV: reason

Since no data displayed from the list, this information is not needed.

Specify here which column in the list, the value of the GV is to be saved.

Enter here to search for what number. The number may be from a record or a GV.

You choose here the column from the list of "Personal Data" to search the selected number.



Input | List selection | Jumps

Select from list : Personal Data

Select field : Name

Field for stored : UID

Options

□ Barcode/RFID reader confirm selection.

□ Enable list selection by entering a character string.

□ Allow transfer of values which not in list.

□ Without inquiry call.

□ Show entries in two columns.

Font size for list lines: Small

☑ Select in List □ two fields.

First field for selection: GV: Person

First Selection field from list "Personal Data": UID

Second field for selection:

Second selection field from list "Personal Data":

Behavior when there is no entry for the selection.

● Output error message (generated ESC, see jumps)

○ Ignore list check; not indicate an error .

○ All entries in the list to choose from.

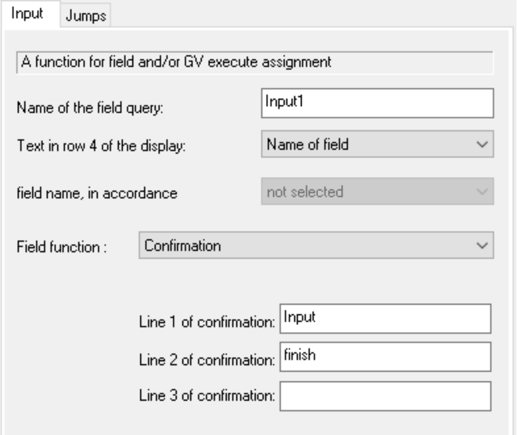
○ Branch to : Parent submenu

○ Append record

☞ **Note:**
If the selection list is not selected, the value of the specified GM is stored in the first row of the list.
The "write list" function only makes sense if the value is stored at the corresponding position in the list.

5.8.6. Confirmation (a input)

A confirmation field is used for check of input for the user. Here can the user control his inputs. Also is possible to confirm the input and conditional from inputs to jump. More information for the jumps you find in the chapter „Jumps“.



A function for field and/or GV execute assignment

Name of the field query: Input1

Text in row 4 of the display: Name of field

field name, in accordance: not selected

Field function : Confirmation

Line 1 of confirmation: Input

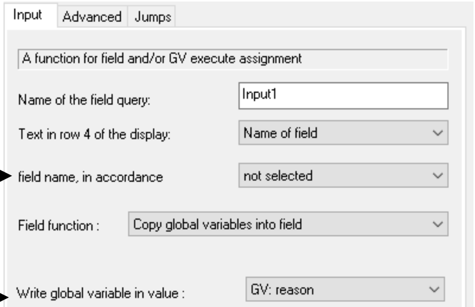
Line 2 of confirmation: finish

Line 3 of confirmation:

This field you can use to give the user some information. This text displayed on device.

5.8.7. Copy a global variable in a field (Record)

The content of global variables can you here copy in the records and cut the length.



A function for field and/or GV execute assignment

Name of the field query: Input1

Text in row 4 of the display: Name of field

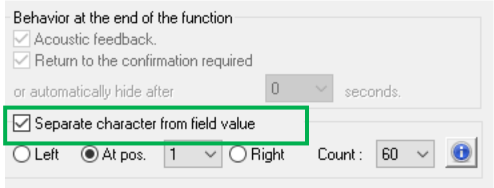
field name, in accordance: not selected

Field function : Copy global variables into field

Write global variable in value : GV: reason

You choose a field from the records, to save the content of the GV.

Select here the GV do you want save.



Behavior at the end of the function

☑ Acoustic feedback.

☑ Return to the confirmation required

or automatically hide after 0 seconds.

☑ Separate character from field value

○ Left ● At pos. 1 ○ Right Count : 60

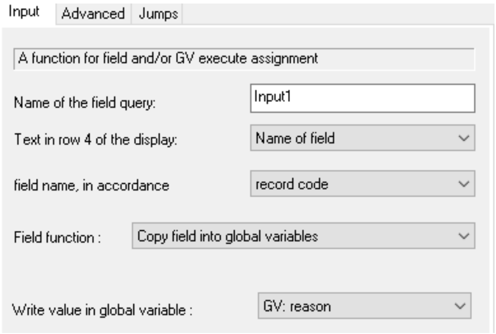
On the tab “Advanced” you can the content of the GV cut the length.

5.8.8. The value form a Field copy in a Global variable

A current value from the records you can save back in a global variable.
This to make sense if you use the content from the field later or you need a part of length.

You choose a field from the records, to save the content from the field in a GV.

Select here the GV to you want save.



A function for field and/or GV execute assignment

Name of the field query: Input1

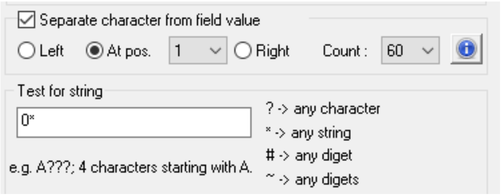
Text in row 4 of the display: Name of field

field name, in accordance record code

Field function : Copy field into global variables

Write value in global variable : GV: reason

On the tab “Advanced” you can the content of the GV cut the length.



☑ Separate character from field value

○ Left ● At pos. 1 ○ Right Count : 60

Test for string

0*

e.g. A???; 4 characters starting with A.

? -> any character
* -> any string
-> any diget
~ -> any digets

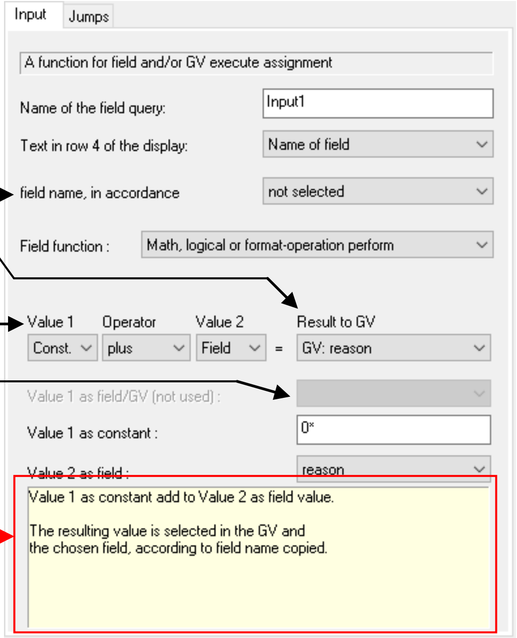
5.8.9. To perform math, logic, or format operations

You can use value from GV or data fields.

The result can be saved in the records or in GV.

If you use content from a record field then can you only select numeric field.

! You get here some information about the function.



A function for field and/or GV execute assignment

Name of the field query: Input1

Text in row 4 of the display: Name of field

field name, in accordance not selected

Field function : Math, logical or format-operation perform

Value 1	Operator	Value 2		Result to GV
Const.	plus	Field	=	GV: reason

Value 1 as field/GV (not used) :

Value 1 as constant : 0*

Value 2 as field : reason

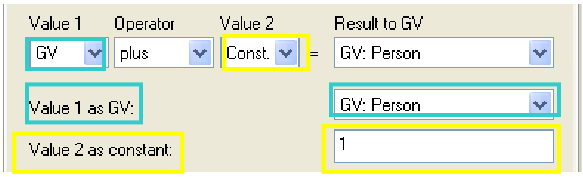
Value 1 as constant add to Value 2 as field value.

The resulting value is selected in the GV and
the chosen field, according to field name copied.

Examples for the operations

To add /plus:

Value 1	plus add	Value 2	result save in GV
123456789	+	1	123456790
GV Person	+	Value 2 as a constant	GV Person



Value 1: GV | Operator: plus | Value 2: Const. | = | Result to GV: GV: Person

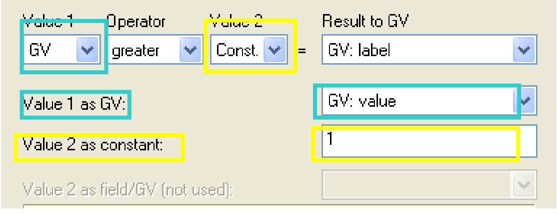
Value 1 as GV: GV: Person

Value 2 as constant: 1

To compare:

The result at the compare to be saved at false=0 or true=1 in the GV.

Value 1	greater	Value 2	result save in GV
123456789	>	1	1
GV value	>	Value 2 as a constant	GV label



Value 1: GV | Operator: greater | Value 2: Const. | = | Result to GV: GV: label

Value 1 as GV: GV: value

Value 2 as constant: 1

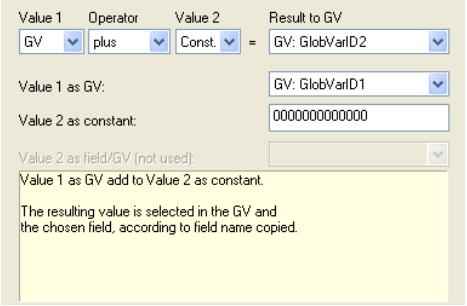
Value 2 as field/GV (not used):

Conversion to hexadecimal value:

The operation "to Hex" is available for this action.
The value mask serves as indicator for the number of characters. More characters than in the initial value can be used in the value mask. By this, leading zeros can be added, for example.
Examples decimal to hexadecimal with 13 character value mask:

Same applies for conversion of decimal values to hex.

Value 1	to Hex	Value 2	result in GV
000005202	to Hex	0000000000000	0000000000804
164166271	to Hex	0000000000000	0000009C8FA7F
000002052	to Hex	FFFFFFFF00000	FFFFFFFF00804
164166271	to Hex	FFFFFFFF00000	FFFFF09C8FA7F
GV GlobCardNo	to Hex	Value 2 as value mask	GV GlobPersonnelNo



Value 1: GV | Operator: plus | Value 2: Const. | = | Result to GV: GV: GlobVarID2

Value 1 as GV: GV: GlobVarID1

Value 2 as constant: 0000000000000

Value 2 as field/GV (not used):

Value 1 as GV add to Value 2 as constant.

The resulting value is selected in the GV and the chosen field, according to field name copied.

!

Caution:
Due to system design, for the data in a GV it is not indexed whether it contains hexadecimal or decimal values. Therefore, you must make sure that a hexadecimal value is not converted again to a hexadecimal value and a decimal value to a decimal value.

5.8.10. Write value on RFID-Tag

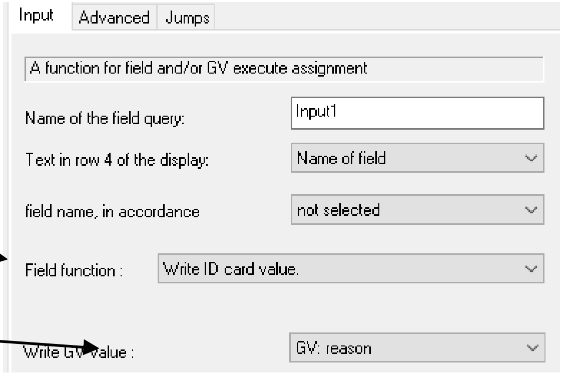
This function makes possible to write data on a transponder.

Transpondertypen die diese Funktion derzeit unterstützen sind:

- Mifare Classic
- Hitag 2
- Hitag 1(Security)

The content of a global variable (GV) you can save on ID card.

Choose here the global variable.



A function for field and/or GV execute assignment

Name of the field query: Input1

Text in row 4 of the display: Name of field

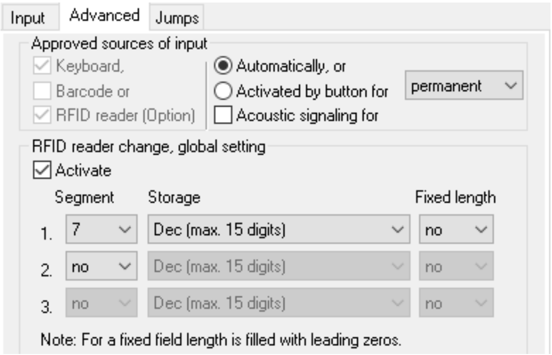
field name, in accordance not selected

Field function : Write ID card value.

Write GV value : GV: reason

Select here the sector where to write the value on the ID card.

Akustische Bestätigung = Signalausgabe nach erfolgreichem Schreiben. Zusätzliche Bestätigung des geschriebenen Wertes mit der Enter-



Approved sources of input

☑ Keyboard,
☐ Barcode or
☑ RFID reader (Option)

● Automatically, or
○ Activated by button for permanent
☐ Acoustic signaling for

RFID reader change, global setting

☑ Activate

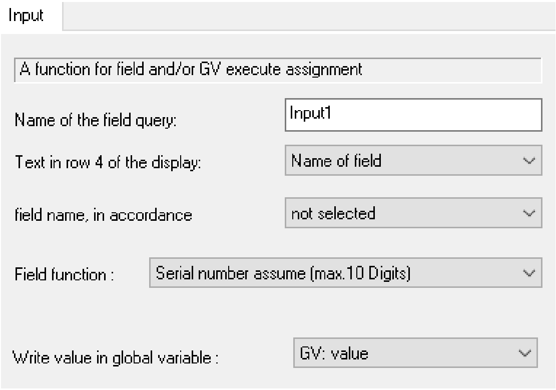
	Segment	Storage	Fixed length
1.	7	Dec (max. 15 digits)	no
2.	no	Dec (max. 15 digits)	no
3.	no	Dec (max. 15 digits)	no

Note: For a fixed field length is filled with leading zeros.

5.8.11. Serial number assume (max. 10 Digits)

With assume the serial number it is possible to indicate the terminal.

The serial number is always unique for a device.



A function for field and/or GV execute assignment

Name of the field query: Input1

Text in row 4 of the display: Name of field

field name, in accordance not selected

Field function : Serial number assume (max.10 Digits)

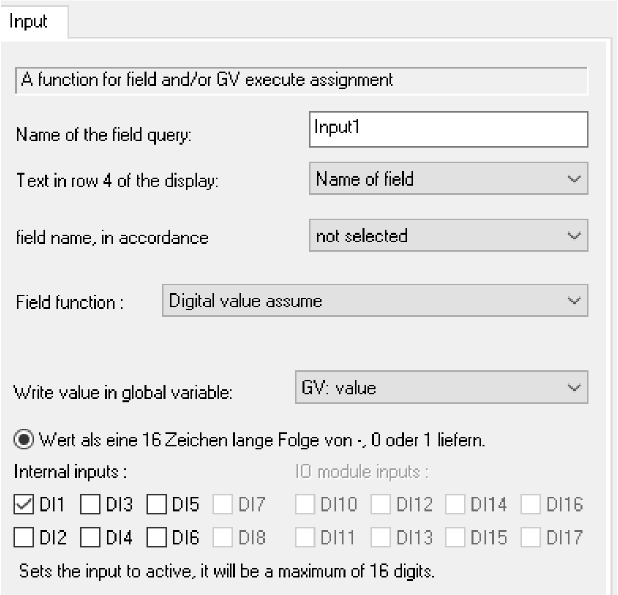
Write value in global variable : GV: value

5.8.12. State of digital inputs assume

The condition of the digital input is queried and stored in the data field and / or in the specified GV.

The stored format as follow:
1-----   E1 = 1(high)
0-----   E1 = 0(low)

- = no active input cannel
0 or 1 active



Input

A function for field and/or GV execute assignment

Name of the field query: Input1

Text in row 4 of the display: Name of field

field name, in accordance: not selected

Field function : Digital value assume

Write value in global variable: GV: value

● Wert als eine 16 Zeichen lange Folge von -, 0 oder 1 liefern.

Internal inputs : IO module inputs :

☑ DI1 □ DI3 □ DI5 □ DI7 □ DI10 □ DI12 □ DI14 □ DI16
□ DI2 □ DI4 □ DI6 □ DI8 □ DI11 □ DI13 □ DI15 □ DI17

Sets the input to active, it will be a maximum of 16 digits.

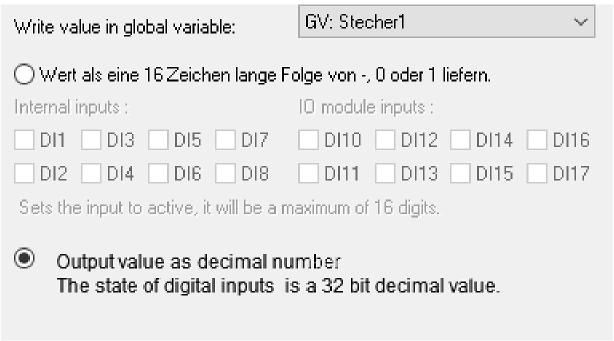
The decimal value is calculated as follows:

Input number.:		binär value
E1	=	1
E2	=	2
E3	=	4
E4	=	8
E5	=	16
E6	=	32
E7	=	64
E8	=	128
E9	=	265

usw.

Example:
Decimal value: 64+8+1= 75

E1	=	on
E2	=	-
E3	=	-
E4	=	on
E5	=	-
E6	=	-
E7	=	on
E8	=	-
E9	=	-



Write value in global variable: GV: Stecher1

○ Wert als eine 16 Zeichen lange Folge von -, 0 oder 1 liefern.

Internal inputs : IO module inputs :

□ DI1 □ DI3 □ DI5 □ DI7 □ DI10 □ DI12 □ DI14 □ DI16
□ DI2 □ DI4 □ DI6 □ DI8 □ DI11 □ DI13 □ DI15 □ DI17

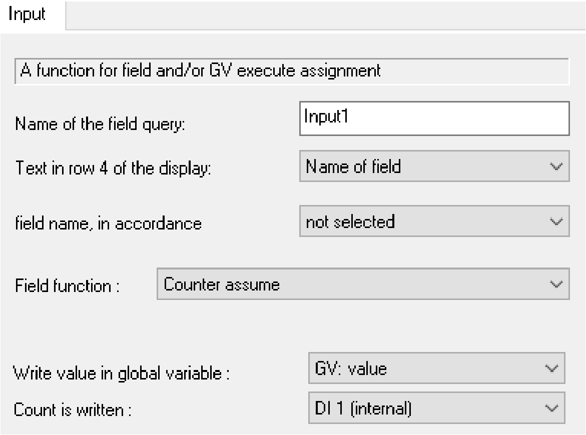
Sets the input to active, it will be a maximum of 16 digits.

● Output value as decimal number
The state of digital inputs is a 32 bit decimal value.

5.8.13. Counter assume

The value of the digital counter is queried and stored in the data field and / or in the specified GV. The counter is reset to 0 after the reading!

Select here the counter of the digital input canal.



A function for field and/or GV execute assignment

Name of the field query: Input1

Text in row 4 of the display: Name of field

field name, in accordance: not selected

Field function : Counter assume

Write value in global variable : GV: value

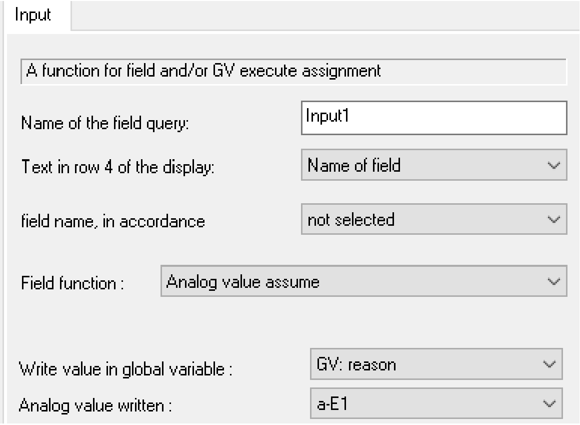
Count is written : DI 1 (internal)

5.8.14. Analog measurement assume

The state of the analog input is polled and stored in the data field and / or in the specified GV.
For more details see Chapter „Analog inputs“.

Here an example for the saved format:

- 34.5 °F
- 9.2 V



A function for field and/or GV execute assignment

Name of the field query: Input1

Text in row 4 of the display: Name of field

field name, in accordance: not selected

Field function : Analog value assume

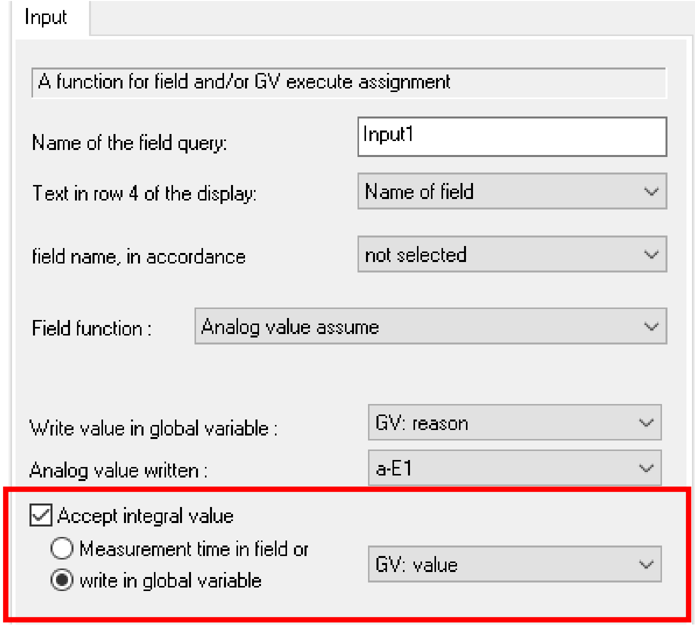
Write value in global variable : GV: reason

Analog value written : a-E1

5.8.14.1. Integralfunction for analog measurement

The existing field function "*analog value assume* " has been extended to an integral functionality. If the checkbox is checked for the integrated data of the selected input is accepted.

This makes it possible to measure a "volume", for example the energy consumption of devices by current measurements.



Input

A function for field and/or GV execute assignment

Name of the field query: Input1

Text in row 4 of the display: Name of field

field name, in accordance: not selected

Field function : Analog value assume

Write value in global variable : GV: reason

Analog value written : a-E1

☑ Accept integral value

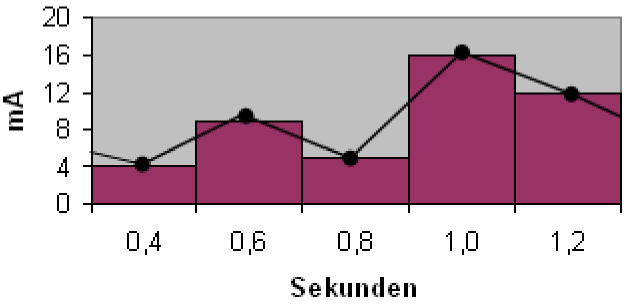
○ Measurement time in field or

● write in global variable: GV: value

In addition, you have the possibility to save the period of measurement in seconds, either in another field in the record or store it in a GV for farther processing.

Wurde im Setup für den ausgewählten Eingang ein Wert für die Einheit festgelegt, wird an den Integralwert diese Einheit und zusätzlich ein *s* angehängt. Beispiel: aus 66.23 *mA* wird 66.23 *mAs*.

The sampling rate is 200 ms for all analog inputs. I.e. each analog input is measured five times in the second and the value added.



The graph shows that good accuracy can only be achieved if the measured values change only slowly compared to one second.
The scaling possibilities of the analog inputs, for example to convert a standard signal into a temperature or power, can also be applied in the integral function as known.

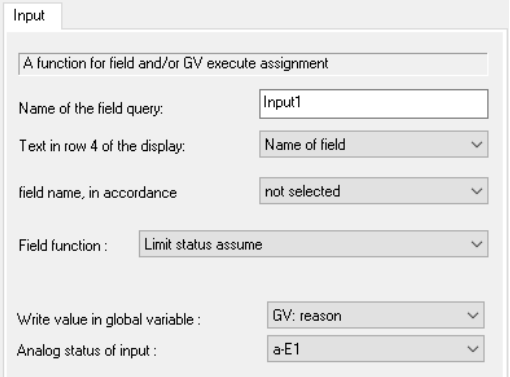
5.8.15. Analog limits assume

The limits of the monitored analog inputs can be saved as status in a data field and / or in the specified GV.

The storage format is, depending on the direction of change:

1->2	2->3	3->2
3->4	4->5	5->4

More information you find in the chapter „analog input“.



Input

A function for field and/or GV execute assignment

Name of the field query: Input1

Text in row 4 of the display: Name of field

field name, in accordance: not selected

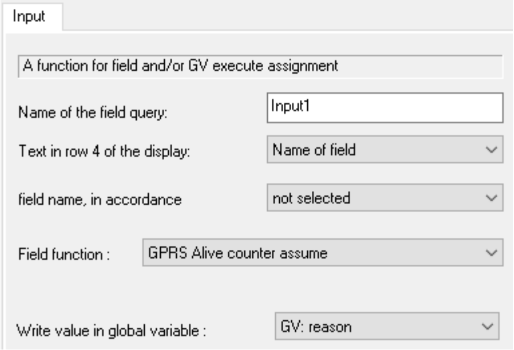
Field function : Limit status assume

Write value in global variable : GV: reason

Analog status of input : a-E1

5.8.16. GPRS Alivecounter assume

The value of the alivecounter can be saved as status in a data field and / or in the specified GV.
More information you find in the chapter :
„Recording Procedures of Signal Processing -> GPRS-Alive“



Input

A function for field and/or GV execute assignment

Name of the field query: Input1

Text in row 4 of the display: Name of field

field name, in accordance: not selected

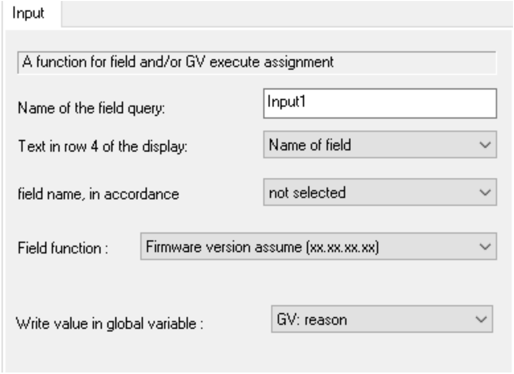
Field function : GPRS Alive counter assume

Write value in global variable : GV: reason

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

The version number of the firmware can be saved as status in a data field and / or in the specified GV.

The firmware contained on the device is dependent on the current firmware at the time of surrender or of any updates made. See chapter "Version Changes" at the beginning of this manual.



