

Datafox PZE-MasterIV Basic



Flexible data collection with method

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1 Introduction

1.1 Updates in this document

1.2 Alterations 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 ex- tension)	Build Build trou- bleshooting (with a new ver- sion the Build number is reset)
e. g. PZE-MasterIV Basic	04.	01.	01.	12

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.

date	version			
	manual	firmware	Studio/DLL	description
06. Juni 2007	4.01.04.16	4.01.04.16	4.01.04.16	new release

1.3 The device file archive (*.dfz)

1.3.1 Description

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

1.3.2 Function of the archive

The transmission routine of the device file picks out the fitting file from the device 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.

1.3.3 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 device file archive is Zip. Hence, you can open the archive with every standard Zip-program. Via the menu item "open with..." in the context menu you can chose 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 called Inhalt.pdf; you can gather from there which file (*.hex) of the archive matches your device. Extract the device file (*.hex) you want and rename it if necessary. A renaming of a file is always possible, 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 transmission takes place.

1.4 Typography of the manual

exposition	contextual meaning
< <i>PZE-MasterIV Basic, SoftwareVersion.pdf</i> >	file names
< <i>Setup => edit</i> >	a path via a program menu at DatafoxStudioIV
<i>communication</i>	a single menu item
FW	abbreviation for firmware (software in the device)
(from FW V 3.1.5)	shows that this function is supported from the firmware version 3.1.5 onwards
SW	abbreviation for software
HW	abbreviation for hardware
(from HW V 2.0)	shows that this option is available from the hardware version 2.0 onwards
GV	abbreviation for global variable
ZK-list	abbreviation for access control lists, where the configuration data for the access control is provided
cross-reference 1.4	In the electronic document you can use the cross-references to jump within the manual. Therefore, cross-references are depicted in blue and crossing them the cursor takes the shape of a hand .



Note:

You will get useful advice which helps you to avoid possible mistakes during the installation, configuration and commissioning.



Caution:

There will be advice given you definitely have to keep to. Otherwise it will lead to defective function of the system.

1.5 Important general advice



Caution:

Use the devices only according to regulations and following the assembly, commissioning and operating instructions. Assembly and commissioning may only be carried out by authorized and qualified personnel.

Subject to technical alterations.



Caution:

Because of technical development illustrations, functional steps, technical processes and data can differ slightly.

Datafox PZE-MasterIV Basic has been developed to create a flexible terminal for time and attendance, order time collection and access control that can easily be integrated. The device is robust and easy to use. You save time through the PC - setup program, because the device is quickly and easily configured for its application field.

This manual describes the creation of work flows for time and attendance with the setup program.

Before deciding for the programming in C you should check if the functions of the setup program do fulfil the system requirements after all , because then the development effort will be reduced to a minimum. With some exercise it will be possible to compile a complete entry within half an hour. If you need functions that are not available we should get into contact.

If you need support at the compilation of setups we offer you our services. Because of our wide experience in dealing with the setup we are very quick and can make your setup even more efficient through useful advice, so that the entry at the device can take place quickly and reliably.

Through our experience and with our specialized knowledge of method, hard- and software we produce devices and find solutions concerning data collection, that prove themselves with functionality and practicality. We offer solutions for REFA/ job analysis, time and attendance, production data collection, machine data collection, process data collection and mobile data collection. Our team develops and produces standardized and inexpensive systems. We create solutions using the modular principle and expand them as required. Our service includes consultation, system definition and implementation as well as workshops and training to support you in the introduction.

Guarantee restriction

All data in this manual has been checked carefully. Nevertheless, errors cannot be excluded. Therefore, there cannot be given guarantee nor taken legal responsibility for consequences that derive from errors of this manual. Of course we are grateful if you point out errors to us. Subject to change because of technical improvements. Our general terms and conditions of business apply.



Note:

Because of the DatafoxStudioIV the Datafox devices have many functions and combination of functions; therefore, it is not possible to test all functions and their combinations in case of updates. This applies especially to all the setups you created as a customer. Before updating your device please test if your individual setup works without errors. If you detect an error contact us immediately. We will rectify the mistake at short notice.

2 System structure and functional principle

2.1 Software versions and compatibility of device firmware and setup

The firmware (operating system) of the device and the setup program (*.aes data file = application program) form a unit. With the setup program the configuration for the device (definition of the data tables and the data fields, operation, etc.) is compiled and transmitted to the device. Then the firmware works in accordance with the setup adjustments.

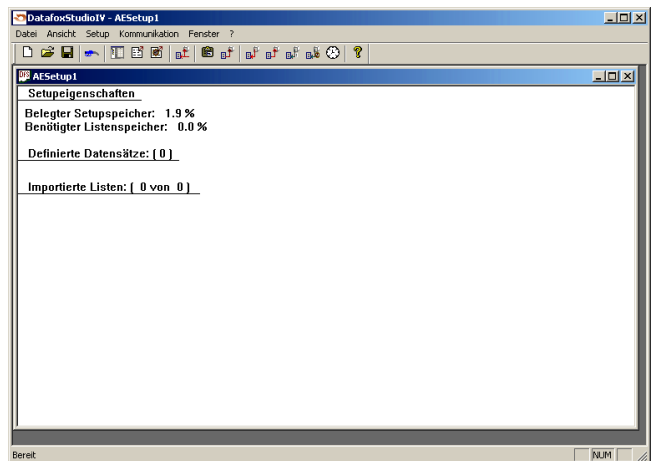
Firmware in device



After switching-on the current firmware version is shown on the display. The firmware can be transmitted to the device with DatafoxStudioIV.

At delivery a demo setup is at the device. The description of the demo setup you will find in chapter 5.3.1. It is advisable to go through the example at first comparing the process with the setup. That way a quick introduction to the configuration is possible.

Setup program on PC



After starting the setup program the user interface is displayed.

You can get information about the current software version via the info dialog of DatafoxStudioIV. Click on the < ? > in the menu bar and then on < info over DatafoxStudioIV >..



Compatibility of firmware and DatafoxStudioIV

The DatafoxStudioIV is downward compatible within the firmware versions 4.x.xx. The second number shows the compatibility group. If this number is changed, a more up-to-date firmware generation must be used.



Note:

Devices with an older firmware can also be configured with DatafoxStudioIV, but only that functions are provided by the device which are also provided by the older firmware. However, it is impossible to configure a more up-to-date firmware version with an older DatafoxStudioIV-Version.

That means, the manual version that corresponds to the firmware with the appropriate setup is always relevant for the possible functions. The manual version and the appropriate DatafoxStudioIV always have the same index. It is impossible to configure a firmware with a DatafoxStudioIV version that is older than the firmware. Recommendation: If possible use the appropriate DatafoxStudioIV version. This version always has to be \geq the version of the firmware.

The data file:

< *PZE – MasterIVBasic, SoftwareVersionen Stand xxx.pdf* > shows which functions are provided by which software release. You will find the file on the CD. Please also comply with the instructions given in the chapters of the manual.

The updates are available for download on our internet page www.datafox.de.



Caution:

When the new device is delivered always the firmware version recently released is used. If you wish to work with an older version please carry out a downgrade. Please comply with the instructions in chapter 2.2.2.

2.2 Firmware



Caution:

A firmware update or downgrade is a very sensitive process. Possibly a reset of the main communication to RS232 may occur. In any case comply with the details about the compatibility in the software version list.

2.2.1 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 kept.

For example, when changing from version 04.00.xx to version 04.01.xx there must be a version 04.00.23.769 or higher as minimum requirement to carry out the update to version 04.01.xx successfully.

2.2.2 Firmware downgrade



Caution:

When carrying out a firmware downgrade the firmware always has to be transmitted to the device twice. This has technical reasons. Errors on the display of the device after the first transmission can be ignored.

2.3 System structure

2.3.1 Device functions

In principle, Datafox PZE-MasterIV Basic offers two possibilities to create workflows for data collection.

- ▶ Via the PC-setup program "DatafoxStudioIV" many processes for data collection can be created quickly without programming knowledge. Such a process is a setup for the device and can be loaded on the device via the communication program. Devices using such setup programs are equipped with the standard firmware at production. (Details about the software versions see chapter 2.1)
- ▶ Free Programming in C. The progression packet offers many basis routines and a supporting program which can be used as basis for own programs. Devices for c-programming are delivered without the standard firmware and only in connection with an instruction.

2.3.2 Communication

There are 4 possibilities available for communication/ data transmission.

1.) Setup- and communication program

The setup- and communication program supports both the setting of the device settings and the important possibilities of data transmission (these data transmission functions are for test purposes primarily). Of course they can also be used for regular data transmission. But this is disadvantageous, because 2 work steps are necessary: At first you have to read out the data via the setup- and communication program and to file them as ASCII-file. Then the second program has to be opened and the file must be imported.

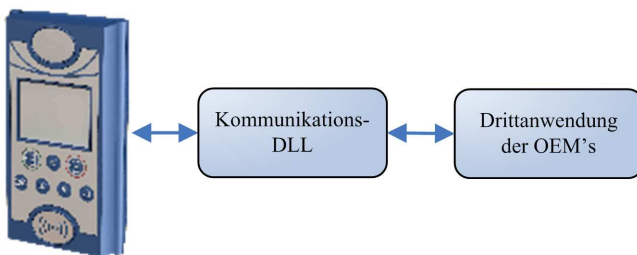


Figure 1: Setup- and Communication programm

2.) **Communication DLL**

The direct way for communicating with the ... is the communication DLL. It can be started with any Windows application. The whole process can be realized without any intermediate files and also be set individually. We advise software producers to choose this method for the integration of the devices. You can find the DLL and the appropriate explanation on the installing-CD.

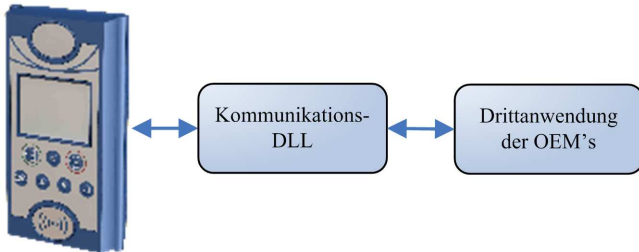


Figure 2: Communication-DLL

3.) **Direct integration via C-Source code**

There are some operating systems that do not support the use of DLLs. In order to solve this problem there is also a C-Source code available on the installing-CD. That way communicating with programs designed under Unix or Linux is also possible.

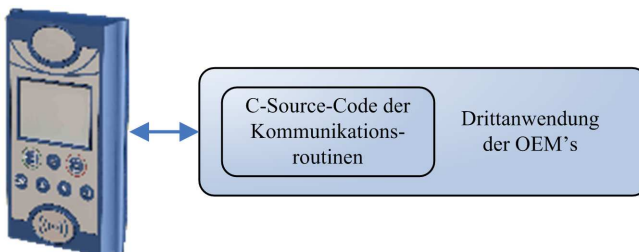


Figure 3: Implementation via C-Sourcecode

4.) **Datafox-Talk**

Via Datafox-Talk data transmission with Datafox AEIII+, Timeboy and the MasterIV-series is possible on file- and database layer. Therefore it is an alternative to communication via DLL. An advantage of this method is, that no installation is necessary. The data are taken over and displayed as ASCII-file. If desired and with computation a direct connection to databases is possible. There the costumer has to decide which database tables and fields shall be filled. Datafox-Talk supports all functions for transmitting data and for setting the device. Via timing the times for transmission can be set freely. Via additional modules the data can also be transmitted per radio, internet, telephone-/ mobile network.

Advantages:

- ▶ Via Datafox-Talk integration of the devices can be realized easily and fast.
- ▶ Transmission takes place automatically and is ensured via a log file.
- ▶ The data are accessible forthwith.
- ▶ There is no programming work for data transmission.

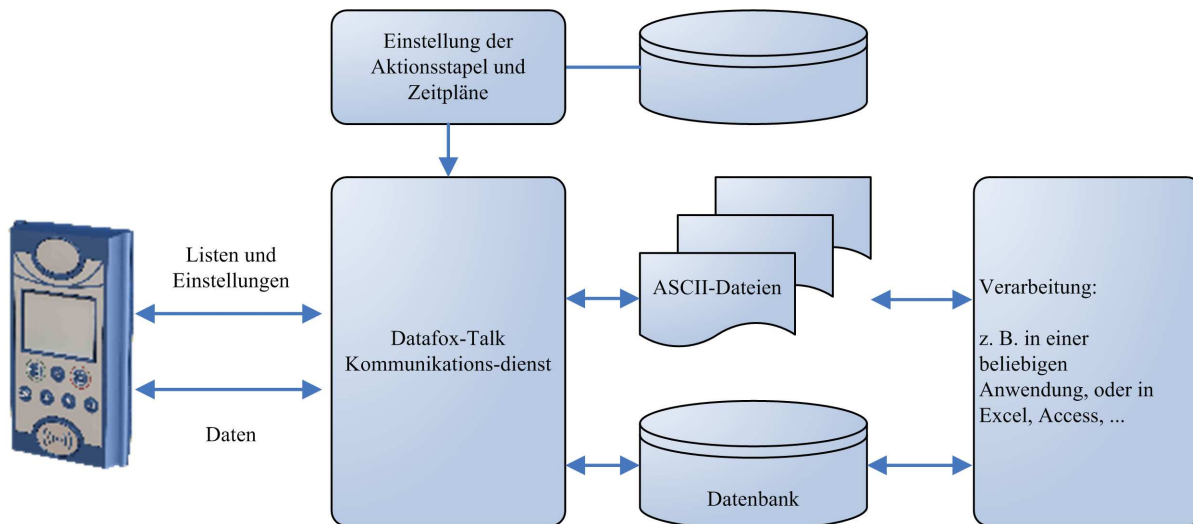


Figure 4: Datafox-Talk

Supports the following types of transmission:

- ▶ RS232
- ▶ RS485
- ▶ TCP/IP
- ▶ WLAN
- ▶ Funk 433 MHz
- ▶ Modem (GSM/GPRS)
- ▶ Cellular radio, mobile phone with integrated modem

The following actions are possible:

- ▶ Transmitting setup to the devices
- ▶ Setting a clock
- ▶ Transmitting lists to the devices
- ▶ Reading out of data
- ▶ Writing log files and error lists where necessary
- ▶ Filing of data as ASCII-file, Excel-file, Dbase-File or ACCESS-database

The actions are applied as batch and carried out according to the settings of the timing. Timing allows the permanent collection of data (polling) and the collection at any time. The setting via time model is very easy. The working through the actions is logged and therefore always traceable. The same applies to the transmission of lists. Lists are used e.g. to back-up applications, accounts, occupations etc. or to transmit balances.

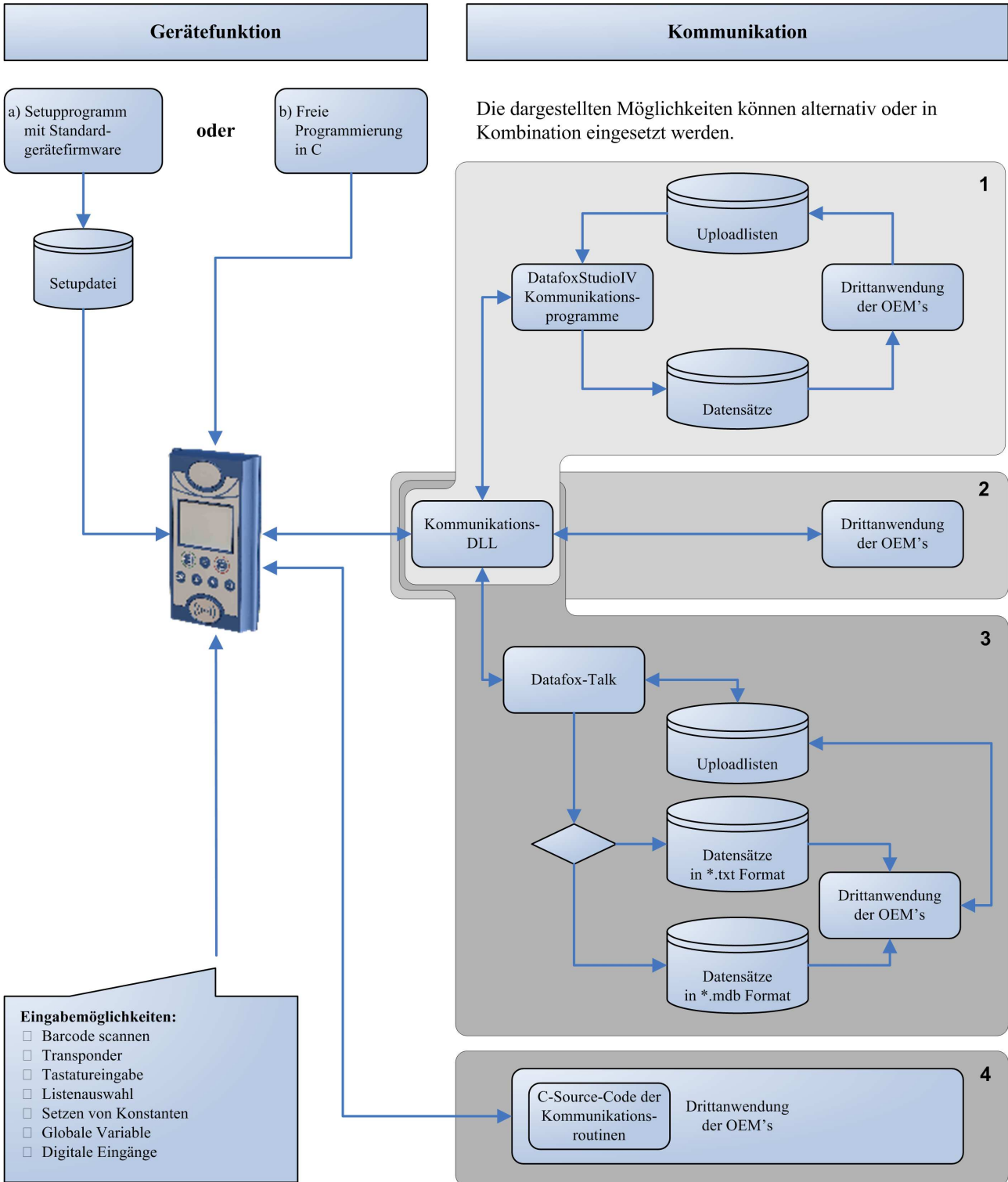


Figure 5: System structure

3 PZE-MasterIV Basic

The PZE-MasterIV Basic can generally also be used outdoors. But then you have to comply with the temperature range of -20 to + 70°C from the data sheet. If the device is installed outdoors, suitable measures have to be taken to protect the plug of the device against humidity. Therefore, IP64 can only be granted if the device is mounted and its backside is completely covered and damp proofed.

It has to be taken care of a suitable protection from direct sunlight because the synthetic materials are not 100% UV resistant. Fading simply is an optical defect which does not restrict the function of the device.



Caution:

Pleas keep in mind that MasterIV terminals use a flash memory. According to the manufacturer each memory sector (512 byte) can be written to a maximum of 100,000 times. The firmware of the terminals distributes the access to the memory sectors, this technique is called wear levelling. Bad blocks in case of write or read failures are not used anymore. However, despite this technique it is not advisable to write the memory too frequently. The application should initialize a new list transfer only after a change of the list data but not cyclically.

Keep in mind the message - FlashService - in the display of the device. It means that the live time of the flash memory according to the manufacturer instruction will be reached soon. Then the device has to be sent to Datafox for service.

3.1 Technical data

CPU	Controller	8 bit, 16 MHz
	Uhr	real time clock
Program memory	Flash	128 Kbyte
Data memory	Flash	2 MB default
Display	LCD	graphic 1/4 VGA 320 x 240 pixel, 82 x 62 mm
	Backlight	LED-Backlight
Keyboard	Typ	tactile feedback with full switch way
	Size	diameter 14 mm
	Number of function keys	7
Power supply	Power supply	24 volts of change tension or DC voltage
	Lithium battery	care of the clock with stream failure
Power consumption	max.	7,2 Watt
	Basicdevice	4 Watt
Dimensions	length x width x depth	237mm x 130mm x 55mm
Weight	without power supply	650 g
Environment factors	Environment temperature	-20 bis +70 °C
	Protection class	IP54 in mountet position
Software	Configuration program	Setup program for arrangement witout programming
	Communication tools	Communication-DLL
Data transfer	RS232 /RS485	RS232 und RS485 in basic unit
	TCP-IP (option)	TCP/IP use via integrated TCP/IP stack
Reader connection	RS232 external	connection from cash code reader, magnet card reader etc.
Options	Transponder reader	integrated: Unique EM4102, Hitag
	Column	Column for free putting up

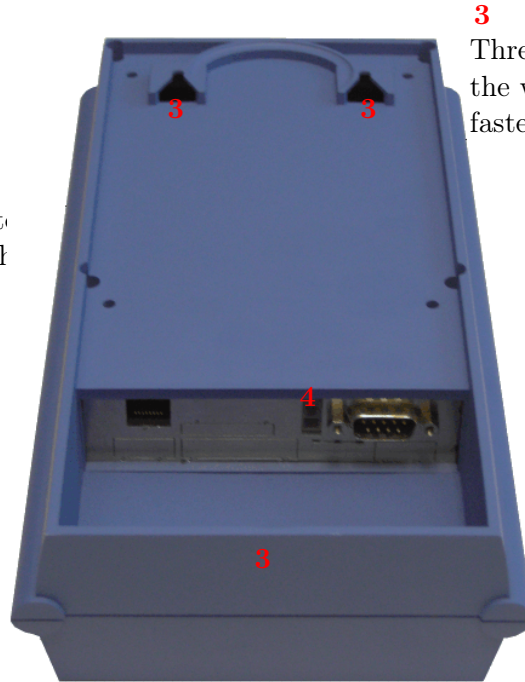
Table 1: Technical data of the PZE-MasterIV Basic HW-Version 2 Subject to technical alterations.

3.2 Connection

The plug which is only accessible from behind is at the lower third of the double shell casing. In this way the plugs are completely covered when the device is mounted. Thus, the manipulability is greatly restricted. The power supply unit is at the same package dimension. You can find a drilling template that helps mounting the device in the appendix of the manual.



- 1** LCD-Modul
320x240
Pixel
- 2** Transponder
reader inte-
grated in th
terminal



- 3** Three eyes for
the wall
fastening; screws are enclosed

- 4** Connection for a power supply
unit 24 V AC, 300 mA, Datafox
Item no. 105108. If the de-
vice is mounted on a patress box
and there is only one screw ter-
minal available, just cut the 230
V plug and connect the cores to
the screw terminal.

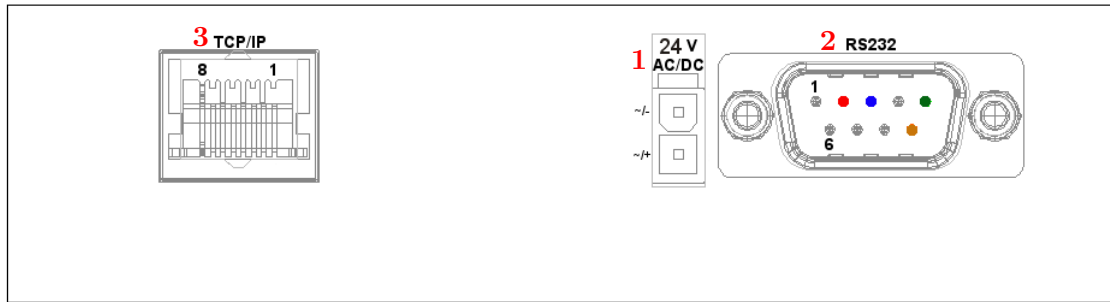


Figure 6: Edge connector of the PZE-MasterIV Basic

Designation	Plug	Pin	Description
Power supply	1		24 V 300 mA AC/DC (f a DC voltage is connected, the polarity is to be followed.)
RS232 interface D-Sub 9 pole	2	2	TxD
		3	RxD
		5	GND

Table 2: Overview over connections with pin assignment

3.2.1 Power supply

The PZE-MasterIV Basic is energized (24 V 300 mA power supply unit) by the Molex connector (1) in figure 6.

!

Caution:
In principle, only one voltage source may be connected to the PZE-MasterIV Basic. Use a 24 V/ 300 mA AC/DC power supply unit for this.

3.2.2 Ethernet interface

!

Caution:
Power over Ethernet (PoE) describes a process with which network-compatible devices can be energised via the 8-core Ethernet-wire. The internal TCP/IP module of the PZE-MasterIV Basic is not PoE tolerant.

The device can be integrated into a network of companies via TCP/IP via the RJ45 plug (3) in figure 6.

3.3 Commissioning

On delivery the device is already in working order and configured with a demo setup so that you immediately can test the input. After having plugged in the power supply unit the device will switch on automatically. The PZE-MasterIV Basic automatically starts booting, recognition of the hardware options and loading the setups. After having finished booting the device switches to the operation. Now the PZE-MasterIV Basic is ready for use. Only use power supply units with appropriate power to establish the power supply (see chapter 3.2.1).

On delivery the device is set for a communication over an RS-232 connection with 38400 Baud.

In chapter 3.5.1 you can find a description how to change these settings.



Note:

Before changing the communications read the corresponding paragraph in chapter 3.6.

3.4 Operation

General guidelines for the operation via keyboard

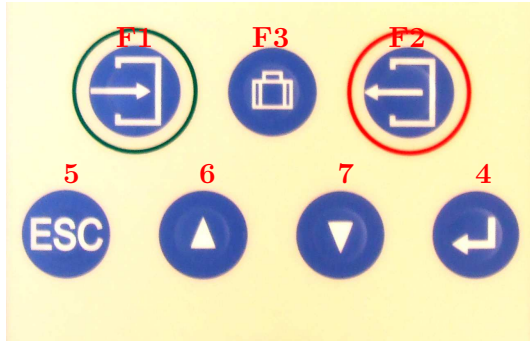


Note:

Keep to the given order of the key sequences. Otherwise, you will switch to an input chain and the desired function will not be available.

3.4.1 Keyboard

The keyboard of the PZE-MasterIV Basic is structured as follows:



- F1 e.g. input chain entry
- F2 e.g. input chain exit
- F3 e.g. input chain business errand
- 4 (ENTER) to confirm an input
- 5 (ESC) to stop an input
- 6 and 7 to navigate into a list

Figure 7: Keyboard of the PZE-MasterIV Basic

3.4.2 Key sequences

- ⇒ You can reach the start-up options via the M-key during the booting
- ⇒ You reach the BIOS via the key sequence ▲ + ▼ or from FW V 04.01.01 on also via ESC + ↵.
- ⇒ From FW V 04.01.01 on you can reach the transponder menu via ESC + F1. In older FW V it is a sub-point in the BIOS.
- ⇒ Use the keys and the menu navigation to select functions. Confirm with the ↵ key.
- ⇒ If you press ESC a return takes place in accordance with the settings in the setup program.
- ⇒ In order to select a list entry scroll with the arrow keys and confirm your selection with ENTER. Your selection is highlighted in grey.

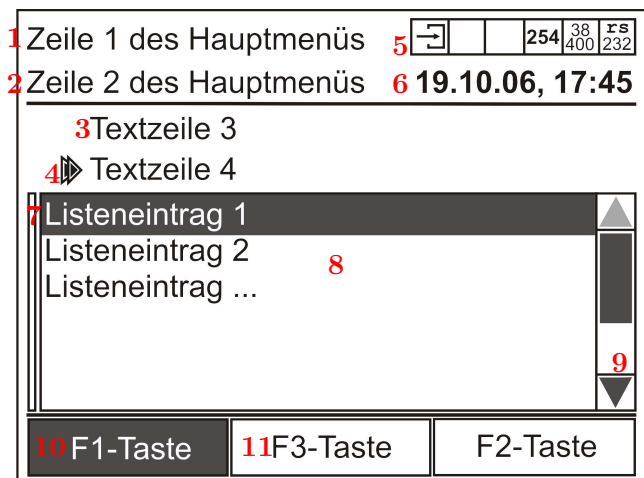
Buzzer:

The buzzer gives a response to the data input.

1 beep = correct input

2 beeps = input error

3.5 Menu structure and menu navigation at the display



1 and **2** are texts for the main menu that are free to define.

In the toolbar **5** are displayed on the right side the current configuration parameter and on the left side the symbol for the active F-key.

If the device is within an input chain, date and time are displayed at position **6**. The name of the input chain or the submenu is displayed here **3**. This line **4** displays the current input field or additional text in a submenu.


Figure 8: Display PZE-MasterIV Basic

A selected list entry **7** is highlighted in grey. Submenus, menu items and list data are displayed in the list **8** for selection. You can scroll the list **9** via the **▲** + **▼** keys. The F-keys F1 to F3 and their names are displayed at the footer of the display. The active **11** F-key is highlighted in grey.

3.5.1 System menu (bios)

You can make directly different basic settings at the terminal via the system menu. All settings - except the communications and the bus number - can also be made through the DatafoxStudioIV. In order to enter the system menu BIOS press a key sequence (see chapter 3.4.2). If you have a password for the system menu, enter it via the **▲** or **▼** keys and confirm it with the **↵**-key. "Bios" is displayed in line 2 of the main menu.

In order to select a menu item scroll with the **▲** or **▼** keys and confirm with the **↵**-key. If N/A is displayed behind a component, this component is not available. All possible actions in the bios are displayed in the footer of the display. In order to switch back step by step press ESC. This is also the way how you leave the bios.



Note:
Note the following instructions to edit the BIOS-data:

- ▶ Place the cursor via the F1 (left) and F2 (right) keys.
- ▶ Navigate in a list and change values via the arrow keys: **▲** = up or (+1) **▼** = down or (-1).
- ▶ Press **↵** ENTER to apply the changes or press ESC to reject them.

▶ **terminalinfo**

Display of the serial number, firmware version and build date of the firmware.

► **system**

Via *< global variables >* all defined global variables are shown with the supplied values. It is not possible to change the values. *< Double input >* defines the period of time one has to wait before the card can be read again. The range of permitted values is from 0 to 65499. You can define the display duration of the function "confirm" via *< demand timer >*. The range of permitted values is from 0 to 255. The parameter *< recordfilllevel >* displays the percentage of the capacity utilisation of the memory of the terminal.

► **communication**

First there will be an inquiry with *< break communication? >*. If you confirm with ENTER, the communication will be broken. You can detect an interruption of the communication in the toolbar when only the PZE-MasterIV symbol is displayed on the left and all other fields are empty.

■ **interface**

Here it is possible to select the communications (RS232 or TCP/IP) via the arrow keys and to confirm the selection with ENTER. Each communication has different parameters which have to be set if necessary. You can find further descriptions of the parameters in chapter 3.6.

■ **baud-rate**

You can select 9600, 19200 or 38400 as baud-rates.

■ **timeout[100]**

Here you can select a period of time for the communication in ms that constitutes the waiting time till the output of an error message. The range of values is between 100 and 2000. The input will be rounded down to 10.

■ **TCP/IP**

Not all displayed values can be changed. You can find a further description of the parameters in chapter 3.6.3.

If you press the ESC-key the device switches back to the bios menu.

► **display/buzzer**

Here you can set the optical and acoustic values of the device.

■ **LCDlighting**

You can choose between low, middle and high for the backlight.

■ **LCDcontrast**

Is display contrast is set by a value between 0 and 100.

■ **buzzer**

The warning tone can be set low or loud. werden.

► **date&time**

You can set date and time here as well as the automatic change from summertime to wintertime.

3.6 Communications

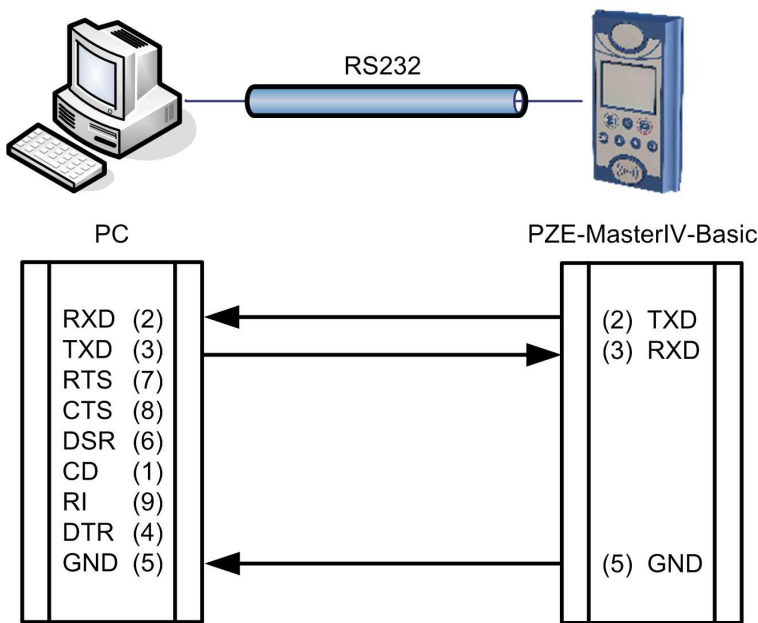
The PZE-MasterIV Basic has different interfaces for communication (dependent on features and hardware version). Thus, peripheral (e.g. bar code- or transponder reader) can be connected to the device or a communication with the device is possible. The configuration can partly be done at the device, e.g. change the communication and set the baud rate. Further configuration can only be done via the DatafoxStudioIV for safety reasons, e.g. GPRS configuration.