Input

A function for field and/or GV execute assignment

Name of the field query: Input1

Text in row 4 of the display: Name of field

field name, in accordance: not selected

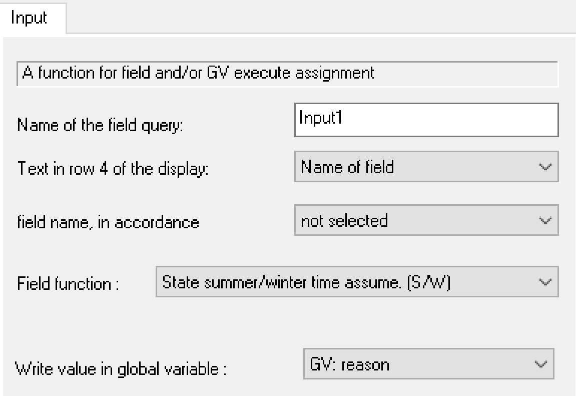
Field function : Firmware version assume (xx.xx.xx.xx)

Write value in global variable : GV: reason

5.8.18. State of Summer-/Winter time assume

The status of Sommer-/Winter time can be saved as status in a data field and / or in the specified GV.

The saved format is as follows:
S summertime
W wintertime
More information you find in the chapter „Setup structure / sommer-/wintertime


Input

A function for field and/or GV execute assignment

Name of the field query: Input1

Text in row 4 of the display: Name of field

field name, in accordance not selected

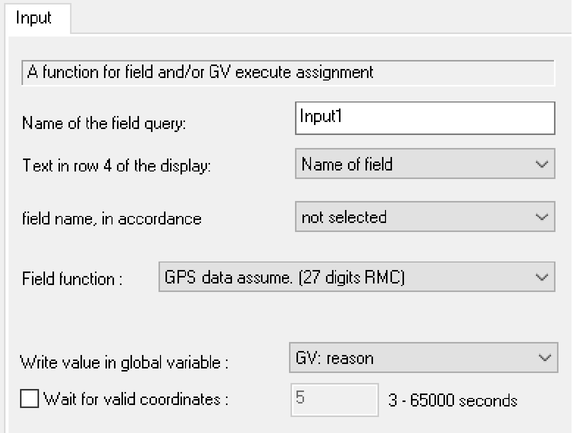
Field function : State summer/winter time assume. (S/W)

Write value in global variable : GV: reason

5.8.19. GPS data assume

Es werden Ihnen mit dieser Funktion GPS-Daten zur Verfügung gestellt.

The value can be saved as status in a data field and / or in the specified GV.


Input

A function for field and/or GV execute assignment

Name of the field query: Input1

Text in row 4 of the display: Name of field

field name, in accordance not selected

Field function : GPS data assume. (27 digits RMC)

Write value in global variable : GV: reason

□ Wait for valid coordinates : 5 3 - 65000 seconds

The saved format is as follows:
A,5043.1526,N,00957.6707,E, bzw. V,5043.1526,N,00957.6707,E,

meaning:

- validity:
  - A= available
  - V= void
- Latitude N/S
- longitude E/W

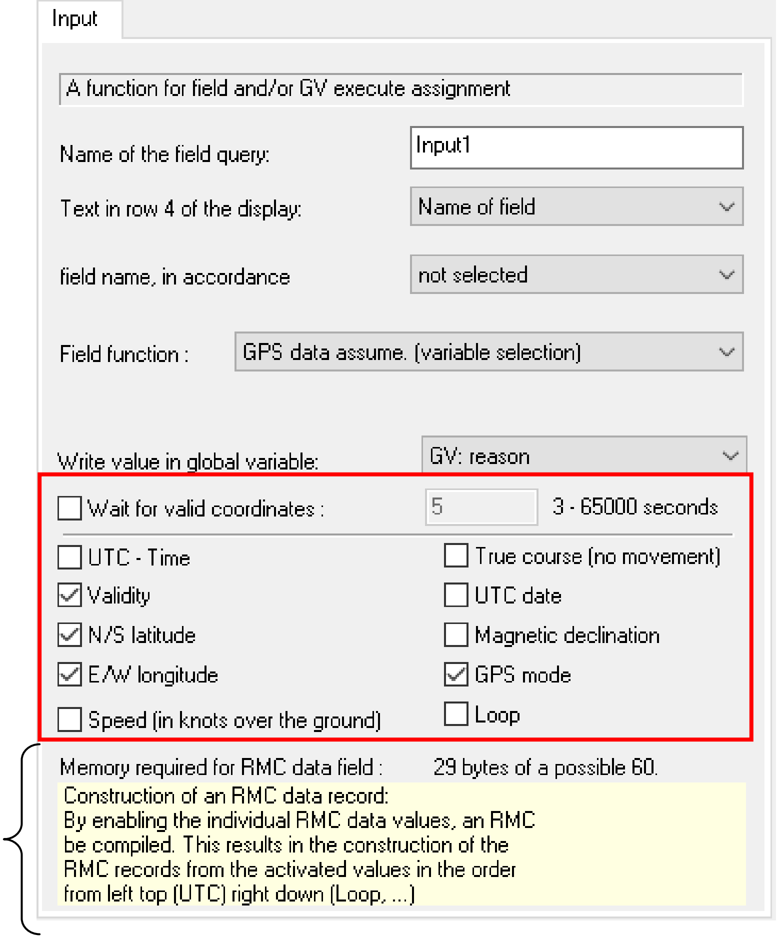
5.8.20. GPS - data assume (variable selection)

It will be provided to you with this function GPS data available.

The data you can save in a record field and/or save in a GV.

Set your checkmarks for the data what you want. To watch out of the size in the record field.

Please read the notes.



Input

A function for field and/or GV execute assignment

Name of the field query: Input1

Text in row 4 of the display: Name of field

field name, in accordance: not selected

Field function : GPS data assume. (variable selection)

Write value in global variable: GV: reason

☐ Wait for valid coordinates : 5 3 - 65000 seconds

☐ UTC - Time
☑ Validity
☑ N/S latitude
☑ E/W longitude
☐ Speed (in knots over the ground)
☐ True course (no movement)
☐ UTC date
☐ Magnetic declination
☑ GPS mode
☐ Loop

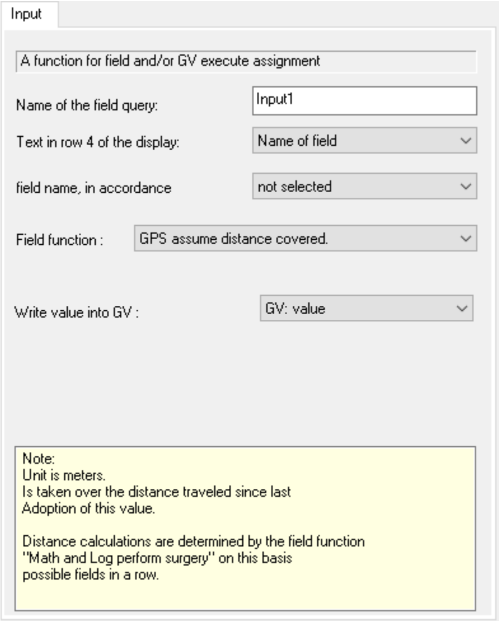
Memory required for RMC data field : 29 bytes of a possible 60.

Construction of an RMC data record:
By enabling the individual RMC data values, an RMC be compiled. This results in the construction of the RMC records from the activated values in the order from left top (UTC) right down (Loop, ...)

Note link:
http://de.wikipedia.org/wiki/NMEA_0183#Recommended_Minimum_Sentence_C_.28RMC.29
http://en.wikipedia.org/wiki/NMEA_0183

☞ **Note:**
The maximum at the data field is 40 byte. Use more data fields to save all Necessary RMC data.

5.8.21. GPS - assume distance covered



Input

A function for field and/or GV execute assignment

Name of the field query: Input1

Text in row 4 of the display: Name of field

field name, in accordance: not selected

Field function : GPS assume distance covered.

Write value into GV : GV: value

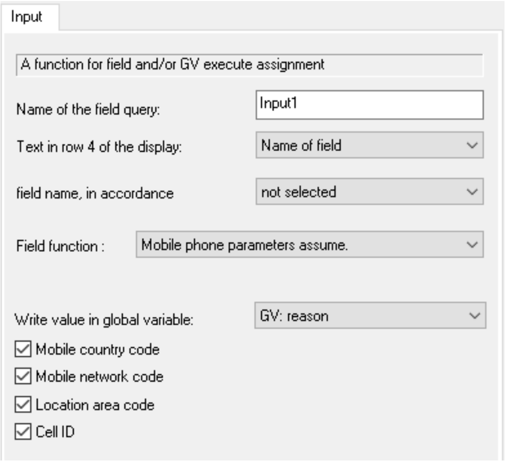
Note:
Unit is meters.
Is taken over the distance traveled since last
Adoption of this value.

Distance calculations are determined by the field function
"Math and Log perform surgery" on this basis
possible fields in a row.

The data/distance from the last call of this function you can save in a record field and/or save in a GV.

The value range is between 0 und $2^{\wedge 32}$-1.

5.8.22. Mobile phone parameters assume



Input

A function for field and/or GV execute assignment

Name of the field query: Input1

Text in row 4 of the display: Name of field

field name, in accordance: not selected

Field function : Mobile phone parameters assume.

Write value in global variable: GV: reason

☑ Mobile country code
☑ Mobile network code
☑ Location area code
☑ Cell ID

It will put you with this function GPS data available.

The data you can save in a record field and/or save in a GV.

Here some links:

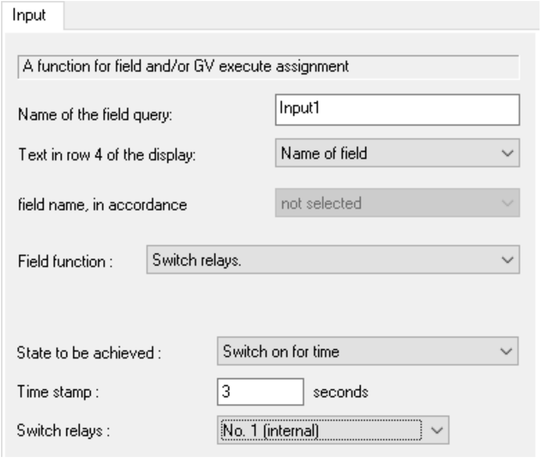
Mobile Country Code:	http://en.wikipedia.org/wiki/Mobile_Country_Code
Mobile Network Code:	http://en.wikipedia.org/wiki/Mobile_Network_Code
Location Area Code:	http://en.wikipedia.org/wiki/Location_Area
Cell ID:	http://en.wikipedia.org/wiki/Cell_of_Origin

5.8.23. Relay switch

With this function it is possible to switch the internal relay of the device.
Switching options are available:

- switch off
- switch on
- switch
- switch off for time
- switch on for time
- switch for time
- switch off after time
- switch on after time
- switch after time

Choose the relays what you switch.



Input

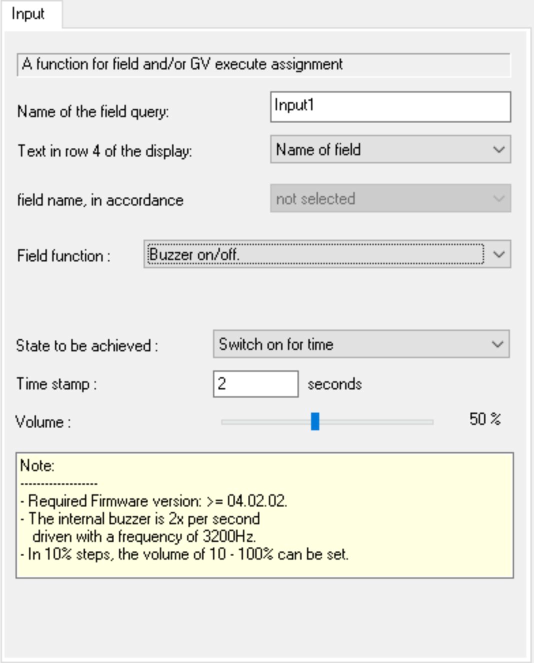
A function for field and/or GV execute assignment

Name of the field query:	Input1
Text in row 4 of the display:	Name of field
field name, in accordance	not selected
Field function :	Switch relays.
State to be achieved :	Switch on for time
Time stamp :	3 seconds
Switch relays :	No. 1 (internal)

5.8.24. Buzzer switch

With this function it is possible to switch the internal buzzer of the device.
Switching options are available:

- switch off
- switch on
- switch
- switch off for time
- switch on for time
- switch for time
- switch off after time
- switch on after time
- switch after time



Input

A function for field and/or GV execute assignment

Name of the field query:	Input1
Text in row 4 of the display:	Name of field
field name, in accordance	not selected
Field function :	Buzzer on/off.
State to be achieved :	Switch on for time
Time stamp :	2 seconds
Volume :	50 %

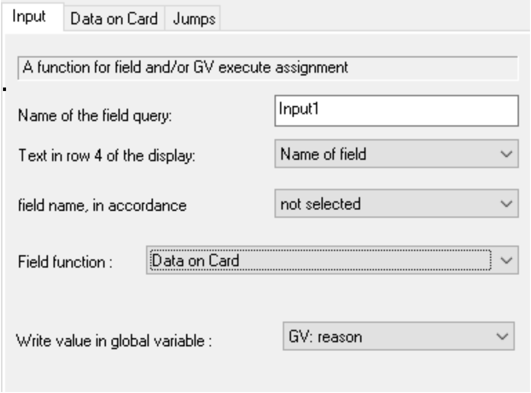
Note:

- Required Firmware version: >= 04.02.02.
- The internal buzzer is 2x per second
  driven with a frequency of 3200Hz.
- In 10% steps, the volume of 10 - 100% can be set.

5.8.25. Data on Card (Fieldfunction)

For this field function needs a detailed description.

The information you find in the chapter “Data on Card“.



A function for field and/or GV execute assignment

Name of the field query:	Input1
Text in row 4 of the display:	Name of field
field name, in accordance	not selected
Field function :	Data on Card
Write value in global variable :	GV: reason

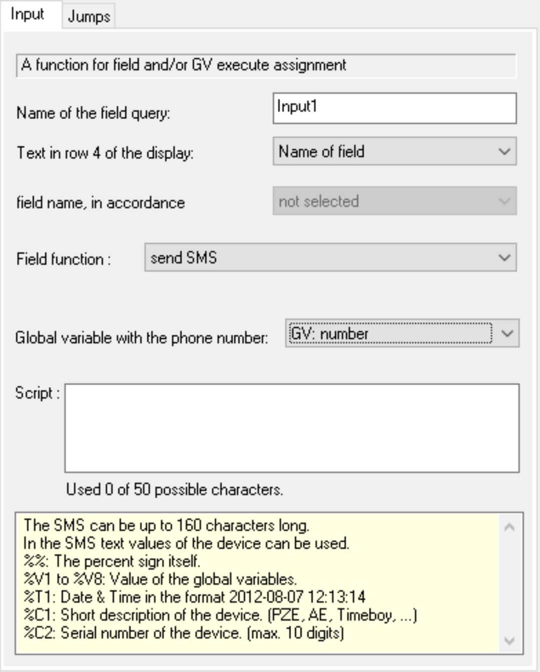
5.8.26. Send SMS

This function provides the ability to send an SMS.

Condition to send a SMS with a device is equipped with a mobile radio modem.

The phone number to which the SMS is to be sent is stored in a GV. →

Intern information about the device you can integrate in the SMS here. →



A function for field and/or GV execute assignment

Name of the field query: Input1

Text in row 4 of the display: Name of field

field name, in accordance: not selected

Field function : send SMS

Global variable with the phone number: GV: number

Script :

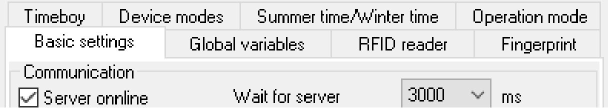
Used 0 of 50 possible characters.

The SMS can be up to 160 characters long.
In the SMS text values of the device can be used.
%%: The percent sign itself.
%V1 to %V8: Value of the global variables.
%T1: Date & Time in the format 2012-08-07 12:13:14
%C1: Short description of the device. (PZE, AE, Timeboy, ...)
%C2: Serial number of the device. (max. 10 digits)

More information to this topic you find in the device manual „Communication via SMS“.

5.8.27. Server status assume (online/offline)

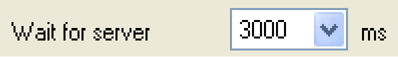
Condition to use this function is activating the online-mode.



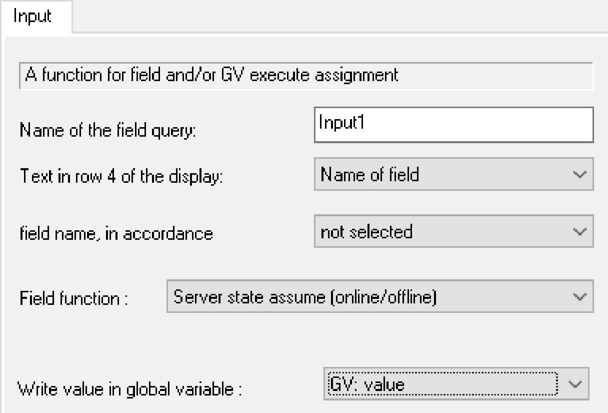
☑ Server onnline

Wait for server 3000 ms

If the polling time shorter than the settings


Wait for server 3000 ms

get the value state „online”, otherwise you get the value state „offline“.



A function for field and/or GV execute assignment

Name of the field query: Input1

Text in row 4 of the display: Name of field

field name, in accordance: not selected

Field function : Server state assume (online/offline)

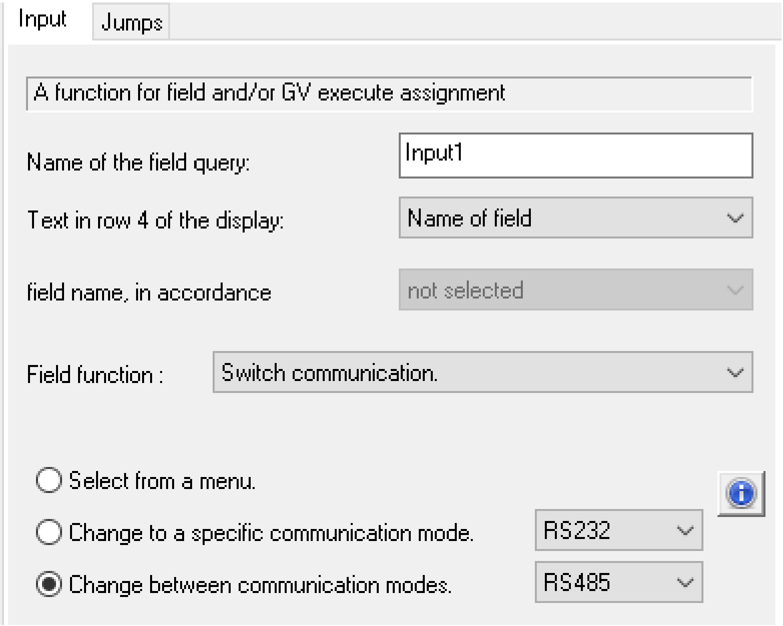
Write value in global variable : GV: value

The use of the identifier is preferably intended to be able to react to the offline case in the setup. If the terminal is now offline, information such as balance lists, etc. stored on the terminal can be displayed.In the case online, send the server the message directly on the display.
The function is not intended give the server via records the online/offline state of terminal.

5.8.28. Switch the main communication

With this function it is possible to switch the main-communication in an input sequence.
Before the integration of this function, was the switching of communication only been possible in the bios-menu.

There are three possibilities:



A function for field and/or GV execute assignment

Name of the field query: Input1

Text in row 4 of the display: Name of field

field name, in accordance: not selected

Field function : Switch communication.

○ Select from a menu.

○ Change to a specific communication mode. RS232

● Change between communication modes. RS485

1.) **Selection via menu**
This function it only for devices with display

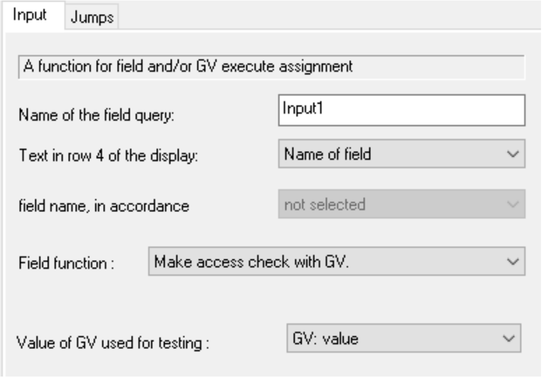
2.) **Switch the main-communication to an specific mode**
Here change the communication to the selected mode. If the selected mode already active then no changes.

3.) **Change between two communications**
With every call of this function change the device the other mode.

5.8.29. Access control with the vallue from a GV

If activate the access control then is possible to check an access in the control.
The value for this check must be saving in a GV.

Select here the GV, with the value for the access control.



A function for field and/or GV execute assignment

Name of the field query: Input1

Text in row 4 of the display: Name of field

field name, in accordance: not selected

Field function : Make access check with GV.

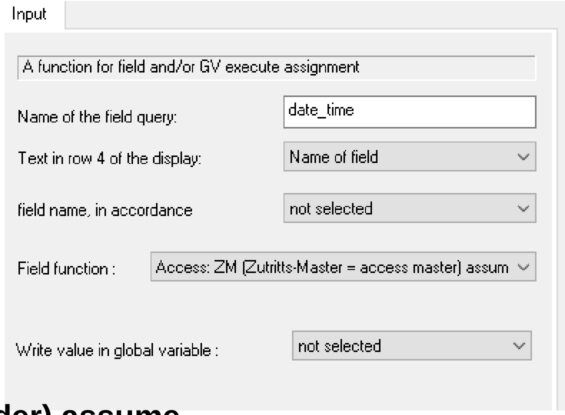
Value of GV used for testing : GV: value

5.8.30. Access: ZM (Master ID) assume

This function is only available in an input sequence of the access control.

Here assume the master ID.

The data you can save in a record field and/or save in a GV.



A function for field and/or GV execute assignment

Name of the field query: date_time

Text in row 4 of the display: Name of field

field name, in accordance: not selected

Field function : Access: ZM (Zutritts-Master = access master) assum

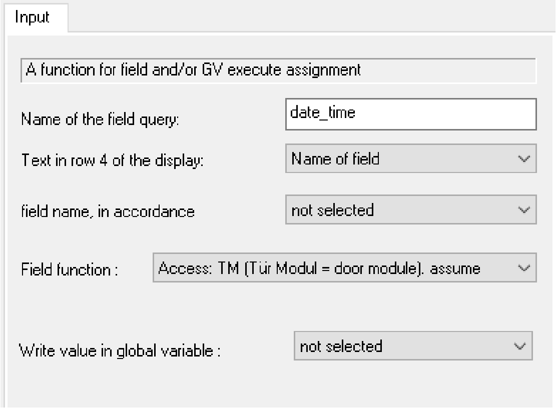
Write value in global variable : not selected

5.8.31. Access: TM (Bus number od doorreader) assume

This function is only available in an input sequence of the access control.

Here assume the bus number of the door module.

The data you can save in a record field and/or save in a GV.



A function for field and/or GV execute assignment

Name of the field query: date_time

Text in row 4 of the display: Name of field

field name, in accordance: not selected

Field function : Access: TM (Tür Modul = door module). assume

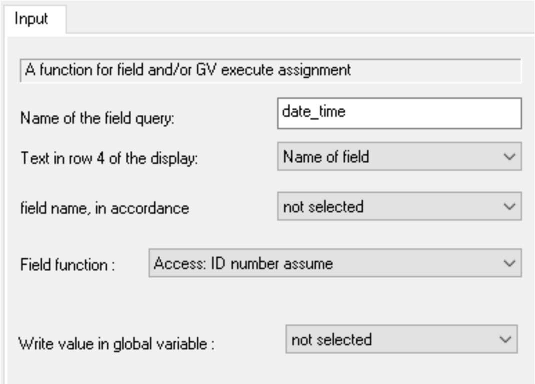
Write value in global variable : not selected

5.8.32. Access: Bage / RFID-Tag number assume

This function is only available in an input sequence of the access control.

Here assume the read RFID- number from a door module.

The data you can save in a record field and/or save in a GV.



Input

A function for field and/or GV execute assignment

Name of the field query: date_time

Text in row 4 of the display: Name of field

field name, in accordance: not selected

Field function : Access: ID number assume

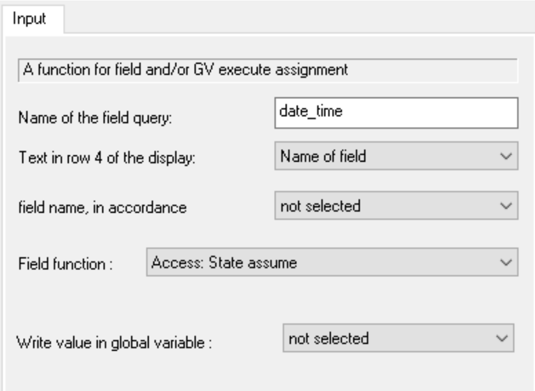
Write value in global variable : not selected

5.8.33. Access: Status assume

This function is only available in an input sequence of the access control.

The value is a digit value.
This state is important for the troubleshooting.
The meaning of the state numbers you find in the chapter “State of access control”.

The data you can save in a record field and/or save in a GV.



Input

A function for field and/or GV execute assignment

Name of the field query: date_time

Text in row 4 of the display: Name of field

field name, in accordance: not selected

Field function : Access: State assume

Write value in global variable : not selected

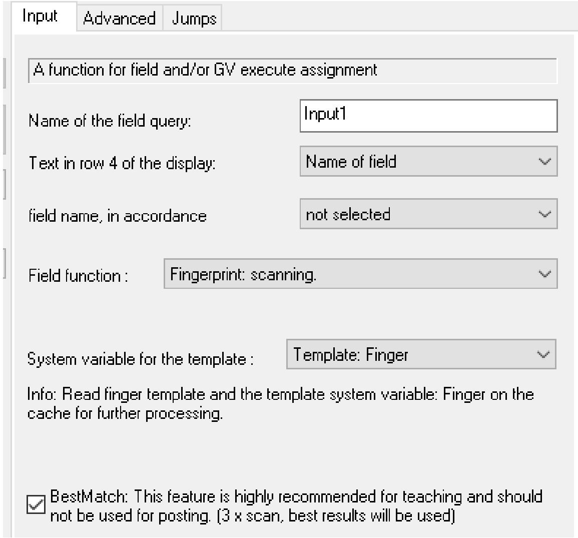
5.8.34. Fingerprint: Scanning

The "Fingerprint Scan" function activates the fingerprint scanner. Is now a finger scanned, the scanner remembers this scan (template). Following this, the scanner needs to be told what is to be done with the template:
e.g. Identification, verification, teaching or deletion.

The scanning of the finger may be stored in a data field.

! The record field as the field type should be Fingertemplate (DIN V66400)

Use to teach in a finger the function “BestMatch”. After the 3 scans save the fingerprint module the best scan.



A function for field and/or GV execute assignment

Name of the field query: Input1

Text in row 4 of the display: Name of field

field name, in accordance: not selected

Field function : Fingerprint: scanning.

System variable for the template : Template: Finger

Info: Read finger template and the template system variable: Finger on the cache for further processing.

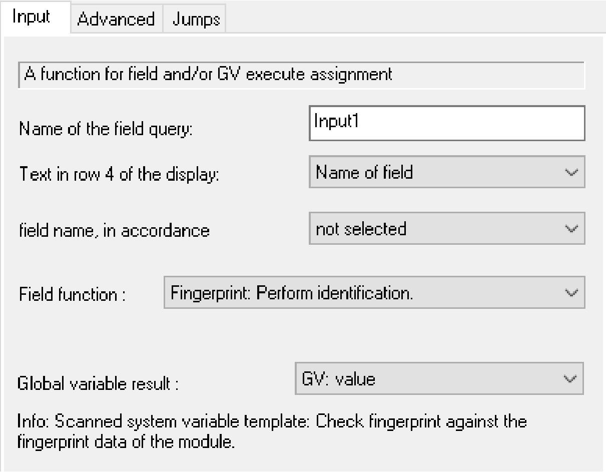
☑ BestMatch: This feature is highly recommended for teaching and should not be used for posting. (3 x scan, best results will be used)

5.8.35. Fingerprint: Identification

After the "Fingerprint Scan", the fingerprint module performs the finger scan the last scan by an ID. Upon successful testing (compared with the stored templates in the module), the PID of the associated Finger scans is delivered. This can then be used for further processing.

The returned after successful identification ID you can save in a record field and/or save in a GV.

The returned after successful identification ID you can save in a record field and/or save in a GV.



A function for field and/or GV execute assignment

Name of the field query: Input1

Text in row 4 of the display: Name of field

field name, in accordance: not selected

Field function : Fingerprint: Perform identification.

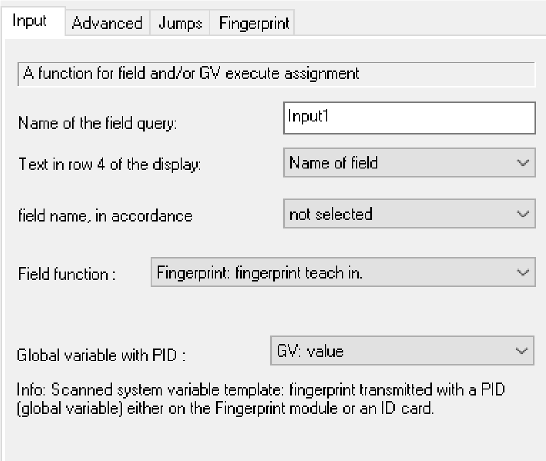
Global variable result : GV: value

Info: Scanned system variable template: Check fingerprint against the fingerprint data of the module.

5.8.36. Fingerprint: finger teach in

After the "Fingerprint Scan", stores the fingerprint module the finger scan with this function. The finger scan is stored in association with a number (PID) as contiguous data (template). Depending on the global settings, the template is saved on the Biokey module or on a Mifare card.

If you want save the teaching process, select a field of the associated record description in order to save the returned PID.



A function for field and/or GV execute assignment

Name of the field query: Input1

Text in row 4 of the display: Name of field

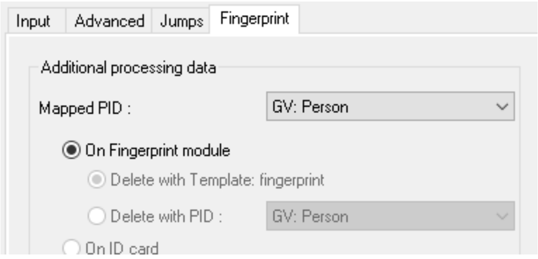
field name, in accordance: not selected

Field function : Fingerprint: fingerprint teach in.

Global variable with PID : GV: value

Info: Scanned system variable template: fingerprint transmitted with a PID (global variable) either on the Fingerprint module or an ID card.

Select a GV with the PID.
The Biokey module saved the template with this PID.



Additional processing data

Mapped PID : GV: Person

● On Fingerprint module

● Delete with Template: fingerprint

○ Delete with PID : GV: Person

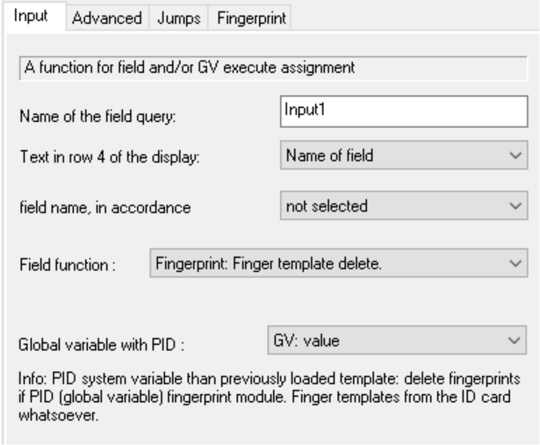
○ On ID card

5.8.37. Fingerprint: Finger template delete

There are to possibilities to delete a saved template:

1. Delete with using the PID.
   All saved templates to be deleted with this selected PID.
2. Delete with the scanning of a saved finger.
   In this option, only the matching template is deleted to the scan.

This function gives the PID of the deleted template back.
The PID you can save in a record field and/or save in a GV.



A function for field and/or GV execute assignment

Name of the field query: Input1

Text in row 4 of the display: Name of field

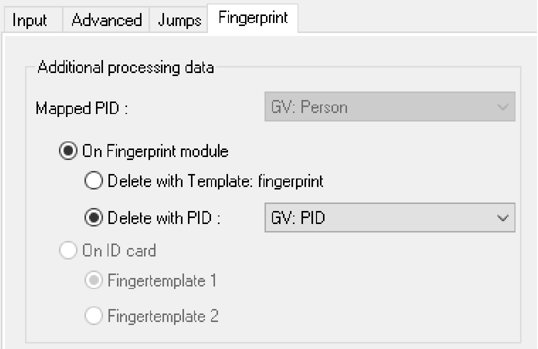
field name, in accordance: not selected

Field function : Fingerprint: Finger template delete.

Global variable with PID : GV: value

Info: PID system variable than previously loaded template: delete fingerprints if PID (global variable) fingerprint module. Finger templates from the ID card whatsoever.

Select the function as they want to delete a finger template.



Additional processing data

Mapped PID : GV: Person

● On Fingerprint module

○ Delete with Template: fingerprint

● Delete with PID : GV: PID

○ On ID card

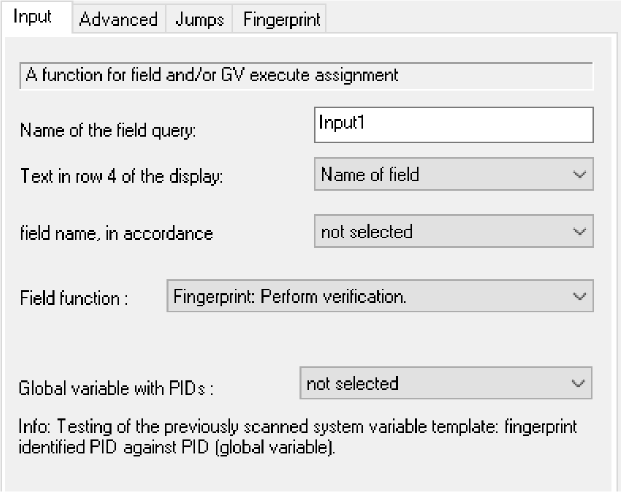
● Fingertemplate 1

○ Fingertemplate 2

5.8.38. Fingerprint: Perform verifcation

The identification of the user is done with RFID chip or choosing from a list.
After the identification scanning the user the finger and the matching is only with the templates of this PID. The matching to perform with saved templates on Mifare RFID chips or saved templates on the Biokey module.

After successful matching (Verification) give the function the PID back.
The PID you can save in a record field and/or save in a GV.



A function for field and/or GV execute assignment

Name of the field query: Input1

Text in row 4 of the display: Name of field

field name, in accordance: not selected

Field function : Fingerprint: Perform verification.

Global variable with PIDs : not selected

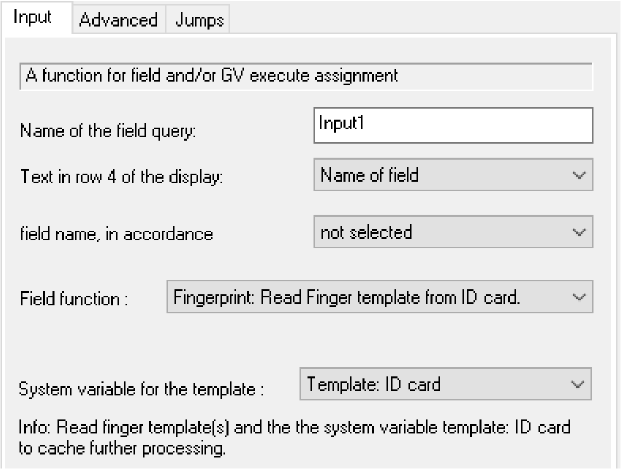
Info: Testing of the previously scanned system variable template: fingerprint identified PID against PID (global variable).

5.8.39. Fingerprint: Read Finger template from ID card

This function is using if you want read a template from a Mifare RFID chip.

Condition is the selected function “Verification (one or two finger templates stored on ID card)”

The template to be saved in the system variable„Template: ID card“.



A function for field and/or GV execute assignment

Name of the field query: Input1

Text in row 4 of the display: Name of field

field name, in accordance: not selected

Field function : Fingerprint: Read Finger template from ID card.

System variable for the template : Template: ID card

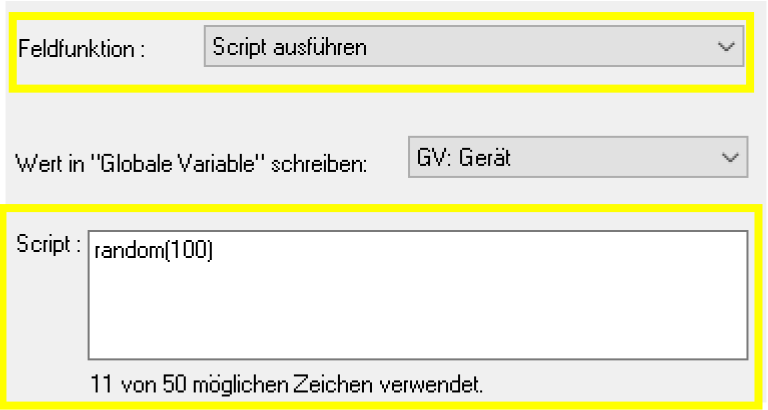
Info: Read finger template(s) and the the system variable template: ID card to cache further processing.

5.8.40. Skript Ausführen

5.8.40.1. Zufallszahlen generieren

Ab der Firmware 04.03.04.XX steht Ihnen ein Zufallsgenerator zur Verfügung.
Mit diesem Generator lassen sich Zahlen von 1 bis 4294967295 zufällig generieren.

Wenn man eine Zufallszahl berechnen möchte, muss zunächst die Feldfunktion „Script ausführen“ angewählt werden. Bei „Text“ wird folgender Befehl eingetragen: „random(100)“. Die 100, welche in diesem Fall verwendet wurde kann durch jede beliebige Zahl von 1 bis 4294967295 ersetzt werden. Es wird dann eine Zahl zwischen 1 und Ihrer Zahl zufällig ermittelt.



Feldfunktion : Script ausführen

Wert in "Globale Variable" schreiben: GV: Gerät

Script : random(100)

11 von 50 möglichen Zeichen verwendet.

Beispiele:
Zufallszahlen von 1 bis 50
random(50)

Zufallszahlen von 1 bis 1000
random(1000)

Einsatzmöglichkeiten für Zufallszahl:

- Taschenkontrolle
- Verifizierung per Stichprobe bei Fingerprint
- Qualitätskontrolle - Stichproben zur Überprüfung von Teilen
- Diese Feldfunktion kann zum Beispiel auch benutzt werden, um bei 10 % der Mitarbeiter ein Bild anzufertigen (Kamerafunktion in Vorbereitung). In diesem Fall ist die Feldfunktion „random(10). Hierbei kann man dann zum z. B: immer die letzte Ziffer der Mitarbeiternummer mit der Zufallszahl vergleichen und, wenn diese übereinstimmen wir ein Foto zur Überprüfung angefertigt.

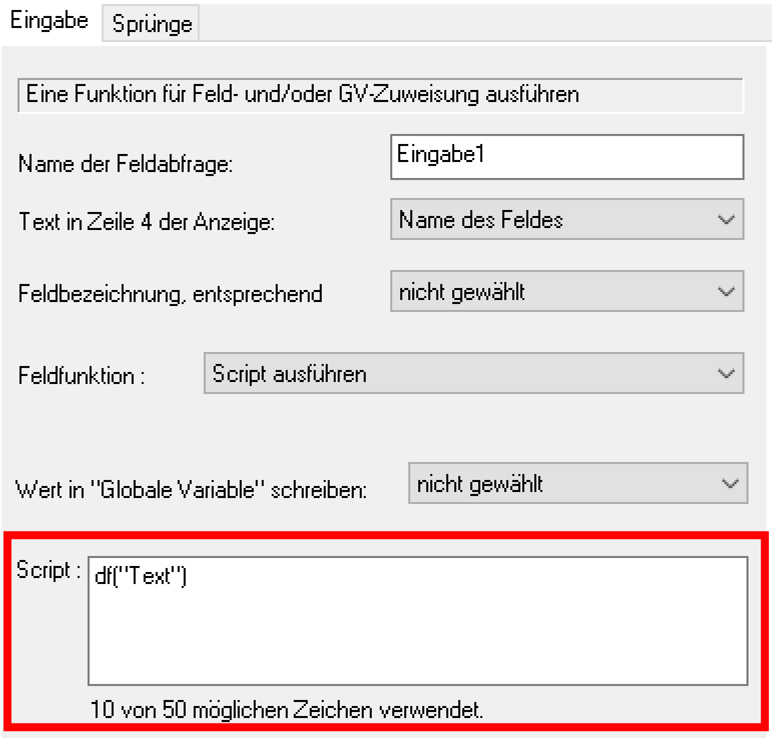
! **Achtung:**
Wird bei der Feldfunktion „Script ausführen“ ein falscher oder unbekannter Befehl ausgeführt, wird die Feldfunktion mit ESC beendet, dass bedeutet Abbruch siehe Sprünge.

! Nutzen Sie zum Vergleich die Feldfunktion „Math., Log. oder Format- Operation ausführen“.

5.8.40.2. Texte für Anzeigen / Datensatz generieren zusammensetzen etc.

Möglichkeiten die diese Funktion bietet sind:

- Datum Uhrzeit in eine anderes Format bringen
- Zusammensetzten von globalen Variablen



Eine Funktion für Feld- und/oder GV-Zuweisung ausführen

Name der Feldabfrage: Eingabe1

Text in Zeile 4 der Anzeige: Name des Feldes

Feldbezeichnung, entsprechend: nicht gewählt

Feldfunktion : Script ausführen

Wert in "Globale Variable" schreiben: nicht gewählt

Script : df("Text")

10 von 50 möglichen Zeichen verwendet.

Der Text in der Klammer bei dem Funktionsaufruf df("**Text**") kann folgende Werte Zeichen etc. übernehmen.
%%: Das Prozentzeichen selbst.
%V1 bis %V8: Wert der Globalen Variablen.
%T1: Datum - Uhrzeit im Format 2012-08-07 12:13:14
%C1: Kurzbezeichnung des Gerätes. (PZE, AE, TIMEBOY, ...)
%C2: Seriennummer des Gerätes. (max. 10 Stellen)

Beispiele:
Datum Uhrzeit in eine GV schreiben:
df("**%T1**") -> Ergebnis n der GV **2012-08-07 12:13:14**

Den Wert von 2 GV in eine GV schreiben (Wert in GV1= 1000; Wert in GV2= 99):
df("**%V1%V2**") -> Ergebnis n der GV Value **100099**

5.9. Data on Card

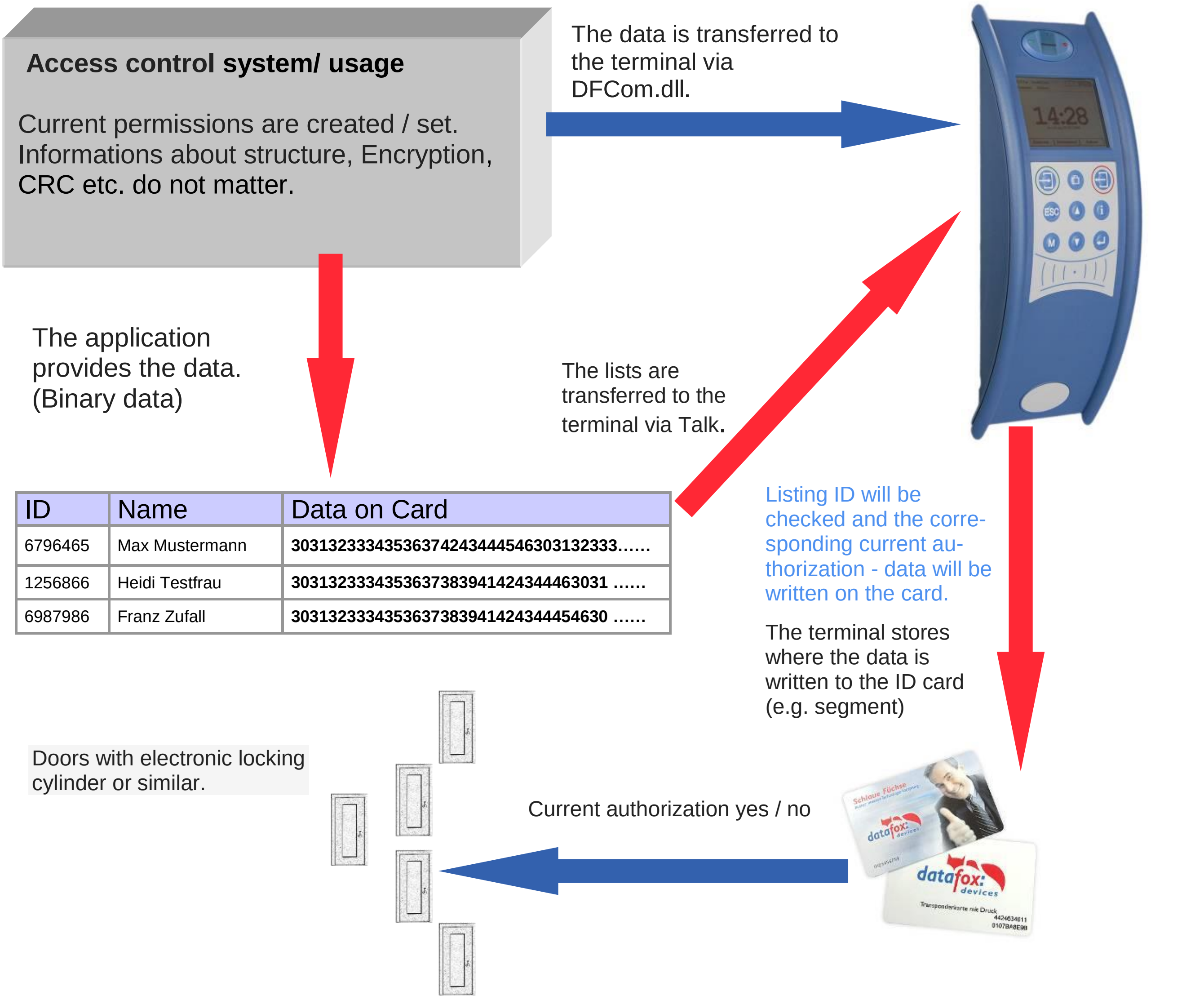
5.9.1. General infomations

With the Data on Card - function it is possible to write data with an individual structure on a transponder.
These data are provided in the form of a list of your application.
This list is loaded onto the terminal, and if you´re holding the transponder in front of the terminal the data will be written and saved.
The following transponder-procedures support the Data on Card-function:

- Mifare
- Legic
- iCode
- MyD

For instance:
In buildings with an electronic closing cylinder should the actual daily authorization for the access be wrote down on a transponder card.

The Personal ID will be checked and the corresponding current authorization - data will be written on the card.
The terminal stores where the data is written to the ID card (e.g. via segment).



Access control system/ usage

Current permissions are created / set.
Informations about structure, Encryption, CRC etc. do not matter.

The data is transferred to the terminal via DFCom.dll.

The application provides the data. (Binary data)

The lists are transferred to the terminal via Talk.

ID	Name	Data on Card
6796465	Max Mustermann	**30313233343536374243444546303132333……**
1256866	Heidi Testfrau	**303132333435363738394142434446303 1 ……**
6987986	Franz Zufall	**3031323334353637383941424344454630 ……**

Listing ID will be checked and the corresponding current authorization - data will be written on the card.

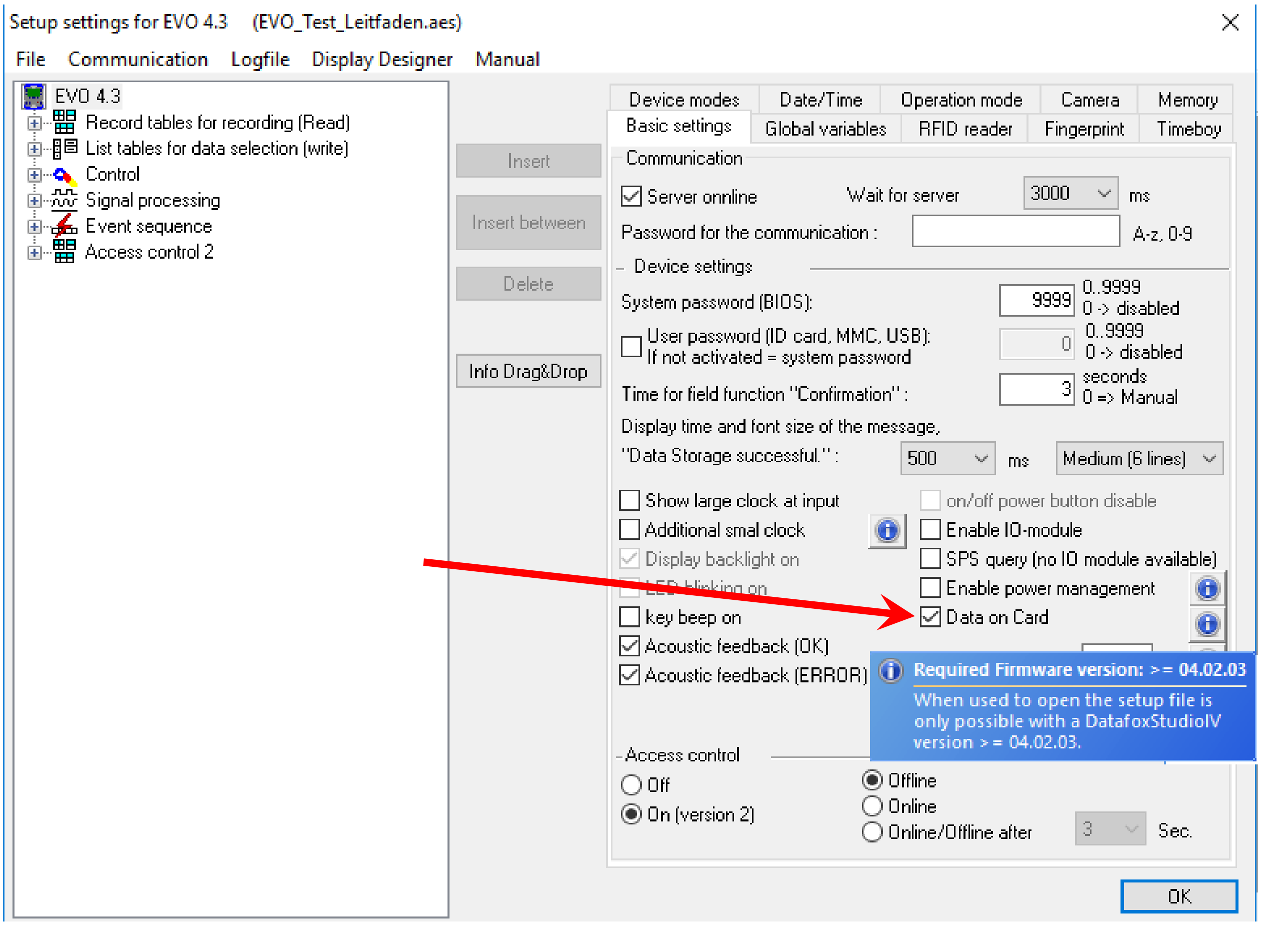
The terminal stores where the data is written to the ID card (e.g. segment)

Doors with electronic locking cylinder or similar.

Current authorization yes / no

5.9.2. Settings for using DataOnCard

Data on Card is an option of the device where data can be written to a transponder from a data list. This option needs to be stated and said while you ordered your product. Those devices who don´t offer this option, an error message will be displaying when it´s executed.



Setup settings for EVO 4.3 (EVO_Test_Leitfaden.aes)

Communication

☑ Server onnline   Wait for server 3000 ms

Password for the communication : [ ] A-z, 0-9

Device settings

System password (BIOS): 9999   0..9999 0 -> disabled

□ User password (ID card, MMC, USB): If not activated = system password   0   0..9999 0 -> disabled

Time for field function "Confirmation" : 3   seconds 0 => Manual

Display time and font size of the message, "Data Storage successful." : 500 ms   Medium (6 lines)

□ Show large clock at input
□ Additional smal clock
☑ Display backlight on
□ LED blinking on
□ key beep on
☑ Acoustic feedback (OK)
☑ Acoustic feedback (ERROR)

□ on/off power button disable
□ Enable IO-module
□ SPS query (no IO module available)
□ Enable power management
☑ Data on Card

Required Firmware version: >= 04.02.03
When used to open the setup file is only possible with a DatafoxStudioIV version >= 04.02.03.