3.6.1 Communication via RS232

3.6.1.1 Requirement

For a communication with a PZE-MasterIV Basic over an RS-232 connection, the device has to be set for this communication in the system menu-BIOS (see chapter 3.5.1). Furthermore, baud rate and timeout of the RS232-interface of the terminal and the PC must be coordinated. Permitted baud rates are 9600, 19200 and 38400. The timeouts have to be between ≥ 100 and ≤ 2000 . When you select RS232 for communication the timeout is set on 100 by default.

3.6.1.2 Connection



A single device can be connected to the PC directly via the RS232-interface (position 2 in figure 6). The cable must not be longer than 15 m. Use a RS232 cable with a 1:1 configuration, corresponding to Datafox item no. 20010, as connecting cable.

Figure 9: Connection of the PZE-MasterIV Basic with the PC about RS232

3.6.1.3 Conversion of RS232 to RS485

Up to 31 devices can be connected to a serial interface of a PC or server via a RS232-to-RS485 converter. In this case the devices are connected via a RS485 bus. The power supply can be established using a central power supply unit with adequate power. Note that the fall of voltage is dependent on wire cross-section and length.

The pin assignment of the converter will be demonstrated using the Datafox converter RS232/485 (small) as example. Gather the wiring of the RS485 bus from the following examples.

! Caution: Pay attention to the hardware version given in the examples. It is a precondition for the prevailing example.

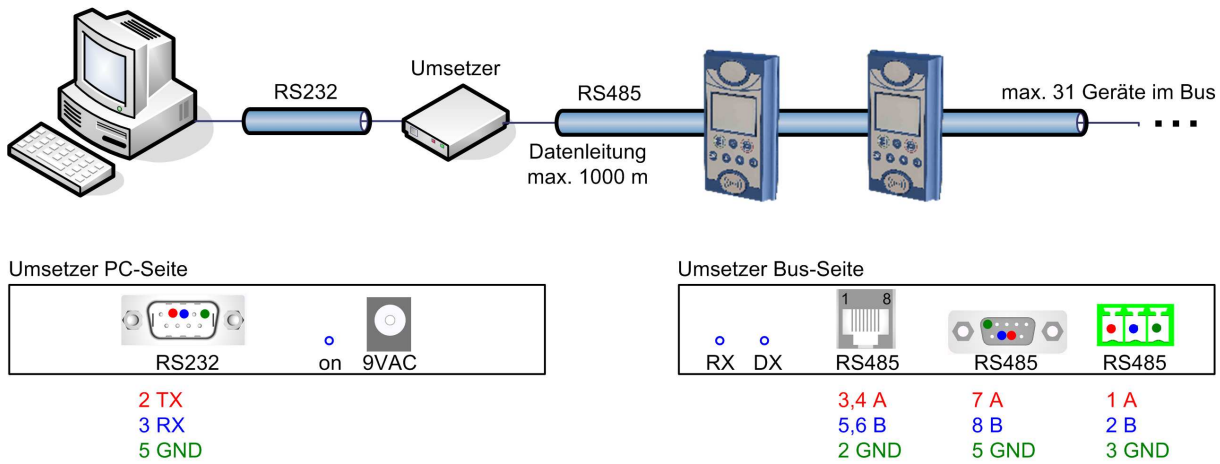


Figure 10: RS232 auf RS485 Bus

Connect the converter to the PC with a Sub-D 9-pole 1:1 cable as shown in figure 9. The converter replaces the PZE-MasterIV Basic.

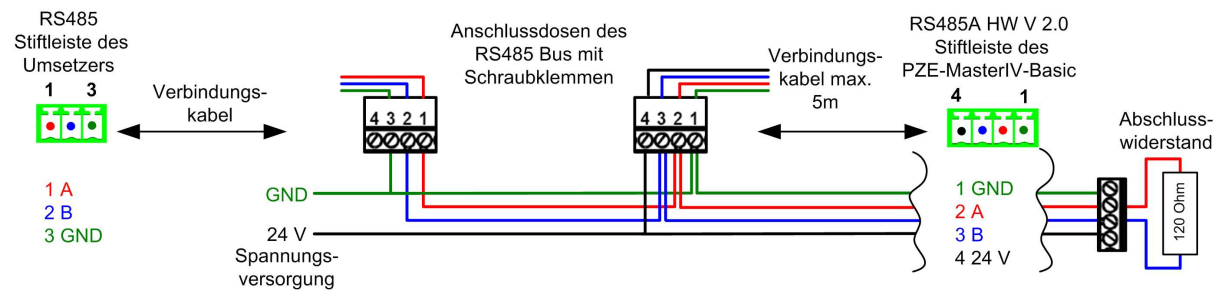


Figure 11: RS485 Bus über Stiftleisten (RS485A HW V 2.0)

PIN 1/4 in figure 11 are supply entries which make a power supply of the device via the bus possible.

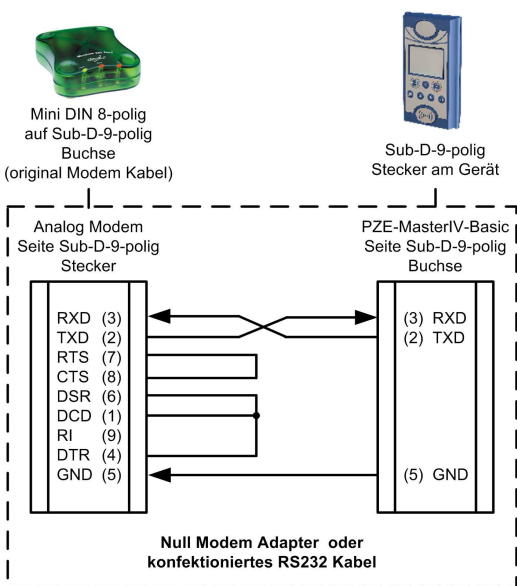
! Caution: If the power supply of the PZE-MasterIV Basic and the RS485 bus is established via PIN 1/4 (male connector of the PZE-MasterIV Basic in figure 11) direct voltage must be used.

3.6.2 Communication via analogues modem

3.6.2.1 Conditions

For a communication via analogues modem, you have to set RS232 as communication in the system menu-BIOS of the PZE-MasterIV Basic (see chapter 3.5.1). The baud rate of the terminal and the connected modem must be coordinated. The timeout must be set dependent on the line quality of the telephone network (Which disturbance sources the cable is exposed to?). The worse the line quality the higher the timeout should be set. The modem to which the terminal is to be connected has to be configured via the COM-interface of a PC. The steps listed below refer to the tested and recommended "Devolvo-MicroLink 56k Fun II" modem.

3.6.2.2 Connection

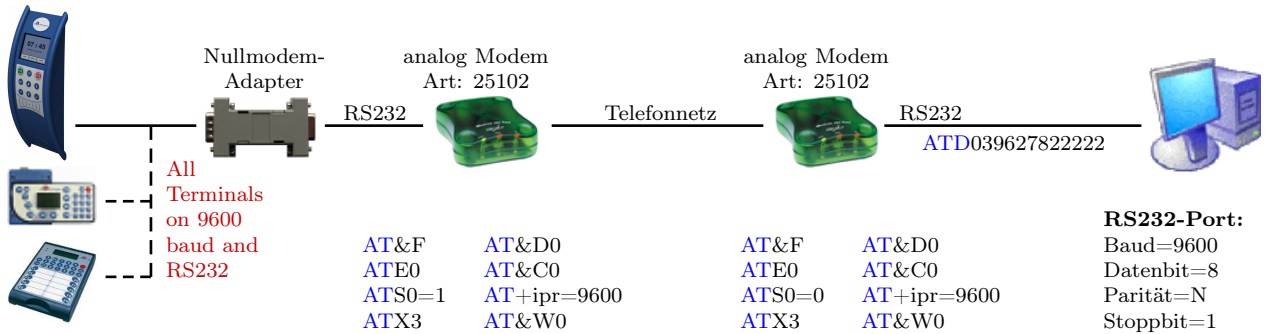


The analogues modem is connected to the COM-interface of the PZE-MasterIV. Use a Null-modem-adaptor or another cable that is assembled corresponding to the figure.

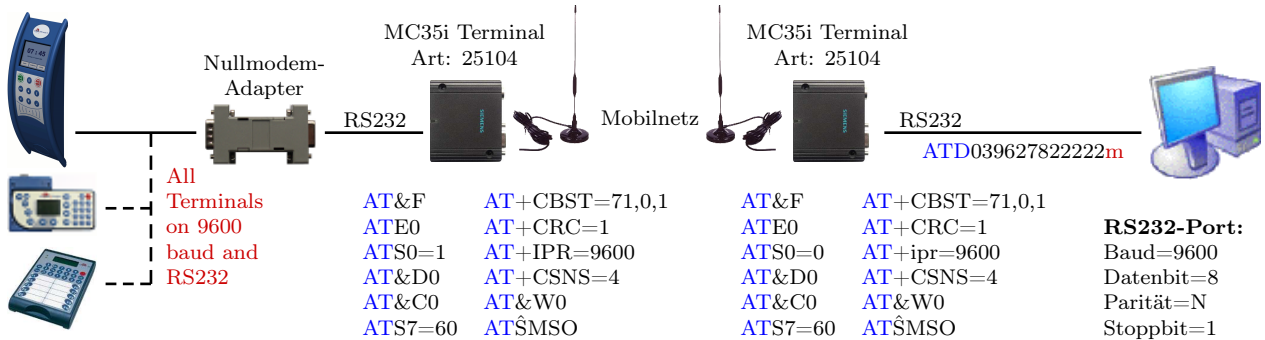
Note that at the site of the PZE-MasterIV Basic **no** connections are bridged. You can use a Sub-D 9-pole 1:1 cable as an extension between the Null modem adaptor and the terminal.

Figure 12: Connection of the analogues modem to the PZE-MasterIV Basic

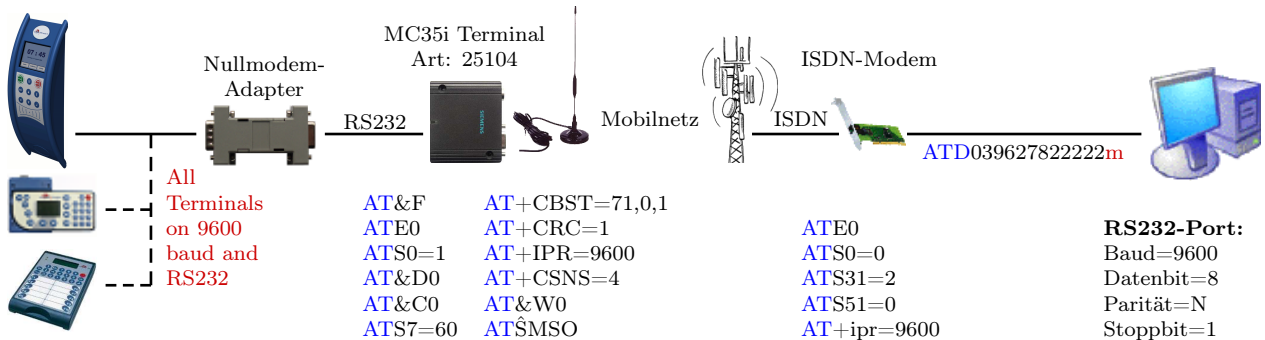
Analogous modem to analogous modem (Wiring of the Null modem adaptor see figure 13)



Mobile communications modem to mobile communications modem (Wiring of the Null modem adaptor see figure 13)



ISDN (terrestrial network) to mobile communications modem (Wiring of the Null modem adaptor see figure 13)



ISDN (terrestrial network) to mobile communications modem (internal MC35i or MC55)

All AE-IV Terminals with integrated GSM/GPRS-Modem



Note:

The configurations mentioned above are no guarantee for a connection. They are just based on experience and maybe have to be set to the different telephone systems. Configurations that are not listed here usually do not work.

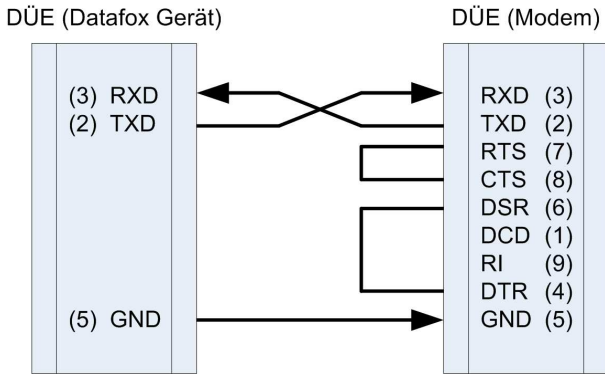


Figure 13: Wiring of the Null modem adaptor

Pin	Designation	Importance
1	DCD data carrier detect	Träger erkannt
2	RxD receive data	Empfangsdaten
3	TxD transmit data	Sendedaten
4	DTR data terminal ready	DEE empfangsbereit
5	GND ground	Signalmasse
6	DSR data set ready	Betriebsbereitschaft
7	RTS request to send	Sendeanforderung
8	CTS clear to send	Sendebereitschaft
9	RI ring indicator	Ankommender Ruf

Table 3: PIN Belegung und Kennzeichnung

Abbrevia- tion	Description
DCD	It becomes active when the connected modem has contacted another modem. It indicates the PC that a connection is established and data can be sent.
DTR	The computer signals his ready status, e.g. at a direct connection.
DSR	As response to DTR (at crossed lines.)
RTS	Becomes active when the terminal is ready to send data.
CTS	Becomes active when the terminal is ready to receive data.
RI	Is produced by a connected modem when a ring comes in.

Table 4: Description of the identifiers of the Sub-d-9-pole

Output:

Low-Pegel = + 12V

High-Pegel = - 12V

Output current: up to 10 mA

Input:

Low-Pegel is recognized till ca. + 1V

High-Pegel is recognized from ca. + 1V

Driving point impedance = 10 kOhm

3.6.2.3 Modem initialization

Check on which baud rate the PZE-MasterIV Basic is set. You can find this information in the system menu-BIOS (see chapter 3.5.1).

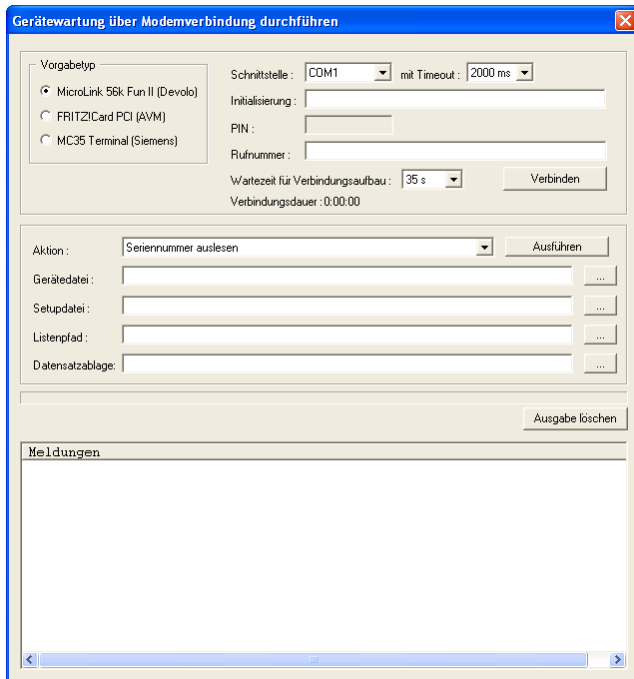


Figure 14: Configuration of the modem connection

Connect the "Devolo-MicroLink" to the COM-interface at your PC. Start the DatafoxStudioIV and open the modem configuration dialogue via *< setup => device maintenance via modem connection >*. Select "MicroLink 56k Fun II (Devolo)" as type and set a COM-interface of your PC out. Set the timeout on "2000 ms".

3.6.2.4 Connection via the DatafoxStudioIV

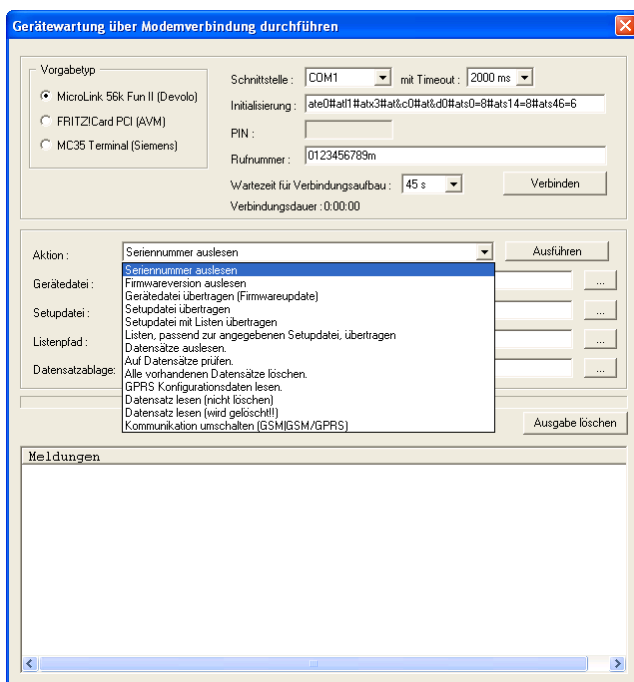


Figure 15: Dialogue for device maintenance via modem connection

Open the communication dialogue via the DatafoxStudioIV menu item *< setup – > device maintenance via modem connection >* to establish a connection between a PZE-MasterIV Basic and a PC (DatafoxStudioIV). In dependence on the selected modem type you additionally have to set the COM-interface, baud rate, PIN and phone number of the remote station. Parameters that are not needed are deactivated.

This kind of communication is used at the administration of the PZE-MasterIV Basic ("device maintenance via modem connection"). For this purpose different functions are available. You can find further descriptions in chapter 4.4.5.

3.6.2.5 Connection via the DFComDLL

You can also start the connection to the PZE-MasterIV Basic from your own application. Use the functions of the DFComDLL.dll to establish a connection between a PC and the device. Proceed as it is shown in the figure below.

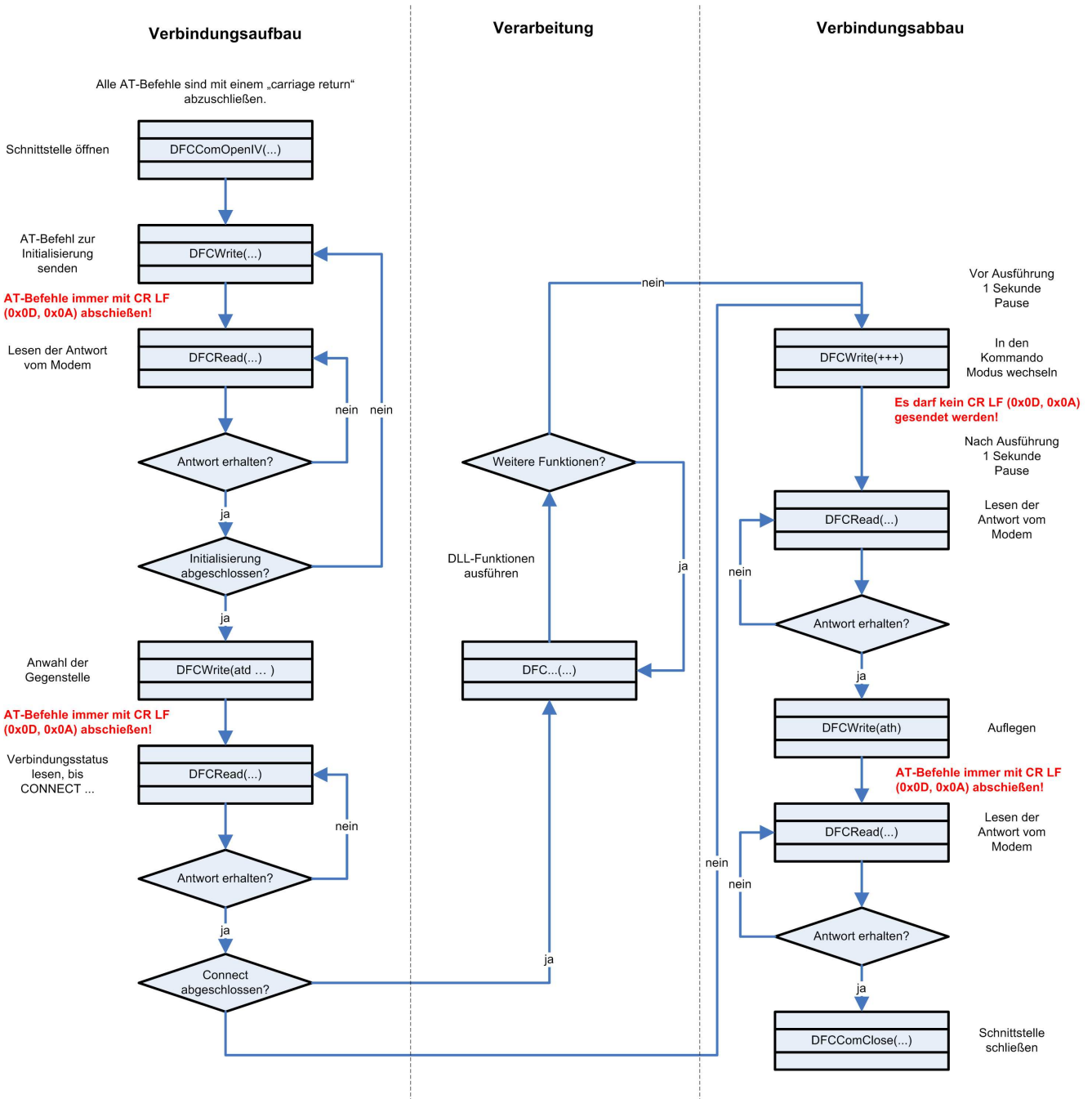


Figure 16: Course of the communication via DFComDLL.dll

You can find a more detailed description of the functions and parameters in the documentation or help to the DFComDLL.dll.

3.6.3 Communication via TCP/IP

Usually, the configuration of the network connection is necessary to integrate a PZE-MasterIV Basic. But if a DHCP server, that supplies all PCs and peripheral with dynamic IPs, is available in the network, this configuration can be omitted. In this case the IP of the terminal has to be set on "000.000.000.000".

- ▶ **version** fixed value
- ▶ **MAC** fixed value
- ▶ **IP** changeable value
- ▶ **port** changeable value, analogous IP
- ▶ **hostbits** changeable value, analogous IP
- ▶ **gateway** changeable value, analogous IP
- ▶ **remoteaccess** changeable value you have the choice between **yes** and **no**.
- ▶ **set default** the default values of the device are set

A possible access protection per Telnet or web interface to the TCP/IP module of the Datafox terminal is deactivated after a restart of the device.

Starting from version 04.01.06.16 the following security mechanisms are available:

Variant 1 A complete protection of the terminal against remote access (Telnet-session, web interface) is possible by deactivating remote access in the BIOS of the device. Then TCP/IP settings are only available at the terminal itself.

The settings for the remote access (yes / no) in the BIOS can only be changed if the BIOS is protected by a password. This means that after a firmware update it is necessary to transfer a setup with a BIOS password before the settings can be changed.

This additional protection is necessary because a change of this setting (remote access yes/no) deactivates a probably set Telnet password.

Variant 2 In a Telnet session you must set the value for "Enable Enhanced Password" to y (yes) in menu 6. Also set the value for "Change the password" to y (yes) and enter the password. Save these changes at menu item 9, Save and Exit. With these settings you have protected the access per Telnet as well as per web interface with a single password. With this variant you can still change the settings per remote access.



Caution:

Important! A change of the setting remote access in the BIOS of the device deactivates the Telnet Enhanced password. This can be desired if you forget the password and want to reset the terminal. To do so you need the BIOS password which can be found in the devices setup.

A firmware update has no influence on the security settings of the terminal!

3.6.3.1 LAN

Analogous to the direct connection via RS232 a single device can be connected directly to the PC via TCP/IP. In this case the device is connected to the PC with a CAT-5 network cable (in case of direct connection with crossover; in case of connection via router,... with patch cable) via the RJ45 jack.

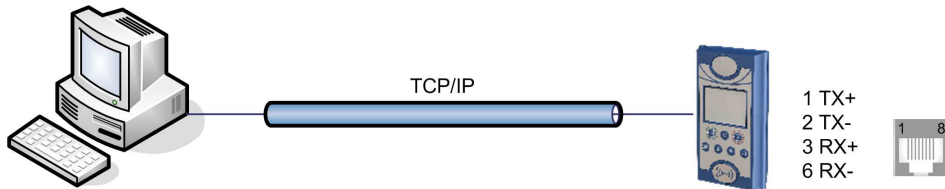


Figure 17: Connection to the PC via TCP/IP

3.6.3.2 Transition from TCP/IP to RS232

In order to connect a single device via RS232 to a TCP/IP network a COM-server has to be used. The COM-server serves as converter.

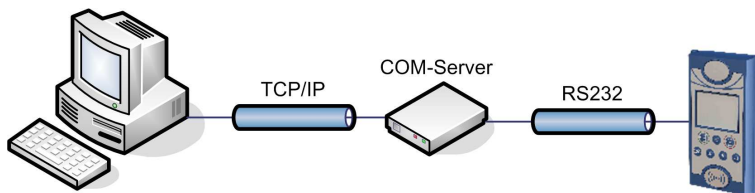


Figure 18: TCP/IP to RS232

The necessary settings of the COM-server will be explained using the W&T COM-server as example. The COM-server can be configured easily via the Wutility.exe program.

- 1.) Open the W&T program
- 2.) Open "inventory" and then "scan local network"
- 3.) Mac-address is displayed at the menu; click on it
- 4.) Adjust IP-address via "Configuration" and "Assign IP-Address"
- 5.) Click on telnet (screen) button
- 6.) The telnet menu is shown
- 7.) Press key 3 (setup port 0) and then 2 (UART setup)
- 8.) Further settings see below
- 9.) Save setup and close program
- 10.) Hardware settings see manual of the COM-server

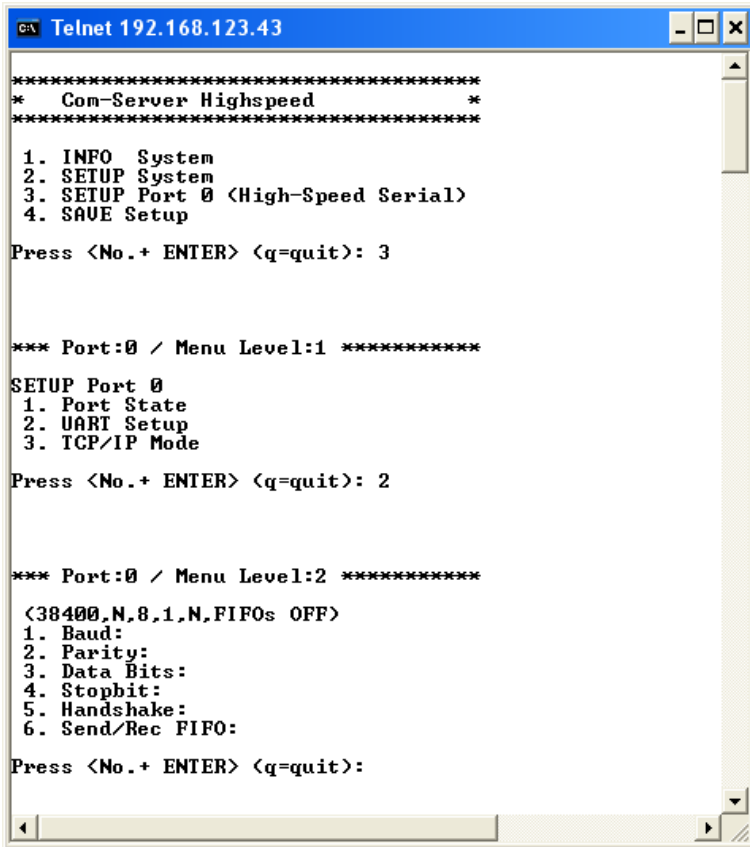


Figure 19: COM-Server configuration over telnet

3.6.3.3 Transition from TCP/IP to RS485 Bus

Up to 31 devices can be connected economically via a COM-server with RS485 bus. You can find details about the structure of a RS485-network in the separate networking description. You can request it from us or download it from our homepage. Please note that the bus number has to be set directly at the terminal (see chapter 3.5.1).

The network structure is a bus. The bus cable is looped through from one device to the other. Branching is not allowed. The PC can be connected at the beginning, the end or somewhere in the middle of the network. The total length of the bus cable must not exceed 1000 m.

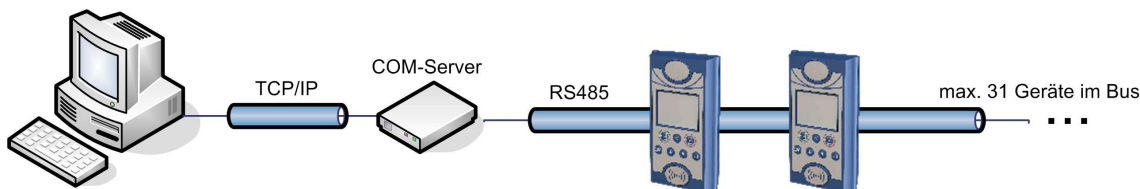


Figure 20: TCP/IP to RS485 Bus

3.6.3.4 WLAN

The PZE-MasterIV Basic can be integrated into a WLAN with a WLAN router via TCP/IP. Please note that a WLAN router is an external component and that you have to pay attention to the compatibility to the present network topology. You have to set the IP-addresses in the system menu bios of the PZE-MasterIV Basic and the WLAN router in accordance with the network class of the present network.

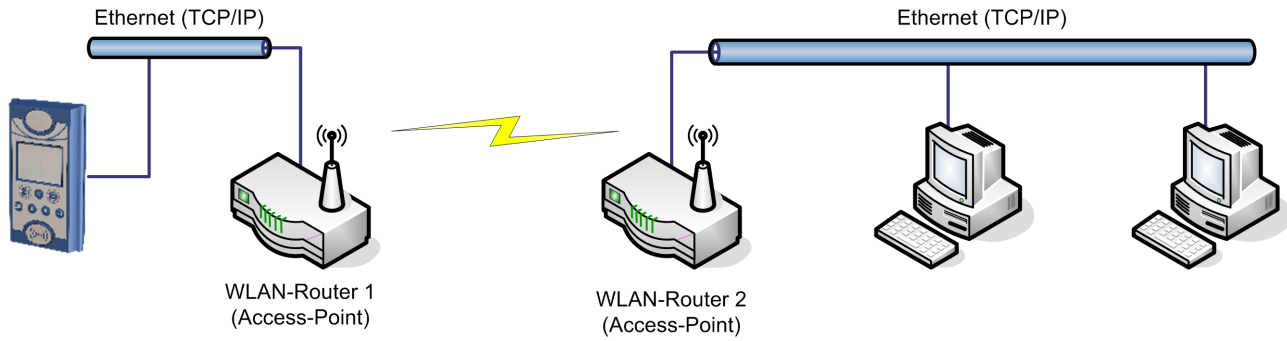


Figure 21: Connection of a PZE-MasterIV Basic via WLAN router to a WLAN network of a company

3.7 Bar code reader

If for the data transmission a communication different from RS232 is used, the RS232 interface (D-sub 9 pole) of the PZE-MasterIV Basic can be used for connecting a bar code reader.

The configuration of the bar code that is to read is done via the setup. The bar code reader is set with the help of the configuration code. The codes are provided on the Datafox CD.

You can connect all bar code readers which have a RS232 interface. Please note the pin assignment of the RS232 interface given in the table below.

Pin assignment for a bar code reader via RS232		
Pin	Bez.	Function
1		
2	TxD	Transmission data (connect to RxD of the bar code reader)
3	RxD	Received data (connect to TxD of the bar code reader)
4		
5	GND	Masse
6	+ 24V	+ 24 V supply 100 mA at most (solder bridge on edge connector necessary)
7		
8		
9	+ 5V	+ 5V Supply 150 mA at most

Table 5: Bar code reader over RS232

We use bar code readers of the company Datalogic by default and already make the right settings at delivery. You can find the corresponding bar code readers with the suitable cables in the price list.

Basic setting of the bar code reader Datalogic DLC-series for using it with the PZE-MasterIV.

With the basic configuration EAN8, Standard Code 39 and Interleaved 2/5 can be read. In order to make the basic settings read the bar codes 1.) RESTORE DEFAULT and 2.) RS232. If other bar codes are to be read, carry out the initialising according to the manual of Datalogic. A brief instruction is included in the cardboard of the bar code reader. The CD contains the whole manual "Handbuch Datalogic_Barcodeleser.pdf".

4 DatafoxStudioIV - General operation



Note:

The dialogues can differ from the presentations in this manual, dependent on the version of the DatafoxStudioIV. This also applies to differences in functionality.

4.1 Installation

The DatafoxStudioIV is required for setting up and changing the device setup. The setup and communication program just consist of the files DatafoxStudioIV.exe and DFComDLL.dll. A real installation is not necessary. Just copy the files into the desired directory and create a link to DatafoxStudioIV.exe in the program menu or at the desktop.

System requirements

- ▶ PC with Microsoft Windows 95/98/NT/2000/ME/XP
- ▶ 64 MB RAM
- ▶ minimum 2 MB HD memory

Use



Caution:

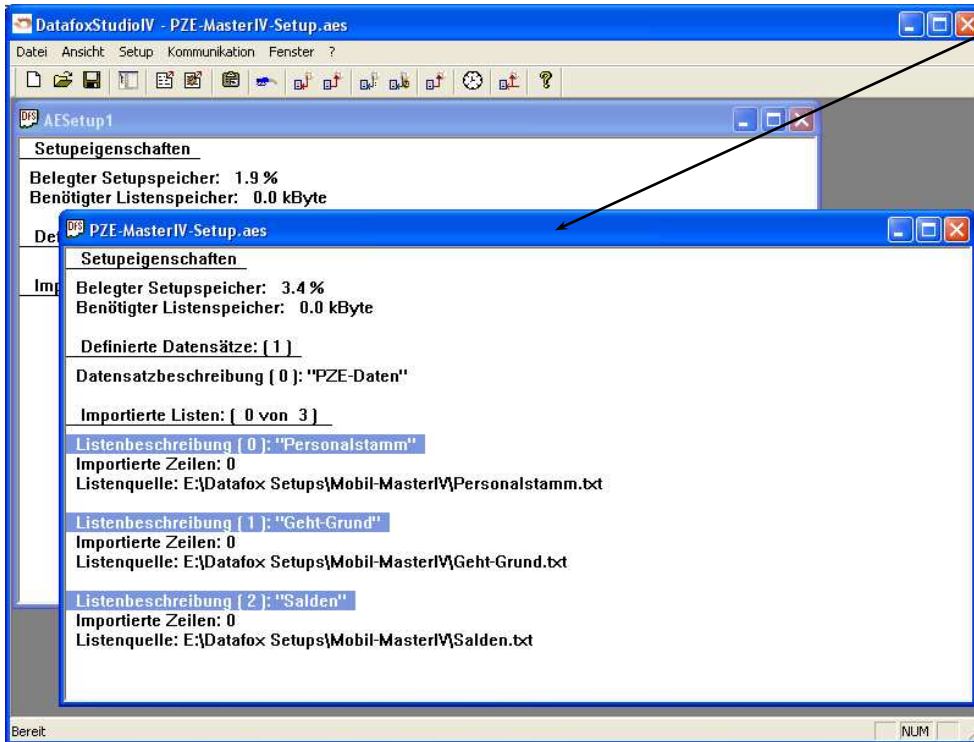
If there are different versions of the DFComDLL.dll on the PC where the program DatafoxStudioIV is run, it can lead to malfunctions, because possibly a wrong version of the DLL is loaded by the program. Therefore, always pay attention to the software version and compatibility (see chapter 2.1).

User interface

Description of the main menu items

File:	Open, save, create setup file
View:	Hide and unhide status bar and toolbar
Setup:	Basic settings like edit setup, import lists, set data storage, load firmware and device maintenance via modem connection
Communication:	Setting of the communication, commands for a communication between the PC and the terminal
Window:	Set the order of the windows
?	Information about the program and version requirements for the firmware and DF-ComDLL.dll

The single functions are explained in detail in the following chapters.



Client-Window

The edition, e.g. writing setup, etc., always refers to the current marked window. The file name of the setup file is visible in the title bar.


Figure 22: DatafoxStudioIV User interface

4.2 Operation of the DatafoxStudioIV

All functions you need about the setup are available via the menu of the DatafoxStudioIV. The most important functions can additionally be called up via the toolbar.

When you have opened a setup file as described in chapter 4.3.2, you can open the setup-mask-dialogue (as shown in figure 23) via the menu *< Setup => Editieren >* or via a double click in the window of the selected setup in order to edit the setup. At first, all inputs you make in the setup-mask-dialogue are only applied to the dialogue interface. If you close the dialogue via the OK-key, all settings will be applied to the setup without further queries. If you close the dialogue via the cross, you will be asked if the changes shall be applied to the setup. Only if you answer this query with JA (yes) the changes are applied to the setup.

As long as the setup-mask-dialogue is opened you have no access to other functions of the DatafoxStudioIV. Only if the dialogue is closed, you can call up and carry out other functions from the studio for the setup that is chosen currently.



Note:
Please take into consideration that, if several setups have been opened in the main window of the DatafoxStudioIV, the changes only refer to the currently chosen setup. This means the setup window which is not covered by another window.

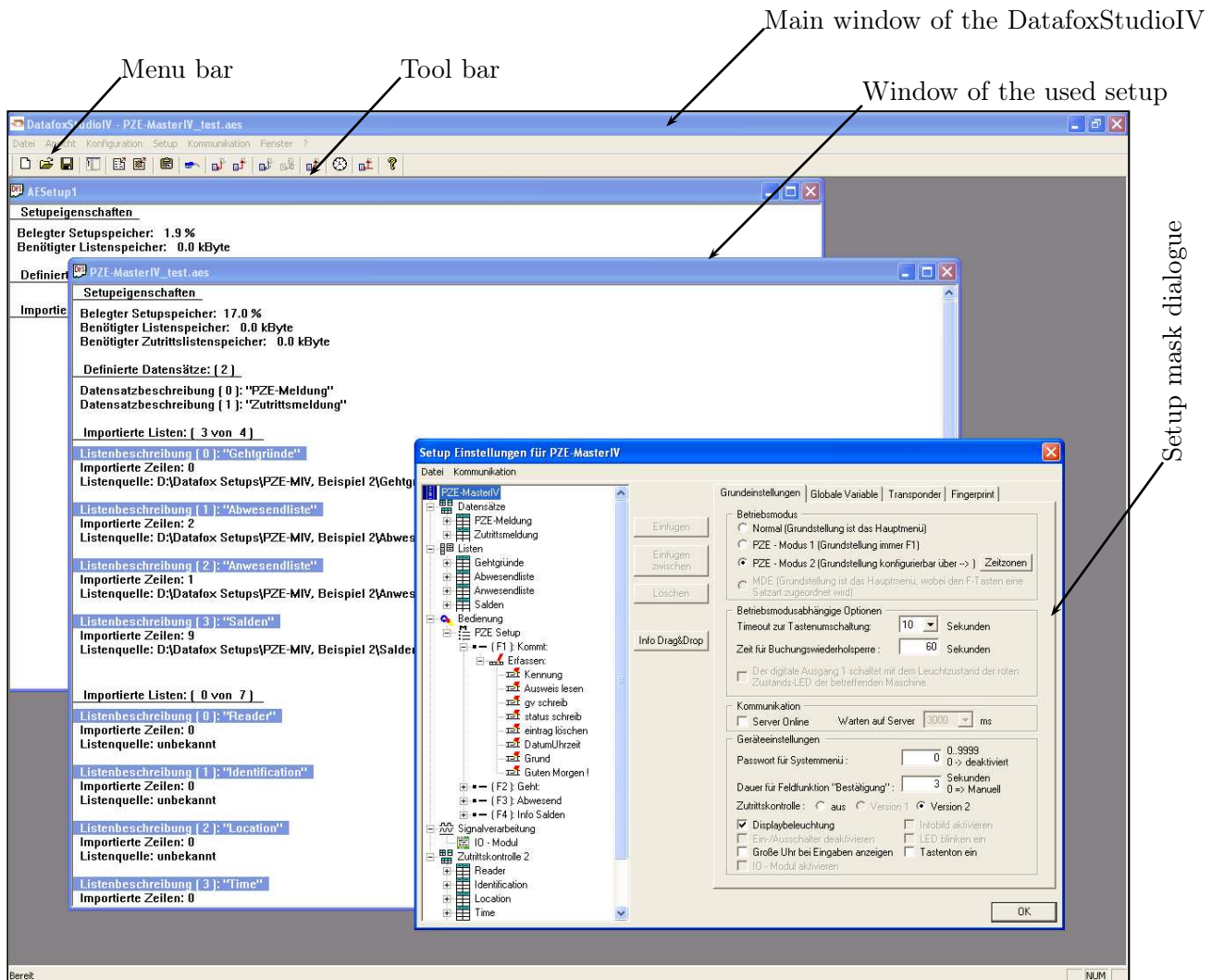


Figure 23: User interface of the DatafoxStudioIV

4.3 Menu Datei

Under the menu item < *Datei* > are several standard functions that you know from other office applications and that are not examined further. Such functions are for example < *Speichern* > for saving changes.

4.3.1 Creating a new setup file

You can create a new setup file via < *Datei* => *Neu* >. A new client window will be opened in the DatafoxStudioIV. After creating a setup file you should save it under the name of your choice. After successfully saving the setup file the new file name will be displayed in the title bar of the client window. With that, the creating of a new setup file is finished. The setup now can be edited at will.

4.3.2 Open setup file

In order to open an already created setup file with the DatafoxStudioIV, click on *< Datei => "Öffnen >* in the menu and select the directory that contains the file. Open the file with a double click on it.

!

Caution:
 You should note that if you open a setup file that was created with a previous version of the DatafoxStudioIV, the file is converted into the new setup format by the DatafoxStudioIV. Then, it is not possible any longer to open this converted setup file with the previous program version. The DatafoxStudioIV back-ups the setup file before converting it. The back-up copy has the file extension (*.bak). By renaming the file extension (.aes) you can open and edit it with a previous program version (AESetup).

4.4 Menu Setup

4.4.1 Edit

Via the menu item *< Setup => Editieren >* you reach the domain of the DatafoxStudioIV where you can edit a setup. You can find a more detailed description of the procedure in chapter 5.

☞

Note:
 By double clicking on the white surface of the window, this menu order is carried out as well.

4.4.2 Import lists

!

Achtung:
 All lists must be provided with the sign coding ISO-8859-1.!



Via the menu item *< Setup => Listen importieren >* all necessary lists can be imported into the setup program. Select the lists as shown in the figure opposite and open them. You can select several files at the same time by pressing and holding the Ctrl key.

Figure 24: File selection dialogue for list import

All imported lists are displayed in the main window of the setup under the item *Importierte Listen : (n von m)*. The link to the memory location of the lists, paths and file names are saved with the setup.

A selected list is only imported if it corresponds to the list definition of the setup (see chapter 5.2.5).

If a list definition was changed in a setup, all list have to be transmitted again after transmitting the setup to the device.

4.4.3 Configure data storage

Under the menu item < Setup => *Datenablage konfigurieren* > a dialogue opens where you can set how the read out data records should be saved.

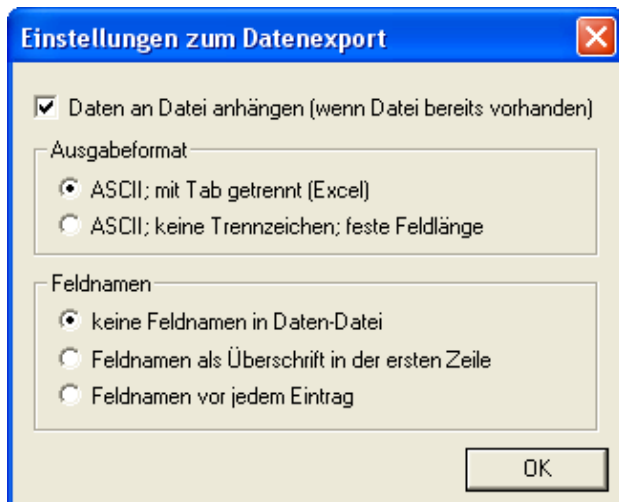


Figure 25: Configuration of the data storage

You can define if an existing file should be overwritten or if the data shall be added to the file.

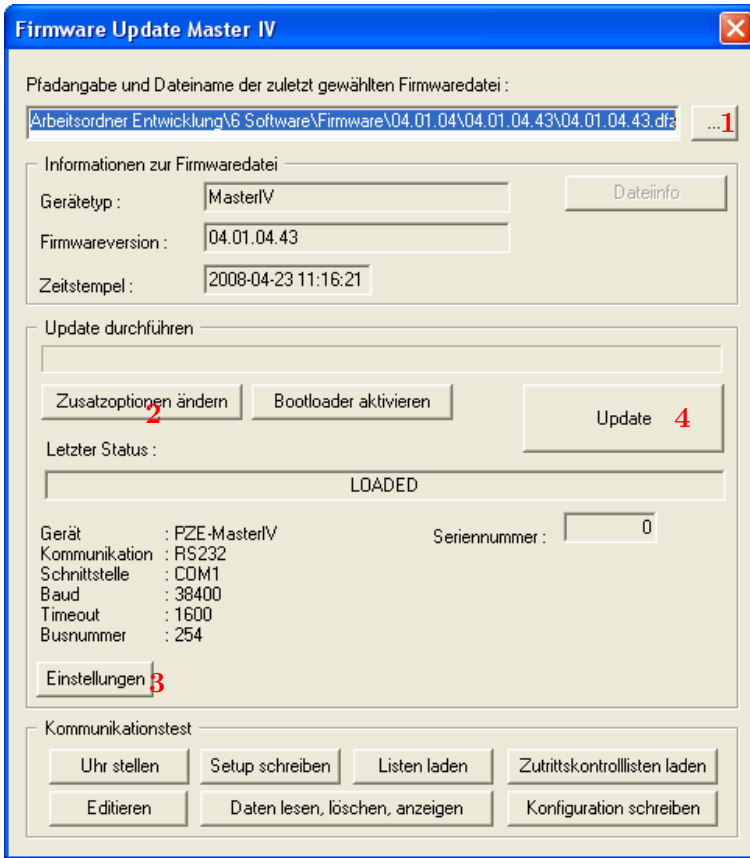
Furthermore, you can set the output format and define if and how field names should be used in the data files in order to be able to identify the field values more easily.



Caution:

If you read out data from several terminals and want to unite them into a single file, you necessarily have to activate the option "Add data to file" in order to avoid data loss. Otherwise, only the data of the terminal that was read out last are preserved.

4.4.4 Load firmware



You can make all necessary settings for a firmware update via the menu item *< Setup => Firmware laden >*.

You can select a *.zip archive which contains the firmware file (*.hex) for the PZE-MasterIV Basic via the button (1).

Via the button *< Zusatzoptionen "ändern" >* (2) you can select the access series (TS/ PHG) you use. It is important that this is done **before** the firmware update, otherwise the wrong firmware (wrong access series) could be installed.

Before transmitting the *< Einstellungen >* (3) for the communication (kind of communication, timeout etc.) should be checked. If all settings are correct, the update can be started via the button *< Update >* (4).

Figure 26: Firmware update dialogue

!

Caution:

Please note at all costs the information under software versions and compatibility as well as firmware update/ downgrade in the chapters 2.2.1 and 2.2.2.

4.4.5 Device maintenance via modem connection

It often happens that a PZE-MasterIV Basic is autarkically installed as data entry terminal at a machine or plant. In this case it would be very time-consuming to do a firmware update with direct connection to a PC. Therefore, it is possible to transmit data to the device or read them from the device via a modem connection.

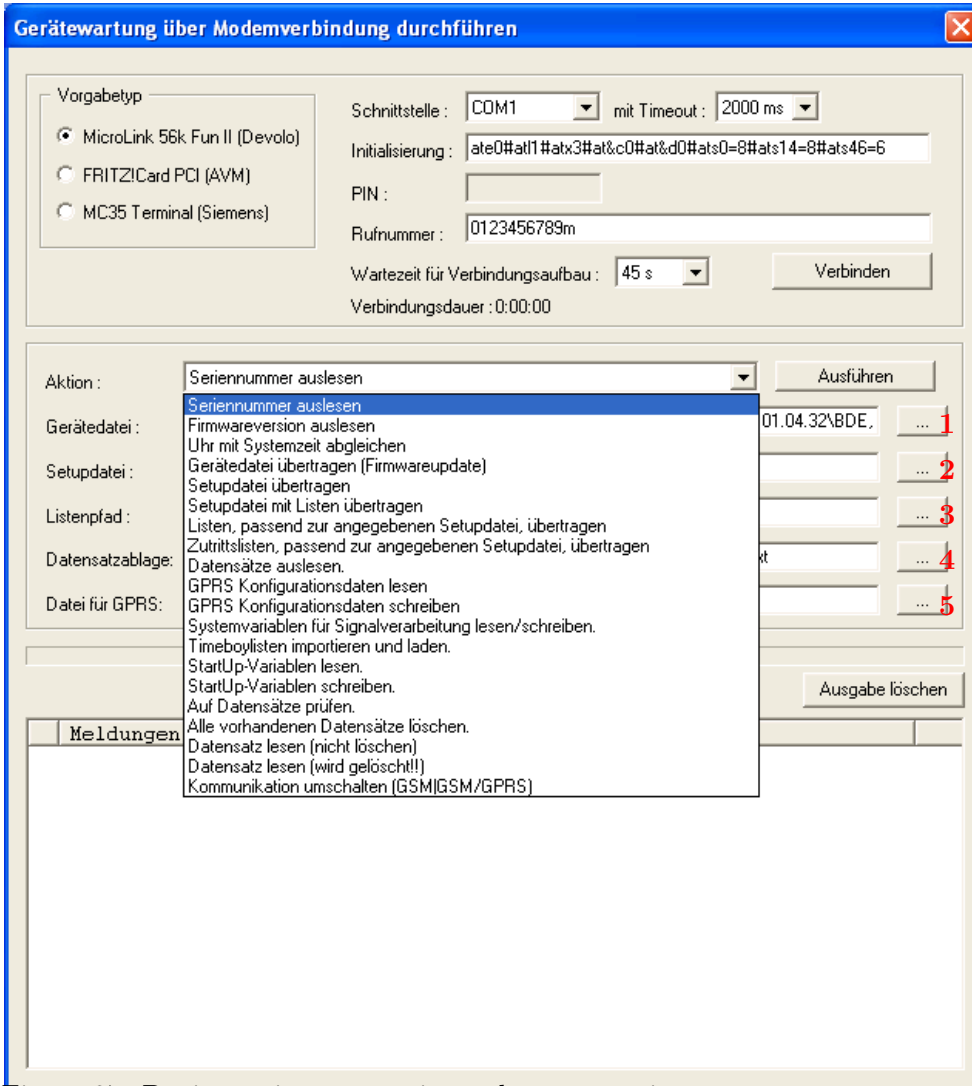


Figure 27: Device maintenance via modem connection

All settings to take here, except for the PIN and phone number, refer to the configuration of the modem at you PC. That means, the external modem at the terminal has already to be configured for such a connection.

4.4.5.1 Functions for device maintenance

- ▶ Read out serial number
- ▶ Read out firmware version
- ▶ Compare clock with system time
- ▶ Transmit device file (firmware update) - Via the button **1** in figure **27** a dialogue opens where you can select the device file with the extension ".hex". When you have marked the file, you can take it over via the button "Open".
- ▶ Transmit setup file - Via the button **2** in figure **27** a dialogue opens where you can select the setup file with the extension ".aes". When you have marked the file, you can take it over via the button "Open".
- ▶ Transmit setup file with lists - Via the button **3** in figure **27** a dialogue opens where you can define the folder (path) that contains the list files.
- ▶ Transmit lists matching to the given setup file - Only the list data of the button (**3**) are transmitted here.
- ▶ Transmit access lists matching to the given setup file - Here the access lists have to be assigned to the button (**3**)
- ▶ read out data records - Via this function you can read out data records from the PZE-MasterIV Basic. Via the button **4** in figure **27** a dialogue opens where you can define the folder (path) in which you want to save the data records.
- ▶ Read GPRS configuration data - Via the button (**5**) a dialogue opens where you can define the GPRS.ini. Just create a new file, name it GPRS.ini and select it. Now, the current GPRS configuration is read from the device and written into the *.ini file.
- ▶ Write GPRS configuration data - Select the configuration file (GPRS.ini) that contains the desired settings via the button (**5**).
- ▶ Read/ write system variables for signal processing - A selection dialogue opens where you can select the desired system variables of the digital inputs and then read or write them. See chapter **4.5.9**.
- ▶ Import and load Timeboy lists - The dialogue "Import and transmit data of the lists of the Timeboy" opens. See chapter **4.5.3**.
- ▶ Read StartUp variables - Via this function you can read out the StartUp variables.
- ▶ Write StartUp variables - Via this function you can write StartUp variables.
- ▶ Checking for data records - It is examined whether there are data records in the device.
- ▶ Delete all existing data records - Deletes all data records from the device. This is absolutely necessary before you can install a new firmware or setup.
- ▶ Read data record (not delete) - reads a selected data record without deleting it
- ▶ Read data record (is deleted!) - reads a selected data record and then deletes it
- ▶ Switch over communication (GSM, GSM/GPRS)



Note:

In order to carry out the functions "Transmit device file" and "Transmit setup file", no data records must be on the device. In this case you first have to read out all data from the device (see chapter **4.5.4**).

4.4.6 Edit text data of the firmware

From version 04.01.06. x you can edit the text data of the device firmware about DatafoxStudioIV. Open the edit dialogue about the menu < Setup => Textdaten der Firmware bearbeiten >. Open now an

device file archive *.dfz. The Defaulttexte of the firmware with a description are indicated.

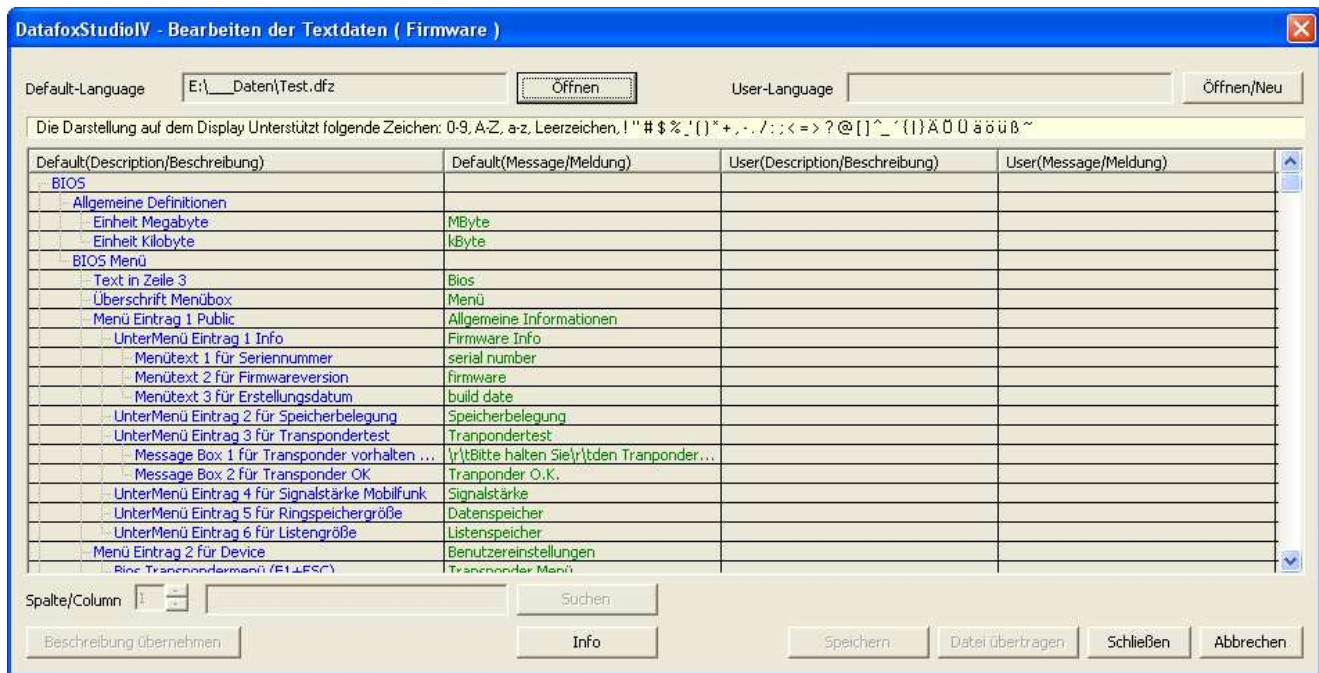


Figure 28: Default Text-Datendatei Öffnen

Open or generated now a new linguistic file for the firmware with the ending *.dfl. If you have generated a new file, the right side of the list is empty.

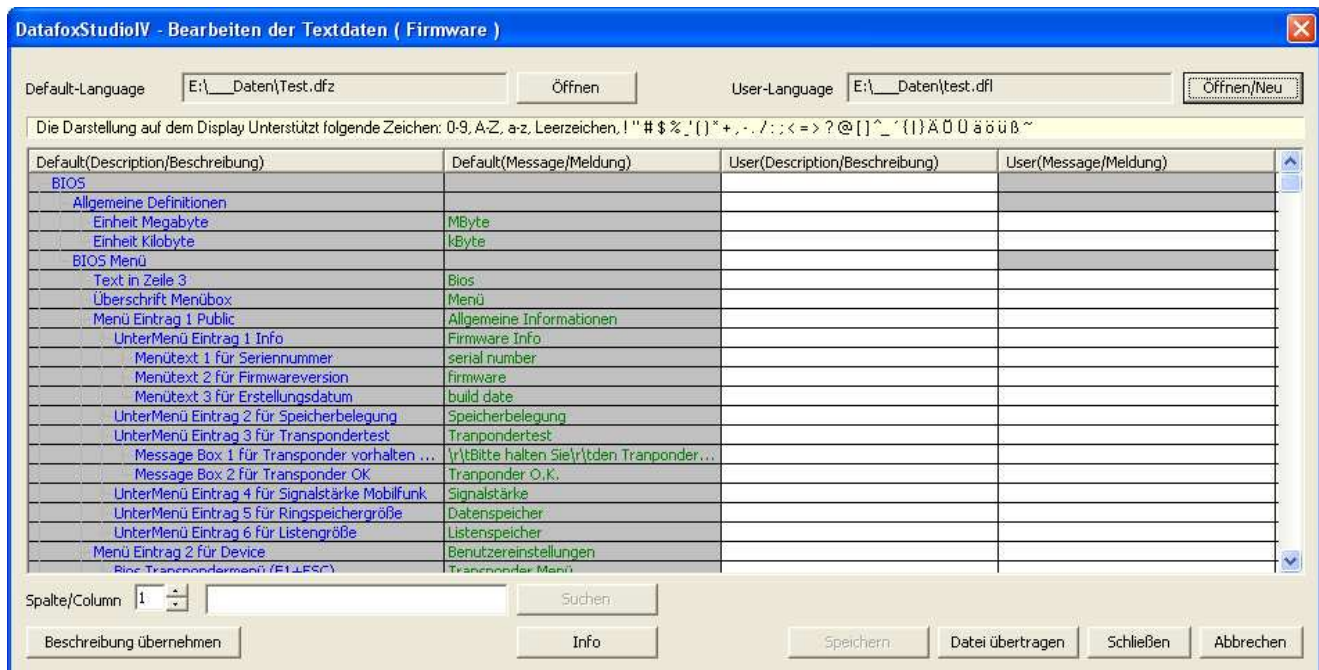


Figure 29: User Text-Datendatei Erstellen bzw. Öffnen

Innerhalb der Liste arbeiten Sie nur mit einfachen Mausklicks, KEINE Doppelklicks. Selectieren Sie mit einem einfachen Klick eine Zeile aus der Liste.

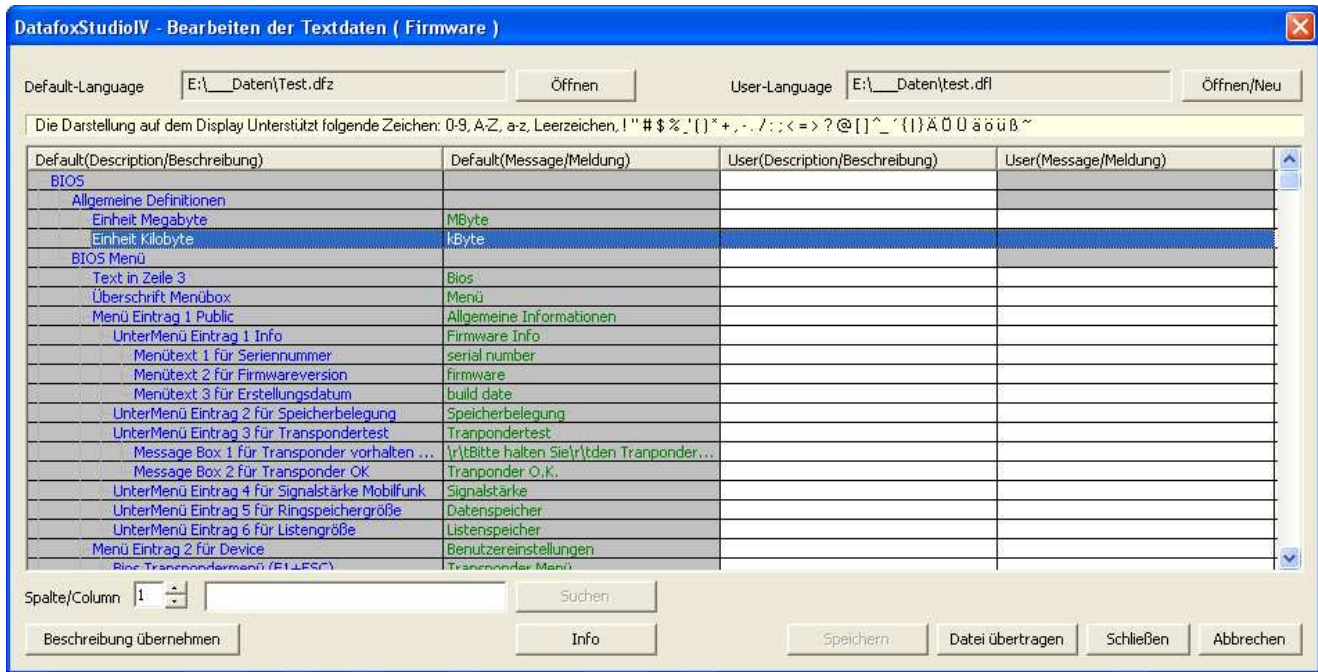


Figure 30: Zeile auswählen

With the next single click in the column of user(description/...) or user(message/...) you put the cursor in this field.