Access control
○ Off
● On (version 2)

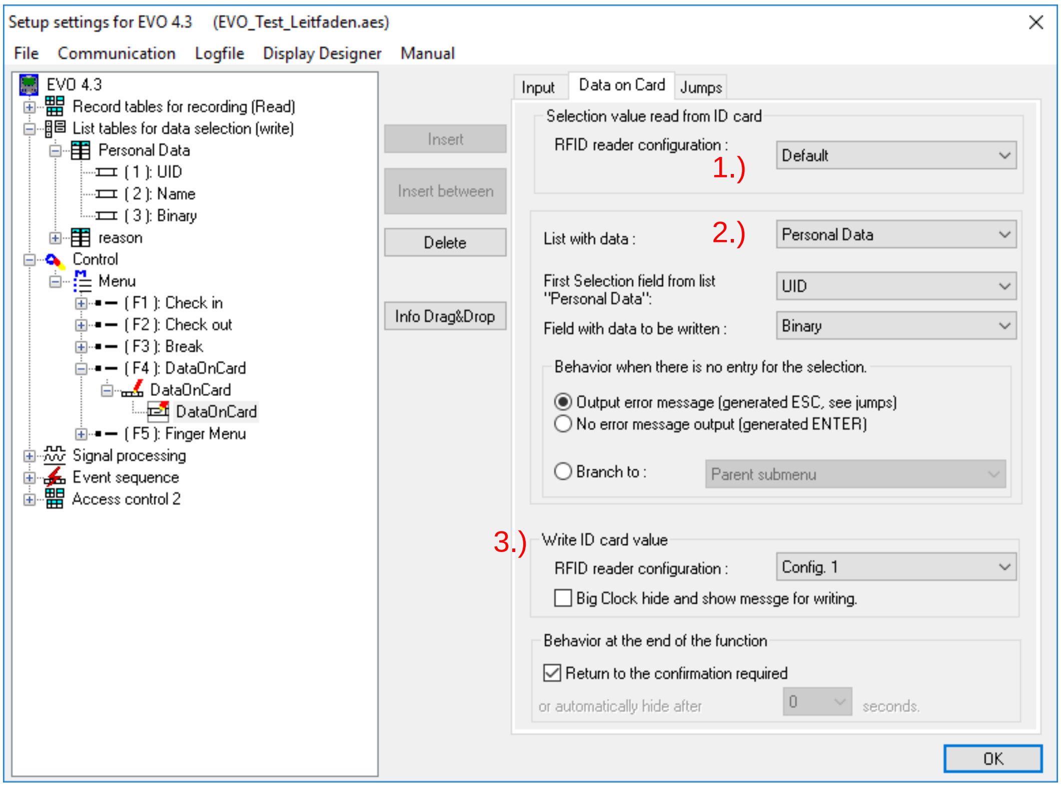
● Offline
○ Online
○ Online/Offline after 3 Sec.

Data on Card works in 3 steps:

- reading a value from the transponder, e.g. Serial number
- the value is used to select a binary field list to read the binary data
- the binary data is written to the transponder

The return value of the Data on Card function for GV or data record field is the value from the first step "Reading a value from the transponder".
For errors like "the value is not found on the list" or the "writing to the ID failed" the function generates an ESC.
The side steps can then be used to decide how the work continues in the input chain.
The binary field data within the file that the DatafoxStudioIV imports and transmits is to be specified as a hex string. When importing via the DLL, the data needs to be passed on as binary data.
Using the DFC GetField, DFC GetField list functions, you are working with strings, while the firmware converts the hexstrings to and from the binary data.

Einstellungen bei Data on Card



Setup settings for EVO 4.3 (EVO_Test_Leitfaden.aes)

Selection value read from ID card

RFID reader configuration : Default 1.)

List with data : 2.) Personal Data

First Selection field from list "Personal Data": UID

Field with data to be written : Binary

Behavior when there is no entry for the selection.

- ● Output error message (generated ESC, see jumps)
- ○ No error message output (generated ENTER)
- ○ Branch to : Parent submenu

3.) Write ID card value

RFID reader configuration : Config. 1

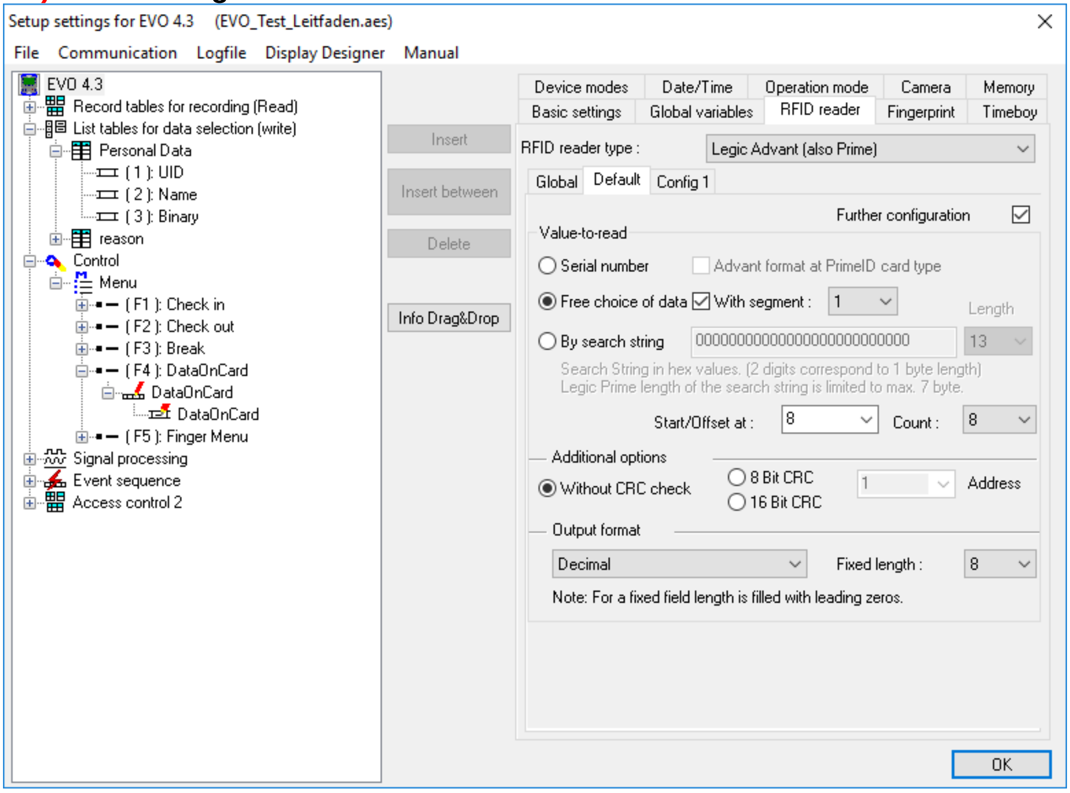
□ Big Clock hide and show messge for writing.

Behavior at the end of the function

☑ Return to the confirmation required

or automatically hide after 0 seconds.

1.) RFID Configurations for the RFID reader



Setup settings for EVO 4.3 (EVO_Test_Leitfaden.aes)

RFID reader type : Legic Advant (also Prime)

Further configuration ☑

Value-to-read

- ○ Serial number □ Advant format at PrimeID card type
- ● Free choice of data ☑ With segment : 1
- ○ By search string 00000000000000000000000000 Length 13

Search String in hex values. (2 digits correspond to 1 byte length)
Legic Prime length of the search string is limited to max. 7 byte.

Start/Offset at : 8 Count : 8

Additional options

- ● Without CRC check
- ○ 8 Bit CRC
- ○ 16 Bit CRC

1 Address

Output format

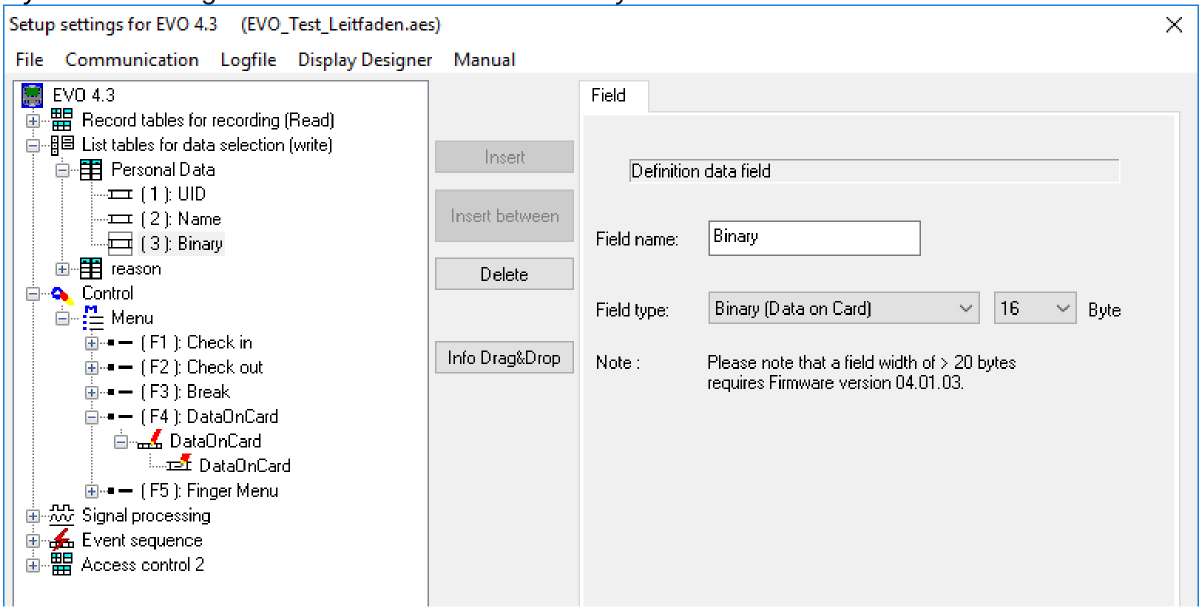
Decimal Fixed length : 8

Note: For a fixed field length is filled with leading zeros.

The transponder configuration for the reading can be freely selected. However, firstly it needs to be defined in the basic transponder settings.

2.) List / binary file sruckture

By the list configuration the list who has a binary field will be selected.



Definition data field

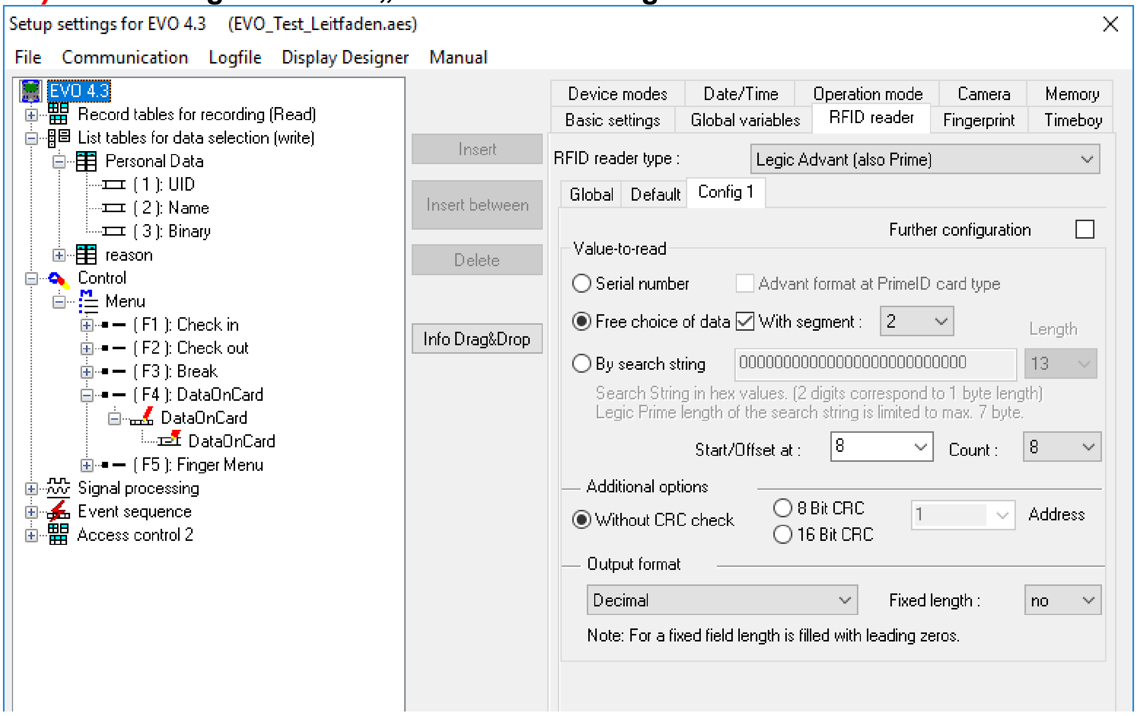
Field name: Binary

Field type: Binary (Data on Card) 16 Byte

Note : Please note that a field width of > 20 bytes requires Firmware version 04.01.03.

In this example, the value of the transponder reading, who is wanted in the list in the ID field. The data that needs to be written is binary on the Data on Card field. The maximum field size is not allowed to exceed more than 220 bytes. After this, the further procedure can be set for list errors.

3.) RFID configuration for „write on a RFID tag"



RFID reader type : Legic Advant (also Prime)

Further configuration □

Value-to-read

○ Serial number □ Advant format at PrimeID card type

● Free choice of data ☑ With segment : 2 Length

○ By search string 00000000000000000000000000 13

Search String in hex values. (2 digits correspond to 1 byte length)
Legic Prime length of the search string is limited to max. 7 byte.

Start/Offset at : 8 Count : 8

Additional options

● Without CRC check ○ 8 Bit CRC ○ 16 Bit CRC 1 Address

Output format

Decimal Fixed length : no

Note: For a fixed field length is filled with leading zeros.

The transponder configuration for the reading can be freely selected. However, firstly it needs to be defined in the basic transponder settings.

Please note:
First, complete the transponder configuration, then create the list with the binary field and finally parameterize the field function Data on Card.

Example for Data on Card:

ID with serial number: **1848989745**

List entry for **1848989745** in the file before transferring to the device
Field ID   Field Data (binary field) here as hex bytes
1848989745   30313233343536373839414243444546303132333435363738394142434445463031323334353637383941 ……

Data after conversion or within the device
Field ID Field Data (binary field) is binary here
1848989745   0123456789ABCDEF0123456789ABCDEF0123456789A …..

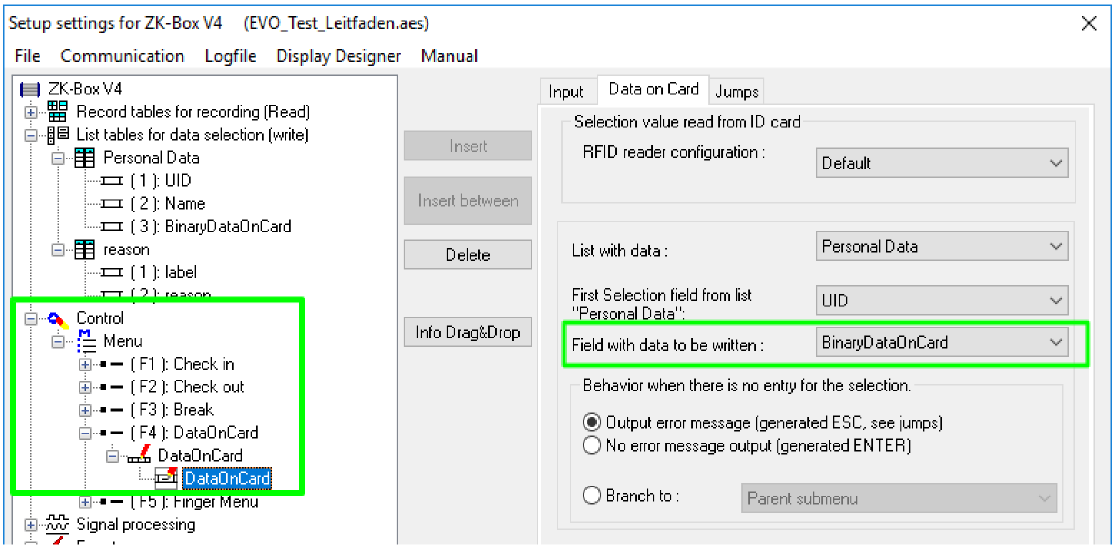
The following data will be writen on the ID card:
0123456789ABCDEF0123456789ABCDEF0123456789A …..
Binary the data looks like this:
0x30, 0x31, 0x32, 0x33, 0x34 ……

☞ **Please note:**
When a 3-tone sequence is signaled, the Data-On-Card option is not available on this device. The option has to be purchased afterwards.

5.9.3. DataOnCard on the access control reader

In order to be able to use on a standard ZK reader of the EVO or the PHG series, the following settings must be made.

The functions for DataOnCard described in the previous chapters can only be set in the setup under Control menu.



Setup settings for ZK-Box V4 (EVO_Test_Leitfaden.aes)

```
ZK-Box V4
  Record tables for recording (Read)
  List tables for data selection (write)
    Personal Data
      ( 1 ): UID
      ( 2 ): Name
      ( 3 ): BinaryDataOnCard
    reason
      ( 1 ): label
      ( 2 ): reason
  Control
    Menu
      ( F1 ): Check in
      ( F2 ): Check out
      ( F3 ): Break
      ( F4 ): DataOnCard
        DataOnCard
          DataOnCard
      ( F5 ): Finger Menu
  Signal processing
```

Selection value read from ID card

RFID reader configuration : Default

List with data : Personal Data

First Selection field from list "Personal Data": UID

Field with data to be written : BinaryDataOnCard

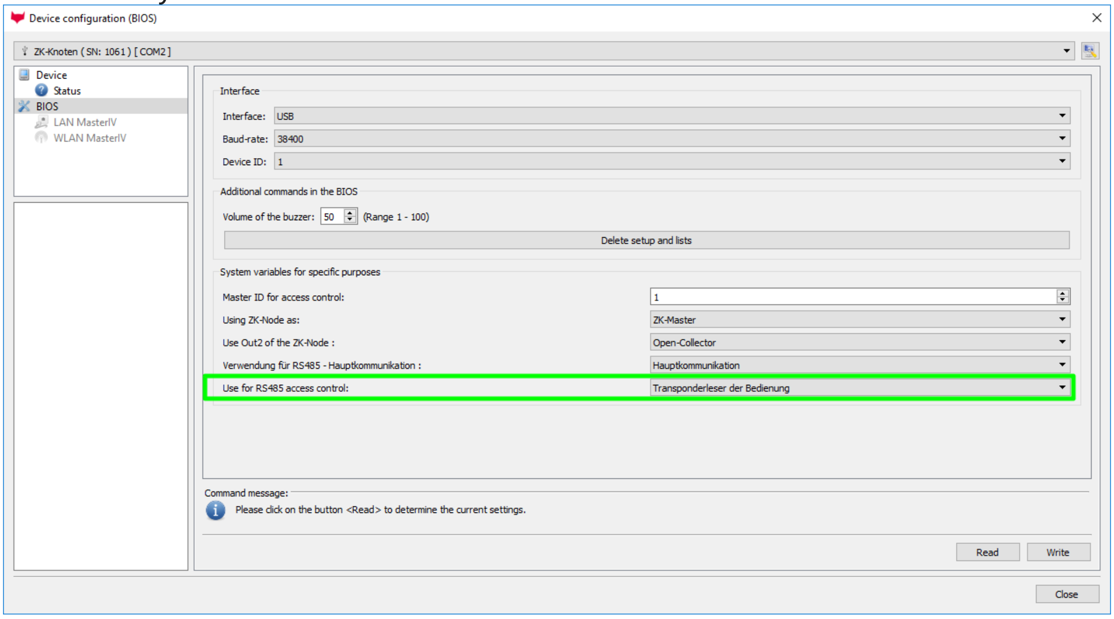
Behavior when there is no entry for the selection.

● Output error message (generated ESC, see jumps)

○ No error message output (generated ENTER)

○ Branch to : Parent submenu

Now it is necessary to be able to access the *access control reader* under the control. This is how you set it:



Device configuration (BIOS)

ZK-Knoten (SN: 1061) [COM2]

Interface

Interface: USB

Baud-rate: 38400

Device ID: 1

Additional commands in the BIOS

Volume of the buzzer: 50 (Range 1 - 100)

System variables for specific purposes

Master ID for access control: 1

Using ZK-Node as: ZK-Master

Use Out2 of the ZK-Node : Open-Collector

Verwendung für RS485 - Hauptkommunikation : Hauptkommunikation

Use for RS485 access control: Transponderleser der Bedienung

Command message:

Please click on the button <Read> to determine the current settings.

The reader on the *access control reader* (ZK) bus (RS485) is now activated via the Control menu (Transponderleser der Bedienung)

☞ **Please note:**
Only one *access control reader* (ZK) can be connected to the bus at any time.
Dip switch 1 and the termination of the bus must be set to "ON"
(Bus address 1).

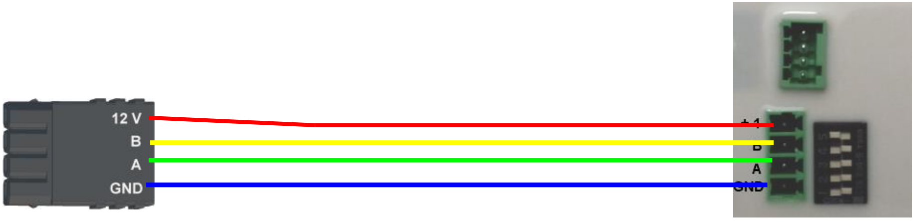
5.9.4. DataOnCard an a aceess control reader - wirering

Wireringplan for EVO-access reader with using DataOnCard:

(for each cable line you use the same wirering, Bus Number / Master Number)

Bus Nr. 1
EVO-access
-reader

connector 4 pole
for Access-Bus
on Modulplace 1

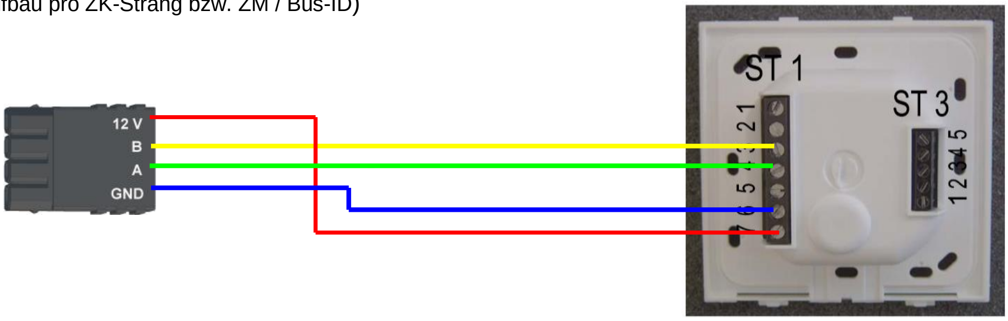


Bus Nr. 1
PHG-access
-reader

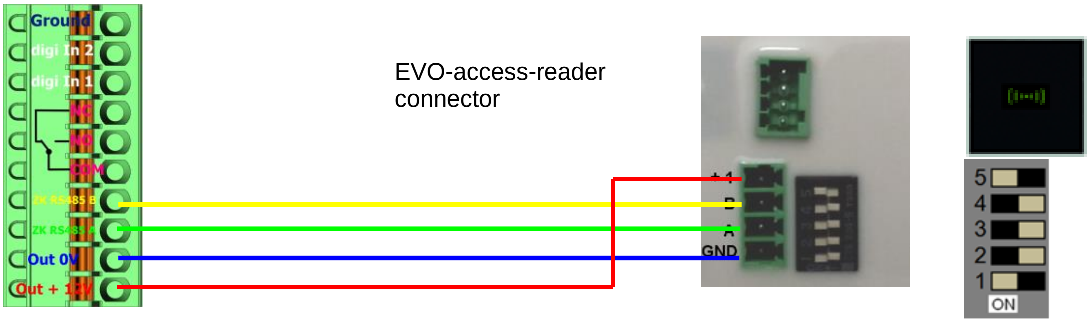
Wireringplan for PHG-access reader with using DataOnCard:

(hierbei gilt der gleiche Aufbau pro ZK-Strang bzw. ZM / Bus-ID)

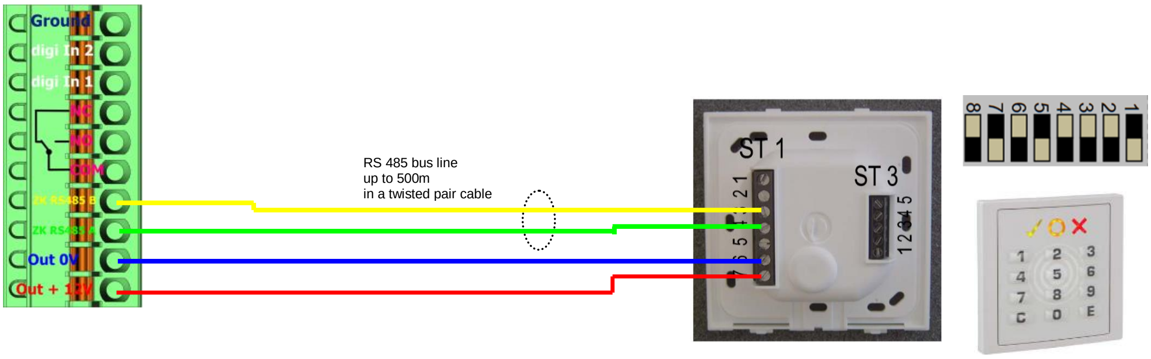
connector 4 pole
for Access-Bus
on Modulplace 1



ZK-Knoten Wireringplan for EVO-access reader with using DataOnCard:



ZK-Knoten Wireringplan for PHG-access reader with using DataOnCard:



5.10. Extended Jump Function in Input Sequences

The extension of the jump functions allows creating a setup suitable for many application possibilities. Until now, the jumps have been limited to the corresponding input sequence and jumping to the parent submenu or the next input sequence.