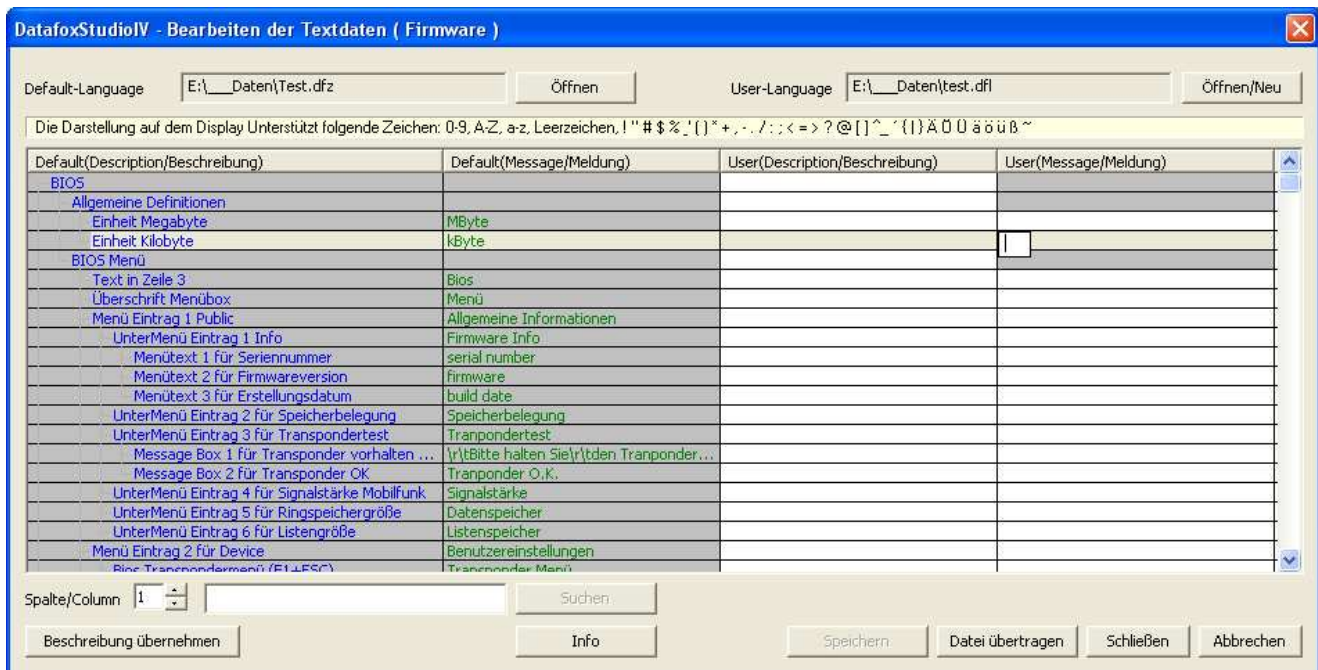


Figure 31: Zelle zum Bearbeiten auswählen

Now you can edit the text.

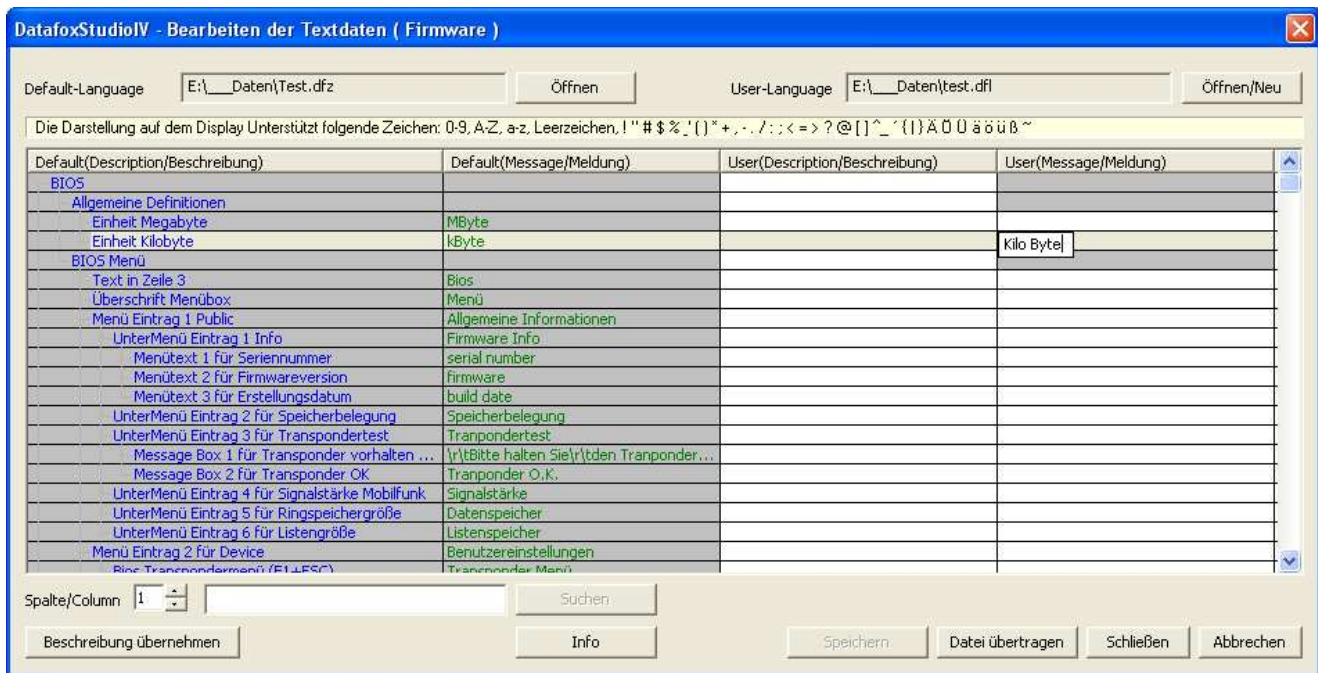


Figure 32: Textdaten eingeben bzw. bearbeiten

If you conclude the input, the description from the column default(description/...) is taken over.

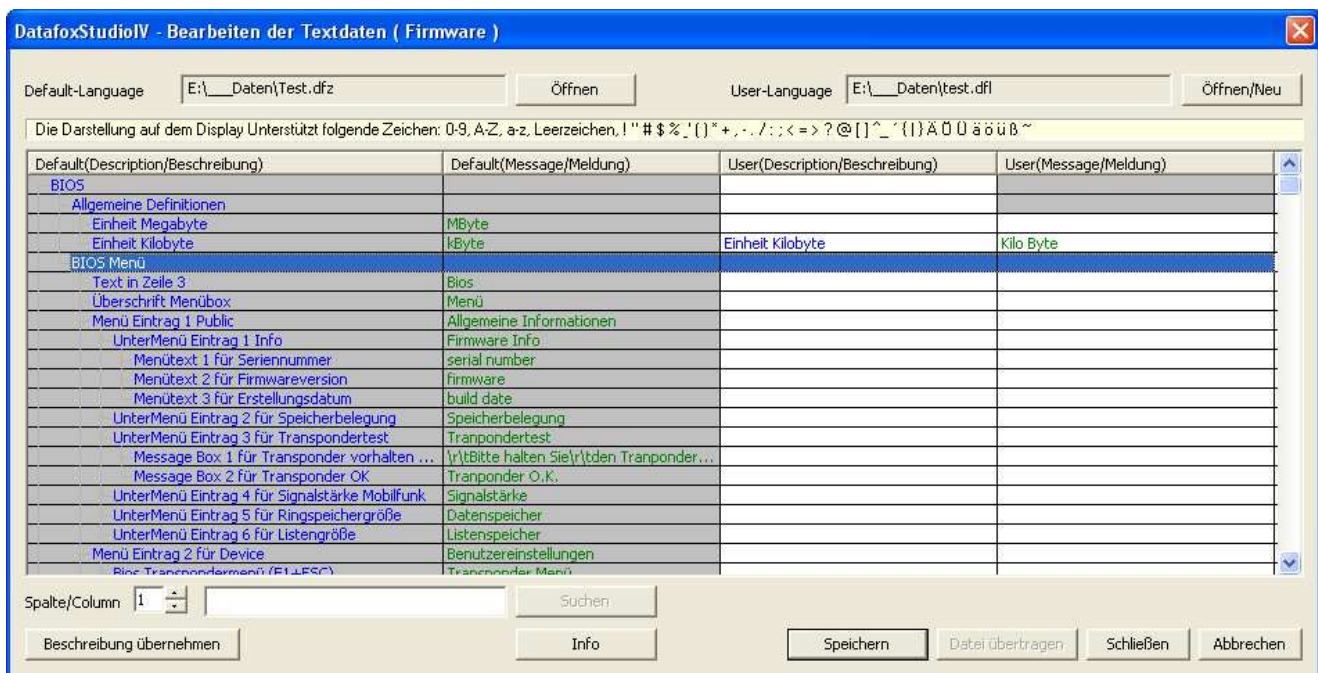


Figure 33: Änderungen übernehmen

You can change this text now in the column user(description/...). To transfer user to text data, they store all changes.

It is available to you a full text search. Give the text and choose the column which you would like to search for the text.

4.5 Menu Communication



Note:

You can and should check all displayed communication parameters at each dialogue that opens with one of the following function calls, and adjust them via the button Settings if necessary.

4.5.1 Write / read setup

When the setup is finished, back-up it on disk via *< Datei => Speichern unter >*. For transmitting the setup you have to set the communication parameter for the device in question via *< Kommunikation => Einstellungen >*.



Caution:

Always check the communication parameter before transmitting the setup. This is especially important when several devices are managed via the DatafoxStudioIV. Pay particularly attention to the IP address of the device to which you want transmit the setup.



Figure 34: Transmitting setup data

The device is only ready for operation with a completely transmitted setup. If the transmission is aborted early, the device cannot be put into operation. In this case, a possibly existing disturbance source has to be eliminated and the transmission must be repeated.

Likewise, a setup can be read out from the device in order to change it or to configure a second device with the same setup. Open the corresponding dialogue via *< Kommunikation => Setup lesen >*, give a file name for the setup and check the communication settings. With OK you confirm all entries and the setup is read out from the device.

4.5.2 Load lists/ access control lists

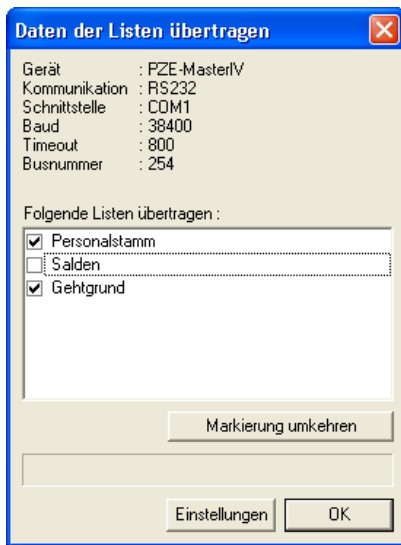


Figure 35: Load lists

The loading of the lists is done via the function `< Kommunikation => Listen laden >`. This functions are also available in the DLL and can be used via own applications.

If devices are activated via the DLL, the lists can be directly transmitted from an application without previously creating an ASCII file.

4.5.3 Import and load Timeboy lists

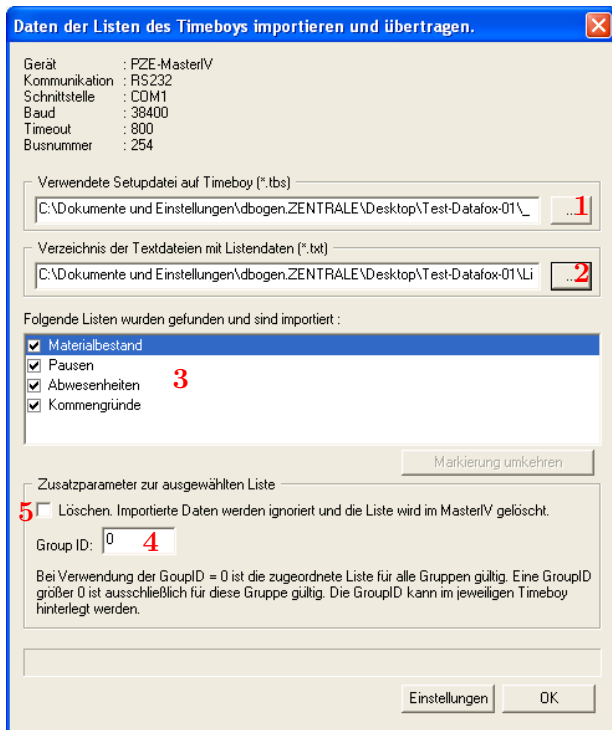


Figure 36: Import and load Timeboy lists

You can start the dialogue for importing Timeboy lists via the function `< Kommunikation => Timeboylisten importieren und laden >`. Here, at first you select the path to the desired Timeboy setup (1) and then the path to the Timeboy lists (2). The lists whose information matches the list description of the Timeboy setup are displayed now (3). You can define the Group ID (4) via the additional parameters and thus assign the special lists e.g. for certain fields of activities. The Group ID is logged on the Timeboy. Additionally, you can delete lists from the PZE-MasterIV Basic (5).

This functions are also available in the DLL and can be used via own applications.

4.5.4 Read, delete, display data

The setup program offers simple functions for reading out and deleting data from the device. Only ASCII files can be created. For different output formats the use of the communication DLL or Datafox-Talk is advisable. Please not chapter [2.3.2](#).

The respective formats and options for the filing of data in the ASCII file are set via *< Setup => Dateiablage konfigurieren >*, as described in chapter [4.4.3](#).



Caution:

In a network the option "Add data to file" (if this file already exists) has to be activated. Otherwise, at the download the data are overwritten by the following devices and only the data from the last device are available.

4.5.4.1 Read data and delete them

You can read out the data records from the device via the menu < *Kommunikation* => *Daten lesen, löschen* >. The reading out of the data records is done separately.

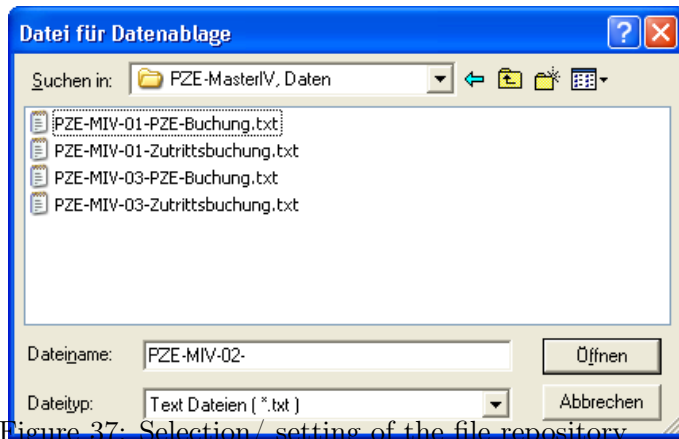


Figure 37: Selection/ setting of the file repository

After the function call

< *Daten lesen, löschen* >, a file prefix for saving the data records has to be given. For each data record description of the used setup, an own text file is created for the existing data records. The file name consists of the given file prefix and the name of the data record description.

Example:

At the reading and deleting of data the files PZE-MIV-04-PZE-Meldung.txt and PZE-MIV-04-Zutrittsmeldung.txt are created if for all data record descriptions for the forth device PZE-MIV-04 is set as file prefix in the file selection dialogue and the data record descriptions "PZE-Meldung.txt" and "PZE-MIV-04-Zutrittsmeldung.txt" are created in the setup.

If you set the current date in the file prefix, you create a history of the data backup. The date in the form yymmdd, e.g. PZE-MIV-02-060514 would result in a chronological ordered back-up of the files.

If a file is newly selected or created, a query appears whether you want to use this file as standard filing for the data.

After opening the file a dialogue for reading out the data records appears. Via this dialogue the communication parameter have to be checked via < *Einstellungen* >. But above all the communication and the IP address have to be checked and set if necessary. The option "Pollen" offers the possibility to read out several devices permanently, this is also called collecting process, and to back-up the data on the local disk. The devices are read out one after the other here. Via the parameter "Time between the collecting processes" a period of time in seconds can be set as break between two read out processes, **not** between the reading out of two devices.

4.5.5 Set time

Via the function < *Kommunikation* => *Uhrstellen* > you can compare the time of the device with the system time of the PC from which this function is called.

4.5.6 Read serial number

With the function $\langle \text{Kommunikation} \Rightarrow \text{Seriennummer lesen} \rangle$ you can read out the number of a device. It is displayed via a separate dialogue.

4.5.7 Send message

In practice, information can automatically be made available to the user from the server with the function $\langle \text{Kommunikation} \Rightarrow \text{Nachricht senden} \rangle$. In the DatafoxStudioIV this function is used for example to point out the transmission of new data to the user (e.g. in order to prepare for the transmission of an updated setup).



Figure 38: Send a message

As shown in the figure, the text that is to be set consists of two headers, a title and the message.

4.5.8 Read global variables

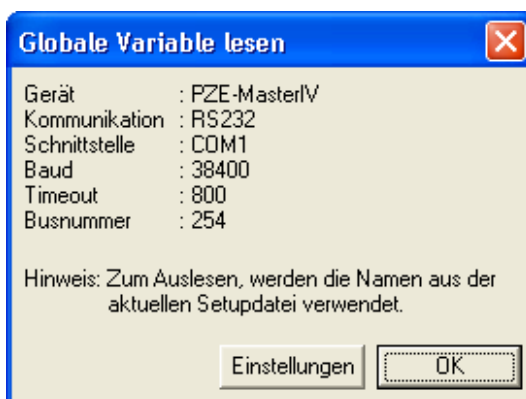


Figure 39: Values of the read variables

Via the function "Read global variable" you can check which value has a global variable in the device.

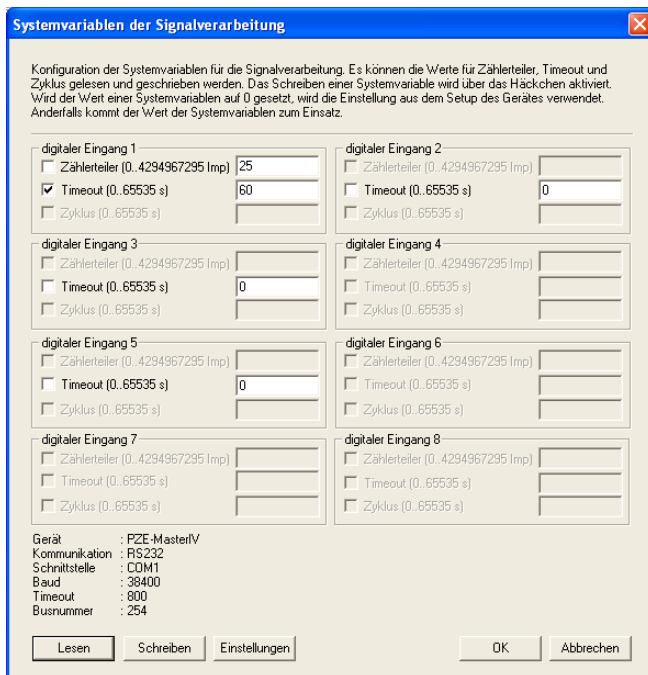


Figure 40: Values of the read variables

At the function call all global variables are read out from the device and shown with their current value.

4.5.9 System variables of the signal processing

You reach this dialogue via *< Kommunikation => Systemvariablen der Signalverarbeitung >*.



By clicking on "Read" you can read out the counter divisor, timeouts and cycles of the digital inputs.

Then, you can change the information by ticking it and apply it to the device firmware by clicking on "Write".

You should note that, if the value of a system variable is set on "0", the settings from the setup of the PZE-MasterIV Basic are used. Otherwise, the entered value.

Figure 41: Dialogue system variables of the signal processing

4.5.10 Work through batches

Via the function $\langle \textit{Kommunikation} \Rightarrow \textit{Stapel abarbeiten} \rangle$ the functions read data, delete data, set time, load setup, load lists and load access lists can be worked through chronologically. Further functions proceed automatically.

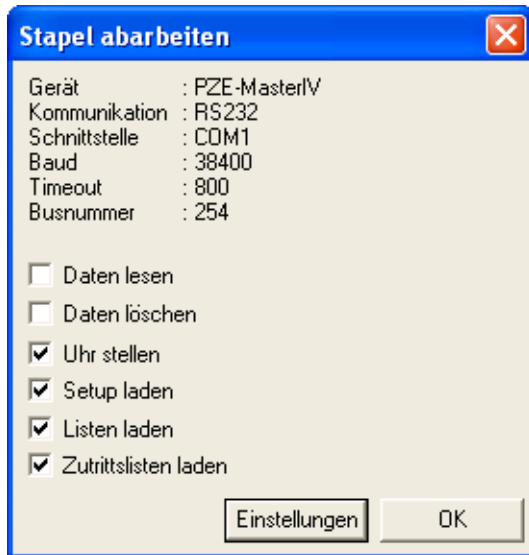


Figure 42: Work through batches

Depending on the activation/deactivation the respective functions are worked through.

After working through a reply for each activated function occurs.

Pay attention to the selection of the related setup if you have activated the option "Listen laden" (load lists). If you have not opened the right setup an error in the list processing occurs. All other options are executed faultless.

4.5.11 Device configuration BIOS

The function $\langle \textit{Kommunikation} \Rightarrow \textit{Gerätekonfiguration(Bios)} \rangle$ is relevant for Datafox devices that have no display. For this reason this function will not be explained here further.

4.5.12 Settings

Via the function $\langle \textit{Kommunikation} \Rightarrow \textit{Einstellungen} \rangle$ you can select the parameter for a communication between a PC and the PZE-MasterIV Basic. For all communications applies: at first select the device type. It can be set optionally whether only error messages should be output or whether the accessibility, should be checked via Ping before establishing a connection.

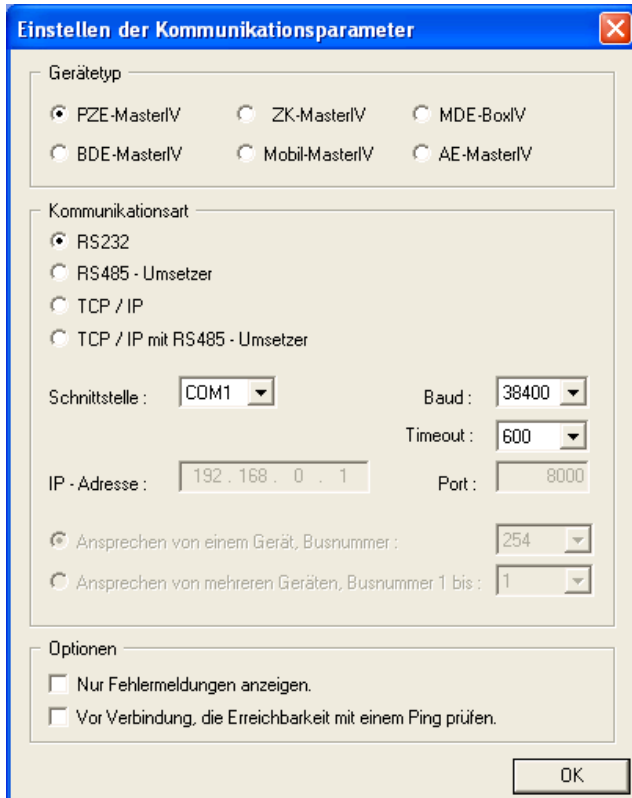


Figure 43: Settings of the RS232 communication

With the type of communication you set via which channel (transmitting medium) the communication should take place.

Dependent on the selected communication, the active parameter have to be set.

In case of RS232 the serial port (COM-Port), the baud rate (how many bits are transmitted within a second) and the timeout (time till the connection termination if no data arrive) have to be set.

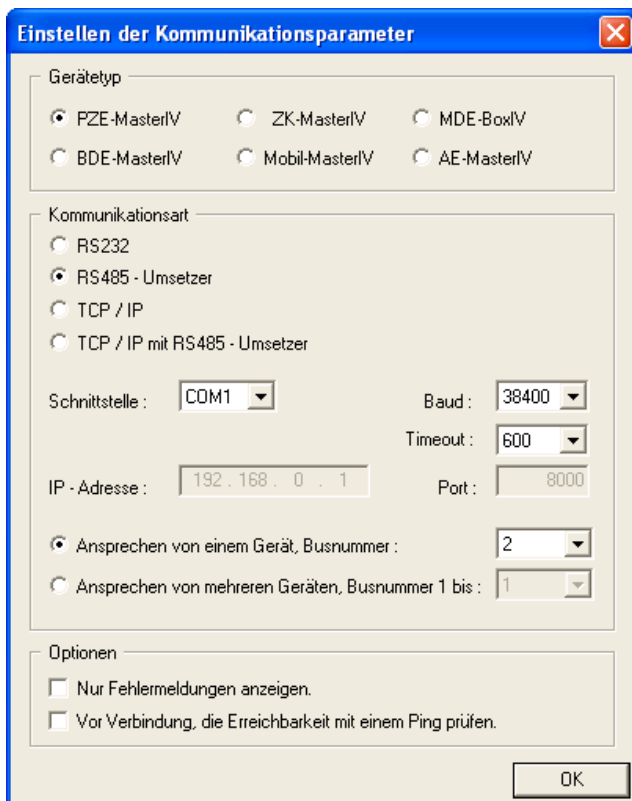
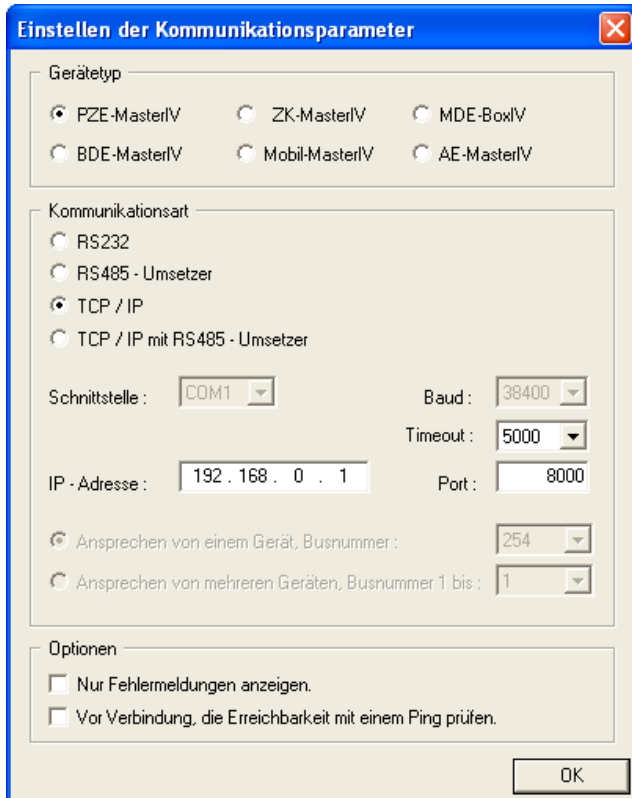


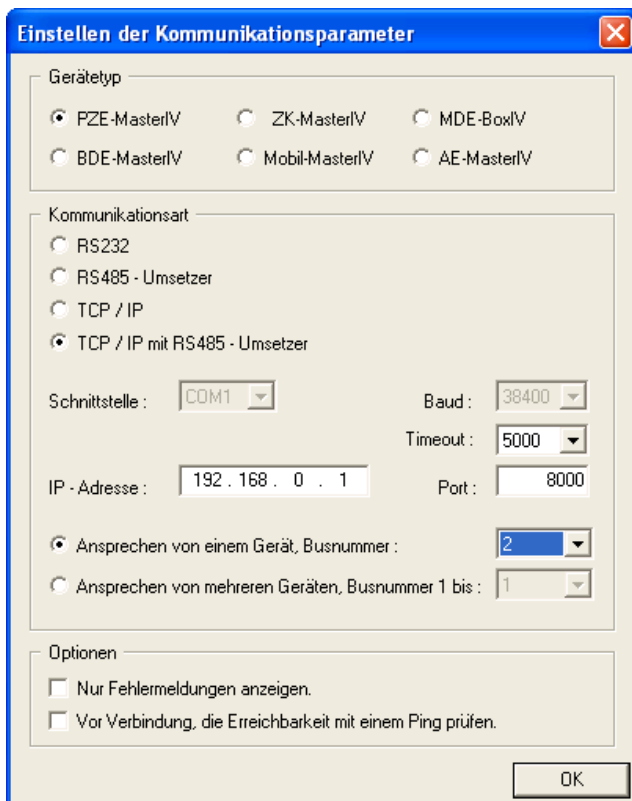
Figure 44: Settings of the RS485 communication via converter

For a communication via a RS485 converter, in addition to the information of the RS232 communication you have to set if one or several devices should be activated. For a communication with only one device the bus number of the device is set. Several devices can only be activated in a consecutive order of bus numbers, starting with bus number 1, and by giving the bus number of the last device.



At a communication via TCO/IO the IP address of the PZE-MasterIV Basic, the communication port and the timeout (in msec) have to be set.

Figure 45: Settings of the TCP/IP communication



In this case, analogous to a communication via TCP/IP the parameter have to be set and additionally it has to be set if one or several devices should be activated. For a communication with only one device the bus number of the device is selected. Several devices can only be activated in a consecutive order of bus numbers, starting with bus number 1, and by giving the bus number of the last device.

Figure 46: Settings of the TCP/IP communication via RS485 converter

4.6 Menu Extra



Note:

You can and should check all displayed communication parameters at each dialogue that opens with one of the following function calls, and adjust them via the button Settings if necessary.

5 DatafoxStudiIV - Setup

5.1 Basics

5.1.1 Planning

Before switching on the computer and creating the setup, the process of data collection and the setup structure should be planned. Only a few steps are necessary to do that. If you do the preparations carefully you can create the setup very fast.

On the graphic you can see the connections between parameterisation and result data. You may find secondary project support in the form of models on the Datafox CD.

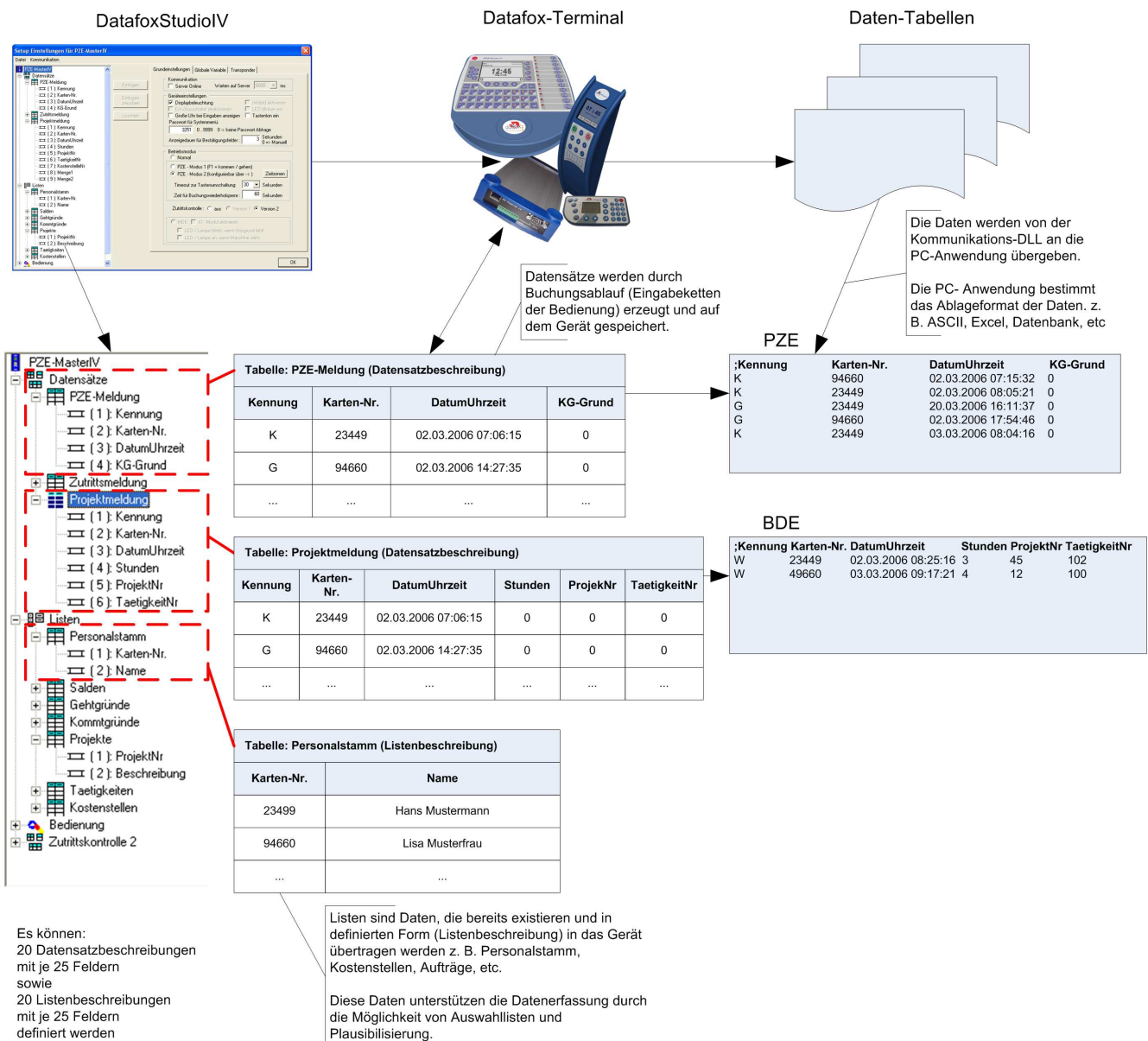


Figure 47: System relations

Planning steps

- ▶ Define all the tables for the data records that should be collected:
field order, field name, field format
- ▶ Set the method of data collection for each field of a data record. In order to do this please use the operation (input chain fields):
bar code, transponder, list, entering via keys, constants, global variables, etc. Combinations are possible
- ▶ In order to use lists you have to define this lists analogous to the data record descriptions:
field order, field name, field format
- ▶ The most important step is the planning of the booking processes (input chains of the operation). To this step belong questions like this:
 - What is the best order to enter the fields?
 - Are loops or jumps labels necessary?
 - Are global variables necessary?
 - Are depending lists necessary? E.g. projects with specific occupations; if the project is selected, only the appropriate occupations can be chosen
 - Should the device switch off automatically after entering a data record?
 - ...




Note:

If the tree structure is very large, it might be arduous to open all the structures by clicking on it with the mouse. By using the following key combinations the tree structure also can be operated.

Shortcut	Funcion
* (on the keypad)	display all secondary files under the current selection
+ (on the keypad)	display the secondary files under the current selection
- (on the keypad)	fade out the secondary files of the current selection
↓	move down one position in the opened tree
↑	move up one position in the opened tree
→	open the following application level in a branch
←	close the complete branch

5.2 Functions of a setup

5.2.1 Basic settings



Note:

With the DatafoxStudioIV more than one device type can be configured. The functionality of the devices differs. Therefore it is important to select the device type at first. Only then it can be guaranteed that all functions are available while configuring and that they are not deactivated.

Depending on the chosen communication type some further settings have to be carried out. Please note, that all changes have to go well with the settings of the device (see chapter 4.5.12).

After setting the type of device and communication the basic settings, the global variables and the transponder settings of the device can be defined.

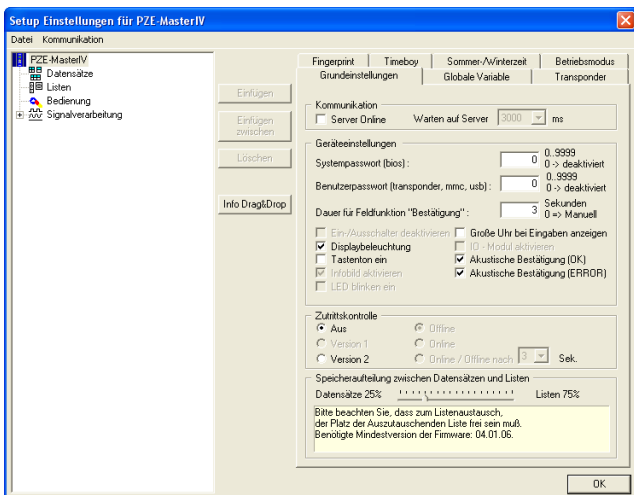


Figure 48: Basic settings depending on the device

Activating the online operation is combined with a wait (input lock) after each input (booking record), for the set period of time in ms.

Under Device settings the display and the acoustics are defined. In order to secure the configuration, you can set up a password for the system menu-BIOS (see chapter 3.5.1 Bios).

The operating mode controls the reactions when you enter something. If Normal is selected, the device dwells on the key that was pressed last. When PZE-Mode 1 is selected, the device returns to the F1-key after the set period of time (timeout for keyboard shift). The anti-repeat lock for bookings indicates, that a card is read only once within the set period of time. The PZE-Mode 2 has to be configured via the time zones additionally.

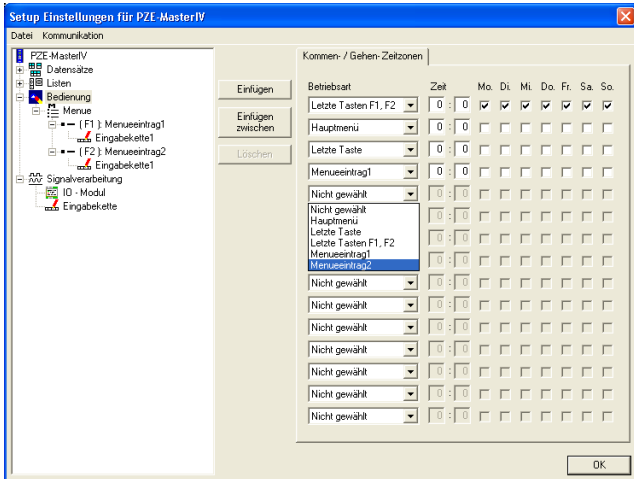


Figure 49: Definition of time zones

This configuration cannot take place before the definition of the operation is finished.

The input chains (assigned under operating mode, with setting of time and activation of weekdays) are not available till then.

Via the time zones the following reactions can be defined:

- 1.) The device is in operation, but no booking record is carried out over a longer period of time. All 60 seconds the device checks the current operating mode (time and weekday) and sets itself to that state.
- 2.) When a key is pressed, e.g. when calling up staff accounts, and the timeout is run out, the device returns to the state defined via the time zones. This can be the main menu, the last key, the last key F1-F2 or an input chain.
- 3.) When a booking record was finished after pressing the ↵-key, the device returns to the state defined via the time zones forthwith.

From version 04.01.06. x can be put how much of the device memory should be used for records and how much for lists.

5.2.2 Global variables

Global variables are used as buffers within the device and do not depend on a data type. That way it is possible to transmit values, created within an input chain, to another input chain for reprocessing. At most 8 global variables can be defined in the PZE-MasterIV Basic.

Already while defining, the global variables can be preallocated with values (in the basic settings of the device via the register card Global variables, see figure 50). It is also possible to fill them with values via input chains within the term. If you access to the same GV repeated, writing, via input chains, the value of the GV is changed.

When a global variable is filled via an input chain you have to differ to cases: Either you fill the GV and create a data record concurrently, or you fill the GV without creating a data record. In the second case please note, that there should be no connection to any data record description.

When inputting GVs using the function Normal, you can carry out a format check via the register card Expanded. Such a test is not available for other input functions. That is not necessary, because there the

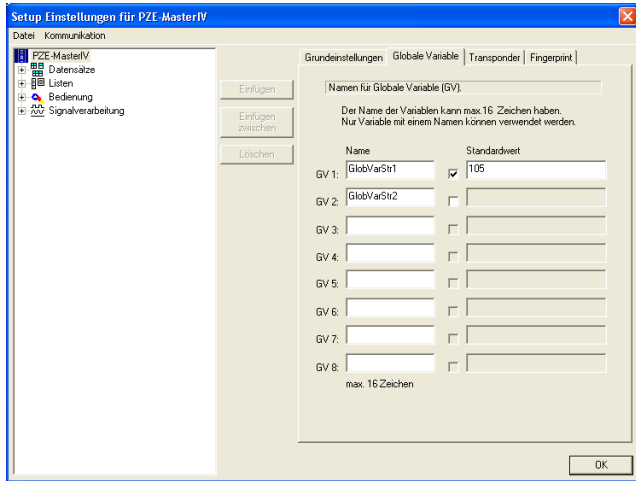


Figure 50: Setting of global variables

The use of global variables is explained in detail in chapter 82.

For testing purposes or also with the basic parameters (e.g. device-no.) it might be very useful, if the global variables are already preallocated in the setup.

In order to name the GV you can use the characters "A - Z", "a - z", "0 - 9" and "_" (underscore). Other characters are inadmissible.

data formats are set in advance.

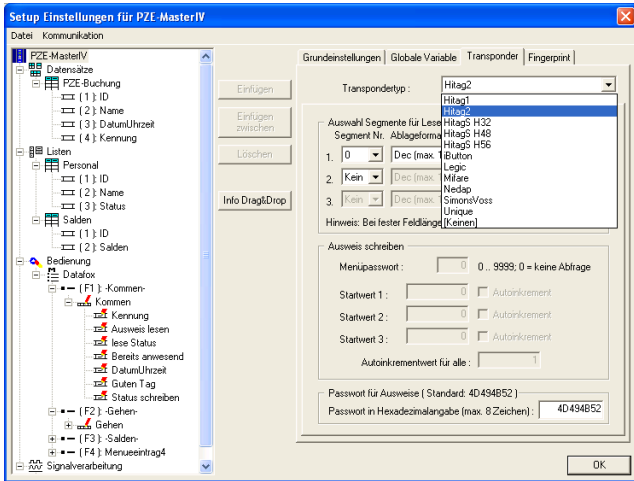


Note:

- When you transmit a new setup, it is possible to delete global variables and their values. In order to do this you have to activate the appropriate option.
- If you want to reset one or all GVs to a defined value (e.g. at clocking-off), you have to create an input chain with the appropriate fields. Use the function Constant. Via the configuration of the time zones you can set, when this input chain resets the GVs.

5.2.3 Transponder

Transponder readers are provided in two versions. Either it is integrated into the device or you get an external module, e.g. TS-TMR33. Whether the appropriate option is available, you can see on the type label and in the device menu (press ESC+F1 to get there). In order to release the transponder reader you have to open the setup and to set the appropriate options (see figure 51).



When configuring the transponder please mind the provided information about the current transponder type.

The reading system is set via the transponder type.

Figure 51: Settings of the transponder

At the moment the following transponders are supported by the PZE-MasterIV Basic Fields on the transponder				
Frequency	Type	Module	Fields on the transponder	Comment
125 KHz	Unique	TMR33,	Fixed 13-digit number	Only reading possible
125 KHz	Hitag1	ProxLine MCR, PHG-Voxio oder -Relino	64 segments each 4 byte: 0 = Fixed number, only reading 1 to 31 = Passwords, 32 to 63 = available.	The available segments can be used e.g. to save a firm identification, a card number, an account for canteens etc. PHG supports at most 3 segments with Hitag1 and 2, with Titan only the serial number.
125 KHz	Hitag2	(Switch over in DatafoxStudioIV)	8 segments each 4 byte: 0 = Fixed number, only reading 1 to 3 = Passwords, 4 to 8 available.	
125 KHz	HitagS		1 - 63 available	
125 KHz	Titan EM4450		34 segmentes: 0 to 2 = Password 3 to 31 = available 32 to 33 Serial/Device ID	

Table 6: Overview over supported transponders

Various possibilities of configuration are available for the DatafoxStudioIV, depending on the chosen transponder type.

5.2.3.1 Transponder reading systems

Read		
Type	Frequency	Module
Unique	125 kHz	TSR20, TSR21, TSR30, TSR32, TSR33
Hitag1	125 kHz	TSR21, TSR32, TSR33
Hitag2	125 kHz	TSR20, TSR21, TSR30, TSR32, TSR33
HitagS H32	125 kHz	TSR21, TSR32, TSR33
HitagS H48	125 kHz	TSR21, TSR32, TSR33
HitagS H56	125 kHz	TSR21, TSR32, TSR33
Titan EM4450	125 kHz	TSR20, TSR21, TSR30, TSR32, TSR33

Table 7: Transponder read

Write		
Type	Frequency	Module
Hitag1	125 kHz	TSR32
Hitag2	125 kHz	TSR30, TSR32
HitagS H32	125 kHz	TSR32
HitagS H48	125 kHz	TSR32
HitagS H56	125 kHz	TSR32
Titan EM 4450	125 kHz	TSR30, TSR32

Table 8: Transponder write

TMR33 supported by GIS:

Unique (Serial number)
 Hitag1 (max. 3 segments)
 Hitag S H32 (max. 1 segments)
 Hitag S H48 (max. 3 segments)
 Hitag S H56 (max. 3 segments)
 Hitag2 (max. 3 segments)
 EM4450 (max. 3 segments)

Please note the following when using Mifare:

The value-format is not supported.
 You can only read the data-format with the key-A.
 You can read and write the default-format with key-A.

Unique

Hitag1

Hitag1 is organized in 16 blocks at 4 segments each. Each segment has a length of 32 bits. The block numbers 4 to 7 can be saved with a password (secret) or used without one (public) optionally.

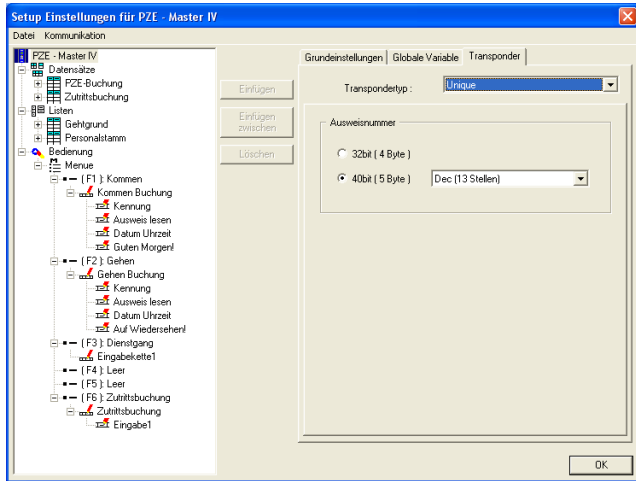


Figure 52: Unique transponder

Unique is a pure reading system. The card number is a worldwide well-defined ID and is used in all conceivable fields. A 64bit information is saved on the card. For the well-defined ID only 40bits are used. The remaining bits are amongst other things used for a checksum. When using Unique in DatafoxStudioIV the value of the card number (ID) (as 40 or 32bit-value) can be used for further processing.

Caution: DatafoxStudioIV supports only the segments 0 and 8..63. The segments of 32..63 can be read and written always, the segment 0 can be read always. Depending on the content of the segments 1..7 it might be possible, that the segments 8..31 cannot be read or written.

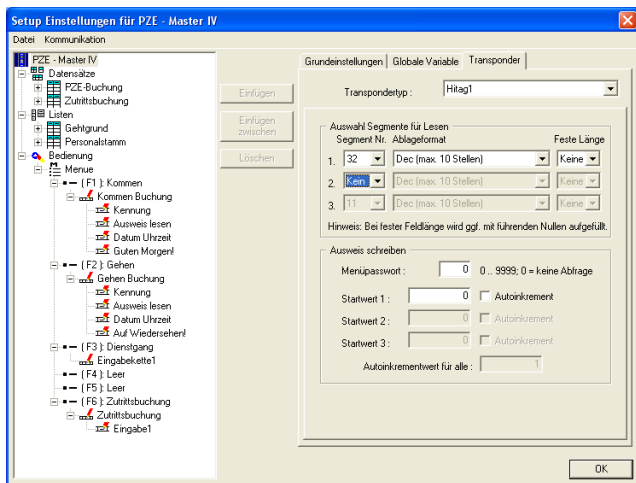


Figure 53: Hitag1 transponder

At most 3 segments are available for concurrent processing. You can select them in the DatafoxStudioIV under Transponder via the segment number.

Via the filing format you set how the 32bit-value is used.

When you select Fixed length the read card value is cut to the set number of digits and is filled up with zeros (0) left-sided, if necessary.

For the writing of the cards an initial value per each segment can be set. You can activate the option Autoincrement value behind the current initial value. Then the current segment value is increased by the value indicated under Autoincrement value after every write operation. The initial values of the segments can be edited in the device-BIOS. The set autoincrement value is only displayed in the device-BIOS and cannot be changed on the device itself. The writing of cards can be saved by a menu password.

Hitag2

Hitag 2 is organized in 8 segments. Each segment is 32 bits long.

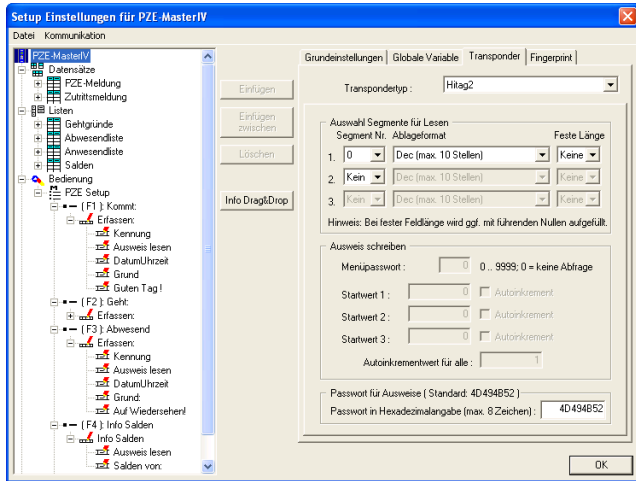


Figure 54: Hitag2 transponder

At most 3 segments are available for concurrent processing. You can select them in the DatafoxStudioIV under Transponder via the segment number.

Via the filing format you set how the 32bit-value is used.

When you select Fixed length the read card value is cut to the set number of digits and is filled up with zeros (0) left-sided, if necessary.

For the writing of the cards an initial value per each segment can be set. You can activate the option Autoincrement value behind the current initial value. Then the current segment value is increased by the value indicated under Autoincrement value after every write operation. The initial values of the segments can be edited in the device-BIOS. The set autoincrement value is only displayed in the device-BIOS and cannot be changed on the device itself. The writing of cards can be saved by a menu password.

HitagS

When using this method you differ between "HitagS H32", "HitagS H56" and "HitagS H48".

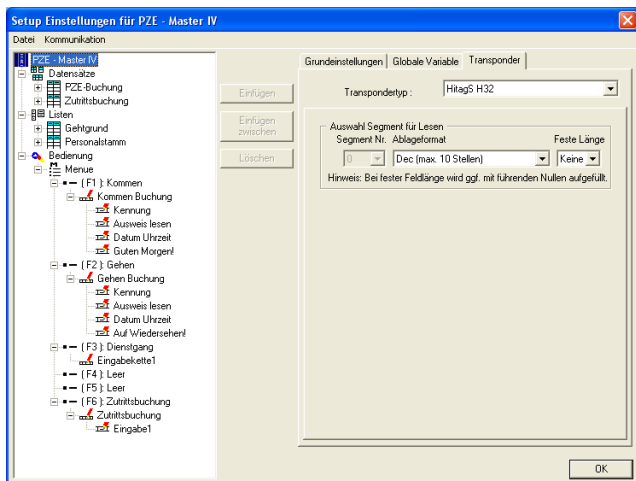


Figure 55: HitagS H32

HitagS H32 means, that this transponder has just a 32bit-value (= serial number of the card) (see Unique).

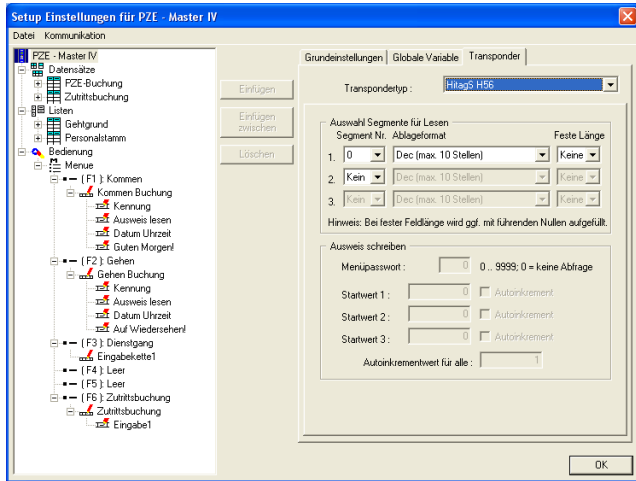


Figure 56: HitagS H56

The H56 means, that this transponder has 8 registers for a 32bit-value each, altogether 256 bit (see Hitag2).

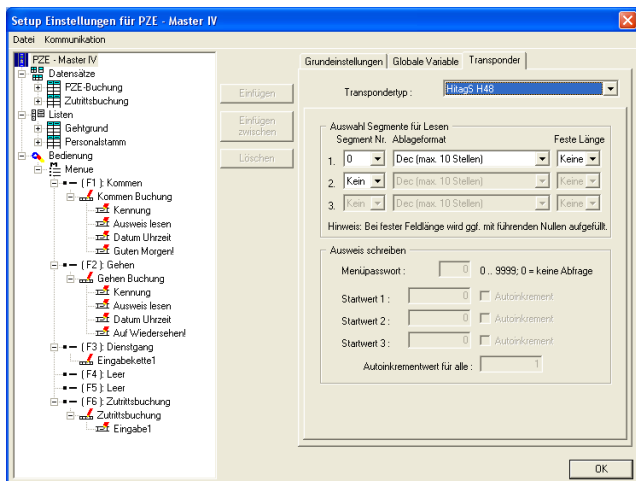


Figure 57: HitagS H48

The H48 means, that this transponder has 64 registers for a 32bit-value each, altogether 2048 bit (see Hitag1).

Titan

Titan (EM4450) is organized in 34 segments. Each segment has a length of 64 bits. You can find the serial number in segment 32.

For the writing of the cards an initial value per each segment can be set. You can activate the option Autoincrement value behind the current initial value. Then the current segment value is increased by the value indicated under Autoincrement value after every write operation. The initial values of the segments can be edited in the device-BIOS. The set autoincrement value is only displayed in the device-BIOS and cannot be changed on the device itself. The writing of cards can be saved by a menu password.

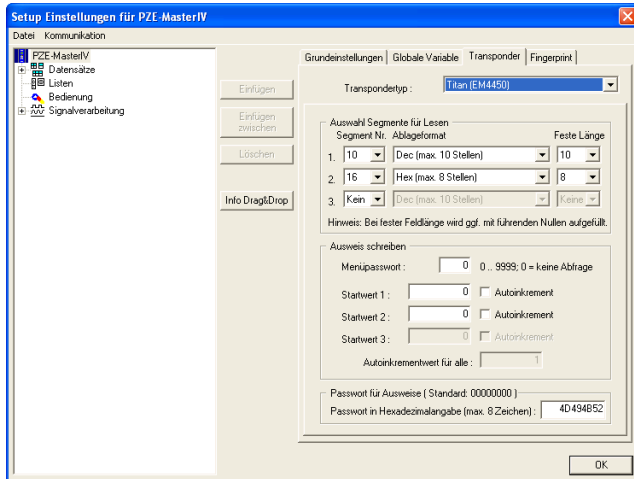


Figure 58: Titan EM4450 transponder

At most 3 segments are available for concurrent processing. You can select them in the DatafoxStudioIV under Transponder via the segment number.

With the filing format you set, how the 64bit-value is used.

When you select Fixed length, the read card value is cut to the set number of digits and is filled up with zeros (0) left-sided, if necessary.

5.2.3.2 Function upgrading for Mifare transponders

5.2.3.2.1 General information

The function Autologin always works in this version. If no password is entered, the default password by Philips or Infineon is used. If a password is entered, at first a login as key A is carried out and if that fails, this password is used as key B. Autologin is active only for reading.

5.2.3.2.2 Global settings

Mifare

Three password groups are provided. Password group 1 is used for the global settings. Range 2 is freely available, range 3 can be used with the restriction, that here the passwords of the old card (for rewriting the Access Conditions Bits of the sector trailer in the BIOS menu) are logged.

For the ASCII-format the value with the given length is written on the card, a zero-termination is not written on the card. If there are any zeros within the given length, they are written on the card.

For the ASCII-format the value with the given length is read from the card, a zero-termination is added after the given length. Thus, the maximum length, possible for the card, used completely.

All Mifare standard cards can be used. When using 1kByte cards all sectors can be used, when using 4kByte cards only the first 16 sectors (out of 40) can be used.

Autologin function

In the previous version 04.01.04.xx the Autologin was active non-stop; only a few users knew this and used it. In the version 04.01.05.19 (and higher) the Autologin works in a different way. At activation all 6 passwords, that are given, are used until a login was successful. This function allows only the reading of the card with various passwords; when writing on the card the password has to be correct. If Access is used, the Autologin function cannot be used, because the access reader permits only one reading password for security reasons.

Access Conditions Bits

The Access Conditions Bits are logged on the sector trailer, the fourth block of a sector. Each sector can have its own password key A and B, also the access rights can be set for each sector and even for each block. The sector Trailer is structured as follows:

The sector Trailer cannot be read out via the setup functions. Only the blocks 0 to 2 are accessible in order to read and write data. The Access Conditions indicate the block format and the access rights of the block of a sector. The Value format is not supported by the firmware, but this can be set optionally. You should pay special attention to the Access Condition (B3), because the settings of the sector Trailer cannot be changed afterwards, it is write-protected then. If you are not sure, you should use the default settings of the producer.

!

Caution:
 The Access Conditions Bits do not change the settings of the password use in the groups 1, 2 or 3. Here you have to pay attention, so that the settings correspond to the ACB. A set write-protection of the sector Trailer cannot be cancelled.

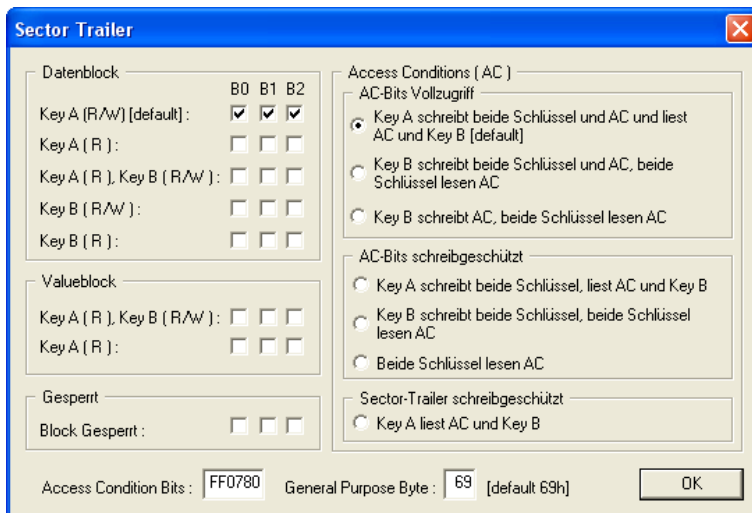


Figure 59: Sektor Trailer

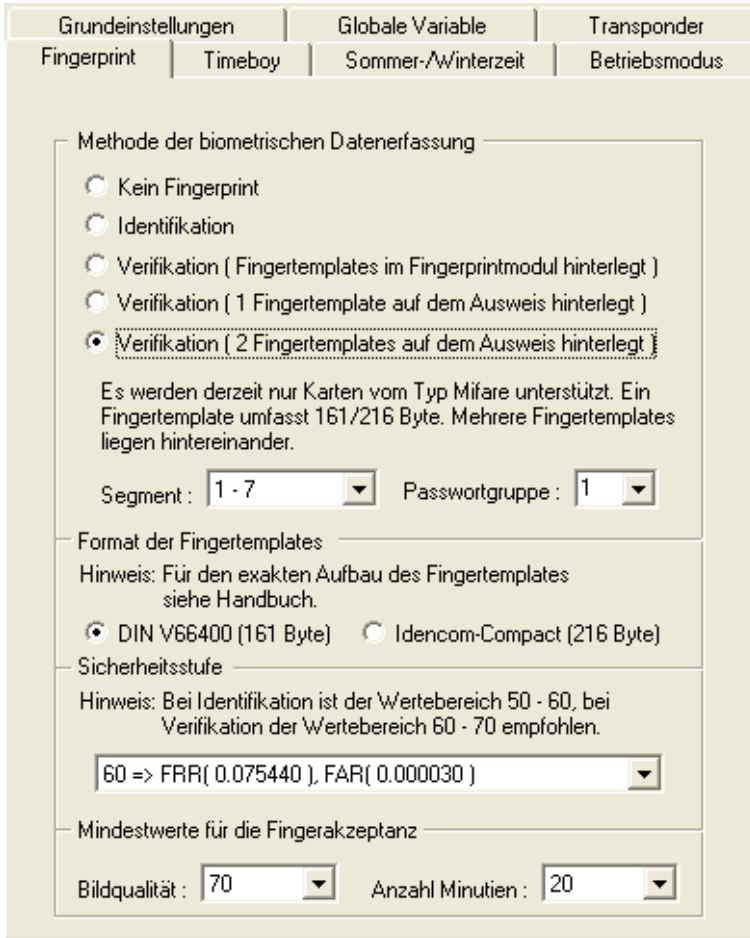


Figure 60: Example of a card

The card with the set default password key A FFFFFFFFFFFFFFFF for reading and writing with the ACBs FF078069 is new.. The card should have an ID number (32-bit as decimal value with leading zeroes, 10 digits) in the range sector 1 block 1, and a data range for fingerprint in the sectors 2 to 10. The range for the ID number uses the password group 1 with key A (reading key) and key B (writing key); the range for the fingerprint uses the password group 2, also with key A (reading key) and key B (writing key). In that case the ACBs have to be changed.

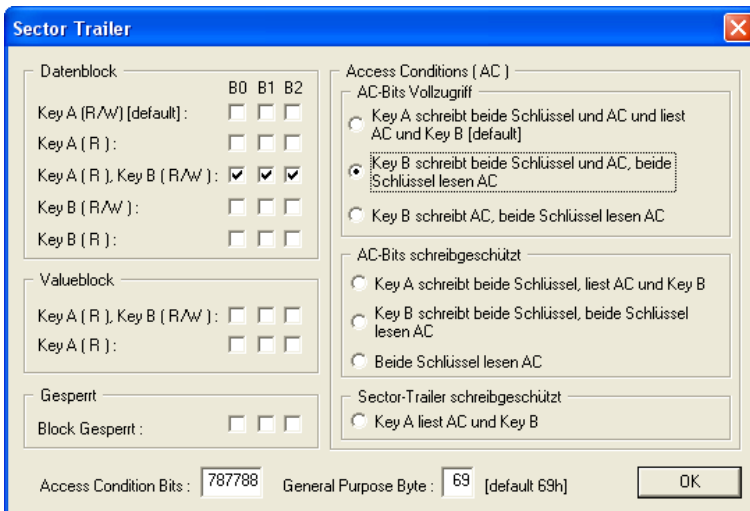


Figure 61: Sektor Trailer

The ACBs (Access Condition Bits) should have a value of 78778869.

Fingerprint	Timeboy	Sommer-/Winterzeit	Betriebsmodus
Grundeinstellungen	Globale Variable	Transponder	

Transpondertyp :

Globale Auswahl Sektor für Lesen/Schreiben

Seriennr.

Sektor	Block	Ablageformat	Start	Länge
<input type="text" value="1"/>	<input type="text" value="1"/>	<input type="text" value="Dec (max. 10 Stellen)"/>	<input type="text" value="4"/>	<input type="text" value="Keine"/>

Passwort Gruppe 1 (Standard)

Für Lesen alle Passwörter

Lesen / Schreiben

Key A	Key B	<input type="radio"/> Key A / Key A
<input type="text" value="FFFFFFFFFFFF"/>	<input type="text" value="FFFFFFFFFFFF"/>	<input checked="" type="radio"/> Key A / Key B
		<input type="radio"/> Key B / Key B

Ausweis schreiben

Startwert : Autoinkrement, Wert :

Access Conditions :

Passwort Gruppe 2

<input type="text" value="FFFFFFFFFFFF"/>	<input type="text" value="FFFFFFFFFFFF"/>	<input type="radio"/> Key A / Key A
		<input checked="" type="radio"/> Key A / Key B
		<input type="radio"/> Key B / Key B

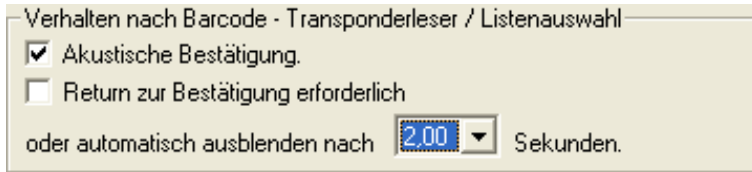
Passwort Gruppe 3

<input type="text" value="FFFFFFFFFFFF"/>	<input type="text" value="FFFFFFFFFFFF"/>	<input checked="" type="radio"/> Key A / Key A
		<input type="radio"/> Key A / Key B
		<input type="radio"/> Key B / Key B

In order to set the card on the values, intended for the use in the setup, the password group 3 has to contain the old passwords; in this example key A with FFFFFFFFFFFFFF as reading and writing key. Via the transponder menu the card can be set newly, but the formatting sector has to be activated. The ID can be set via Write data on card, the field Fingerprint via Fingerprint sector trailer. Now the card possesses different reading and writing passwords for fingerprint and ID, that are only known to you and the terminal.

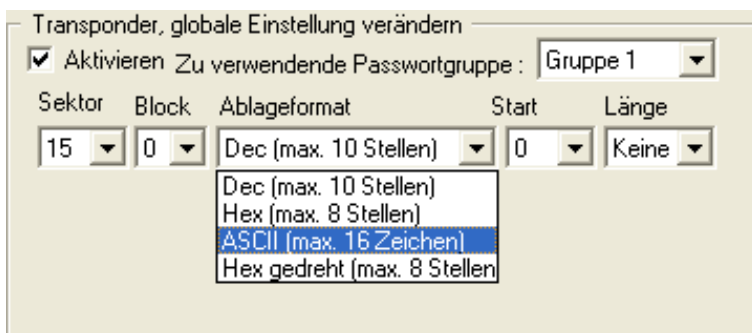
Figure 62: Password definition

5.2.3.2.3 Function normal



New for this field function is the switching-on and -off of the acoustic signalisation. The background is, that the last access to the transponder shall create a beep, in case of carrying out several reading and writing processes within one input chain.