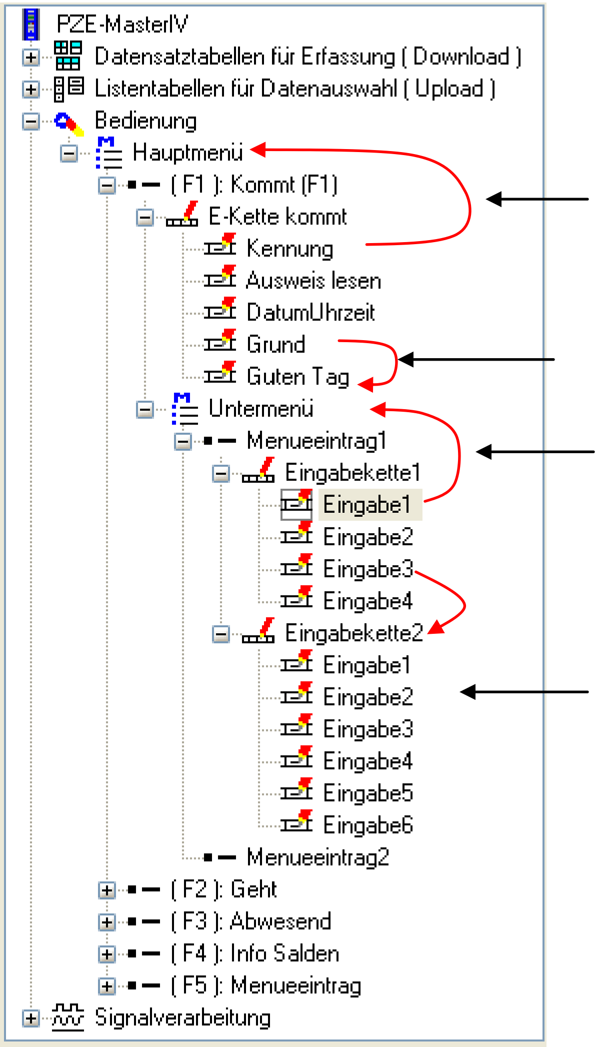
The improvements concern the following functions:

Jump to:

- Main menu
- Function key X
- Parent submenu
- Next input sequence or submenu
- Next input field
- Input sequence X
- Input field X

Abbreviation:

F-key:	Function key
S-menu:	Submenu
I-sequence:	Input sequence
I-field:	Input field



Sample Figure for Jumps

Jump to main menu
via ESC or conditional jump

Jump to the next input field via ESC

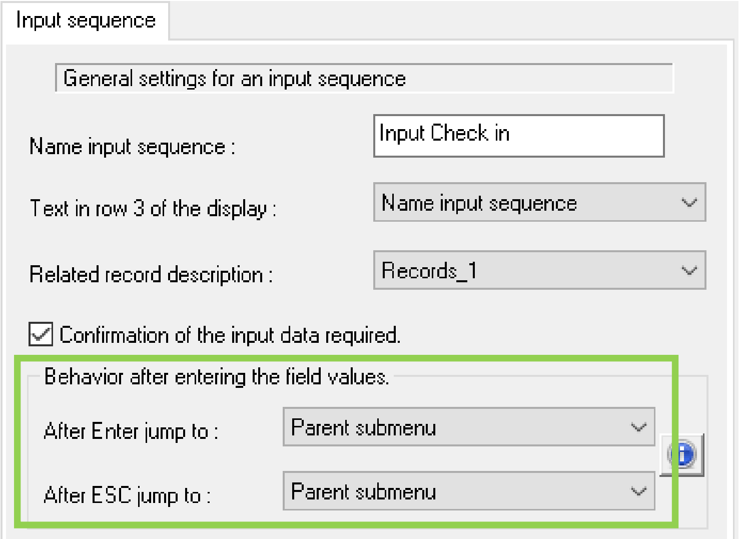
Jump to parent submenu

Next input sequence / submenu

Jumps can be used for the following applications:

1. Behavior after entering field contents.
2. Behavior after canceling an input by ESC.
3. Branching in input sequence, dependent on comparison with format string.
4. Behavior at leaving the menu.

5.10.1. Behavior after Entering Field Content



Input sequence

General settings for an input sequence

Name input sequence : Input Check in

Text in row 3 of the display : Name input sequence

Related record description : Records_1

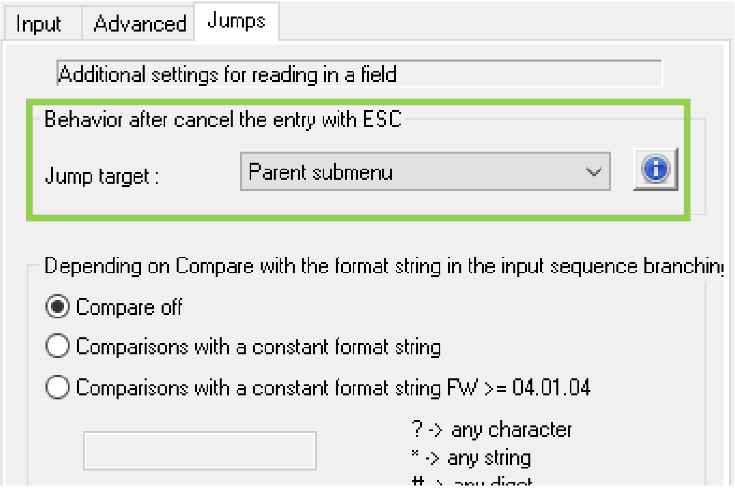
☑ Confirmation of the input data required.

Behavior after entering the field values.

After Enter jump to : Parent submenu

After ESC jump to : Parent submenu

5.10.2. Behavior after Canceling an Input by ESC



Input | Advanced | Jumps

Additional settings for reading in a field

Behavior after cancel the entry with ESC

Jump target : Parent submenu

Depending on Compare with the format string in the input sequence branchin

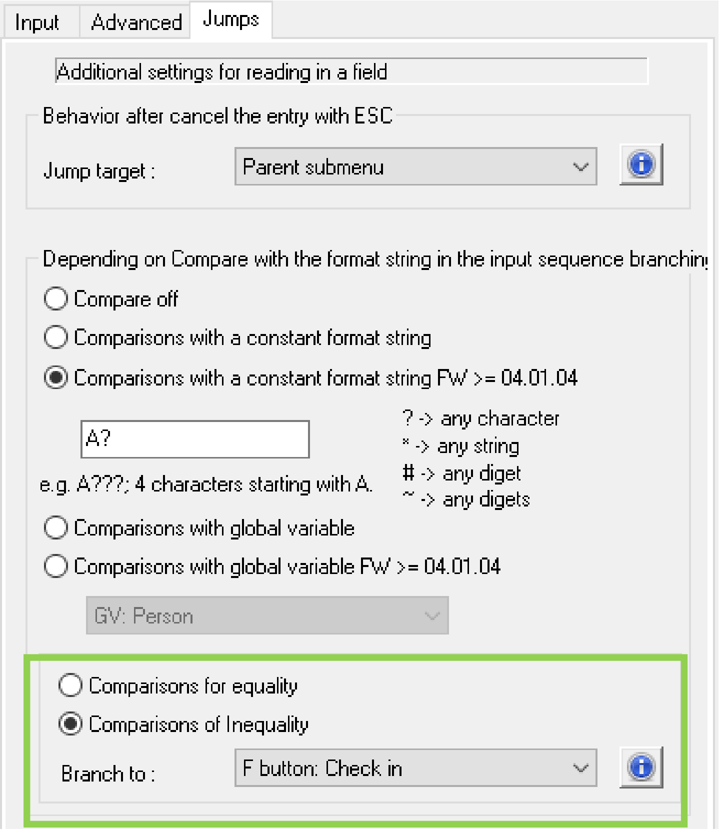
● Compare off

○ Comparisons with a constant format string

○ Comparisons with a constant format string FW >= 04.01.04

? -> any character
* -> any string
-> any digit

Branching in input sequence, dependent on comparison with format string.



Input | Advanced | Jumps

Additional settings for reading in a field

Behavior after cancel the entry with ESC

Jump target : Parent submenu

Depending on Compare with the format string in the input sequence branching

○ Compare off

○ Comparisons with a constant format string

● Comparisons with a constant format string FW >= 04.01.04

A?

e.g. A???; 4 characters starting with A.

? -> any character
* -> any string
-> any diget
~ -> any digets

○ Comparisons with global variable

○ Comparisons with global variable FW >= 04.01.04

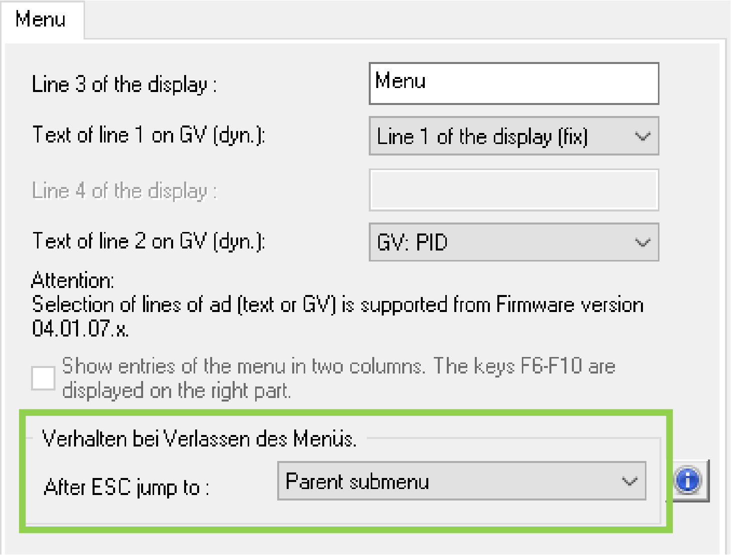
GV: Person

○ Comparisons for equality

● Comparisons of Inequality

Branch to : F button: Check in

5.10.3. Behavior at Leaving the Menu



Menu

Line 3 of the display : Menu

Text of line 1 on GV (dyn.): Line 1 of the display (fix)

Line 4 of the display :

Text of line 2 on GV (dyn.): GV: PID

Attention:
Selection of lines of ad (text or GV) is supported from Firmware version 04.01.07.x.

□ Show entries of the menu in two columns. The keys F6-F10 are displayed on the right part.

Verhalten bei Verlassen des Menüs.

After ESC jump to : Parent submenu

6. The RFID Technology (Transponder)

6.1. General Information on RFID

For contactless identification (RFID = Radio Frequency IDentification), transponders are distinguished into two types:

Passive Transponders

Passive transponders are systems which obtain the energy required for communication and processing internal processes solely from the field of the read-write unit.
Passive responders do not need an own power supply but can only work on short distances.
The best known type is the Radio Frequency Identification RFID. Typical applications: Identification of objects, pet registration chips or chip cards for access control systems. An active sensor (in connection with a PC) reads and decodes data the passive transponder sents.
As no own power supply is required, the consequences are very small dimensions enabling the installation of passive transponders in small casings. Thus, objects and persons can easily be equipped with an electronically readable data medium.

Active Transponders

Active systems have an own power supply. Either they have an built-in battery or are connected to an external electrical grid. This allows longer communication ranges, the management of larger data storage devices and the operation of built-in sensor technology. Simple active transponders are used for example for the identification of objects or persons:

This kind of transponders is not described here. An active transponder currently supported by Datafox is Simons & Foss.

6.2. RFID Methods Supported by Datafox

The amount of information which can be stored on a transponder depends on the RFID type used and the corresponding reading method.
Simple methods only support a unique serial number, the so-called ID. This ID can only be read. Complex methods offer different segments and sectors which are protected by a password partly. These segments can be read and written. Thus, apart from the ID-card number also additional information as status, departmental affiliation, personal data like blood group, access authorizations, bank accounts etc. can be stored at the RFID medium.

The following table gives an overview of the RFID methods supported by Datafox.

Reader	Reading method	Frequency	Tech. Data	Description
TSR32	Unique / EM4102	125 kHz	Serial number only	Unique / EM4102 is mere reading method. The number of the card is a globally unique ID and is used in all imaginable fields. A 64 bit information is stored on the card with the unique ID using only 40bit. The remaining bits serve as checksum.
	Hitag1	125 kHz	64 segments, 4 byte each 0 = serial number 1 - 31 = passwords, 32 to 63 = freely available	Hitag1 is organized in 16 blocks with 4 segments each. Each segment is 32 bits long. The block numbers 4 to 7 can be protected by password (secret) or used freely (public). The free segments can be used, for example, for saving a company code, a card number, account for cafeterias, etc.
	Hitag2	125 kHz	8 segments, 4 byte each 0 = serial number 1 to 3 = passwords, 4 to 8 = freely available	Hitag2 is organized in 8 segments. Each segment is 32 bits long. The free segments can be used, for example, for saving a company code, a card number, account for cafeterias, etc.
	HitagS	125 kHz	Serial number (segment 0) and, depending on type, segments 1 - 63 freely available.	This method is distinguished into "HitagS H32", "HitagS H56" and "HitagS H48". HitagS H32 means that this transponder only has a 32 bit value, the serial number of the card (see Unique). H56 means that the transponder has 8 registers with a 32 bit value each, in total 256 bit (see Hitag2). H48 means that the transponder has 64 registers with 32 bit each, in total 2048 bit (see Hitag1). The free segments can be used, for example, for saving a company code, a card number, account for cafeterias, etc.
	Titan / EM4450 (Hewi)	125 kHz	34 segments: 0 to 2 = passwords 3 to 31 = freely available 32 to 33 serial/device ID	Titan (EM4450) is organized in 34 segments. Each segment is 32 bits long. The serial number is contained in segment 32. The free segments can be used, for example, for saving a company code, a card number, account for cafeterias, etc.
	DOM Hitag1	125 kHz	Reading serial number	Hitag1 with crypto processor, therefore only serial number can be read

	DOM Hitag2	125 kHz	Reading serial number	Hitag1 with crypto processor, therefore only serial number can be read
ProxPoint ® Plus OEM Module 4065	HID ProxPoint	125 kHz	ID card number only	Facility code and card number or card number only, depending on the card format from 26 bit format to 84 bit format Correct number determination only for public formats H10301, H10302 and H10304. For all non-public formats the binary value incl. parity bit is provided in hexadecimal format.
IClass OEM 50	HID IClass	13.56 MHz	ID card number only	Facility code and card number or card number only, depending on the card format from 26 bit format to 84 bit format Correct number determination only for public formats H10301, H10302 and H10304. For all non-public formats the binary value incl. parity bit is provided in hexadecimal format.
Mifare Easy	Mifare Classic	13.56 MHz	Serial number and 16 sectors, each with a reading and writing password Available as 1Kbyte and 4Kbyte variant	Mifare Classic 1k is organized in 16 sectors, each with 4 blocks with 16 byte per block. Mifare Classic 4k is organized in 32 sectors, each with 4 blocks with 16 byte per block and in 8 sectors, each with 16 blocks and 16 byte per block. Every 4th block serves for administrating the data on the transponder. It contains a password for reading and writing permissions divided into a key A and a key B, each 6 byte long, and the "Access Conditions" where the sector formats are defined. Depending on the application, all blocks of a sector can be available in default format (i.e. key A is the reading and writing protection key) or in Data or Value format (i.e. key A is the reading key and key B the master key for reading and writing). Advantages are the high speed and the large storage volume making the transponder suitable for biometry.
	Mifare Desfire	13.56 MHz	Serial number only	Data are available in encrypted form in a file system. Access via applications and file.
	Mifare Ultralight	13.56 MHz	Serial number only	Mifare Ultralight consists of 16 pages with 4 byte each and has a 7 byte serial number.
TWN3 Multi-ISO (available from the beginning of 2012)	Mifare Classic	13.56 MHz	Serial number and 16 sectors, each with a reading and writing password Available as 1Kbyte and 4Kbyte variant	Mifare Classic 1k is organized in 16 sectors, each with 4 blocks with 16 byte per block. Mifare Classic 4k is organized in 32 sectors, each with 4 blocks with 16 byte per block and in 8 sectors, each with 16 blocks and 16 byte per block. Every 4th block serves for administrating the data on the transponder. It contains a password for reading and writing permissions divided into a key A and a key B, each 6 byte long, and the "Access Conditions" where the sector formats are defined. Depending on the application, all blocks of a sector can be available in default format (i.e. key A is the reading and writing protection key) or in Data or Value format (i.e. key A is the reading key and key B the master key for reading and writing). Advantages are the high speed and the large storage volume making the transponder suitable for biometry.
	Mifare Desfire	13.56 MHz	Serial number and file system with reading and writing password Available as 2, 4, 8Kbyte and 72Kbyte variant	Data are available in encrypted form in a file system. Access via applications and file. Depending on the card type, from 2 kByte up to 72 kByte, 28 applications, each with 13 keys/passwords and 32 files per application are possible. Mifare Desfire is one of the safest transponder methods on the world.
	Mifare Ultralight	13.56 MHz	Serial number only	Mifare Ultralight has 64 byte capacity, consists of 16 pages with 4 byte each and has a 7 byte serial

				number.
	Mifare Ultralight C	13.56 MHz	Serial number only	Mifare Ultralight C has 192 byte capacity, consists of 48 pages with 4 byte each and has a 7 byte serial number. User data can be read and written in a range of 35 pages (148 byte). Mifare Ultralight C has a crypto processor using 3DES encryption.
	Mifare Plus SL1 and SL2	13.56 MHz	Serial number and 16 sectors, each with a reading and writing password (Security level 1 and 2 only)	MifarePlus is structurally equivalent to a Mifare Classic but it is available with different security levels. Security level 1 4 byte UID (may exist more than once) and 6byte keys Security level 2 7 byte UID (globally unique) and 16byte keys
	Mifare Plus SL3	13.56 MHz	Serial number only (security level 3)	7 byte UID (globally unique) / Access only with SAM (crypto processor unit) via APDUs (direct transponder commands)
	I Code SLI, SLI-S, SLI-L	13.56 MHz	Serial number and 8 – 64 blocks, 4 byte each	UID Mode 40 bit UID Block mode (4 byte per block) 8, 28, 32, 40 and 64 blocks depending on card chipset
	ICODE UID	13.56 MHz	Serial number and 12 byte data	Storage capacity of 96 bit / 12 byte. UID (40 bit) USER DATA (192 bits) CRC16 of user data (16 bit) Destroy Code(24 bit) The UID (serial number) cannot be altered.
	ICODE EPC	13.56 MHz	12 byte data only	Storage capacity of 96 bit / 12 byte. USER DATA (136 bits) CRC16 of user data (16 bit) Destroy Code(24 bit) The card has no UID (serial number).
	MyD	13.56 MHz	Serial number and 96 – 1024 blocks, 8 byte each	MyD is a transponder of the company Infineon and can have up to 10 kByte (1024 blocks). The cards have a serial number and a data area. Similar to Mifare, block 0 is the serial number.
Primo110	Legic Prime	13.56 MHz	Serial number and 256 or 1024Byte	Legic is only used in the German-speaking regions. Segmented and not segmented ID cards are available. For a not segmented card, the data are read by means of a position and length information. For segmented cards, besides the length information the segment must be provided from which the data are to be read.
Primo130	Legic Prime	13.56 MHz	Serial number and 256 or 1024Byte	Legic is only used in the German-speaking regions. Segmented and not segmented ID cards are available. For a not segmented card, the data are read by means of a position and length information. For segmented cards, besides the length information the segment must be provided from which the data are to be read.

	Legic Advant	13.56 MHz	Both Advant types are supported. ISO14443 and ISO15693 Serial number and 128 to 4096Byte	Segmented and not segmented ID cards are available. For a not segmented card, the data are read by means of a position and length information. For segmented cards, besides the length information the segment must be provided from which the data are to be read. A segment can also be selected via a search string.
i-Button	i-Button	Contact-based method	Fixed 15-digit serial number	This is a contact-reading method. The i-button only has a serial number which is read at contact with the transponder.
Smart Relay	SimonsVoss	25 kHz	10-digit number 1 to 5 = facility number 6 to 10 = card	SimonsVoss is an active contactless reading method. Each card has a unique 10-digit decimal code. Digit 1-5 is the company code, digit 6-10 the card number. Up to 8000 cards with corresponding profiles can be stored on a SmartRelay.
XS070	Nedap	125kHz	Serial number only	Nepad is a mere reading method; the cards only provide a number

For more information on the options supported for a reading method see the manual of the respective device. The manuals are available for download as PDF on our homepage.

If the reading method you need is not listed in the table, please contact us. We are expanding the range of supported reading methods permanently and also for customer projects.

6.3. Most Important RFID Reading Methods

For some transponders, a detailed description of the settings and the technology of the transponder type is necessary.

This concerns:

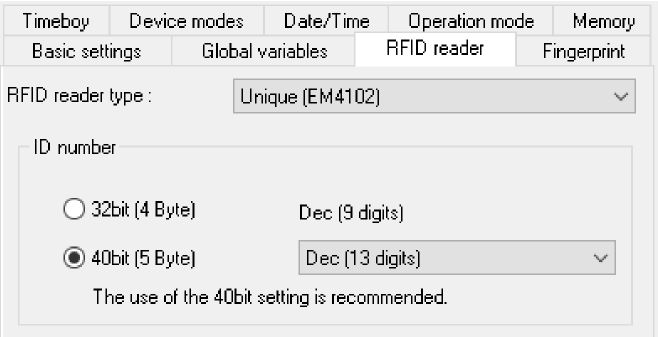
- Legic Prime
- Legic Advant
- HID-ProxKey
- HID-iClass

☞ **Note:**
Simple transponder methods are not explained further. For additional information on RFID technology see the product DVD.
<_Datafox DVD\Werbe- und Infomaterial\MasterIV Werbe-Info-Material aktuell\1_Prospekte und Produktbeschreibungen/ Datafox _MasterIV-Serie, Option Kommunikationsarten-Übersicht V1.0.pdf>

6.3.1. 125 kHz RFID Reader

6.3.1.1. Unique

Unique is mere reading method. The number of the card is a globally unique ID and is used in all imaginable fields. A 64bit information is stored on the card with the unique ID using only 40bit. The remaining bits serve as checksum.
When using Unique, the value of the ID card can be selected in the AESetup as 40 or 32bit value for further processing.



RFID reader type : Unique (EM4102)

ID number

○ 32bit (4 Byte) Dec (9 digits)

● 40bit (5 Byte) Dec (13 digits)

The use of the 40bit setting is recommended.

6.3.1.2. Hitag1

Hitag1 is organized in 16 blocks with 4 segments each. Each segment is 32 bits long. The block numbers 4 to 7 can be protected by password (secret) or used freely (public).

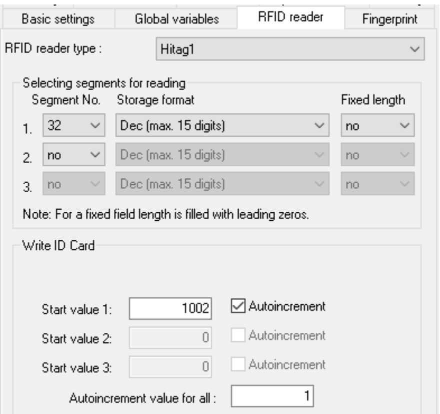
Caution!
The AESetup only supports the segments **0** and **8..63**. The segments from **32..63** can always be read and written, the segment **0** can always be read. Depending on the content of the segments **1..7** it could happen that reading or writing of the segments **8..31** is not possible.

	Block Number	Segment Number	Data
Public	0	0	Serial number
		1	Configuration
Secret		2	Key A
		3	Key B
Secret	1	4	Logdata 1B
		5	Logdata 0A
		6	Logdata 1A
		7	Logdata 0B
Secret	2 and 3	4 * BlockNumber + 0	User data
		4 * BlockNumber + 1	User data
		4 * BlockNumber + 2	User data
		4 * BlockNumber + 3	User data
Secret or Public depending on configuration	4 to 7	4 * BlockNumber + 0	User data
		4 * BlockNumber + 1	User data
		4 * BlockNumber + 2	User data
		4 * BlockNumber + 3	User data
Public	8 to 15	4 * BlockNumber + 0	User data
		4 * BlockNumber + 1	User data
		4 * BlockNumber + 2	User data
		4 * BlockNumber + 3	User data

3 segments at most are available for simultaneous processing. They can be selected in the AESetup under transponder.

The “*Storage format*” determines for what the 32 bit value is used.

With the option “*Fixed Length*” the card value read is reduced to the given number of digits and leading zeros (0) are added if necessary.



RFID reader type : Hitag1

Selecting segments for reading

Segment No.	Storage format	Fixed length
1. 32	Dec (max. 15 digits)	no
2. no	Dec (max. 15 digits)	no
3. no	Dec (max. 15 digits)	no

Note: For a fixed field length is filled with leading zeros.

Write ID Card

Start value 1: 1002 ☑ Autoincrement

Start value 2: 0 □ Autoincrement

Start value 3: 0 □ Autoincrement

Autoincrement value for all : 1

For writing the cards an initial value can be determined per segment. If the option "*Autoincrement*" is activated next to the respective initial value, the current segment value is increased by the "*autoincrement value*" after each writing process. The initial values of the segments can be edited in the device BIOS. The "*autoincrement value*" is only displayed in the device BIOS but cannot be changed at the device.

6.3.1.3. Hitag2

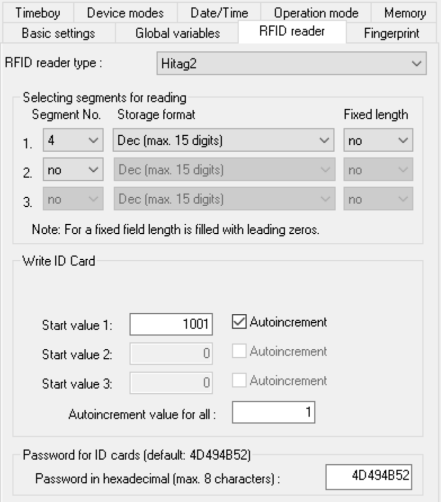
Hitag2 is organized in 8 segments. Each segment is 32 bits long.

Page	Content
0	Serial number
1	Password RWD
2	Reserved
3	8 bit configuration, 24 bit password TAG
4	Read/write page
5	Read/write page
6	Read/write page
7	Read/write page

3 segments at most are available for simultaneous processing. They can be selected in the AESetup under transponder.

The “*Storage format*” determines for what the 32 bit value is used.

With the option “*Fixed Length*” the card value read is reduced to the given number of digits and leading zeros (0) are added if necessary.



RFID reader type : Hitag2

Selecting segments for reading

Segment No.	Storage format	Fixed length
1. 4	Dec (max. 15 digits)	no
2. no	Dec (max. 15 digits)	no
3. no	Dec (max. 15 digits)	no

Note: For a fixed field length is filled with leading zeros.