Figure 63: Behaviour after Barcode - transponder reader



On the field Mifare some alterations were carried out, so that now not only an ASCII string can be read, but also binary values (as already possible at other transponder processes). It is important, that the password group is set correctly, so that the data can be read.

Figure 64: Behaviour after Barcode - transponder reader

5.2.3.2.4 Transponder value write, also for Hitag1, Hitag2 and Titan

Only values of global variables can be written.

Note for the user: With Hitag several segments can be used. If these segments use different formats, the number of digits has to be set under Decimal (except for the use of only one segment). Otherwise, the data might be written on an other range than desired.

The page Expanded has the same structure as the one for field function Normal.

5.2.3.2.5 Transponder menu

The transponder menu is different only on the register card Mifare. The function Formatting sector was added to the hitherto existing functions/ menu items. The activation of this new function causes, that a card with key Ax and key Bx and its current ACBs is overwritten with the values of key A and key B of field 1 and with the ACBs of block 4, set in the setup. In order to carry out a login with the correct passwords, key Ax and key Bx have to be set in the password group 3. All this is important, if you want to create a new password for a card, that is new/ unused or even already used.

Terminals with fingerprint If the terminal is equipped with fingerprint and Mifare, the menu item "Fingerprint field sector trailer" is displayed in the transponder menu. Here the sectors, with the settings of the password section, edited under Fingerprint, are set. If Formatting sector is active, the passwords and the ACBs are set; if this option is deactivated, only the passwords are set. For the logging-in password the field 3 is used. The number of sectors, that are not accessible, is displayed at the end of the formatting

process. The reason for this are the different Access Conditions of the single sectors. Here the terminal will not help you. Such error sources have to be eliminated before, or you have to make sure, that the cards were not used yet. In that case such an error does not occur.

Conclusion If Formatting sector is deactivated, only the value is written on the card under Write card, on the fingerprint field Sector trailer only the passwords for the memory range of the fingerprint templates are set. If Formatting sector is activated, both passwords under Write card and block 4 of the segment with Access Conditions on the fingerprint field Sector Trailer are written newly. If the fields to be written are write-protected, an error message is displayed.

You may find further information about Mifare under <http://www.mifare.net/> or www.nxp.com Products => Identification => MIFARE => MIFARE Classic.

5.2.3.3 Application possibilities for Hitag-transponder

All Hitag-transponders have got a fixed serial number in segment 0 and further available segments. You may find information about number, size and function in table 6. There is the possibility to use different segments. So you have several possibilities to use them with PZE and ZK. In the following you may find 2 examples for the possible use of PZE and ZK as well as the advantages and disadvantages.

**Note:**

You recommend the safer method with lists in the terminal. When using ZK lists they are necessary anyway.

Example 1.

PZE-MasterIV Basic setup for Hitag2 with firm code in segment 4 and personnel number in segment 5.

Operation:

The firm code is filed in segment 4. When reading the card a format check is carried out, e.g. 010101* for the customer ID 10101. The first 0 is created, because the fixed field length is 6. That means, even if the customer ID becomes a 6-digit number, the process still works.

The personnel number is filed in segment 5 (card number = personnel number).

Security is created by the firm code exclusively. Of course a further list could be loaded. But this would not be an improvement, because the clearness of the card number cannot be guaranteed.

The cards can be programmed via the terminal or the desktop reader TS-WR34_USB article-no. 222001

Advantages:

No permanent staff lists have to be transmitted to the terminal.

Disadvantages:

Overlappings might be possible, if the firm code is not well-defined. That can happen, if you forget to set the setup for the project or if another producer uses the same method. Different accounting programs use different formats for the customer ID. The setup has to be set customer-specific.

- ▶ Under Transponder the project number/customer ID has to be input.
- ▶ The format check has to be set in each input chain.

Each card has to be programmed.

Example 2.

PZE-MasterIV Basic setup for Hitag 2 with card number in segment 0 and check on lists.

Operation:

Only the well-defined serial number (already programmed by the producer) in segment 0 is used.

Security is created by a check of the permanent staff lists (as standard with Unique).

Advantages:

The process is absolute safe because the well-defined serial number is used.

The setup does not need to be adjusted to each costumer, i.e. the same setup can be used for various projects/costumers.

The cards do not need to be programmed.

All free fields are available for other uses (canteen, drinks dispenser, firm equipment etc.).

While bookings are carried out, the name of the person can be displayed.

Disadvantages:

You have to load the lists, that should be controlled on the device compulsorily. (Alternative: This can also be done via an online check with the server application.)



Note:

Datafox offers a desktop reader with USB-connection to read the serial numbers into the PZE-software. By the keyboard emulation software the reader reacts like a keyboard. The cursor is put to the field Card number and the transponder is read. The number in the set segment is read and written to the position of the cursor.

5.2.4 Creating data record descriptions

!

Caution:
When creating data record descriptions please note the following restrictions:

- At most 25 data fields are admissible per each data record description.
- The field length of date and time is set in advance by the format fix.
- Numeric character fields and ASCII-fields with a firmware release smaller than 04.01.03 are limited to 20 characters, the following firmware versions can save up to 40 characters in the fields.
- The total length of a data record is limited to 230 byte.
- At most 20 data record descriptions can be created.

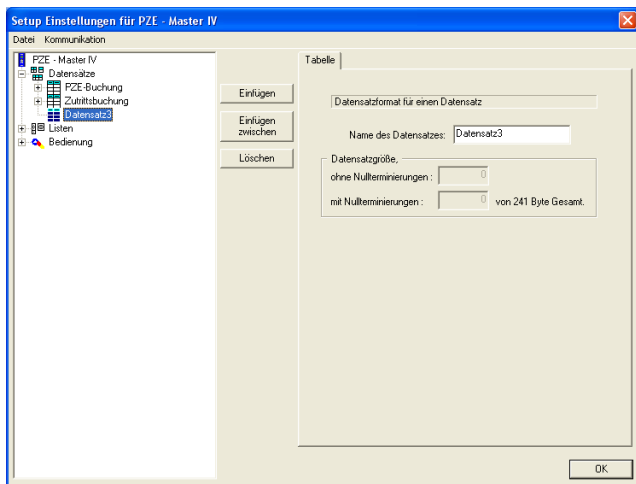


Figure 65: Creating a data record description

When creating new data record descriptions under the element Data records please proceed as follows. Select the element Data records in the tree structure (it is highlighted in blue then). Via the button Paste a new data record description is created; the tree structure is expanded to a new entry. If several data records exist you can set the position of the new data record via the button Paste between.

In order to name the new data record, click on it in the tree structure. On the right side the details about this data record are displayed. There you can enter the new name.

☞

Note:
All entries are applied automatically and do not need to be saved explicitly. Via the button OK you leave the edit dialogue and return to the setup dialogue.

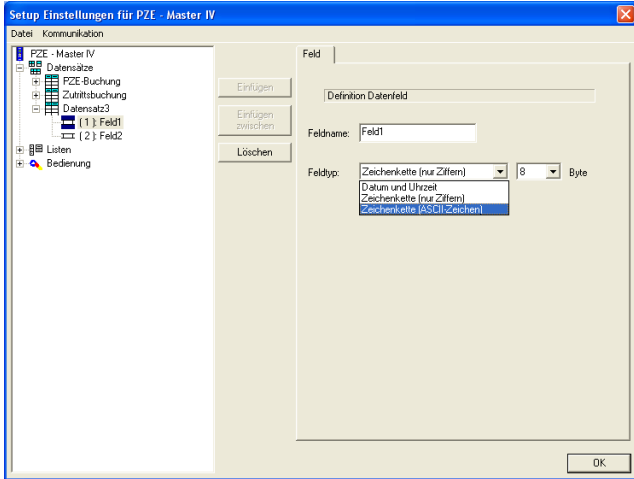


Figure 66: Creating data fields

For each data record appropriate data fields can be created and the field characteristics can be defined. This procedure is the same as when creating new data records.

The data type Date_Time is defined with a fixed length. When using strings you have to give an indication of length additionally.

5.2.5 Creating list descriptions

Lists provide a defined data base. You can compare them with the combo-box of a PC application.

!

Caution:
When creating list descriptions please note the following restrictions:

- At most 25 data fields are admissible per each list description.
- Numeric character fields and ASCII-fields with a firmware release smaller than 04.01.03 are limited to 20 characters, the following firmware versions can save up to 40 characters in the fields.
- The total length of a data record is limited to 242 byte.
- At most 20 list descriptions can be created.

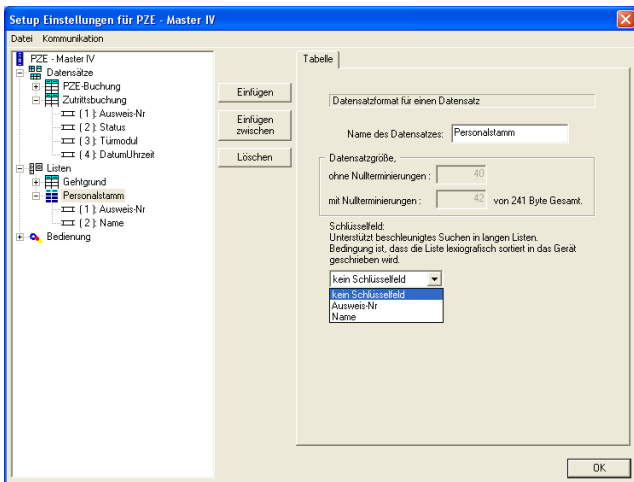


Figure 67: Creating list descriptions

Creating and defining list descriptions with data fields is carried out analogously to the creating of data record descriptions, under the element Lists in the tree structure (see also chapter 5.2.4).

In addition you can set a list field as key field. That way searching in long lists is expedited.

The fields under the item Data size, which cannot be edited, indicate the size of a list entry, with and

without end identifier (zero-termination) per each field.

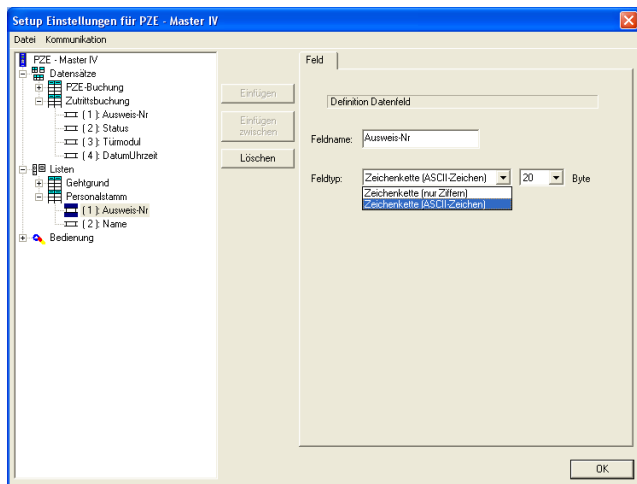


Figure 68: Creating list fields


Only the options string with numeric characters or rather string with ASCII-characters are available for a list field.

Here you also have to set the maximum length of the string.

5.2.5.1 Creating and importing lists

1.) Creating lists

If you want to work with logged lists, the user has the possibility to select particular data of a list and to transmit values to input chains. In that case the lists have to be defined in the setup and to be available as ASCII file or as text file.



Note:

If you want to import a list as *.txt file, the beginning of the file has to correspond to the name of the list description in the setup. If they do not correspond, the *.txt. file is not identified as list. In order to differentiate several lists you can expand the file name, e.g. list description in the setup is Gehgrund and the name of the list file is Gehgrund-PZE-MIV-02.txt.

According to the list definition in the setup, the list fields are separated from each other via the tabulator. In order to create lists you can use the characters A-Z, a-z and 0-9. Other characters are inadmissible. The maximum length of each field depends on the field length defined in the setup.

2.) Importing lists

Via the menu item *< Setup => Listen importieren >* all necessary lists are imported to the setup program. The imported lists are displayed in the main window of the setup under the point *Importierte Listen : (n von m)*. The link to the memory location of the lists, path and file name are saved with the setup. Please note, that only those lists can be imported, that are compatible with the list definitions of the setup. Otherwise the links are deleted and new compatible lists have to be imported. For this reason an edited list should be imported again to make sure, that it is compatible with the list definition.



Note:

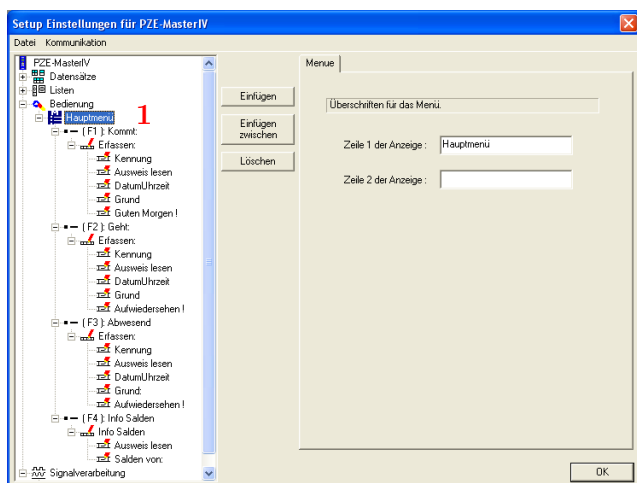
When transmitting a setup, the lists are formatted on the device (according to the new setup). For this reason you have to import and to transmit the lists again to the device together with the setup after editing a setup.

5.2.6 Creating a user guidance

The creating and editing of the user guidance (operation) of the PZE-MasterIV Basic is carried out analogously to the creating and editing of data records and lists. At first you create the elements via Paste or rather Paste between. Then you edit the details of the elements selected in the tree structure.

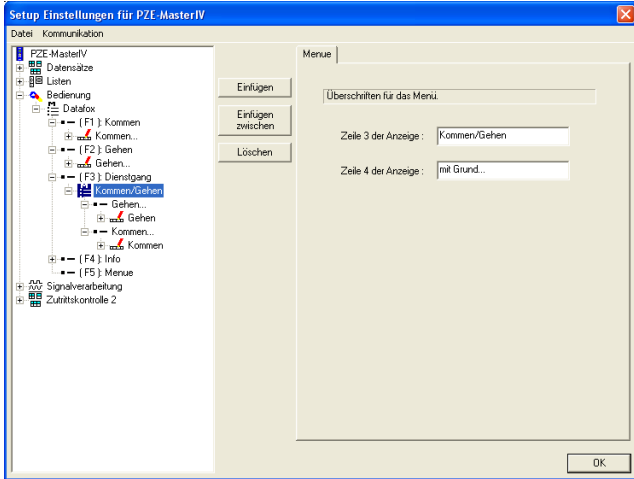
5.2.6.1 Menu and menu items

The operation of the PZE-MasterIV Basic can be created individually, depending on the application. Initial point of the whole operation is the main menu (1) as highest level (Root) (depending on the PZE-MasterIV Basic type).




For operating the PZE-MasterIV Basic a main menu has to be created. At most 12 menu items can be created for this main menu. Each of this menu items (F1 to F12) defines a booking record, that can be carried out by the PZE-MasterIV Basic.

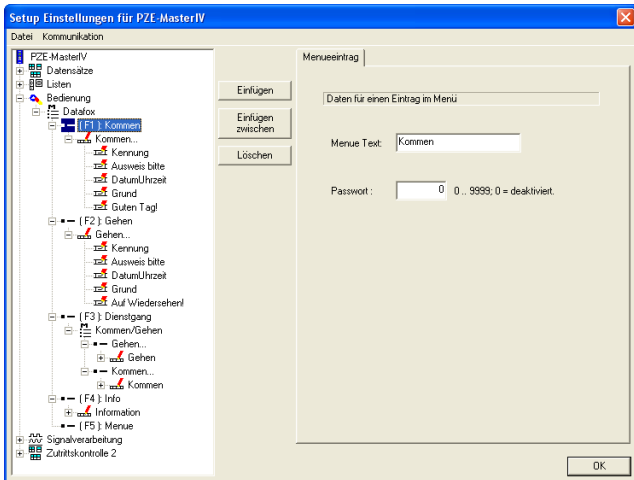
Figure 69: Creating a user guidance



Under menu inputs submenus or input chains can be created optionally. Depending on the selection you can paste the element to the tree structure via double click or via OK-key.

Figure 70: Creating the menu structure

 **Note:** Under a menu only menu items can be created. Under menu items also menus or input chains can be created optionally. In the structure depth at most two submenus can be created, i.e. main menu - menu item - submenu 1 - submenu item 1 - submenu 2 - submenu item 2 - input chain 1 (with fields) - input chain 2 ...



As explained above, a menu item represents a booking record. For this reason it is possible to create a password for each menu item (in addition to its displayed text). This password protects against unauthorized use of the whole device or single booking processes.

Figure 71: Menu item

5.2.6.2 Defining input chains

An input chain defines a series of data fields that are entered on the device or filled automatically via collection- or control routines. Via this input chains the data records are filled by the device (see chapter 5.2.4. If several input chains are created under one menu item, they are worked through one after another.

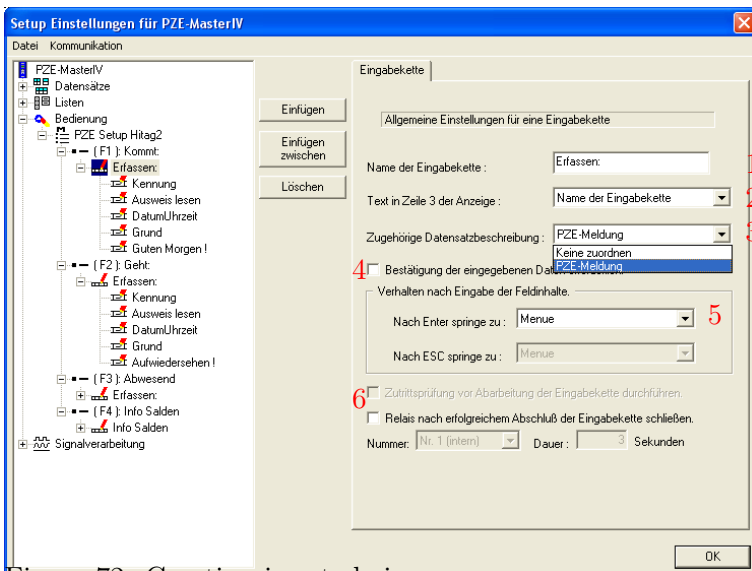


Figure 72: Creating input chains

After creating an input chain and setting a designator(1), it has to be assigned to a data record. This is done via the field with the appropriate data record description (3).

If no assignment is defined at this point, no data record is created. It is reasonable, if the input chain is only used for defining a GV (as explained in chapter 5.2.2.

Via the top line on the display further information can be provided to the user. You have to select from the name of the input chain and all defined GVs (2) displayed with their values.

In the interests of safety you can call up, whether the data should be saved at the end of the input chain. In order to do this you have to tick off (4). If this option is activated, you can return to the beginning of the input chain by pressing the ESC (without saving the data).

The reaction (5) of the device can be set depending on the ENTER/ESC-key. You can define for each key, where the device jumps to after keypress. Possible jump targets are the menu and the data fields of the input chains. That way loops can be created, e.g. when an order is selected there. Then several bookings can be carried out under one personnel number and no groups or persons need to be selected again. This is also used with the labour time collection 1 and 2.

In order to activate the access control before working through the input chain (6), you have to select access control 2 (in the basic settings of the device under operating mode).

!

Caution:

If all fields of the input chain are filled automatically (e.g. via constants or global variables), the system runs through a loop automatically: At the end of the input chain it returns to the query in the beginning. This loop cannot be left via the ESC key. It is only possible to save the input via ENTER. In this case a separate confirmation field can be defined at the end of the input chain to finish the input chain.

5.2.6.3 Defining input fields

Note:
All inputs always apply to the input field selected in the tree structure.

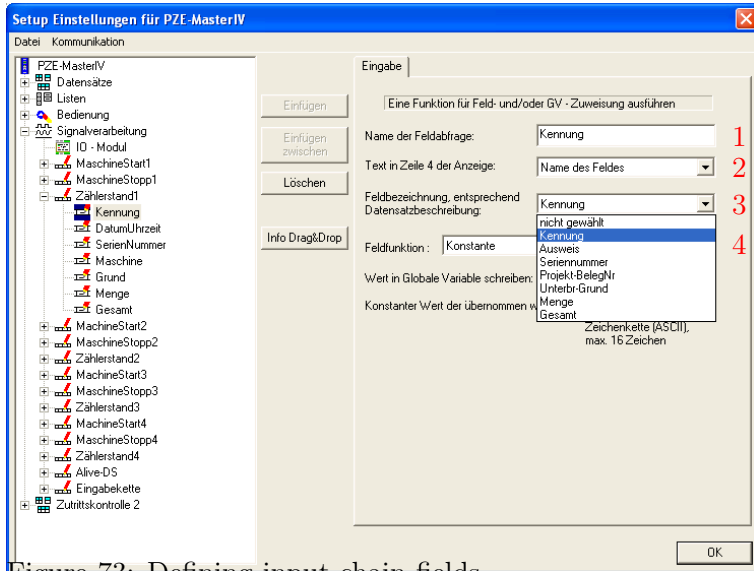


Figure 73: Defining input chain fields

The input chain, which the input field (1) was created in, is assigned to a data record description. The same is done with the input field: It is assigned to a data field (3) of the same data record description (field description according to the data record description).

Via the top line on the display further information can be provided to the user (see also chapter 5.2.6.2)). You have to select from the name of the input field and all defined GVs (2) displayed with their values.

The value written on this field while entering can be copied to a GV. In order to do this you have to set the global variables here. (5).


The following input functions (4) are available:

5.2.6.3.1 Field functions in general

- ▶ Normal = Input via keyboard, bar code, transponder or smart card.
- ▶ Current date_time
- ▶ Select from list = In order to do this an assignment to a defined list has to occur. You may find a detailed description in chapter 5.2.5.
- ▶ Write list field = The value of a GV can be written on a selected list field via this function.
- ▶ Constant = The field is filled with a constant value.
- ▶ Confirmation = No data field is created but a stand-by position, e.g. to collect beginning and end of an occupation with two date_time fields. In front of the next field a stand-by position in form of a confirmation is pasted (see also the notes in the caution-box in chapter 5.2.6.2).
- ▶ Copy global variable to field = The value of the current global variable is copied into this field.
- ▶ Copy field into global variable
- ▶ Apply serial number (10-digit number)
- ▶ Apply analogous measurement
- ▶ Apply digital measurement (16-digit number)
- ▶ Apply counter reading
- ▶ Apply function value
- ▶ Apply threshold status
- ▶ Apply GPRS Alive counter
- ▶ Apply firmware version (xx.xx.xx.xx)
- ▶ Apply status of summer-/wintertime (S/W)
- ▶ Apply GPS data (27-digit RMC)
- ▶ Apply GPS data (variable selection)
- ▶ Copy Timeboy variable to field
- ▶ Start/Stop Timer
- ▶ Carry out access control with GV = You can carry out an access control within an input chain.
- ▶ Switch relay
- ▶ Apply debug value
- ▶ Write transponder value

5.2.6.4 List selection

The function Select from list allows the selection of values from a list or to use list values for check an input; e.g. accounts, occupation lists, cost centres etc. Before you can select from lists you have to define some lists (see chapter 5.2.5) and to import them (including data)(see chapter 5.2.5.1).



Note:

There are three methods available for list selection. You can use them separate or in combination. A list selection via direct input is impossible because the PZE-MasterIV Basic has not got a keypad.

For all the methods you have to set as follows:

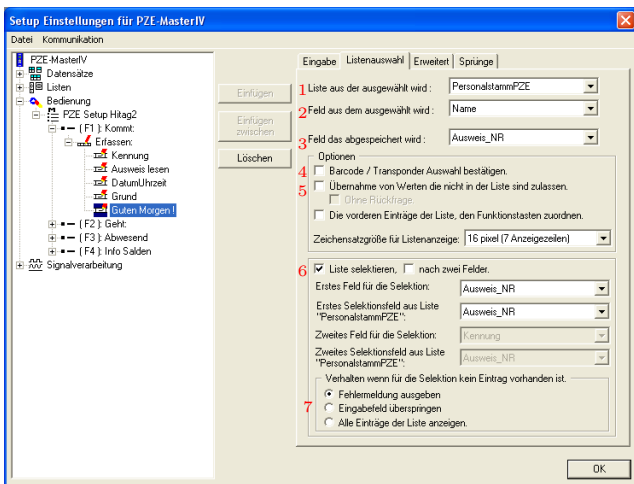


Figure 74: List selection

The function Select from list was set for one input field.

Via the register card List selection a list definition with the item List to be selected from (1) has to be assigned. Via the item Field to be selected from (2) the display is set.

You set which data are saved via the item Field to be saved or rather Field to be compared with bar code (3).

Depending on the chosen method further settings might be necessary

- 1.) Simple list selection by scrolling (arrow keys ▲ ▼) and selection via ENTER

This method is suited to the manual selection of failure reasons etc. excellently. No further settings are necessary.

- 2.) List selection via bar code; input check on the basis of the logged list

At first you have to activate the option (4) Confirm bar code/transponder selection. An appropriate note is displayed. You have to confirm the booking record via ENTER.

The input is checked automatically. Therefore the further process has to be defined as Value read via bar code/transponder was not found, if a bug occurs. Nevertheless the value that was not found can be applied (with or without query)(5).

- 3.) List selection via selection

At first you have to activate the option (6) Select list. That way it is possible to compare an entered/read-in value with a value in the assigned list. If the comparison is positive, the value is saved on the assigned data record field via the option Field that is saved or rather compared with bar code. If the comparison is negative, 3 options are available. A message is displayed: The searched value was not found in the list. The device returns to the defined position (if the PZE-mode 2 is activated via the time zones).

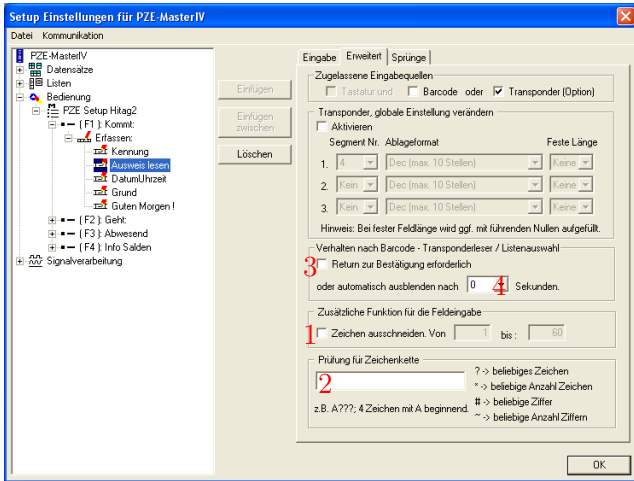
If the comparison is negative, these 3 options (7) are available.

- a.) First option: An error message is displayed (The searched value was not found in the list). The device returns to the defined position (if the PZE-mode 2 is activated via the time zones).
- b.) Via the option Skip input field the input field is skipped and no data record field is filled. The input chain is not interrupted here.
- c.) Via the option Display all inputs the user gets the possibility to select an input from the list manually by scrolling (arrow keys)(▲▼).

5.2.6.5 Expanded

Often several information are logged in a bar code or transponder to reduce the input expense. The PZE-MasterIV Basic offers the possibility to depacketize this combi-bar codes/ -transponders and to distribute them to various fields.

At first an input field is created to save the read value on a GV (see chapter 5.2.2. Then the input fields (each accommodates a part value) are defined in the input chain. For each of this fields the function Copy global variable is selected on the register card Input. Under Write global variable on field the GV, that should be depacketized, is selected.



On the register card Expanded the option Cut out character of (1) is activated and the field part is set by setting start and end position of the fields to be read. Additionally a format check for string (2) (with a set format) can be carried out here.

Figure 75: Expanded

5.2.6.6 Reaction on list selection

- ▶ If you tick off Return necessary for confirmation (...), the list is displayed until a selection is made (in case of a list selection).
- ▶ (no tick) Timeout 0 (...). The first found list input is applied without being displayed. Please be careful in this case!
- ▶ (no tick) Timeout >0. The list is displayed. You can select a list input by scrolling and apply it via ENTER. If no acceptance occurs via ENTER, the selected list input is applied automatically after the set time.

5.2.6.7 Jumps

This field is available, if one of the following input functions is selected: Normal, Select from list, Write list field, Confirmation, Copy GV/Timeboy variable to field, Copy field to GV/Timeboy variable, Fingerprint: scan/ teach-in fingers/ delete finger templates/ carry out identification/ carry out verification or apply debug value.

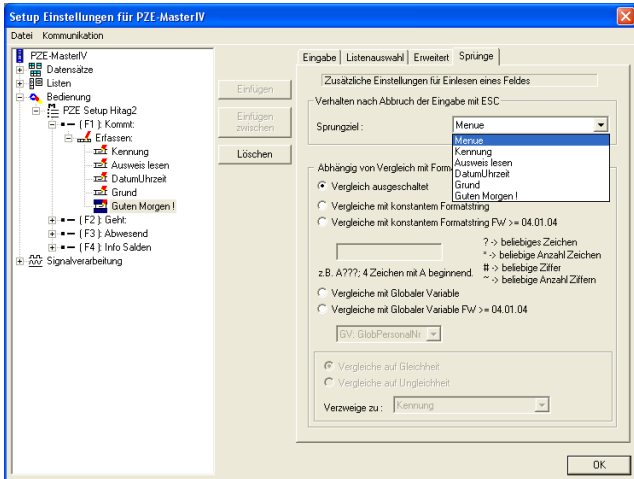


Figure 76: Defining jumps

Via jumps you can leave input chains early. You can configure input chains so that you can jump back field by field via ESC. A jump target is also precondition to terminate a loop.

That way it is possible to define also complicated processes.

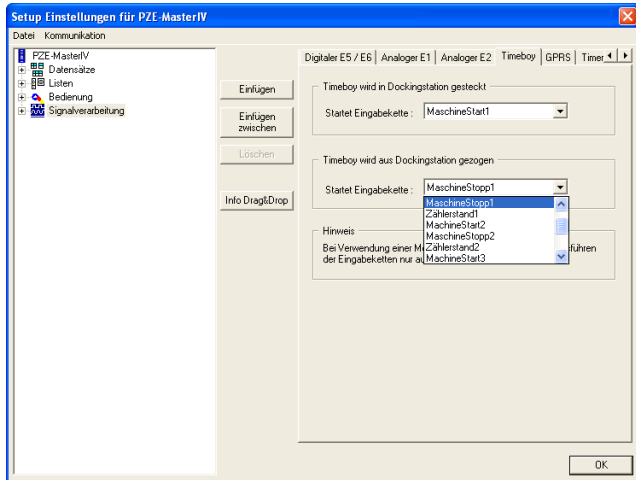
Various loops can be created in form of different input chains. The PZE-mode also corresponds to a loop, which is always run through from the beginning.

By comparing the input with a given string or with the content of a global variables, you can carry out further intersections (depending on the comparison).

5.2.7 Signal processing

Via the signal processing the digital and the analogous inputs are supervised and the digital outputs controlled.

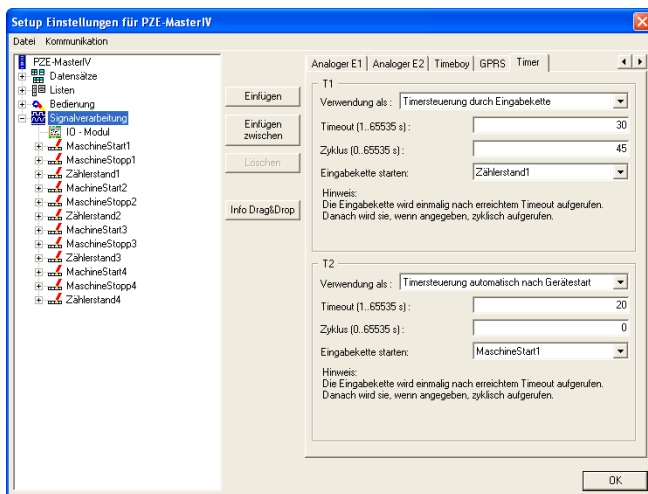
5.2.7.1 Connection Timeboy



Via the register card Timeboy input chains can be assigned to the actions Plug-in Timeboy and Pull-out Timeboy. They are activated, when the action occurs.

Figure 77: Assignment of input chains to plugging-in- and pulling-out-events

5.2.7.2 Setting of timers



Two types of timers are available. They are started either via an input chain (call up the function Start/stop timer) or automatically after starting the PZE-MasterIV Basic. An input chain can be assigned to each timer. It is called up after the timeout was reached and then, if set, cyclically.

Figure 78: Setting of timers

5.2.7.3 Setting of timers

5.2.8 Mathematical operations

The mathematical operator can carry out addition, subtraction, comparison (equal, not equal, greater/less than) and negation (No). The operand (the information) has to be available as string in decimal form [0..9]. The operands can be provided as constants, global variables or fields with the format (only numeric characters).

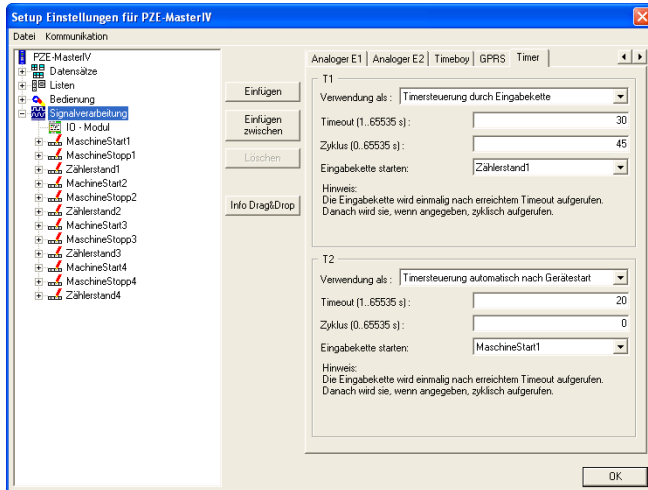


Figure 79: Setting of timers

Two types of timers are available. They are started either via an input chain (call up the function Start/stop timer) or automatically after starting the PZE-MasterIV Basic. An input chain can be assigned to each timer. It is called up after the timeout was reached and then, if set, cyclically.

The operations addition and subtraction do not have to be explained further.

The following is valid for the negation (No): Each value of the operand > 0 has the result = 0; each value of the operand = 0 has the result = 1.

The following is valid for the comparison operations: A positive comparison (Yes) has the result = 1; a negative comparison (No) has the result = 0.

The result is stored in a global variable. The value this GV can be used for the decision for jump target.

formatting operations

Record fields and GV (global variables) can be convert between hexadecimal strings and dezimal strings or between dezimal strings and hexadecimal strings. You can set a mask of zero sign to get a constant length of string. The maximum mask length is 16 characters. The max. resolution of operands is 8 Byte (64bit).

Example

Value in GV 0000290A should be convert to a dezimal value 9994 with a mask of 00000000. The result is 00009994.

5.3 Creating setups

5.3.1 Setup for labour time collect (entry-exit order check offline)

In this chapter there is explained, how to create the setup for labour time collection and how to transmit all necessary information to the device. You will explain how to use jumps and queries to avoid double bookings. Please plan 3 up to 4 hours for working through this chapter. Take the time, so that you can comprehend each step in a test environment.

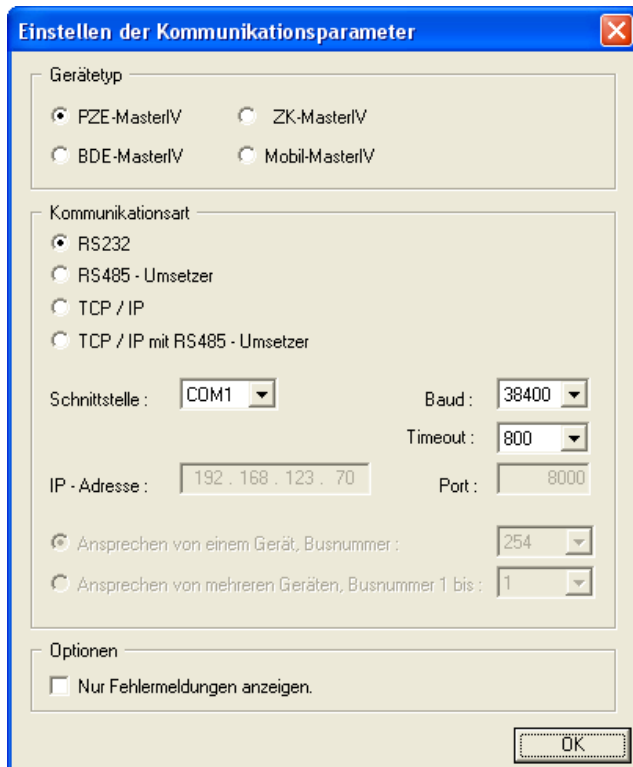
5.3.1.1 General

The booking processes, that are available for the setup of labour time collection, are Entry, Exit and Short business trip. An information display of the accounts can be set in addition.

In order to carry out a labour time collection you need a collection terminal with integrated transponder reader.

5.3.1.2 Basic settings of the setup

At first you start the DatafoxStudioIV. Then you have to open the dialogue for setting the communication parameters via *< Kommunikation => Einstellungen >*.



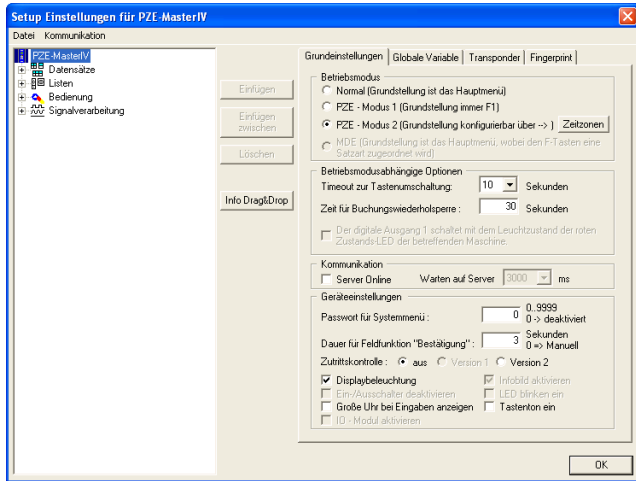
Set PZE-MasterIV as device type.

In this example you select the communication type RS232. Select the interface, as it is allocated on you server (standard COM1). Baud rate and timeout value can remain on the default values in this case. But you should check the concurrence of the settings via the system menu-BIOS of the PZE-MasterIV under communication. If they are not concurrent, you have to adapt the parameters via terminal or DatafoxStudioIV. Confirm all changes via OK.

Figure 80: Setting of the device type and the communication parameters

Via *< Datei => Speichern unter >* you can save this setup (standard AESetup1) with an own name. In the following example you use the name PZE-Basic-Unique.aes.

You can also create a new setup file via *< Datei- > Neu >* and save it with an own name. The setting of device type and communication parameters is important.



After saving the setup with an own name, the basic settings can be carried out. You may find a detailed explanation in chapter 5.2.1. You set the operating mode to PZE-Mode 2 and define, if required, the time zones. The timeout for key shift and the time for anti-repeat lock for bookings is set to 10 seconds. The duration of the field function Confirmation is set to 5 seconds.

Figure 81: Basic settings of the device setup

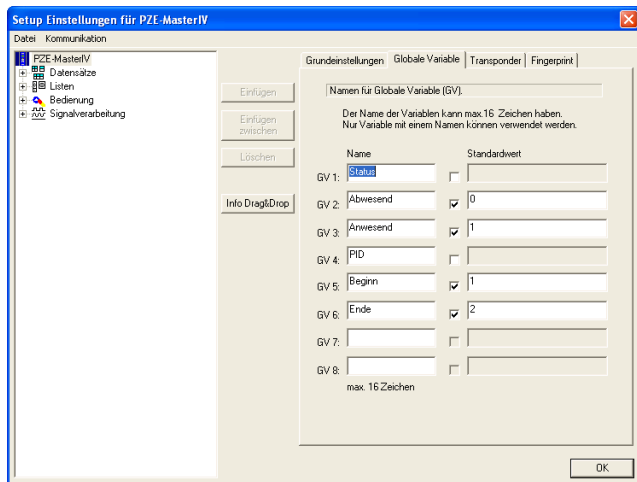


Figure 82: Definition of global variables

In the following example you use 6 global variables. The variable Status is used to save the attendance status of the staff. The possible states are attendant and absent. They are preallocated with the values (0/1). The fourth variable is PID, used to buffer the personnel numbers. In addition you define the two global variables Start (default value 1) and Stop (default value 2). Later they are used for the list selection, to collect clocking-on and -off as reason automatically.

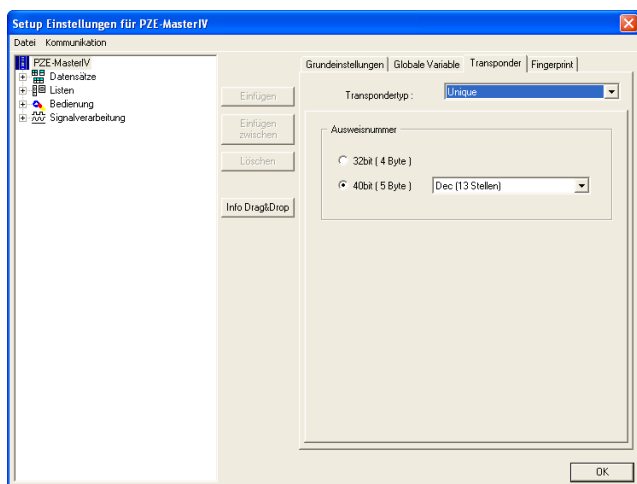


Figure 83: Transponder selection

In this example you use a transponder of the type Unique. The card number is 40bit (5 Byte) with the filing format Decimal (at most 13 digits).

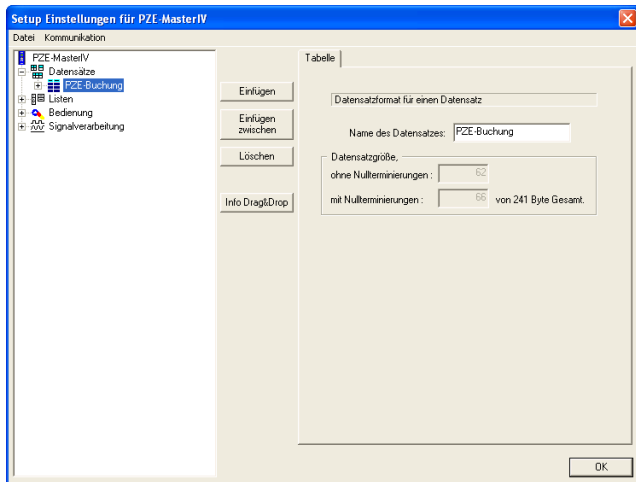
5.3.1.3 Creating the data record description

In order to create a data record description you should exactly know, which data have to be created.

Example: While a PZE-booking record a data record should be created, containing the following information:

- 1.) **Kennung** (indicates, which booking process = F1...Fn was carried out)
- 2.) **ID** (read card number)
- 3.) **Name** (name of the staff member)
- 4.) **Datum_Uhrzeit** (indicates, when the card was read)
- 5.) **Grund** (enables to describe the short business trips more detailed)

Now click on the button Paste five times to create the 5 data fields. The rough definition is finished. Now you have to set which data types (and their length) should be in each field. The following data types are available: string with numeric characters, string with ASCII-characters (text) and date_time.



The dialogue for editing the setup is opened via a double click on the client range of the DatafoxStudioIV or via *< Setup => Editieren >*. Mark the input Data records on the left side of the tree and then click on Paste. Under Data records an entry Datensatz1 is created. Mark this entry and you can edit its characteristics on the right side. Please enter the name PZE-booking there and mark the entry again in the tree. Now the name is updated.

Figure 84: Creation of a data record description

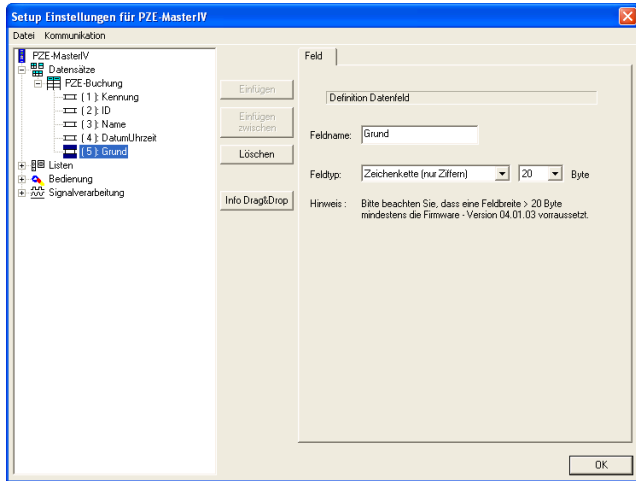


Figure 85: Setting the data types

Mark an input in the tree and set the characteristics on the right side. Identification is set as string with ASCII-characters (length 2). Because you know, that a Unique transponder is used, the ID is defined as string with numeric characters (length 13). The Name is set as string with ASCII-characters (length 20). Date_Time is set as date_time. The Reason is defined as string with ASCII-characters (length 20). When you have finished these settings, the tree should look as shown in the adjoining figure.

5.3.1.4 Creating the lists

After setting, which data shall be created, you have to consider, which information are necessary for that purpose.

All staff members are provided with name and card-number in the permanent staff list. The possible short business trips (with identification and designation) must also be provided via a list.

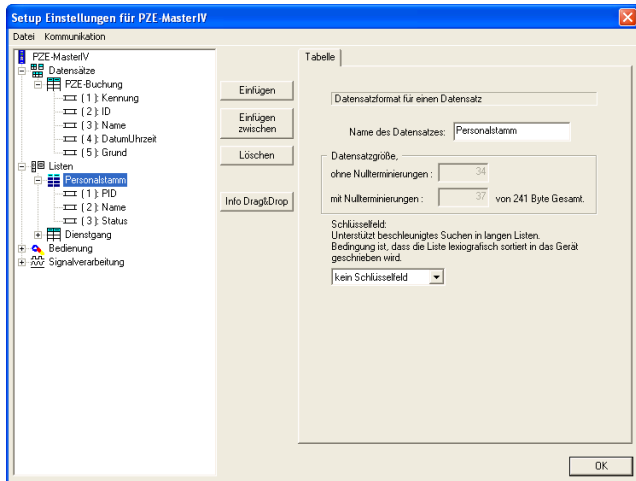
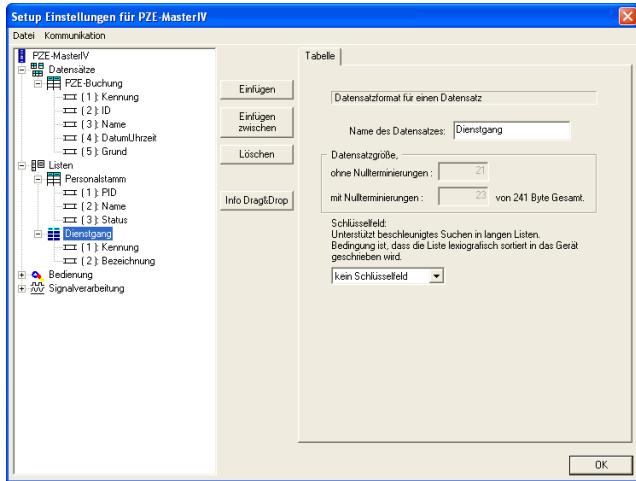


Figure 86: Creation of the list descriptions

These two lists are defined in the Studio appropriately. For this mark the entry Lists in the tree of the edit dialogue. Via Paste a new list is created. This Liste1 is named Permanent staff. Add 3 fields and define them as follows: PID as string with numeric characters (length 13) (according to data record description), Name as string with ASCII-characters (length 20) and Status as string with numeric characters (length 1).



The list Short business trip with the fields Identification (string with numeric characters (length 1)) and Reason (string with ASCII-characters (length 20)) is defined analogously.

Figure 87: Creation of the list descriptions

These 2 lists have to be created via an editor (e.g. Microsoft Editor) and saved with the appropriate name as a *.txt . Another possibility is the creating of lists via an own software. The fields of the lists are separated via a tabulator. Comment lines start with a semicolon.

Liste Personalstamm

```
;PID      Name      Status
1234567890123  Arbeiter1  0
1212121212123  Arbeiter2  0
2525252525250  Arbeiter3  1
```

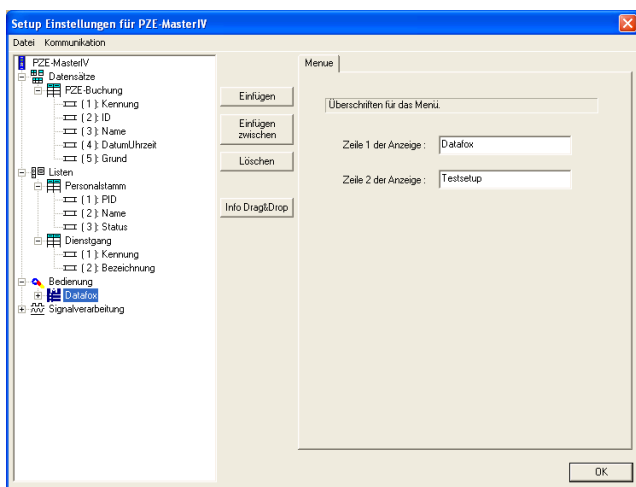
Liste Dienstgang

```
;Kennung  Bezeichnung
1  Arbeitsbeginn
2  Arbeitsende
3  Kundenbesuch
4  Bank
5  Post
6  Kfz-Pflege
7  Meeting
```

5.3.1.5 Definition of the device operation

After defining data records and lists you have to set, how the booking records shall proceed. In other words, you have to set, how the device reacts when inputting something and what is expected from the user. In this connection pressing a key on the device or reading a transponder or bar code can be an input.

For this you have decide at first, which booking records shall be carried out. In our example a staff member shall carry out an Entry-booking at clocking-on, an Exit-booking at clocking-off and an Entry/Exit-booking (for a short business trip) while working time. So you have to create 3 booking records.



At first you have to create the main menu. The display text can be defined freely, e.g. you can enter your firm name.

16 characters are available for each line.

Figure 88: Creating the main menu

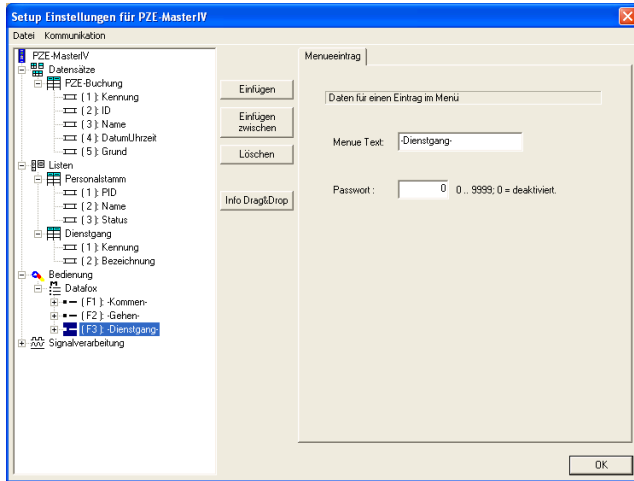


Figure 89: Creating the function keys

After the main menu the function keys (see figure 3.4.1) have to be defined. In order to do this you need the keys F1 to F3. The text, you enter for this keys (on the left side of the dialogue under Menue Text), is displayed in 3 text boxes in the lowest line of the display. Each text should not be longer than 10 characters.

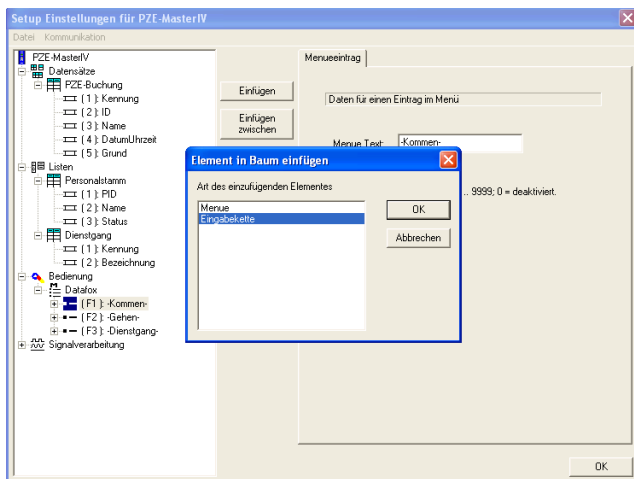


Figure 90: Creating an input chain

For the F1-key you define an input chain, which is the actual booking record, i.e. via the F1-key the booking record is initialized.

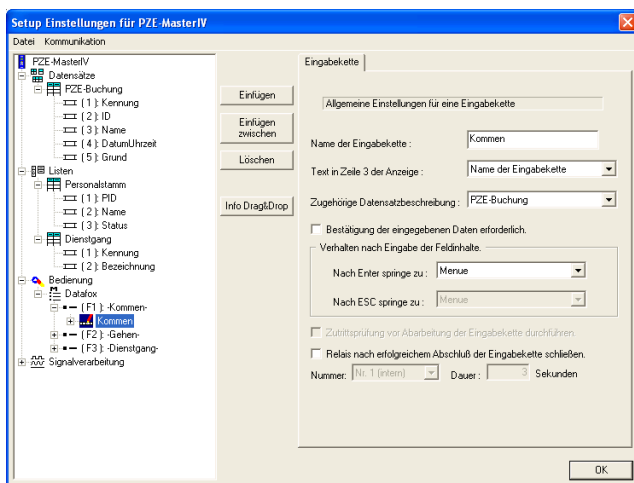


Figure 91: Configuration of the input chains

The input chain can be configured on the right side: Entering a name (Entry) and assigning a data record description (which data record shall be created). In our example you assign PZE-booking. Confirming the input is not necessary, because the booking record shall be automated. The following two options are also unnecessary in our example and therefore deactivated: Reaction after pressing ENTER or ESC. Controlling a relay after the successful conclusion of an input chain for a set period of time (e.g. for an automatic door-opener).

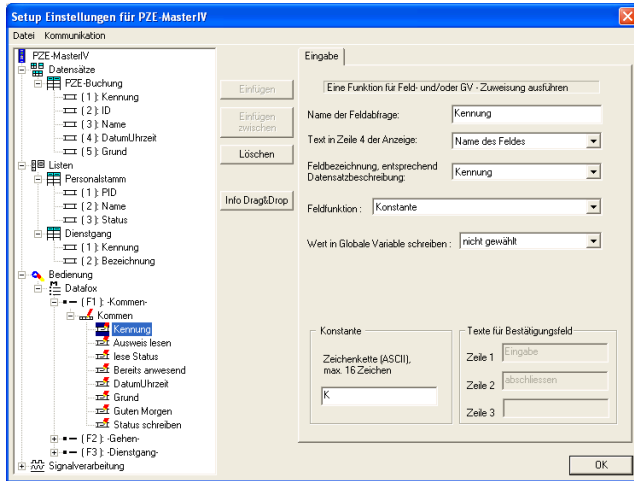


Figure 92: Configuration of the input Identification

Mark the input chain Entry... in the tree structure and add 8 input fields. Mark the first input field and select the appropriate data field (field description according to the data record description), that shall be filled with data. In our example select the field Identification. You use the function Constant and set Entry as constant value.

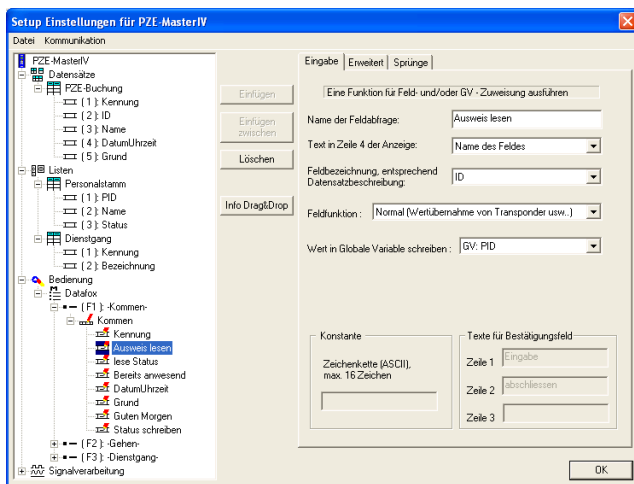


Figure 93: Configuration of the input Card please

Mark the next field and name it Read card. Set the field ID as field description (according to the data record description). Select the field function Normal (value transmission via transponder). At last you have to select the variable GV_PID under Write value on global variable to buffer the read ID.

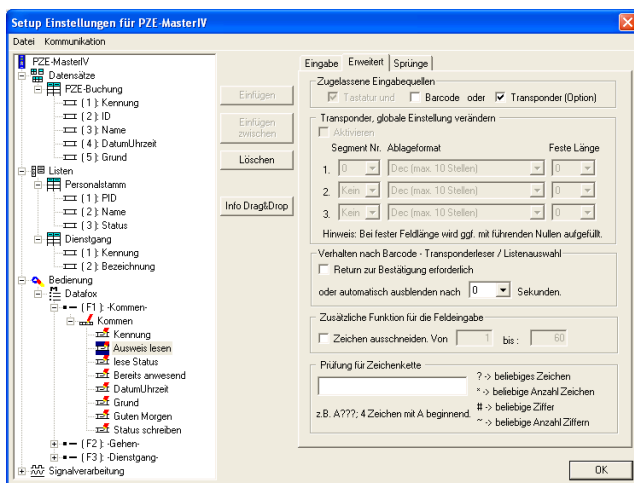
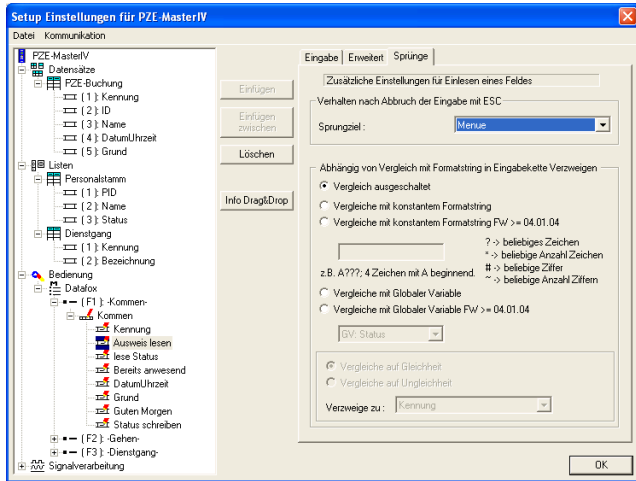


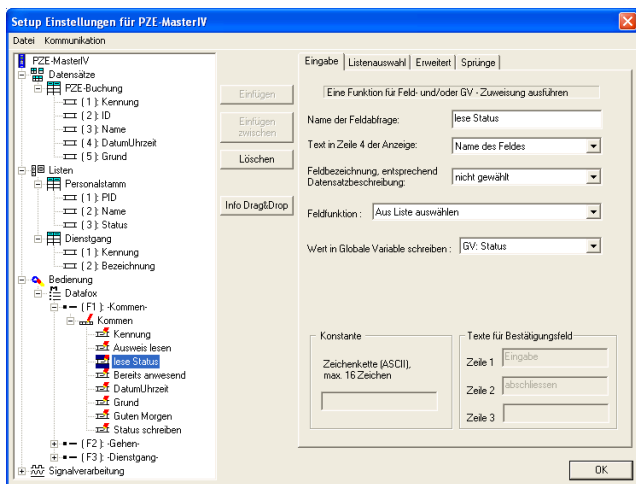
Figure 94: Expanded characteristics of Card please

On the page Expanded transponder as permitted input source has to be activated and the option Return necessary for confirmation has to be deactivated. Set the value for fading out automatically to 0 seconds.



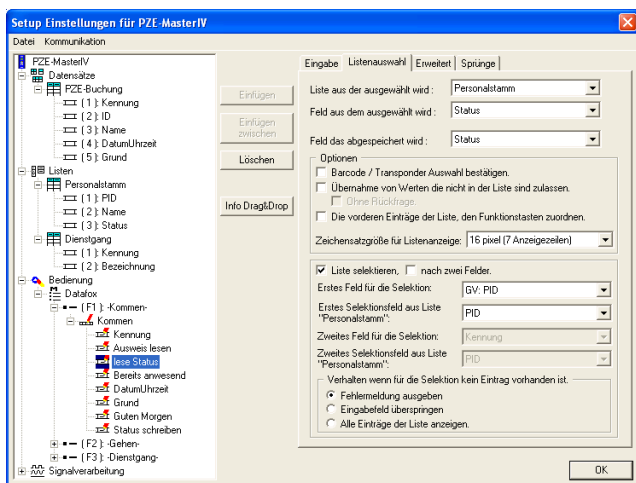
Because you only transmit a value from a global variable to a data field, but do not carry out any checks, you can apply the basic settings on the register card Jumps.

Figure 95: Configuration of the jump characteristics Card please



The third input field is named Read status. You do not need a field description (according to the data record description), because you only want to change the value of a GV. The status is read out of the permanent staff list, so you need the field function Select from list. You want to save the read value on the global variable Status, so you have to set the appropriate settings.

Figure 96: Configuration of the input Read status



On the register card List selection you have to set the following settings: The list to be selected from is the permanent staff list. The field to be selected from is Status and the field to be saved (on the global variable Status) is also Status. Activate the option Select list. The first field for selection is the global variable GV: PID. You want to compare it with all PIDs of the list. Therefore you have to set PID as first selection field of list Personalstamm.

Figure 97: Configuration of the list selection Read status

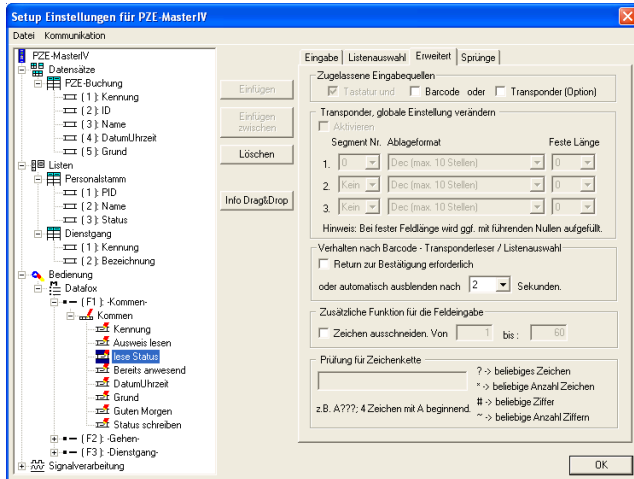


Figure 98: Expanded settings of Read status

On the page Expanded you have to deactivate transponder and Return necessary for confirmation. The time for fading out automatically is set to 2 seconds.

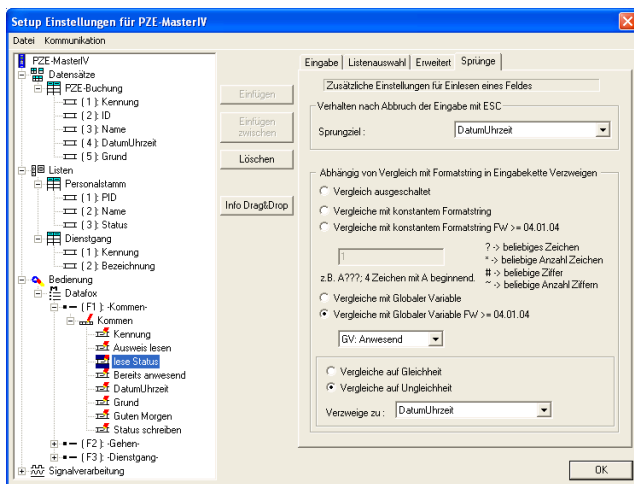


Figure 99: Jump characteristics of Read status

In order to avoid double Entry-bookings you open the register card Jumps now. There you activate the option Compare with global variable and compare the status of the GV: Status with the GV: attendant for inequality. In case of inequality you have to set a jump target under Branch to. Because the person is authorized to carry out bookings, you branch to Date_Time and skip the error message (already attendant) that way.