Write ID Card

Start value 1: 1001 ☑ Autoincrement

Start value 2: 0 □ Autoincrement

Start value 3: 0 □ Autoincrement

Autoincrement value for all : 1

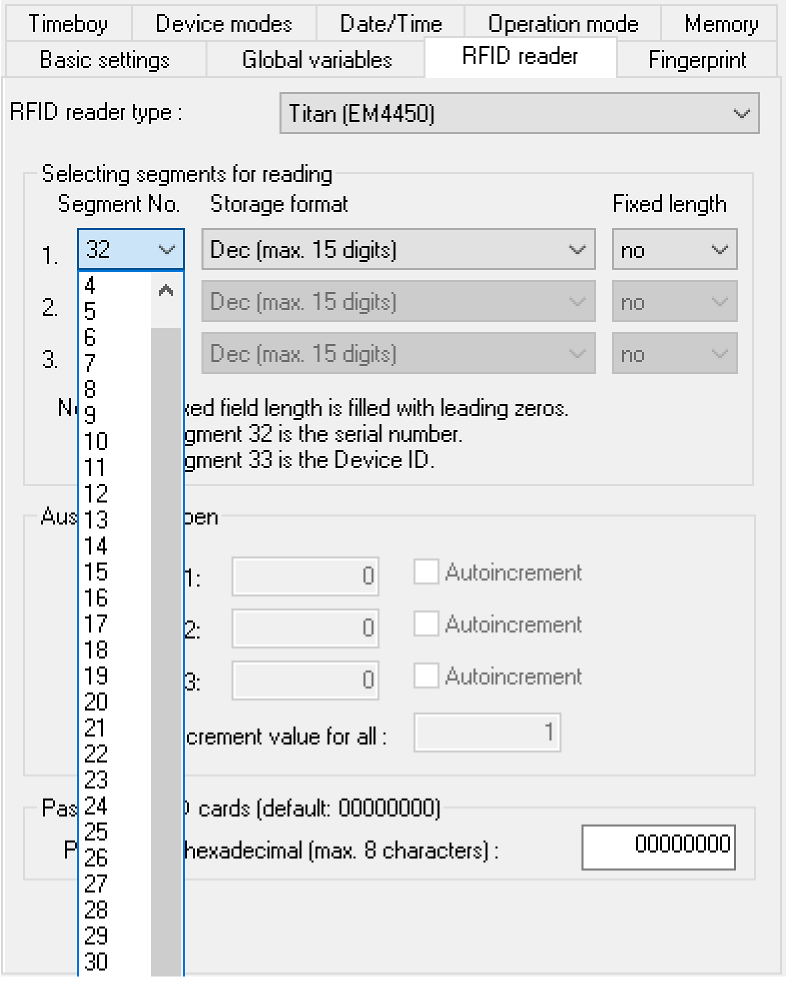
Password for ID cards (default: 4D494B52)

Password in hexadecimal (max. 8 characters) : 4D494B52

For writing the cards an initial value can be determined per segment. If the option "*Autoincrement*" is activated next to the respective initial value, the current segment value is increased by the "*autoincrement value*" after each writing process. The initial values of the segments can be edited in the device BIOS. The "*autoincrement value*" is only displayed in the device BIOS but cannot be changed at the device. The writing of cards can be protected by a "*menu password*".

6.3.1.4. Titan

Titan (EM4450) is organized in 34 segments. Each segment is 64 bits long.
The serial number is contained in segment 32.



RFID reader type : Titan (EM4450)

Selecting segments for reading

	Segment No.	Storage format	Fixed length
1.	32	Dec (max. 15 digits)	no
2.		Dec (max. 15 digits)	no
3.		Dec (max. 15 digits)	no

N xed field length is filled with leading zeros.
gment 32 is the serial number.
gment 33 is the Device ID.

Aus pen

1: 0 □ Autoincrement
2: 0 □ Autoincrement
3: 0 □ Autoincrement
crement value for all : 1

Pas) cards (default: 00000000)
P hexadecimal (max. 8 characters) : 00000000

Three segments at most are available for simultaneous processing. They can be selected at DatafoxStudioIV under transponder via the segment number. With the "Storage format" it is set for what the 64 bit value is to be used. With "Window length" the card value read is cut to the given number of characters and leading zeros (0) are added if necessary.

For writing the cards an initial value can be determined per segment. If the option "Autoincrement" is activated next to the respective initial value, the current segment value is increased by the "autoincrement value" after each writing process.
The initial values of the segments and the "autoincrement value" can be edited in the device BIOS.

6.3.2. Legic Transponder Technology

Legic is a 13.56 MHz technology with two fundamentally different types Legic Prime and Legic Advant. The Advant has two different transfer versions ISO 14443A and ISO 15693.
Datafox terminals only support the reading of ID cards. Writing values on the card is not possible.

6.3.2.1. Overview Prime and Advant

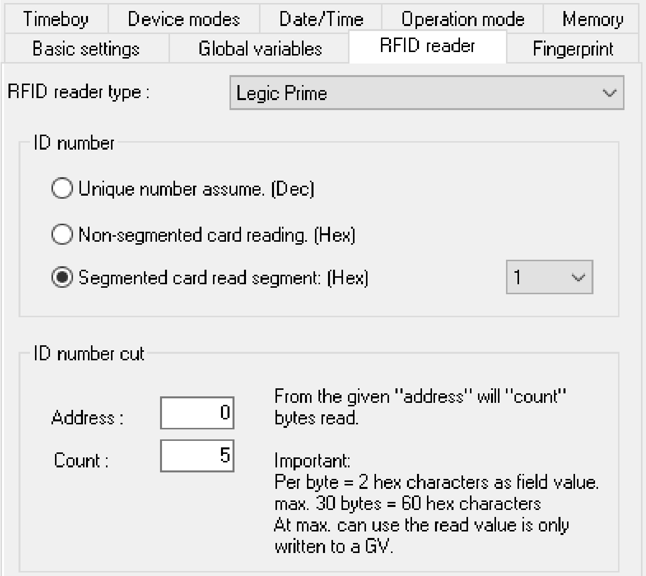
	Prime	Advant ISO15693	Advant ISO14443A
Hardware	Security chip with proprietary protocol	Microcontroller with ISO standard	Microcontroller with ISO standard
Transfer, advantages/disadvantages	ISO15693, better range, lower data transfer	ISO15693, better range, lower data transfer	ISO14443A, faster data transfer, worse range
Reader hardware in Datafox terminals	Primo100 (PHG) Primo130 (PHG)	Primo130 (PHG)	Primo130 (PHG)
Data structures	Freely definable data areas in segments	Freely definable data areas in segments	Freely definable data areas in segments
Special security per segment	Kaba Group Header	Access Segment Definition	Access Segment Definition

6.4. Important Settings in DatafoxStudioIV

Devices with Primo 100 or Primo 130 are able to read the Legic Prime and configure the reader via this dialog.

Via this dialog, both readers can be configured, but only for Legic Prime cards.

Former setups still use this dialog.
Due to compatibility reasons,
it has not been removed.



RFID reader type : Legic Prime

ID number

○ Unique number assume. (Dec)

○ Non-segmented card reading. (Hex)

● Segmented card read segment: (Hex) 1

ID number cut

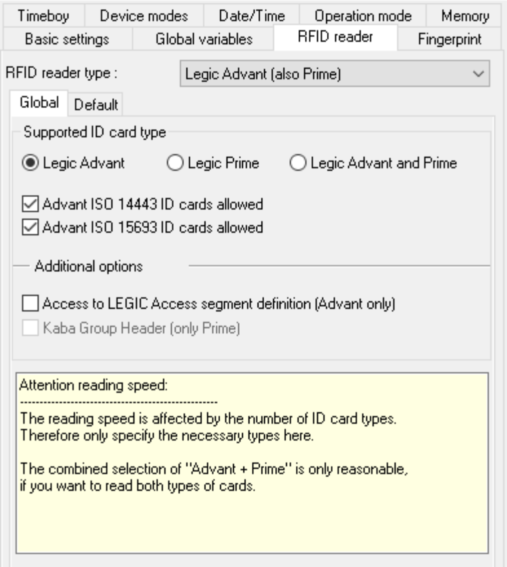
Address : 0

Count : 5

From the given "address" will "count" bytes read.

Important:
Per byte = 2 hex characters as field value.
max. 30 bytes = 60 hex characters
At max. can use the read value is only written to a GV.

Devices with Primo 130 are able to read Legic Prime and Legic Advant. You can select whether both types or just one type is to be read.



RFID reader type : Legic Advant (also Prime)

Supported ID card type

● Legic Advant ○ Legic Prime ○ Legic Advant and Prime

☑ Advant ISO 14443 ID cards allowed
☑ Advant ISO 15693 ID cards allowed

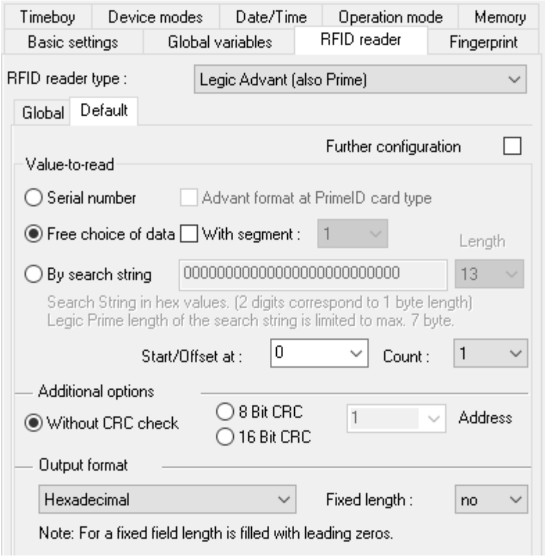
Additional options

□ Access to LEGIC Access segment definition (Advant only)
□ Kaba Group Header (only Prime)

Attention reading speed:

The reading speed is affected by the number of ID card types.
Therefore only specify the necessary types here.

The combined selection of "Advant + Prime" is only reasonable,
if you want to read both types of cards.



RFID reader type : Legic Advant (also Prime)

Further configuration □

Value-to-read

○ Serial number □ Advant format at PrimeID card type

● Free choice of data □ With segment : 1

○ By search string 00000000000000000000000000 Length 13

Search String in hex values. (2 digits correspond to 1 byte length)
Legic Prime length of the search string is limited to max. 7 byte.

Start/Offset at : 0 Count : 1

Additional options

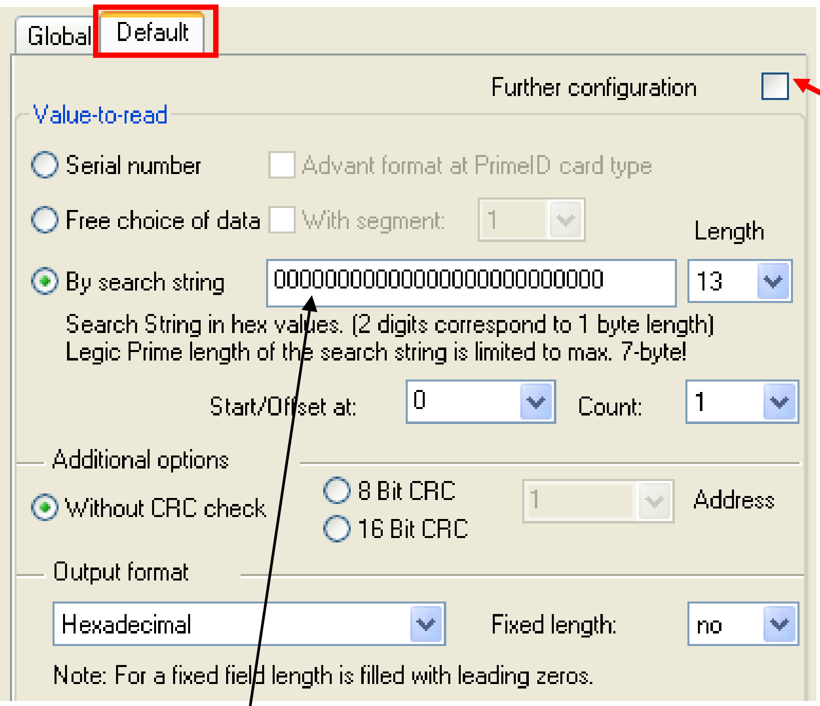
● Without CRC check ○ 8 Bit CRC ○ 16 Bit CRC 1 Address

Output format

Hexadecimal Fixed length : no

Note: For a fixed field length is filled with leading zeros.

☞ **Note:**
If you select the state field function in the power management of a Primo 130, you must expect a booting time of the reader of at least 2 seconds after tuning it on. During this time, it is not possible to read cards.



Global | Default

Further configuration □

Value-to-read

○ Serial number □ Advant format at PrimeID card type

○ Free choice of data □ With segment: 1

Length

● By search string 00000000000000000000000000 13

Search String in hex values. (2 digits correspond to 1 byte length)
Legic Prime length of the search string is limited to max. 7-byte!

Start/Offset at: 0 Count: 1

Additional options

● Without CRC check ○ 8 Bit CRC ○ 16 Bit CRC 1 Address

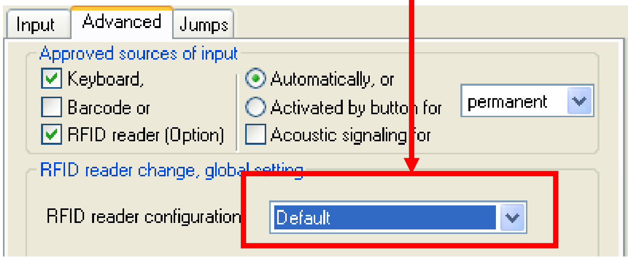
Output format

Hexadecimal Fixed length: no

Note: For a fixed field length is filled with leading zeros.

Here you can activate a further configuration and can choose in the field function "normal",

Read a segment and can search a value by a string in the segment.



Input | Advanced | Jumps

Approved sources of input

☑ Keyboard, ● Automatically, or
□ Barcode or ○ Activated by button for permanent
☑ RFID reader (Option) □ Acoustic signaling for

RFID reader change, global setting

RFID reader configuration Default

Explanation of Parameters

Supported card type

- Legic Advant
- Legic Prime
- Legic Advant and Prime

Advant ISO 14443 format cards permitted

- If you select this option, Legic Advant cards with ISO 14443 format can be read, otherwise these cards are ignored.

Advant ISO 15693 format cards permitted

- If you select this option, Legic Advant cards with ISO 15693 format can be read, otherwise these cards are ignored.

Serial number – unique number of the card

Advent format for Prime card type

- Option Advant format for Prime card type refers to the value output according to Prime or Advant rules (byte 2 and 4 switched).

Free Data Selection

There are segmented and not segmented ID cards. The defined data area can be read from those cards.

Via Search String
A transponder has one or more segments, for example.
Each segment starts with an IAM number.
IAM number e.g.: 85 00 6B 00 1C

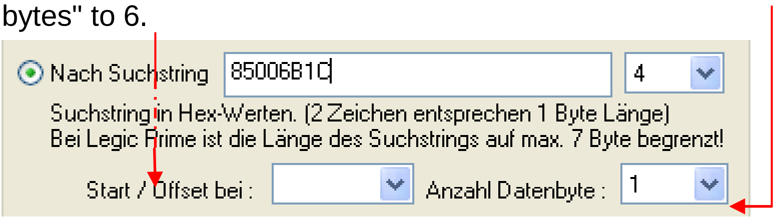
Example segment structure:

	IAM 85 0…	SSC		ID card number		X Data		IAM 73....	SSC					
Byte	1 - 5	6	7	8 - 13		x…		1 - 5	6					

Segment 1 Segment 2

If the segments 1, 2 or 3 are not always identical for a customer, the right segment can be determined via a search string which contains the IAM number, for example.
During start / offset, you specify at which point of the data area you want to start reading. At number of data bytes, you specify the length of the data to be read. If it is read beyond the data area, the reader provides no data. The values set must correspond to the Legic card.

Example of a search string based on the IAM no.: 85 00 6B 00 1C.
If you want to read the ID card number, you have to set "Start/Offset" to 8 and "Number of data bytes" to 6.



● Nach Suchstring 85006B1C 4

Suchstring in Hex-Werten. (2 Zeichen entsprechen 1 Byte Länge)
Bei Legic Prime ist die Länge des Suchstrings auf max. 7 Byte begrenzt!

Start / Offset bei : Anzahl Datenbyte : 1

Storage format:
Decimal: the read binary value of the card is converted to a decimal number. For this format, 8 byte/64 bit are possible at most.

Hex: the read binary value of the card is converted to a hexadecimal number. For this format, 20 byte are possible at most. Example: 74001B00004A

Reverse hex: the read binary value of the card is converted to a hexadecimal number. However, it is not read from front to back but from back to front. For this format, 20 byte are possible at most. Example: 4B0064000082

CRC (***c**yclic **r**edundancy **c**heck*),
If data areas are read where they are secured by a CRC, the reader can perform the check independently. For this purpose, the size and the address must be provided on the card. If the CRC is false, no data are provided.

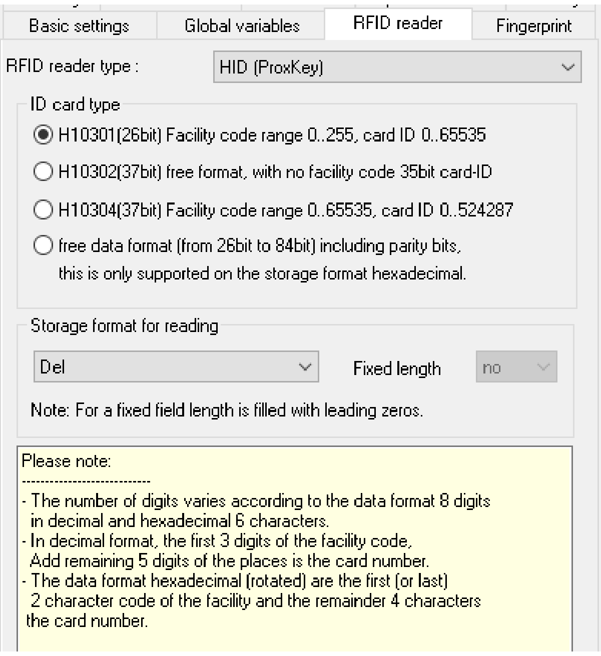
Access to Legic Access Segment Definition,
is access to a segment with a strictly defined header structure oriented towards the Legic standard. This segment type provides a high security level of data.

Kaba Group Header for Prime cards,
increases data security with additional CRCs of a segment. If the CRCs are false, no data are provided.

6.4.1. HID-ProxKey and HID-iClass

V4	V4	V4		EVO 2.8 / 3.5			ZK / IO Box V4	Mobil-Box V4	Docking V2	FDL V2	ZK-Knoten	EVO-IPC
☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒

HID-ProKey and HID-iClass are two RFID methods which are compatible with each other in formats but use different transfer frequencies. Therefore, Datafox terminals have two different reader modules. The settings in DatafoxStudioIV only differ in the selection of the transponder types.



RFID reader type : HID (ProxKey)

ID card type

● H10301(26bit) Facility code range 0..255, card ID 0..65535

○ H10302(37bit) free format, with no facility code 35bit card-ID

○ H10304(37bit) Facility code range 0..65535, card ID 0..524287

○ free data format (from 26bit to 84bit) including parity bits, this is only supported on the storage format hexadecimal.

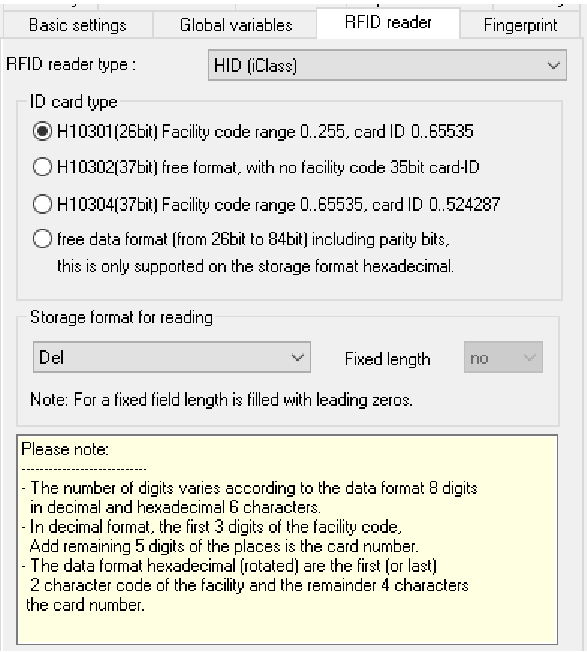
Storage format for reading

Del   Fixed length no

Note: For a fixed field length is filled with leading zeros.

Please note:

- The number of digits varies according to the data format 8 digits
  in decimal and hexadecimal 6 characters.
- In decimal format, the first 3 digits of the facility code,
  Add remaining 5 digits of the places is the card number.
- The data format hexadecimal (rotated) are the first (or last)
  2 character code of the facility and the remainder 4 characters
  the card number.



RFID reader type : HID (iClass)

ID card type

● H10301(26bit) Facility code range 0..255, card ID 0..65535

○ H10302(37bit) free format, with no facility code 35bit card-ID

○ H10304(37bit) Facility code range 0..65535, card ID 0..524287

○ free data format (from 26bit to 84bit) including parity bits, this is only supported on the storage format hexadecimal.

Storage format for reading

Del   Fixed length no

Note: For a fixed field length is filled with leading zeros.

Please note:

- The number of digits varies according to the data format 8 digits
  in decimal and hexadecimal 6 characters.
- In decimal format, the first 3 digits of the facility code,
  Add remaining 5 digits of the places is the card number.
- The data format hexadecimal (rotated) are the first (or last)
  2 character code of the facility and the remainder 4 characters
  the card number.

Three public formats (H1030x) can be set in the Studio. All customer-specific formats must be read via a free data format. The data are output including parity bits because the parity bits and information are differently stored in the card for the different customer formats. Therefore, all data are output because they are unique. A validation of the values read could be executed within the input sequence by a positive list and thus the ID card number can be determined.

Data Format H10301(26bit) Facility Code Range 0..255, Card ID 0..65535

- Formatting decimal (3 digits facility code + 5 digits Card-ID)
- Formatting hexadecimal (2 characters facility code + 4 characters Card-ID)
- Formatting reverse hexadecimal (2 characters facility code + 4 characters Card-ID)

Example:
Facility code is 15 and Card ID is 5.
Decimal output value 015 00005
Hexadecimal output value 0F 00 05
Hexadecimal reverse output value 05 00 0F

Data Format H10302(37bit) Free Format, without Facility Code 35bit Card ID
Formatting decimal (max. 11 digits Card-ID)
Formatting hexadecimal (8 characters Card-ID)
Formatting reverse hexadecimal (8 characters Card-ID)

35 bit	←most significant bit least significant bit→
Binary	111 1111 1111 1111 1111 1111 1111 1111 1111
Decimal	34 359 738 367
Hexadecimal	07 FF FF FF FF

Example:
Card ID is 5.
Decimal output value 00 000 000 005
Hexadecimal output value 00 00 00 05
Hexadecimal reverse output value 05 00 00 00

Data Format H10304(37bit) Facility Code Range 0..65535, Card ID 0..524287

- Formatting decimal (5 digits are the facility code, 6 digits the Card-ID)
- Formatting hexadecimal (4 characters are the facility code, 6 characters the Card-ID)
- Formatting reverse hexadecimal (4 characters are the facility code, 6 characters the Card-ID)

Example:
Facility code is 15 and Card ID is 5.
Decimal output value 000 015 000 005
Hexadecimal output value 00 0F 00 00 05
Hexadecimal reverse output value 05 00 00 0F 00

Free data format (from 26bit to 84bit)
Formatting hexadecimal (20 characters Card-ID)

84 bit   MSB
LSB
Binary
1111 1111 1111 1111 1111 1111 1111 1111 1111 1111 1111 1111 1111 1111 1111
 1111 1111 1111 1111 1111 1111
Decimal   019 342 813 113 809 551 615
Hexadecimal   0003 FFFF FFFF FFFF FFFF FFFF

Example:
Data from reader are 65535.
Decimal output value is not supported.
Hexadecimal output value 00 0000 0000 0000 0000 FFFF
Hexadecimal reverse output value is not supported.

6.4.2. 13,56MHz RFID Reader (ISO14443 u. ISO15693)

There are 2 RFID reader for 13,56 MHz available. See price list:

1. **device with 13,56 MHz** **ISO 14443** for Mifare-Desfire
ISO 14443 Mifare-Plus, -Classic, -Ultralight

This reader (TWN3 Mifare NFC) is due to the antenna design especially suitable for RFID - cards

2. **device with 13,56 MHz** **ISO 14443** for Mifare-Classic, -Plus, **…**
ISO 15693 for ICode, My-D, Tag-it, **…**

This reader (TWNS Multi-ISO) is due to the antenna design especially suitable for RFID - Keychains and offers these the best reading range.

overview table with RFID technology

IEC/ISO	description	read	write	read	write
14443A	Mifare Mini	X	X	X	X
	Mifare Classic 1k und 4k	X	X	X	X
	Mifare Plus S und X	X	X	X	X
	Mifare Ultralight/ Mifare Ultralight C	X	X	X	X
	Mifare DESFire	X	X	X	X
	LegicAdvant (ISO14443 Typ) serial number only *	X*	-	X*	-
	Andere ISO14443 Typen (SmartMX) serial number only*	X*	-	X*	-
14443B	Calypso, CEPAS, Moneo serial number only *	X*	-	X*	-
14443-2	iClass, Piccopass serial number only *	X*	-	X*	-
14443-3	SRX Transponder von ST Microelectronics, serial number only *	X*	#	X*	#
15693	iCode	X	X	-	-
	My-D Vicinity	X	#	-	-
	Tag-it serial number only *	X*	#	-	-
	LegicAdvant (ISO15693 Typ) serial number only *	X*	-	-	-
	24LR16 / 24LR64 von ST Microelectronics, serial number only *	X*	#	-	-
	MB89R118/MB89R119 von Fujitsu, serial number only *	X*	#	-	-
	LRI 2k / 64k von ST Microelectronics, serial number only *	X*	#	-	-
	Andere ISO15693 Typen serial number only *	X*	-	-	-

***** reading, serial number only.

# writing, can be implemented on request.

6.4.2.1. ISO 14443A - Mifare Familie

6.4.2.1.1. Mifare Mini

The Mifare Mini is a compatible transponder for Mifare Classic 1k, only with a memory limit of 320 bytes. So he has not 16, but only 5 sectors.

☞ **Hint:**
The Mifare Mini can be configured through the Mifare Plus basic settings in the Datafox-StudioIV.

6.4.2.1.2. Mifare Classic

Mifare is organized in 16 sectors a 4 blocks of 16 bytes. Every 4th Block is used to encrypt the data on the transponder and contains, divided into a Key-A and Key B, each 6 bytes long a password for write and read access, as well as the "Access Condition," in which the sector formats are defined. Depending on the application, all the blocks of a sector can be in the default format (ie, key A is the read and write protection key) or in the data or the value format, with key A, the read password and key B is the master key for reading and writing. The Datafox devices up to 4.1.4.xx version currently only support the default format.