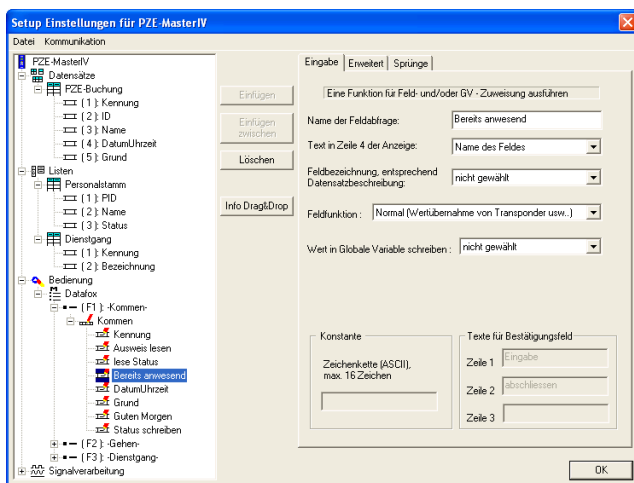
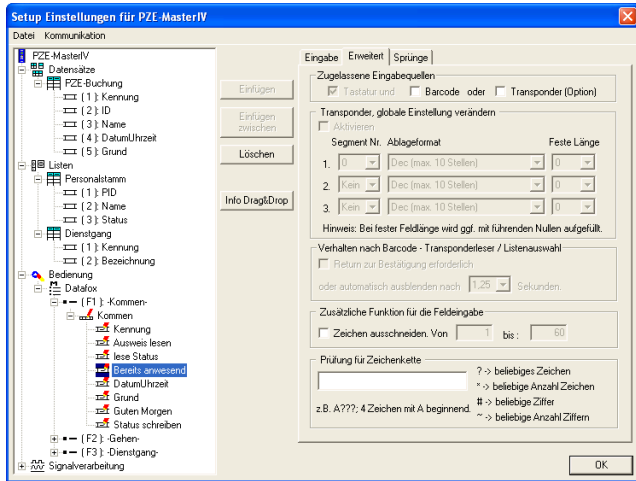


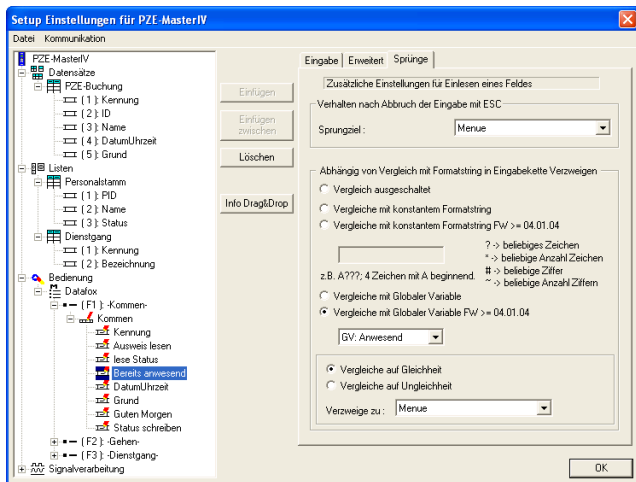
Figure 100: Configuration of the input Already attendant

The fourth field is our error message, in case of a double Entry-booking. Here you have to select a significant name, because this is the actual error message (in this example Already attendant). Select the field function Normal. The other settings are not changed.



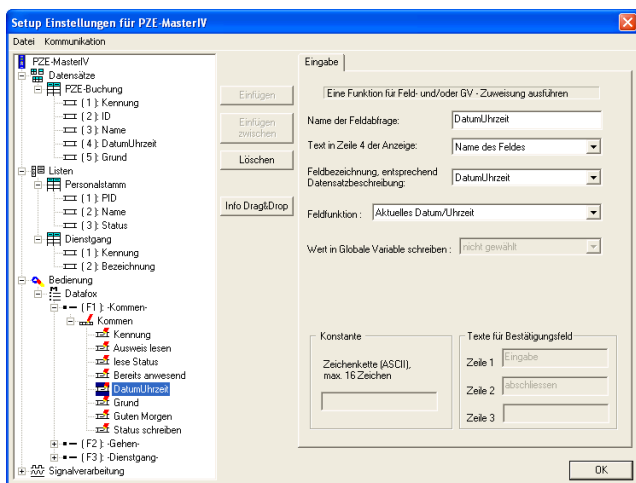
On the register card Expanded you deactivate the options transponder and Return necessary for confirmation.

Figure 101: Expanded settings of Already attendant



Now you have to carry out a comparison under Jumps to define a branching in case of a double Entry-booking. For this you activate the option Compare with global variable and compare with the GV: attendant. But this time compare for equality. In case of a positive comparison you set Menue under Branch to. That way creating a data record is avoided.

Figure 102: Jump characteristics of Already attendant



The next data field is named Date_Time. Select the field function Current date_time. Then the field description switches to date_time automatically.

Figure 103: Configuration of input Date_Time

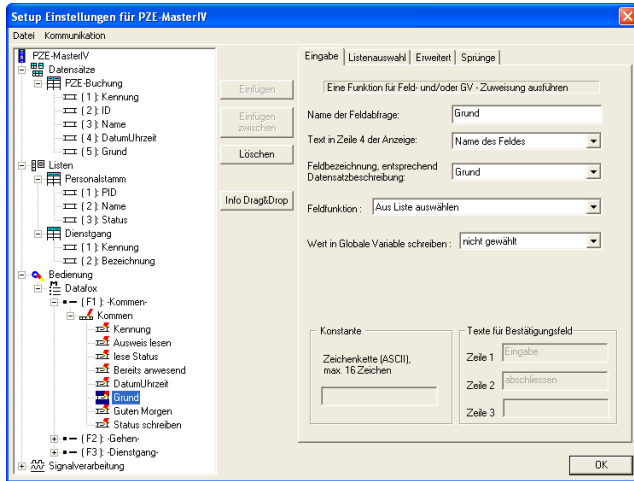


Figure 104: Configuration of the input Reason

Via this field you want to write the reason for the booking. While clocking-on and -off the user shall not carry out any further selection. Enter the name of the field (Reason) and assign the appropriate data record description. Set the field function Select from list.

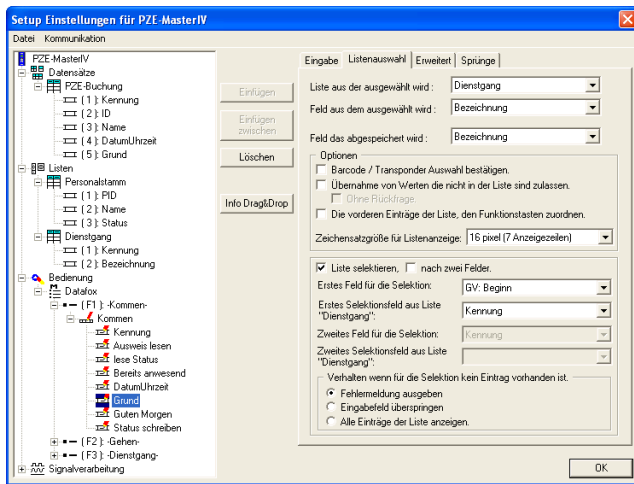


Figure 105: List selection of Reason

At first you select the list, the information shall be selected from - in this case of course Short business trip. Now you select that field of the list, whose data shall be displayed - in this case it is Designation. The information of this field shall also be saved. In order to carry out the list selection you use the value of the GV Start. Then you compare this value with each value of the list field Identification. The other settings can be applied without any changing.

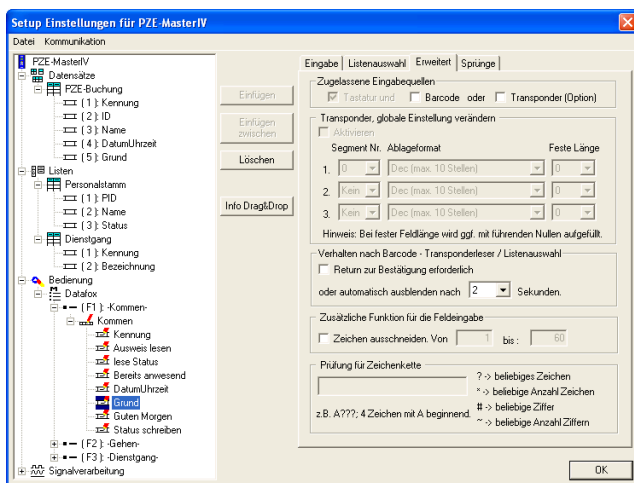
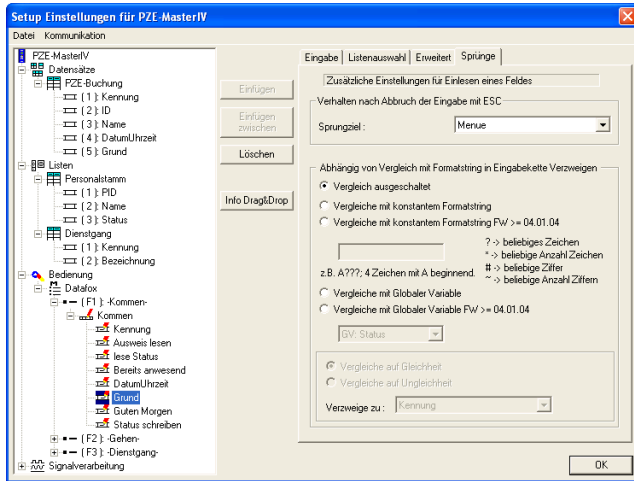


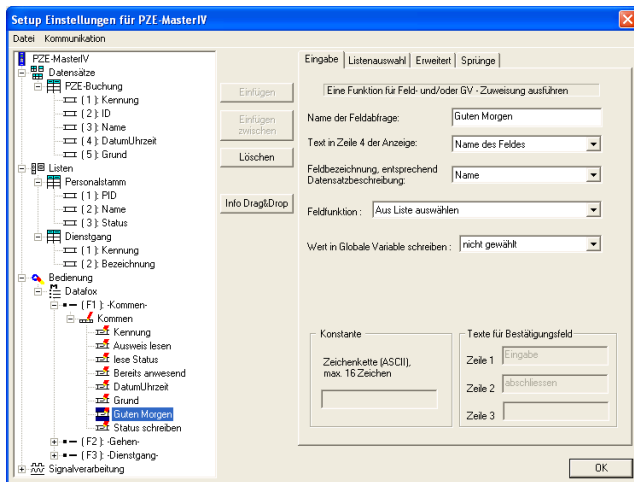
Figure 106: Expanded settings of Reason

On the register card Expanded you deactivate the option Return necessary for confirmation and set the time value for displaying the selected list information to 2 seconds. That way the user gets a visual confirmation of the correct list selection.



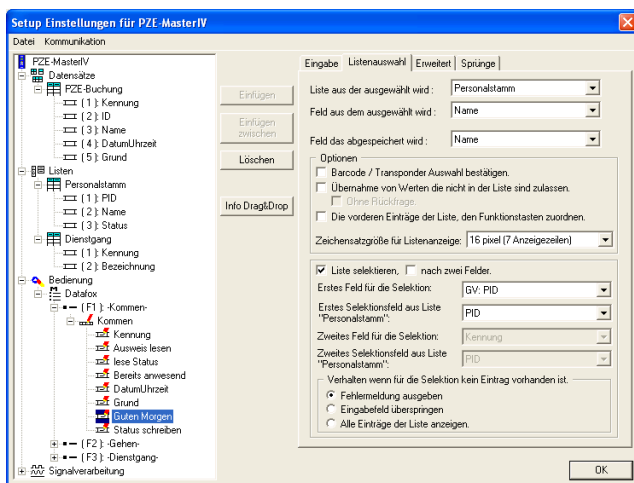
On this page all settings are applied.

Figure 107: Jump characteristics of Reason



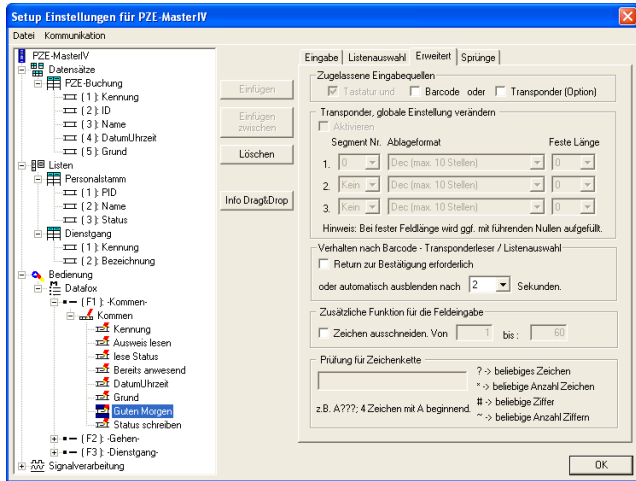
The next field is named Good morning. You set the field description Name. That way the field Name of the data record PZE-booking is filled. Again you need the field function Select from list. The other settings can be applied.

Figure 108: Configuration of the input Good morning



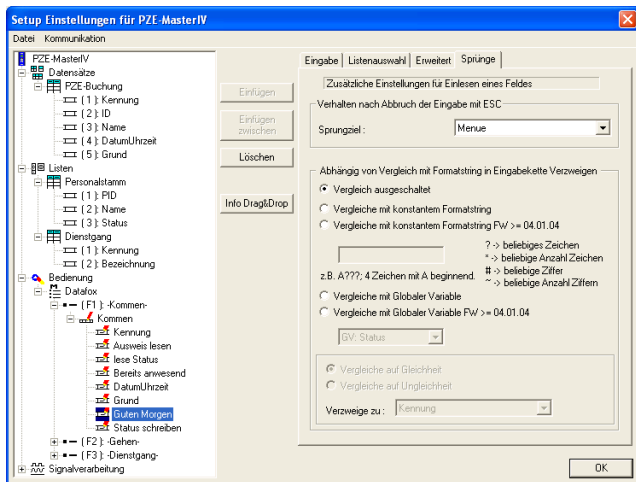
Open the register card List selection now and set the permanent staff list as list to be selected from. The field to be saved/selected from is our list field Name. The first field for selection is the GV: PID. You want to compare this variable with all PIDs of the list. Therefore you set PID as first selection field of list Personalstamm.

Figure 109: List selection of Good morning



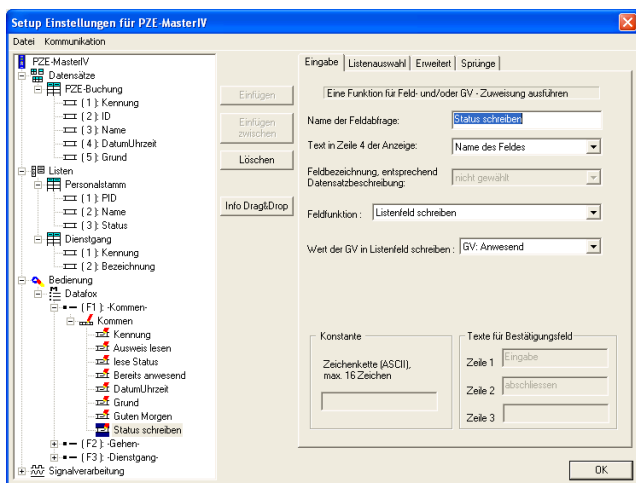
On the register card Expanded you deactivate transponder and Return necessary for confirmation. The time for fading out automatically is set to 2 seconds.

Figure 110: Expanded settings of Good morning



On this register card all settings are applied.

Figure 111: Jump characteristics of Good morning



Out last input chain field is named Write status. Here you need the field function Write list field. Set the GV: attendant (indicating the attendance) under Write value of global variable on list field.

Figure 112: Configuration of the input Write status

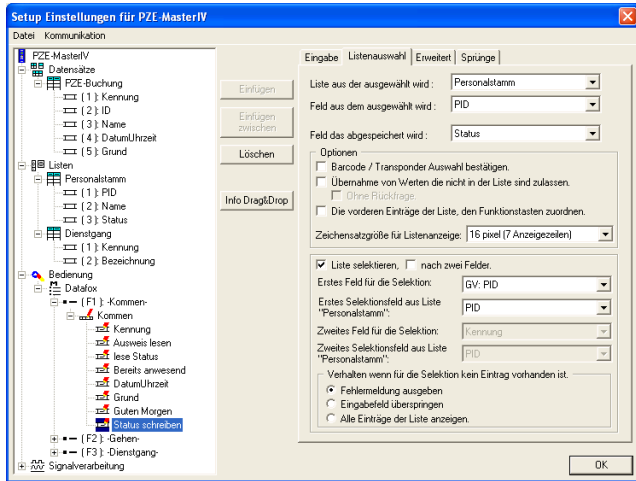


Figure 113: List selection of Write status

Open the register card List selection now and set the following: Again the list to be selected from is the permanent staff list. The field to be selected from is PID and the field to be saved (on the list field Status) is therefore Status. Activate the option Select list now. The first field for selection is our global variable GV: PID. You want to compare this value with all PIDs of the list. Therefore you set PID as first selection field of list Personalstamm.

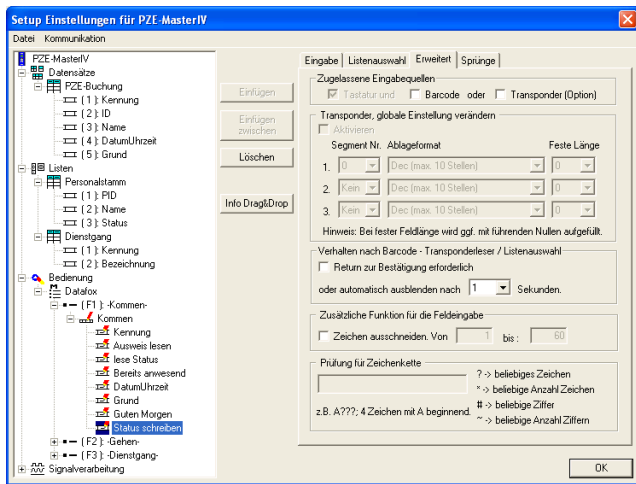


Figure 114: Expanded settings of Write status

On the register card Expanded you deactivate transponder and Return necessary for confirmation. The time for fading out automatically is set to 1 second.

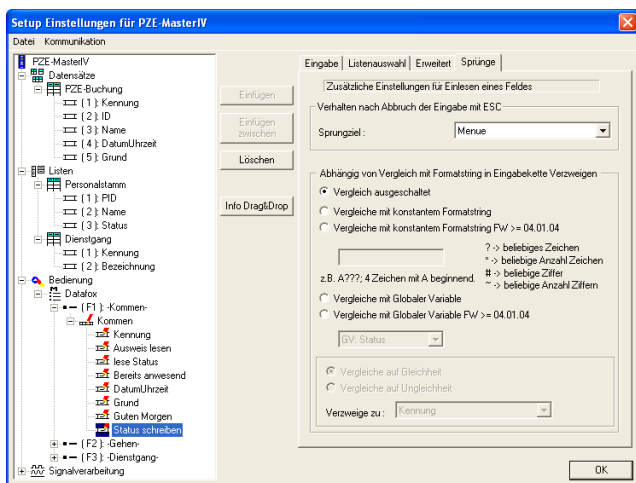
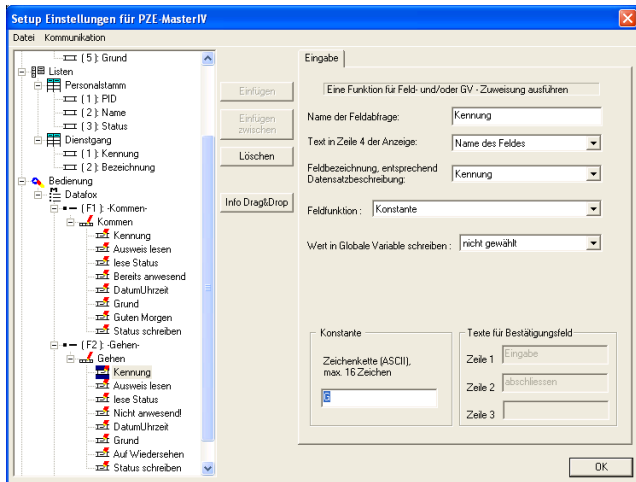


Figure 115: Jump characteristics of Write status

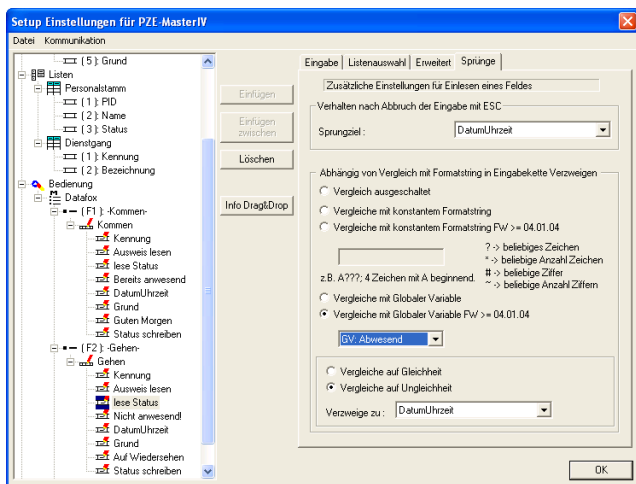
Because you do not want to carry out any checks, no options are changed.

The input chain Entry is finally configured now. The next step is the creation of the input chain Exit. Here you have to repeat all steps, you have already carried out when configuring the input chain Entry. Therefore in the following only the differing steps are explained.



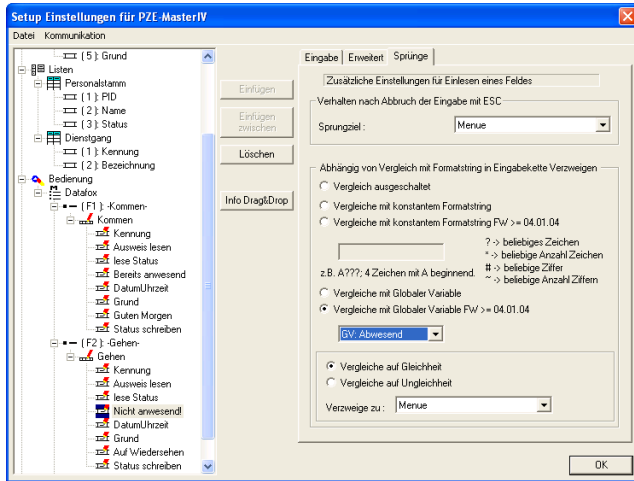
On the input chain field Identification you do not set En but Ex (= Exit).

Figure 116: Differing settings of Identification



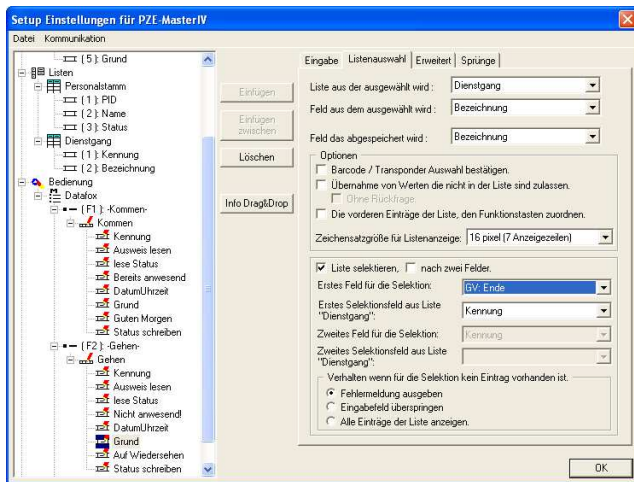
You compare with the GV: absent on the input chain field Read status.

Figure 117: Differing settings of Read status



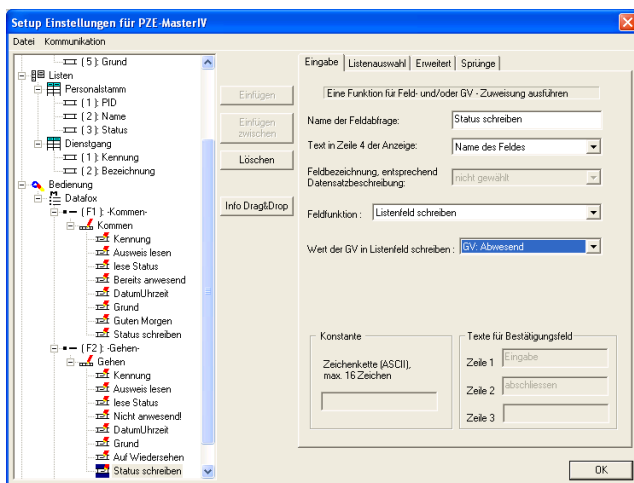
The same is valid for the input chain field Not attendant, the counterpart of Already attendant. Again you compare with the GV: absent instead of GV: attendant.

Figure 118: Differing settings of Not attendant



Under List selection of Reason you have to set GV: Stop (instead of GV: Start) as first field for selection.

Figure 119: Differing settings of the list selection of Reason

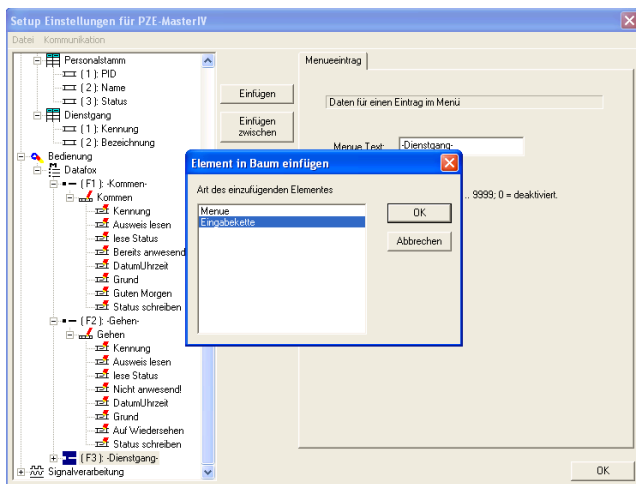


Under Write status you write the GV: absent on the list field.

Figure 120: Differing settings of Write status

In order to finish the setup you have to create and configure a third input chain. You have learned now, how to create input chains with input chain fields and how to configure them, so that the user does not need to carry out any manual inputs. At next you want to create a more complicated booking record.

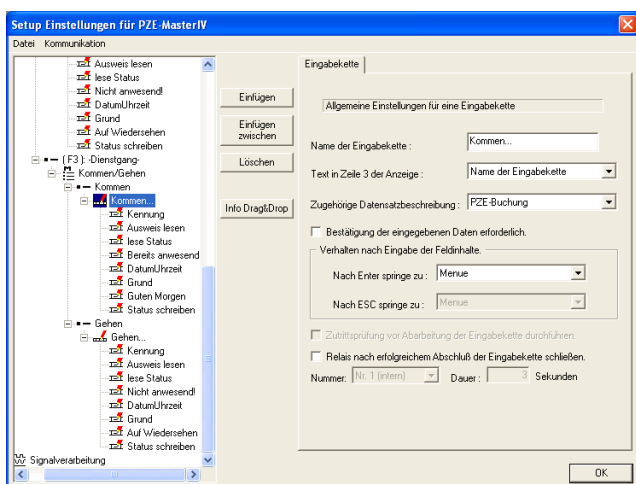
You want to collect the time, a staff member is absent for a short business trip. Therefore you have to differ, whether a staff member comes or leaves. Additionally you want to collect the reason for the short business trip. The user has to enter this information directly on the terminal. In order to create the complete process as simple as possible, all necessary information are provided in a list. That way only the right information has to be selected from a list and to be confirmed via ENTER within one booking process.



At first you paste a submenu under (F3): Short business trip. The display text can be defined freely. In our example you enter Exit/Entry for line 3 and With reason... for line 4.

Figure 121: Creating a submenu

Add 2 menu items to this submenu. Menu item 1 is named Entry and menu item 2 is named Exit. Create an input chain within each menu item. In the following the tree should look like shown in figure 122.

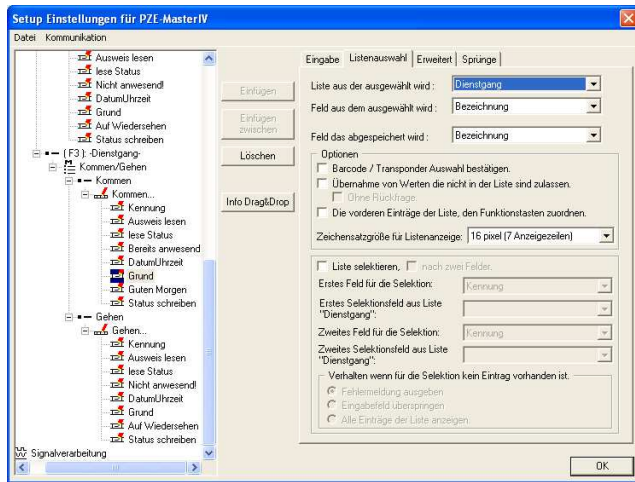


The input chain in the menu item Entry is named Entry... Assign PZE-booking to the data record description and deactivate the option Confirmation of entered data necessary. The same is valid for the input chain Exit... Add 8 input fields to each of the input chains.

Figure 122: Creating a submenu

The fields of the input chain Entry... and Exit... within Short business trip are configured like the input chains of F1 and F2 of the same name. Exception: The constant value for Identification = SbtEn

(= Short business trip (Entry)) and SbtEx (= Short business trip (Exit)) and the configuration of the list selection for Reason.



In order to allow a manual list selection, you deactivate the option Select list. On the register card Expanded you activate the option Return necessary for confirmation. The same settings have to be set for the last input chain Exit.... Save all changes of the setup via < Datei => Speichern >.

Figure 123: List selection of Reason (Short business trip)

5.3.1.6 Setup- and list transmission

When you have worked through all the steps, the setup is finished now. In order to check the booking records, setup and lists have to be transmitted to the terminal of the PZE-MasterIV Basic.

Connect the device terminal to the PC according to the selected communication type (see figure 43). Make sure, that the PC interface is configured correctly, e.g. the baud rate, number of data bits, parity and stop bits of the COM-interface have to be concurrent to the configuration of the terminal.

Connect the terminal to the voltage source. If the PZE-MasterIV Basic is booted completely, the message Wait for setup is displayed or the device is in an active setup.

In both cases you can transmit a new setup to the device via the DatafoxStudioIV.

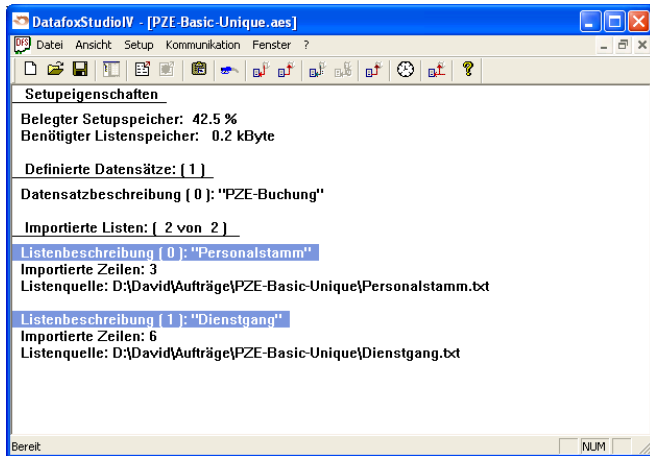


Figure 124: Import of the lists

Import the list to the setup via *< Setup => Listen importieren >*. If the import is finished successfully, the file path is displayed as list source.



Figure 125: Transmitting the setup to the device

Now you can transmit the setup to the device via *< Kommunikation => Setup schreiben >*. The progress bar indicates, that data are transmitted to the device. A successful conclusion of the transmission is indicated by a message, you have to confirm via OK.

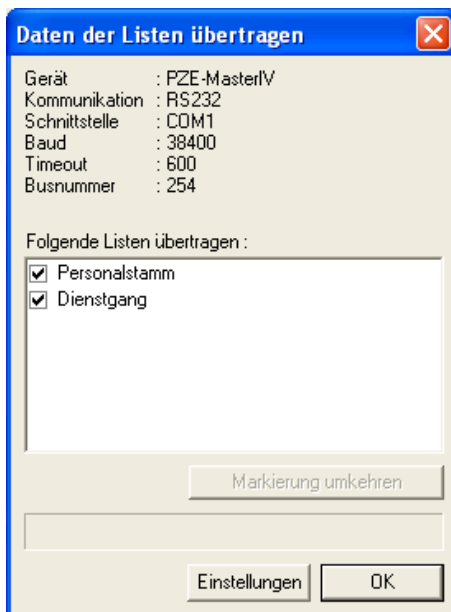


Figure 126: Transmitting the lists to the device

At last you can transmit lists to the device via *< Kommunikation => Listen laden >*. In addition you can set there, which lists shall be transmitted. The progress bar indicates, that data are transmitted to the device. A successful conclusion of the transmission is indicated by a message, you have to confirm via OK. Now booking records can be carried out on the terminal.