! **Attention:**
The value format is not supported.
The data format we can read only with KeyA.
The default format we can read and write with Key A.

☞ **Hint:**
It is also possible to configure the Mifare Classic in DatafoxStudioIV with the MifarePlus basic settings. This is necessary when multiple types of Mifare need to be used for reading or even at DataOnCard.

6.4.2.1.3. Mifare Plus

Mifare Plus is similar to the data structure such as Mifare Classic. The first 16 sectors have the 4 blocks and the following ones have 16 blocks a 16-byte. The difference with the Mifare Classic is that one has different security levels (security level) which impact primarily on the cryptography. Similar to the Mifare Classic there are Key A and Key B with different lengths depending on the security level.

Security level	description
SL0	Delivery condition, the serial number can be read. Accessing the data areas is not possible. With the Card Master Key and Level switch key the security level can be configured.
SL1	Kompatibilitätsmodus zum MifareClassic, der Mifare Plus ist 100% kompatibel zum Mifare Classic und benutzt auch den Crypto1 Algorhytmus mit 6Byte(48Bit) Keys.
SL2 Only at Plus X	Data access as in MifareClassic with Cryptokey, but authentication is done via 16-byte AES-keys. In SL2 there are 2 Crypto1 Keys and 2 AES keys.
SL3	ISO1443-4 communication protocol and AES authentication and pre-shared keys, and MACing. There are two AES keys. Weiterhin ist zum Schutz der Seriennummer optional Random UID möglich. Furthermore optional random UID is possible to protect the serial number. Bei MifarePlus X erfolgt die Kommunikation über AES Verschlüsselung und beim MifarePlus S ist die Kommunikation unverschlüsselt. In MifarePlus X communication via AES encryption and the MifarePlus S the communication is unencrypted.

☞ **Note:**
In Security Level 1 MifarePlus, Mifare Classic and Mifare Mini can be read and written, where the set sectors exist on the card.

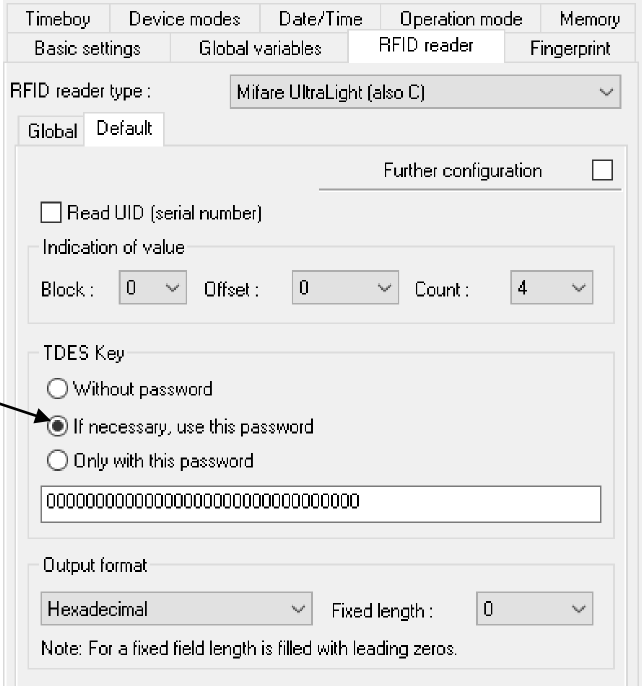
! **Caution:**
Mifare Plus cards can switch up their security levels. Reverse is not available.
Changing the security level on MasterIV devices is not possible.

6.4.2.1.4. Mifare Ultralight

Mifare Ultralight uses in contrast to Mifare Classic and Plus no sectors and blocks, but only 16 pages of 4 bytes, which may be regarded as a segment in Hitag transponders. The simple Ultralight has no access protection or write protection only, the Ultralight C, however, can be protected by a 3DES authentication. In the delivery state this key is not set and the Ultra Light behaves like a simple ultralight.
The simple Ultralight has 16 pages with 4 bytes, only 12 pages can be written.
The Ultralight C has 48 pages, 40 of which can be written.

! **Caution:**
Mixed operation of Mifare Classic and Mifare Ultralight is not possible due to the different data structures.

☞ **Note:**
Mixed operation of Ultralight and Ultralight C is possible. Depending on the security requirements, the key usage is selected



RFID reader type : Mifare UltraLight (also C)

Further configuration □

□ Read UID (serial number)

Indication of value
Block : 0 Offset : 0 Count : 4

TDES Key
○ Without password
● If necessary, use this password
○ Only with this password
00000000000000000000000000000000

Output format
Hexadecimal Fixed length : 0
Note: For a fixed field length is filled with leading zeros.

key usage

6.4.2.1.5. Mifare DESFire

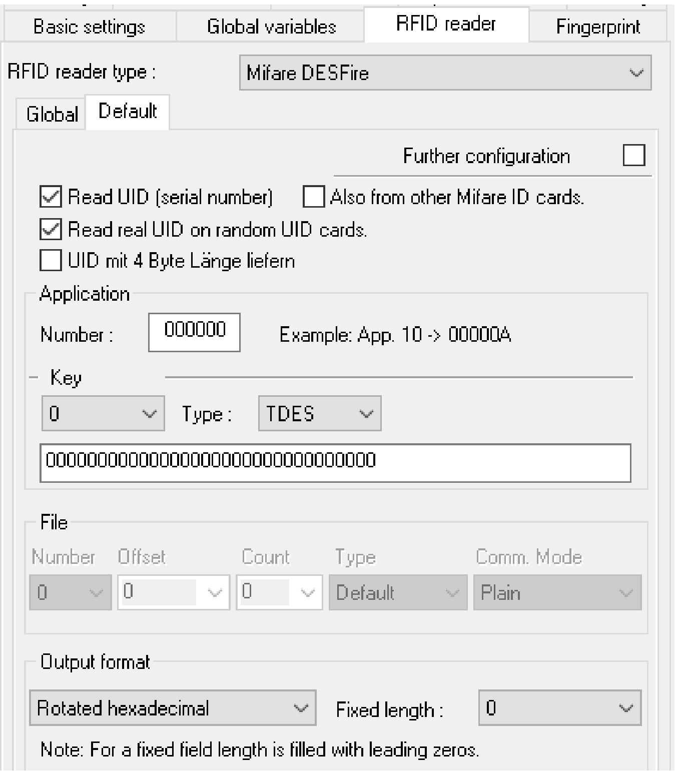
The Mifare DESFire is next to the Mifare Plus X one of the safest and most complex transponder. In contrast to the Mifare Plus or Classic the DESFire is not built on the solid data structures with sectors and blocks, but a file system as on a PC is used for DESFire.
There are two basic types of DESFire: the old DF40, referred to as native type and the successor series DF80, also known as the EV1.
The security relies on encryption, authentication negotiation of session keys and different communication modes. It is also possible, to protect the serial number (UID) by a random UID against unauthorized reading.

	MF3IC40	MF3IC21–EV1	MF3IC41-EV1	MF3IC81-EV1
Memory size	4k	2k	4k	8k
Free memory	4096 Bytes	2272 Bytes	4832 Bytes	7936Bytes
Max. number of Applications	28	28	28	28
max. Number of files per application	16	32	32	32
encryption	DES, TDES (DF4)	DES, TDES, (DF4 und ISO) 3KTDES, AES	DES, TDES, (DF4 und ISO) 3KTDES, AES	DES, TDES, (DF4 und ISO) 3KTDES, AES
Number of keys per application	14	14	14	14

The DF4 is based on the DES encryption algorithm, but with special NXP treatises.
ISO encryption is based on the DES algorithm according to the ISO standard.
Both may DES with 8 byte keys and TDES with two 8-byte keys, ie 16 bytes.
For systems that use only one 8-byte key, the key must be entered twice.
The DESFire recognize about whether DES or TDES encryption should be used.

communication modes	Description
Plain	Unencrypted, the data between the reader and the RFID chip will be transmitted unencrypted (useful for development)
MACed	Unencrypted with encrypted checksum (MAC), the data between the reader and the RFID chip will be transmitted unencrypted, but it will calculate a checksum of the data and its transmission is encrypted (old transponder method for data validation)
Enchiphered (Crypt)	Encrypted, the data between the reader and the RFID chip is encrypted (data only)

Reading of the serial number



RFID reader type : Mifare DESFire

Further configuration □

☑ Read UID (serial number) □ Also from other Mifare ID cards.

☑ Read real UID on random UID cards.

□ UID mit 4 Byte Länge liefern

Application

Number : 000000 Example: App. 10 -> 00000A

Key

0 Type : TDES

00000000000000000000000000000000

File

Number 0 Offset 0 Count 0 Type Default Comm. Mode Plain

Output format

Rotated hexadecimal Fixed length : 0

Note: For a fixed field length is filled with leading zeros.

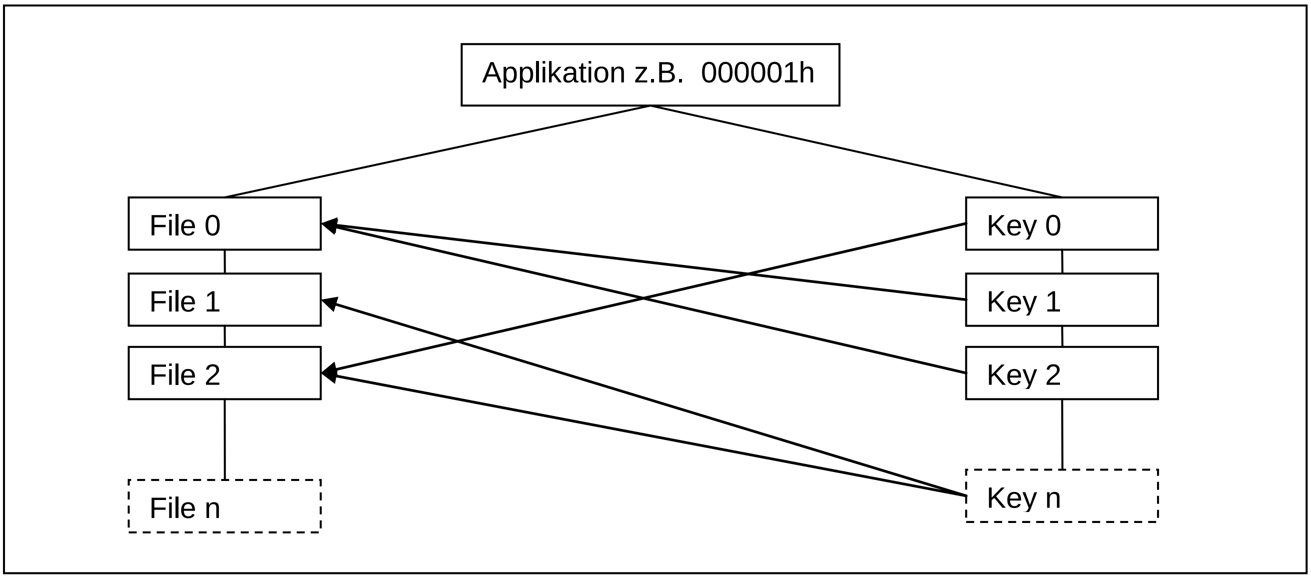
To read the serial number the check mark must be set for it. If in addition to DESFire cards other Mifare Cards should be read, an additional check mark hast to be set.
If DESFire cards with random UID are used, an authentication into an application shall be used for the determination of the real serial number. Therefore, in this case, also the AID (Application Identifier) in the range of 000000 to FFFFFF has to be specified, the number from 0 to 13 and the type of the key and the string of hexadecimal key.

Reading and Writing of files

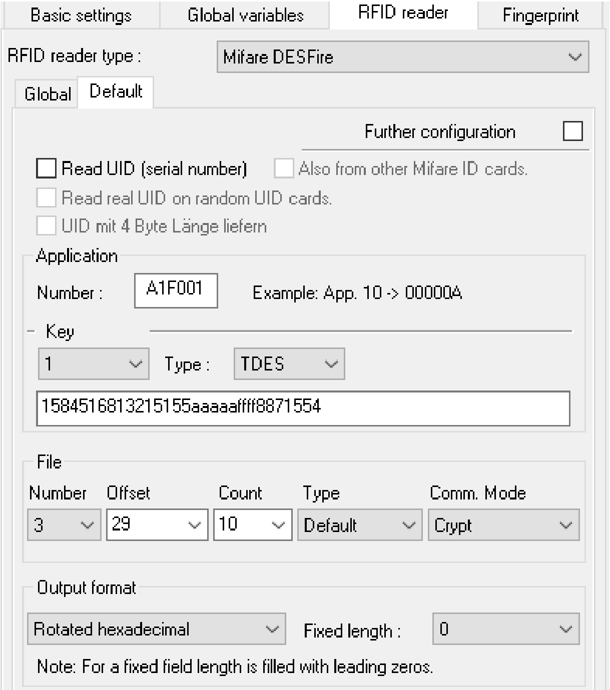
Typ	description
Standard Data File	Datafile
Backup Data File	Backup Data file
Value File	Number file (is currently not supported)
Linear Record File	Database table (is currently not supported)
Cyclic Record File	Database table, limited, old data will be overwritten (is currently not supported)

Table File Types

Access to the data is carried out via the selection of an application and subsequent Authentication with a key. The key must be assigned to the file you want to access.



! **Caution:**
Files of an application can use different keys. It is important to select the correct key for read or write access.



RFID reader type : Mifare DESFire

Further configuration □

□ Read UID (serial number) □ Also from other Mifare ID cards.
□ Read real UID on random UID cards.
□ UID mit 4 Byte Länge liefern

Application
Number : A1F001 Example: App. 10 -> 00000A

Key
1 Type : TDES
1584516813215155aaaaafff8871554

File

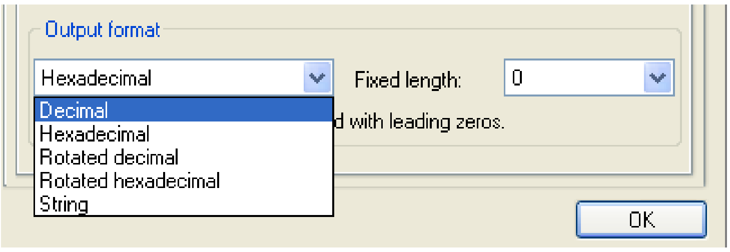
Number	Offset	Count	Type	Comm. Mode
3	29	10	Default	Crypt

Output format
Rotated hexadecimal Fixed length : 0
Note: For a fixed field length is filled with leading zeros.

The following settings must be made for access to a file:

- Number of application
- number of the key in the Application
- type of key (TDES, AES ...), DF4 cards can only DF4-encryption
- string of the key
- number of the file
- Offset, Starting position of the data within the file
- Number of bytes to read
- Type of File (Standard, Backup)
- Communication mode (Plain, MACed, Crypt)

Output Format



There are several output formats, how the data is processed in the data set and in the display. Important here is the approach which byte is the most significant. There are also rotated variants in decimal and hexadecimal so that the final outcome shows the correct values. The fixed length is used to bring any to small numbers to a defined length by leading zeros.

! **Caution:**
Decimal numbers are based on the basis of 32-bit (4-byte) operations. It is possible to process up to 64 bits (8 bytes), larger data is leading to conversion errors.

6.4.2.1.6. ISO 14443B – Calypso, CEPAS und Moneo

With these transponders only the serial number can be determined. An access to data areas is not possible. These transponders can be selected under ISO tags (13.56 MHz).

6.4.2.1.7. ISO 14443-2 iClass, Picopass

With these transponders only the serial number can be determined. An access to data areas is not possible. These transponders can be selected under ISO tags (13.56 MHz).

6.4.2.1.8. ISO 14443-3 SRX von ST Microelectronics

With these transponders only the serial number can be determined. An access to data areas is possible on request. These transponders can be selected under ISO tags (13.56 MHz).

6.4.2.1.9. ISO 15693 – iCode, Tag-it, MyD

iCode

I code is available in different memory sizes up to 64 blocks a 4 bytes. The data areas can be read and written, except for the 8-byte serial number. Data areas can be provided with a write protection.

Tag-it

With these transponders you can only read the serial number. An access to data areas is not possible. These transponders can be selected under ISO tags (13.56 MHz).

My-D Vicinity by Infineon

My-D Vicinity is available in different memory sizes up to 1024 bytes. These transponders have depending on the size up to 128 pages of 8 byte or 256 pages of 4 bytes. Currently, we only communicate unencrypted. When the cards are assigned with a key, only the serial number can be determined.

24LR16 / 24LR64 von ST

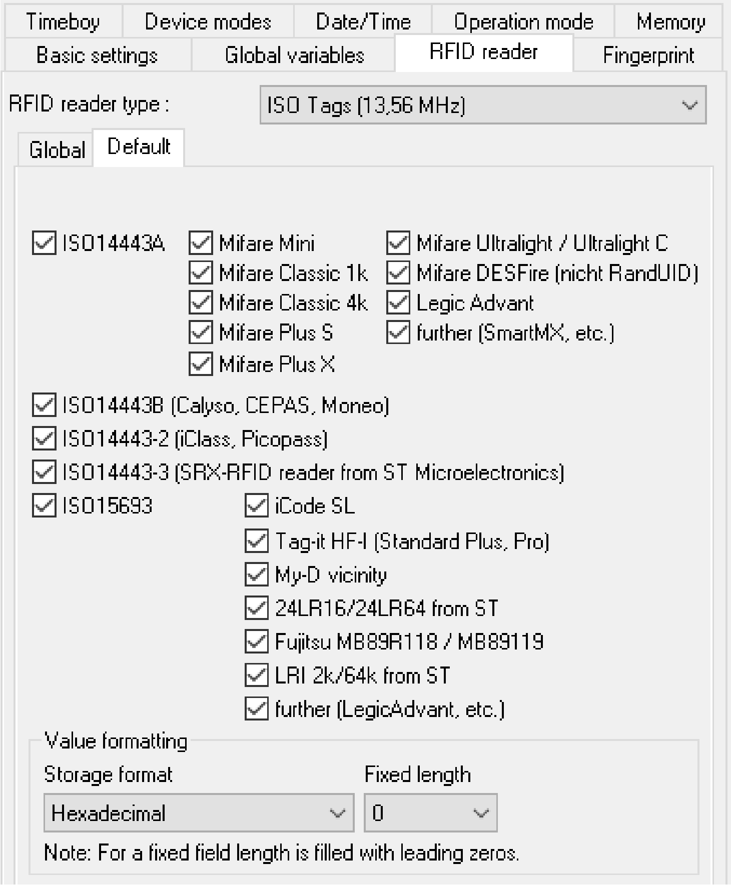
With these transponders only the serial number can be determined. An access to data areas is not possible. These transponders can be selected under ISO tags (13.56 MHz).

MB89R118 / MB89R119 by Fujitsu
With these transponders only the serial number can be determined. An access to data areas is not possible. These transponders can be selected under ISO tags (13.56 MHz).

LRI 2k
With these transponders only the serial number can be determined. An access to data areas is not possible. These transponders can be selected under ISO tags (13.56 MHz).

6.4.2.1.10. ISO 14443/15693 read serial number

With the TWN3 Multi ISO reader, it is possible to read all serial number of the 13.56MHz ISO14443 and ISO15693 transponders. So you can choose from various methods which transponder types you actually want and what not. You can select the type of transponder ISO tags (13.56 MHz), the respective desired.



RFID reader type : ISO Tags (13,56 MHz)

☑ ISO14443A
☑ Mifare Mini
☑ Mifare Classic 1k
☑ Mifare Classic 4k
☑ Mifare Plus S
☑ Mifare Plus X
☑ Mifare Ultralight / Ultralight C
☑ Mifare DESFire (nicht RandUID)
☑ Legic Advant
☑ further (SmartMX, etc.)

☑ ISO14443B (Calyso, CEPAS, Moneo)
☑ ISO14443-2 (iClass, Picopass)
☑ ISO14443-3 (SRX-RFID reader from ST Microelectronics)
☑ ISO15693
☑ iCode SL
☑ Tag-it HF-I (Standard Plus, Pro)
☑ My-D vicinity
☑ 24LR16/24LR64 from ST
☑ Fujitsu MB89R118 / MB89119
☑ LRI 2k/64k from ST
☑ further (LegicAdvant, etc.)

Value formatting
Storage format: Hexadecimal
Fixed length: 0
Note: For a fixed field length is filled with leading zeros.

☞ **Note:**
It is often better to work with the serial numbers with the hexadecimal format, because the serial number larger then 7 bytes and contains the manufacturer information’s.

7. Tips and Tricks

7.1. Adding pre-zeros to the ID

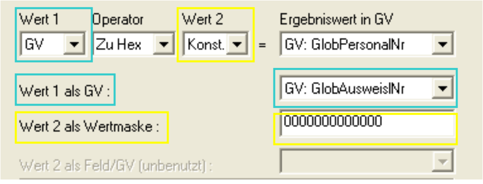
With the help of the transformation possibilities of hex- to decimal values or reverted, the total length of the string can be corrected by specifying a value mask.

Conversion to hex value:

The "to hex" operation is available for this.
The value mask serves as a measure for the number of digits. It is also possible to use more digits than a value mask than the initial value.
For example, you can add leading zeros.
Examples dec. in hex. with 13-character value mask:

The same applies, of course, to the conversion of decimal values into hex.

Wert 1	zu Hex	Wert 2	Ergebnis in GV
000005202	zu Hex	0000000000000	0000000000804
164166271	zu Hex	0000000000000	0000009C8FA7F
000002052	zu Hex	FFFFFFFF00000	FFFFFFFF00804
164166271	zu Hex	FFFFFFFF00000	FFFFF09C8FA7F
GV GlobAusweisNr	zu Hex	Wert 2 als Wertmaske	GV GlobPersonalNr



Wert 1: GV
Operator: Zu Hex
Wert 2: Konst.
= Ergebniswert in GV: GV: GlobPersonalNr
Wert 1 als GV : GV: GlobAusweisINr
Wert 2 als Wertmaske : 0000000000000
Wert 2 als Feld/GV (unbenutzt) :

!

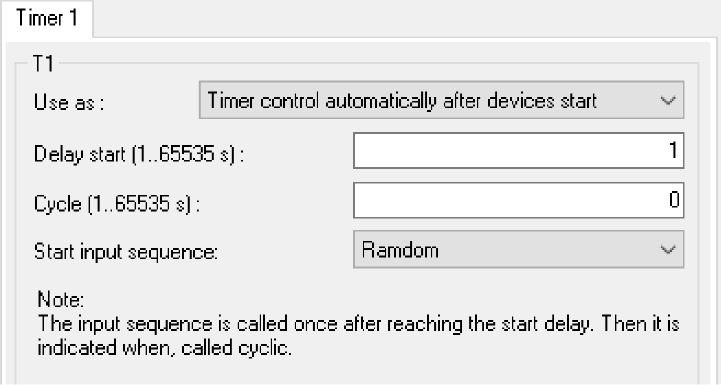
Attention**:**
The data in a GV is not provided with an index as to whether it is a Hex or Dec. value. It is therefore important to ensure that a hexadecimal value is not converted into a hexadecimal value or a decimal value into a decimal value.

7.2. Random number and sample check

With Datafox devices, it is possible to perform a random check based on a random number.

This requires some changes in the setup.

First, a timer is set. This timer executes an input chain after each restart.



Timer 1

T1

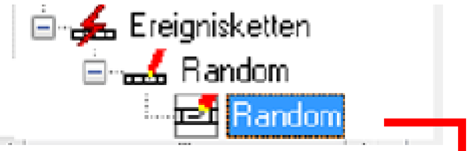
Use as : Timer control automatically after devices start

Delay start (1..65535 s) : 1

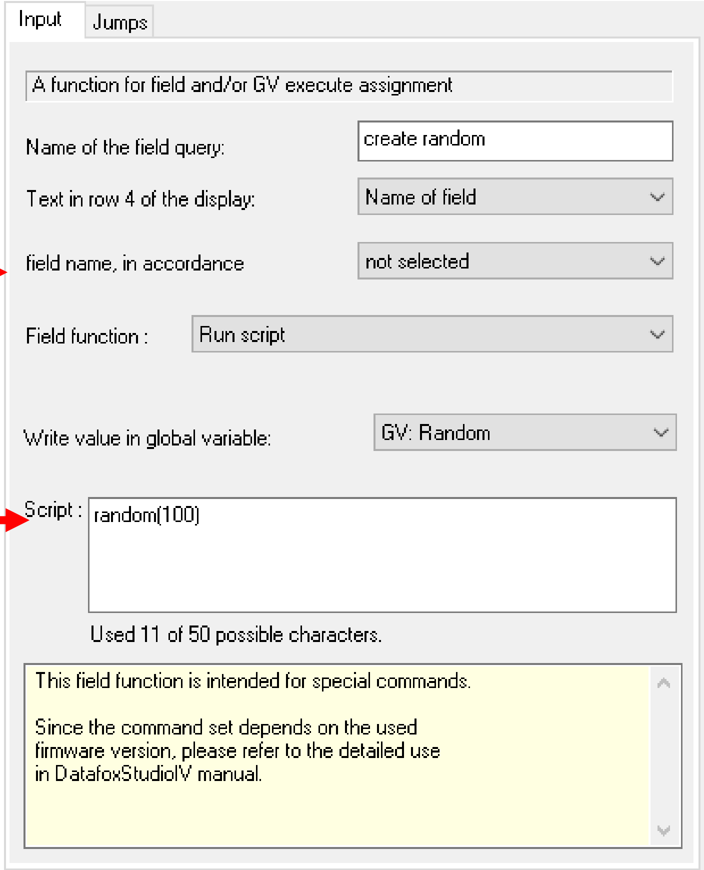
Cycle (1..65535 s) : 0

Start input sequence: Ramdom

Note:
The input sequence is called once after reaching the start delay. Then it is indicated when, called cyclic.



Ereignisketten
Random
Random



Input | Jumps

A function for field and/or GV execute assignment

Name of the field query: create random

Text in row 4 of the display: Name of field

field name, in accordance: not selected

Field function : Run script

Write value in global variable: GV: Random

Script : random(100)

Used 11 of 50 possible characters.

This field function is intended for special commands.

Since the command set depends on the used firmware version, please refer to the detailed use in DatafoxStudioIV manual.

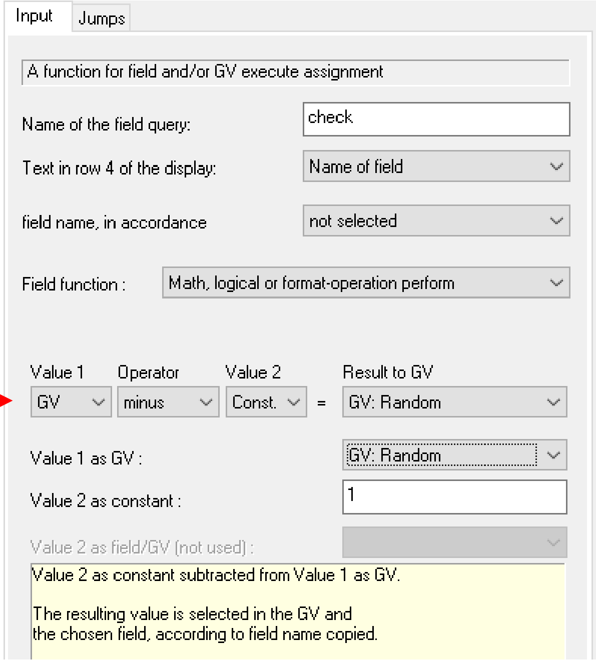
The "random" script is executed in the input chain.

In the case of "random (100)", a random number of 1-100 is output.

The calculated value is then written to a global variable.

In the function key that is responsible for Leaving, the following changes are made:

A mathematical-logical operation is created which calculates the variable in which the random value is located "minus one" for each transaction.



A function for field and/or GV execute assignment

Name of the field query: check

Text in row 4 of the display: Name of field

field name, in accordance: not selected

Field function : Math, logical or format-operation perform

Value 1	Operator	Value 2		Result to GV
GV	minus	Const.	=	GV: Random

Value 1 as GV : GV: Random

Value 2 as constant : 1

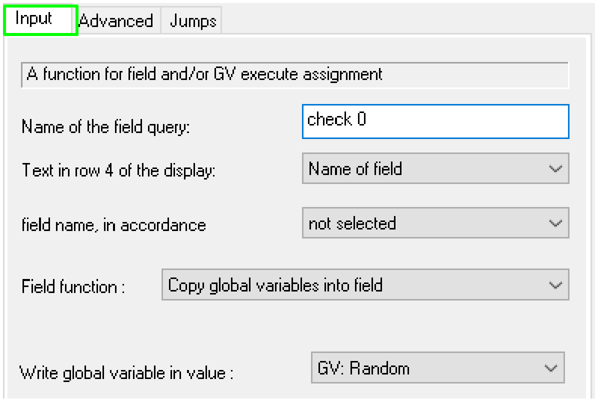
Value 2 as field/GV (not used) :

Value 2 as constant subtracted from Value 1 as GV.

The resulting value is selected in the GV and the chosen field, according to field name copied.

Next, a check is made.

To do this, use the "Copy global variable to field" field function and select the variable.



A function for field and/or GV execute assignment

Name of the field query: check 0

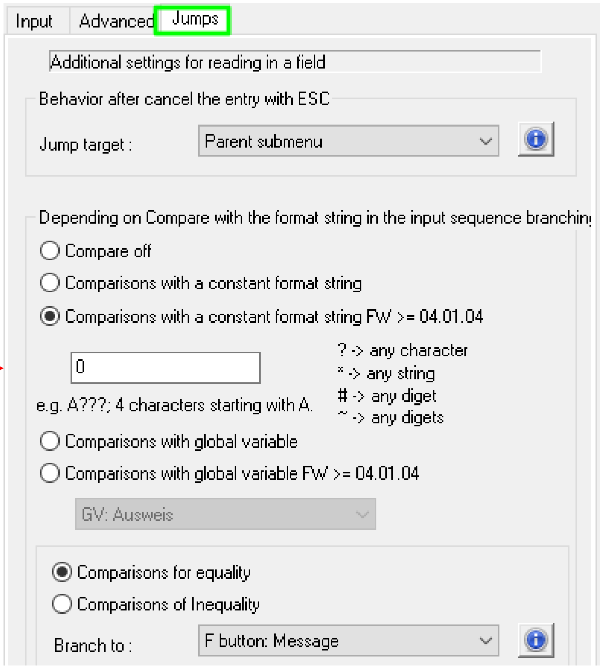
Text in row 4 of the display: Name of field

field name, in accordance: not selected

Field function : Copy global variables into field

Write global variable in value : GV: Random

The "Jumps" tab checks whether the variable corresponds to 0. If this is the case, a new input chain is executed.



Additional settings for reading in a field

Behavior after cancel the entry with ESC

Jump target : Parent submenu

Depending on Compare with the format string in the input sequence branching

○ Compare off

○ Comparisons with a constant format string

● Comparisons with a constant format string FW >= 04.01.04

0

e.g. A???; 4 characters starting with A.

? -> any character
* -> any string
-> any diget
~ -> any digets

○ Comparisons with global variable

○ Comparisons with global variable FW >= 04.01.04

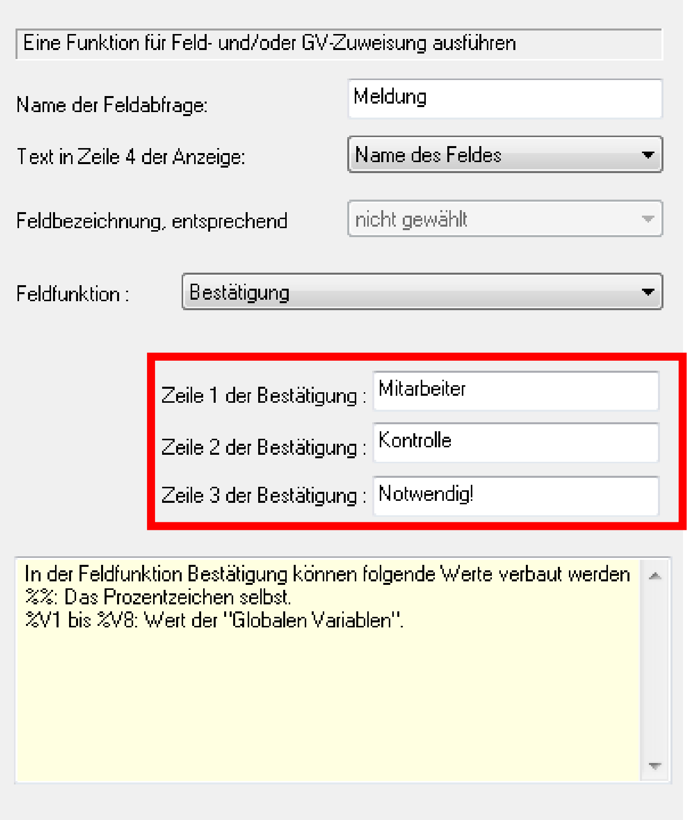
GV: Ausweis

● Comparisons for equality

○ Comparisons of Inequality

Branch to : F button: Message

The new input chain is called "message" in our case.



Eine Funktion für Feld- und/oder GV-Zuweisung ausführen

Name der Feldabfrage: Meldung

Text in Zeile 4 der Anzeige: Name des Feldes

Feldbezeichnung, entsprechend: nicht gewählt

Feldfunktion : Bestätigung

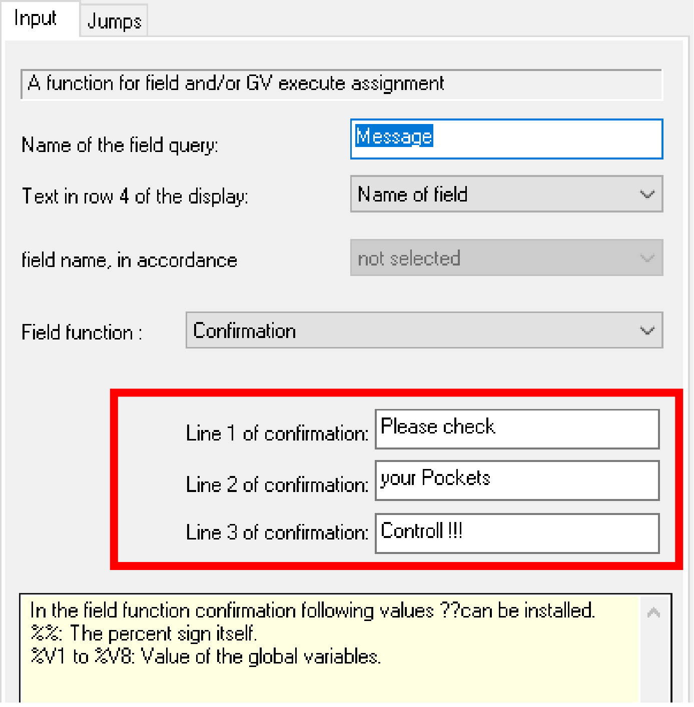
Zeile 1 der Bestätigung : Mitarbeiter

Zeile 2 der Bestätigung : Kontrolle

Zeile 3 der Bestätigung : Notwendig!

In der Feldfunktion Bestätigung können folgende Werte verbaut werden
%%: Das Prozentzeichen selbst.
%V1 bis %V8: Wert der "Globalen Variablen".

This field displays a message that indicates that an inspection is to be carried out.



A function for field and/or GV execute assignment

Name of the field query: Message

Text in row 4 of the display: Name of field

field name, in accordance: not selected

Field function : Confirmation

Line 1 of confirmation: Please check

Line 2 of confirmation: your Pockets

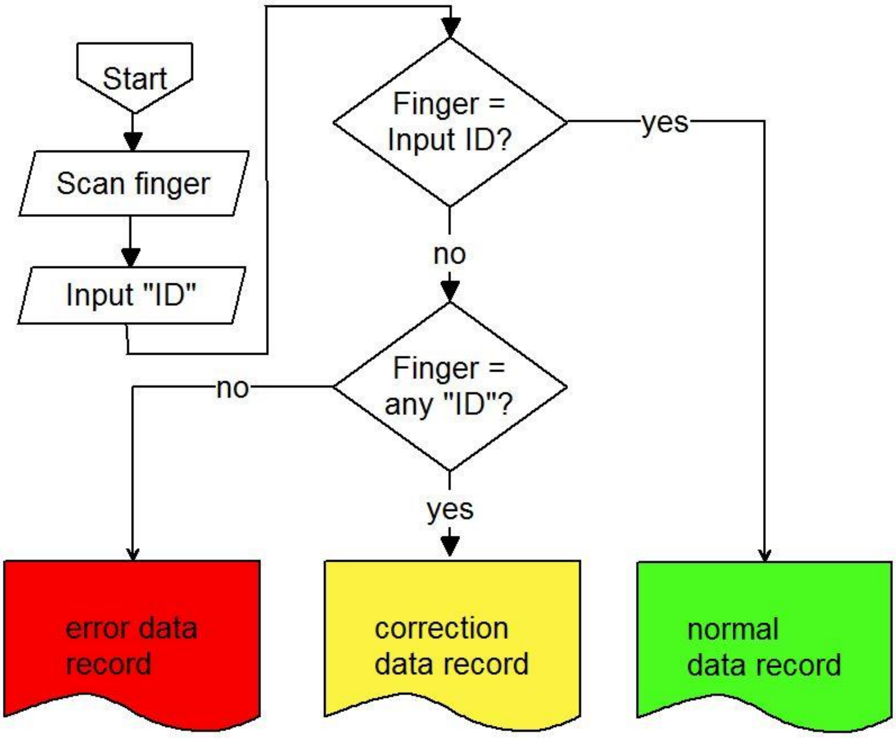
Line 3 of confirmation: Controll !!!

In the field function confirmation following values ??can be installed.
%%: The percent sign itself.
%V1 to %V8: Value of the global variables.

And in the last input chain, the randomscript is run again and a number is created again

7.3. Fingerprint: Verifikation mit Plausibilitätsprüfung via Identifikation

Da nicht immer alle Mitarbeiter Zeiterfassung via Fingerprint akzeptieren und so ggf. absichtlich für Fehlbuchungen sorgen, kann man zusätzlich zur Verifikation eine Plausibilitätsprüfung einbauen. Hiermit können fast alle absichtlich entstandenen Fehlerfälle durch ein geschriebenes Log bzw. den erweiterten Datensatz nachvollziehbar aufgedeckt werden. Die Funktionalität ist ein einem Demosetup



Die drei folgenden Szenarien können auftreten:

Korrekter Ablauf:
Ein Mitarbeiter Identifiziert sich mit seiner Personal ID und Verifiziert sich mit seinem Fingerabdruck. Ein normaler PZE Datensatz entsteht.

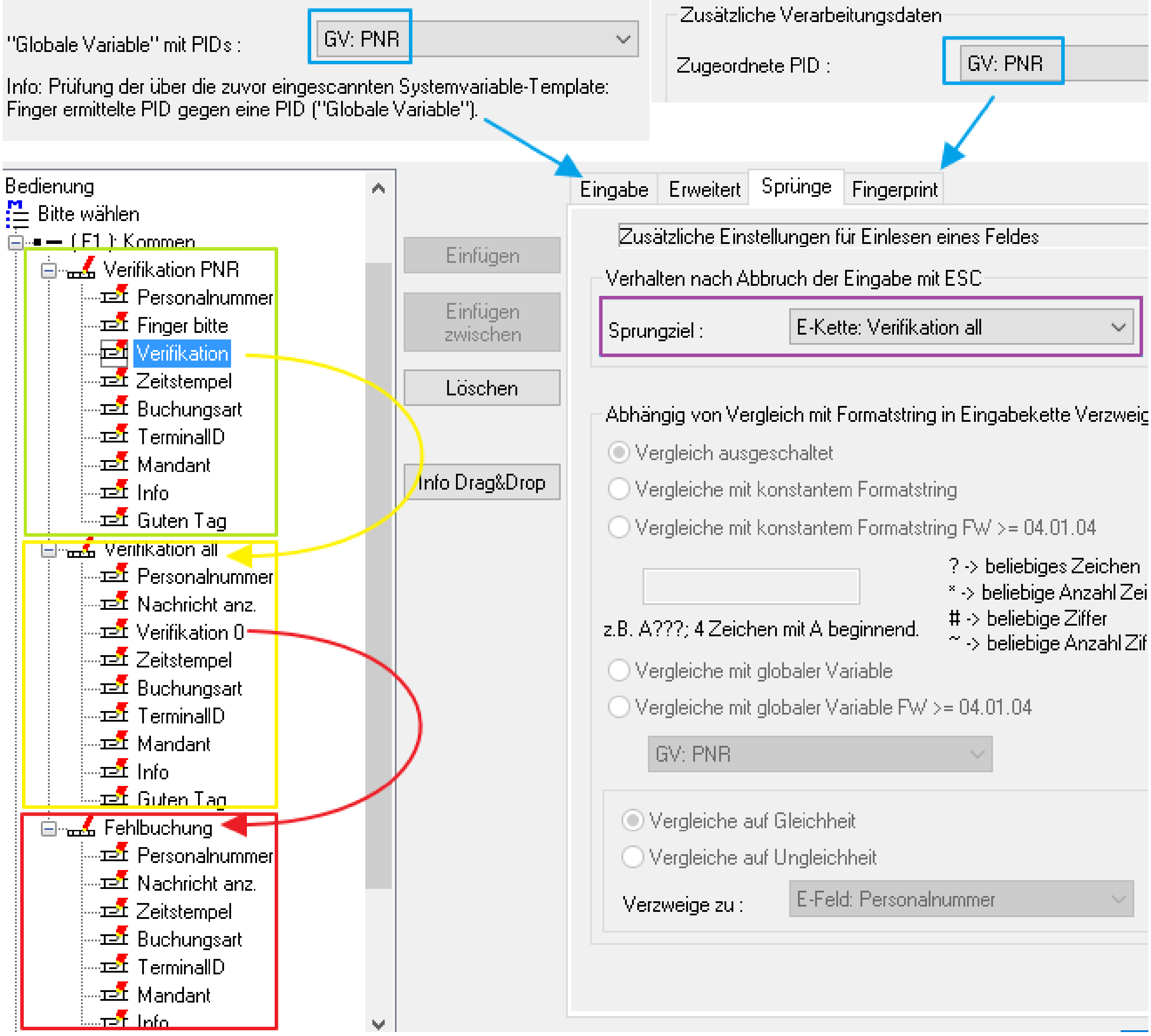
Buchung mit falscher Personal ID:
Ein Mitarbeiter Identifiziert sich mit einer falschen Personal ID. Der Finger wird im ersten Schritt gegen die zuvor eingegebene Personal ID geprüft und nicht gefunden. Bei einer erneuten Suche wird der Finger mit allen Personal ID´s verglichen und gefunden. Ein Korrektur-Datensatz entsteht.

Buchung mit nicht eingelerntem Finger:
Ein Mitarbeiter Identifiziert sich mit seiner Personal ID. Der Finger wird im ersten Schritt gegen die zuvor eingegebene Personal ID geprüft und nicht gefunden. Bei einer erneuten Suche wird der Finger mit allen Personal ID´s verglichen und auch nicht gefunden. Ein Fehlbuchungs-Datensatz entsteht.

Ein entsprechendes Setup finden Sie auf der DVD oder auf unserer Webseite unter den Beispielsetups EVO 4.3.

Umsetzung im Setup:

Unterhalb von den F-Tasten (Kommen, Gehen, Dienstgang) sind 3 Eingabeketten für die obigen 3 Buchungsfälle angelegt. In der ersten Eingabekette wird die Verifikation gegen die zuvor eingegebene Personal ID (GV PNR) durchgeführt. Schlägt dies fehl, wird ein Sprung zur Eingabekette "Verifikation all" ausgeführt. Ist die Verifikation erfolgreich, wird der normale Datensatz erstellt.



"Globale Variable" mit PIDs : GV: PNR

Info: Prüfung der über die zuvor eingescannten Systemvariable-Template: Finger ermittelte PID gegen eine PID ("Globale Variable").

Zusätzliche Verarbeitungsdaten

Zugeordnete PID : GV: PNR

Bedienung
- Bitte wählen
- [F1]: Kommen
  - Verifikation PNR
    - Personalnummer
    - Finger bitte
    - Verifikation
    - Zeitstempel
    - Buchungsart
    - TerminalID
    - Mandant
    - Info
    - Guten Tag
  - Verifikation all
    - Personalnummer
    - Nachricht anz.
    - Verifikation 0
    - Zeitstempel
    - Buchungsart
    - TerminalID
    - Mandant
    - Info
    - Guten Tag
  - Fehlbuchung
    - Personalnummer
    - Nachricht anz.
    - Zeitstempel
    - Buchungsart
    - TerminalID
    - Mandant
    - Info

Zusätzliche Einstellungen für Einlesen eines Feldes

Verhalten nach Abbruch der Eingabe mit ESC

Sprungziel : E-Kette: Verifikation all

Abhängig von Vergleich mit Formatstring in Eingabekette Verzweig

● Vergleich ausgeschaltet
○ Vergleiche mit konstantem Formatstring
○ Vergleiche mit konstantem Formatstring FW >= 04.01.04

? -> beliebiges Zeichen
* -> beliebige Anzahl Zei
-> beliebige Ziffer
~ -> beliebige Anzahl Zif

z.B. A???; 4 Zeichen mit A beginnend.

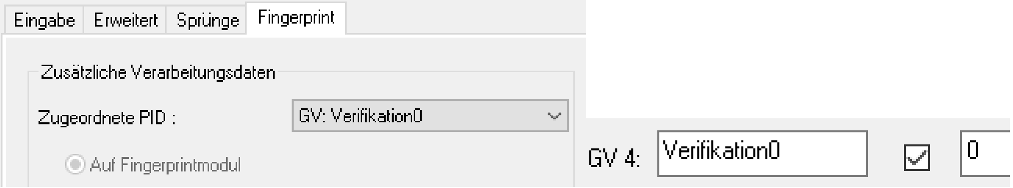
○ Vergleiche mit globaler Variable
○ Vergleiche mit globaler Variable FW >= 04.01.04

GV: PNR

● Vergleiche auf Gleichheit
○ Vergleiche auf Ungleichheit

Verzweige zu : E-Feld: Personalnummer

In der Eingabekette "Verifikation all" wird die Verifikation gegen den bereits gescannten Finger nochmals durchgeführt. Allerdings nicht gegen die PNR sondern gegen eine Globale Variable die mit 0 deklariert ist. Damit wird der Finger mit allen PNR´s verglichen. Hat eine Zuordnung Erfolg, so wird ein Korrektur Datensatz erzeugt. Andernfalls findet ein Sprung in die Eingabekette "Fehlbuchung" statt und es wird ein Fehlbuchungsdatensatz erzeugt.



Zusätzliche Verarbeitungsdaten

Zugeordnete PID : GV: Verifikation0

○ Auf Fingerprintmodul

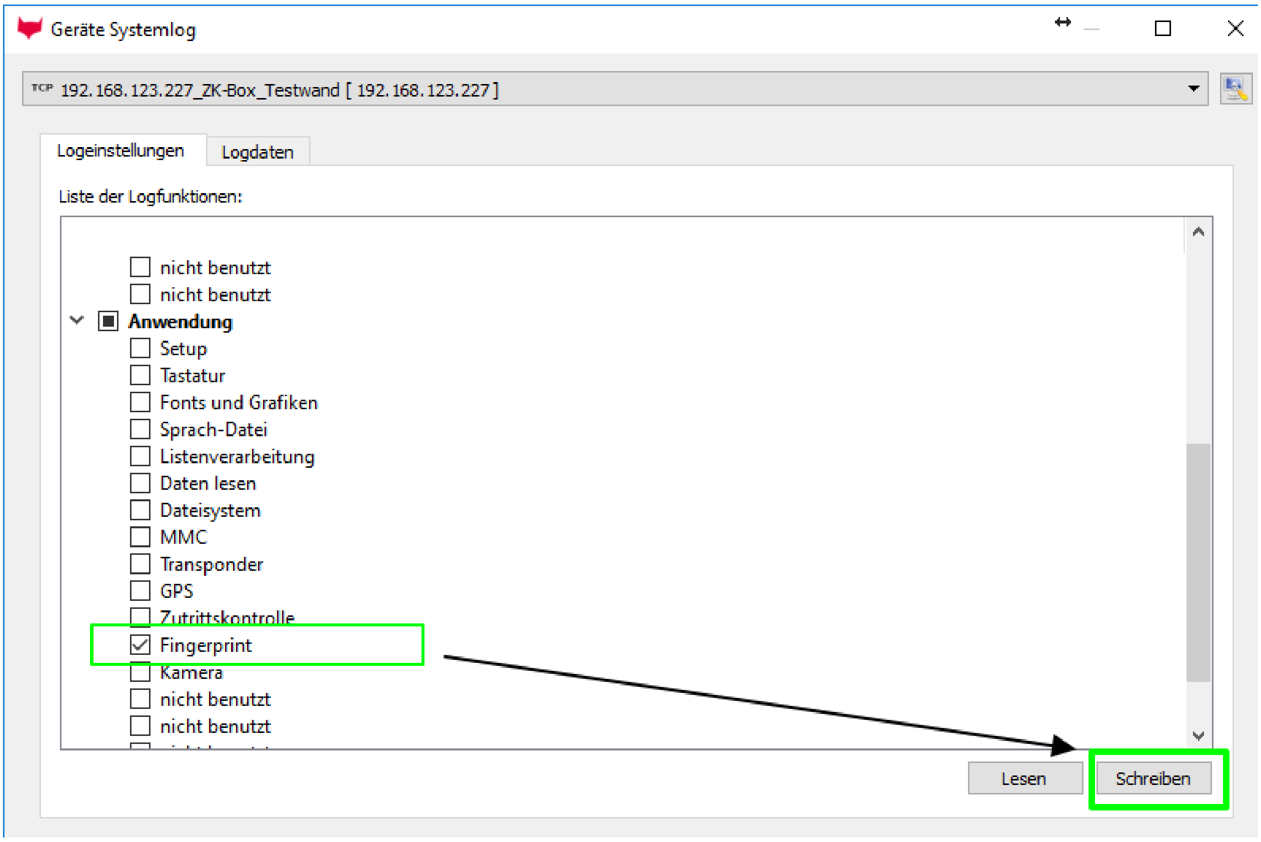
GV 4: Verifikation0 ☑ 0

7.4. Fingerprint: Manipulation ausschließen

Da nicht immer alle Mitarbeiter Zeiterfassung via Fingerprint akzeptieren und so ggf. absichtlich für Fehlbuchungen sorgen, kann man zusätzlich zur Verifikation eine Plausibilitätsprüfung mitloggen. Hier geschieht die Dokumentation über das korrekte Buchungsverhalten im Hintergrund des Gerätes.

Mitgeloggt wird zum Beispiel die eingegebene ID.
Ist diese unbekannt, wird dies gespeichert.
Wenn für den Finger eine korrekte ID gefunden wird, so wird diese ebenfalls mitgeloggt.

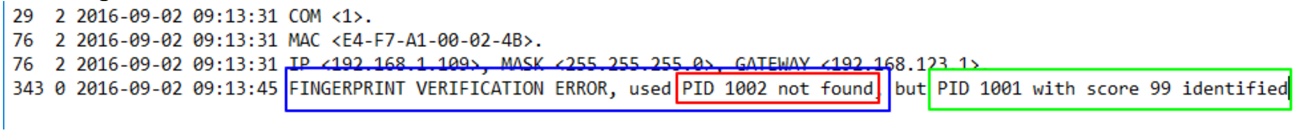
Um diese Funktion zu aktivieren, schalten Sie wie im Bild gezeigt, den entsprechenden „Fingerprint-Log“ hinzu.



Liste der Logfunktionen:

- □ nicht benutzt
- □ nicht benutzt
- ■ **Anwendung**
  - □ Setup
  - □ Tastatur
  - □ Fonts und Grafiken
  - □ Sprach-Datei
  - □ Listenverarbeitung
  - □ Daten lesen
  - □ Dateisystem
  - □ MMC
  - □ Transponder
  - □ GPS
  - □ Zutrittskontrolle
  - ☑ Fingerprint
  - □ Kamera
  - □ nicht benutzt
  - □ nicht benutzt

Das Log könnte dann so aussehen:



```
29  2 2016-09-02 09:13:31 COM <1>.
76  2 2016-09-02 09:13:31 MAC <E4-F7-A1-00-02-4B>.
76  2 2016-09-02 09:13:31 IP <192.168.1.109>, MASK <255.255.255.0>, GATEWAY <192.168.123.1>.
343 0 2016-09-02 09:13:45 FINGERPRINT VERIFICATION ERROR, used PID 1002 not found, but PID 1001 with score 99 identified
```

PID 1002 wurde eingegeben.
Der Finger wurde aber unter der PID 1001 gespeichert.

8. Index